maximo enterprise suite

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User's Guide

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Contents

About this Guide . . . . . **xxiii**
Who Should Read this Guide? xxiii
How to Use this Guide xxiv
How to Print this Guide xxiv
Documentation Conventions xxv
Notation Conventions. xxvi
Related Documentation xxvi
Support xxvii

Chapter 1: Maximo Overview **1-1**
About Maximo 1-1
Maximo Components 1-2
Maximo Modules and Applications 1-2
Understanding Databases 1-6
Database Components 1-6
Columns or Fields 1-6
Key Fields. 1-7
Rows or Records 1-7
Tables or Files 1-7
Structured Query Language 1-8
Maximo's Database Structure 1-8
Relational Databases. 1-8
Maximo Hierarchies 1-8
Data Sharing Between Applications. 1-9
Multisite Overview. 1-9
Multisite Levels 1-9
Multisite and Maximo 1-10
Security Overview 1-12
Passwords. 1-13
Workflow. 1-13
Workflow Capabilities 1-13
Understanding Workflow Processes 1-14
Using the Workflow Inbox. 1-15

Chapter 2: Getting Started. **2-1**
System Requirements 2-1
Launching Maximo. 2-1
Signing In to Maximo. 2-1
Browser Menu and Icons 2-2
Maximo Navigation Bar 2-3
Signing Out of Maximo 2-3
Maximo Start Centers 2-4
Start Center Components 2-4
Managing Multiple Start Centers. 2-4
Personalizing Portlets 2-5
Opening an Application 2-5
Maximo's Application Types 2-6
Searching the Maximo Database. 2-6
Using the Search Toolbar 2-7

Basic Searches . . . 2-8
Using Saved Queries to Search . . . 2-8
Saving a Query . . . 2-8
Managing Saved Queries . . . 2-9
Using the Find Field to Search . . . 2-9
Using the Table Filter to Refine Search Results . . . 2-10
Field Buttons . . . 2-11
Special Characters and Maximo . . . 2-11
Using Wildcard Characters . . . 2-12
Maximo Wildcard Characters . . . 2-12
Placement of Wildcard Characters . . . 2-12
Searching for Null Values . . . 2-12
Advanced Searching . . . 2-13
Using the Advanced Search Option . . . 2-13
Using a SQL WHERE Clause to Search . . . 2-13
Viewing Search Results . . . 2-14
Using Bookmarks . . . 2-14
Adding a Bookmark . . . 2-14
Managing Bookmarks . . . 2-15
Maximo Application Pages . . . 2-15
Maximo Toolbar . . . 2-15
Query Menu . . . 2-16
Find Field . . . 2-16
Select Action Menu . . . 2-16
Toolbar Buttons . . . 2-16
Tabs and Subtabs . . . 2-17
Record Heading . . . 2-18
Sections . . . 2-18
Table Windows . . . 2-19
Navigating Table Rows (Records) . . . 2-20
Table Window Buttons . . . 2-21
Sorting Columns . . . 2-22
Filtering Table Windows . . . 2-22
Using the Row Details . . . 2-23
Default Table Data . . . 2-23
Editable Table Windows . . . 2-24
Creating New Rows . . . 2-24
Paired Table Windows . . . 2-25
Maximo Fields . . . 2-26
Field Characteristics . . . 2-26
Field Help . . . 2-28
Creating Records . . . 2-28
Types of Maximo Records . . . 2-28
Automatic Numbering of Records . . . 2-28
Default Field Values . . . 2-29
Creating a Record . . . 2-29
Entering Values in Fields . . . 2-30
Entering Partial Field Values . . . 2-30
Entering Dates . . . 2-30
Using the Select Value Button . . . 2-31
Using the Detail Menu Button . . . 2-32
Using the Drilldown . . . 2-32
Understanding the Detail Display . . . 2-33
Navigating the Hierarchy . . . 2-34
Actions Available from the Drilldown . . . 2-35
Using Classifications . . . 2-35
Multisite and Classifications . . . 2-36
Searching Classifications . . . 2-36

Classifying a Record . . . 2-37
Understanding General Ledger Account Codes . . . 2-38
GL Account Codes and Maximo . . . 2-38
GL Account Components . . . 2-38
Mandatory and Optional Components . . . 2-39
Valid Account Definitions . . . 2-39
Component Sequences . . . 2-40
Entering GL Account Codes . . . 2-41
Selecting GL Account Codes . . . 2-41
Editing GL Account Codes . . . 2-41
Using Attached Documents . . . 2-42
Types of Attachments . . . 2-42
Attached Documents Administrative Actions . . . 2-43
Attaching Documents . . . 2-43
Managing Records . . . 2-43
Editing an Existing Record . . . 2-44
Understanding Record Statuses . . . 2-44
Making a Record Inactive . . . 2-44
Deleting Records . . . 2-45

Chapter 3: The Assets Module . . . 3-1
Assets and Deployed Assets . . . 3-2
Using Classifications . . . 3-2
Interaction Between Asset and Location Records . . . 3-2
The Drilldown . . . 3-3
Asset/Location Priority . . . 3-3
Asset Records . . . 3-4
Multisite and Asset Records . . . 3-4
Assets and Classifications . . . 3-4
Assets and Companies . . . 3-5
Assets and Condition Monitoring . . . 3-5
Assets and Contracts . . . 3-5
Assets and Deployed Assets . . . 3-5
Assets and Items . . . 3-6
Assets and Locations . . . 3-6
Assets and Meters . . . 3-6
Assets and Preventive Maintenance . . . 3-7
Assets and Safety . . . 3-7
Assets and Work Orders . . . 3-8
Asset Types . . . 3-8
Using the Assets Application . . . 3-8
Asset Buttons . . . 3-9
Assets Application Quick Reference . . . 3-9
Creating Asset Records . . . 3-11
Understanding Rotating Assets . . . 3-11
Understanding Asset Hierarchies . . . 3-12
Asset Assembly Structure Elements . . . 3-12
Creating Asset Assembly Structures . . . 3-13
Applying Item Assembly Structures . . . 3-13
Viewing Asset Hierarchies . . . 3-14
Managing Asset Records . . . 3-14
Asset Users and Custodians . . . 3-14
Deleting Meters . . . 3-14
Asset Statuses . . . 3-15
Decommissioning an Asset . . . 3-15
Asset Reports . . . 3-16
Condition Monitoring . . . 3-16
Multisite and Condition Monitoring . . . 3-16

Condition Monitoring and Assets/Locations . . . 3-17
Condition Monitoring and Meters. . . . 3-17
Condition Monitoring and Preventive Maintenance . . . 3-17
Condition Monitoring and Work Orders. . . . 3-17
Using the Condition Monitoring Application . . . 3-17
Condition Monitoring Application Quick Reference . . . 3-18
Creating Measurement Points Records . . . 3-18
Measurement Point Limits - Gauge Meters . . . 3-19
Measurement Point Limits - Characteristic Meters . . . 3-19
Managing Condition Monitoring Records. . . . 3-19
Generating a Work Order from a Measurement Point . . . 3-19
Condition Monitoring Reports . . . 3-20
Failure Codes . . . 3-20
Understanding the Failure Code Hierarchy . . . 3-20
Multisite and Failure Codes . . . 3-21
Failure Codes and Assets/Locations . . . 3-21
Failure Codes and Work Orders . . . 3-21
Using the Failure Codes Application . . . 3-21
Failure Codes Application Quick Reference. . . . 3-22
Creating Failure Codes . . . 3-22
Building a Failure Hierarchy . . . 3-22
Managing Failure Codes . . . 3-23
Failure Codes Reports . . . 3-23
Locations. . . . 3-23
Multisite and Locations. . . . 3-24
Locations and Assets . . . 3-24
Locations and Condition Monitoring . . . 3-24
Locations and Contracts . . . 3-24
Locations and Inventory . . . 3-25
Locations and Meters. . . . 3-25
Locations and Preventive Maintenance . . . 3-25
Locations and Safety . . . 3-25
Locations and Work Orders. . . . 3-26
Location Types . . . 3-26
Using the Locations Application . . . 3-27
Locations Application Quick Reference . . . 3-27
Creating Locations. . . . 3-28
Understanding Locations Terms . . . 3-29
Preparing to Create Locations . . . 3-29
Understanding Location Systems. . . . 3-30
Planning Location Hierarchies. . . . 3-30
Creating Hierarchical Systems. . . . 3-31
Building a Location Hierarchy from an Item Assembly Structure. . . . 3-31
Creating Network Systems. . . . 3-31
Viewing Location Hierarchies. . . . 3-32
Managing Locations. . . . 3-32
Location Statuses . . . 3-32
Decommissioning a Location Record . . . 3-32
Locations Reports. . . . 3-33
Meters . . . 3-33
Multisite and Meter Records. . . . 3-34
Meters and Assets/Locations. . . . 3-34
Meters and Condition Monitoring. . . . 3-34
Meters and Inventory . . . 3-34
Meters and Meter Groups . . . 3-35
Meters and PMs. . . . 3-35
Meter Types . . . 3-35
Using the Meters Application . . . 3-35

Meters Application Quick Reference . . . 3-36
Creating a Meter Record . . . 3-36
Managing Meters . . . 3-36
Deleting a Meter Definition . . . 3-36
Meters Reports . . . 3-37
Meter Groups . . . 3-37
Multisite and Meter Groups . . . 3-37
Meter Groups and Assets/Locations . . . 3-37
Meter Groups and Items . . . 3-37
Meter Groups and Meters . . . 3-38
Using the Meter Groups Application . . . 3-38
Meter Groups Application Quick Reference . . . 3-38
Creating Meter Groups . . . 3-38
Managing Meter Groups . . . 3-39
Modifying Meter Groups . . . 3-39
Deleting a Meter Group . . . 3-39
Meter Groups Reports . . . 3-39

Chapter 4: The Contracts Module . . . 4-1
Contract Types . . . 4-2
Contract Details . . . 4-3
Contracts and Terms and Conditions . . . 4-3
Contract Statuses . . . 4-4
Revising Contracts . . . 4-5
Labor Rate Contracts . . . 4-6
Multisite and Labor Rate Contracts . . . 4-6
Labor Rate Contracts and Company Records . . . 4-7
Labor Rate Contracts and Crafts . . . 4-7
Labor Rate Contracts and Invoices . . . 4-7
Labor Rate Contracts and Labor . . . 4-7
Labor Rate Contracts and Labor Reporting . . . 4-7
Labor Rate Contracts and Work Orders . . . 4-7
Using the Labor Rate Contracts Application . . . 4-8
Labor Rate Contracts Application Quick Reference . . . 4-8
Creating Labor Rate Contracts . . . 4-9
Creating a Rate Schedule . . . 4-9
Associating Labor with a Contract . . . 4-9
Managing Labor Rate Contracts . . . 4-9
Labor Rate Contracts Reports . . . 4-10
Lease/Rental Contracts . . . 4-10
Multisite and Lease/Rental Contracts . . . 4-10
Lease/Rental Contracts and Companies . . . 4-10
Lease/Rental Contracts and Invoices . . . 4-10
Using the Lease/Rental Contracts Application . . . 4-11
Lease/Rental Contracts Application Quick Reference . . . 4-11
Creating Lease/Rental Contracts . . . 4-12
Associating Assets with a Contract . . . 4-12
Setting up Payment Schedules . . . 4-12
Lease/Rental Contracts Reports . . . 4-13
Master Contracts . . . 4-13
Multisite and Master Contracts . . . 4-13
Using the Master Contracts Application . . . 4-13
Master Contracts Application Quick Reference . . . 4-14
Creating Master Contracts . . . 4-14
Creating Associated Contracts . . . 4-15
Managing Master Contracts . . . 4-15
Master Contracts Reports . . . 4-16
Purchase Contracts . . . 4-16

Multisite and Purchase Contracts 4-16
Purchase Contracts and Companies 4-16
Purchase Contracts and Invoices 4-16
Purchase Contracts and Purchasing 4-17
Using the Purchase Contracts Application 4-17
Purchase Contracts Application Quick Reference 4-17
Creating Purchase Contracts 4-19
Adding Lines to a Contract 4-20
Creating Software License Contracts 4-20
Managing Purchase Contracts 4-20
Purchase Contracts Reports 4-20
Terms and Conditions 4-20
Multisite and Terms and Conditions 4-21
Terms and Conditions and Contracts 4-21
Terms and Conditions and Purchasing 4-21
Using the Terms and Conditions Application 4-21
Terms and Conditions Application Quick Reference 4-21
Creating Terms and Conditions 4-22
Managing Terms and Conditions 4-22
Terms and Conditions Reports 4-22
Warranty Contracts 4-22
Multisite and Warranty Contracts 4-23
Warranty Contracts and Companies 4-23
Warranty Contracts and Invoices 4-23
Warranty Contracts and Work Orders 4-23
Using the Warranty Contracts Application 4-23
Warranty Contracts Application Quick Reference 4-24
Creating Warranty Contracts 4-24
Defining Contract Lines / Meter Lines 4-25
Associating Assets with a Contract 4-25
Duplicating Warranty Contracts 4-25
Managing Warranty Contracts 4-25
Warranty Contracts Reports 4-26

Chapter 5: The Deployed Assets Module 5-1
Deployed Asset Administration 5-2
Reconciliation Administration 5-3
Computers 5-4
Multisite and Computer Records 5-5
Computer Records and Maximo Fusion 5-5
Computer Records and Deployed Asset Administration 5-5
Computers Records and Reconciliation 5-6
Using the Computers Application 5-6
Computers Application Quick Reference 5-7
Creating Computer Records 5-7
Managing Computer Records 5-8
Computers Reports 5-8
Network Devices 5-8
Multisite and Network Devices 5-8
Network Devices and Deployed Asset Administration 5-8
Network Devices and the Reconciliation Application 5-9
Using the Network Devices Application 5-9
Network Devices Application Quick Reference 5-9
Creating Network Device Records 5-10
Managing Network Device Records 5-10
Network Devices Reports 5-10
Network Printers 5-10
Multisite and Network Printers 5-10

Network Printers and Deployed Asset Administration . . . 5-11
Network Printers and the Reconciliation Application . . . 5-11
Network Printers and the Computers Application . . . 5-11
Using the Network Printers Application . . . 5-11
Network Printers Application Quick Reference . . . 5-11
Creating Network Printer Records . . . 5-12
Managing Network Printer Records . . . 5-12
Network Printers Reports . . . 5-12

Chapter 6: The Inventory Module . . . 6-1
Inventory and Multisite - Item Sets . . . 6-3
Commodity Groups . . . 6-3
Kits . . . 6-4
Condition Codes . . . 6-4
Multisite and Condition Codes . . . 6-5
Condition Codes and Assets . . . 6-5
Condition Codes and Inventory . . . 6-5
Condition Codes and Issues and Transfers . . . 6-5
Condition Codes and Item Records . . . 6-6
Condition Codes and Tools . . . 6-6
Using the Condition Codes Application . . . 6-6
Condition Codes Application Quick Reference . . . 6-6
Creating Condition Codes . . . 6-6
Managing Condition Codes . . . 6-6
Condition Codes Reports . . . 6-7
Inventory . . . 6-7
Multisite and Inventory . . . 6-7
Inventory and Condition Codes . . . 6-7
Inventory and Item Records . . . 6-7
Inventory and Purchasing (Reordering) . . . 6-8
Inventory and Storerooms . . . 6-8
Using the Inventory Application . . . 6-8
Inventory Application Quick Reference . . . 6-8
Using the Inventory Application . . . 6-10
Stocked, Nonstocked, and Special Order Items . . . 6-10
Creating Inventory Records . . . 6-11
Creating Kits . . . 6-11
Managing Inventory . . . 6-11
Viewing Item Availability . . . 6-12
Maximo's Reorder Process . . . 6-12
Determining the Reorder Point . . . 6-12
Reordering Items . . . 6-13
Managing Inventory Item Counts and Costs . . . 6-13
Managing Kits . . . 6-14
Inventory Reports . . . 6-14
Issues and Transfers . . . 6-14
Multisite and Issues and Transfers . . . 6-15
Issues and Transfers and Condition Codes . . . 6-15
Issues and Transfers and Inventory . . . 6-15
Issues and Transfers and Purchasing . . . 6-16
Issues and Transfers and Work Orders . . . 6-16
Using the Issues and Transfers Application . . . 6-16
Issues and Transfers Application Quick Reference . . . 6-17
Direct Issue Items . . . 6-17
Creating Issue Transactions . . . 6-17
Creating Transfer Transactions . . . 6-18
Managing Issues and Transfers . . . 6-19
Issues and Transfers Reports . . . 6-19

Item Master . . . 6-19
Multisite and Item Master Records . . . 6-19
Item Master Records and Assets. . . . 6-20
Item Master Records and Commodity Codes . . . 6-20
Item Master Records and Condition Codes . . . 6-21
Item Master Records and Contracts . . . 6-21
Item Master Records and Inventory . . . 6-21
Item Master and Safety . . . 6-22
Item Master Records and Storerooms . . . 6-22
Using the Item Master Application . . . 6-22
Item Master Application Quick Reference . . . 6-23
Creating Item Master Records . . . 6-24
Designating Alternate Items . . . 6-24
Creating Rotating Items . . . 6-24
Understanding Item Assembly Structures . . . 6-25
Using Item Assembly Structures . . . 6-25
Creating Item Kits . . . 6-25
Managing Item Master Records . . . 6-26
Managing Vendors . . . 6-26
Managing Kits . . . 6-26
Linking Items to Classifications . . . 6-26
Deleting Items . . . 6-26
Item Master Reports . . . 6-27
Service Items . . . 6-27
Multisite and Service Items . . . 6-27
Service Items and Job Plans . . . 6-28
Service Items and Purchasing. . . . 6-28
Service Items and Work Orders . . . 6-28
Using the Service Items Application . . . 6-28
Service Items Application Quick Reference . . . 6-28
Creating Service Item Records . . . 6-29
Managing Service Item Records . . . 6-29
Service Items Reports . . . 6-30
Stocked Tools . . . 6-30
Multisite and Stocked Tools . . . 6-30
Using the Stocked Tools Application . . . 6-30
Stocked Tools Application Quick Reference . . . 6-31
Creating Stocked Tool Records . . . 6-32
Managing Stocked Tool Records . . . 6-32
Stocked Tools Reports . . . 6-33
Storerooms . . . 6-33
Multisite and Storerooms . . . 6-33
Storerooms and Inventory . . . 6-33
Storerooms and Item Records . . . 6-33
Storerooms and Purchasing . . . 6-34
Using the Storerooms Application . . . 6-34
Storerooms Application Quick Reference . . . 6-34
Creating Storerooms . . . 6-34
Managing Storerooms . . . 6-35
Storerooms Reports . . . 6-35
Tool Records . . . 6-35
Multisite and Tool Records . . . 6-35
Tool Records and Assets . . . 6-36
Tool Records and Stocked Tools . . . 6-36
Tool Records and Work Orders . . . 6-36
Using the Tools Application . . . 6-36
Tools Application Quick Reference . . . 6-37
Creating Tool Records . . . 6-38

Duplicating Tools . . . 6-38
Managing Tool Records . . . 6-38
Deleting Tools . . . 6-38
Tools Reports . . . 6-38

Chapter 7: The Planning Module . . . 7-1
Job Plans . . . 7-2
Multisite and Job Plans . . . 7-2
Job Plans and Preventive Maintenance . . . 7-3
Job Plans and Work Orders . . . 7-3
Using the Job Plans Application . . . 7-3
Job Plans Application Quick Reference . . . 7-3
Creating Job Plans . . . 7-4
Defining Job Plan Tasks . . . 7-5
Defining Job Plan Labor . . . 7-6
Defining Job Plan Materials . . . 7-6
Defining Job Plan Services . . . 7-6
Defining Job Plan Tools . . . 7-6
Associating Work Assets with a Job Plan . . . 7-7
Ownership of Job Plans . . . 7-7
Duplicating Job Plans . . . 7-7
Managing Job Plans . . . 7-8
Job Plan Statuses . . . 7-8
Deleting a Job Plan . . . 7-8
Job Plan Reports . . . 7-8
Routes . . . 7-8
Multisite and Routes . . . 7-9
Routes and Other Applications . . . 7-9
Using the Routes Application . . . 7-9
Routes Application Quick Reference . . . 7-10
Creating Routes . . . 7-10
Managing Routes . . . 7-10
Routes Reports . . . 7-10

Chapter 8: The Preventive Maintenance Module . . . 8-1
Master PMs vs. Preventive Maintenance Records . . . 8-1
Master PM Records . . . 8-2
Multisite and Master PM Records . . . 8-2
Master PM Records and Items . . . 8-2
Master PM Records and Job Plans . . . 8-2
Master PM Records and Preventive Maintenance . . . 8-3
Using the Master PM Application . . . 8-3
Master PM Application Quick Reference . . . 8-3
Creating Master PMs . . . 8-4
Setting PM Frequency . . . 8-4
Setting Seasonal Dates . . . 8-5
Job Plan Sequencing . . . 8-5
Managing Master PMs . . . 8-6
Creating Associated PMs . . . 8-6
Updating Associated PMs . . . 8-7
Deleting Master PMs . . . 8-7
Master PM Reports . . . 8-7
Preventive Maintenance Records . . . 8-8
Ownership of Preventive Maintenance Records . . . 8-8
Multisite and Preventive Maintenance . . . 8-8
Preventive Maintenance Records and Assets/Locations . . . 8-9
Preventive Maintenance Records and Job Plans . . . 8-9
Preventive Maintenance Records and Master PMs . . . 8-9

Preventive Maintenance Records and Routes . . . 8-9
Preventive Maintenance Records and Safety Plans . . . 8-9
Preventive Maintenance Records and Work Orders . . . 8-10
Using the Preventive Maintenance Application . . . 8-10
Preventive Maintenance Application Quick Reference . . . 8-10
Creating PMs . . . 8-11
Setting Priority for PMs . . . 8-11
Setting PM Frequency . . . 8-12
Setting Seasonal Dates . . . 8-12
Job Plan Sequencing . . . 8-12
PM Hierarchies . . . 8-13
Managing PMs . . . 8-13
Generating PM Work Orders . . . 8-13
PM Statuses . . . 8-13
Preventive Maintenance Reports . . . 8-14

Chapter 9: The Purchasing Module . . . 9-1
Purchasing and Inventory . . . 9-3
Internal vs. External Purchases . . . 9-3
Line Types . . . 9-4
Commodity Codes . . . 9-5
Purchasing and Contracts . . . 9-5
Terms and Conditions . . . 9-5
Purchase Contracts . . . 9-6
Creating Purchasing Records from Contracts . . . 9-6
Types of Purchase Orders . . . 9-6
Payment Schedules . . . 9-7
Company Records . . . 9-7
Multisite and Company Records . . . 9-8
Company Records vs. Company Master Records . . . 9-8
Company Records and Other Applications . . . 9-8
Company Records and Contracts . . . 9-8
Company Records and Purchasing . . . 9-9
Using the Companies Application . . . 9-9
Companies Application Quick Reference . . . 9-9
Creating Company Records . . . 9-10
Using Company Branches . . . 9-10
Company Branch Hierarchies . . . 9-11
Duplicating Company Records . . . 9-11
Managing Company Records . . . 9-11
Disqualifying a Vendor . . . 9-11
Deleting Company Records . . . 9-11
Companies Reports . . . 9-12
Company Master Records . . . 9-12
Multisite and Company Master Records . . . 9-12
Company Master Records vs. Company Records . . . 9-12
Using the Company Master Application . . . 9-13
Company Master Application Quick Reference . . . 9-13
Creating Company Master Records . . . 9-13
Managing Company Master Records . . . 9-14
Disqualifying a Company Master . . . 9-14
Deleting Company Master Records . . . 9-14
Company Master Reports . . . 9-14
Invoices . . . 9-14
Multisite and Invoice Records . . . 9-14
Invoice Records and Contracts . . . 9-15
Invoice Records and Purchase Orders . . . 9-15
Using the Invoices Application . . . 9-15

Invoices Application Quick Reference . . . 9-16
Creating Invoices . . . 9-16
Invoice Types . . . 9-16
Entering Invoice Lines . . . 9-17
Duplicating an Invoice . . . 9-17
Managing Invoices . . . 9-17
Invoice Statuses . . . 9-17
Deleting an Invoice . . . 9-18
Invoices Reports . . . 9-18
Purchase Orders . . . 9-19
Multisite and Purchase Orders . . . 9-19
Purchase Orders and Purchase Contracts . . . 9-19
Purchase Orders and Purchase Requisitions . . . 9-20
Purchase Orders and Storerooms . . . 9-20
Using the Purchase Orders Application . . . 9-20
Purchase Orders Application Quick Reference . . . 9-21
Creating Purchase Orders . . . 9-22
Adding PO Lines . . . 9-22
Understanding Standard Services . . . 9-23
Duplicating a Purchase Order . . . 9-23
Managing Purchase Orders . . . 9-23
Creating a Change Order . . . 9-23
Purchase Order Statuses . . . 9-24
Purchase Orders Reports . . . 9-24
Purchase Requisitions . . . 9-24
Multisite and Purchase Requisitions . . . 9-25
Purchase Requisitions and Contracts . . . 9-25
Purchase Requisitions and Purchase Orders . . . 9-25
Purchase Requisitions and Storerooms . . . 9-26
Using the Purchase Requisitions Application . . . 9-26
Purchase Requisitions Application Quick Reference . . . 9-26
Creating Purchase Requisitions . . . 9-27
Entering PR Line Items . . . 9-27
Requisitioning Spare Parts . . . 9-28
Requisitioning Vendor Items . . . 9-28
Managing Purchase Requisitions . . . 9-28
Purchase Requisitions Statuses . . . 9-28
Purchase Requisitions Reports . . . 9-29
Receipts . . . 9-29
Multisite and Receiving . . . 9-29
Receiving and Assets . . . 9-29
Receiving and Companies . . . 9-30
Receiving and Inventory . . . 9-30
Receiving and Invoices . . . 9-30
Using the Receiving Application . . . 9-30
Receiving Application Quick Reference . . . 9-31
Creating Receipts . . . 9-31
Receiving Materials . . . 9-31
Modifying Material Receipts . . . 9-32
Returning Materials . . . 9-32
Receiving Services . . . 9-32
Managing Receipts . . . 9-33
Receiving Reports . . . 9-33
Requests for Quotations . . . 9-33
Multisite and Requests for Quotations . . . 9-34
Request for Quotations and Companies . . . 9-34
Request for Quotations and Contracts . . . 9-34
Request for Quotations and Purchase Orders . . . 9-34

Request for Quotations and Purchase Requisitions . . . 9-34
Using the Request for Quotations Application . . . 9-35
Request for Quotations Application Quick Reference . . . 9-35
Creating Requests for Quotations . . . 9-36
Adding Vendors to an RFQ . . . 9-36
Managing Requests for Quotations . . . 9-37
Recording Quotation Lines . . . 9-37
Awarding Quotation Lines to Vendors . . . 9-37
Creating a PO from an RFQ . . . 9-37
RFQ Statuses . . . 9-37
Request for Quotations Reports . . . 9-38

Chapter 10: The Resources Module . . . 10-1
Interaction Between Labor, Person, and User Records . . . 10-2
Crafts . . . 10-2
Multisite and Craft Records . . . 10-3
Crafts and Job Plans . . . 10-3
Crafts and Labor Records . . . 10-3
Craft Records and Work Orders . . . 10-3
Crafts vs. Person Groups . . . 10-3
Using the Crafts Application . . . 10-4
Crafts Application Quick Reference . . . 10-4
Creating Craft Records . . . 10-5
Managing Craft Records . . . 10-5
Crafts Reports . . . 10-6
Labor Records . . . 10-6
Multisite and Labor Records . . . 10-6
Labor Records and Assignment Manager . . . 10-6
Labor Records and Contracts . . . 10-6
Labor Records and Crafts . . . 10-7
Labor Records and Person Records . . . 10-7
Labor Records and Work Orders . . . 10-7
Using the Labor Application . . . 10-7
Labor Buttons . . . 10-8
Labor Application Quick Reference . . . 10-8
Creating Labor Records . . . 10-9
Managing Labor Records . . . 10-10
Deleting Crafts from a Labor Record . . . 10-10
Modifying Qualifications . . . 10-10
Labor Record Statuses . . . 10-10
Deleting Labor Records . . . 10-11
Labor Reports . . . 10-12
Person Records . . . 10-12
Multisite and Person Records . . . 10-12
Person Records and Workflow . . . 10-12
Person Records vs. Labor Records . . . 10-13
Using the People Application . . . 10-13
People Application Quick Reference . . . 10-13
Creating Person Records . . . 10-13
Managing Person Records . . . 10-14
Person Record Statuses . . . 10-14
Deleting Person Records . . . 10-15
People Reports . . . 10-15
Person Groups . . . 10-15
Multisite and Person Group Records . . . 10-15
Person Groups and Workflow . . . 10-16
Using the Person Groups Application . . . 10-16
Person Groups Application Quick Reference . . . 10-16

Creating Person Groups . . . 10-17
Managing Person Groups . . . 10-17
Deleting Person Groups . . . 10-17
Person Groups Reports . . . 10-18
Qualifications . . . 10-18
Multisite and Qualifications . . . 10-18
Qualifications and Labor Records . . . 10-18
Using the Qualifications Application . . . 10-19
Qualifications Application Quick Reference . . . 10-19
Creating Qualifications . . . 10-20
Managing Qualifications . . . 10-21
Qualifications Statuses . . . 10-21
Deleting Qualifications . . . 10-21
Qualifications Reports . . . 10-21

Chapter 11: The Safety Module . . . 11-1
Hazards . . . 11-2
Multisite and Hazard Records . . . 11-2
Hazards and Assets/Locations . . . 11-2
Hazards and Item Records . . . 11-3
Hazards and Precautions . . . 11-3
Hazards and Safety Plans . . . 11-3
Hazards and Tag Outs . . . 11-4
Using the Hazards Application . . . 11-4
Hazards Application Quick Reference . . . 11-4
Creating Hazard Records . . . 11-5
Hazards Reports . . . 11-6
Lock Out/Tag Outs . . . 11-6
Multisite and Lock Out/Tag Out Records . . . 11-6
Tag Outs and Assets/Locations . . . 11-7
Tag Outs and Hazards . . . 11-7
Tag Outs and Safety Plans . . . 11-7
Tag Outs and Work Orders . . . 11-7
Using the Lock Out/Tag Out Application . . . 11-7
Lock Out/Tag Out Application Quick Reference . . . 11-7
Creating Tag Outs . . . 11-8
Managing Lock Out/Tag Out Records . . . 11-9
Lock Out/Tag Out Reports . . . 11-9
Precautions . . . 11-9
Multisite and Precaution Records . . . 11-9
Precautions and Assets/Locations . . . 11-10
Precautions and Hazards . . . 11-10
Precautions and Safety Plans . . . 11-10
Using the Precautions Application . . . 11-10
Precautions Application Quick Reference . . . 11-10
Creating Precaution Records . . . 11-11
Managing Precaution Records . . . 11-11
Precaution Reports . . . 11-11
Safety Plans . . . 11-12
Multisite and Safety Plans . . . 11-12
Safety Plans and Assets/Locations . . . 11-12
Safety Plans and Hazards . . . 11-12
Safety Plans and Job Plans . . . 11-13
Safety Plans and Precautions . . . 11-13
Safety Plans and Tag Outs . . . 11-13
Safety Plans and Work Orders . . . 11-13
Using the Safety Plans Application . . . 11-14
Safety Plans Application Quick Reference . . . 11-14

Creating Safety Plans . . . 11-15
Associating Hazards and Precautions . . . 11-16
Associating Hazardous Materials . . . 11-16
Listing Tag Outs . . . 11-16
Duplicating a Safety Plan . . . 11-16
Managing Safety Plans . . . 11-17
Safety Plans Reports . . . 11-17

Chapter 12: The Service Desk Module . . . 12-1
Service Desk Terms . . . 12-2
About Ticket Records . . . 12-3
About Work Orders . . . 12-3
Tickets and Work Orders . . . 12-3
Multisite and Ticket Records . . . 12-4
Multisite and Work Orders . . . 12-4
Creating Tickets . . . 12-4
Using Ticket Templates . . . 12-5
Ownership of Tickets . . . 12-5
Classifying Tickets . . . 12-6
Priority and Tickets . . . 12-6
Related Records . . . 12-6
Types of Related Records . . . 12-7
Relating Other Records to a Ticket . . . 12-8
Global Issues . . . 12-8
Creating Global Issues . . . 12-8
Relating Other Records to Global Issues . . . 12-9
Managing Tickets . . . 12-9
Managing Activities . . . 12-9
Time Management . . . 12-9
Working with Solutions . . . 12-10
Working with Logs . . . 12-11
Understanding the Work Log . . . 12-11
Understanding the Communications Log . . . 12-11
Using Communication Templates . . . 12-11
Failure Reporting . . . 12-11
Ticket Statuses . . . 12-12
Deleting Tickets . . . 12-13
Creating Work Orders . . . 12-13
Managing Work Orders . . . 12-14
Work Order Statuses . . . 12-14
Activities . . . 12-15
Multisite and Activities . . . 12-15
Using the Activities Application . . . 12-16
Activities Buttons . . . 12-16
Activities Application Quick Reference . . . 12-16
Creating Activities . . . 12-18
Managing Activities . . . 12-18
Activities Statuses . . . 12-18
Activities Reports . . . 12-18
Change Records . . . 12-18
Multisite and Change Records . . . 12-19
Using the Changes Application . . . 12-19
Changes Buttons . . . 12-20
Changes Application Quick Reference . . . 12-20
Creating Change Records . . . 12-22
Managing Change Records . . . 12-22
Changes Statuses . . . 12-22
Changes Reports . . . 12-22

Incident Records . . . 12-22
Multisite and Incident Records . . . 12-23
Using the Incidents Application . . . 12-23
Incidents Buttons . . . 12-23
Incidents Application Quick Reference . . . 12-24
Creating Incident Records . . . 12-25
Managing Incident Records . . . 12-25
Incident Record Statuses . . . 12-26
Incidents Reports . . . 12-26
Problem Records . . . 12-26
Multisite and Problem Records . . . 12-26
Problem Records and Incidents . . . 12-26
Using the Problems Application . . . 12-26
Problems Buttons . . . 12-27
Problems Application Quick Reference . . . 12-27
Creating Problem Records . . . 12-29
Managing Problem Records . . . 12-29
Problem Record Statuses . . . 12-29
Problems Reports . . . 12-29
Release Records . . . 12-30
Multisite and Release Records . . . 12-30
Using the Releases Application . . . 12-30
Releases Buttons . . . 12-31
Releases Application Quick Reference . . . 12-31
Creating Release Records . . . 12-33
Managing Release Records . . . 12-33
Releases Reports . . . 12-33
Service Requests . . . 12-33
Multisite and Service Requests . . . 12-34
Using the Service Requests Application . . . 12-34
Service Request Buttons . . . 12-34
Service Requests Application Quick Reference . . . 12-34
Creating Service Requests . . . 12-36
Managing Service Requests . . . 12-36
Service Requests Statuses . . . 12-36
Service Request Reports . . . 12-37
Solutions . . . 12-37
Multisite and Solutions . . . 12-37
Using the Solutions Application . . . 12-37
Solutions Application Quick Reference . . . 12-37
Creating Solutions . . . 12-38
Managing Solutions . . . 12-38
Solutions Statuses . . . 12-38
Solutions Reports . . . 12-38
Ticket Templates . . . 12-39
Multisite and Ticket Templates . . . 12-39
Ticket Templates and the Ticket Applications . . . 12-39
Using the Ticket Templates Application . . . 12-39
Ticket Templates Application Quick Reference . . . 12-39
Creating Ticket Templates . . . 12-40
Managing Ticket Templates . . . 12-40
Ticket Template Statuses . . . 12-41
Ticket Templates Reports . . . 12-41

Chapter 13: The Service Management Module . . . 13-1
Service Catalog . . . 13-1
Multisite and the Service Catalog . . . 13-2
Service Catalog and Assets . . . 13-2

Service Catalog and Contracts . . . 13-2
Service Catalog and Locations . . . 13-2
Service Catalog and Purchasing . . . 13-2
Service Catalog and the Service Desk . . . 13-3
Service Catalog and Service Level Agreements . . . 13-3
Service Catalog Records vs. Service Item Records . . . 13-3
Using the Service Catalog Application . . . 13-3
Service Catalog Application Quick Reference . . . 13-3
Creating the Service Catalog . . . 13-4
Service Group Types . . . 13-4
Creating Services . . . 13-5
Managing the Service Catalog . . . 13-5
Viewing Related Records . . . 13-5
Deleting Services . . . 13-5
Service Catalog Reports . . . 13-5
Service Level Agreements . . . 13-5
Service Level Agreement Types . . . 13-6
Multisite and Service Level Agreements . . . 13-6
Service Level Agreements and Assets/Locations . . . 13-6
Service Level Agreements and Contracts . . . 13-7
Service Level Agreements and Escalations . . . 13-7
Service Level Agreements and Tickets . . . 13-7
Service Level Agreements and Work Orders . . . 13-8
Using the Service Level Agreements Application . . . 13-8
Service Level Agreement Buttons . . . 13-9
Service Level Agreements Application Quick Reference . . . 13-9
Creating Service Level Agreements . . . 13-10
Ranking Service Level Agreements . . . 13-10
Associating Related SLAs . . . 13-10
Adding Assets and Locations to an SLA . . . 13-10
Managing Service Level Agreements . . . 13-11
Service Level Agreement Statuses . . . 13-11
Deleting Service Level Agreements . . . 13-11
Service Level Agreements Reports . . . 13-12

Chapter 14: The Work Orders Module . . . 14-1
Creating Work Orders Using Maximo . . . 14-2
Classes of Work Orders . . . 14-2
Types of Work Orders . . . 14-3
Work Order Priority . . . 14-4
Ownership of Work Orders . . . 14-5
Quick Reporting vs. Work Order Tracking . . . 14-5
Work Order Statuses . . . 14-5
Assignments . . . 14-7
Multisite and Assignment Manager . . . 14-7
Assignment Manager and Other Applications . . . 14-7
Assignment Manager and Labor Records . . . 14-8
Understanding Labor Availability . . . 14-8
Filtering the Labor List . . . 14-9
Assignment Manager and Work Orders . . . 14-9
Understanding Work Priority . . . 14-9
Filtering the Work List . . . 14-10
Using the Assignment Manager Application . . . 14-10
Assignment Manager Buttons . . . 14-11
Assignment Manager Application Quick Reference . . . 14-12
Creating Assignments . . . 14-13
Scheduling Future Work . . . 14-13
Managing Assignments . . . 14-13

Viewing Assignments for a Worker . . . 14-14
Dispatching Work . . . 14-14
Assignment Statuses . . . 14-15
Deleting Assignments . . . 14-15
Assignment Manager Reports . . . 14-16
Labor Reporting . . . 14-16
Multisite and Labor Reporting . . . 14-16
Labor Reporting and Contracts . . . 14-16
Labor Reporting and Invoices . . . 14-17
Labor Reporting and Labor Records . . . 14-17
Labor Reporting and the Service Desk . . . 14-17
Labor Reporting and Work Order Tracking . . . 14-17
Using the Labor Reporting Application . . . 14-18
Labor Reporting Buttons . . . 14-18
Labor Reporting Application Quick Reference . . . 14-18
Creating Labor Transactions . . . 14-19
Creating Labor Transactions . . . 14-19
Reporting Labor Transactions . . . 14-20
Managing Labor Reporting . . . 14-20
Approving Labor . . . 14-20
Deleting Labor Transactions . . . 14-21
Labor Reporting Reports . . . 14-21
Quick Reporting . . . 14-21
Multisite and Quick Reporting . . . 14-21
Using the Quick Reporting Application . . . 14-21
Quick Reporting Application Quick Reference . . . 14-22
Creating Work Orders . . . 14-23
Managing Work Orders . . . 14-23
Reporting Actuals . . . 14-24
Work Order Statuses . . . 14-24
Deleting a Work Order . . . 14-24
Quick Reporting Reports . . . 14-24
Work Orders . . . 14-24
Multisite and Work Orders . . . 14-24
Work Orders and Assets/Locations . . . 14-25
Work Orders and Contracts . . . 14-25
Work Orders and Inventory . . . 14-25
Work Orders and Issues and Transfers . . . 14-26
Work Orders and Job Plans . . . 14-26
Work Orders and Labor Records . . . 14-27
Work Orders and Meters . . . 14-27
Work Orders and Preventive Maintenance . . . 14-27
Work Orders and Purchasing . . . 14-27
Work Orders and the Service Desk . . . 14-28
Work Orders and Service Level Agreements . . . 14-28
Using the Work Order Tracking Application . . . 14-29
Work Order Tracking Application Quick Reference . . . 14-29
Creating a Work Order . . . 14-32
Creating a Work Plan . . . 14-32
Defining Work Plan Tasks . . . 14-33
Selecting Multiple Records on Plans and Actuals . . . 14-33
Adding a Safety Plan to a Work Order . . . 14-33
Duplicating a Work Order . . . 14-34
Managing Work Orders . . . 14-34
Work Order Hierarchies . . . 14-34
Understanding Work Order Hierarchy Terms . . . 14-35
Viewing and Navigating Work Order Hierarchies . . . 14-35
Building a Work Order Hierarchy . . . 14-36

Adding Children to a Work Order . . . 14-36
Adding Tasks to a Work Order . . . 14-37
Applying a Route to a Work Order . . . 14-37
Generating a WO Hierarchy From a PM Hierarchy . . . 14-37
Status Changes and Hierarchy Records . . . 14-37
Work Order Hierarchies vs. Related Records . . . 14-38
Associating Existing Records with a Work Order . . . 14-38
Entering Meter Readings . . . 14-38
Downtime Reporting . . . 14-38
Types of Downtime . . . 14-39
Recording Actuals . . . 14-39
Removing a Work Plan . . . 14-40
Using the Logs . . . 14-40
Using the Work Log . . . 14-40
Using the Communications Log . . . 14-40
Failure Reporting . . . 14-40
Recording Failure Data . . . 14-41
Conducting Failure Analysis . . . 14-41
Work Order Statuses . . . 14-41
Deleting a Work Order . . . 14-41
Work Order Tracking Reports . . . 14-42

Appendix A: Keyboard Shortcuts . . . A-1

Appendix B: Maximo's Self-Service Applications . . . B-1
User Self-Registration . . . B-1
Maximo's Self-Service Applications . . . B-2
Service Requests Module . . . B-3
Viewing Bulletin Board Messages . . . B-3
About Solutions . . . B-4
Searching for Solutions . . . B-4
About Service Requests . . . B-5
Self-Service Service Requests and Maximo . . . B-6
Creating a Service Request . . . B-6
Creating a Service Request from Search Solutions . . . B-6
Creating a Service Request from Create Service Requests . . . B-7
Creating a Service Request from an E-mail . . . B-8
Viewing Service Requests . . . B-8
Searching for Service Requests . . . B-8
Modifying Service Requests . . . B-8
Deleting Service Requests . . . B-9
Desktop Requisitions Module . . . B-9
Desktop Requisitions and Maximo's Purchasing Module . . . B-10
Desktop Requisition Buttons . . . B-10
Creating a Requisition . . . B-11
Creating Requisition Templates . . . B-13
Creating Requisitions Using Templates . . . B-13
Saving Draft Requisitions . . . B-13
Viewing Requisitions . . . B-13
Searching for Requisitions . . . B-13
Modifying or Deleting Requisitions . . . B-14
Requisition Statuses . . . B-14

Appendix C: IT Asset Life Cycle Management . . . C-1
IT Asset Terminology and Maximo . . . C-1
Information Technology (IT) Asset Records . . . C-2
IT Assets and Classifications . . . C-3
IT Assets and Contracts . . . C-3

IT Assets and Lease/Rental Contracts . . . C-4
IT Assets and Service/Warranty Contracts . . . C-4
IT Assets and Software License Contracts . . . C-4
IT Assets and Job Plans . . . C-4
IT Assets and Locations. . . . C-5
IT Assets and Purchasing . . . C-5
Creating IT Asset Records . . . C-5
Creating Rotating Item Records . . . C-6
Creating Rotating Asset Records . . . C-7
Receiving Rotating Assets . . . C-7
Managing IT Asset Records . . . C-9
Install, Move, Add, Change (IMAC) . . . C-9
Installing IT Assets . . . C-10
Moving IT Assets . . . C-11
Adding to IT Assets . . . C-12
Changing IT Assets . . . C-12
Decommissioning IT Assets . . . C-13
Deployed Asset Management . . . C-15
Asset Discovery Tool . . . C-15
Maximo Fusion . . . C-15
The Deployed Assets Administration Module . . . C-16
The Deployed Assets Module . . . C-17
The Reconciliation Administration Module . . . C-17
Managing Software Licenses. . . . C-18
Managing Software License Contract Details . . . C-19
Software License Contract Types . . . C-19
Monitoring Software Usage . . . C-20

Index . . . Index-1

About This Guide

This section briefly summarizes this document and how it can help you as a Maximo® user. It also provides information on other MRO resources available to you, such as additional documentation and support.

Who Should Read this Guide?

This guide is designed for both novice and experienced Maximo users who will be using applications in the following Maximo modules to manage Service Desk tickets, work orders, assets and inventory, and purchasing:

- Assets Module
- Contracts Module
- Deployed Assets Module
- Inventory Module
- Planning Module
- Preventive Maintenance Module
- Purchasing Module
- Resources Module
- Safety Module
- Self-Service Module (Desktop Requisitions and Service Requests)
- Service Desk Module
- Service Management Module
- Work Orders Module

For information about using the applications in the following Maximo modules, consult the *Maximo System Administrator's Guide*:

- Administration Module
- Configuration Module
- Financial Module
- Security Module

For additional information about using the applications in the following Maximo module, consult the *Maximo Report Administration Guide*:

- Reporting Module

For information about using the applications in the following Maximo module, consult the appropriate *Maximo Enterprise Adapter Guide*:

- Integration Module

How to Use this Guide

The Maximo User's Guide provides a general introduction to Maximo, and should be used together with the Maximo Help when learning about Maximo. Each Maximo application contains extensive online help including overviews and procedures. This guide introduces you to the applications, and the Maximo Help provides the details. For certain subjects, this guide provides detailed information to supplement the Maximo Help.

The first two chapters of this guide provide simplified overviews of how Maximo stores data in a database, the Multisite implementation of Maximo, Workflow, the look and feel of the application screens, and information about procedures that are common to more than one module, such as signing in, and searching for records.

Subsequent chapters of this guide provide an overview of each of the Maximo modules and applications, arranged alphabetically. You can choose which chapters to read based on which Maximo modules and applications are required to perform your job. Each chapter corresponds to a Maximo module, and includes a section for each application that appears in that module. These chapters focus on how the applications function as part of Maximo and provide a quick reference to common tasks. When overview information applies to two or more applications it appears in the module overview, rather than being repeated in the application overviews. For detailed instructions on how to use an application, refer to the Maximo Help.

Appendix A lists Maximo's keyboard shortcuts. For information about browser shortcut keys, refer to your browser documentation. Appendix B describes Maximo's self-service applications, which are designed for the occasional Maximo user. Appendix C lists additional information about using Maximo to manage information technology assets.

How to Print this Guide

This document is available in two formats, Adobe® System Incorporated's Portable Document Format (PDF) and Hypertext Markup Language (HTML).

The file 60_mx_ug.pdf is available on the documentation CD.

To print the PDF User's Guide, complete the following steps:

1. Open the User's Guide in Adobe Reader.
2. From the Reader menu choose File > Print. The Print dialog box appears.
3. If you do not want to print the entire guide, enter the pages to print in the **Pages from** fields.
4. Click **OK**.

The HTML User's Guide can be accessed via the Maximo Help menu, it is part of the main Maximo Help. The online version of this document contains one

HTML page for each chapter of the book. Each chapter must be printed individually.

To print the HTML User's Guide, complete the following steps:

1. Open the User's Guide and navigate to the chapter that you want to print.
2. Place your curser in the file to be printed, not in the Table of Contents.
3. Right-click and select Print from the menu. The Print dialog box appears.
4. Click **Print**.
5. Repeat steps 2 through 4 for each additional chapter that you want to print.

Documentation Conventions

This guide describes all of the modules and applications available to an end-user in a standard "out-of-the-box" Maximo installation, that is, without implementation or configuration modifications. Because Maximo can be implemented in a variety of ways to match a wide range of business needs, this guide may not exactly match your company's Maximo implementation.

Implementation is the process by which a *business or company* decides which components of Maximo will be utilized to meet the needs of the business. Some examples of ways that an implementation team can choose to implement Maximo include:

- Choosing one or more languages for the implementation.
- Creating one or more Organizations, and one or more Sites.
- Using Maximo for Enterprise Asset Management (EAM), or Information Technology Asset Management (ITAM), or both.
- Creating cloned or custom applications.
- Creating custom Start Centers to match job descriptions.
- Choosing to create Workflow processes for records.

Configuration is the process by which an *administrator* changes the layout and or display of a screen for all users. Some examples of ways that a system administrator can configure Maximo include:

- Modules can be hidden or renamed.
- Applications can be hidden or renamed.
- Tabs can be added, hidden, or be renamed.
- Fields can be added, hidden, have their location changed, or be renamed.

Personalization is the process by which a *user* modifies the content and display of Maximo data for their screens only. Some examples of ways that you can personalize Maximo include:

- Choose a default language, locale, and time zone
- Choose a sort order for columns in a table window.
- Choose to display or collapse sections of an application screen.

Note that the security settings associated with your user name determine your access to Maximo modules, applications, tabs, and actions.

Notation Conventions

This guide uses the following typographical conventions:

Bold type indicates the following elements of the user interface:

- Buttons
- Check boxes
- Field names
- Select Action menu options

Italic type indicates a documentation title, and is used for emphasis.

The greater than sign (>) is used to indicate a menu choice from a submenu, for example "Select File > Open." means you should select the File menu, then select the Open option from the File menu.

TIP: A tip helps you apply the techniques and procedures described in the text to your specific needs.

NOTE: A note provides related information, reminders, recommendations, and strong suggestions.

CAUTION: A caution means that taking or avoiding a specific action could cause you to lose data.

Related Documentation

The *Maximo User's Guide* is part of the Maximo documentation set. You receive the Maximo's documentation set in Adobe® Systems' Portable Document Format (PDF) on the Documentation CD. Depending on the options purchased, your documentation set can include the following documents:

- *Maximo® Installation Guide* specific to your application server and operating system
- *Maximo® System Administrator's Guide*
- *Maximo® Multisite Administrator's Guide*
- *Maximo® Report Administration and Development Guide*
- *Maximo® Workflow™ Designer Implementation Guide*
- *Maximo® Finance Manager's Guide*
- *Maximo® Project Manager User's Guide*

Depending on your database platform and the options you purchase, you also might receive third-party manuals and online documentation.

Support

To find the nearest corporate office, visit the company contact page on the MRO Web site:

mro.com

MRO Software, Inc. users with a valid Annual Customer Support Plan (ACSP) can obtain product support online at:

support.mro.com

NOTE: To use the MRO Software Support Online Web site, you must provide your contact information and your MRO Software product serial/license number.

The MRO Software Support Online Web site includes information on product releases, software patches, and documentation updates. To find the most current version of a document, refer to the Support Web site's Knowledge Base.

1 Maximo Overview

Maximo is a computerized asset maintenance system that provides asset management, work management, materials management, and purchasing capabilities to help companies maximize productivity and extend the life of their revenue-generating assets.

Maximo allows your company to create a strategy for maintenance, repair, and operations related to both Enterprise Asset Management (EAM) and Information Technology Asset Management (ITAM).

About Maximo

Maximo stores and maintains data about your company's assets, facilities, and inventory. You can use this information to help you schedule maintenance work, track asset status, manage inventory and resources, and analyze costs.

Maximo's software suite can be configured to meet the needs of a variety of different businesses, including:

- Manufacturing and utilities production
- Hotels, universities, and other facilities
- Buses, trains, aircraft, and other fleet vehicles
- Information technology (IT) assets

Maximo helps companies to improve the availability and performance of their revenue-generating assets while decreasing operating costs, without increasing safety issues. Maximo lets you:

- Record service requests and all related records and communications from the initial request to problem resolution.
- Track work orders and failures to better schedule preventive maintenance.
- Track information technology (IT) assets and their configurations across a network.
- Track inventory use to find optimum stock levels. The goal is to maximize availability of items for upcoming work, while also reducing unnecessary inventory and associated carrying costs.
- Track purchasing of inventory stores and materials for work orders. To assist in creating budgets, you can use Maximo to track costs for labor, materials, services, assets, and tools used to complete work orders.
- Reduce on-the-job injuries and accidents by identifying hazards in the workplace and precautions needed to increase safety.

Maximo can automate processes that are repetitive or happen on regular intervals, for example, preventive maintenance, periodic inspections, or reordering inventory items.

Maximo Components

A Maximo installation consists of several components that work together:

- a relational database (briefly described in this chapter)
- application server software (described in your installation guide and in the *Maximo System Administrator's Guide)*
- Maximo software including
  - system administration applications for initial setup, configuration, and security (described in the *Maximo System Administrator's Guide)*
  - end-user applications for asset management (described in this guide)
- Actuate® report software (described in the *Report Administration and Development Guide* and the Actuate documentation)

Maximo Modules and Applications

Maximo's applications are grouped into modules. The applications in a module have similar purposes, for example, applications related to purchasing are grouped together. Some applications, such as Work Order Tracking, function individually, while others, such as Precautions, create records designed to be used in conjunction with records created in other applications.

Depending on your job description and security permissions, you may have access to some or all of the Maximo modules and applications.

Chapters that appear later in this guide describe each module and application in more detail.

Module	Application	Function
Assets		Applications to manage assets and locations.
	Assets	Used to create and store asset numbers and corresponding information, such as parent, location, vendor, up/down status, and maintenance costs for each asset.
	Condition Monitoring	Used to define measurement points for assets or locations, and to specify alarm limits and associated work to be performed after reaching those limits.
	Failure Codes	Used to define failure codes and define the Problem, Cause, Remedy hierarchy.
	Locations	Used to create location records and track assets that exist at the location. Also used to build hierarchical or networked systems.

Module	Application	Function
	Meters	Used to define meters that can be used to track asset and location performance.
	Meter Groups	Used to create groups of meters that can then be applied to assets or locations at the same time.
Contracts		Applications to manage contracts with vendors.
	Labor Rate Contracts	Used to define labor rates to be paid to specific crafts and skills when hiring workers.
	Lease/Rental Contracts	Used to define the terms and conditions and payment information for lease or rental agreements for rotating assets, including information technology assets.
	Master Contracts	Used to define the contractual relationship with a vendor. A master contract links all contracts with the vendor, as well as containing the terms and conditions that apply to the associated contracts.
	Purchase Contracts	Used to create, modify, and view contracts for items or services with outside vendors. You can include detailed information about a contract's shipping and financial terms, contact information, item and service pricing, and delivery times.
	Terms and Conditions	Used to enter and maintain a library of terms and conditions to be used on contracts and purchasing documents. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.
	Warranty Contracts	Used to create warranty and service contracts where vendors maintain one or more assets for a fixed fee, or regularly scheduled payment over a time period; or to track warranty information for multiple assets or locations by time or meter.
Deployed Asset		Applications to view information about deployed information technology (IT) assets.
	Computers	Used to view data about specific computers deployed at your company.
	Network Devices	Used to view information about deployed network devices such as routers, switches, and hubs.
	Network Printers	Used to view information about deployed network printers.
Inventory		Applications to manage item and tool inventory.
	Condition Codes	Used to define the codes used to describe the condition of items.
	Inventory	Used to manage items in inventory, including tracking stock levels, reordering items, and tracking rotating assets.
	Issues and Transfers	Used to issue stock from inventory (with or without a work order), and to transfer stock from one storeroom location to another.
	Item Master	Used to define inventory items, and add them to a storeroom's stock list.
	Service Items	Used to define services that your company requisitions, either as part of the purchasing process, or as part of a work order.

Module	Application	Function
	Stocked Tools	Used to manage tool inventory.
	Storerooms	Used to define storeroom locations, and view a read-only list of items stocked at each storeroom location.
	Tools	Used to define tools and add them to storerooms.
Planning		Applications to plan how work should be performed.
	Job Plans	Used to create a detailed description of how a job is to be performed and the resources required to complete it.
	Routes	Used to list related work assets (assets and/or locations) that are considered "stops" along an inspection or maintenance route.
	Safety Plans	Used to create a detailed plan of how to service assets or locations safely.
Preventive Maintenance		Applications to manage preventive maintenance.
	Master PM	Used to create generic preventive maintenance templates.
	Preventive Maintenance	Used to plan periodic, preventive maintenance, and inspections for assets and locations.
Purchasing		Applications to manage purchasing.
	Companies	Used to manage records for manufacturers, vendors, and other companies that do business with you.
	Company Master	Used to define companies that belong to a Company Set that can be shared by one or more Organizations.
	Invoices	Used to record invoices and match against purchase orders and receipts for approval.
	Purchase Orders	Used to purchase materials or services from an internal supplier or an external vendor.
	Purchase Requisitions	Used to request the ordering of materials or services.
	Receiving	Used to receive materials into inventory and record the receipt of services.
	Request for Quotation	Used to request and manage vendor quotations for prices and delivery information for goods and services.
	Terms and Conditions	Used to enter and maintain a library of terms and conditions to be used on contracts and purchasing documents. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.
Resources		Applications to create records for individuals and groups.
	Crafts	Used to create and manage craft records.
	Labor	Used to create and manage laborer and contractor records.
	People	Used to create and manage records for people who are listed on Maximo records in any capacity.

Module	Application	Function
	Person Groups	Used to create and manage person group records that can be used on escalation, Workflow process and other records.
	Qualifications	Used to create and manage certificate and qualification records.
Safety		Applications to record safety information.
	Hazards	Used to define hazards that exist in the workplace and define how to eliminate or mitigate them.
	Lock Out/Tag Out	Used to create a detailed description of how to eliminate hazards associated with related assets or locations.
	Precautions	Used to define precautions that can be taken to mitigate hazards in the workplace.
	Safety Plans	Used to create a detailed plan of how to service assets or locations safely.
Self-Service Module		Applications to allow users to create and submit purchase requisitions and service requests.
	Desktop Requisitions	Applications to create requisitions, view drafts and templates, and view submitted requisitions.
	Service Requests	Applications to search Solutions, create service requests, and view submitted service requests.
Service Desk		Applications to manage customer requests for help, information, and service.
	Activities	Use to report work on activity class work orders.
	Changes	Used to create records to track changes made to information technology (IT) assets.
	Incidents	Used to create records of incidents that result in an interruption to or reduction in the quality of a service.
	Problems	Used to create records of the underlying problems that cause incidents and service requests.
	Releases	Used to create records to plan and record the release of changes to information technology (IT) assets.
	Service Requests	Used to create records of customer calls or e-mail requesting service.
	Solutions	Used to create a library of reusable solutions which can be applied to incident and problem records.
	Ticket Templates	Used to create templates for common service desk calls.
Service Management		Applications to manage services provided by your company, or purchased from vendors.
	Service Catalog	Used to create service groups and catalog the services provided by those groups.
	Service Level Agreements	Used to define agreements between service providers and customers, documenting agreed upon levels of service.

Module	Application	Function
Work Orders		Applications to manage work orders, labor assignments, and labor hours.
	Assignment Manager	Use to dispatch urgent work and schedule future work requirements.
	Labor Reporting	Used to report hours worked by labor (employees) or contractors. You can enter hours worked by labor ("timecard" reporting), contract/ vendor, ticket, or work order.
	Service Requests	Used to create records of customer calls or e-mail requesting service.
	Quick Reporting	Used to report work on open work orders and small jobs without pre-existing work orders, or to report equipment downtime that involves no maintenance work.
	Work Order Tracking	Used to perform every function related to processing work orders.

Understanding Databases

When you enter information into Maximo, it stores the data in a database. Understanding the structure and function of a database helps you to understand how Maximo operates. It also helps you to retrieve information.

A database is simply a way of storing and organizing large amounts of information, much like an electronic filing cabinet. Because of how the information is entered and organized, a computer program can search and display requested data quickly.

Maximo works with Oracle® databases. The Maximo database contains more than 490 tables and more than 11,000 columns.

Database Components

Traditional databases are organized by columns (or fields), rows (or records), and tables (or files). Which term is used often depends on whether you are talking about the database program or what a user sees on the computer screen.

A **field** is a single piece of information (for example, a name). A **record** is a complete set of fields (for example, a name, address and phone number). A **file** is a collection of records. A telephone directory would be a file since it contains a list of records, each consisting of three fields: name, address, and telephone number.

Columns or Fields

In Maximo, each field and check box on the page is a separate column in the database.

A **column** or field is the smallest unit of data in a database. A field might contain a word, a number, or several sentences. Because you enter information into specific fields and Maximo uses those fields to store information in the database, you can search for information quickly and easily.

Columns have properties, which include a unique name, description, data type, whether a field is required, optional, or calculated, and so on. A required field is one where you must enter data. An optional field can be left empty or **null**. A calculated field does not require data entry. Maximo uses a formula based on entries in other fields to calculate the value, for example, a **Total Cost** field. Your company's business needs determine the properties of a field.

Key Fields

In a database, a **key** is a field that you use to sort data. It also can be called a *key field*, *sort key*, *index*, or *key word*. For example, if you sort records by creation date, the **Creation Date** field is a key. Some columns are designated as **primary keys**. A primary key is one or more columns that uniquely identify a record and make it distinct from other records. For example, the work order applications use the work order number as a key.

The value(s) in a primary key cannot be null (empty), and they must be unique. Maximo automatically numbers the primary key field in most applications. In applications where you can create the primary key, Maximo alerts you if you choose a value that has already been used in the data table.

NOTE: When using Multisite key field uniqueness is determined by the level the records are stored at: System, Set, Organization, or Site. It is possible to have *identical* key fields in the database for *different* records created at different Organizations or Sites. For more information about Multisite, see "Multisite Overview," on page 1-9.

Rows or Records

Each row in a database table is a collection of related columns (fields), called a **record**. A Maximo record contains the data you enter in fields on the computer screen. If you used paper instead of a computer to keep track of your data, you would complete a form with related information, with a different page for each new record.

Maximo records include the following examples:

- a work order
- an asset record
- a purchase order
- a row in a table window and its corresponding Row Details

Tables or Files

Databases are structured so that similar data is stored together in tables, also known as files. A **table** is a grouping of data arranged in rows and columns. In general the different Maximo page areas, for example, tabs, subtabs, and table windows, each correlate to a different table in the database. Because Maximo

uses a relational database, data that you enter into one table can be shared with another related table, or used to calculate a value in yet another table.

Structured Query Language

Maximo uses Structured Query Language (SQL) to retrieve data from the database. Requests to find information in a database are called "queries." **SQL** is a standard language specifically designed to let people to create, edit, maintain, and retrieve data from databases.

You do not need to know SQL to use Maximo. All Maximo users can perform a query to the database from the application pages. For more information about database queries, see "Searching the Maximo Database," on page 2-6. However, you should know SQL if you plan to use Maximo to create reports.

Maximo's Database Structure

Maximo's database is a relational database. A detailed look at Maximo's database design is beyond the scope of this guide, but you should be familiar with a few additional database concepts which are covered in this chapter.

You can refer to the *Technical Reference Guide* or the *Data Model Report* available on the documentation CD for more technical information about the Maximo database.

Relational Databases

The records accessed by Maximo are stored in a **relational database**. In a relational database one table can be connected to another table if they both contain at least one common field. For example, the WORKORDER table and JOBPLAN table are related because their records both contain job plan IDs. This relational structure lets you view the same data in many different ways, from many different applications.

Maximo Hierarchies

Some Maximo applications group related records using "parent-child" relationships. A **parent-child relationship** is a one-way referral or link from one table to another. A column in the child table refers to a column in the parent table. The column referred to in the parent table must be part of the primary key. For example, in the Assets application, you can have a "parent" asset record that has "child" records for subassemblies. The subassembly records contain a reference to the parent record that they "belong to."

Maximo uses these parent-child relationships to group related records such as assets, operating locations, or work orders into **hierarchies**. You can build and use hierarchies of records in many Maximo applications, including Assets, Companies, Locations, Master Contracts, Preventive Maintenance, and Work Order Tracking.

With a parent-child relationship, you cannot delete a parent record without first deleting the children, because if you delete a record from the parent table, then the child would have an entry referencing a record that no longer exists.

Data Sharing Between Applications

Because Maximo's applications work together, data from a column in one database table can be shared with other database tables. Because of this column sharing, a data entry error in a single field (column) can appear in more than one application.

In many cases you can correct errors, but in some instances after you enter data, or change a record's status, you cannot change the data in the database. In these cases Maximo preserves errors intentionally, to create records for auditing purposes.

Note that a field that has one name in one application, can have a different name in another application but contain the same data. For example, the MANUFACTURER column in the ASSET table is the same as the COMPANY column in the COMPANIES table.

TIP: You can find information about each field's table and column location in the database by placing the cursor in a field and pressing Alt + F1.

Multisite Overview

Large businesses often consist of multiple facilities, or even multiple companies owned by a parent corporation. Some customers choose to install a separate Maximo database at each facility. But often these different facilities have common business practices or share common data, and separate databases do not meet the needs of the business.

Multisite is a way of implementing Maximo that allows a large company or corporation with multiple facilities to share data from a single database, while allowing the flexibility to have different business practices and data at different facilities. A Multisite setup allows you to organize your Maximo database to model your company's organizational structure.

The following sections contain a brief overview of Multisite. For more information about the Multisite option, refer to the *Maximo Multisite Administrator's Guide*.

Multisite Levels

Multisite divides data storage into the following different levels:

- **System** or database — Data that is stored at the system level can be accessed by all users who are connected to the Maximo database. You may also hear this level referred to as "Enterprise level."
- **Set** — Data that is stored at the Company Set or Item Set level can be accessed by users in the Organizations that share the Company or Item

Set. Each Organization can have only one Company Set and one Item Set, but more than one Organization can share the same Company or Item Set. An administrator uses the Sets application to define Company and Item Sets.

- **Organization** — Data that is stored at the Organization level can only be accessed by users within a specific Organization. An Organization can contain one or more Sites. Organization level data can not be shared with other Organizations. An administrator uses the Organizations application to define Organizations.

- **Site** — Data that is stored at the Site level can only be accessed by users at the specified Site. Site level data cannot be shared with other Sites or Organizations. An administrator uses the Organizations application to define Sites.

When you install Maximo you must create at least one Company Set, Item Set, Organization, and Site. That may be all that is required to meet the needs of your business.

Multisite and Maximo

You create person and person group records at the System level, and define users and security groups at the System level. Many of the general records that are used by all of the Maximo applications, such as classifications, units of measurement, and the attached document library, are created at the System level. Many of Maximo's automated tasks (Cron tasks, E-mail listener, Escalations, and Workflow) are also the system level.

The Service Desk and applications to manage information technology (IT) assets are at the system level. This includes the Bulletin Board, Solutions, the ticket applications (Service Requests, Incidents, Problems. Ticket Templates), service level agreements, and the Deployed Assets, Deployed Assets Administration, and Reconciliation modules.

KPIs and reports are at the system level, allowing you to create and run reports against any application or function that Maximo manages.

Company Master records are created at the Company Set level so that the records can be shared by more than one Organization. Item records for items, services, and tools are defined at the Item Set level, so that the records can be shared by one or more Organizations and items and tools can be transferred between Organizations and Sites that share the same Item Set. Other item related data such as commodities, condition codes, and conversion values between order units and issue units are also defined at the Item Set level.

Although currency codes are defined at the system level, other financial information (exchange rates, tax codes, General Ledger accounts, financial periods, and so forth) is defined at the Organization level. You also create contracts (master, labor rate, lease/rental, purchase, and warranty type contracts) and vendor records, and define terms and conditions for contracts and purchasing at the Organization level.

Calendars and shifts are defined at the Organization level, as are Failure Codes. Labor records are defined at the Organization level, as are crafts, skills, certifications, qualifications, labor rates, and premium pay rates.

Assets and locations are at the Site level, and thus condition monitoring, failure reporting, meter readings, PMs, and work orders are also at the Site level. Job plans are at the System level, but can have Organization or Site specific elements. Hazards are defined at the Organization level, but precautions, tag outs, and safety plans are defined at the Site level. Labor assignments and labor reporting is done against work orders, and thus is also at the Site level. Item and tool inventories are managed at the Site level, which means that purchasing (PR, RFQ, PO, Receiving, and Invoices) are also at the Site level.

The following table lists which applications and functions are defined at each Multisite level:

Multisite Level	Applications or functions
System or database — A System is a single instance of a Maximo database. A single System can contain one or more Sets, Organizations, and Sites.	▼ Attached Document Library ▼ Bulletin Board ▼ Classifications ▼ Communication Templates ▼ Computers ▼ Cron Task Setup ▼ Currency Codes ▼ Deployed Assets ▼ Escalations ▼ Incidents ▼ Job Plans ▼ KPIs ▼ Master PM ▼ Meters ▼ Meter Groups ▼ Network Devices ▼ Network Printers ▼ People ▼ Person Groups ▼ Problems ▼ Reconciliation ▼ Reports ▼ Security Groups ▼ Service Level Agreements ▼ Service Requests ▼ Solutions ▼ Ticket Templates ▼ Units of Measurement ▼ Users ▼ Workflow
Set — Sets exist below the System level, but above the Organization level, to allow multiple Organizations to share company and item data. Each Organization can have only one Company Set and one Item Set, but each Set can be shared by more than one Organization.	▼ Condition Codes ▼ Commodity Codes ▼ Company Masters ▼ Conversion values (Order Units/Issue Units) ▼ Item Master ▼ Service Catalog ▼ Service Items ▼ Tools

Multisite Level	Applications or functions
Organization — An Organization identifies a unique legal entity. A large corporation might have different Organizations for different companies, or group all the facilities that exist in a continent or country into an Organization. There can be many Organizations within a single Maximo database.	▼ Calendars ▼ Chart of Accounts (GL Account codes) ▼ Companies ▼ Crafts ▼ Exchange Rates ▼ Failure Codes ▼ Hazards ▼ Labor ▼ Labor Rate Contracts ▼ Labor Reporting ▼ Lease/Rental Contracts ▼ Master Contracts ▼ Purchase Contracts ▼ Qualifications ▼ Tax codes ▼ Terms and Conditions ▼ Warranty Contracts
Site — A Site identifies a work location, such as a plant or facility.	▼ Activities ▼ Assets ▼ Assignment Manager ▼ Changes ▼ Condition Monitoring ▼ Desktop Requisitions ▼ Inventory ▼ Invoices ▼ Issues and Transfers ▼ Labor Reporting ▼ Locations ▼ Lock Out/Tag Out ▼ Precautions ▼ Preventive Maintenance ▼ Purchase Orders ▼ Purchase Requisitions ▼ Quick Reporting ▼ Receiving ▼ Releases ▼ Request for Quotation ▼ Routes ▼ Safety Plans ▼ Stocked Tools ▼ Storerooms ▼ Work Order Tracking

Security Overview

Your access to Maximo's modules, applications, screens, and menu options is controlled by your security privileges. All security access to Maximo is based on security groups. Your user name is associated with one or more security groups, each of which can have different levels of access to Maximo. Security setup is described in detail in the *System Administrator's Guide*, but you

should be aware of how security settings can affect your ability to use Maximo.

In Maximo all permissions are granted. A new user name or group has no permissions until they are granted by the system administrator.

NOTE: Your Maximo license also affects your access to modules and applications. Your company may not have purchased a Maximo configuration that includes all of the applications documented in this guide.

Passwords

You are assigned a user name and password by your system administrator. If you have security permissions to do so, you can change your password by selecting **Profile > Password Information** from the navigation links.

Your system administrator may configure Maximo to

- specify a required length for passwords. The default is six characters.
- specify the number of days before a password expires.
- require that passwords contain a number or special character
- prevent you from reusing a password.

When you change you password you can enter a password hint. Your system administrator can require you to correctly answer the Password Hint Question before they will reset your password.

Workflow

Maximo Workflow provides a dependable and repeatable method for routing Maximo records to the people that need to act on them. This is useful for managing the approval process of records such as tickets, purchasing records, and work orders, and ensuring that the approval process happens in a timely manner.

Workflow Capabilities

A Workflow process is a preset path that determines the flow of information at your company. A Workflow process has the following capabilities:

- A Workflow process can be started automatically or manually.
- Records can be assigned for action to a person, person group, delegate (alternate) or a role.
- Users can receive Workflow notifications in their Workflow Inbox or via e-mail.
- Workflow tasks can be reassigned to another user when appropriate.
- Standard time periods can be defined at each step, after which the record is escalated.

Understanding Workflow Processes

A Workflow process is a map of your company's business processes. Any time your company's business rules call for a person to perform an action or provide input on a record, Workflow can be configured to electronically route the record to the person or group who needs to act on the record. Workflow can also automatically evaluate the record to determine the next step for the record.

The decision made at each step determines the path the record takes. Certain decisions are made by users while others are made automatically by Maximo according to information within the record.

Workflow processes are created for a particular type of record, for example work orders. The following is just one example of how a service request might move through a work order Workflow process:

- Someone enters a request for a repair via the Service Request application, creating a ticket record.
- The Workflow process automatically creates a work order from the ticket record.
- The request is routed to a maintenance supervisor, who determines whether or not the work must be completed immediately.
- If the work is not urgent, the request is routed to a planner, who assigns the work to a laborer.
- The assignment appears in the laborer's Workflow Inbox.
- When the work order is saved with a value in the **Actual Start** field the work order status changes to INPRG and the Workflow automatically creates an e-mail that notifies the person who requested to work that work has started on their request.
- When the work order is saved with a value in the **Actual Finish** field the work order status changes to COMP and the Workflow automatically e-mails the maintenance supervisor that work has been completed.
- Once the maintenance supervisor approves the completed work, the work order status changes to CLOSE.

A Workflow for a purchase requisition (PR) might resemble the following example:

- A worker creates a purchase requisition and enters it in Workflow with a status of WAPPR.
- The PR is routed to the worker's direct superior, who reviews the PR and approves or rejects it.
- If the total cost of the approved PR is more than a specified dollar amount, the PR is routed to the department manager, who must also approve it.
- Once the status has been changed to APPR, the PR is routed to the purchasing department, where it is reviewed by the purchasing agent.

- The purchasing agent creates a purchase order (PO) for the appropriate vendors listed on the PR, and changes the PR status to CLOSE once all of the PR lines have been assigned to a PO.

- The purchase order(s) created from the PR might then enter a separate PO Workflow.

NOTE: When a record enters a Workflow Process, the status change action is disabled on that record and Workflow takes control of the status changes. A record leaves a Workflow process when it reaches a stop node. When a record leaves the control of a Workflow process it becomes a regular Maximo record that retains whatever status it had when it left the Workflow.

Using the Workflow Inbox

Your Start Center may be configured so that it contains a Workflow Inbox. When Maximo routes a record to you for action, it appears in your in your Workflow Inbox. You can click the record ID to view the record.

2 Getting Started

Maximo is a Web-based product. This chapter describes the different elements of the application pages, basic navigation of the user interface (UI), and procedures that are common to most or all Maximo applications, such as searching and selecting values.

System Requirements

To use Maximo, you need the following:

- a Web browser. Maximo currently supports Microsoft® Internet Explorer version 5.5 SP2 or higher.
- a monitor with resolution of 1024 x 768 pixels per inch.
- a user name and a password. These are assigned by your system administrator.

In addition, your Web browser should be set to automatically check for newer versions of pages stored in Temporary Internet files.

CAUTION: Pop-up blockers prevent your browser from opening new browser windows. Pop-up blockers may interfere with some Maximo functionality, for example Maximo Help.

Launching Maximo

Maximo is a Web based application suite. You access it through a Web browser by entering the Uniform Resource Locator (URL) that points to an application server that is running Maximo.

NOTE: Your system administrator will provide you with the URL to use to connect to Maximo.

Signing In to Maximo

While your system administrator can customize the Maximo Sign-In screen, it should include fields to enter your **user name** and **password**.

Maximo Sign In

If you do not have a user name and password, for example, if you are not a Maximo user but must file a maintenance request, click "register now" to register yourself and create a user name and password. For more information about user self-registration, see “User Self-Registration,” on page B-1.

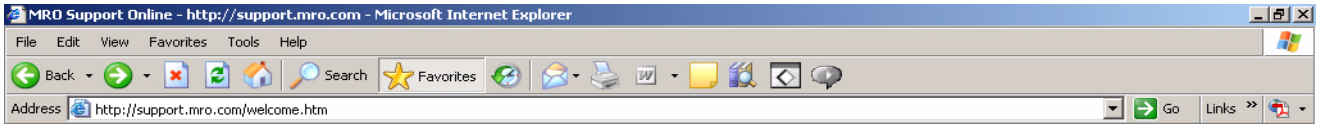
NOTE: Your user name and password are case sensitive.

When you access reports, Maximo automatically signs you in to Actuate using your Maximo user name and password. For information about using reports with Maximo, refer to the *Maximo Report Administration and Development Guide*.

Browser Menu and Icons

The menu and toolbar icons at the top of the page control your Web browser. Do not confuse them with the Maximo menus and toolbars.

Browser Toolbar



CAUTION: Do not use the browser **Forward** and **Back** buttons to navigate within Maximo. These buttons act on the browser, and are not part of the Maximo software.

For more information about this part of your screen, refer to your browser documentation.

Maximo Navigation Bar

Below the browser menu and toolbar is the Navigation Bar, the first part of the Maximo application page. The following figure shows the Navigation Bar:

Maximo Navigation Bar

Maximo uses the Navigation Bar to identify the current application, display messages, and display links that let you maneuver among Maximo applications. It contains the following sections:

- **Application icon and name** shown on the left to identify the current application. The application icon is also a link to the first editable field on the application page.
- **Message area** in the center. When appropriate, Maximo displays messages in this area. These messages are only informational, and need no response, for example, "Record has been saved."
- **Navigation Links** in the right corner. The available links vary depending on which page you are currently using. Possible options include the following links:
  - **Bulletins** — Click to display the Bulletin Board and view broadcast messages. This link only appears when there are active Bulletin Board messages.
  - **Go To** — Click to display a menu of modules, letting you maneuver among modules and applications.
  - **Reports** — Click to display a menu of modules, letting you maneuver among modules and applications to select an application to run reports against.
  - **Start Center** — Click to return to your Start Center.
  - **Profile** — Click to manage the personal information (address, phone, e-mail, and so forth), defaults, and Maximo password recorded on your Maximo Person and User records.
  - **Sign Out** — Click to sign out of Maximo.
  - **Return** — Click to return to the previous application page without selecting a value. Available after you link to another application.
  - **Return with Value** — Click to return to the previous application page with selected value(s). Available after you link to another application.
  - **Help** — Click to display the help menu (when selected from application pages), or context sensitive help (when selected from dialog boxes). This link is always available.

Signing Out of Maximo

Do not exit an application by closing the browser. To ensure that the connection between your user name and the Maximo server is severed, you

should *always* use the Sign Out link in the Navigation Links to exit Maximo before closing the browser.

Maximo Start Centers

After you sign in, Maximo displays your Start Center. A **Start Center** contains links to actions, applications, data, records, and/or reports that are relevant to your job. Start Centers are assigned to security groups by a system administrator using the Security Groups application. If your user name is assigned to more than one security group, you may have more than one Start Center.

Start Center Components

A Start Center consists of two columns, one narrow and one wide. Each column can be configured to display one or more **portlets**, or windows, which display data, links, or reports that are available in a specific Maximo application. The portlets that make up a specific Start Center are often chosen to support a particular job function, and can include any of the following:

- **Bulletin Board** — Displays Bulletin Board messages.
- **Favorite Applications** — Displays links that allow you to launch specific Maximo applications.
- **Inbox/Assignments** — Displays your Workflow Inbox, which contains records that have been routed to you and that require some sort of action, for example, review and approval. For more information about Workflow, see "Workflow," on page 1-13.
- **KPI Graph** — Displays one or more Key Performance Indicator (KPI) graphs.
- **KPI List** — Displays a list of links to one or more Key Performance Indicator (KPI) records in the KPI Manager application.
- **Quick Insert** — Displays a list of links that allow you to launch an application and add a new record into the database, for example create a New Work Order.
- **Result Set** — Displays the result set from a saved query. For more information about saved queries, see "Using Saved Queries to Search," on page 2-8.

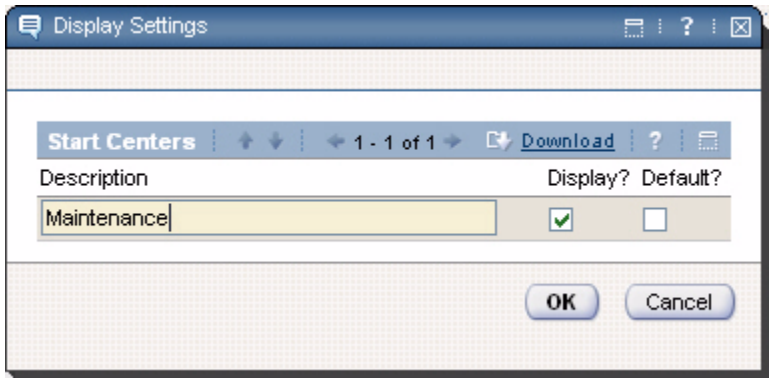
Managing Multiple Start Centers

If you have more than one Start Center assigned to your user name Maximo displays each Start Center as a separate tab, one for each Start Center. To view a different Start Center, click the tab for that Start Center.

You can manage multiple Start Centers using the **Display Settings** link. This link allows you to:

- Change the name of a Start Center.
- Indicate if a Start Center should be displayed or hidden.
- Indicate which Start Center should appear as the first tab (default).

Display Settings Dialog Box



Personalizing Portlets

Each portlet has an application that controls the content and configuration of the portlet. If your system administrator has granted you security permissions to a portlet's application, then you can personalize how that portlet appears in your Start Center. The buttons that you use to personalize a portlet appear in the portlet header.

Button	Action
	Edit Portlet — Click to open the set up application for the portlet.
	Minimize Portlet Window — Click to minimize the portlet.
	Maximize Portlet Window — Click to maximize a portlet that has been minimized.
	Remove Portlet — Click to remove a portlet from the Start Center. CAUTION: If you do not have appropriate security permissions, you may be unable to restore the deleted portlet.

Opening an Application

There are several ways to open a Maximo application from your Start Center.

- **Go To link** in the Navigation Links — To open an application, click the Go To link in the Navigation Links, then select the module and application. For example, to open the Work Order Tracking application Select Go To > Work Orders > Work Order Tracking.

- **Favorite Applications** portlet — To open an application, click the application link in the Favorite applications portlet. For example click Work Order Tracking.

- **Inbox/Assignments** portlet — To open an application and view a record that has been assigned to you for action, click the record ID.

- **Quick Insert** portlet — To open an application and insert a new record, click the link in the Quick Insert portlet, for example New Work Order.

- **Result Set** portlet — To open an application and view a specific record, click the record ID in the Result Set portlet.

TIP: You can run more than one Maximo application at the same time, as long as the applications are launched in *separate* browser sessions. For example, if you were creating a requisition for materials, you could have the Inventory application running in one browser session, and the Purchase Requisitions application running in a second browser session.

Maximo's Application Types

While all of the Maximo applications share a similar look and feel, the applications fall into three general types:

- *Self-service applications* are designed to guide occasional Maximo users through the process of creating a record. Maximo contains two self-service modules, Desktop Requisitions, and Service Requests. For more information, see Appendix B, "Maximo's Self-Service Applications," on page B-1.

- *Simple applications* contain a single page. Records are displayed in table windows, and searches are accomplished using the table filter. A Search Toolbar may or may not appear on the application page. Assignment Manager, Condition Codes, Labor Reporting, and several of the administrative applications are simple applications.

- *Standard applications* are applications that contain the following:

  - a standard navigation bar and toolbar
  - a List tab and Search toolbar to search the database for records
  - a main record tab
  - as many additional tabs as are required by the type of record

  NOTE: The majority of Maximo's applications are standard applications.

Searching the Maximo Database

Maximo stores entered information in a database. Requests to find information in the database are called **queries**. When you open a Maximo application, Maximo displays the List tab which displays the result of your default saved query. If you do not have a default saved query Maximo does not display a result set.

Because most applications open to the List tab, you can execute several actions from the tab:

- execute a saved query from the **Query** menu.
- perform a key field search with **Find** field.
- create a new record by clicking the **New <*Record*>** button on the toolbar, for example **New Work Order**.
- create reports for one or more records
- perform any of the actions available via the Search Toolbar. For more information, see "Using the Search Toolbar," on page 2-7.
- click any tab to view the first record in the result set.
- select the **Select Records** check box, select one or more records, and select an action from the Select Action menu to perform on the record(s), for example to perform a status change on a group of records.

NOTE: Some applications may include additional actions available from the List tab.

Using the Search Toolbar

The Search Toolbar appears on the List tab, allowing you to perform several different search related actions. When you enter a query, Maximo uses Structured Query Language (SQL) to retrieve the data from the database. You do not need to know SQL to conduct basic searches of the Maximo database. The Search Toolbar contains actions that allow for both SQL and non-SQL based queries. The results of your query are displayed in a table window below the Search Toolbar.

The Search Toolbar

The triangle next to the **Advanced Search** button activates a menu of additional Advanced Search options:

- **More Search Fields** — Click to access additional record fields for query by example (QBE) searches.
- **View Search Tips** — Click to view a help topic containing tips for searching the Maximo database.
- **WHERE Clause** — Click to view your current structured query language (SQL) WHERE clause or to construct a new WHERE clause to use to search the database.

The triangle next to the **Save Query** button activates a menu of additional Saved Query options:

- **Save Current Query** — Click to name and save your current query so that you can reuse it at a later time.
- **View/Manage Queries** — Click to view and manage your saved queries for the current application.

Basic Searches

This section describes the different ways to search the Maximo database for records. You do not need to know SQL to perform these basic searches.

Using Saved Queries to Search

The **Query** field in the Maximo toolbar contains a menu that includes any queries you have created and saved for an application, and two additional search options:

- All Records
- All Bookmarks

When you select a query from this menu, Maximo executes it immediately.

If you perform a saved query from the List tab the name of the saved query shows in the menu, but when a search performed from the List tab is not a saved query the menu is empty as no query name exists.

Saving a Query

If you frequently execute the same searches, you can save time by creating saved queries. You can also define a default saved query for Maximo to execute every time you open an application. For example, if your job involves approving work orders, you might define a default query to find all work orders with a status of WAPPR (waiting for approval) when you open the Work Order Tracking application. If Maximo does not find any records that match your query it displays the message "No records found that match the specified query."

Saved and default queries are specific to each application. For example, a query created in the Work Order Tracking application is not available in Quick Reporting unless you also create and save it in that application.

To save a query, complete the following steps:

1. Use the List tab to create a query. For more information about constructing queries see “Searching the Maximo Database,” on page 2-6.

   Maximo displays the query results.

2. Click **Save Query** in the Search Toolbar.

   The Save Current Query dialog box appears.

3 Enter a name for the query in the **Query Name** field. You can also enter a **Description**.

NOTE: Each saved query must have a unique name.

4 Select the **Public?** check box to make the query available to other Maximo users.

5 Select the **Default?** check box to make the query your default.

NOTE: You can also make a query your default by selecting the **Default?** check box in the View/Manage Saved Queries dialog box.

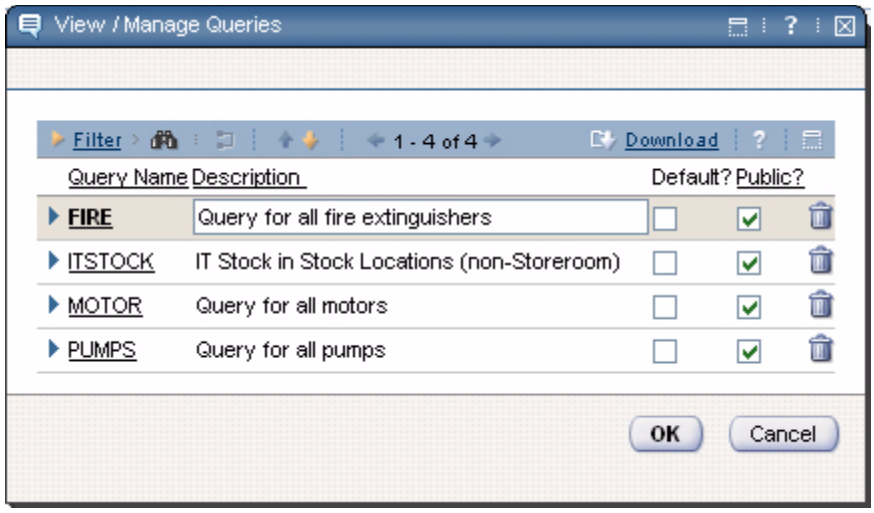
6 Click **OK**.

Maximo saves the query and adds it to the Query menu. If you selected the **Default?** check box, the next time you launch the application, Maximo will execute the query.

Managing Saved Queries

The View/Manage Saved Queries dialog box displays all queries that you have saved and named. These queries are also available from the Current Query menu on the toolbar.

View/Manage Saved Queries Dialog Box



To execute a saved query, click the **Query Name**.

To delete a saved query, click the **Mark Row for Delete** button for the query.

Using the Find Field to Search

You can use the **Find** field in the Maximo toolbar to search for a *single* record by the record ID or key field. For example, in Work Order Tracking, the search is by work order number. You can use the **Find** field to search from any tab in the application.

NOTE: You must know the *exact* record ID to search using the **Find** field. Entering a partial record ID will not return any results.

To search using the **Find** field, complete the following steps:

1 Enter a record ID in the **Find** field.

2 Click the **Quick Key Search** button (binoculars).

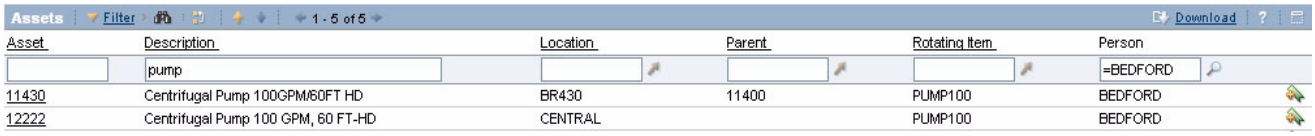
For more information about key fields, see "Key Fields," on page 1-7.

Using the Table Filter to Refine Search Results

The List tab displays query results in a table window. For more information about table windows see "Table Windows," on page 2-19. Maximo table windows include a filter to help you locate specific rows in large tables by reducing the number of rows displayed.

The table filter appears at the top of the table window as a row of editable fields appearing between the column headers and the first row of the table, as shown in the following figure.

Table Filter



To filter a table window, complete the following steps:

1 If necessary, click the ▸ **Filter** icon.

The filter opens and the **Filter Table** button appears.

2 Enter a value in one or more of the filter fields. You can enter partial values.

TIP: Use the equals sign (=) for an exact match. For example, filtering records with a status of "APPR" will also return records that have a status of "WAPPR" unless you type "=APPR" in the status field.

3 Click the **Filter Table** button (binoculars) or press **Enter**.

Maximo filters the table window and the **Clear Filter Fields** button appears.

If there are no rows that match your filter criteria, a message displays in the table window, for example "No work orders found."

4 To filter using different criteria, click the **Clear Filter Fields** button to return to the original result set.

NOTE: The **Clear Filter Fields** button only appears when the rows displayed in a table has been filtered.

Field Buttons

Fields can have actions associated with them. A field can have a long description, a select value lookup, or a menu of actions associated with it. In all cases, you access these actions via a field button.

Field Buttons

Button	Name and Function
	Detail Menu— Displays a menu of actions available for the field. Specific choices vary by field.
	Long Description — Provides room for entering more data than can fit in a field. After a long description entry is created, the button changes color to indicate that more information is available.
	Select Date — Displays the Select Date dialog box. Click a date to return the selected value to the **Date** field.
	Select Date and Time — Displays the Select Date and Time dialog box. Click a date to return the selected date and time to the **Date** field.
	Select Value — Displays a page showing available values for the fields. Select Value pages are often lists of records created in other applications, for example, item records created in the Item Master application.

Special Characters and Maximo

A **character** is a letter, number, or symbol. Most database programs use a selection of special characters as operators. An **operator** is a symbol that represents a specific action that the database program should take.

The following list contains characters that Maximo uses as operators and some guidelines on how to use them when you are constructing queries:

- **ampersand (&)** — AND. You use the AND operator to search for records that contain at least one occurrence of all of your query terms. The operator must be placed between two query terms otherwise Maximo will display an error message.

- **hyphen (-)** — MINUS. You use the MINUS operator to search for records that contain one query term, but you want the presence of your second query term to cause the document to be ranked lower in the result set. The operator must be placed between two query terms otherwise Maximo will display an error message.

- **pipe (|)** — OR. You use the OR operator to search for records that contain at least one occurrence of any of your query terms. The operator must be placed between two query terms otherwise Maximo will display an error message.

- **semicolon (;)** — You use a semicolon to indicate the end of a SQL command line. Using a semicolon as part of your query text may generate an error message.

- **tilde (~)** — NOT. You use the NOT operator to search for records that contain one query term and not another. The operator must be placed between two query terms otherwise Maximo will display an error message.

Your database may use additional special characters as operators. For additional information about other characters that are used as operators, refer to the documentation provided with your database.

Using Wildcard Characters

Sometimes you do not know the exact value for a field you want to use in a query. For example, you remember only part of a work order number, but not the exact number. When you do not know the exact value, you can search using the partial value plus a wildcard character. A **wildcard character** is a special symbol that stands for one or more characters. A **character** is an individual letter or number.

Maximo Wildcard Characters

Maximo uses two wildcard characters:

- Use the underscore (_) to substitute for a *single* character.
- Use the percent sign (%) to substitute for a *string* of characters

A **string** is any grouping of letters, numbers, or both. A word is an example of a string of letters.

Placement of Wildcard Characters

When you use a wildcard character in a search field, place the wildcard character exactly where the unknown character(s) would occur. You can use more than one wildcard character in a single search.

Placement	Finds	Example
%X	all instances where *X* is the last in the string of characters	*%ing* would return all instances where a word ended in *-ing*
X%	all instances where *X* is the first in a string of characters	*M%* would return all instances where the word started with the letter *M*
%X%	all instances where *X* falls *anywhere* within the string of characters	*%3%* would return all records with the number *3* anywhere in the field

Searching for Null Values

A **null** value is the absence of a value in a field. Nulls indicate missing or unknown data, and are not the same thing as the number zero (0) or a blank space.

Because a null indicates a lack of data, searching for null values is different from searching for other values. When using the List tab or the Advanced Search/More Search Fields dialog box to search for records containing null values you use the following syntax:

- To search for records that contain a NULL value for a field enter:

  ~null~

- To search for records that do *not* contain a null value for a field (known as a NOT NULL value) enter:

  !=~null~

NOTE: When searching for null values using the WHERE Clause dialog box you use the SQL comparison values IS NULL and IS NOT NULL to select and compare null values.

Advanced Searching

In addition to searching using the **Query** field, the **Find** field, and the table filter, you have two additional options for searching the Maximo database. You can use the Advanced Search option to search additional fields beyond those available in the table window, or if you know Structured Query Language (SQL) you can use the WHERE Clause option to construct a SQL query.

Using the Advanced Search Option

The More Search Fields dialog box is for querying by example (QBE), meaning that you enter values in the on screen fields to provide Maximo with an example of the type of records you are searching for. For example, if you want to find all work orders with a status of waiting for approval, you would enter WAPPR in the **Status** field. You can enter values for each field that you want to have included in your query.

You can give examples of records you want to find by entering values in one or more fields in the dialog box. Doing so narrows your search. If no records match your query, Maximo displays a message.

TIP: You can enter more than one value in a field. The values must be separated by commas, and cannot exceed the length allowed for the field. For example, to find work orders that list either pumps or motors you could enter "pump, motor" in the **Description** field.

Using a SQL WHERE Clause to Search

You use the WHERE Clause dialog box to conduct advanced queries of the Maximo database using Structured Query Language (SQL). To perform advanced queries, you should be familiar with both SQL and the Maximo database. A SQL tutorial is not within the scope of this manual. Constructing SQL queries is something that is more commonly performed by system administrators and database administrators.

The WHERE Clause dialog box displays the SQL WHERE clause for your current query in the **Current Query** field. You can use any of the search methods available to you and see the WHERE clause Maximo created based

on your query values in the WHERE Clause dialog box. If you know SQL you can also modify the WHERE clause to change your search parameters.

Viewing Search Results

The List tab displays all records that match the current query in a table window. For more information about table windows see “Table Windows,” on page 2-19. You can perform the following actions on the Results subtab:

- Use the **Filter** to filter the results displayed in the table window.
- Click the **Next Row** or **Previous Row** buttons to navigate the rows in your results set.
- Click the **Next Page** and **Previous Page** buttons to navigate the pages of your result set.
- Click the **Download** button to download the result set.
- Click an underlined column header to sort the column. For more information, see “Sorting Columns,” on page 2-22.
- Select the **Select Records** check box, then check the **Select Row** check boxes to select multiple records to perform batch actions from the Select Action menu.
- Click the **Add to Bookmarks** button for a record to include the record in your personal list of bookmarks for the application.

Using Bookmarks

The My Bookmarks dialog box displays all records that you have "bookmarked" for later review. The My Bookmarks dialog includes the record ID (key field), the **Description** of the record, and a **Delete** button for each bookmark.

Bookmarks are associated with your user name. If you were to sign in under a different name, you would see a different Bookmarks list. Each application has a separate bookmark list. So for example, work orders bookmarked in the Work Order Tracking application will not be bookmarked in the Quick Reporting application.

Adding a Bookmark

You can add a record to your list of Bookmarks in two ways:

- From the List tab — Click the **Add to Bookmarks** button for the record.
- From any application tab — Select **Add to Bookmarks** from the Select Action menu to add the current record to your bookmarks.

Managing Bookmarks

Click **Bookmarks** on the Search toolbar to view the My Bookmarks dialog box, which lists all of the records you have bookmarked for a particular application.

To remove a bookmark, click the **Delete** button for the record, The bookmark is deleted when you close the dialog box. This does not delete the record, only the bookmark.

NOTE: If you choose All Bookmarks from the Current Query menu, Maximo does not show a deleted record.

Maximo Application Pages

Most Maximo applications have a similar look and feel. The Maximo application page starts below your browser's address bar and contain the following areas:

- **Maximo Navigation Bar** — Identifies the application and provides navigation links. For more information, see "Maximo Navigation Bar," on page 2-3.
- **Maximo Toolbar** — Contains search options, action menu, and buttons for frequently used actions.
- **Application Tabs** — Contains groupings of similar fields and actions within an application.
- **Record Heading** — Contains the key field, **Description**, and one or more additional fields that identify the current record. Heading fields appear at the top of every tab of the application.
- **Sections** — Contains groupings of fields that contain similar or related data within an application page.
- **Table Windows** — Displays multiple records from the database simultaneously.

Maximo Toolbar

Immediately below the Navigation Bar is the Maximo toolbar.

WorK Order Tracking Toolbar

The toolbar contains four sections:

- **Query** menu
- **Find** field and button (binoculars)
- Select Action menu

▼ Toolbar Buttons

Query Menu

The Query menu is described in “Using Saved Queries to Search,” on page 2-8.

Find Field

Using the **Find** field to perform a quick key search is described in “Using the Find Field to Search,” on page 2-9.

Select Action Menu

The Select Action menu contains all application-specific actions that are available to you. Select an action from the menu to perform it. These actions are listed in chapters that appear later in this guide.

NOTE: Action menu options appear only if your system administrator gives you security access.

Toolbar Buttons

The Maximo toolbar contains buttons that are common to most Maximo applications, as well as application specific buttons. You see buttons only for actions your system administrator has authorized you to perform.

NOTE: The tool tip text for some buttons can change based on the application, but the button performs the same function. For example, in the Work Order Tracking application the "New Record" button is labeled "New Work Order."

Maximo Toolbar Buttons

Button	Name and Function
	New Record — Inserts a new record. If your system administrator has set the application to automatically create numbers for new records the button displays a number sign (#).
	Save Record — Saves a record. Maximo displays a message if a required field is empty.
	Clear Changes — Clears changes to the page and returns you to the List tab. Maximo notifies you if unsaved changes exist and gives you the option to save them.
	Previous Record — Takes you to the previous record in the result set. Displays a message in the Navigation bar if you are at the first record. Maximo notifies you if unsaved changes exist and gives you the option to save them.
	Next Record — Takes you to the next record in the result set. Displays a message in the Navigation bar if you are at the last record. Maximo notifies you if unsaved changes exist and gives you the option to save them.
	Change Status — Displays the Change Status dialog.
	Create KPI Option — Displays the Create KPI dialog box, allowing you to create a Key Performance Indicator report.

NOTE: Some applications include a subset of these toolbar buttons. And some applications include additional application specific toolbar buttons. Application specific toolbar buttons are documented with their respective applications in the following chapters.

Tabs and Subtabs

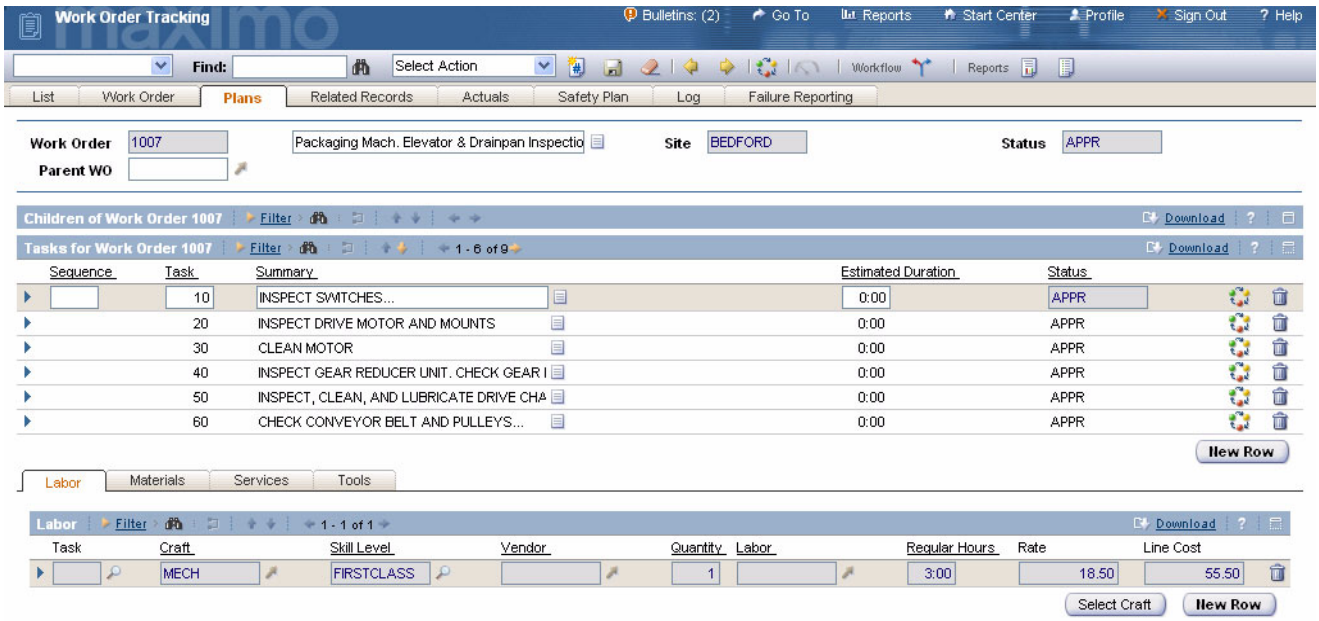
Most applications display two or more tabs at the top of the page's working area. Data entry fields are arranged in logical groupings within each application, and tabs organize and display the groupings.

The List tab appears first for all applications. The second tab contains the main information for that application. Subsequent tabs contain secondary, related information. The selected tab appears as a lighter color than the inactive tabs.

To change application pages, select a tab. A message may appear if you have unsaved changes on the current page.

Tabs in turn can have **subtabs** that display additional information. Subtabs contain data pertinent to their parent tab. For example, the Plans tab of the Work Order Tracking application contains four subtabs: Labor, Materials, Services, and Tools.

Work Order Tracking application, showing tabs and subtabs



Record Heading

Many Maximo applications include more than one application tab in addition to the List tab. In order to identify the current record when you move from one tab to another, a Maximo record contains a heading section that appears on each application tab. This section contains the key field (record ID), **Description** field, and one or more additional fields.

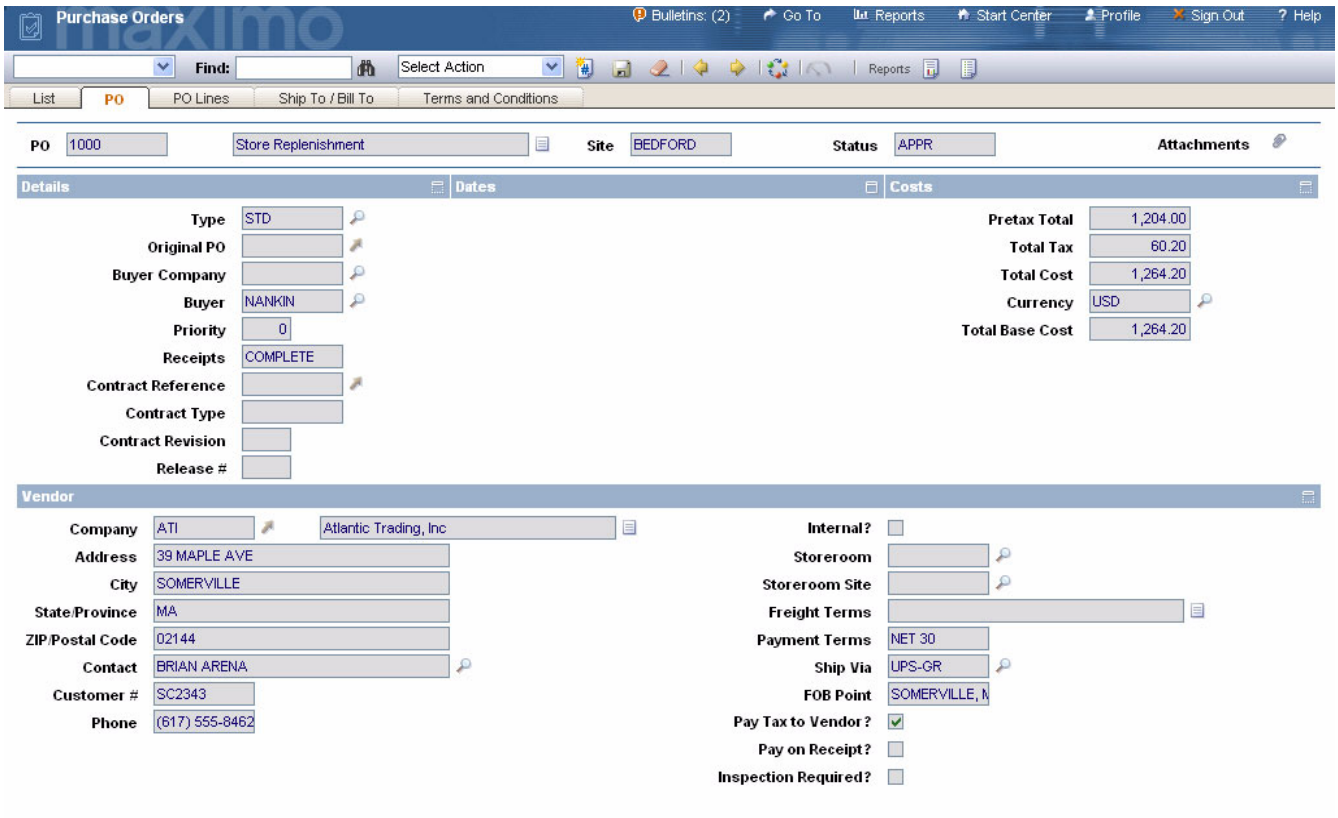
Sections

The fields on an application page are grouped together into sections. Each of these sections contains a button to **Minimize** the section.

Icon	Function
	Minimize
	Maximize

Minimizing a section hides all of the fields in the section from view. When a section is minimized, only the section heading appears with the **Maximize** button as shown in the following image.

Purchase Order Record with Collapsed Dates Section



TIP: If all of the fields in a section appear to be missing on the screen, click the **Maximize** button to display them.

A section can also contain a table window, which are described in the next topic.

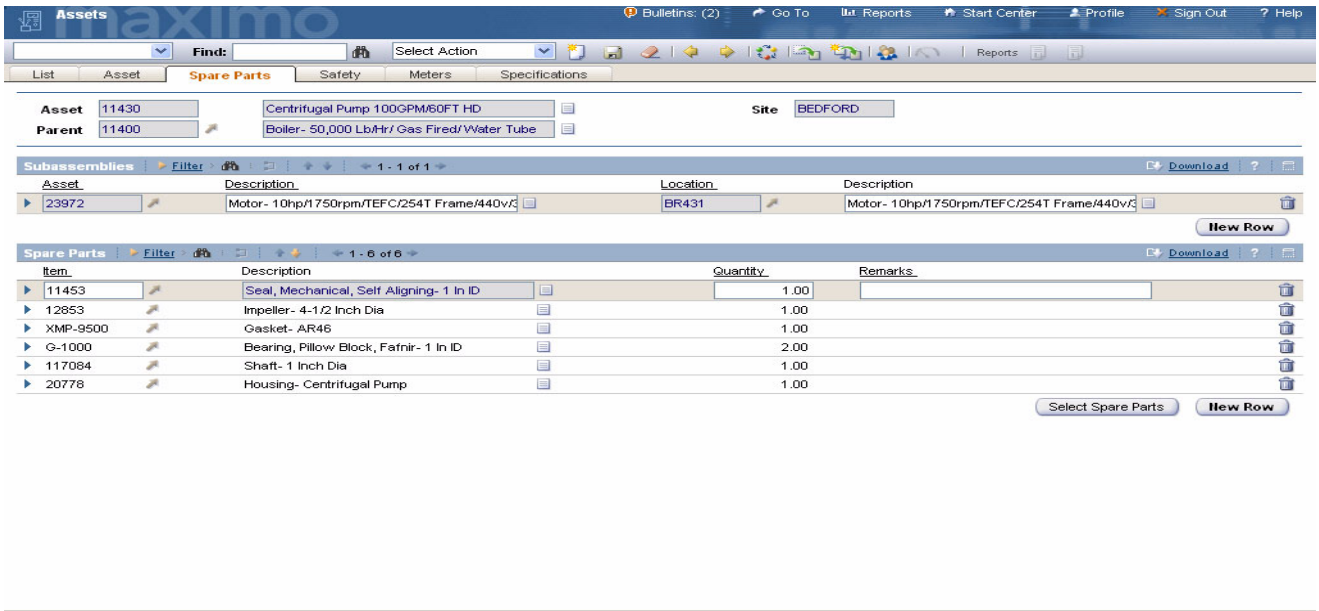
Table Windows

Maximo uses table windows to display multiple records from the database simultaneously. In some cases, for example on the List tab, a table window will display a result set. A **result set** is the set of records that matches the criteria specified in a query to the database. For more information about queries, see "Searching the Maximo Database," on page 2-6.

Maximo tables generally contain more rows and columns than a single screen can display. For this reason, Maximo table windows include the following features:

- Navigation buttons that allow users to navigate the table window
- Table Filter that allows a user to temporarily reduce the number of records displayed in the table window
- Expandable Row Details that allow editing of all record fields
- Editable table windows that allow quick data entry on selected fields of some tables.

Assets Application - Spare Parts Tab Showing Two Table Windows



NOTE: Some table windows are read-only; you use them only to view information.

Most table windows have a label which is located just above the table window. The top row of the table window displays column headings, which are selected field labels, designed to give you an overview of each row. The rest of the table window displays rows of data, each row representing one record. Maximo highlights the record in the table after you select it. By default the first row is highlighted.

Navigating Table Rows (Records)

Several navigation aids appear on each Maximo table window. The colored heading of the table window contains a table filter which is described in "Using the Table Filter to Refine Search Results," on page 2-10.

Next to the table filter are **Previous Row** and **Next Row** buttons that allow you to move the focus up and down the rows of the table window. Click the **Next Row** button to move the focus to the next record in the list. Click the **Previous Row** button to return the focus back to the previous record. If you are at the first record, you cannot use the **Previous Row** button. If you are at the last record, you cannot use the **Next Row** button.

The number of records that can be displayed in a table window at one time is limited. Next to the **Previous Row** and **Next Row** buttons are the **Previous Page** and **Next Page** buttons which allow you to display additional records in a result set. Between these buttons there is a number range indicating the records currently being displayed and the number of records in the table or current result set.

Table Row Navigation Buttons

Click **Next Page** to show the next page of records; click **Previous Page** to show the previous page. If you are at the first set of records, you cannot use the **Previous** button. If you are at the last page of records, you cannot use the **Next** button.

To learn about navigating table rows from the keyboard, see Appendix A, "Keyboard Shortcuts," on page A-1.

Table Window Buttons

The following buttons commonly appear on Maximo table windows. Since table windows appear as part of the List tab, application screens, value lists, and action menu options, the buttons that appear on each table window will vary.

Button	Name and Function
Filter	**Table Filter** — Click to open the table filter. The table filter appears as a row of editable fields between the column headings and the first row in the table.
	Find — Click to filter the table contents based on the entries in the filter fields.
	Clear — Click to clear the filter fields and restore the original rows displayed in the table.
	Previous Row — Click to move the focus to the previous record in the table. Disabled (gray) if you are at the first row in the table or result set.
	Next Row — Click to move the focus to the next record in the table. Disabled (gray) if you are at the last row in the table or result set.
	Previous Page — Click to show the previous page of records. Disabled (gray) if you are at the first page of records, or if all records in the result set are currently displayed.
	Next Page — Click to show the next page of records. Disabled (gray) if you are at the last page of records, or if all the records in the result set are currently displayed.
	Download — Click to download the contents of the table.
	Hide Table — Click to minimize or hide the table.
	Show Table — Click to maximize or show a hidden table window.
	Help icon — Click to display table window help. Application Help is available via the Help link in the Navigation Bar.
	View Details — Click to open the Row Details, displaying all fields in a record so that you can enter, view, or modify data.
	Close Details — When the Row Details are open, the **View Details** button changes to the **Close Details** button. Click to close the Row Details.

Button	Name and Function
	Add to Bookmarks — Marks a document or record for later viewing. You can access bookmarked records from the Bookmarks subtab of the List tab.
	Mark Row for Delete — Marks a record for deletion. Maximo does not delete the row until you click **Save**.
	Undo Delete — Restores a row that you marked for deletion. This button indicates that you marked the row for deletion.
	New Row — Inserts a new row and opens the Row Details if it is not already open.

For information about keyboard shortcuts for these buttons, see Appendix A, "Keyboard Shortcuts," on page A-1.

Sorting Columns

You can sort columns with underlined headings. To sort a column, click the heading.

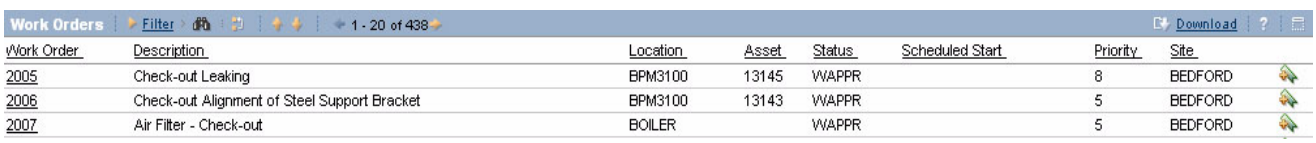
Click	Function
First	Sorts the column in ascending order. An arrow pointing up appears in the column header.
Second	Sorts the column in descending order. An arrow pointing down appears in the column header.
Third	Returns the column to the database sort default. No icon appears.

You can sort only one column at a time, and that column displays an icon in the column header. If you select a second column to sort, the sorting on the first column is lost. If no icon appears in the table, you are not sorting.

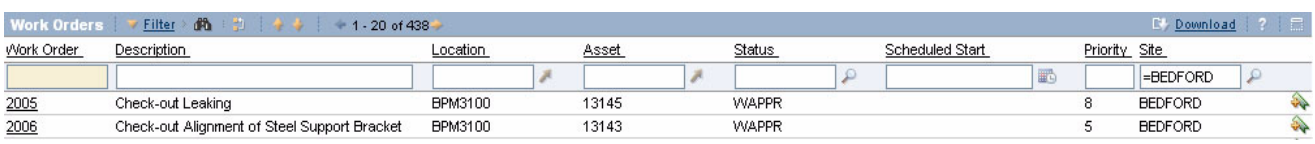
Filtering Table Windows

Maximo tables contain a filter to help you locate specific rows in large tables by reducing the number of rows being displayed. The table filter appears as a row of editable fields between the column headers and the first row of the table. If the table filter is hidden, click the click the ▸ **Filter** icon to display it.

Closed Table Filter



Open Table Filter



Use of the table filter is described in "Using the Table Filter to Refine Search Results," on page 2-10.

Using the Row Details

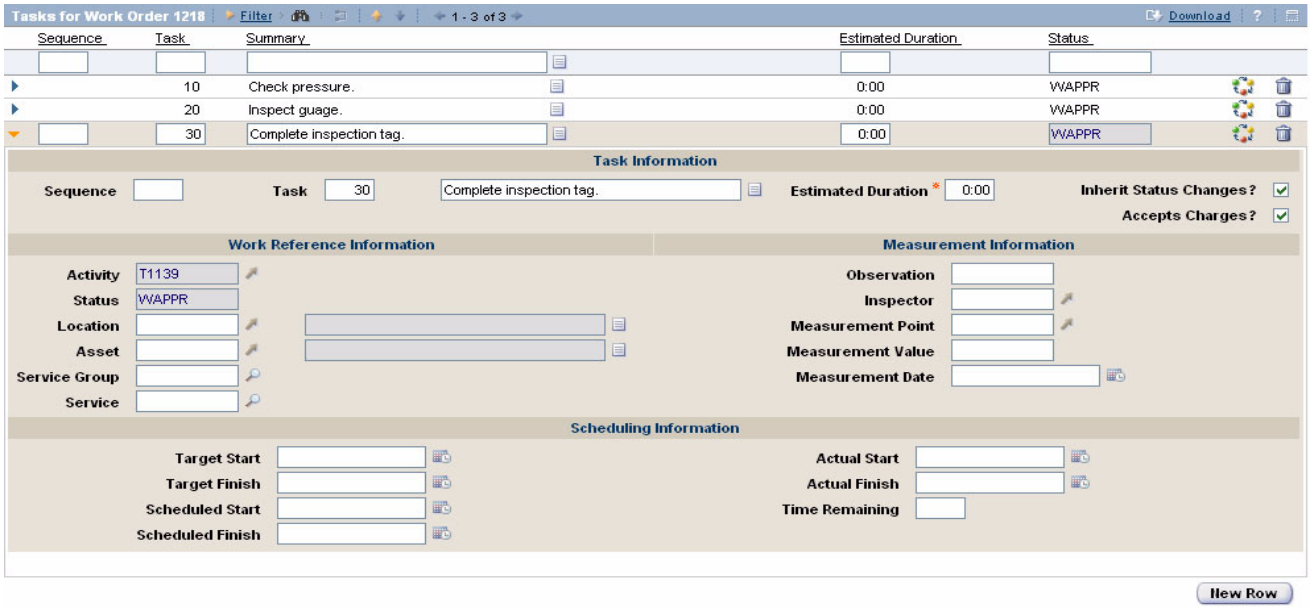
The number of columns that you can display in a Maximo table window is limited, and most records contain more fields than you can display on a page at one time. You can access all fields in the record by using the ▶ **View Details** button for an existing record, or the **New Row** button if adding a record.

NOTE: Row Details are not available on some table windows, for example table windows on the List tab.

Clicking the ▶ **View Details** button next to a row opens the Row Details beneath the rows in the table window. When the Row Details are open, you can enter, view, or modify any data that is not read-only.

In the following example from a work order work plan, the Tasks table window shows an open Row Details. Note the ▼ **Close Detail** button to the left of the third row.

Row Details



Default Table Data

Some pages containing table windows also include a Default Table Data section at the bottom of the page. If you are entering a series of similar entries you can speed the data entry process by entering values in the Default Table Data fields. Values you enter as default table data are used as field defaults when you insert new rows into the table. For example, if you are creating a purchase requisition for materials for a work order, you could enter default values for the work order number, the asset, location, and storeroom.

Default table data for some table windows might contain system supplied values. For example, in the Receiving application, the **Received By** field might default to your user name, and **Received Date** might default to the

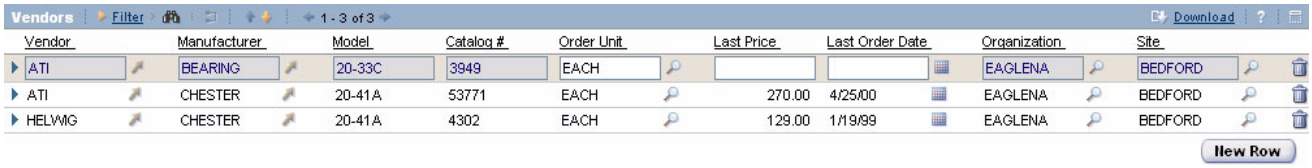
system date. When you create a new row in the table window, the default values are copied to the appropriate fields, but remain editable, allowing you to modify them.

NOTE: Maximo does not save entries in the default table section when you close an application.

Editable Table Windows

Most Maximo tables contain editable table windows, which allow you to edit a limited number of columns without opening the Row Details.

Inventory Reorder Details Showing an Editable Table Window



Clicking anywhere in a row in an editable table will highlight it and put the row into "edit mode." When in edit mode, each editable column appears as an editable field. If a column is read-only, the column cannot be edited while in edit mode. For more information about the buttons that appear next to a field, see “Field Buttons,” on page 2-11. When a table window is in edit mode existing rows may be edited.

You can navigate an editable table window from the keyboard using the following keys:

- Press the Tab key to move through the visible fields in a row. The field focus will move through the visible fields from left to right, then move the focus to the next row. Press Shift + Tab to move from right to left.

  NOTE: Click **View Details** to edit the fields not currently visible in the table window.

- Press Ctrl + ↓ to move down a row in a single column, for example when editing the **Quantity** column.

- Press Ctrl + ↑ to move up a single column in the table window.

CAUTION: Maximo does not automatically save changes made in table windows. You must click **Save**.

Creating New Rows

For a simple record with few fields, you may be able to enter data directly into the editable table window. More complex records will require that you to use the Row Details section to access all of the possible fields when creating a new record.

To add a new row to a table window, complete the following steps:

1. Click **New Row** at the bottom of the table window.

Maximo opens the Row Details if it is not already open. Some fields bay display default values.

2 Fill in additional fields as needed. An asterisk (*) indicates a required field.

3 If appropriate, click New Row to enter another new row.

NOTE: When you click **New Row** after adding or modifying a row, Maximo automatically updates the previous row changes to the table, but does *not* save them.

4 If appropriate, click **Close Details** to close the Row Details.

5 Click **Save**.

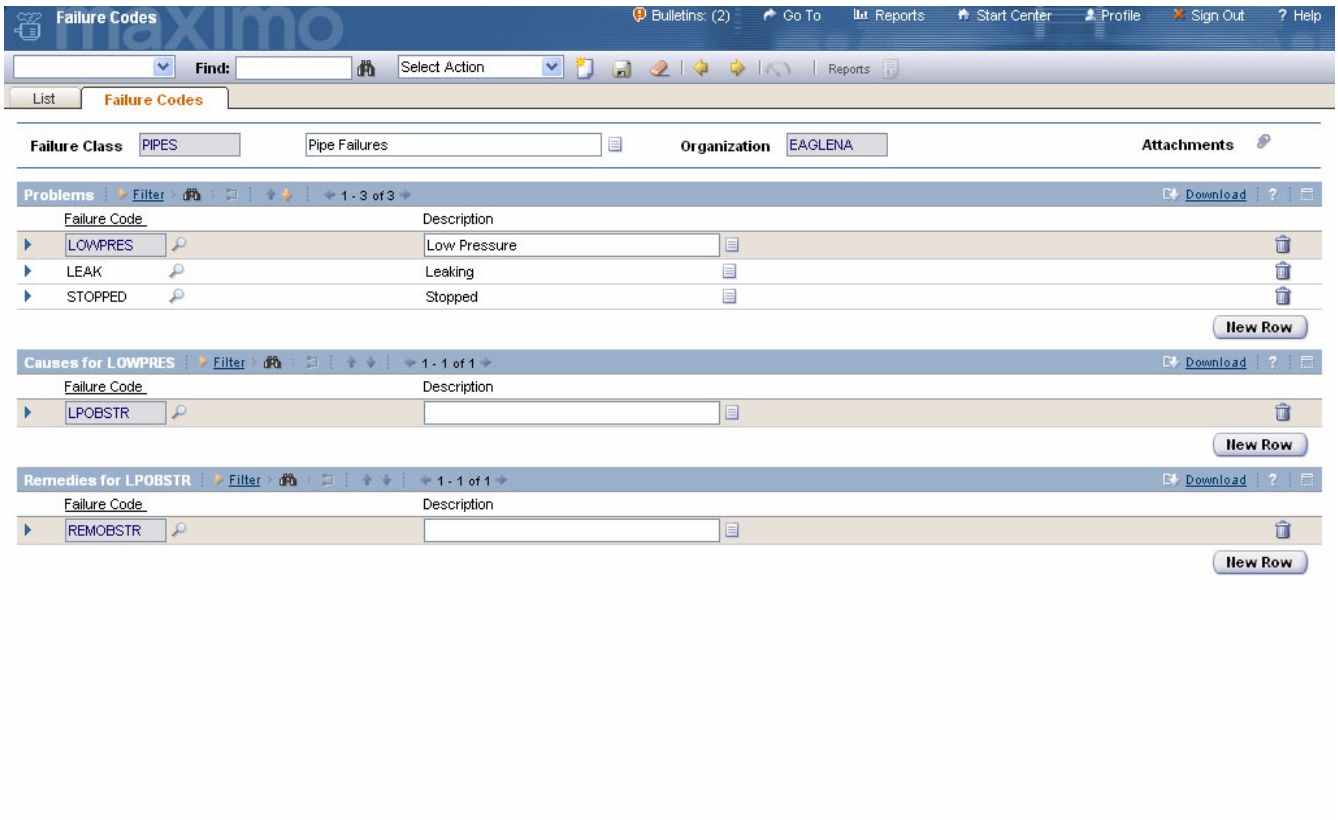
CAUTION: Maximo does not automatically save changes made in table windows. You *must* click **Save**.

Paired Table Windows

The Maximo applications contain a number of paired table windows, where the row selected in the first table window determines the records that are displayed in the second table window. The name of the second table window in a pair is dynamic, and will change to reflect the row that is selected in the first table window.

The Failure Codes application contains two sets of paired table windows. Note how the name of the second table window (Causes for) reflects the row selected in the first table window, and the name of the third table window (Remedies for) reflects the row selected in the second table window.

Paired Table Windows in the Failure Codes Application



Maximo Fields

Maximo application pages contain multiple fields and check boxes. As you work with the applications you will encounter a variety of different types of fields.

Field Characteristics

Each Maximo application field has at least three characteristics:

1 A field is either read/write or read-only.

- **Read/Write** — Data entry fields that allow you to enter, view, modify, and delete data.
- **Read-only** — Fields that allow you to view data, but not enter, modify, or delete data. For example, some default values, or values on a saved record might be read-only.These fields are indicated by a gray background.

2 A field is either a required field or not required.

- **Required** — Fields where you must enter data before Maximo can save the record to the database. The key field is always a required field. An application can have one or more required fields in addition to

the key field.These fields are indicated by an asterisk (*). If a required field is not filled in when you attempt to save a record Maximo displays an error message.

CAUTION: Your business processes may also require data entry in fields that are *not* marked with an asterisk.

- **Accepts Nulls** — Does *not* require data entry before the record can be saved in the database. The field can be left null or empty.

3 A field will only accept or display a specific type of data:

- **Upper** — Field accepts alphanumeric text. Text is displayed with all letters in uppercase.
- **Mixed-case** — Field accepts alphanumeric text. Text is displayed with both uppercase and lowercase text.
- **Integer** — Field accepts and displays only positive or negative whole numbers. If decimal values are entered, they are rounded to the nearest whole number.
- **Decimal** — Field accepts and displays positive or negative decimal values.
- **Amount** [or cost] — Field accepts or displays currency amounts. Can be configured to display a currency symbol, for example the dollar sign ($).
- **Date** — Field can contain only dates. The display format of dates is determined by your system administrator.
- **Date/Time** — Field contains date and time. Your system administrator can configure Maximo to display times in 12 hour or 24 hour format.
- **Yes/No (YORN) Check Boxes** — Field accepts only "yes" value (checked) or "no" value (unchecked). When the field is read-only, for example in a table, Maximo displays a graphic of a check mark when the value is positive (Y), and an empty check box when the value is negative (N).

Fields can have additional characteristics, including:

- **calculated values** — Some fields contain a numeric value that is calculated based on data stored in Maximo, for example **Total Cost**. These values are read-only. You cannot modify them.
- **default values** — Your system administrator can configure Maximo so that some fields already have values entered when new records are created. For example, the **Reported By** field might default to your user name, and **Date** fields might default to the current system date and time. You might be unable to modify default values.
- **long description field** — A field may be paired with a long description field to accept and display additional data that cannot be displayed in the on-screen field due to field size limits.

NOTE: Although they are paired fields, the on-screen field (for example a **Description** field) and the long description field are not the same field. Data that appears in the on-screen field does not appear in the long description field, and vice versa.

- **value list** — A field may only accept or display predefined values, which are stored and selected from a value list. Your system administrator can modify Maximo's default value lists to better fit your business needs.

Field Help

Maximo includes context sensitive field help for each on-screen field and check box, including fields found in dialog boxes. The field help topics include a brief description of the field and database table and column information for each field. You access the field help by placing the cursor in the field and pressing Alt + F1.

Creating Records

The process for creating new Maximo records is similar for each type of application.

Types of Maximo Records

There are three types of Maximo applications (which are discussed briefly in "Maximo's Application Types," on page 2-6). The process for creating a new record varies depending on which type of application you are using:

- **Self-Service applications** — New records are created automatically when you open the application, for example when you open the Create Service Request application. For more information about creating this type of record, see Appendix B, "Maximo's Self-Service Applications," on page B-1.

- **Simple applications** — New records are created using the **New Row** button at the bottom of the table window to insert a new row into the table window. For more information about creating this type of record, see "Creating New Rows," on page 2-24.

- **Standard applications** — New records are created using the **New <record>** button in the Maximo toolbar. For more information about creating this type of record, see "Creating a Record," on page 2-29.

Automatic Numbering of Records

When you create a new Maximo record, the record needs to have a unique value in the key field to identify it. (For more information about key fields, see "Key Fields," on page 1-7.) Record identifiers can be a combination of letters and numbers.

Your system administrator can configure Maximo to automatically generate a new record ID for applications that generate large numbers of records, for example the Work Order Tracking and Purchase Requisitions applications, to ensure that each new record has a unique ID and to streamline the record creation process.

There are two different **Insert New <record>** buttons. The button that appears indicates if the application has been configured to automatically generate record IDs or not.

Icon	
	Maximo automatically creates the record ID for new records.
	You must create a unique record ID for new records. Maximo will display a message if the record ID you choose has already been used.

Default Field Values

When you create a new record, Maximo may fill in some of the record fields with default values. Some common types of default data include the current date and time in a **Date** field, and your user name in a **Requested By** or **Reported By** field. In most cases you can edit this default data.

When you are creating new rows in a table window, some applications allow you to enter default table data to be copied to each new row. For more information about default table data, see “Default Table Data,” on page 2-23.

Creating a Record

The basic procedure for creating a record is similar for most applications. The most common difference is that some applications automatically generate a numbered record ID (key field) value for each new record, while other applications let you create the name or number for the record ID.

To create a Maximo record, complete the following steps:

1. Open the application.
2. On the Maximo toolbar, click the **New <record>** button.

   NOTE: The name of this button varies by application. For example, in Work Order Tracking it is labeled "New Work Order."

   Maximo displays a new record.
3. If the key field is empty, enter a value.
4. Enter a description in the **Description** field. To enter additional information, click the **Long Description** button.
5. Fill in additional fields as needed. An asterisk (*) indicates a required field.

NOTE: An asterisk (*) indicates that a field requires a value for Maximo to save the record. For more information about any field, refer to the field help.

6 You can edit default values that are not read-only.

7 Click **Save**.

Entering Values in Fields

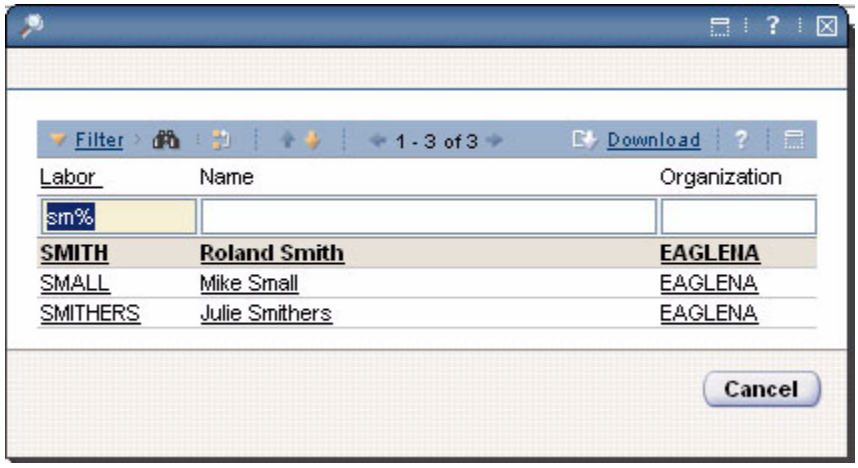
Maximo applications are linked, letting you select values from lists of existing records when you fill in fields in other applications. For example, when you fill in the **Asset** field on a work order, you can select from the list of asset records in the Assets application.

Maximo contains several options for selecting a value for a field. These options appear on a separate page that lets you select a value and return it to the application where you were working. Your options vary by field. This section describes some common ways to select a value for a field.

Entering Partial Field Values

Maximo has a feature that allows you to enter a partial value in a field, and Maximo will attempt to find a valid value that matches the portion that you entered. When you exit the field, Maximo displays a Select Value dialog box that displays records that match the partial value that you entered. You can use the table filter in the Select Value dialog to search for additional values if Maximo did not match the value exactly.

Partial Value Entered in a Labor Field



Entering Dates

Many Maximo records contain one or more date fields. For example work orders contain fields for **Target Start**, **Target Finish**, **Scheduled Start**, **Scheduled Finish**, **Actual Start**, and **Actual Finish** dates. Some date fields do not require you to enter a value, as Maximo automatically enters the current date and time for you.

You can use the following keyboard shortcuts to enter a date into any **Date** field:

Function	Keyboard Shortcut
Insert today's date	Ctrl + =
Move back one day	Ctrl + Minus Sign
Move forward one day	Ctrl + Plus Sign

You can also click the **Select Date** button or the **Select Date and Time** button to display the Select Date dialog box. The Select Date dialog displays the current month, with the current date highlighted. The Select Date and Time dialog box displays the current date and the current system time. You use the arrows to navigate forward and backwards by month or year, and by hour, minute, or second.

To select a date, complete the following steps:

1 Click **Select Date** next to a field that requires a date.

The Select Date dialog box appears.

2 If necessary, navigate to the correct date.

TIP: You can use the following keyboard shortcuts when using the Select Date dialog.

Button	Function	Keyboard Shortcut
	Next Month	Ctrl + →
	Previous Month	Ctrl + ←
	Next Year	Ctrl + ↓
	Previous Year	Ctrl + ↑

3 Click a date to select it.

Maximo returns the value to the field.

Using the Select Value Button

When you click the **Select Value** button Maximo displays a Select Value list. This list consists of either of records created in another Maximo application, or created by your system administrator.

To select field values using the **Select Value** button, complete the following steps:

1 Click **Select Value** next to a field.

The Select Value dialog box appears.

2 If appropriate, you can use the table filter to locate a record.if there is a lengthy list of values.

3 Click the **Select Record** button beside a value.

Maximo returns the value to the field.

Using the Detail Menu Button

When you click the **Detail Menu** button, Maximo displays a menu of options for locating a value for the field. The options vary depending on the application and field you are using. Some common Detail Menu options include the following:

- **Open Drilldown** — For more information about the Drilldown, see "Using the Drilldown," on page 2-32.
- **Classification** — For more information about Classifications, see "Using Classifications," on page 2-35.
- **Go To <Application Name>** — Allows you to go to another application and create a new record or retrieve an existing record as a value for the field.
- **Move To** — Allows you to navigate up a record hierarchy by moving to the parent record.

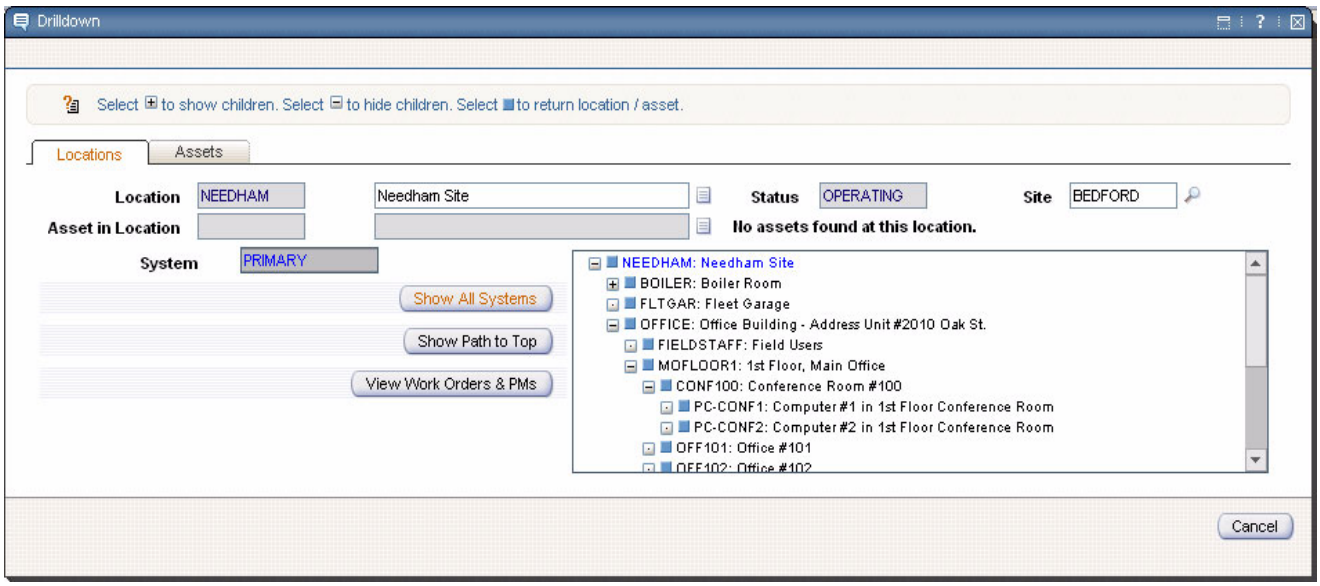
In addition, Detail Menus can contain context specific options that will vary by field. For example many **Asset** and **Location** fields will include the option to View Work Orders and PMs.

Using the Drilldown

The Drilldown is a Maximo feature that allows you to use a graphical tree to navigate your location and asset hierarchies, much like Windows Explorer® lets you find files on your computer hard drive. The Drilldown is available from the Detail Menu on the **Asset**, **Location**, and some **Belongs To** fields throughout Maximo, and from the Select Action menu in the Assets and Locations applications.

The location hierarchies displayed in the Drilldown are created in the Locations application, and the asset assembly structures displayed are built in the Assets application.

Drilldown



Understanding the Detail Display

The Drilldown contains two tabs, Locations and Assets. Read-only fields in the header for each tab display the details of the location or asset currently in focus.

Locations Tab Details Fields

Field	Description
Location	Location ID
Description	Description (including long description) of the location.
Status	Status of the location (for example planned or operational).
Site	Site listed on the location record.
Asset in Location	Asset ID of the asset at the location currently in focus. An asset ID is only displayed if there is a single asset or a single top-level asset at the location. A message is displayed if either no asset or more than one top-level asset exists at the location. A top-level asset is an asset that does not have a parent in the same location.
Description	Description (including long description) of the asset. Displayed only if an asset ID is displayed.
System	Field indicating all the systems that are associated with the selected location. The system for the hierarchy tree currently displayed is highlighted.

Assets Tab Details Fields

Field	Description
Asset	Asset ID
Description	Description (including long description) of the asset.
Asset Up?	Check box indicating if the asset is up and running (checked) or experiencing downtime (unchecked).
Site	Site listed on the asset record.
Location	Location of the asset.
Description	Description (including long description) of the location.
Rotating Item	Item ID if the asset is a rotating asset.
Failure Class	Failure Class for the asset.

Navigating the Hierarchy

You can switch back and forth between locations and asset by selecting the appropriate tab on the Drilldown. You can select a location, then switch tabs to view the asset(s) at that location. Or you can drill down to an asset, then switch tabs to see its location, and the system(s) that location belongs to.

A plus sign ⊞ next to an entry in the Drilldown indicates that there are further levels in the hierarchy. Click the plus sign to display the next level of the hierarchy.

A minus sign ⊟ next to an entry in the Drilldown indicates that the level is open and displaying the next hierarchy level. Click the minus sign to close the hierarchy level.

A dot indicates that the location or asset does not have any children and there are no further levels in the hierarchy.

Actions Available from the Drilldown

The Locations tab of the Drilldown contains the following button:

- **Show All Systems** — Click to show all systems in the selected Site.

Both the Locations and Assets tabs of the Drilldown contain the following buttons:

- **Show Path to Top** — Click to display the direct path from the selected location or asset to the top of the current hierarchy.

  NOTE: Networked location systems display the Networked Systems icon next to the **Show Path to Top** button, and the button is disabled.

- **View Work Orders & PMs** — Click to display all work orders, PMs, routes, and service contracts for an asset or location.

- **Select Record** — Click the **Select Record** icon to select a location or asset and return the value to the application page. If the Drilldown is called from an application that contains both **Location** and **Asset** fields you can call the Drilldown from either field, select either a location or an asset, and the value will be returned to the appropriate field, regardless of which field the Drilldown was launched from. If permitted by the business rules of the application, *both* the location and asset values are returned to the application.

Using Classifications

Maximo includes a feature called Classifications which can be used to structure records into organized hierarchies. Using classifications helps you to more easily locate records, and help to ensure that records are not duplicated unintentionally.

Your system administrator creates one or more different classification hierarchies using the Classifications application. By default Classifications allows you to classify and search the following types of records:

- assets
- items
- locations
- solutions
- tickets (service requests, incidents, problems)
- work orders (activities, changes, releases, work orders)

You can classify solutions, tickets, and work orders by entering a value in the **Classification** field on a record.

You can add new asset, location, or item records to Classifications by associating a specification template with the record on the Specifications tab in the Assets, Locations, or Item Master applications. After assets, locations, and items are associated with specification templates, you can use the

Classification Search dialog to search through Maximo to find the records you are looking for.

Multisite and Classifications

The Classification structure exists at the System or database level in Multisite. Classification records include an **Organization** and **Site** field, which are null (empty) by default, but allow classifications to be defined for specific Organizations or Sites. When a classification is defined for an Organization or a Site, all of the levels of the classification below that one must be for the same Organization or Site.

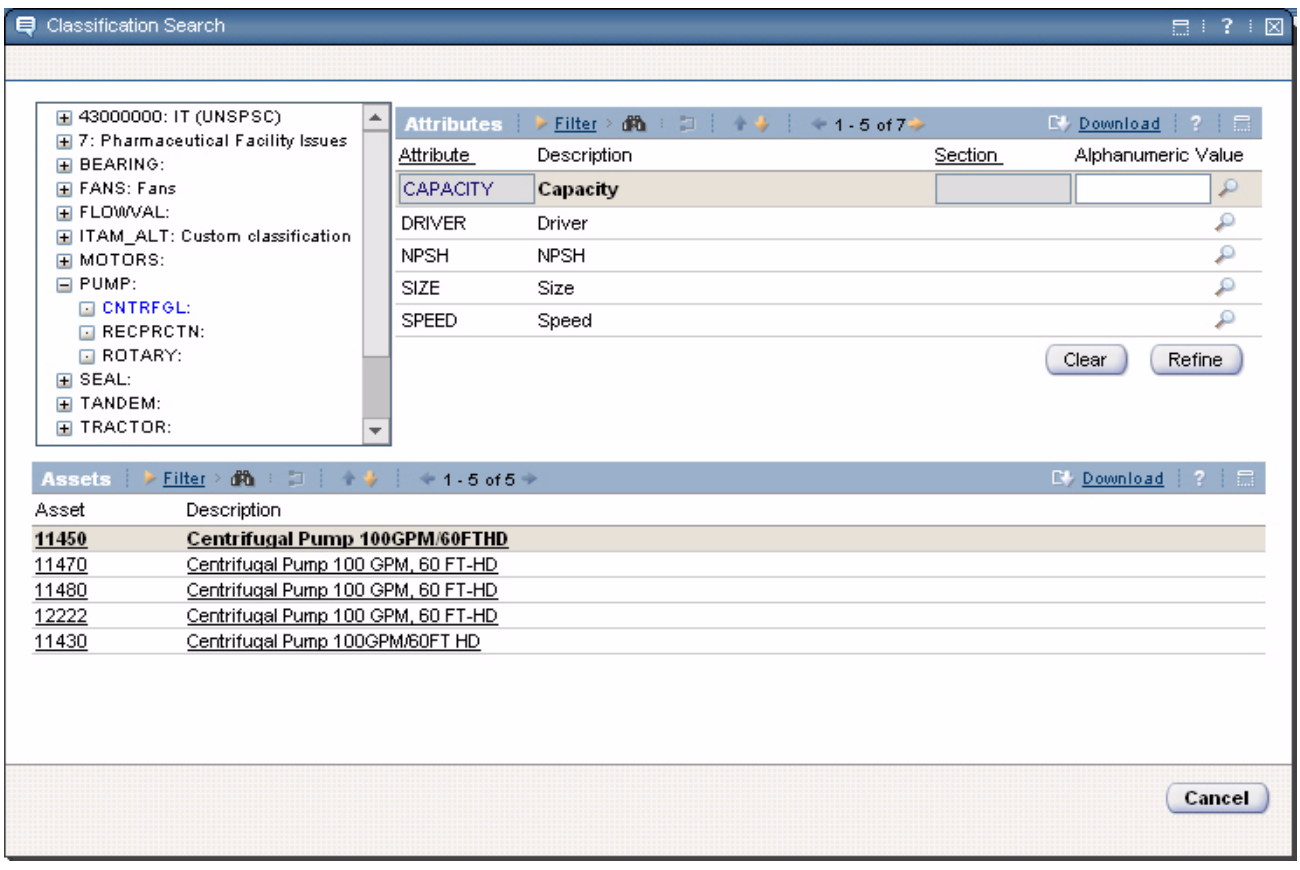
Searching Classifications

You can use Classifications to locate values when you are creating records. For example, when you are creating a work order record if your company has created Classifications for assets and locations, you can use Classifications to enter values in the **Asset** and **Location** field on the work order.

Similar to the Drilldown, the Classification Search dialog box allows you to use a graphical tree to navigate classification hierarchies. For more information about how to navigate the hierarchy see "Navigating the Hierarchy," on page 2-34.

NOTE: The Classification hierarchy displayed will vary depending on the application or field you access the dialog box from, and will only show classifications that can be used with a specific type of record, for example assets or work orders.

Classification Search - Assets



To search Classifications from an application field, complete the following steps:

1. Click the **Detail Menu** button and choose **Classification**.

   The Classification Search dialog box appears.

2. Click a Classification category in the Classification tree on the left.

   The next level of the hierarchy opens. Any Attributes defined for the classification are displayed in the Attributes table window. Any records that have the selected classification are displayed in the table window below the Classification tree.

3. If appropriate, open additional levels of the classification until you find the record you are searching for.

4. Click a record ID in the table window below the Classification tree to return a value to the field.

Classifying a Record

You will need to search Classifications when you want to classify solution, ticket, and work order records. The **Classification** field on a record contains a the following options:

- **Classify** — Click to view the Classify dialog box.
- **Clear Classification** — Click to clear the current value in the **Classification** field.
- **Go To Classifications** — Click to go to the Classifications application. You might need security authorization to perform this action.

NOTE: The Classification hierarchy displayed will vary depending on the application or field you access the dialog box from, and will only show classifications that can be used with a specific type of record.

To classify a record, complete the following steps:

1. In the **Classification** field, click the **Detail Menu** button and select **Classify**.

   The Classify dialog box appears.

2. Click a Classification category.

   The next level of the hierarchy opens.

3. If appropriate, open additional levels of the classification until you find the classification you are searching for.

4. Click the blue **Select Record** button for the classification to return a value to the **Classification** field.

Understanding General Ledger Account Codes

Your company creates General Ledger (GL) accounts to track expenses. Your company's accounting department can create GL accounts for various entities within a company (locations, assets, tools, and so on). Numeric or alphanumeric GL account codes can be used to identify GL accounts.

Many Maximo records include one or more **GL Account** fields. The values in these fields allow your company's accounting department to track specific costs. For example GL account codes can be used to track total maintenance costs for an asset, or to track the variance between purchase order price and invoice price for items received into a storeroom. The GL account(s) entered on a record specify which account should be charged or credited for financial transactions related to the record.

GL account codes are typically used only when Maximo interacts with a separate accounting system. If your company uses a separate financial system, your system administrator may have configured Maximo to enter default values for **GL Account** fields or if you have security authorization to do so, you may enter account codes manually using the Select GL Account dialog box. For more information about entering GL account codes, see "Selecting GL Account Codes," on page 2-41.

GL Account Codes and Maximo

GL Account Codes are defined and stored at the Organization level in the database.

Since companies typically charge the cost of a work order to the location where work is performed, Maximo automatically charges work costs to a location rather than to assets at that location. However, if the asset on a work order has a GL account specified, Maximo overrides the GL account code for a work order location with the code for asset entered at that location. The assumption is that this asset has its own GL account because all work costs for it should be charged directly to the asset.

When you enter a location on a work order, the GL account code that Maximo copies to the work order is usually the one established for that location. If your company has established GL account codes for assets, however, and you enter an asset that has a GL account specified, Maximo uses the asset GL account code rather than the location GL account code.

GL Account Components

Each general ledger account code consists of several distinct **segments** (also called **components)**. Each component relates to a specific part of your company's accounting system and can be used to charge a particular transaction, for example the purchase of an item, to a particular cost center, department, type of account, or any other category of costs that exists within your accounting system.

Your system administrator can create GL account components using the Chart of Accounts application, or the components may be imported into the Maximo database from an external financial system using the Maximo Enterprise Adapter (MEA).

To simplify identifying account components, a **delimiter** or special separator character is often used between components when account codes appear on the page. For example, your company might use hyphens to separate components: 6200 - 229 - SAF.

Mandatory and Optional Components

Within an account, a component can be mandatory or optional.

- A **mandatory component** requires a value to define the account fully. When you display an account, any unknown mandatory components contain the placeholder character set by the system administrator, for example a question mark (?).

- An **optional component** does not require a value in order to define the account fully. When you display an account, no unknown optional components appear. For example, in Maximo's DEMO database, the fourth component is optional so there are many account codes in the DEMO database consisting of just the first three components.

Valid Account Definitions

When establishing rules for general ledger accounts, your system administrator specifies whether an account code is valid if it is only partially defined, or whether it must be fully defined for Maximo to accept it as valid.

- A **fully defined account** has no unknown characters in mandatory components. A fully defined GL account exactly matches an entry in the Chart of Accounts table. For example, the account 6100-200-450 in the DEMO database is considered fully defined as the fourth component is optional.

- A **partially defined account** can contain an undefined mandatory component, that is a mandatory component that consists of placeholder characters. For example, the account 6100-???-450 in the DEMO database is considered partially defined because while the second component is mandatory, placeholder characters are acceptable.

Depending on how your company creates GL accounts and the status of the record you are working with, you may or may not be required to define all components in a **GL Account** field.

For example work order and purchase order records can be created with undefined or partially defined **GL Account** fields, but the GL accounts must be fully defined before you can change the status of a work order or a purchase order to approved.

Your system administrator uses the Chart of Accounts application to define account code components. Your system administrator can also restrict the combination of components that you can enter.

If your system administrator specifies that only certain component combinations are valid then even if all of the individual components are valid, Maximo will only consider the account code valid if it can match the exact combination of components to an existing account in the Chart of Accounts.

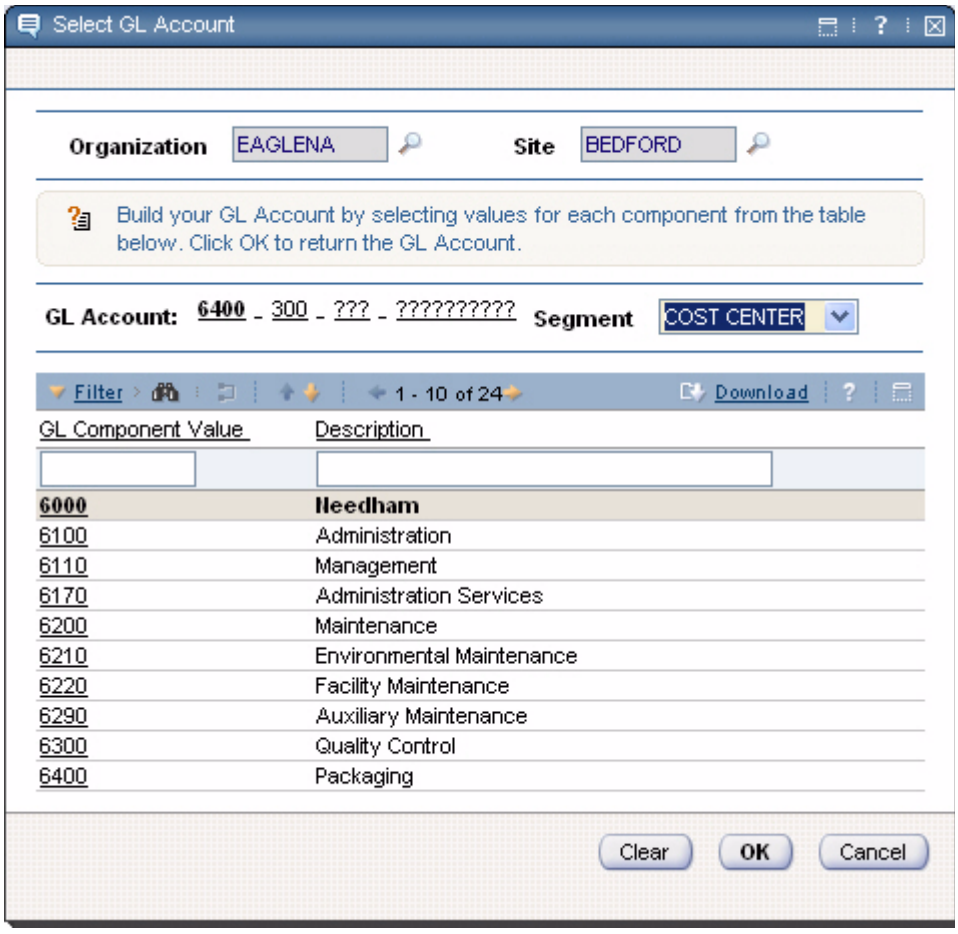
Component Sequences

The various components of a GL account code appear in a set order or sequence, with the highest level component appearing first in the sequence. For example, the Maximo DEMO database has four component or segment levels defined for GL account codes:

Segment 1 Cost Center	Segment 2 Activity	Segment 3 Resource	Segment 4 Element
6200	**229**	**SAF**	

The Select GL Account dialog box guides you through the component sequence. When you use the Select GL Account dialog box to find and select GL account components, each time you select a component the value in the **Segment** field changes and the dialog box refreshes to display the next level of components in your company's sequence.

Select GL Account Dialog Box



Entering GL Account Codes

You use the Select GL Account dialog box to select or modify values in **GL Account** fields on Maximo records.

Selecting GL Account Codes

You use the Select GL Account dialog box to build or edit an account code from valid components previously established by your system administrator. To enter an account code in a **GL Account** field, complete the following steps:

1. In the **GL Account** field click the **Select Value** button.

   The Select GL Account dialog box appears. The GL Account displays placeholder values for all components. The name of the first component, for example COST CENTER, appears in the **Segment** field and the table window displays all the valid values available for this component.

2. To select a GL Component Value, click the underlined component ID.

   Maximo refreshes the dialog box. The selected component appears in the GL Account code, the next component in the sequence, for example ACTIVITY, appears in the **Segment** field, and the table window displays all the valid values available for this component.

3. Select a value for each component in the sequence as described in Step 2.

4. Click **OK** to return the account code to the **GL Account** field.

NOTE: The number of components required to build a valid account code varies, depending on how your company implements its accounting system. Also, your system administrator can restrict the account codes you can enter to only valid *combinations* of components—and the values displayed in the Search Results table window are only those values that form valid combinations with the account code's other defined components.

Editing GL Account Codes

To edit an account code in a **GL Account** field, complete the following steps:

1. In the **GL Account** field click the **Select Value** button.

   The Select GL Account dialog box appears. The GL Account may display placeholder values for some components. The name of the component, for example COST CENTER, appears in the **Segment** field and the table window displays all the valid values available for this component.

2. To view valid values for a component, select one of the following options:

   - Click the underlined component in the GL Account display
   - Select the component from the **Segment** menu.

3. To select a GL Component Value, click the underlined component ID.

Maximo refreshes the dialog box. The selected component appears in the GL Account code, the next component in the sequence, for example ACTIVITY, appears in the **Segment** field, and the table window displays all the valid values available for this component.

4 Select values for the other components you want to edit as described in Steps 2 and 3.

5 Click **OK** to return the account code to the **GL Account** field.

Using Attached Documents

The Attached Documents feature is found in most Maximo applications. You can use Attached Documents to attach many types of relevant information to a record in the form of a file or Uniform Resource Locator (URL) address. These attached documents can be located on your company's network, on the Internet, or in a Document Management System (DMS) and might include text files, spreadsheets, images, or Web pages.

The Attached Documents feature allows you to:

- attach a copy of a document to a record, for example an owner's manual could be attached to an asset
- attach individual documents to records, for example attaching a permit to a work order
- attach an image to a record, for example attach a photo to a service request
- view documents attached to a record, or to related records
- print one or more documents attached to a record
- manage the Library of documents available to be attached to records

Types of Attachments

The Attached Documents feature includes two kinds of attachments:

- **Direct Attachments** — documents that are attached directly to an application record. For example in the Work Order Tracking application all of the documents attached to the work order are direct attachments. When working with Attached Documents you can attach, view, modify, and print documents that are part of the current record's document collection.
- **Referential Attachments** — documents that are attached to *other* application records, which are associated with the current record. For example a work order record might also display document collections for the asset and location associated with the work order. You can view and print documents that are referential attachments, but you cannot add or modify attachments to related document collections.

Attached Documents Administrative Actions

If Attached Documents is enabled for an application, there are three actions that appear in the Select Action menu:

NOTE: You might need security authorization to perform these actions.

- **Attachment/Library Folders > Manage Library** — Use to register new documents to the Library and manage the document properties of existing documents in the Library.
- **Attachment/Library Folders > Manage Folders** — Use to create document folders and set a default file location for storing documents associated with each folder.
- **Attachment/Library Folders > Associate Folders** — Use to associate existing document folders with the current application.

Because creating document folders and associating them with applications are functions that are often performed by a system administrator, these procedures are described in the *Maximo System Administrator's Guide*.

Attaching Documents

You can attach documents to Maximo records using either of the following methods:

- First create a document Library using the **Attachment/Library Folders > Manage Library** action, then attach documents to Maximo records using the **Add From Library** option available from the **Attachments** menu.
- Attach a document using either the **Add New File** or **Add New Web Page** option available from the **Attachments** menu. Documents can also be added to the Library via these actions.

NOTE: Your system administrator can configure Maximo to connect to a Document Management System (DMS). This option is hidden by default. Once enabled, documents that physically reside in a DMS can be registered to the Library.

For more information about creating and using attachments, refer to the Maximo Help.

Managing Records

While the process of creating records is similar for most of Maximo's applications, what happens to the record after it has been saved often varies depending on the type of record.

Editing an Existing Record

You ability to edit a record after it has been saved depends on your security authorizations, the application, and the effect that modifying that record could have on business processes. In some cases records must be maintained for auditing purposes, and Maximo does not allow you to edit some or all of the fields on the record.

The status of a record often dictates which fields on a record may be edited.

Understanding Record Statuses

Some records are created once and remain unchanged, while other undergo changes as they move through various stages of a record life cycle, for example "record creation," "record approval, " and "record closed." Many Maximo records contain a **Status** field which is used to indicate a record's position in the record's life cycle.

In some cases there are a very limited number of possible statuses, for example, DRAFT, ACTIVE, INACTIVE. In other cases, for example work orders and purchase orders, the processing cycle for the record is more complicated and therefor includes more statuses. Chapters that appear later in this guide describe specific record statuses in more detail.

When you change the status of a record, Maximo records the date and time of the status change, and lets you record a memo. In some cases changing the status of a record means you can no longer edit certain fields. Changing the status of a record to INACTIVE means that the record can no longer be used when creating new Maximo records.

NOTE: You might need security authorization to change the status for a record.

Making a Record Inactive

Because of the interaction between Maximo applications, records created in one application often appear as values in fields on other applications. There may be cases where a record in the database is no longer needed, but it cannot be deleted because it is listed on other Maximo records, or you want to retain the record for some other reason.

Certain Maximo applications allow you to disable a record by changing its status to INACTIVE. Making a record inactive retains the record in the database, but the record no longer appears in value lists that display the record. For example an inactive labor record no longer appears as part of the Select Labor value list.

The following types of records can have their status changed to INACTIVE:

- Labor records
- Job plans
- Person records
- Qualifications
- Service level agreements (SLAs)
- Ticket templates

Deleting Records

Much like the ability to edit a record, the ability to delete records varies by application, and how the deletion could affect your business processes. In some cases you must maintain records for auditing purposes, and you cannot delete.

When an application allows the deletion of records, there are usually rules governing when a record may and may not be deleted. For example, hierarchy associations affect the ability to delete records. You cannot delete parent records if children are associated with the record. You must break the child associations before you can delete the record.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

NOTE: You might need security authorization to delete records.

3 The Assets Module

You can use Maximo to manage assets from purchase to salvage — from the beginning to the end of an asset's life cycle. You can track assets at a temporary location, or even in transit between locations. The Asset module contains applications designed to manage the assets and locations owned or leased by your company.

The Asset Module consists of the following applications:

Application	Function
Assets	Used to create and store asset numbers and corresponding information, such as parent, location, vendor, up/down status, and maintenance costs for each asset.
Condition Monitoring	Used to define measurement points for assets or locations, and to specify alarm limits and associated work to be performed after reaching those limits.
Failure Codes	Used to define failure codes and define the Problem, Cause, Remedy hierarchy.
Locations	Used to create location records and track assets that exist at the location. Also used to build hierarchical or networked systems.
Meters	Used to define meters that can be used to track asset and location performance.
Meter Groups	Used to create groups of meters that can then be applied to assets or locations at the same time.

You use the Assets application to create records for any equipment, machinery, or technology that your company owns or leases that you will be managing and maintaining using Maximo. You use the Locations application to create records for any physical location where equipment, machinery, or technology is located, or locations that you will be managing and maintaining using Maximo.

There are some similarities between asset and location records. For example you can define failure codes and safety information for both assets and locations, and associate meters with both types of records. But each application also includes features designed for either asset management or facilities management.

Failure codes allow you to capture data about the reasons why assets or locations fail to operate as they should, as well as data about the possible causes of those failures.

In order to monitor the performance of assets and locations, you can define *measurement points* in the Condition Monitoring application and *meters* in the Meters application. Measurement points and meters can be used together or separately, depending on the needs of your business. *Meter groups* are a simplified way to apply multiple meters to an asset or location.

Assets and Deployed Assets

An **asset** is any piece of equipment that has either moving parts or circuitry, that needs to be maintained, and where you will be using Maximo to track the maintenance history. Assets can be either owned or leased by your company. You create and manage asset records in the Assets application. For more information about assets, see “Asset Records,” on page 3-4.

Deployed assets are information technology (IT) assets that have been discovered on a network. Asset discovery tools scan computers, network devices, and network printers deployed at your company and record information about the hardware and software installed on those assets. Maximo Fusion assembles the collected data and imports it into Maximo which creates deployed asset records from the imported data. Each deployed asset record should have a corresponding record in the Assets application. You use the Reconciliation Results application to view the discrepancies found when your deployed asset records are compared to asset records. Deployed asset records are managed using the applications in the Deployed Assets module. For more information about deployed assets, see Chapter 5, "The Deployed Assets Module," on page 5-1.

Using Classifications

The Specifications tab on asset and location records can be used to add Classification information to asset and location records. Using Classifications lets you structure your assets and locations in organized hierarchies so that:

- records can be easily located via Classifications.
- records are not duplicated unintentionally.
- your company’s asset and item lists are consistent with vendors’ lists.

Classifications use attributes to define the classification category. When you list a rotating item that has a classification on an asset or location record, Maximo copies the Classification and Attributes to the Specifications tab of the asset or location record.

For more information about Classifications, see “Using Classifications,” on page 2-35.

Interaction Between Asset and Location Records

There are several different ways that the applications in the Assets module can be implemented. When choosing how to classify their assets and locations different companies choose different strategies depending on their needs. The

correlation between asset and location records depends on how your company implements Maximo. Possible implementations include creating records for the following:

- A mix of asset and location records — one or more asset records may exist for each location record.
- A one to one correlation between asset and location records — each asset has a matching location record.
- All asset records, no location records — no correlation between asset and location records.
- All location records, no asset records — no correlation between asset and location records.

The Drilldown

The Drilldown is a graphical tool available from the **Asset** or **Location** fields of an application. You use it to view and navigate asset and location hierarchies, and to select a record to be returned as a value to the field.

The Locations tab on the Drilldown is built by creating location hierarchies in the Locations application. The Asset tab on the Drilldown is built by creating asset assembly structures in the Assets application. When some correlation exists between asset and location records it allows you to use the Drilldown to navigate to a location, then click the Assets tab to view the assets at the location, or to locate an asset, then click the Locations tab to view its location.

NOTE: Spare parts are not displayed as part of the Drilldown.

For more information about using the Drilldown, see “Using the Drilldown,” on page 2-32.

Asset/Location Priority

Maximo uses values between 0 and 999 to indicate priority for work orders, assets, and locations. Maximo can use these different priority values to generate a calculated priority to help schedulers determine the overall priority of a work order among "competing" work orders for similar assets or locations.

You should assign a higher priority value to assets and locations you can least afford to have down. Assign a lower priority value to those assets or locations whose repairs can wait until more important work is finished.

When assigning priorities to assets that may move between different locations ("rotating assets") note that in Maximo asset priority supersedes location priority. The **Asset/Location Priority** value that Maximo uses when calculating work priority uses the location priority only if there is *no* value specified for asset priority.

For more information about recommended priority values, see “Work Order Priority,” on page 14-4.

Asset Records

An **asset** is any equipment, machinery, or technology that your company owns or leases that you will be managing and maintaining using Maximo. Some examples might include:

- **Production** — motors, pumps, winches, presses, and so on.
- **Facilities** — plumbing, lighting, fire extinguishers, and so on.
- **Fleet** — forklifts, trucks, buses, trains, aircraft, and so on.
- **Technology** — computers, routers, hubs, servers, and so on.

The Assets application stores asset numbers and other related information, such as location, parents and children, vendor or manufacturer, up/down status, and maintenance costs for the asset.

Tabs on the Assets application let you build an asset hierarchy, which is an arrangement of assets, subassemblies, and spare parts that make up the asset. The asset hierarchy provides a convenient way to roll up maintenance costs so that you can check accumulated costs at any level, at any time. It also makes it easy to find a particular asset number.

NOTE: This application was known as the Equipment application in previous releases.

Multisite and Asset Records

Asset records are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Records can only be viewed by users who have security permission to the Site and the application.

Assets and Classifications

Using Classifications allows you to sort your assets into organized categories of assets. The categories of classifications used by your company are created in the Classifications application. For more information about creating classifications, refer to the *Maximo System Administrator's Guide*.

You use the Specifications tab on an asset record to add **Classification** information to an asset record.

NOTE: The **Classification** of a rotating asset record is copied from the **Rotating Item** record.

CAUTION: If you are using Maximo to manage IT assets, there must be a value in the **Classification** field to allow Maximo to filter for IT assets when performing reconciliation.

For more information about Classifications, see "Using Classifications," on page 2-35.

Assets and Companies

Asset records contain a **Vendor** field. Before you can list a company as a vendor on an asset record you must first create a record for the company in the Company Master application.

Assets and Condition Monitoring

Maximo uses measurement points as one possible criteria for generating PM work orders. If a measurement is entered that reaches an upper or lower action limit, a PM work order can be generated for the asset, either automatically via a cron task, or manually via the **Generate Work Order** action in the Condition Monitoring application.

You create measurement points in the Condition Monitoring application. Each measurement point is associated with a meter. Meters are created in the Meters application. When you create a measurement point for an asset Maximo copies the measurement point to the Meters tab of the asset record. You can record readings using the **Enter Meter Readings** and **Manage Meter Reading History** actions available from the Select Action menu.

For more information about creating measurement points, see “Using the Condition Monitoring Application,” on page 3-17.

Assets and Contracts

Asset records can be associated with the following types of contracts:

- Lease Contracts
- Pricing Contract
- Purchase Contracts
- Rental Contract
- Service Contract
- Software License Contract
- Warranty Contracts

For more information about contract types, see “Contract Types,” on page 4-2.

You can view all contracts associated with an asset using the **View Contracts** action in the Assets application.

Assets and Deployed Assets

An asset record can represent any type of strategic asset: production, facilities, fleet, or technology. The term "deployed assets" refers specifically to information technology (IT) assets, for example computers, network devices, and network printers, that are discovered on the network by an asset discovery and tracking tool. You use Maximo Fusion to import the discovered data into Maximo and create records for your deployed assets. You use Reconciliation to match asset records to deployed asset records and to identify any discrepancies or variances.

You can use the **Asset Details** action available from the Select Action menu to compare the record in the Assets application with the record for the same asset in the Deployed Assets module.

Records for IT assets must always include a value in the **Rotating Item** field and the **Classification** field. Your company may also require that IT asset records contain a value in the **Serial #** field.

NOTE: Maximo copies the **Classification** and **Attributes** from the Rotating Item to the Specifications tab of the asset record.

Assets and Items

Rotating assets are a special category of asset records, used to refer an any asset record that contains a value in the **Rotating Item** field. Rotating assets consist of multiple interchangeable assets, with each asset having the *same item number* and a *different asset number*.

These items are tracked both by their item numbers in the Inventory module and by their individual asset numbers in the Assets module. The term **rotating item** is used when referring to inventory records and management, and the term **rotating asset** is used when referring to asset records and maintenance.

Once you save an asset record the **Rotating Item** field becomes read-only. You must use the **Change Item Number** action to change the value in the **Rotating Item** field.

Assets and Locations

If an asset is associated with a particular location you can indicate that by entering a value in the **Location** field on the asset record.

You use the **Move/Modify Assets** action to make changes to an asset's location, including it's parent/child relationship with other assets, modify existing **Users** and **Custodians** for the asset, and modify **Attributes** for the asset.

You use the **Swap Assets** action to replace one or more assets with a replacement asset.

NOTE: You cannot use the **Swap Assets** or the **Move/Modify Assets** action to move rotating assets from inventory locations; you must use the Issues and Transfers application.

You use the **View Asset Move History** action to view the history of the assets movement within and between Sites, hierarchies, and locations.

Assets and Meters

Maximo uses meters as one possible criteria for generating PM work orders. PM frequency is based on elapsed time in days or in meter units since the last work order was completed or targeted to start.

Once meters have been created in the Meters and Meter Groups applications, you can associate individual meters or meter groups with an asset record on the Meters tab. An initial meter reading may be entered when the meter is attached to the asset record. The Meters tab lets you track readings for an unlimited number of meters per asset record.

You use the **Enter Meter Readings** action to record meter readings for an asset. You use the **Manage Meter Reading History** action to view or update historical meter readings. You use the **Reset/Replace Meters** action to reset a meter's readings, for example when you replace a continuous meter.

Assets and Preventive Maintenance

You use the Preventive Maintenance application to create PM records for periodic maintenance and inspections to be performed on an asset.

You can use the **View WO and PMs** action to view all of the PM records that list the asset.

Assets and Safety

You use the Safety tab to record safety information for an asset, including safety related assets. **Safety related assets** are assets and locations in the general vicinity of the asset that may also pose a safety hazard to workers.

You use the applications in the Safety module to create records that can be associated with asset records to provide safety information to workers. You create hazard records in the Hazards application. You create precaution records in the Precautions application, and associate them with hazard records in the Hazards application. You use the Lock Out/Tag Out application to write tag out procedures to eliminate a specific hazard for a specific asset. You can associate records from all of these applications with an asset on the Safety tab of the asset record.

- You use the Hazards and Precautions subtab to associate precaution enabled hazards with the asset record. Maximo automatically copies the precautions associated with the hazard to the record. If you list a hazard that is also hazardous material enabled, Maximo automatically copies the hazardous materials data to the record.

- You use the Hazardous Materials subtab to associate hazardous material enabled hazards with the asset record. If you list a hazard on that is also precaution enabled, Maximo automatically copies the precautions to the record.

- You use the Lock Out / Tag Out subtab to associate tag out enabled hazards with the asset record. Once you have created a tag out for the asset and hazard, you can associate it with the asset record.

- You use th that are in the immediate vicinity that have safety implications for workers. For example, if you must shut down another machine to be able to safely work on an asset.

Assets and Work Orders

You can use several different methods to create work orders for assets:

- Maximo can generate work orders based on condition monitoring data
- Maximo can generate PM work orders for preventive maintenance or periodic inspections
- You can create work orders manually using one of Maximo's work order applications. For more information about the applications that can be used to create work orders, see "Creating Work Orders Using Maximo," on page 14-2.

You can use the **View WO and PMs** action to view all of the work order records that list the asset.

Asset Types

Maximo supports a wide variety of industries and asset types. If you are using Maximo to track a variety of asset types, you may find it useful to include a value in the **Type** field when adding asset records. The **Type** field is an optional field, and is null by default, but Maximo can use the value in the **Type** field to filter asset records during searches.

Maximo has four default asset types:

- **Facilities** — building assets, for example lighting, plumbing, heating, ventilation, and air conditioning (HVAC) systems.

- **Fleet** — transportation assets, for example trucks, buses, trains, and aircraft.

- **IT** — information technology (IT) assets, for example computers, routers, and printers.

- **Production** — production assets, for example assembly lines, conveyor belts, and packaging machinery.

Your system administration can create any number of additional asset types, for example "computer hardware" and "computer software."

NOTE: You should enter a value in the **Type** field when you are creating asset records that will be managed using the applications in the Service Desk module.

Using the Assets Application

To access the Assets application, click the application link on your Start Center, or select **Assets > Assets** from the Go To menu.

The Assets application contains the following tabs:

- **List** — to search Maximo for asset records.

- **Asset** — to enter, view, or modify the main record for an asset.
- **Spare Parts** — to create the asset hierarchy and view the subassemblies and spare parts of an asset.
- **Safety** — to add, view, modify, or delete safety information associated with an asset.
- **Meters** — to add, view, modify, or delete meters for an asset.
- **Specifications** — to classify an asset and add, view, modify, or delete specifications that give details about the attributes of the asset.

Asset Buttons

The following table lists application specific buttons that appear in the Assets application.

Icon	Function	Location
	Move/Modify Asset	▼ Toolbar
	Swap Assets	▼ Toolbar
	Associate Users and Custodians	▼ Toolbar

Assets Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Assets application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Assets Help.

How Do I...	
apply an item assembly structure to an asset record?	Select **Apply Item Assembly Structure** from the Select Action menu.
associate a service or service group with an asset?	Select **Associate Services** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
compare asset and deployed asset records for information technology (IT) assets?	Select **Asset Details** from the Select Action menu.
create an asset record?	Click the **New Asset** button in the toolbar.
delete an asset record?	Select **Delete Asset** from the Select Action menu.

How Do I...	
designate one or more people as a custodian for an asset?	Select **Associate Users and Custodians** from the Select Action menu.
designate one or more people as a user for an asset?	Select **Associate Users and Custodians** from the Select Action menu.
duplicate an asset record?	Select **Duplicate Asset** from the Select Action menu.
enter meter readings for an asset?	Select **Enter Meter Readings** from the Select Action menu.
modify the attributes for one or more assets?	Select **Move/Modify Assets** from the Select Action menu.
modify the rotating item ID listed on an asset record?	Select **Change Item Number** from the Select Action menu.
modify the users or custodians for one or more assets?	Select **Move/Modify Assets** from the Select Action menu.
move one or more assets to another bin, location, parent, Site, or storeroom?	Select **Move/Modify Assets** from the Select Action menu.
replace one asset with another asset?	Select **Swap Assets** from the Select Action menu.
replace meters on an asset record?	Select **Reset/Replace Meters** from the Select Action menu.
reset a meter on an asset record?	Select **Reset/Replace Meters** from the Select Action menu.
reset the year-to-date and/or total costs for an asset?	Select **Zero Asset Costs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
update the meter history on an asset record?	Select **Manage Meter Reading History** from the Select Action menu.
view the asset downtime history for an asset?	Select **View Asset Downtime History** from the Select Action menu.
view asset and location hierarchies displayed graphically?	Select **Open Drilldown** from the Select Action menu.
view contracts associated with the asset?	Select **View Contracts** from the Select Action menu.
view the history of an asset's movements?	Select **View Asset Move History** from the Select Action menu.
view reconciliation details for an information technology (IT) asset?	Select **Asset Details** from the Select Action menu.
view work orders and PMs associated with the asset record?	Select **View Work Orders and PMs** from the Select Action menu.

Creating Asset Records

The Assets application lets you create and maintain records for assets leased, managed, or owned by your company You can specify the location of an asset, its vendor, and its manufacturer. You can also associate an asset with an asset hierarchy, define safety information and meters, and classify an asset.

You use the Assets application to create asset records. When you create asset records, they fall into one of two categories:

- **Standard assets** — assets that you want to keep a repair history for, but that will not be stored in inventory.

- **Rotating assets** — assets that are interchangeable, for example, motors, pumps, or computers. Rotating assets have both an asset number and an inventory item number. This lets you track the asset as it moves from an operating location to a storeroom and vice versa.

NOTE: You can also create asset records for rotating items in the Receiving application via the **Receive Rotating Items** action.

Understanding Rotating Assets

Rotating assets are interchangeable assets that are moved in and out of service as needed. The term is generally applied to assets that can be repaired or refurbished rather than replaced, and can be used interchangeably at different locations or as subassemblies on different assets. Some examples of rotating assets might include the following:

- Production — pumps, motors
- Facilities — fire extinguishers
- Fleet — motors, transmissions, aircraft engines
- Technology — laptops, network printers

Other terms for this kind of asset include "rotating equipment," "rotating parts," "stocked equipment," "serialized equipment," "serialized assets," "rotables," and "rotatable spares."

Rotating asset records also have a **Rotating Item** number to track the asset as it moves from a storeroom to an asset or location, to repair, and so forth. Having both an asset and item number lets you track identical assets both individually, via their unique asset numbers, and as a group, via their shared item number.

For example, a company might have fifty identical fire extinguishers (same manufacturer, same model), so all fifty have the *same item number*. However, each fire extinguisher has a unique history of when it was purchased, placed in the facility, inspected, used, and recharged, so each extinguisher has a *unique asset number* to let you track it individually.

NOTE: Before creating rotating *asset* records, the rotating *item* first must be defined in the Item Master application.

NOTE: Once you have saved a rotating asset record, you must use the **Change Item Number** action to change the value in the **Rotating Item** field.

Understanding Asset Hierarchies

You use the Spare Parts tab of an asset record to define the **asset assembly structure** or **asset hierarchy** for an asset record. You create asset hierarchies when you want the records you create in Maximo to reflect the physical connection of the actual assets.

Building an asset hierarchy serves the following functions:

- It lets you track maintenance costs. Costs get "rolled up" the hierarchy to the asset responsible for assuming the maintenance cost.
- It builds the Asset/Location hierarchy, letting you use the Drilldown to visually navigate the hierarchy to locate a specific asset.

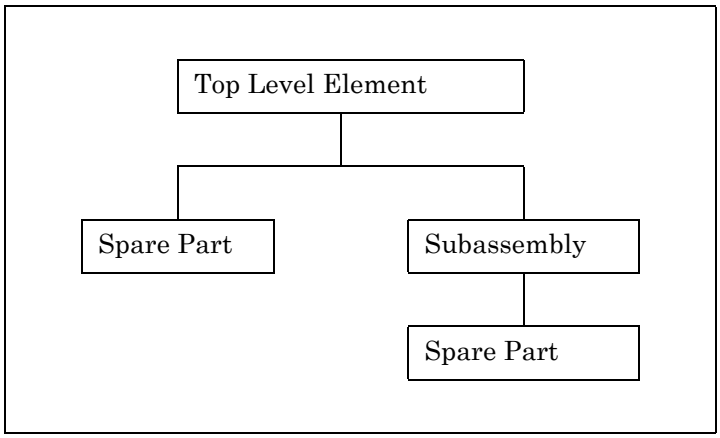
Asset hierarchies consist of asset records and item records for spare parts and other inventory items.

Asset Assembly Structure Elements

Three kinds of possible elements exist in an asset assembly structure:

- **Top Level Elements** – A single record is at the top level of each asset assembly structure. Any asset record in the ASSET table that does not have a value in its **Parent** field (that is, any record that is not the child of another asset record) is a top level element.
- **Subassemblies** – Subassemblies are entities that “belong to” another asset. A subassembly can have one or more other subassemblies belonging to it. This type of relationship is referred to as a “parent-child relationship.” A parent asset can have one or more subassemblies (children) belonging to it, but a subassembly belongs to only one parent.
- **Spare Parts** – An inventory item can belong to any asset – the top level element or a subassembly, or both. Unlike individual assets spare parts can be entered multiple times in an asset assembly structure. For example, both a motor and the motor housing might require two half-inch nuts as parts.

Simple Asset Assembly Structure



Creating Asset Assembly Structures

Asset assembly structures can be built on either the Asset tab or the Spare Parts tab in the Assets application.

- **Asset Tab** — Use the **Detail Menu** button to specify an asset in the **Belongs To** field. This makes the asset shown in the **Asset** field a child of the asset in the **Belongs To** field, thereby building a hierarchy for *new* asset records.

- **Spare Parts Tab** — Use the **New Row** button in the Subassemblies or Spare Parts table window to add existing assets or item records to the asset assembly structure for a *new* asset record.

- **Move/Modify Assets action** — Use the **Move/Modify Assets** action to specify a new parent for an *existing* asset record. You can also use this action to modify the parent for a saved asset record.

Applying Item Assembly Structures

Item assembly structures (IAS) are created in the Item Master application and can be used as templates for creating asset assembly structures. After you apply an IAS to an asset record, the rotating and non-rotating items are copied into the asset's Spare Parts tab.

You typically apply an item assembly structure to assets when you first create the asset record. You can apply an IAS to an asset by specifying the top-level item number in the **Rotating Item** field, then choosing the **Apply Item Assembly Structure** action. The rotating *item* at the top level of the IAS becomes a rotating *asset* after the IAS is applied to an asset record.

Any lower-level elements in the IAS that are themselves rotating items must be given asset identifiers after the IAS is applied. Any children of nonrotating items in the IAS are treated in the asset hierarchy as belonging to the closest rotating asset above the item in the IAS.

NOTE: While the IAS can have multiple levels of nonrotating items, the asset assembly structure can have only one level of nonrotating items below an asset number.

Viewing Asset Hierarchies

Using the Spare Parts tab on the Assets application you can see the parents and the children of the current record. You can also see the spare parts that have been defined for the asset.

To view the:	Look in the:
Current asset	**Asset** field
Parent of the asset	**Parent** field
Subassemblies	Subassemblies table window
Spare Parts	Spare Parts table window

Instead of viewing the current asset record, you might want to view the record for its parent or for one of the subassemblies.

- To view the parent record, click the **Detail Menu** button in the **Belongs To** field (if that field has an entry) and select **Move To**. Maximo moves up the hierarchy to the parent record.

- To view the record for a subassembly, click the **View Details** button (triangle) for the subassembly. Click the **Detail Menu** button in the **Asset** field and select **Move To**. Maximo moves down the hierarchy to the subassembly record.

Managing Asset Records

Once you have created asset records and changed their status to ACTIVE, you use a number of different applications to manage your assets including Condition Monitoring and Preventive Maintenance. You can use the **View Asset Downtime History** action to view a history of when the asset has been out of service for maintenance or other reasons.

Asset Users and Custodians

In the context of asset records a **user** is someone who uses an asset and a **custodian** is someone who is responsible for the care of the asset. In the Assets module you can use the **Associate Users and Custodians** action to associate a person record with an asset as a user, a custodian, or as both user and custodian.By default the first person record associated with an asset is designated as the primary user or custodian, but this can be modified if necessary.

If an asset does not have a user or custodian specified for it, it is considered a **public asset**. You can only use the Create Service Request application to create a self-service service request for public assets or assets where you are listed as the user or custodian.

Deleting Meters

If a meter is attached to an asset in error the meter can be deleted, but only if there have not been any readings entered for the asset/meter combination. To delete a meter, click the **Mark Row for Delete** button next to the row in the Meters table window, then click **Save**. Meters can only be deleted if there are

no readings for the asset/meter combination recorded on any of the following tables:

- METERREADING
- WOMETER
- PMMETER
- MEASUREMENTS

Asset Statuses

Assets have an associated status to designate whether or not they are operational. An asset record can have one of the following statuses:

- **NOT READY** — Default status for new asset records. Asset records can be created before assets have been received, installed, configured, inspected, or otherwise approved for their intended use.

- **OPERATING** — Asset has been received, installed, configured, inspected, or otherwise approved for use or operation.

- **DECOMMISSIONED** — Asset has been retired from service and moved to scrap or salvage.

  CAUTION: You should only select DECOMMISSIONED as the new status if you intend that status change to be permanent.

Decommissioning an Asset

If an asset is going to be permanently retired from service, you can change it's status to DECOMMISSIONED. Decommissioned asset do not appear in select value lists or in the drilldown, but are still maintained in the Maximo database as historical records.

Before an asset record can be decommissioned, the following must be true:

- The asset cannot be referenced on any open work orders.
- The asset cannot be referenced on any open desktop requisitions, purchase requisitions, requests for quotation or purchase orders.
- The asset cannot be referenced on any job plans.

CAUTION: You should only select DECOMMISSIONED as the new status if you intend that status change to be permanent.

Once an asset record has had its status changed to DECOMMISSIONED the following actions are *not* allowed:

- adding children, subassemblies, or spare parts
- updating meter readings
- modifying the **Rotating Item** or apply an item assembly structure
- associating specifications or specification values
- referencing the asset on new desktop requisitions, purchase requisitions, requests for quotation, or purchase order lines
- issuing items that will be charged to the asset
- creating work orders for the asset
- adding the asset to job plans or preventive maintenance records.

You can, however, still perform the following actions for a decommissioned asset:

- Return items issued or charged to the asset.
- Move/Modify the asset record using the **Move/Modify Assets** action.
- Zero the Year to Date costs for the asset.

The Change Status dialog box allows you the following options when decommissioning an asset:

- **Roll New Status to All Child Assets?** — Checked by default when you are changing the status of an asset to DECOMMISSIONED. Automatically changes the status of all child assets to DECOMMISSIONED.

- **Remove asset reference from active routes?** — Select to remove the asset record from all routes with a status of ACTIVE.

- **Remove asset reference from active safety plans?** — Select to remove the asset record from all safety plans with a status of ACTIVE.

- **Change status of all associated PMs to inactive?** — Select to change the status of all PMs associated with the asset record to INACTIVE.

Asset Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Condition Monitoring

Condition monitoring is tracking measured data for an asset or location and using that data to predict when preventive maintenance needs to be performed. The type of data, for example, vibration, pressure, or temperature, depends on the asset or location.

You use the Condition Monitoring application to create and view measurement point records for your assets and locations. A measurement point record defines the acceptable limits for condition and performance measurements for a point or place on an asset or location. You can generate preventive maintenance (PM) work orders for assets or locations whose measurements are outside acceptable limits.

Multisite and Condition Monitoring

You create measurement points for assets and locations, which are at the Site level. Thus Condition Monitoring is at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Records can only be viewed by users who have security permission to the Site and the application.

Condition Monitoring and Assets/Locations

You can have an unlimited number of measurement points for each asset or location record, but you can only create one measurement point for each meter that exists for the asset or location.

Condition Monitoring and Meters

Gauge and characteristic meters can be used to drive condition monitoring. Continuous meters can not be used with condition monitoring.

When you create measurement points, each meter can only be used once on an asset or location. You may need to create duplicate meters with different names if you have multiples of the same meter on an asset or location. For example, if a piece of equipment has three temperature gauges, you would need to create three meters that measured temperature, TEMP1, TEMP2, and TEMP3, to be able to create three temperature measurement points for the asset.

Condition Monitoring and Preventive Maintenance

You can create PMs that describe the preventive maintenance that should be performed when the readings for a measurement point reach a certain limit or value. You use the Preventive Maintenance application to create PM records.

Conditions measured by gauge and continuous meters might require different maintenance at the upper and lower action limits. You can specify a different PM in the **Upper Limit PM** field and the **Lower Limit PM** field.

Conditions measured by characteristic meters can have a different **PM** specified for each characteristic value by entering a row for each value in the Characteristic Action Value table window.

Condition Monitoring and Work Orders

You can generate a work order from a measurement point using the **Generate Work Order** action available from the Select Action menu. You can also select multiple measurement points on the List tab and generate work orders as a batch action.

Work orders generated by condition monitoring have a work type of CM (corrective maintenance).

Using the Condition Monitoring Application

To access the Condition Monitoring application, click the application link on your Start Center, or select **Assets > Condition Monitoring** from the Go To menu.

The Condition Monitoring application contains the following tabs:

- **List** — to search Maximo for condition monitoring records.
- **Condition Monitoring** — to create, view and modify measurement points, and to generate PM work orders.

Condition Monitoring Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Condition Monitoring application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Condition Monitoring Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a measurement point record?	Click the **New Measurement Point** button in the toolbar.
delete a record?	Select the **Delete Measure Point** action from the Select Action menu.
generate a work order from a measurement point record?	Select **Generate Work Order** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Measurement Points Records

Measurement points are records that you create in the Condition Monitoring application that define the acceptable limits for condition and performance measurements for a point or place on an asset or location. The measurement data and acceptable conditions depend on the type of asset or location. For example you might measure vibration, pressure, and temperature on two different pieces of equipment, but the acceptable measurements might be different for each machine.

You create a measurement point for a specific asset or location. Each measurement point has an associated **Meter**. Before you can create measurement points in the Condition Monitoring application you must create meters in the Meters application.

You can only create one measurement point using a particular meter record for each asset or location. For example, if you have a PRESSURE meter, you can only use it to create one measurement point for a particular asset. If you have multiples of the same type of meter on an asset or location, you must create duplicate meters with different names. For example if you want to create three measurement points for pressure gauges on the same asset, you would need to create three separate meters, PRESSURE1, PRESSURE2, and PRESSURE3.

Measurement Point Limits - Gauge Meters

A measurement point record for a gauge meter contains a range of values. There is an acceptable, safe operating range, as well as the upper and lower warning and action limits. The upper and lower limits are defined as follows:

- **Lower Warning Limit** — indicates potential trouble and a need for closer monitoring. This value always should be *higher* than the Lower Action Limit.
- **Lower Action Limit** — indicates a need for corrective action. Maximo can generate a PM work order after this point is reached.
- **Upper Warning Limit** — indicates potential trouble and a need for closer monitoring. This value always should be *lower* than the Upper Action Limit.
- **Upper Action Limit** — indicates a need for corrective action. Maximo can generate a PM work order after this point is reached.

You can specify a different PM in the **Upper Limit PM** field and the **Lower Limit PM** field. You can specify a different job plan in the **Upper Limit Job Plan** field and the **Lower Limit Job Plan** field. When Maximo generates work orders, the work order will be based on the PM and job plan for the appropriate action limit.

NOTE: PMs are created in the Preventive Maintenance application.

Measurement Point Limits - Characteristic Meters

A measurement point record for a characteristic meter contains a specific list of values. One or more of the values represents an acceptable, safe operating range. To indicate that a characteristic value requires maintenance, you enter a value in the **PM** field. Maximo can generate a PM work order when readings are entered that match the characteristic value.

NOTE: PMs are created in the Preventive Maintenance application.

Managing Condition Monitoring Records

You use the Condition Monitoring application to modify and delete measurement points.

You enter meter readings using the **Enter Meter Readings** action available from the Select Action menu in the Assets, Locations, Quick Reporting, and Work Order Tracking applications.

Generating a Work Order from a Measurement Point

You can generate PM work orders from a measurement point in two ways:

- automatically via a cron task. Cron tasks are created in the Cron Task application.
- manually via the **Generate Work Order** action available from the Select Action menu.

The History table window displays work orders that have been generated from the Condition Monitoring application in response to measurements that have been recorded that fall outside of the acceptable limits. The History table is read-only. All work orders shown were generated from the Condition Monitoring application. This table does not display work orders generated from anywhere else, even if they involve work on the measurement point.

TIP: You can generate work orders for multiple measurement points from the List tab.

Condition Monitoring Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Failure Codes

A **failure code** is an element of a failure hierarchy. In Maximo a failure hierarchy consists of Problems, Causes, and Remedies. An individual failure code can be used at more than one level of a failure hierarchy. For example "high temperature" could appear in one failure hierarchy as a Problem, and in another as a Cause.

You use the Failure Codes application to build and display failure hierarchies. A failure hierarchy is identified on other Maximo records by a **Failure Class** name. Failure classes can be associated with assets, locations, and work orders.

Using failure hierarchies can help you to construct an accurate history of the problems that lead to asset and location failures. You can also use failure hierarchies to record the different solutions to failures. After reporting and analyzing failure trends, you can take preventive measures to help reduce future failures.

Understanding the Failure Code Hierarchy

A **Failure Class** is the name used to identify a failure hierarchy. By default Maximo uses a three level hierarchy that is built on a Problem—Cause—Remedy framework.

- The **PROBLEM** is the symptom. What looks or feels broken? Problem failure codes are added, viewed, modified, and deleted in the Problems table window on the Failure Codes tab.
- The **CAUSE** creates the problem. Why did the problem occur? Cause failure codes are added, viewed, modified, and deleted in the Causes for table window on the Failure Codes tab. Note that the Causes for table window is paired with the Problems table window.
- The **REMEDY** is the correction. What will fix the problem? Remedy failure codes are added, viewed, modified, and deleted in the Remedies for table window on the Failure Codes tab. Note that the Remedies for table window is paired with the Causes for table window.

Each level in the failure hierarchy beneath the failure class can contain one or more failure codes, which "belong to" the failure code in the next higher level. An individual failure code can have multiple children; each child in turn can have one or more child failure codes.

NOTE: You company may choose to use a different structure for its failure hierarchies.

Multisite and Failure Codes

Failure Codes are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Failure Codes and Assets/Locations

You can associate a **Failure Class** with an asset or location record.

Failure Codes and Work Orders

When work orders are created for the asset or location that has a **Failure Class** specified on the record, the **Failure Class** data is copied to the work order. You can then select a **Problem Code** for the work order. You can specify a **Failure Class** for a work order even if the asset or location record does not specify one.

TIP: Using failure codes on work orders can help reduce the number of duplicate work orders that are entered in the system. Maximo displays a message if a work order with the same **Problem Code** already exists for the asset or location.

You use the Failure Reporting subtab of the Quick Reporting application, and the Failure Reporting tab of the Work Order Tracking application to record failure data.

Using the Failure Codes Application

To access the Failure Codes application, click the application link on your Start Center, or select **Assets > Failure Codes** from the Go To menu.

The Failure Codes application contains the following tabs:

- **List** — to search Maximo for failure code records.
- **Failure Codes** — to create, view, modify, and delete failure hierarchies.

Failure Codes Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Failure Codes application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Failure Codes Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
copy one or more existing failure hierarchies to a failure code record?	Select **Copy Failure Hierarchy** from the Select Action menu.
create a failure code record?	Click the **New Failure Code** button in the toolbar.
delete a record?	Select **Delete Failure Cod**e from the Select Action menu.
duplicate a record?	Select **Duplicate Failure Cod**e from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Failure Codes

You use the Failure Codes application to create and view failure hierarchies. These hierarchies represent the identified causes of asset and location failures, and the identified solutions to these failures.

TIP: Because failure codes include data about known problems, causes, and remedies for asset failures, maintenance workers can use a failure hierarchy as a troubleshooting checklist.

Building a Failure Hierarchy

Failure hierarchies are built from the top down. You navigate the failure hierarchy from top to bottom. A Failure Hierarchy can be created all at once, or completed partially and added to later as necessary. You can use existing failure codes and/or create new ones to build the hierarchy.

- You can select existing failure codes by clicking the **Select Value** icon next to the field.
- You can create new failure codes by typing a value into the field. Maximo will attempt to match the value you entered with an existing failure code value. If one already exists, Maximo copies it into the field. If one does not exist, Maximo displays the Select Value dialog box. Click **Continue** to accept the value.

NOTE: Failure codes can be used at any level of the hierarchy. For example, "jammed" could be both a Problem and a Cause.

The procedures for adding Problem, Cause, and Remedy level failure codes are the same with one exception: selecting the parent for Causes and Remedies. All Problem failure codes are children of the Failure Class, but note the labels for the Cause and Remedy tables, which indicate the parent levels for the records in each table window. The Cause and Remedy table windows are both paired table windows, their labels reflect the selected row in the table above. For more information about paired table windows, see "Paired Table Windows," on page 2-25.

CAUTION: Before entering Causes or Remedies, check that the table window label reflects the correct parent for the failure code you are about to enter. To change the table label, click the appropriate row in the parent table window.

Managing Failure Codes

Failure reporting lets you identify and track asset and location failures. Entering **Failure Class** and **Problem Code** data on work orders provides data that can be used for failure analysis. You use the Failure Reporting subtab of the Quick Reporting application, and the Failure Reporting tab of the Work Order Tracking application to record failure data.

Failure analysis is how you examine your failure history data, reported over a significant period of time. You use asset or location failure reports to look for breakdown trends, average time between failures, and so on.

By correlating this failure information with other data available to you, for instance, preventive maintenance schedules for an asset or location, you can develop ways to reduce or limit future failures. For example, you might want to review your preventive maintenance schedule, or you might be able to identify a branch of faulty inventory items.

Failure Codes Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Locations

A **location** is generally defined as a place where assets are operated, stored, or repaired. Generally locations are defined as a means of tracking assets, but if your company does not use asset records to track equipment, you may define a location as any facility (or portion of a facility) that you want to create a maintenance record for using Maximo.

You use the Locations application to add, view, modify, and delete location records for assets, and organize these locations into logical hierarchical or network systems. Using systems of locations and specifying the location for assets on asset records provides the groundwork for gathering and tracking valuable information on the history of assets, including asset performance at specific sites, and as an asset is moved from location to location. When you organize your locations into systems, you can quickly find a location using the Drilldown and then identify the assets at a specific location.

You also can use the Locations application to create repair locations, courier locations, salvage locations, vendor locations, and labor locations.

Multisite and Locations

Locations are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations. For example, if each facility is a separate Site, you could have a location record named "Second Floor" at each Site.
- Records can only be viewed by users who have security permission to the Site and the application.

Locations and Assets

You use the Assets tab of a location record to view a read-only list of assets that have the current record listed as a value in their **Location** field.

Locations and Condition Monitoring

Maximo uses measurement points as one possible criteria for generating PM work orders. If a measurement is entered that reaches an upper or lower action limit, a PM work order can be generated for the location, either automatically via a cron task, or manually via the **Generate Work Order** action in the Condition Monitoring application.

You create measurement points in the Condition Monitoring application. Each measurement point is associated with a meter. Meters are created in the Meters application. When you create a measurement point for a location Maximo copies the measurement point to the Meters tab of the location record. You can record readings using the **Enter Meter Readings** and **Manage Meter Reading History** actions available from the Select Action menu.

For more information about creating measurement points, see “Using the Condition Monitoring Application,” on page 3-17.

Locations and Contracts

Location records can be associated with the following types of contracts:

- Service Contract
- Warranty Contracts

For more information about contract types, see “Contract Types,” on page 4-2.

You can view all contracts associated with a location using the **View Contracts** action in the Locations application.

Locations and Inventory

Location records are generally defined to track assets, but sometimes you create location records to track inventory when it is not in a storeroom. For more information about locations and inventory, see "Location Types," on page 3-26.

Locations and Meters

Maximo uses meters as one possible criteria for generating PM work orders. PM frequency is based on elapsed time in days or in meter units since the last work order was completed or targeted to start.

Once meters have been created in the Meters and Meter Groups applications, you can associate individual meters or meter groups with a location record on the Meters tab. An initial meter reading may be entered when the meter is attached to the location record. The Meters tab lets you track readings for an unlimited number of meters per location.

You use the **Enter Meter Readings** action to record meter readings for a location. You use the **Manage Meter Reading History** action to view or update historical meter readings. You use the **Reset/Replace Meters** action to reset a meter's readings, for example when you replace a continuous meter.

Locations and Preventive Maintenance

You use the Preventive Maintenance application to create PM records for periodic maintenance and inspections to be performed at a location.

You can use the **View WO and PMs** action to view all of the PM records that list the location.

Locations and Safety

You use the Safety tab to record safety information for a location, including safety related assets. **Safety related assets** are assets and locations in the general vicinity of the location that may also pose a safety hazard to workers.

You use the applications in the Safety module to create records that can be associated with location records to provide safety information to workers. You create hazard records in the Hazards application. You create precaution records in the Precautions application, and associate them with hazard records in the Hazards application. You use the Lock Out/Tag Out application to write tag out procedures to eliminate a specific hazard for a specific location. You can associate records from all of these applications with a location on the Safety tab of the location record.

- You use the Hazards and Precautions subtab to associate precaution enabled hazards with the location record. Maximo automatically copies the precautions associated with the hazard to the record. If you list a hazard that is also hazardous material enabled, Maximo automatically copies the hazardous materials data to the record.

- You use the Hazardous Materials subtab to associate hazardous material enabled hazards with the location record. If you list a hazard on that is also precaution enabled, Maximo automatically copies the precautions to the record.

- You use the Lock Out / Tag Out subtab to associate tag out enabled hazards with the location record. Once you have created a tag out for the asset and hazard, you can associate it with the location record.

You use the Safety Related Assets subtab to associate assets and locations that are in the immediate vicinity that have safety implications for workers. For example, if you must shut down another machine to be able to safety work on a location.

Locations and Work Orders

You can use several different methods to create work orders for locations:

- Maximo can generate work orders based on condition monitoring data
- Maximo can generate PM work orders for preventive maintenance or periodic inspections
- You can create work orders manually using one of Maximo's work order applications. For more information about the applications that can be used to create work orders, see "Creating Work Orders Using Maximo," on page 14-2.

You can use the **View WO and PMs** action to view all of the work order records that list the location.

Location Types

You can create the following types of locations using Maximo:

- **Courier** — Courier location. This is an inventory location, used to indicate an individual who is responsible for inventory items while in transit from one inventory location to another.

- **Holding** — Holding location. This is an inventory location, used to hold items received with a status of WINSP (waiting for inspection). You can only create one holding location per Site.

- **Labor** — Labor location. This is an inventory location, used when inventory is issued to a worker, for example a mobile repair worker.

- **Operating** — Operating location. This is an asset location, used to indicate a location where assets are located or equipment is operated.

- **Repair** — Repair location. This is an asset location, used to indicate a location where assets are repaired or refurbished.

- **Salvage** — Salvage location. This is an asset location, used to indicate a location used to store retired or decommissioned assets.

- **Vendor** — Vendor location. This is an inventory location, used to indicate the source of items, materials, and rotating assets, and may be used to

indicate the location of an asset returned to the vendor for repair or refurbishment.

Using the Locations Application

To access the Locations application, click the application link on your Start Center, or select **Assets > Locations** from the Go To menu.

The Locations application contains the following tabs:

- **List** — to search Maximo for location records.
- **Location** — to enter, view, or modify detailed information specific to a location.
- **Assets** — to view assets at the location.
- **History** — to view the history of move transactions into and out of the location.
- **Safety** — to add, view, modify, or delete safety information associated with a location.
- **Meters** — to add, view, modify, or delete meters for a location.
- **Specifications** — to classify a location and add, view, modify, or delete specifications that give details about the attributes of the location.

Locations Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Locations application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Locations Help.

How Do I...	
add a new system?	Select **Manage Systems** from the Select Action menu.
apply an item assembly structure to a location record containing a rotating item ID?	Select **Apply Item Assembly Structure** from the Select Action menu.
associate a location with a system?	Select **Associate Systems with Location** from the Select Action menu.
associate a service or service group with an asset?	Select **Associate Services** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a hierarchical system to a network system?	Select **Manage Systems** from the Select Action menu.

How Do I...	
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a location record?	Click the **New Location** button in the toolbar.
delete a record?	Select **Delete Location** from the Select Action menu.
designate one or more people as a custodian for a location?	Select **Associate Users and Custodians** from the Select Action menu.
designate one or more people as a user for a location?	Select **Associate Users and Custodians** from the Select Action menu.
disassociate a location from a system?	Select **Associate Systems with Location** from the Select Action menu.
duplicate a record?	Select **Duplicate Location** from the Select Action menu.
enter meter readings for a location?	Select **Enter Meter Readings** from the Select Action menu.
modify the parent for a location in one or more systems?	Select **View/Modify Parents** from the Select Action menu.
replace meters on a location record?	Select **Reset/Replace Meters** from the Select Action menu.
reset a meter on a location record?	Select **Reset/Replace Meters** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a system to be the primary system?	Select **Manage Systems** from the Select Action menu.
update the meter history on a location record?	Select **Manage Meter Reading History** from the Select Action menu.
view asset and location hierarchies displayed graphically?	Select **Open Drilldown** from the Select Action menu.
view the parents for a location across systems?	Select **View/Modify Parents** from the Select Action menu.
view the status history of a location?	Select **View History** from the Select Action menu.
view work orders and PMs associated with the location record?	Select **View Work Orders and PMs** from the Select Action menu.

Creating Locations

Locations are typically the places where assets operate, but include any building, place, or position that contains assets, or where maintenance work might need to be performed. For example, a hallway might include lighting fixtures and a fire extinguisher, and would need to be painted periodically.

Work order costs are typically charged to the location itself or to the asset at a location.

In addition to operating locations, assets can be located in other "asset type" locations. Other asset type locations are vendor locations, salvage locations, and repair locations. You can track an asset not only as it moves from one location to another, but also as it moves to a vendor or repair location, and eventually, to salvage.

Along with "asset type" locations, there are "inventory type" locations such as labor and courier. Like a storeroom, these "locations" can maintain a balance of items issued from a storeroom. For example, if a courier is holding a number of parts, he is responsible for them until they are received into another location.

Understanding Locations Terms

The following are some common terms that are used when discussing location hierarchies:

- **hierarchy** — Any system of places ranked one above another. Each parent location can have many child locations, but each child location can have only one parent location.
- **location** — Locations are typically the places where assets operate, but include any building, place, or position that contains assets, or where maintenance work might need to be performed.
- **network** — Any system of interconnected locations. Unlike hierarchies, in a network each location can have multiple parents and children.
- **operating location** — In Maximo, the places where equipment operates.
- **primary system** — The default hierarchy of locations. Each Site may have only one primary system. Your primary system must be hierarchical, that is there must be a single top-level location that is the parent of all other locations in the system. If assets in different locations are part of an asset hierarchy, their locations must exist in the primary system.
- **Site** — Term used to define a work location in Maximo, such as a plant or facility. A Site belongs to a single Organization, but more than one Site can share the data defined for the Organization. For more information about Sites, see “Multisite Levels,” on page 1-9.
- **system** — A grouping of locations, organized into either hierarchical or network relationships. A hierarchical system could define location relationships of a plant, having a plant site as a parent to plant buildings, which are parents of sublocations within the building areas. A network system could define the location relationships of a system of pipes or ducts, where there are some locations that feed back into others.

Preparing to Create Locations

Carefully review all topics on locations and systems in this guide and in the Locations Help before creating locations. Inserting location records and specifying parents and systems for the new locations creates relationships that are not easily undone after you establish them.

The time and thought you invest in planning your locations and systems simplifies creating them, and makes it easier for users to navigate the Drilldown.

CAUTION: The first location you create in a hierarchical system becomes the top level location. You cannot change this.

Operating locations are most useful when organized into systems. A location can be in more than one system at the same time. If you have selected a system you can specify a parent for the location. If you are specifying both a system and a parent, the parent must belong to the system.

Understanding Location Systems

Location hierarchies let you group assets and locations into areas of responsibility. A location hierarchy can be designed to include all locations in your plant against which work orders are written, and can track the movement of assets into and out of locations. Maximo calls location hierarchies **systems**.

Establishing one or more systems lets you build a logical model of the locations at your site by specifying their parent(s) and/or children. Locations can be placed into more than one system. Your primary system might divide an office building into floors, and the floors into offices. In this example, an office might belong to the primary system, the heating system, and the electrical system.

You can add location records without organizing them into systems. However, organizing locations into named systems can help you manage your maintenance work more effectively by letting you see how a work order can affect assets, locations, or systems beyond the specific asset or location the work is to be done on.

With operating locations organized into systems, you can find a location quickly via the Drilldown and identify the assets at that location.

CAUTION: Plan carefully before creating systems.

Planning Location Hierarchies

If the Drilldown is intended to be a primary means of accessing location data, proper planning of location hierarchies is necessary. While a large number of location or asset records will not necessarily affect the performance of the Drilldown, a poorly constructed hierarchy can have a negative impact on Drilldown performance.

A perfectly symmetrical hierarchy, containing 10 children at each level, and containing five levels below the top level could have over 100,000 records and have very good performance. But performance can be negatively affected if there are hundreds of children for any given parent. In addition, users may have difficulty finding locations if there are a large number of records at any given level of the hierarchy.

When planning the shape of your location hierarchies, consider how your locations can be subdivided and categorized. For example, a large building could be divided into floors. A floor containing a large number of offices could be divided into wings, or quartered into North, South, East, and West

quadrants. And consider how future growth will be accommodated, for example if a large space were to be partitioned to create several new offices.

Creating Hierarchical Systems

If you are entering location records for the first time, and no systems currently exist, you must create one. You use the **Manage Systems** action to create a new system, and also to designate your primary system.

In general, first create the **primary system** for each Site. If assets in different locations are part of an asset hierarchy, their locations must exist in the primary system. Having all your operating locations tied together in one complete primary system provides a solid foundation for using locations and systems. It might be the only system your site needs for tracking assets.

The primary system must be hierarchical, that is, it must have one top-level location as the "ancestor" of all other locations in the system. You can call this system Primary, Main, Plant, or whatever is appropriate for your site.

NOTE: The first location you add to a new hierarchical system becomes the top-level location in the system; for every location you add to the system after that, you must specify a parent location. Plan carefully before adding the first location to any new system.

After defining the location, you can use the **Associate Systems with Location** action to specify each system that the location is associated with.

Building a Location Hierarchy from an Item Assembly Structure

You can use an item's item assembly structure to create location records for rotating assets associated with the item. When the same IAS is applied to both a location and an asset, a location hierarchy is created that matches the asset hierarchy. An IAS can be applied multiple times, to different locations that require the same kind of assets.

To apply an IAS to a location, specify the top-level item number in the **Item** field on a location record, then choose the **Apply Item Assembly Structure** action. You then can create location records for any rotating items in the structure. Non-rotating items in the IAS are ignored in the location hierarchy.

NOTE: You can only apply an item assembly structure (IAS) to a location if the location belongs to the primary system.

Creating Network Systems

When you define a system using the **Manage Systems** action, you can specify whether it is Hierarchical or Network using the **Network?** check box. If an association requires the system to be networked, Maximo does not automatically change the system to network. You must change the property of the system using the **Manage Systems** action, and then associate the location with the system.

Examples of locations that might be organized as a network include a ventilation system or piping system.

NOTE: You can change a system from a hierarchy to a network but not from a network back to a hierarchy.

Viewing Location Hierarchies

The Locations tab displays three table windows:

- **Systems** — displays the systems associated with the location. Click a system to populate the other two table windows.
- **Parent of** — displays the location's parent in the selected system. Additional parents can be added using the **New Row** button only if the selected system is a network.
- **Children of** — displays the location's children that belong to the selected system. New children can be added using the **New Row** button.

If a system is a network, the **Network** column of the System table window contains a check. If a system is hierarchical, the **Network** column is not checked.

Managing Locations

When you disassociate a location from a system, the location should not have any children that are associated with the same system. Delete the children from the Children table window present in the Locations main page, and then disassociate the system.

NOTE: Deleting children from the Children table window removes the association between the child and parent records, it does not delete the child location records from Maximo.

You can delete a system only when it is not associated with any locations.

Location Statuses

A location record can have one of the following statuses:

- **NOT READY** — Location records can be created before locations have been built, leased, or purchased.
- **OPERATING** — Default status for new location records.
- **DECOMMISSIONED** — Location is no longer in use.

  CAUTION: You should only select DECOMMISSIONED as the new status if you intend that status change to be permanent.

Decommissioning a Location Record

If a location is going to be permanently retired from service, you can change it's status to DECOMMISSIONED. Decommissioned locations do not appear in select value lists or in the drilldown, but are still maintained in the Maximo database as historical records.

Before a location record can be decommissioned, the following must be true:

- The location cannot be referenced on any open work orders.

- The location cannot be referenced on any open desktop requisitions, purchase requisitions, requests for quotation or purchase orders.
- The location cannot be referenced on any job plans or routes.
- The location cannot be reference on any preventive maintenance record.

Once a location record has had its status changed to DECOMMISSIONED the following actions are *not* allowed:

- adding children to the location
- associate systems with the location
- updating meter readings
- modifying the **Rotating Item** value or apply an item assembly structure
- associating specifications or specification values
- referencing the location on any new desktop requisitions, purchase requisitions, requests for quotation or purchase order lines.
- issuing items that will be charged to the location
- creating work orders for the location
- adding the location to job plans or preventive maintenance records.

Locations Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Meters

A **meter record** in Maximo is a virtual identifier used to record measurements. You associate meter records with assets and locations to record measurements, for example run hours, temperature, or pressure, that are used to track asset and location performance. You use the Meters application to add, view, modify, and delete meter records.

Meter readings may be recorded for a variety of reasons, including:

- determining the next time an asset is due for maintenance
- performing efficiency comparisons between similar asset performing similar work
- tracking production costs, for example tons per hour in the mining industry
- tracking service costs, for example odometer readings for a trucking fleet
- tracking efficiency indicators, for example miles per gallon
- conforming to regulatory requirements, for example maintaining cradle to grave details of time controlled components in the aviation industry

When you use the Meters application to define a meter record you can define the type of meter, the unit of measure used by the meter, and the type of reading (delta or actual) that the meter should record. Meter records can be associated with assets, inventory items, and locations, and can be used to

drive condition monitoring and preventive maintenance. Meters can be applied individually, or as part of a meter group.

Multisite and Meter Records

Meters are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

Meters and Assets/Locations

You can associate one or more meters with an asset or location record. Meters are associated with assets in the Assets application, and with locations in the Locations application.

You use the **Enter Meter Readings** action to record meter readings for an asset or location. You use the **Manage Meter Reading History** action to view or update historical meter readings. You use the **Reset/Replace Meters** action to reset a meter's readings, for example when you replace a continuous meter.

Meters and Condition Monitoring

When you create a measurement point in the Condition Monitoring application you associate it with a meter. Gauge and characteristic meters can be used to drive condition monitoring. Continuous meters can not be used with condition monitoring.

When you create measurement points, each meter can only be used once on an asset or location. You may need to create duplicate meters with different names if you have multiples of the same meter on an asset or location. For example, if a piece of equipment has three temperature gauges, you would need to create three meters that measured temperature, TEMP1, TEMP2, andTEMP3, to be able to create three temperature measurement points for the asset.

Meters and Inventory

You can associate a single meter with an inventory item. Individual meters can not be associated with rotating items unless it is via a meter group.

When you issue an item that has a meter associated with it to an asset that has a corresponding meter, Maximo automatically enters a meter reading for the asset. For example, if you create an item record for fuel, and attach a fuel gauge to the item, when you issue fuel to assets that also include a fuel gauge, Maximo will automatically enter meter readings for the fuel gauge on the asset.

Meters and Meter Groups

Meter records can be associated with assets, rotating items, and locations, and can be used to drive condition monitoring and preventive maintenance. Often more than one meter might be applied to a particular type of record. For example, a truck might include meters for temperature, pressure, odometer readings, and fuel consumption. Rather than apply each meter individually, you can group them together in a meter group. When a meter group is applied to a record, Maximo copies all of the data about individual meters in the group to the record.

Meter groups are created in the Meter Groups application, and meter records are assigned to groups in the Meter Groups application.

Meters and PMs

Meters can be used as a criteria for how often Maximo should generate preventive maintenance work orders from a PM record. When you associate one or more meters with a PM Maximo generates work orders based on the meter readings and the frequency settings on the Meter Based Frequency subtab of the PM record.

Meters are associated with PMs in the Preventive Maintenance application. For more information about creating PMs with meter based frequency, refer to the PM Help.

Meter Types

Meters can have one of three types:

- **Continuous** — Meters where the readings increase continuously, for example odometers. These meters might be used to track miles, hours, engine starts, pieces produced, fuel consumed, and other continuous readings.
- **Gauge** — Meters where the readings may fluctuate, for example thermometers or pressure gauges. These meters might be used to track temperature, pressure, noise levels, oil levels, and other readings that fluctuate.
- **Characteristic** — Meters where an observed state is being tracked, for example a color change. These meters might be used to track Brick/ Refractory Color (Yellow, orange, white), or oil color (Clear, Turbid, Dark).

Using the Meters Application

To access the Meters application, click the application link on your Start Center, or select **Assets > Meters** from the Go To menu.

The Meters application contains the following tabs:

- **List** — to search Maximo for meter records.

- **Meter** — to add, view, modify, or delete meter definitions.
- **Where Used** — to view a read-only list of any asset, locations, PMs, items, or Condition Monitoring points that use the meter.

Meters Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Meters application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Meters Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a meter record?	Click the **New Meter** button in the toolbar.
delete a record?	Select **Delete Meter** from the Select Action menu.
duplicate a record?	Select **Duplicate Meter** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the meter groups that the meter belongs to?	Select **View Meter in Groups** from the Select Action menu.

Creating a Meter Record

You can use the **Duplicate Meter** action to create a copy of an existing meter, for example if you need to create multiple measurement points with similar meters. Once you duplicate a meter you can then modify it as needed.

Managing Meters

The only fields that may be modified after a Meter Definition has been saved are the **Description** and **Unit of Measure**.

Deleting a Meter Definition

You can delete a meter record using the **Delete Meter** action available from the Select Action menu. A meter may not be deleted if it is associated with records in any of the following applications:

- Assets
- Condition Monitoring
- Item Master
- Locations
- Master PM
- Meter Group
- Preventive Maintenance

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Meters Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Meter Groups

A **meter group** is two or more meters that are commonly used on the same types of assets or locations. You use the Meter Groups application to create groups for meters that are commonly used together. For example all of the vehicles in your fleet use meters to track mileage, usage, fuel, and oil consumption. Rather than attach these four meters to a vehicle one at a time, you can define a meter group and use it to associate all four meters to the vehicle at the same time.

Meter Groups can also be associated with rotating items in the Item Master application to designate the meters commonly associated with a rotating item.

Multisite and Meter Groups

Meter Groups are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

Meter Groups and Assets/Locations

Meter groups can be associated with asset or location records in one of the following ways:

- the record includes a **Rotating Item** that has an associated meter group
- you enter a value in the **Meter Group** field for the record
- an item assembly structure that contains rotating items with an associated meter group is applied to the record

When a meter group is associated with an asset or location record Maximo copies the meters in the group to the Meters table window on the record.

Meter Groups and Items

You can associated meter groups with rotating items records in the Item Master application. When you list that rotating item record on an asset or location record, Maximo copies all of the meters associated with the rotating item to the asset or location record.

Meter Groups and Meters

For information about Meter Groups and the Meters application, see "Meters and Meter Groups," on page 3-35.

Using the Meter Groups Application

To access the Meter Groups application, click the application link on your Start Center, or select **Assets > Meter Groups** from the Go To menu.

The Meter Groups application contains the following tabs:

- **List** — to search Maximo for meter group records.
- **Meter Group** — to enter, view, or modify meter groups.

Meter Groups Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Meter Groups application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Meter Groups Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a meter group?	Click the **New Meter Group** button in the toolbar.
delete a record?	Select **Delete Meter Group** from the Select Action menu.
duplicate a record?	Select **Duplicate Meter Group** from the Select Action menu.

Creating Meter Groups

NOTE: Meters must be defined in the Meters application before they can be added to a meter group.

You can use the Meter Groups application to create groups of two or more meters. You cannot add an individual meter to a group more than once. If there is a requirement for more than one of the same type of meter you will need to create duplicate meters with different names. For example, if a meter group requires three temperature gauges, you would need to create three meters that measured temperature, TEMP1, TEMP2, and TEMP3, to be able to create a meter group with three temperature gauges.

NOTE: A Meter Group can be created that has no meters in the group.

You can use the **Duplicate Meter Group** action to create a copy of an existing meter group. Once you duplicate a meter you can then modify it as needed.

Managing Meter Groups

Once you have defined a meter group you can add or remove meters from the group as needed.

Modifying Meter Groups

When you add meters to an existing meter group you can select the **Apply New Meter to Existing Assets?** check box if you want to add the new meter to existing assets or locations that use the meter group. If you do not select the box then the new meter will only be added to assets or locations that use this meter group in the future.

To delete a meter from a group, click the **Mark Row for Delete** button next to the row in the table window, then click **Save**.

Deleting a Meter Group

If a meter group record is not listed on any asset, location, or rotating item records it can be deleted by selecting **Delete Meter Group** from the Select Action menu. Maximo will display an error message if the meter group can not be deleted.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Meter Groups Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

4 The Contracts Module

The Contracts Module is one of the Maximo modules devoted to financial and purchasing functions. The Financial Module allows administrators to set up currency codes, exchange rates, the Chart of Accounts that users access via the GL Account Navigator, and to perform cost management. The Purchasing Module tracks requests for and purchases of materials and services. And the Contracts Module allows you to create a variety of different types of contracts.

The Contracts Module consists of the following applications:

Application	Function
Labor Rate Contracts	Used to define labor rates to be paid to specific crafts and skills when hiring workers.
Lease/Rental Contracts	Used to define the terms and conditions and payment information for lease or rental agreements for rotating assets, including information technology assets.
Master Contracts	Used to define the contractual relationship with a vendor. A master contract links all contracts with the vendor, as well as containing the terms and conditions that apply to the associated contracts.
Purchase Contracts	Used to create, modify, and view contracts for items or services with outside vendors. You can include detailed information about a contract's shipping and financial terms, contact information, item and service pricing, and delivery times.
Terms and Conditions	Used to enter and maintain a library of terms and conditions to be used on contracts and purchasing documents. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.
Warranty Contracts	Used to create warranty and service contracts where vendors maintain one or more assets for a fixed fee, or regularly scheduled payment over a time period; or to track warranty information for multiple assets or locations by time or meter.

You use the Terms and Conditions application to define the terms and conditions that apply to contracts and purchasing interactions between your company and vendors.

You use the Master Contracts application to create a master contract that defines the relationship between your company and a vendor, for example

whether contracts can be extended, cancelled by the vendor, or cancelled by the customer.

Once you have defined the master contract, you can create associated contracts of any type from within the Master Contracts application. Maximo copies the properties from the master contract to the associated contract. You can then use the Labor Rate Contracts, Lease/Rental Contracts, Purchasing Contracts, or Warranties Contracts application to fill in the specific details of each associated contract.

NOTE: Your ability to enter, view, or modify contracts is determined by your system administrator.

Contract Types

You use the Contracts application to create different types of contracts, and to define the rules that govern the contracts. The default Maximo installation contains the following types of contracts:

- **Blanket (volume) contract** — A blanket contract is an agreement that specifies a vendor, a total dollar amount, and valid dates for the agreement. Typically a blanket is used to purchase services and/or materials at an agreed upon price and terms. You can create release purchase orders in the Purchase Orders application that reference the blanket contract. Blanket contracts are created in the Purchase Contracts application.

- **Labor contract** — A labor contract is a way to define the rates that will be paid for craft and skill combinations, and also rates to be paid to specific contract laborers. You can set up a labor rate contract to create invoices for all approved labor transactions within a specified time period, for example every month. Labor contracts are created in the Labor Rate Contracts application.

- **Lease contract** — A lease contract is an agreement to lease one or more assets from a vendor. Lease contracts specify lease period, payment schedules, and other conditions of the contract. Maximo can generate invoices based on the payment schedule intervals. This type of agreement may involve more than two parties, as one vendor may sell the assets and another may hold the lease. Lease contracts are created in the Lease/ Rental Contracts application.

- **Pricing contract** — A price agreement contract specifies the prices to be paid for specific items purchased from a specific vendor. Typically a price agreement is used to purchase services and/or materials at agreed upon prices and terms. Pricing contracts are created in the Purchase Contracts application.

- **Purchase contract** — A purchase contract specifies the terms and conditions for a purchase. Purchase contracts are created in the Purchase Contracts application.

- **Rental contract** — A rental contract is similar to a lease contract. Rental contracts specify the time period for the rental, payment schedules, and other conditions of the contract. Unlike a lease, a rental contract can be

terminated at will, and does not include a buy-out option in the terms of the contract. Rental contracts are created in the Lease/Rental Contracts application.

- **Service contract** — A service contract is similar to a warranty except that some of the items are billed on a per-incident basis. This contract will contain the details of the services to be provided, and if a payment schedule is associated with the contract. Service contracts are created in the Warranty Contracts application.

- **Software license contract** — **Master contract** — A master contract is a way to associate many contract types together for the same vendor and define terms and conditions for the relationship with the vendor. A master contract lists all contracts that you have with a particular vendor. For example, a master contract might list rental contracts for tools or equipment, purchase contracts for materials, a labor rate contract, and a warranty on parts and labor. Master contracts are created in the Master Contracts application.

- **Warranty contract** — A warranty contract is created in conjunction with the purchase of an asset and generally has no cost associated with it. This contract will contain the details of what is covered by the warranty. If a warranty contract is purchased, this is considered an extended warranty by Maximo. Warranty contracts are created in the Warranty Contracts application.

NOTE: Your system administrator can define an unlimited number of contract types using the Organizations application.

Contract Details

When you enter a contract in Maximo, you can include the following general information about the contract:

- **Contract** identifier and **Description**
- Contract **Type**
- **Status**
- **Vendor Reference #** and details about the vendor
- **Buyer**
- **Start Date** and **End Date**
- **Total Cost** or **Maximum Amount**
- Contract lines
- Terms and conditions

In addition, you can specify properties that are specific to each contract type.

NOTE: The applications in the Contracts Module are not intended for contract negotiation. Contracts should not be entered into Maximo until the contract is final.

Contracts and Terms and Conditions

You use the Terms and Conditions application to create and maintain a library of terms and conditions that describe the legal obligations between a

buyer and a seller. Terms and conditions appear on records in the following applications:

- All contracts (Contracts Module)
- Invoices
- Purchase Requisitions
- Purchase Orders
- Requests for Quotation

NOTE: If the **Editable on Use?** check box is selected for a term you cannot edit the term once it has been copied to a record.

The terms and conditions in the library can be added to a contract from the Terms and Conditions tab of the individual applications. You can also create terms via the **New Row** button on the Terms and Conditions tab, but terms created in this manner are saved to the record and are not added to library.

For more information about terms and conditions, see "Terms and Conditions," on page 4-20.

Contract Statuses

Contract records have a status to indicate where the record is in a contract life cycle. Because contract records have statuses, you can create Workflow processes for contracts to manage approvals, expirations, renewals and so forth.

NOTE: You might need security authorization to perform status changes.

A contract record can have one of the following statuses:

- **DRAFT** — Draft. Default status for new contracts. All fields can be edited when a contract is in a status of DRAFT. You can change a contract's status from DRAFT to APPR, CLOSE, or CAN.

- **WAPPR** — Waiting on Approval. All fields can be edited when a contract is in a status of WAPPR. You can change a contract's status from WAPPR to APPR, CLOSE, or CAN.

- **APPR** — Approved. You must specify a **Company** and a **Start Date** for a contract before you can change its status to APPR. Maximo does not require an **End Date** for contract approval. A master contract must be approved before you can associate other contracts with it. Lease/rental, purchase, and warranty contracts require at least one authorized Site be associated with the contract prior to contract approval. If you need to modify an approved contract, you use the **Revise Contract** action. You can change a contract's status from APPR to SUSPEND, EXPIRE, CANCEL, or CLOSE.

- **WSTART** — Waiting to Start. Maximo automatically assigns a contract to a status of WSTART when a contract has been approved and the **Start Date** is in the future. You can change a contract's status from WSTART to APPR.

- **PNDREV** — Pending Revision. Default status for contract revisions created via the **Revise Contract** action. This status is similar to DRAFT,

except that only a portion of the contract fields can be edited. You can change a contract's status from PNDREV to WAPPR or APPR.

- **REVISD** — Revised. When you change the status of a contract revision from PNDREV to APPR, the previous version of the contract changes status to REVISD and that version of contract becomes a history record and cannot be edited. Receipts and invoices can still be processed against a contract with a status of REVISD. You cannot change a contract's status from REVISD to any other status.

- **SUSPND** — Suspended. The contract cannot be edited. You can change a contract's status from SUSPND to APPR, CAN, or CLOSE.

- **EXPIRD** — Expired. The **End Date** of the contract has passed without the contract being renewed. The contract cannot be edited, but a revision can be created against an expired contract. You cannot change a contract's status from EXPIRD to any other status.

- **CAN** — Canceled. You cannot cancel a lease/rental or purchase contract if it has any outstanding scheduled payments or approved purchase orders against it. Maximo notifies you if unapproved purchase orders exist against a contract. Unapproved purchase orders cannot have their status changed to approved once the contract is cancelled. Cancelling a lease/rental or warranty contract cancels any outstanding scheduled payments for the contract. You can only cancel a master contract if all of its associated contracts are closed or cancelled. When you change a contracts status to CAN the contract becomes a history record and cannot be edited.

- **CLOSE** — Closed. You cannot close a lease/rental or purchase contract if it has any outstanding scheduled payments or approved purchase orders against it. Maximo notifies you if unapproved purchase orders exist against a contract. Unapproved purchase orders cannot have their status changed to approved once the contract is closed. Closing a lease/rental or warranty contract cancels any outstanding scheduled payments for the contract. You can only close a master contract if all of its associated contracts are closed or cancelled. When you change a contracts status to CLOSE the contract becomes a history record and cannot be edited.

When you change the status of a contract, Maximo records the date and time of the status change and lets you record a memo. This information can be viewed using the **View History** action.

Revising Contracts

Once you have changed the status of a contract to APPR (approved) the only field that can be edited on the contract is the **Status** field. You cannot "un-approve" a contract you need to make changes to the contract, you must use the **Revise Contract** action. The **Revise Contract** action is available for contracts with a status of APPR that do not already have an existing revision (that is, a revision with a status of PNDREV).

The **Revise Contract** action creates a copy of the current contract. Maximo copies all of the information from the original contract, including contract lines, terms and conditions, associated service level agreements, commodities, and authorized Sites. The **Contract** number is the same as the original contract, and the value in the **Revision** field is the **Revision** number of the

original contract plus one. For example, the original contract has a Revision number of zero, so the first revision has a Revision number of 1 (0+1=1). The Status of the revision is PNDREV.

The status of the original contract does not change when you create a revision. The original contract is available for use and can have new transactions created against it. When you change the status of the revision from PNDREV to APPR, Maximo changes the status of the original contract from APPR to REVISD and that version of the contract becomes a history record.

NOTE: If you approve a contract revision whose **Start Date** is in the future, Maximo will change the revision status to WSTRART and the original contract will not change status from APPR to REVISD. Maximo includes escalations that check for contracts in a status of WSTART whose start date is the current date and automatically changes the status of the contract to APPR.

You can use the **View Revision History** action to view every revision that has been made to the current contract via the revision process. The Contract Details table window displays every version of the contract. Maximo displays the most current revisions first. The Contract Line Details table window displays contract lines that have been changed or added in the version of the contract that is highlighted in the Contract Details table window and the previous version of the contract. Each changed line is followed by the previous version of that line, so that you can see the changes.

TIP: When searching the database for a contract record, the contract with the highest Revision number is the most recent version of the contract.

Labor Rate Contracts

A **Labor Rate Contract** is a contract for outside labor that specifies the rates to be paid for crafts and skill levels, and any laborers associated with the contract. You use the Labor Rate Contracts application to define multiple labor rates for specific crafts and skills, and optionally for laborers.

You can only create contracts where **Type** = LABOR in the Labor Rate Contracts application. For more information about contract types, see "Contract Types," on page 4-2.

Multisite and Labor Rate Contracts

Labor and craft records are at the Organization level, so labor rate contracts are at the Organization level as well. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Labor Rate Contracts and Company Records

Before you can create a contract for a company you must create a record for the company in the Company Master application.

You can view all contracts associated with a vendor using the **View Contracts** action in the Companies application.

Labor Rate Contracts and Crafts

You use the Rate Schedule tab in the Labor Rate Contracts application to establish the contracted Standard Rates for any Craft or Craft / Skill Level that has been defined in the Craft application. Standard Rates for contracts may also be established within the Craft application in the Outside Rates table window. The business rules for establishing rates is the same in both the Labor Rate Contracts and Crafts applications.

Labor Rate Contracts and Invoices

You can create invoices from labor transactions reporting using the Labor Reporting application when the labor transaction references a labor rate contract.

Labor Rate Contracts and Labor

You can use the Labor application to create labor records for contract labor. When you associate labor records with a labor rate contract you can either select the **Inherit Rate from Contract?** check box, or specify a specific rate for the laborer.

Labor Rate Contracts and Labor Reporting

You can enter labor transactions by contract or vendor in the Labor Reporting application.

Labor Rate Contracts and Work Orders

You can create work order plans and report actuals that reference contract labor. When Maximo calculates work order costs for contract labor, it uses the rates listed on the labor rate contract.

Maximo also uses the **Start Date** and **End Date** on the contract when it validates labor rates on work orders. Labor rates associated with a contract whose status is WSTART (waiting to start) can be used for planning purposes. Labor actuals can be reported against a contract whose status is EXPIRD (expired) only if the reported labor hours are for work time that occurred prior to the contract expiration.

Using the Labor Rate Contracts Application

To access the Labor Rate Contracts application, click the application link on your Start Center, or select **Contracts > Labor Rate Contracts** from the Go To menu.

The Labor Rate Contracts application contains the following tabs:

- **List** — to search Maximo for labor rate contract records.
- **Contract** — to create, view, or modify labor rate contract records.
- **Properties** — to enable or disable properties for the contract.
- **Rate Schedule** — to add, view, or modify standard rates of pay for crafts and skill levels.
- **Associated Labor** — to add, view, or modify the labor records associated with the contract.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the contract.

Labor Rate Contracts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Labor Rate Contracts application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Labor Rate Contract Help.

How Do I...	
associate service level agreements (SLAs) with a contract?	Select **Associate SLAs** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a labor rate contract record?	Click the **New Labor Rate Contract** button in the toolbar.
duplicate a record?	Select **Duplicate Labor Rate Contract** from the Select Action menu.
modify an approved contract?	Select **Revise Contract** from the Select Action menu.
modify the rate for one or more lines on a contract?	Select **Apply Price Adjustment** from the Select Action menu. **NOTE:** A contract must have a status of DRAFT, WAPPR, or PNDREV to use this action.

How Do I...	
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a contract?	Select **View History** from the Select Action menu.

Creating Labor Rate Contracts

You create labor rate contract records in Maximo once the negotiations for the contract are complete and you are ready to record the details of the final contract.

You can use the **Duplicate Contract** action to create a copy of an existing labor rate contract, for example if you have negotiated similar contracts with more than one vendor. Once you duplicate a contract you can then modify it as needed.

Creating a Rate Schedule

You use the Rate Schedule tab to create, view, and modify the standard rates that are paid for contract labor. You can use the **Select Crafts** button to select from crafts and skill levels that have been defined in the Crafts application.

Associating Labor with a Contract

You use the Associated Labor tab to list the laborers whose rates are determined by the contract. Labor records are created in the Labor application. The craft and skill levels for the associated labor must be listed on the Rate Schedule tab for you to be able to add a laborer.

NOTE: Revising a contract does not break the association between laborers and the contract. The laborers listed in the Associated Labor table window are associated with the contract and not a specific revision.

Managing Labor Rate Contracts

Once a contract record is approved, if you need to make modifications to it, you will need to use the **Revise Contract** action. For more information about creating revisions, see "Revising Contracts," on page 4-5.

If the contract has a status of APPR the Rate Schedule table window is read - only. Lines may not be added, modified, or deleted. A contract rate may not be deleted if it is referenced by a labor record.

You can use **Apply Price Adjustment** action to modify the pay rates associated with one or more lines in a labor rate contract that has a status of DRAFT, WAPPR, or PNDREV. You use the **Revise Contract** action to change the contract status to PNDREV.

You can use the **View History** action to view the status change history for a contract.

NOTE: Contract records cannot be deleted.

Labor Rate Contracts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Lease/Rental Contracts

A **Lease/Rental contract** defines the agreement between a vendor and a customer regarding the lease or rental of assets or locations. You use the Lease/Rental Contracts application to define the terms and conditions of the agreement and the assets or locations to be leased or rented.

You can create the following types of contracts using the Lease/Rental Contracts application:

- LEASE
- RENTAL

For more information about contract types, see "Contract Types," on page 4-2.

Multisite and Lease/Rental Contracts

Lease/Rental contracts are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.

- Records can only be viewed by users who have security permission to the Organization and the application.

A contract cannot be utilized until you use the **Authorize Sites** action to indicate that the contract may be used by one or more Sites. You can add Sites from other Organizations to the contract so long as they use the same Company Set and Item Set. If your company uses a single Company Set and Item Set contracts can be used by all of your Organizations.

Lease/Rental Contracts and Companies

Before you can create a contract for a company you must create a record for the company in the Company Master application. You can view all contracts associated with a vendor using the **View Contracts** action in the Companies application.

Lease/Rental Contracts and Invoices

When you set up a payment schedule for a contract, Maximo automatically generates an invoice with a status of SCHED (scheduled) for each **Payment Period** listed on the contract. Maximo includes an escalation to change the

status of the invoice to WAPPR (waiting on approval) when the invoice reaches its **Due Date**.

Using the Lease/Rental Contracts Application

To access the Lease/Rental Contracts application, click the application link on your Start Center, or select **Contracts > Lease/Rental Contracts** from the Go To menu.

The Lease/Rental Contracts application contains the following tabs:

- **List** — to search Maximo for lease/rental contract records.
- **Contract**— to create, view, or modify lease/rental records.
- **Properties** — to enable or disable properties for the contract.
- **Contract Lines** — to create, view, modify, or delete line items listed on a contract.
- **Associated Assets** — to add, modify, or delete asset records associated with a lease or rental contract.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the contract.

Lease/Rental Contracts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Lease/Rental Contracts application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Lease/Rental Contract Help.

How Do I...	
associate commodity codes with a contract?	Select **Associate Commodities** from the Select Action menu.
associate service level agreements (SLAs) with a contract?	Select **Associate SLAs** from the Select Action menu.
authorize a Site to use a contract?	Select **Authorize Sites** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
change the status of one or more lines on a contract?	Select **Change Line Status** from the Select Action menu.

How Do I...	
create a lease/rental contract record?	Click the **New Lease/Rental Contract** button in the toolbar.
create a payment schedule for a contract?	Select **Manage Payments** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a contract?	Select **View History** from the Select Action menu.

Creating Lease/Rental Contracts

You create lease/rental contract records in Maximo once the negotiations for the contract are complete and you are ready to record the details of the final contract.

Associating Assets with a Contract

A lease/rental contract must be approved before you can associate assets or locations with it. You associate assets and locations with a lease or rental contract on the Associated Assets tab.

Setting up Payment Schedules

Maximo requires values in the following fields when creating a schedule for a contract:

- **Term in Months** — Length of the lease or rental in months. For example a two year lease would be entered as 24 months. Lease contracts must have a term specified before they can be approved.
- **Number of Payments** — Number of payments to be made during the term of the loan. For example, if the term of the loan is 24 months, and the payment schedule is quarterly, the number of payments would be 8. Maximo uses this value to determine the estimated **Lease Rate Factor** for the contract.
- **Payment Period** — Specifies when the payment is due, for example on the first of every month. You use the Set Schedule dialog box to select a schedule for when payments are due.
- **Lease Rate Factor** — Maximo calculates the lease rate factor as 1 divided by the number of payments. Maximo multiplies the **Lease Rate Factor** by the cost of the contract when calculating the periodic payment amount.

You use the **Manage Payments** action to schedule payments, generate invoices, and view payment information.

Lease/Rental Contracts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Master Contracts

A **master contract** is a means of creating one document that defines your relationship with a vendor for all contract types.

The information that can be included on a master contract includes vendor information, effective dates, cost information, and the terms and conditions that will apply to all contracts that are created as associated contracts from the master contract.

You can only create contracts where **Type** = MASTER in the Master Contracts application. For more information about contract types, see "Contract Types," on page 4-2.

Multisite and Master Contracts

Master Contracts are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

A contract cannot be utilized until you use the **Authorize Sites** action to indicate that the contract may be used by one or more Sites. You can add Sites from other Organizations to the contract so long as they use the same Company Set and Item Set. If your company uses a single Company Set and Item Set contracts can be used by all of your Organizations.

Using the Master Contracts Application

To access the Master Contracts application, click the application link on your Start Center, or select **Contracts > Master Contracts** from the Go To menu.

The Master Contracts application contains the following tabs:

- **List** — to search Maximo for master contract records.
- **Contract** — to create, view, or modify master contact records.
- **Properties** — to enable or disable properties for the contract.
- **Associated Contracts** — to view contracts associated with the master contract.

- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the contract.

Master Contracts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Master Contracts application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Master Contracts Help.

How Do I...	
associate commodity codes with a contract?	Select **Associate Commodities** from the Select Action menu.
associate service level agreements (SLAs) with a contract?	Select **Associate SLAs** from the Select Action menu.
authorize a Site to use a contract?	Select **Authorize Sites** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a master contract record?	Click the **New Master Contract** button in the toolbar.
create a contract that will be automatically associated with the master contract?	Select **Create Associated Contract** from the Select Action menu.
duplicate a record?	Select **Duplicate Master Contract** from the Select Action menu.
modify a contract?	Select **Revise Contract** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the revision history for a contract?	Select **View Revision History** from the Select Action menu.
view the status change history for a contract?	Select **View History** from the Select Action menu.

Creating Master Contracts

You create master contract records in Maximo once the negotiations for the contract are complete and you are ready to record the details of the final contract.

You can use the **Duplicate Contract** action to create a copy of an existing master contract, for example if you have negotiated similar contracts with more than one vendor or use the same terms and conditions with multiple vendors. Once you duplicate a contract you can then modify it as needed.

Creating Associated Contracts

Master Contracts can have one or more child contracts and can contain multiples of a particular type of contract. Once a master contract is approved, you can use the **Create Associated Contract** action to create child contracts. When you create associated contracts from a master contract, Maximo copies the following information to the new contract:

- **Vendor information** — Maximo copies all vendor information from the master contract to the child contract.
- **Authorized Sites** — Maximo copies authorized Sites from the master contract to the new contract. You can modify this Site information on the child contract.
- **Commodities** — Any associated commodities are copied from the master contract to the new contract. You can modify this commodity information on the child contract.
- **Effective Dates** — Maximo copies the **Start Date** from the master contract to the new contract. The **Start Date** for the child contract cannot be before the **Start Date** or after the **End Date** of the master contract. You can edit the **End Date** on the child contract, but it cannot be after the **End Date** on the master contract.
- **Extensions** — Maximo copies the values in the **Extendable?** check box, **Condition for Extension** and **Extension Period** fields to the new contract. You can modify the values in these fields on the child contract.
- **SLAs** — Any associated service level agreements are copied from the master contract to the new contract.
- **Terms and conditions** — Maximo does not copy terms and conditions from the master contract to the new contract.

  NOTE: When a purchase order references a contract, Maximo copies the terms and conditions from both the contract and its master contract to the purchase order.

You can view associated child contracts on the Associated Contracts tab of the Master Contracts application. You can view and modify each associated contract in the appropriate contract application.

Managing Master Contracts

Once a contract record is approved, if you need to make modifications to it, you will need to use the **Revise Contract** action. This creates a duplicate copy of the original contract with a different **Revision** number and a status of PNDREV, maintaining the original contract for auditing purposes. Once the status of the new revision is changed to approved, Maximo changes the status of the previous version of the contract to REVISD.

You can use the **View History** action to view the status change history for a contract.

NOTE: Contract records cannot be deleted.

Master Contracts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Purchase Contracts

A **purchase contract** is a contract that details the terms for the purchase of assets, items, materials, services, or tools. You use the Purchase Contracts application to create, modify, and view contracts with outside vendors.

You can create the following types of contracts using the Purchase Contracts application:

- PRICE
- BLANKET
- SWLICENSE
- PURCHASE

For more information about contract types, see "Contract Types," on page 4-2.

Multisite and Purchase Contracts

Purchase Contracts are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.

- Records can only be viewed by users who have security permission to the Organization and the application.

A contract cannot be utilized until you use the **Authorize Sites** action to indicate that the contract may be used by one or more Sites. You can add Sites from other Organizations to the contract so long as they use the same Company Set and Item Set. If your company uses a single Company Set and Item Set contracts can be used by all of your Organizations.

Purchase Contracts and Companies

Before you can create a contract for a company you must create a record for the company in the Company Master application. You can view all contracts associated with a vendor using the **View Contracts** action in the Companies application.

Purchase Contracts and Invoices

When you set up a payment schedule for a contract and purchases are made against the contract, Maximo automatically generates an invoice with a status of SCHED (scheduled) for each **Payment Period** listed on the contract. Maximo includes an escalation to change the status of the invoice to WAPPR (waiting on approval) when the invoice reaches its **Due Date**.

Purchase Contracts and Purchasing

You can use the **View Contracts** button on the PR Lines tab of the Purchase Requisitions application and the PO Lines tab of the Purchase Orders application to view a list of contracts for the line item. If you have not specified a vendor on the record, the View Contracts dialog box lists all vendors with whom you have a contract for the line item. If there is a vendor specified on the record, the View Contracts dialog box lists only contracts that contain that item/vendor combination.

When you are creating a purchase requisition or purchase order that lists a purchase contact in the **Reference Contract** field you can use the **Contract Items** button on the PR Lines or PO Lines tab. The Contract Items dialog box allows you to view and select from the line items listed on the contract.

You can create contracts based on information contained on records in the Purchasing module.

- You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** action in the Purchase Requisitions and Purchase Orders application.
- You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** button in the Request for Quotations application.

Using the Purchase Contracts Application

To access the Purchase Contracts application, click the application link on your Start Center, or select **Contracts > Purchase Contracts** from the Go To menu.

The Purchase Contracts application contains the following tabs:

- **List** — to search Maximo for purchase contract records.
- **Contract** — to create, view, or modify purchase contract records.
- **Properties** — to enable or disable properties for the contract.
- **Contract Lines** — to create, view, modify, or delete line items listed on a contract.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the contract.

Purchase Contracts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Purchase Contracts application. For more detailed information,

including prerequisites to performing an action and detailed procedures, refer to the Purchase Contracts Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
associate commodity codes with a contract?	Select **Associate Commodities** from the Select Action menu.
associate service level agreements (SLAs) with a contract?	Select **Associate SLAs** from the Select Action menu.
authorize a Site to use a contract?	Select **Authorize Sites** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record’s status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
change the status of one or more lines on a contract?	Select **Change Line Status** from the Select Action menu.
copy line items from a purchase order (PO) to a contract?	Select **Copy PO Lines to Contract** from the Select Action menu.
copy line items from a purchase requisition (PR) to a contract?	Select **Copy PR Lines to Contract** from the Select Action menu.
create a purchase contract record?	Click the **New Purchase Contract** button in the toolbar.
create a release purchase order from a contract?	Select **Create Release PO** from the Select Action menu. **NOTE:** The **Create Release** check box on the contract must be selected to be able to perform this action.
create a request for quotation (RFQ) from a contract?	Select **Create RFQ** from the Select Action menu.
duplicate a record?	Select **Duplicate Purchase Contract** from the Select Action menu.
modify a contract?	Select **Revise Contract** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.

How Do I...	
modify the price for one or more lines on a contract?	Select **Apply Price Adjustment** from the Select Action menu. **NOTE:** A contract must have a status of DRAFT, WAPPR, or PNDREV to use this action.
record additional details for a software license contract?	Select **Software License Details** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view additional details for a software license contract?	Select **Software License Details** from the Select Action menu.
view all PR lines that were used to create the purchase contract?	Select **View PR Line Items** from the Select Action menu.
view related invoice lines for a contract?	Select **View Invoice Lines** from the Select Action menu.
view all RFQ lines that were used to create the purchase contract?	Select **View RFQ Line Items** from the Select Action menu.
view the revision history for a contract?	Select **View Revision History** from the Select Action menu.
view the total costs for release purchase orders (POs) generated from a purchase contract?	Select **View Release Costs** from the Select Action menu.
view the status change history for a contract?	Select **View History** from the Select Action menu.

Creating Purchase Contracts

You create purchase contract records in Maximo once the negotiations for the contract are complete and you are ready to record the details of the final contract. Purchase contract records can be created in more than one application:

- **Purchase Contracts application** — Click **New Purchase Contract** on the toolbar.
- **Purchase Requisitions application** — Select **Create Contract** from the Select Action menu.
- **Purchase Orders application**— Select **Create Contract** from the Select Action menu.

You can also use the **Duplicate Contract** action to create a copy of an existing purchase contract, for example if you have negotiated similar contracts with more than one vendor. Once you duplicate a contract you can then modify it as needed.

Adding Lines to a Contract

You use the Contract Lines tab to define the items, materials, services, and/or tools that can be purchased under the terms of the contract. You create a separate line for each item, material, service, or tool listed on the contract.

You can use the **Copy PR Lines to Contract** action to use existing PR lines as the basis for contract lines or you can use the **Copy PO Lines to Contract** action to use existing PO lines as the basis for contract lines.

Creating Software License Contracts

For information about Software License Contracts, see "Managing Software Licenses," on page C-18.

Managing Purchase Contracts

Once a contract record is approved, if you need to make modifications to it, you will need to use the **Revise Contract** action. This creates a duplicate copy of the original contract with a different **Revision** number and a status of PNDREV, maintaining the original contract for auditing purposes. Once the status of the new revision is changed to approved, Maximo changes the status of the previous version of the contract to REVISD.

You can change the status of individual lines on an approved contract using the **Change Line Status** action available from the Select Action menu.

If you need to modify the prices associated with one or more lines on a purchase contract you can use the **Apply Price Adjustment** action to do so. (Note that you must first use the **Revise Contract** action to change the contract status to PNDREV.)

You can use the **View Revision History** action to view the dates and contract lines that were changed in each revision of the contract.

You can use the **View History** action to view the status change history for a contract.

NOTE: Contract records cannot be deleted.

Purchase Contracts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Terms and Conditions

Terms and conditions are requirements that are defined for contracts and purchasing records, often by a legal department. You use the Terms and Conditions application to enter and maintain a library of terms and conditions that can be added to a purchasing record or contract. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.

The terms entered in the Terms and Conditions application are available from the Terms and Conditions tabs in purchasing and contract applications. From the tabs, you can select a term from the library to associate with that purchasing or contract record.

Multisite and Terms and Conditions

Terms and Conditions are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Terms and Conditions and Contracts

Each of the contracts applications contains a Terms and Conditions tab, allowing you to list the terms and conditions that will apply to that contract. When you list terms and conditions on a contract, Maximo copies them to records generated from the contract.

Terms and Conditions and Purchasing

The Invoices, Purchase Requisitions, Request for Quotations, and Purchase Orders applications each contains a Terms and Conditions tab, allowing you to list the terms and conditions that will apply to the purchase.

Using the Terms and Conditions Application

To access the Terms and Conditions application, click the application link on your Start Center, or select either

- **Contracts> Terms and Conditions**
- **Purchasing > Terms and Conditions**

from the Go To menu.

The Terms and Conditions application contains a single page with two table windows.

Terms and Conditions Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Terms and Conditions application. For more detailed information,

including prerequisites to performing an action and detailed procedures, refer to the Terms and Conditions Help.

How Do I...	
create a term or condition?	Click an Organization, then click **New Row** in the Terms and Conditions for <Organization> table window.
delete a term or condition?	Click the **Mark Row for Delete** button next to the row in the table window, then click **Save**.

Creating Terms and Conditions

When creating terms you have the option to enter a **Type** for the term.This gives you the ability to filter records in the Terms and Conditions library by Type.

The **Editable?** check box specifies whether the term can be edited once it has been applied to a contract or purchasing record. If the check box is selected, you can edit the term once it has been applied to a record. If the check box is cleared you cannot edit the term when it is copied to records.

The **Default on PO?** check box specifies whether the new term will appear on new purchase orders by default. If the check box is selected, Maximo will copy the term to new purchase orders automatically. If the check box is cleared, the term will not appear by default on new purchase orders.

Managing Terms and Conditions

You can modify an existing term in the Terms and Conditions application at any time. Modifying a term will not update existing contracts or purchasing documents that reference the term.

You can delete a term from the library at any time by using the **Mark Row for Delete** button next to the term. This does not remove the term from any contracts or purchasing documents.

Terms and Conditions Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Warranty Contracts

A **warranty contract** is a contract that details the maintenance of one or more assets or locations by a manufacturer, or an outside service provider.

You can create the following types of contracts using the Warranty Contracts application:

- SERVICE
- WARRANTY

For more information about contract types, see "Contract Types," on page 4-2.

Multisite and Warranty Contracts

Warranty contracts are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

A contract cannot be utilized until you use the **Authorize Sites** action to indicate that the contract may be used by one or more Sites. You can add Sites from other Organizations to the contract so long as they use the same Company Set and Item Set. If your company uses a single Company Set and Item Set contracts can be used by all of your Organizations.

Warranty Contracts and Companies

Before you can create a contract for a company you must create a record for the company in the Company Master application. You can view all contracts associated with a vendor using the **View Contracts** action in the Companies application.

Warranty Contracts and Invoices

When you set up a payment schedule for a contract, Maximo automatically generates an invoice with a status of SCHED (scheduled) for each **Payment Period** listed on the contract. Maximo includes an escalation to change the status of the invoice to WAPPR (waiting on approval) when the invoice reaches its **Due Date**.

Warranty Contracts and Work Orders

Your system administrator can configure Maximo to display the warranty status of work assets when you create work orders. When you create a new work order for a work asset that is covered by a warranty contract Maximo displays a message that the asset or location is under warranty. You can use the **View > Warranties** action to view the warranty contracts that reference the asset or location.

Using the Warranty Contracts Application

To access the Warranty Contracts application, click the application link on your Start Center, or select **Contracts > Warranty Contracts** from the Go To menu.

The Warranty Contracts application contains the following tabs:

- **List** — to search Maximo for service contract records.
- **Contract** — to create, view, or modify warranty contract records.
- **Properties** — to enable or disable properties for the contract.
- **Contract Lines** — to create, view, modify, or delete line items listed on a contract.
- **Associated Assets** — to add, modify, or delete asset or location records associated with a warranty or service contract.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the contract.

Warranty Contracts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Service Contracts application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Warranty Contracts Help.

How Do I...	
authorize a Site to use a contract?	Select **Authorize Sites** from the Select Action menu.
associate service level agreements (SLAs) with a contract?	Select **Associate SLAs** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a warranty contract record?	Click the **New Warranty Contract** button in the toolbar.
duplicate a record?	Select **Duplicate Warranty Contract** from the Select Action menu.
manage payments for a contract?	Select **Manage Payments** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a contract?	Select **View History** from the Select Action menu.

Creating Warranty Contracts

You create service contract records in Maximo once the negotiations for the contract are complete and you are ready to record the details of the final

contract. You create warranty contracts when you purchase assets that include a warranty from the manufacturer.

Defining Contract Lines / Meter Lines

Contract lines can only be added to service or warranty contracts that have a status of DRAFT, PNDREV, or WAPPR.

CAUTION: Once the contract has been approved contract lines and meter lines are read-only and new contract lines can be added to the contract.

You use the Contract Lines tab to define all of the services and standard services that are provided under the terms of the service or warranty contract. You can define the duration of the coverage, if child assets are covered, and the coverage percent or amount for labor, materials, and tools. If there is a meter associated with the coverage, for example a warranty for 5 years or 50,000 miles, you can list the meter in the Meter Lines for Contract Line table window.

Associating Assets with a Contract

Once you have defined Contract Lines and Meter Lines for the contract and it has been approved, you can associate assets or locations with the contract. When you associated an asset or location with a contract, Maximo automatically associates all of the contract lines with that asset or location record.

Maximo only copies meter lines to the associated asset or location if the meter has the same **Unit of Measure** as an existing meter for the asset or location. For example, if you have a metered asset where the **Unit of Measure** for the meter is "miles", Maximo will copy all of the contract lines that have a meter where **Unit of Measure** = "miles" to the Contract Lines for Asset/Location table window.

Duplicating Warranty Contracts

You can use the **Duplicate Contract** action to create a copy of an existing warranty contract, for example if you have similar contracts for more than one asset. When you duplicate a service or warranty contract, Maximo copies all contract lines, authorized Sites, associated service level agreements, and terms and conditions to the new contract. Maximo does not copy associated assets or meters to the new contract. Once you duplicate a contract you must specify the **Start Date** for each asset or location, and the **Start Reading** for any meters associated with the assets or locations.

Managing Warranty Contracts

You cannot edit or revise a service or warranty contract once it has been approved.

You can use the **View History** action to view the status change history for a contract.

NOTE: Contract records cannot be deleted.

Warranty Contracts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

5 The Deployed Assets Module

The applications in the Deployed Assets module let you search the Maximo database and view information collected by an asset discovery tool about hardware and software installed on computers, network printers, and network devices deployed at your company.

The Deployed Assets Module consists of the following applications:

Application	Function
Computers	Used to view data about specific computers deployed at your company.
Network Devices	Used to view information about deployed network devices such as routers, switches, and hubs.
Network Printers	Used to view information about deployed network printers.

Maximo maintains two distinct sets of data about information technology (IT) assets in two different Maximo modules, the Assets module and the Deployed Assets module.

- **Assets Module** — Asset records for purchased or leased IT assets are created in the Assets application or via the **Receive Rotating Items** action in the Receiving application. Asset records for IT assets are rotating assets, that is they contain a value in their **Rotating Item** field, and should be created with a value in the **Classification** field on the Specifications tab to allow the reconciliation function to distinguish them from other types of asset records. IT asset records in the Assets application are considered **authorized** assets.

- **Deployed Assets Module** — Computer, network device, and network printer records are created automatically from data collected about your IT assets. To gather this data, asset discovery tools (Maximo® Discovery, or another tool, such as Microsoft® SMS or IBM® Tivoli Inventory) scan computers, network devices, and network printers deployed at your company and record information about the hardware and software installed on those assets. Maximo Fusion assembles the collected data and imports it into Maximo. The records that you view in the Deployed Asset applications list **discovered** or **deployed** IT assets.

  NOTE: There are several different discovery tools that can be used with Maximo.

Administrators use the applications in the Deployed Asset Administration module to control how Maximo displays data about deployed IT assets.

After Maximo Fusion imports deployed asset data into Maximo, an administrator uses the Reconciliation module applications to set up rules for comparing authorized with deployed assets, to define a reconciliation task that can be run as a cron task, and to view the results of the reconciliation.

Deployed Asset Administration

Because of variable hardware and software naming conventions, data collected by asset discovery tools is often inconsistent. For example, sometimes a computer may be described as a *Computer Type 4* and sometimes as a *Computer Type IV*. In addition, sometimes asset discovery tools include version and release numbers in product names, such as Maximo 4.1 or Maximo 5.2. Your organization may only want to track instances of a product without specifying a version number.

The Deployed Assets Administration module applications let you control how Maximo displays the data collected by your asset discovery tool in the Deployed Assets module applications. Deployed Assets Administration includes five conversion applications that let you translate inconsistent names used by asset discovery tools to standard naming conventions, a Software Suite Setup application that lets you assemble software applications into software application suites, and a Software Usage Setup application to control how Maximo displays data about software usage frequency.

The Deployed Assets Administration module consists of the following applications:

Application	Function
Adapter Conversion	Use to establish standard adapter naming conventions for adapters used in computers, both media adapters (such as video and sound cards) and network adapters. The Adapter Conversion application determines how Maximo displays deployed asset adapter data in reports and in the Computers and Network Devices applications.
Manufacturer Conversion	Use to establish standard manufacturer naming conventions for hardware and software manufacturers. The Manufacturer Conversion application determines how Maximo displays deployed asset manufacturer data in reports and in the Computers, Network Devices, and Network Printers applications.
Operating System Conversion	Use to establish standard naming conventions for operating systems used in computers. The Operating System Conversion application determines how Maximo displays deployed asset operating system data in reports and in the Computers application.
Processor Conversion	Use to establish standard processor naming conventions for central processors (CPUs) used in computers. The Processor Conversion application determines how Maximo displays deployed asset processor data in reports and in the Computers application.

Application	Function
Software Conversion	Use to establish standard naming conventions for software applications used in computers. The Software Conversion application determines how Maximo displays deployed asset software names in the Computers application.
Software Suite Setup	Use to define which software applications should be considered part of a suite. A software suite is a group of software applications licensed as a single unit. Maximo displays data about software suites on the Suites subtab of the Software tab in the Computers application.
Software Usage Setup	Use to specify a range for usage frequency and to assign that range a user-friendly, textual description that is displayed in the Computers application. For example, administrators can use the word "frequently" to describe software that is used between 10 and 20 times or "rarely" to describe software that is used between 0 and 4 times. Maximo provides usage frequency data for both individual software applications and application suites. The frequency for a software suite is determined based on the component application with the highest usage count.

NOTE: Access to the Deployed Asset Administration module is generally restricted to system administrators. Refer to the *Maximo System Administrator's Guide* or the Maximo Help for more information about this module.

Reconciliation Administration

The Reconciliation module includes five applications that allow you to configure a behind-the-scenes process, executed via a cron task, that compares the IT asset information maintained in the Assets application with the data maintained in the Deployed Assets module applications, and then view the results of the comparison.

NOTE: Maximo only applies the reconciliation process to assets that have a **Classification** that indicates they are IT assets.

The reconciliation process compares the authorized assets records in the Maximo database with the deployed assets records and identifies discrepancies and variances between the two. Your enterprise can use this reconciliation to determine whether the IT assets actually deployed comply with corporate plans and whether the changes over an asset's life cycle are in compliance with corporate policies.

Discrepancies you discover can result from a variety of factors, including:

- incorrect data entry
- reconfigured equipment
- retired equipment
- theft
- unauthorized use of hardware and software

The Reconciliation module consists of the following applications:

Application	Function
Reconciliation Tasks	Use to define the task to be performed as part of a reconciliation. You use this application to combine one or more link rules and, if necessary, a task filter, and one or more comparison rules into a reconciliation task. The task filter and comparison rules are optional. This application also lets you specify how Maximo displays results for comparison rule evaluations: all results, failed reconciliations, or successful reconciliations. You use the Cron Task Setup application to create a cron task to schedule the execution of a reconciliation task.
Task Filters	Use to define the subset of either assets or deployed assets that should be included in a reconciliation, for example only reconcile network printers. Setting up a task filter is optional. If you do not define a task filter, Maximo compares all IT assets in authorized assets with deployed assets.
Link Rules	Use to define the link rule that establishes a basis for comparison between a top-level authorized IT asset and a computer, network printer, or network device in deployed assets. A link rule is generally based on serial number or asset tag.
Comparison Rules	Use to identify attribute(s) of parent or child IT assets to compare with attributes of parent or child deployed assets when a reconciliation task is executed.
Link Results	Use to view all successful one-to-one links between a top-level authorized IT asset and a computer, network printer, or network device in deployed assets.
Reconciliation Results	Use to view results of a reconciliation. This application lists link failures and the results of comparison rule evaluations. A link failure occurs when Maximo applies a link rule and finds no link or finds multiple links between a top-level IT asset and a deployed asset. Based on specifications defined in the Reconciliation Tasks application, this application also displays one of the following sets comparison rule results: ▼ all reconciliation results (both failed and successful) ▼ instances where authorized IT assets successfully reconciled against deployed assets ▼ instances where authorized IT assets failed to reconcile against deployed assets

NOTE: Access to the Reconciliation module is generally restricted to system administrators. Refer to the *Maximo System Administrator's Guide* or the Maximo Help for more information about this module.

Computers

A **computer** record is a record of information about a specific computer deployed at your company. A computer record contains information collected by an asset discovery tool and imported into Maximo using Maximo Fusion.

Information contained on a computer record includes data about the following:

▼ random access memory (RAM)

- basic input/output system (BIOS)
- motherboard
- software applications
- storage devices (such as hard disks and floppy drives)
- central processing unit (CPU)
- media adapters (such as sound and video cards)
- communication devices (such as modems and network adapters)
- network settings for TCP/IP and IPX protocols
- image devices (such as printers and scanners)
- displays
- individual users

A computer record also displays information about the hardware and software discovery tools used to collect data and the last date on which the hardware and software data was gathered. In addition, the record displays the **Site** at which the computer is located and the **Role** or function assigned to the computer, such as desktop, notebook, server, and so forth.

NOTE: Empty fields on a computer record indicate that the data for the field was not provided by the asset discovery tool or that administrators did not map the data for import into Maximo.

Multisite and Computer Records

Computer records are at the System, or database level. The Deployed Asset applications contain a **Site** field, but not an **Organization** field. In most cases the **Site** field will be empty.

NOTE: Most asset discovery tools do not provide data about Sites and Organizations. In order to be able to differentiate computers, network devices, and network printers by Sites and/or Organizations, your system administrator must specifically set these values when creating a mapping in the Maximo Fusion application.

Computer Records and Maximo Fusion

Computer records are created when data gathered by an asset discovery tool is imported into Maximo using Maximo Fusion.

Computer Records and Deployed Asset Administration

The applications in the Deployed Assets Administration module determine how Maximo displays values in certain computer record fields. Because discovery tools do not use consistent naming conventions when they collect data about deployed assets, the Deployed Assets Administration module includes conversion applications that let an administrator configure how Maximo displays adapter, manufacturer, operating system, processor, and software names.

For example, the discovery tool might encounter variations such as *MRO Software*, *MRO Software, Inc.* and *MRO Software Incorporated* in the manufacturer name. Your company may want to use only the name *MRO Software*. The Manufacturer Conversion application can be used to control how this data is recorded on a computer record.

In addition to the conversion applications, the Deployed Assets Administration module also lets administrators define which applications are combined into the software suites displayed on the Suites subtab on the Software tab and how Maximo displays data about software usage frequency on the Applications subtab on the Software tab.

This administrative application	Determines the value in this field
Manufacturer Conversion	**Manufacturer** field on the Computer tab
Adapter Conversion	**Media Adapter Type** field on the Media Adapters tab
Operating System Conversion	**Operating System** field on the Operating Systems subtab of the Software tab
Processor Conversion	**Make/Mode**l field on the Processors tab
Software Conversion	**Application** field on the Applications subtab of the Software tab
Software Suites Setup	**Suite** field on the Suites subtab of the Software tab
Software Usage Setup	**Usage** field on the Application subtab of the Software tab

Computers Records and Reconciliation

The applications in the Reconciliation module determine how authorized asset and deployed asset records are matched during the reconciliation process. For more information, see “Reconciliation Administration,” on page 5-3.

Using the Computers Application

To access the Computers application, click the application link on your Start Center, or select **Assets > Deployed Assets > Computers** from the Go To menu.

The Computers application contains the following tabs:

- **List** — to search Maximo for computer records.
- **Computer** — to view computer records.
- **Processors** — to view information about central processing units (CPUs) associated with the computer.
- **Storage** — to view information about physical storage components such as hard disks, floppy drives, tape devices, and Universal Serial Bus (USB) removable storage, as well as data about logical drives, for example local

partitions or mapped network drives, that are associated with the computer.

- **Software** — to view information about installed software applications, operating systems, software suites, and files.
- **Network** — to view information about network adapter settings (Transmission Control Protocol/Internet Protocol (TCP/IP) and Internetwork Packet Exchange (IPX) settings) for the computer.
- **Communication** — to view information about network adapters and communication devices, for example modems, installed on the computer.
- **Media Adapters** — to view information about media adapters, such as sound and video cards, associated with the computer.
- **Displays** — to view information about monitors associated with the computer.
- **Image Devices** — to view information about image devices, such as printers or scanners, associated with the computer.
- **Users** — to view information about the users associated with the computer.

Computers Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Computers application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Computers Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a computer record?	Computer records are created from data collected by an asset discovery tool and imported into Maximo using Maximo Fusion.
delete a record?	Select **Delete Computer** from the Select Action menu.
match a computer record to an asset record?	Use the Reconciliation module to define a reconciliation task for the match and run the reconciliation cron task.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Computer Records

Computer records are not created using the Computers application; they are created when data collected by an asset discovery tool is imported into Maximo using Maximo Fusion.

Managing Computer Records

Computer records displayed in the Computers application are read-only; they cannot be edited.

A computer record can be deleted using the **Delete Computer** action in the Select Action menu.

NOTE: If you delete a computer record and the same computer is detected by your asset discovery tool at a later date when Maximo Fusion imports data into Maximo, the computer record will be re-created in the database.

Computers Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Network Devices

A **network device** record is a record of information about a specific network device, for example a router, hub, or switch. Network device records contain information collected by an asset discovery tool and imported into Maximo using Maximo Fusion.

A network device record contains information collected about the device, device cards installed on the network device, the **Role** or function assigned to the device (such as router, switch, or hub), the hardware discovery tool used to collect data, and the last date on which data was gathered.

NOTE: Empty fields on a network device record indicate that the data for the field was not provided by the asset discovery tool or that administrators did not map the data for import into Maximo.

Multisite and Network Devices

Network Devices are at the System, or database level. The Deployed Asset applications contain a **Site** field, but not an **Organization** field. In most cases the **Site** field will be empty.

NOTE: Most asset discovery tools do not provide data about Sites and Organizations. In order to be able to differentiate computers, network devices, and network printers by Sites and/or Organizations, your system administrator must specifically set these values when creating a mapping in the Maximo Fusion application.

Network Devices and Deployed Asset Administration

The value displayed in the **Manufacturer** field on the Device Cards tab and on the Network Device tab is determined by parameters defined by an administrator in the Manufacturer Conversion application. The value

displayed in the **Make/Model** field on the Device Cards tab is determined by parameters defined by an administrator in the Adapter Conversion application.

Network Devices and the Reconciliation Application

The applications in the Reconciliation module determine how authorized asset and deployed asset records are matched during the reconciliation process. For more information, see "Reconciliation Administration," on page 5-3.

Using the Network Devices Application

To access the Network Devices application, click the application link on your Start Center, or select **Assets > Deployed Assets > Network Devices** from the Go To menu.

The Network Devices application contains the following tabs:

- **List** — to search Maximo for network device records.
- **Network Device** — to view information about a network device, such as a hub, router, or switch.
- **Device Cards** — to view information about cards, such as Ethernet or Token Ring cards, that are installed on the network device.

Network Devices Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Network Devices application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Network Devices Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a Network Device record?	Network Device records are created from data collected by an asset discover tool and imported into Maximo using Maximo Fusion.
delete a Network Device record?	Select the **Delete Network Device** action from the Select Action menu.
run Network Device Reports?	Select **Run Reports** from the Select Action menu.

Creating Network Device Records

Network device records are not created in the Network Devices application; they are created when data collected by an asset discovery tool is imported into Maximo using Maximo Fusion.

Managing Network Device Records

Network device records displayed in the Network Devices application are read-only; they cannot be edited.

A network device record can be deleted using the **Delete Network Device** action in the Select Action menu.

NOTE: If you delete a network device record and the same network device is detected by your asset discovery tool at a later date when Maximo Fusion imports data into Maximo, the network device record will be re-created in the database.

Network Devices Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Network Printers

A **network printer** record is a record of a network printer that has been discovered on the company network via an asset discovery tool. Network printers service more than one computer. A printer connected to only one computer will be listed as part of the record for that computer on the Image Devices tab of the Computers application.

A network printer record also contains information about the **Role** or function assigned to the printer, the hardware discovery tool used to collect data, and the last date on which hardware data was gathered.

NOTE: Empty fields on a network printer record indicate that the data for the field was not provided by the asset discovery tool or that administrators did not map the data for import into Maximo.

Multisite and Network Printers

Network Printers are at the System, or database level. The Deployed Asset applications contain a **Site** field, but not an **Organization** field. In most cases the **Site** field will be empty.

NOTE: Most asset discovery tools do not provide data about Sites and Organizations. In order to be able to differentiate computers, network devices, and network printers by Sites and/or Organizations, your system administrator must specifically set these values when creating a mapping in the Maximo Fusion application.

Network Printers and Deployed Asset Administration

The value displayed in the **Manufacturer** field in a network printer record is determined by parameters defined by an administrator in the Manufacturer Conversion application in the Deployed Assets Administration module.

Network Printers and the Reconciliation Application

The applications in the Reconciliation module determine how authorized asset and deployed asset records are matched during the reconciliation process. For more information, see "Reconciliation Administration," on page 5-3.

Network Printers and the Computers Application

Only network-based printers are included in the Network Printers application. Information about printers installed locally on specific computers is displayed in the Computers application on the Image Devices tab.

Using the Network Printers Application

To access the Network Printers application, click the application link on your Start Center, or select **Assets > Deployed Assets > Network Printers** from the Go To menu.

The Network Printers application contains the following tabs:

- **List** — to search Maximo for network printer records.
- **Network Printer** — to view information about a network printer.

Network Printers Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Network Printers application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Network Printers Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a Network Printer record?	Computer records are created from data collected by an asset discover tool and imported into Maximo using Maximo Fusion.
delete a Network Printer record?	Select the **Delete Network Printer** action from the Select Action menu.
run Network Printer Reports?	Select **Run Reports** from the Select Action menu.

Creating Network Printer Records

Network printer records are not created in the Network Printers application; they are created when data collected by an asset discovery tool is imported into Maximo using Maximo Fusion.

Managing Network Printer Records

Network printer records displayed in the Network Printers application are read-only; they cannot be edited.

A network printer record can be deleted using the **Delete Network Printer** action in the Select Action menu.

NOTE: If you delete a network printer record and the same network printer is detected by your asset discovery tool at a later date when Maximo Fusion imports data into Maximo the network printer record will be re-created in the database.

Network Printers Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

6 The Inventory Module

Managing your spare parts inventory is an important part of maintaining any asset. The Inventory module in Maximo tracks materials needed for maintenance. Maximo keeps track of items in stock, indicates when stock falls below user-defined reorder points, creates purchase requisitions and purchase orders to restock needed items, and reports items received.

The Maximo Inventory module works to balance two opposing objectives:

- maximizing the availability of items for upcoming work tasks
- reducing excess inventory balances and related carrying costs

The goal is to find a balance of inventory stock that lets maintenance work be performed with minimum delays due to unavailable materials, without keeping unnecessary or seldom used items in stock.

The Inventory Module consists of the following applications:

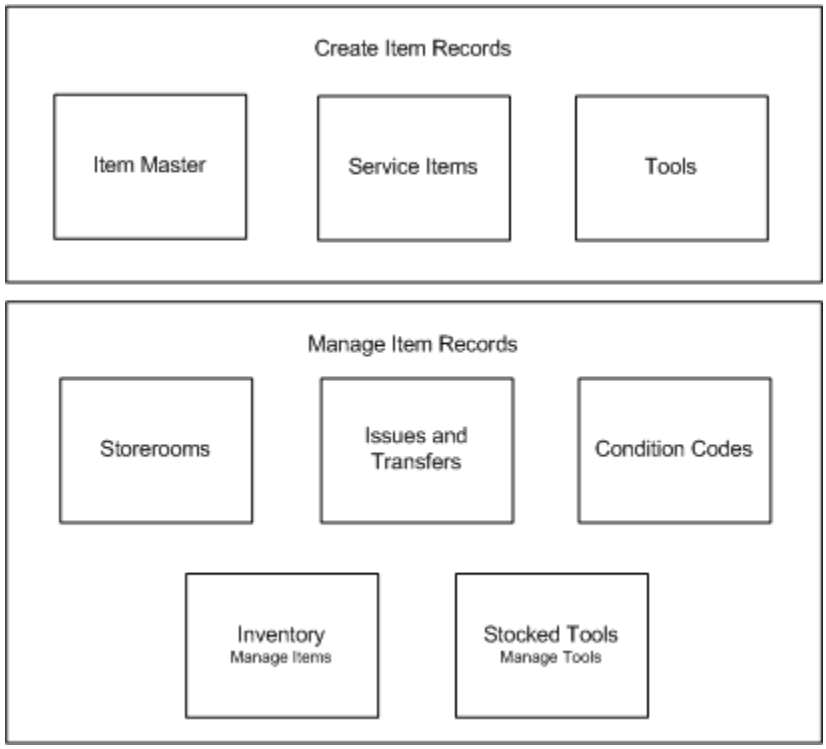
Application	Function
Condition Codes	Used to define the codes used to describe the condition of items.
Inventory	Used to manage items in inventory, including tracking stock levels, reordering items, and tracking rotating assets.
Issues and Transfers	Used to issue stock from inventory (with or without a work order), and to transfer stock from one storeroom location to another.
Item Master	Used to define inventory items, and add them to a storeroom's stock list.
Service Items	Used to define services that your company requisitions, either as part of the purchasing process, or as part of a work order.
Stocked Tools	Used to manage tool inventory.
Storerooms	Used to define storeroom locations, and view a read-only list of items stocked at each storeroom location.
Tools	Used to define tools and add them to storerooms.

Inventory is a central module in Maximo. It functions in a dynamic relationship with the Preventive Maintenance, Work Orders, Contracts, Purchasing, and Assets modules, and with the Companies and Company

Master applications in the Resources module. These other modules affect the quantity of items in inventory, identify where those items are used, and the vendors who supply them to your company.

System administrator privileges are required for the necessary setup in the administrative Chart of Accounts, Organizations, and Cron Task Setup applications. Refer to the *Maximo System Administrator's Guide* and the Organizations Help for additional information about these applications.

Maximo's inventory management applications include applications for creating item records and separate applications for managing those items in storerooms.



You use the Storerooms application to define financial and billing information for storeroom locations, for example the General Ledger (GL) account codes and **Ship To Address** for each storeroom location. Storerooms can be physical locations, or employees who are responsible for transporting or holding inventory item, for example a mobile worker who stores spare parts in their vehicle.

Before you create item records you should define all of the units of measurement and the conversion values for those units of measurement. And if you are using condition codes for inventory items, you should also define the master list of conditions for each Item Set before creating item records.

You use the Item Master application to create records for items and materials that your company uses for maintenance purposes. You also use the Item Master application to define the characteristics and specifications of rotating items that can be used to create rotating asset records, for example information technology (IT) assets. Items are added to the master stock list for a storeroom in the Item Master application.

Item balances are managed in the Inventory application. Maximo's reorder process can automatically reorder items when item balances reach a specified point. When the receipt of ordered items is recorded in the Receiving application, Maximo updates inventory balances for the items.

You use the Service Items application to create records for the standard services that your company purchases. Service items can be used on job plans, work orders, purchase requisitions, and purchase orders.

You use the Tools application to create records for tools that will be issued from and managed in a tool storeroom. Tool balances are managed in the Stocked Tools application.

You can list items, services, and tools on job plans and work orders. Inventory reservations are created for items and tools when a work order status is changed to approved (APPR). You use the Issues and Transfers application to issue and transfer items, and the Stocked Tools application to issue and transfer tools. Items and tools can be issued to an individual if they are listed in the Locations application as a labor type location. Costs for items and tools can be charged to a work order, asset, location, or GL account code.

Inventory and Multisite - Item Sets

Inventory items and materials, service items, and tools are created as part of an **Item Set**. An Item Set consists of an ID that identifies a list of items that can be shared by one or more Organizations. Only one Item Set can be specified for an Organization, but more than one Organization may use the same Item Set. Items and tools can be transferred between Organizations that share the same Item Set.

When creating item records, all item identifiers must be unique within an Item Set. Everywhere that an item ID is referenced on a Maximo record there is also an Item Set ID.

Conversion values between **Order Units** and **Issue Units** are defined at the Item Set level via the **Add/Modify Conversions** action available from the Select Action menu of several of the inventory and purchasing applications.

Units of measurement for **Order Units** and **Issue Units** are defined at the Organization level via the **Add/Modify Units of Measure** action available from the Select Action menu of several of the inventory and purchasing applications.

NOTE: It is recommended that all possible combinations of units of measure and their conversion values be defined before creating item master records.

Commodity Groups

A **commodity** is a thing or product that you purchase. Some companies organize their purchasing departments by commodity. Purchasing managers may create budgets, create and manage purchase orders, and manage vendor relationships based on commodities.

You can create commodity group and commodity code records in Maximo that can be applied to item, company, and contract records. When you associated a **Commodity Group** and **Commodity Code** with an item record it allows users, for example planners or purchasing agents, to search for items by commodity code.

Commodity codes are defined and managed using the **Add/Modify Commodity Codes** action available from the Select Action menu of the following applications:

- Companies
- Item Master
- Purchase Orders
- Service Items
- Tools

Commodity codes are defined at the Item Set level. Commodity group names must be unique for the Item Set. A commodity code can only belong to a single commodity group. You cannot delete commodity groups or codes if they are associated with other Maximo records.

You can also create service type commodities to help you categorize and manage services. For more information about service type commodities, see "Service Catalog," on page 13-1.

Kits

A **kit** is a collection of items that can be issued as a single unit. A kit record is created in the Item Master application, and consists of a parent item record, and associated child item records that are listed on the Item Assembly Structure tab. Using kits allows you to put all the items needed for a job plan or maintenance task into one container and manage them as a single unit.

Kits are defined in the Item Master application, and managed in the Inventory application. You cannot create kits that contain items that are condition-enabled, lotted, or are defined as rotating items.

NOTE: The individual items that make up a kit are considered part of the kit, and are not tracked separately in inventory once they have been assembled into a kit. This means that balances for an item record do not include any instances of that item that have been assembled into a kit.

Condition Codes

A **condition code** enables you to specify that an item record has a different value depending on the physical condition of an item. For example, an item that has been damaged, worn, used, or rebuilt would not have the same value as a new item. A condition code has a rate associated with it, which can be used to calculate the value of non-new inventory items. For example, you might create two conditions for an item, "new" where the value of the item is 100%, and "used" where the value of the item is 50% of the full value.

You use the Condition Codes application to create a master list of condition codes for each Item Set defined in your database. For more information about

Item Sets refer to the *Maximo System Administrator's Guide*. The condition codes you create can be applied to the following types of Maximo records:

- item records created in the Item Master application
- rotating asset records created in the Assets application

Multisite and Condition Codes

Condition Codes are defined at the Item Set level. Item Sets exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new records must be unique within the Item Set.
- Records are available to all users in the Organizations that share the Item Set and who have security permissions to the application.

Each Item Set has a separate list of condition codes. Item Sets can be shared by more than one Organization.

Condition Codes and Assets

Condition codes are an inventory function, but they can be applied to rotating assets, since rotating asset records include a value in the **Rotating Item** field.

For more information about rotating items, see "Item Master Records and Assets," on page 6-20.

For more information about rotating assets, see "Understanding Rotating Assets," on page 3-11.

Condition Codes and Inventory

Condition codes are used to indicate the value of inventory items in various physical conditions. They are also used to help calculate the value of worn or used items that have been returned to inventory.

When you are managing a condition enabled item record, entering a condition code value is mandatory when using the following inventory actions:

- **Issue Current Item**
- **Transfer Current Item**
- **Inventory Adjustments > Current Balance**
- **Inventory Adjustments > Physical Count**

NOTE: You cannot apply a condition code to a kit, because each item in the kit could potentially have a different condition.

Condition Codes and Issues and Transfers

A new item received into inventory in the Receiving application has a condition code equivalent to "new" with a rate of 100%. The item can be

issued, used, and returned to inventory, at which point the condition would no longer be "new" and the value or rate would no longer be 100%. When an item is returned (issued back to) to a storeroom, the existing condition code is displayed in the **From Condition Code** field for the item, and the new condition can be entered in the **To Condition Code** field.

Condition Codes and Item Records

When you create item records that will have condition codes applied to them you must first select the **Condition Enabled?** check box, then enter a row in the Condition Codes table window for each condition you want to apply to the item.

Condition Codes and Tools

You cannot apply a condition code to a tool record.

Using the Condition Codes Application

To access the Condition Codes application, click the application link on your Start Center, or select **Inventory > Condition Codes** from the Go To menu.

Condition Codes Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Condition Codes application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Condition Codes Help.

How Do I...	
create a new condition code?	Click the Item Set, then click **New Row** in the Condition Codes table window.
delete a condition code?	Click the **Mark Row for Delete** button next to the row in the table window, then click **Save**.

Creating Condition Codes

When you create a condition code the code is added to a master value list that can be applied to all items in the Item Set.

Managing Condition Codes

You cannot modify a condition code after it has been saved.

To delete a condition code, click the **Mark Row for Delete** button next to the row in the table window, then click **Save**. You cannot delete a condition code if it is associated with an item record.

Condition Codes Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Inventory

An **inventory** is a listing of all items, materials, and rotating assets that are stored in your storerooms. With Maximo you create item records in the Item Master application, and you create storeroom records in the Storerooms application, but you manage your inventory in the Inventory application.

Using the Inventory application you can track item balances down to the bin and lot level for a storeroom, as well as item costs using condition codes. You can track vendors that supply an item as well as reorder details such as price and lead time for orders. You can view rotating assets that list a rotating item record, as well as assets that list the item as a spare part.

You use the Inventory application to view information about a specific item at a specific storeroom location. The fields on an inventory record refer to item/location records. **Current Balance**, for example, means the current balance of the item at the storeroom in the **Storeroom** field. Like **Current Balance**, the fields listed under Balance Summary, Issue History, and Balances all apply to the item in a *specific* storeroom.

Multisite and Inventory

The Inventory application tracks items and materials in storerooms, which are at the Site level. Thus the Inventory application is managed at the Site level.

Inventory and Condition Codes

Condition codes are created in the Condition Codes application, and applied to item records in the Item Master application.

When you are managing a condition enabled item record, entering a condition code value is mandatory when using the following inventory actions:

- **Issue Current Item**
- **Transfer Current Item**
- **Inventory Adjustments > Current Balance**
- **Inventory Adjustments > Physical Count**

Inventory and Item Records

With Maximo you create item records in the Item Master application, but you manage your inventory in the Inventory application.

Inventory and Purchasing (Reordering)

When you reorder items either manually (using one of the reorder actions in the Inventory application), or automatically (via a reorder cron task set up by your system administrator), Maximo automatically creates one or more purchasing records for the reorder. Exactly what type of purchasing records are created is based on settings controlled by your system administrator. Your system administrator can configure Maximo so that when purchase requests are received one of the following types of records is created:

- Unapproved purchase requisitions (PRs)
- Approved purchase requisitions (PRs)
- Unapproved purchase orders (POs)
- Approved purchase orders (POs)

Inventory and Storerooms

Inventory records refer to an item/location combination, usually an item at a storeroom location. Storeroom records are created using the Storerooms application. Items are added to storerooms using the **Add Item to Storeroom** action in the Item Master application.

Using the Inventory Application

To access the Inventory application, click the application link on your Start Center, or select **Inventory > Inventory** from the Go To menu.

The Inventory application contains the following tabs:

- **List** — to search Maximo for inventory records.
- **Inventory** — to enter, view, or modify item balances, costs, balances, bins and lots, and to view storeroom locations where the item is stocked.
- **Reorder Details** — to enter, view, or modify reorder details, such as the reorder point, lead time, and issue units of an item. In addition, you can enter or view information about one or more vendors for a item, as well as information about multiple manufacturers or models for each vendor.
- **Rotating Asset** — to identify and track rotating assets associated with a rotating item record.
- **Where Used** — to list all assets on which an item is listed as a subassembly or spare part.

Inventory Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Inventory application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Inventory Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
adjust the current balance in a storeroom based on a physical count of the item?	Select **Inventory Adjustments > Reconcile Balances** from the Select Action menu.
assemble items into a kit?	Select **Assemble Kit** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
break up a kit into individual items?	Select **Disassemble Kit** from the Select Action menu.
clear a lock on the reorder process associated with my user name?	Select **Reorder > Clear Reorder Locks** from the Select Action menu.
compare information for multiple vendors for an item?	Select **View Vendor Analysis** from the Select Action menu.
create an inventory record?	Item records are created in the Item Master application. Storeroom records are created in the Storerooms application. You add items to storerooms using the **Add Items to Storerooms** action in the Item Masters application.
enter a physical count for an item?	Select **Inventory Adjustments > Physical Count** from the Select Action menu.
issue an item to an asset, general ledger account, location, or work order?	Select **Issue Current Item** from the Select Action menu.
modify the average cost for the item at this storeroom location?	Select **Inventory Adjustments** > **Average Cost** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify the current balance of an item at this storeroom location?	Select **Inventory Adjustments > Current Balance** from the Select Action menu.
modify the standard cost for the item at this storeroom location?	Select **Inventory Adjustments > Standard Cost** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
reorder items that will be issued without being received into inventory?	Select **Reorder > Reorder Direct Issue Itms/ Svcs** from the Select Action menu.

How Do I...	
reorder stocked items?	Select **Reorder > Reorder Items** from the Select Action menu.
reset the year-to-date issue history for an item?	Select **Inventory Adjustments > Zero Year to Date Quantities** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
transfer items from one bin to another?	Select **Transfer Current Item** from the Select Action menu.
transfer items from one Site to another Site?	Select **Transfer Current Item** from the Select Action menu.
transfer items from one storeroom to another?	Select **Transfer Current Item** from the Select Action menu.
view all of the storerooms that stock an item?	Select **View Item Availability** from the Select Action menu.
view inventory transactions (adjustments, issues and transfers, receipts, and returns) related to the current record?	Select **View Inventory Transactions** from the Select Action menu.

Using the Inventory Application

You use the Inventory application to enter, display, and update information for a specific item at a specific storeroom location. With Maximo you create item records in the Item Master application, and you create storeroom records in the Storerooms application, but you manage your inventory in the Inventory application.

Stocked, Nonstocked, and Special Order Items

Maximo uses the **Stock Category** field as part of the reorder process, as a means of determining which items should be reordered on a regular basis.By default Maximo recognizes three categories of inventory items:

- **NS** —Non-stocked item. Nonstocked items are items you do not stock on a regular basis, need only occasionally, or do not want to maintain in your storerooms throughout the year. Nonstocked items are not automatically reordered, but because you order these items as needed you want to retain the item records in the database. These records are useful both for cost tracking purposes and for future reference (for example, the vendor's name, the price, and so on).

  Example of non-stocked items include items needed once a year for inspections, or items that are only stocked during certain seasons of the year.For example, each spring you replace your air filters. Since you only need the air filters once a year, you do not stock them in your storerooms, you only order them just before they need to be replaced. But because you order the air filters every year, you want to keep the record for the item in your database for reference next spring.

- **SP**— Special Order Item. Special order items are typically items that are ordered only once, often for unexpected needs or for a one-time work order. These items are not kept in stock, and you do not expect to order them again, thus you do not need a permanent record of the item in your database. In most cases, after the item is received, you want to delete special order item records from the database. For more information about deleting item records, see "Managing Item Master Records," on page 6-26.

- **STK** — Stocked Item. This is the default value for a new item added to a storeroom. A stocked item is an item that you stock on a regular basis, and want to keep on hand because it has a regular turnover rate and is frequently needed. Stocked items are automatically included in Maximo's reorder process. Stocked items have a reorder criteria (for example, a reorder point and an economic order quantity) which is specific to each storeroom location.

  Examples of stock items include bearings, gaskets, valves, and belts.

Creating Inventory Records

You use the Inventory application to view information about a specific item at a specific storeroom location. Item records are created in the Item Master application. Storeroom records are created in the Storerooms application. You add items to storerooms using the **Add Items to Storerooms** action in the Item Masters application.

Creating Kits

A **kit** is a collection of items that can be issued as a single unit. Kits are defined in the Item Master application, and managed in the Inventory application.

After you define the contents of a kit in the Item Master application, you use the **Assemble Kit** action in the Inventory application to create kit records for a single storeroom location. Maximo calculates the number of kits that can be build based on current balances for the kit components, and allows you to enter the quantity of kits you want to assemble.

NOTE: You cannot assemble kits from items located in different storerooms.

Managing Inventory

Many companies are moving to a just-in-time system to reduce their inventory levels and associated carrying costs. When using a just-in-time system for maintenance, you base your purchasing and stock levels on upcoming work, rather than on past usage. Because parts and assets can become obsolete and your company's process can change, looking back might not be as useful as looking forward when considering your inventory needs.

Maximo can accommodate a just-in-time system by letting you set reorder quantities. Using the Preventive Maintenance application to plan upcoming maintenance and inspection work also can help to determine which items will be needed in the future.

Viewing Item Availability

The Inventory application displays separate item records for each storeroom location.

Inventory | Filter | 1 - 3 of 3 | Download

Item	Description	Storeroom	Current Balance	Commodity Group	Rotating?	Kit?	ABC Type	Site
11453								=BEDFORD
11453	**Seal, Mechanical, Self Aligning- 1 In ID**	**MACHSHOP**	**1.00**	**SEALS**	**N**	**N**	**B**	**BEDFORD**
11453	Seal, Mechanical, Self Aligning- 1 In ID	GARAGE	0.00	SEALS	N	N		BEDFORD
11453	Seal, Mechanical, Self Aligning- 1 In ID	CENTRAL	21.00	SEALS	N	N	B	BEDFORD

Select Records

If you are trying to locate stock for an item or material you can use the **View Item Availability** action to view balances for all storeroom locations that stock the item, all lots of the item, all PRs and POs that list the item, alternate items that can be substituted for the item, and approved work orders that have created reservations for the item.

NOTE: Items that have been assembled into kits do not appear in item balances displayed in this dialog box.

Maximo's Reorder Process

When Maximo reorders inventory stock, the amount to be ordered is based on Maximo's reorder logic, which uses the following formula:

(current balance + quantity on current purchase requisitions and purchase orders) — (quantity reserved for work orders and internal purchase orders + quantity expired) < = Reorder point

"Current Purchase Requisitions and Purchase Orders" are any PRs and POs with a status of waiting for approval (WAPPR), approved (APPR), or in progress (INPRG). Maximo checks to see how many units of this item are listed on current PRs and POs, adds this number to the current balance, then subtracts any items on approved work orders, internal POs, and any expired items. If the resulting number does not exceed the reorder point (ROP), Maximo will reorder the item.

You can reorder items either manually by using on of the reorder actions in the Inventory module, or via a reorder cron task set up by your system administrator. A **cron task** is a software command to execute a task at a particular time. For more information about configuring the reorder cron task, refer to the *Maximo System Administrator's Guide*.

CAUTION: The reorder process does not check to see if items appear inside kits when reordering an item.

Determining the Reorder Point

The reorder point (ROP) is the point when items should be reordered so that the item balance does not fall below the number designated as safety stock during the lead time for the order. Ideally the calculation of the ROP is based on the following variables:

- **Safety stock** is the minimum number of the item that you must have on hand at all times.
- **Lead time** is the amount of time it takes between placing an order and receiving it.

- **Economic Order Quantity** (EOQ) is the number of an item that should be reordered at one time, usually based on the vendor's price for a particular quantity ordered. For example, buying a case of an item can cost less per item than buying the item individually.

Reordering Items

Reordering is done separately for each individual storeroom. Your system administrator can use the Cron Task Setup application to create a cron task to automatically reorder items or you can reorder items manually using one of the reorder actions available from the Inventory Select Action menu:

- **Reorder > Reorder Items** — Use to reorder one or more inventory items. All items selected must be from the same storeroom location.

- **Reorder > Reorder Direct Issue Itms/Svcs** — Use to reorder items or service items listed on approved work orders.

- **Reorder > Clear Reorder Locks** — Use to remove a lock on the reorder process logged against your user name.

  When a user runs the reorder process (even if preview mode). Maximo places a lock on the process against the storeroom being reordered. This is to prevent other users from running reorder against the same storeroom at the same time. Occasionally, users running the reorder process in preview mode may inadvertently lock the reorder process and prevent themselves and others from running reorder against a certain storeroom.

  NOTE: This action only clears Preview Mode reorder locks, created by the current user. Users running the full reorder process are not affected.

TIP: You can set the reorder process to run in the background and notify you by e-mail after the process ends. This lets you do other work while running a lengthy reorder process.

TIP: You can repeat the reorder process for additional storerooms without exiting the Reorder Items page.

Managing Inventory Item Counts and Costs

The balances and costs fields on an inventory record are calculated fields, and are read-only. You may occasionally need to adjust the balances or costs for an inventory item to accommodate a variety of circumstances. For example:

- after a routine physical count
- at the end of the year
- when items have entered or left a storeroom without a Maximo transaction
- when item costs have changed due to inflation

You use the following inventory adjustment actions available from the Select Action menu to make modifications to item balances or costs for a storeroom.

- **Inventory Adjustments > Reconcile Balances** — Use to adjust the current balance for an item based on a physical count of the item. This action updates only the selected item in the selected **Storeroom**.

- **Inventory Adjustments > Zero Year to Date Quantities**— Use to change the values in the Issue History section of an item record. This action moves all **Year to Date** quantities back one year and changes the current **Year to Date** quantity to zero. Typically this action is used only at the end of a fiscal year. This action updates only the selected item in the selected **Storeroom**.

- **Inventory Adjustments > Current Balance** — Use to change the **Current Balance** of an item listed in the Balance Summary section of an item record. Maximo automatically adjusts balances when items are issued, transferred, received, assembled into kits, and so forth. However, you can use this action if you are aware of a change in the current balance that has not been reflected in any other inventory transaction. This action updates only the selected item in the selected **Storeroom**.

- **Inventory Adjustments > Physical Count** — Use to change the Physical Count of an item listed in the Inventory Balance table window. This action updates only the selected item in the selected **Storeroom**, **Bin**, and/or **Lot**.

- **Inventory Adjustments > Standard Cost** — Use to adjust the read-only **Standard Cost** listed in the Inventory Costs table window.

- **Inventory Adjustments > Average Cost** — Use to adjust the read-only **Average Cost** listed in the Inventory Costs table window. You might want to adjust the average cost value if you issue items at average cost and want any price increases reflected immediately in the issue cost. This action updates only the selected item in the selected **Storeroom**.

Managing Kits

A **kit** is an item record that "contains" other item records and can be issued as a single unit. Item kit records are created in the Item Master application. You use the **Assemble Kit** action in the Inventory application to record changes to item balances when you assemble all of the components and create a kit. Kits can only be assembled from components stored in the same storeroom.

Likewise you use the **Disassemble Kit** action when you need to break a kit into its individual items, for example when you need to return a partially used kit. The parts from a disassembled kit must be returned to a single storeroom, Maximo will not allow kits to be disassembled across storerooms.

Inventory Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Issues and Transfers

You use the Issues and Transfers application to manage the movement of inventory items out of your storerooms. You **issue** an item when it is moving out of a storeroom to be used. You **transfer** an item when it is moving between storerooms.

Using the Issues and Transfers application you can

- issue items directly to a work order, asset, location, or charge to a GL Account.
- return previously issued items to a storeroom
- transfer items out of one storeroom and into another storeroom location
- transfer items to a courier location or a labor location
- receive items previously issued to a courier location or a labor location for transport

Multisite and Issues and Transfers

Since the Inventory and Storerooms applications are at the Site level, Issues and Transfers are also managed at the Site level.

You can issue or transfer items within a single Site, or between any Sites and Organizations that share the same Item Set.

Issues and Transfers and Condition Codes

When you issue, return, or transfer a condition enabled item Maximo prompts you to specify the condition of the item. Maximo calculates the cost of the item based on the condition code and rate.

Issues and Transfers and Inventory

After you create a job plan for a work order, the materials needed for the work order are reserved in inventory. After the work order is approved, you can issue the reserved items.

When you issue an item, Maximo updates the balance for the issuing storeroom. When you transfer items:

- If the item is transferred out to or in from a courier location or a labor location, Maximo only updates the storeroom balance.
- If the item is transferred out to or in from another storeroom, Maximo updates the item balances for both storerooms.

You can issue or return an item from the Inventory application using the **Issue Current Item** action.

You can record physical counts for items when issuing or transferring by entering a value in the **New Physical Count** field. Maximo updates the physical count information for the item in the specified storeroom.

Issues and Transfers and Purchasing

You can transfer items between storerooms with the same Site or between Sites within the same Organization without creating an internal purchase order.

If you are transferring items across Organizations, Maximo requires that the Organizations share the same Item Set, and that you create an internal purchase order.

Issues and Transfers and Work Orders

When you record item use on a work order, Maximo creates a material transaction record in the database. Item usage on work orders can be recorded in one of two ways:

- record material issue to work order using the Issues and Transfers application.
- record material usage using the Actuals tab of the Work Order Tracking application.

Because Maximo updates inventory balances when you perform either of these actions, it is possible for the same item to be subtracted from inventory twice, thereby causing inaccurate item counts. To ensure accurate inventory records, your company should establish a policy for each site regarding whether item use will be recorded in the Issues and Transfers application or in the Work Orders module.

No matter where the materials issues/usage are originally recorded, the information is copied to the Materials subtab on the Actuals tab in Work Order Tracking.

Using the Issues and Transfers Application

To access the Issues and Transfers application, click the application link on your Start Center, or select **Inventory > Issues and Transfers** from the Go To menu.

The Issues and Transfers application contains the following tabs:

- **List** — to search Maximo for storeroom records.
- **Issue** — to issue items directly to a work order, asset, location, or against a general ledger account. Also used for returning items to the storeroom.
- **Transfer Out** — to transfer items out of your storeroom to another storeroom, a courier location, or a labor location.
- **Transfer In** — to transfer items from another storeroom, a courier location, or a labor location.

Issues and Transfers Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Issues and Transfers application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Issues and Transfers Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a new inventory reservation?	Select **Add/Modify Reservations** from the Select Action menu.
modify an existing inventory reservation?	Select **Add/Modify Reservations** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Direct Issue Items

A **direct issue item** is an item that you have ordered that will be issued immediately upon receipt to an asset, location, or work order rather than stocked in the storeroom. These items might be special order items, or regular stock that is needed immediately to complete maintenance work.

NOTE: Service item records are always direct issue items.

Because they are issued directly upon receipt, direct issue items are managed in the Receiving application, not the Issues and Transfers application.

Creating Issue Transactions

In order to be able to issue items using the Issues and Transfers application you must specify which storeroom you want to issue from, and you must be authorized to issue items from the selected storeroom.

Although items are generally specified in a job plan and issued in conjunction with specific work orders, it is also sometimes necessary to issue them directly to a location, or against an asset, or against a General Ledger account, without a work order number. For example, you might want to charge the cost of items such as soap, grease, or rags to a location or GL account rather than to a work order or specific asset.

To allow Maximo to track inventory costs, you must make an entry in at least one of the following fields when issuing items:

- **Asset**
- **GL Debit Account**
- **Location**
- **Work Order**

In general, after you make an entry in one field, one or more other fields are filled in with default values associated with the first specified field. For example, if you specify a work order, the asset and/or location and/or GL account named on the work order are also filled in.

- **Select Items for Return** — Click to select from a list of items and materials previously issued from the selected storeroom.
- **Select Reserved Items** — Click to select items to issue from a list of items that have been reserved for approved work orders.
- **Select Asset Spare Parts** — Click to select from the spare parts associated with a particular asset.
- **New Row** — Click to issue items directly to an asset, location, or charge against a General Ledger account, or issue unreserved items (items that are not included in a work order work plan).

Creating Transfer Transactions

Items can be transferred from one storeroom location to another inventory location using the Transfer Out and Transfer In tabs. Transfers can be made within a Site, or to another Site within your Organization. You also can transfer items from a storeroom to a courier location or a labor location.

Transferring items to another storeroom is done on the Transfer Out tab. You have the following options for selecting items for transfer out to another storeroom:

- **Select PO Items** — allows several options to filter your search when you transfer items on an internal PO to another company storeroom.
- **Select Items for Transfer** — allows you to filter your search by Item, Bin, and Lot.
- **Select Asset Spare Parts** — allows you to select from the spare parts associated with a particular asset.
- **New Row** — allows you to enter items to be transferred individually.

Receiving the transfer into a storeroom is done on the Transfer In tab.

You have the following options available when transferring items into a storeroom:

- **Select PO Items** — allows several options to filter your search when you transfer items on an internal PO to another company storeroom
- **Select PO Items in Transit** — allows you to select items from internal purchase orders that are in transit with a courier.
- **Select Items for Transfer** — allows you to filter your search by Item, Bin, and Lot.
- **Select Asset Spare Parts** — allows you to select from the spare parts associated with a particular asset.

- **New Row** — allows you to enter items to be transferred individually.

Managing Issues and Transfers

You use the Issues tab to return previously issued items and materials, for example, if some parts on a work order were not needed. Note the following restrictions on returns:

- You cannot return rotating asset that has been modified (moved or worked on) since its original issue.
- You cannot return a partial kit. The remaining kit components should be returned as individual items.

Issues and Transfers Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Item Master

An **item** record defines an item or material that is stocked in a company storeroom.

When you use the Item Master application to create an item record you can define the type of stock the item is, whether it is lotted or nonlotted, associate hazards and Material Safety Data Sheets (MSDS) with the item, define the item as a rotating item that can be listed on rotating assets, and identify alternate items that can be used as substitutes for the item.

You also can define other information related to items, such as the storeroom locations that stock the item, vendor information for the item, Classification and Specifications for the item, item assembly structures, and documents outside of Maximo that relate to the item record.

Multisite and Item Master Records

Item master records are defined at the Item Set level. **Item Sets** exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new records must be unique within the Item Set.
- Records are available to all users in the Organizations that share the Item Set and who have security permissions to the application.

Some of the data on an item record may be specific to a single Organization or Site. For example, storerooms listed on the Storerooms tab are at the Site level, and the companies listed on the Vendor tab are at the Organization level.

You use the **Item/Organization Details** action available from the Select Action menu to specify Organization specific data such as **Hazards** and **Tax Codes** for each Organization that uses the Item Set.

Commodity codes are also defined at the Item Set level. For more information about commodity codes, see "Item Master Records and Commodity Codes," on page 6-20.

Item Master Records and Assets

Item records are usually created for consumable items or materials. But you can also create item records for items that can be reused or refurbished, and therefore must also be tracked as assets so that you can keep a maintenance history for the item. Maximo accomplishes this by allowing you to create rotating item records that can be used to create rotating asset records.

A rotating item is a special category of item record, used to indicate items that can be used interchangeably as a replacement for a like item, for example, fire extinguishers, motors, or pumps, but that are repaired or refurbished when they are removed from service. Rotating items can be managed like any other item record; they can be stocked in storerooms, issued and transferred, reordered and so forth.

Rotating assets are a special category of asset records, used to refer an any asset record that contains a value in the **Rotating Item** field. Rotating assets consist of multiple interchangeable assets, with each asset having the *same item number* and a *different asset number*.

These items are tracked both by their item numbers in the Inventory module and by their individual asset numbers in the Assets module. The term **rotating item** is used when referring to inventory records and management, and the term **rotating asset** is used when referring to asset records and maintenance.

To illustrate how a rotating item record is used, let's imagine that your company purchases a dozen identical fire extinguishers. You would create a single rotating item record for the model that you purchased, then create a *separate asset record* for each individual fire extinguisher. All twelve asset records would have the *same item number* in the **Rotating Item** field, but different asset numbers. The asset records allow you to keep a maintenance record for each extinguisher; you can list each fire extinguisher location on an inspection route, record meter readings, generate preventive maintenance work orders and so forth. The fact that the asset records share the same item number allows you to easily find replacement fire extinguishers in your storerooms when they are needed.

NOTE: An item cannot be both a spare part and a rotating item.

Item Master Records and Commodity Codes

The term **commodity** is used to describe classifications of inventory. Commodity codes are used to distinguish groups of inventory items that can be used for reporting and analysis. Your purchasing department might include Commodities Managers who track spending by commodity and make decisions about vendor relationships based on that data.

When you create an item record you can associate the item with an existing **Commodity Group** and **Commodity Code** by listing them on the item record. Commodity codes can be defined and managed using the **Add/Modify Commodity Codes** action available from the Select Action menu of the following applications:

- Companies
- Item Master
- Purchase Orders
- Service Items
- Tools

NOTE: Commodity Codes are defined at the Item Set level.

Item Master Records and Condition Codes

A condition code specifies the physical condition of an item, and is used to indicate that an item is not new. Condition codes are also used to help calculate the value of worn or used items that have been returned to inventory. You use the **Condition Enabled?** check box on an item record to indicate if condition codes can be applied to inventory records for the item. Before saving a condition-enabled item record you must assign at least one full value (100%) condition code to the item. You can assign multiple condition codes to an item record, but only one can have a rate of 100%.

When an item is added to a storeroom via the **Add Items to Storerooms** action in the Item Master application the condition code always defaults to the 100% rate.

When you are managing a condition enabled item record, entering a condition code value is mandatory when using the following Inventory actions:

- Issue Current Item
- Transfer Current Item
- Inventory Adjustments > Current Balance
- Inventory Adjustments > Physical Count

NOTE: You cannot apply a condition code to a kit, because each item in the kit could potentially have a different condition.

Item Master Records and Contracts

Item records may be specifically listed on purchase or lease contracts, or they may be covered under a generic agreement with a vendor where you company has agreed to spend an specific amount on purchases from the vendor.

Item Master Records and Inventory

Item records are created in the Item Master application, but item balances are tracked in the Inventory application.

Item Master and Safety

If an item record is for a hazardous material, you can list the Material Safety Data Sheet number issued by the Occupational Safety and Health Association (OSHA) in the **MSDS** field of the item record.

Because item records are at the Item Set level in Multisite and hazard records are at the Organization level, you use the **Item/Organization Details** action to associate hazards with an item record. The **Can Have Hazardous Materials?** check box on the hazard record must be checked before it can be associated with an item record. Associating a hazard record with an item record allows warehouse and storeroom workers to view the hazard information for the item. When an item with an associated hazard is listed on a work order, Maximo automatically displays safety information to the work order's Safety Plan tab.

Item Master Records and Storerooms

You use the Storerooms tab of an item record to view storeroom information about the item, including a list of all storerooms that have the item on their stock list, balances, and costs for the item.

You use the **Add Item to Storeroom** action in the Item Master application to add an item record to a storeroom location's stock list. Adding an item to a storeroom is one of the few times you make an entry in the **Current Balance** field. Usually, this field is either calculated by Maximo or updated after inventory is received in the Receiving application. Rotating item balances are zero until an asset record is created for the rotating item number.

You can delete an item from a storeroom's stock list if the item balance in the storeroom is zero by deleting the storeroom on the Storerooms tab of the item record.

Using the Item Master Application

To access the Item Master application, click the application link on your Start Center, or select **Inventory > Item Master** from the Go To menu.

The Item Master application contains the following tabs:

- **List** — to search Maximo for item records.
- **Item** — to enter, view, or modify items, and to specify alternate items.
- **Storerooms** — to view a read-only list of information about storerooms that stock the item.
- **Vendors** — to enter, view, modify, or delete information about vendors and manufacturers for an item.
- **Specifications** — to classify an item and add, view, modify, or delete specifications that give details about the attributes of the item.

- **Item Assembly Structure** — to enter, view, or modify item assembly structures.

Item Master Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Item Master application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Item Master Help.

How Do I...	
add an item to the stock list for a storeroom?	Select **Add Items to Storeroom** from the Select Action menu.
add a commodity group to the database?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add or modify a commodity code in a commodity group?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change the capitalized status of an item?	Select **Change Capitalized Status** from the Select Action menu.
copy an existing item assembly structure to an item record?	Select **Copy Item Assembly Structure** from the Select Action menu.
create an item record?	Click the **New Item** button in the toolbar.
delete a record?	Select **Delete Item** from the Select Action menu.
duplicate a record?	Select **Duplicate Item** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
specify hazards for an item?	Select **Item/Organization Details** from the Select Action menu.

How Do I...	
specify tax codes for an item?	Select **Item/Organization Details** from the Select Action menu.
view contract information related to the item?	Select **View Contracts** from the Select Action menu.

Creating Item Master Records

MRO Software recommends that all possible combinations of units of measure and their conversion values be defined before you create item master records. You use the **Add/Modify Units of Measure** action and the **Add/Modify Conversions** action available from the Select Action menu to define these values.

You can use the **Duplicate Item** action to create a copy of an existing item record, for example if you have similar items with different specifications. Once you duplicate an item you can then modify it as needed.

Designating Alternate Items

Alternate items are items that can be used interchangeably with other inventory items, for example, two different brands of motor oil. You use the Alternate Items table window to list any items that can be used as an alternate for the current item.

In many cases, one item can be an alternate for another, but the oppose relationship might not be desired. As a result, Maximo does not automatically created matching rows in the Alternate Items table window when an item record is listed as an alternate. If you want two items to be listed as alternates for each other, you must go into both item records separately and assign each item as an alternate for the other.

Creating Rotating Items

A **rotating item** is a special category of item record, used to indicate items that can be used interchangeably as a replacement for a like item, for example, fire extinguishers, motors, or pumps, but that are repaired or refurbished as assets when they are removed from service. Rotating items can be managed like any other item record; they can be stocked in storerooms, issued and transferred, reordered and so forth.

You create a rotating item by selecting the **Rotating?** check box on an item record. After you create and save an item record, the **Rotating?** field becomes read-only and cannot be edited, and the **Current Balance** field becomes read-only. If an item is defined as rotating, the values in the **Balances** fields are controlled by the movement of the rotating items in and out of a storeroom.

When you list a **Rotating Item** on an asset record, Maximo copies the **Classification** and **Attributes** that are listed on the Specifications tab of the item record to the Specifications tab of the asset record.

CAUTION: When you create rotating item records that will be used to create information technology (IT) asset records, you must enter a value in

the **Classifications** field to allow Maximo to filter for IT assets when performing reconciliation.

Understanding Item Assembly Structures

An item assembly structure (IAS) is a list of individual items and subassemblies that are required to build an asset or define the requirements of a location. Rather than specify its components each time you enter an individual asset or a location, you create an item assembly structure as a template. You can use an IAS as a template when building multiple asset assembly structures and their related location systems.

The IAS is built on an item record, and the IAS is then identified by the item number at the top of the hierarchy. You can apply an item assembly structure to an asset or to a location by specifying the top-level item number in the **Rotating Item** field on an asset or location record, then choosing the **Apply Item Assembly Structure** action.

For example, a five-horsepower motor and its associated spare parts can be used in 10 asset assembly structures in a plant. Rather than entering 10 asset records and specifying the spare parts for each one, you enter the asset records and apply (copy) the IAS for a five-horsepower motor to the records. The entire IAS is applied to the asset assembly structure. Similarly, you could apply the same IAS to the 10 operating locations in the plant that require the motor and its spare parts.

NOTE: Note that while you can use any item as the top level of an IAS, you can only *apply* an IAS to asset or operating locations if the top level is a rotating item.

Using Item Assembly Structures

Item assembly structures are applied to asset and location records in the Assets and Locations applications.

Item assembly structures can be applied when you create new asset records in the Receiving application.

You also use item assembly structures when creating item kits in the Item Master application.

Creating Item Kits

A **kit** is an item record that contains other item records and can be issued as a single unit.

Item records contain a **Kit?** check box that is used to indicate that the item record will act as the virtual "container" for all of the other items contained within the kit. After you create the item record for the kit "container" you then define the components of the kit using the Item Assembly Structure tab. On this tab you list items, and quantities for each item that are to be included in the kit. Kits can be included as components of other kits.

NOTE: Maximo does not allow items that are condition-enabled, rotating, or lotted to be added to a kit.

And item record cannot be included as part of a kit if it has any of the following properties:

- Condition Enabled? = Yes
- Rotating? = Yes
- Lot Type = LOT

NOTE: Kits are assembled in Inventory via the **Assemble Kits** action.

TIP: As a best practice you should include an **Issue Unit** for any item record that may be included as part of a kit.

Managing Item Master Records

You manage data about an item record, for example vendors and classifications, in the Item Master application, but you manage item balances in the Inventory application.

Managing Vendors

You use the Vendors tab of an item record to view or manage a list of vendors or companies that supply the item. The list can include vendors you have previously ordered from, as well as vendors you have not purchased the item from. You can use the vendor data to compare prices and delivery information.

Managing Kits

You use the **Assemble Kit** and **Disassemble Kit** actions available in the Inventory application to create and dismantle kits. You can only assemble kits from components available in an individual storeroom.

Kits can be issued and transferred using the Issues and Transfers application. When returning kits you can only return complete kits. If some of the components have been consumed, you should return the remaining items as individual items, since Maximo does not recognize partial kits.

Linking Items to Classifications

Maximo includes a feature called Classifications which can be used to structure records into organized hierarchies. Using classifications helps you to more easily locate records, and help to ensure that records are not duplicated unintentionally.

You can add new item records to Classifications by associating a specification template with the record on the Specifications tab. After items are associated with specification templates, you can use the Classification Search dialog to search through Maximo to find the records you are looking for.

For more information about Classifications, see “Using Classifications,” on page 2-35.

Deleting Items

You can delete an item record using the **Delete Item** action available from the Select Action menu. You cannot delete an item record if any of the following are true:

- inventory balances or reservations exist for the item.

- the item is associated with an asset record as a **Rotating Item** or as a spare part.
- the item is listed on a master PM record.
- the item is listed as planned materials on a job plan or work order.
- the item is listed on a desktop requisition, purchase requisition, or purchase order.

Maximo displays a message if the item cannot be deleted.

Item Master Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Service Items

A **service item** is a special type of item used to define services that your company utilizes. Service items cannot be issued, transferred, or contain balances, but they can be used as part of job plans, work orders, and can be used in the purchasing applications when creating purchase requisitions, purchase orders, and so forth. Another way to think of service items is that they are "planned services" or services that you plan to use or purchase.

You use the Service Items application to create records for any type of service that your company uses or purchases on either a frequent or infrequent basis. Some examples of service items include standard services associated with purchasing such as freight or installation, or regular maintenance services that you might purchase from a vendor, such as landscaping or janitorial services.

Multisite and Service Items

Service Items are defined at the Item Set level. Item Sets exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new records must be unique within the Item Set.
- Records are available to all users in the Organizations that share the Item Set and who have security permissions to the application.

Some of the data on a service item record may be specific to a single Organization or Site. For example the companies listed on the Vendors table window are at the Organization level.

You use the **Service Item/Organization Details** action available from the Select Action menu to specify Organization specific data such as **GL Account** and **Tax Codes** for each Organization that uses the Item Set.

Service Items and Job Plans

The Job Plans application includes a Services subtab on the Job Plan tab, allowing you to include service items as part of a job plan.

Service Items and Purchasing

Service items can be requisitioned using Desktop Requisitions or the Purchase Requisitions (PR) applications, and ordered using the Purchase Orders (PO) application. When you order a service item, the PR or PO line Type = STDSERVICE. Service items are always direct issue items because they cannot be "stored" in a storeroom location.

Service Items and Work Orders

The Work Order Tracking application includes a Services subtab on both the Plans and Actuals tabs. This allows you to plan for services when creating a work plan, and record the actual costs for service items needed to complete the work order.

Using the Service Items Application

To access the Service Items application, click the application link on your Start Center, or select **Inventory > Service Items** from the Go To menu.

The Service Items application contains the following tabs:

- **List** — to search Maximo for service item records.
- **Service** — to create, view, or modify service item records.

Service Items Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Service Items application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Service Items Help.

How Do I...	
add a commodity group to the database?	Select **Add/ Modify Commodity Codes** from the Select Action menu.
add or modify a commodity code in a commodity group?	Select **Add/ Modify Commodity Codes** from the Select Action menu.
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.

How Do I...	
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
clear a lock on the reorder process associated with my user name?	Select **Reorder > Clear Reorder Locks** from the Select Action menu.
create a service item record?	Click the **New Service Item** button in the toolbar.
delete a record?	Select **Delete Service Item** from the Select Action menu.
duplicate a record?	Select **Duplicate Service Item** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
reorder items that will be issued without being received into inventory?	Select **Reorder > Reorder Direct Issue Itms/ Svcs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
specify GL Account codes for a service item?	Select **Service Item/Organization Details** from the Select Action menu.
specify tax codes for an item?	Select **Service Item/Organization Details** from the Select Action menu.

Creating Service Item Records

You can create a service item record for any type of service that your company uses or purchases on either a frequent or infrequent basis. You can list the vendors that you purchase the service from in the Vendors table window.

If you want to associate a GL Account or a Tax Code with a service item, you can use the **Service Item/Organization Details** action available from the Select Action menu to do so.

You can use the **Duplicate Service Item** action to create a copy of an existing service item, for example if purchase different services from the same vendor. Once you duplicate a service item you can then modify it as needed.

Managing Service Item Records

Because they cannot be received into inventory or stored in a storeroom, service items are always categorized as direct issue items. You can reorder a

service item using the **Reorder Direct Issue Itms/Svcs** action available from the Select Action menu.

You can delete a service item record using the **Delete Service Item** action available from the Select Action menu. For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Service Items Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Stocked Tools

A **stocked tool** is a tool that is tracked as inventory and stored on a storeroom or tool crib. With Maximo you create tool records in the Tools application, and create storeroom records in the Storerooms application, but you manage the tools stocked in your storerooms using the Stocked Tools application.

Using the Stocked Tools application you can track tool balances down to the bin and lot level for a storeroom. You can track vendors that supply a tool, as well as reorder details such as price and lead time for orders. You can view rotating assets that list the tool as the rotating item on the asset, as well as assets that list the tool as a spare part.

You use the Stocked Tools application to view information about a specific tool at a specific storeroom location. The fields on a stocked tool record refer to tool/location records. **Current Balance**, for example, means the current balance of the tool at the storeroom in the **Storeroom** field. Like **Current Balance**, the fields listed under Balance Summary, Issue History, and Balances all apply to the tool in a *specific* storeroom.

Multisite and Stocked Tools

Like the Inventory application, the Stocked Tools application manages tool inventory at the Site level.

Using the Stocked Tools Application

To access the Stocked Tools application, click the application link on your Start Center, or select **Inventory > Stocked Tools** from the Go To menu.

The Stocked Tools application contains the following tabs:

- **List** — to search Maximo for tool/storeroom records.
- **Stocked Tool** — to enter, view, and modify information on the tools used for maintenance work.

- **Vendors** — to enter, view, modify, or delete information about vendors and manufacturers for an item.
- **Rotating Tool Assets** — to identify and track rotating assets associated with a rotating tool record.
- **Where Used** — to list all assets on which a tool is listed as a subassembly or spare part.

Stocked Tools Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Stocked Tools application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Stocked Tools Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
adjust the current balance in a storeroom based on a physical count of the tool?	Select **Adjustments > Reconcile Balances** from the Select Action menu.
compare information for multiple vendors for a tool?	Select **View Vendor Analysis** from the Select Action menu.
create a tool record?	Tool records are created in the Tools application.
enter a physical count for a tool?	Select **Adjustments > Physical Count** from the Select Action menu.
issue a tool to an asset, general ledger account, location, or work order?	Select **Issue Current Tool** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify the current balance of a tool at this storeroom location?	Select **Adjustments > Current Balance** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
reset the year-to-date issue history for a tool?	Select **Adjustments > Zero Year to Date Quantities** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
transfer tools from one bin to another?	Select **Transfer Current Tool** from the Select Action menu.

How Do I...	
transfer tools from one Site to another Site?	Select **Transfer Current Tool** from the Select Action menu.
transfer tools from one storeroom to another?	Select **Transfer Current Tool** from the Select Action menu.
view all of the storerooms that stock a tool?	Select **View Tool Availability** from the Select Action menu.
view inventory transactions (adjustments, issues and transfers, receipts, and returns) related to the current record?	Select **View Inventory Transactions** from the Select Action menu.

Creating Stocked Tool Records

You use the Stocked Tools application to enter, display, and update information for a specific tools at a specific storeroom location. With Maximo you create tool records in the Tools application, and you create storeroom records in the Storerooms application, but you manage your tool inventory in the Stocked Tools application.

Stocked tool records can be created in any of the following ways:

- Tools can be added to a storeroom using the **Add Tool to Storeroom** action available in the Tools application.
- Tools can be transferring from one storeroom to another using the Issues and Transfers application.
- Newly purchased tools can be receiving into a storeroom using the Receiving application.

Managing Stocked Tool Records

You can issue and transfer tool balances from a storeroom using the **Issue Current Tool** and **Transfer Current Tool** actions available from the Select Action menu. When you issue or transfer a tool, Maximo updates the tool balances accordingly.

If you are trying to locate a tool in your inventory you can use the **View Tool Availability** action to view balances for all storeroom locations that stock the tool, all lots of the tool, all PRs and POs that list the tool, alternate tools that can be substituted for the tool, and approved work orders that have created reservations for the tool.

Stocked tool records may need to be adjusted from time to time, due to damage, theft, or data entry errors. The following actions are available from the Select Action menu that allow you to make adjustments to a stocked tool record:

- **Zero Year to Date Quantities**
- **Reconcile Balances**
- **Physical Count**
- **Current Balance**

NOTE: You might need security authorization to perform this action.

Stocked Tools Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Storerooms

A **storeroom** is a location that contains inventory items. Storerooms have General Ledger account codes associated with them to help track inventory costs.

You use the Storerooms application to create new Storeroom records, define the GL account codes to be associated with a storeroom, and view a read-only list of items stocked at that storeroom location.

NOTE: Inventory stock can be issued to a courier or labor location, but these "inventory type" locations are not considered storerooms.

Multisite and Storerooms

Storeroom records are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations. For example, you could have a storeroom named "Central" at each Site.
- Records can only be viewed by users who have security permission to the Site and the application.

Storerooms and Inventory

The records in the Inventory application are for an item/storeroom combination. Balances for each item record are tracked separately for each storeroom that stocks the item. Balances for all storerooms can be viewed using the **View Item Availability** action in the Inventory application.

Items at Different Storeroom Locations

Inventory | Filter | 1 - 3 of 3 | Download

Item	Description	Storeroom	Current Balance	Commodity Group	Rotating?	Kit?	ABC Type	Site
11453								=BEDFORD
11453	**Seal, Mechanical, Self Aligning- 1 In ID**	**MACHSHOP**	**1.00**	**SEALS**	**N**	**N**	**B**	**BEDFORD**
11453	Seal, Mechanical, Self Aligning- 1 In ID	GARAGE	0.00	SEALS	N	N		BEDFORD
11453	Seal, Mechanical, Self Aligning- 1 In ID	CENTRAL	21.00	SEALS	N	N	B	BEDFORD

Select Records

Storerooms and Item Records

After a storeroom has been created you can create a master stock list by associating items with the storeroom in the Item Master application using the

Add Item to Storeroom action. Items are also deleted from a storeroom's master stock list in the Item Master application by deleting the storeroom from the item records Storerooms tab.

Storerooms and Purchasing

Some companies do all of their purchasing at a central storeroom, and have all other storerooms "purchase" their stock from that storeroom. Maximo refers to this type of transfer as an internal purchase requisition or purchase order. You select the **Use in PO/PR?** check box to indicate that a storeroom can be used as a "vendor" for internal purchases.

Using the Storerooms Application

To access the Storerooms application, click the application link on your Start Center, or select **Inventory > Storerooms** from the Go To menu.

The Storerooms application contains the following tabs:

- **List** — to search Maximo for storeroom records.
- **Storeroom**— to define storeroom locations and provide default GL account code information.
- **Items** — to view a read-only list of items associated with the storeroom.

Storerooms Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Storerooms application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Storerooms Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a storeroom record?	Click the **New Storeroom** button in the toolbar.
delete a record?	Select **Delete Storeroom** from the Select Action menu.

Creating Storerooms

The Storerooms application lets you add new storeroom location records. Storeroom locations are the names of your inventory storerooms, the places inventory items are stored in and issued from.

This application is used to set the general ledger accounts to be associated with each new storeroom location. You can indicate which GL Account code is

to be charged for each type of inventory transaction associated with the location. Check with your accounting department if you need information on providing the proper GL account codes.

NOTE: Depending on your company's business practices, you might need security authorization to create storeroom locations and/or to provide GL account code information for storeroom locations.

The **Ship to** and **Bill to** fields on a storeroom record are used as default shipping and billing information by Maximo's reorder process.

Managing Storerooms

Items are added to and deleted from a storeroom's master stock list in the Item Master application.

You can delete a storeroom record using the **Delete Storeroom** action available from the Select Action menu. You cannot delete a storeroom if there are items or tools stocked in it.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Storerooms Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Tool Records

A **tool** is a special type of item record, where the item Type = TOOL. Because tools are items, they can be managed in the same way that items are managed in Maximo, that is, tracked in inventory, reserved in storerooms, issued and transferred, charged to work orders, and so forth. The Tools application lets you store information about the tools your company uses, both those tools owned by your company and those leased from outside vendors.

Tools are typically non-consumable items that have an hourly rate charged against them for their use. Some examples of tools include air compressors, nail guns, calibration equipment, and heavy equipment such as cranes and excavators.

Multisite and Tool Records

Tools are item records, which are defined at the Item Set level. Item Sets exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new records must be unique within the Item Set.

- Records are available to all users in the Organizations that share the Item Set and who have security permissions to the application.

Some of the data on a tool record may be specific to a single Organization or Site. For example, storerooms listed on the Storerooms tab are at the Site level, and the companies listed on the Vendor tab are at the Organization level.

You use the **Tool/Organization Details** action available from the Select Action menu to specify Organization specific data such as **Tool Rates**, **GL Account**, and **Tax Codes** for each Organization that uses the Item Set.

Tool Records and Assets

Tool records can be listed as a rotating item on an asset record. Asset records where the value in the **Rotating Item** field is a tool can have a maintenance record kept for them in the Assets application, and be tracked as tool inventory using the Stocked Tools application.

For more information about rotating item records, see "Item Master Records and Assets," on page 6-20.

For more information about rotating asset records, see "Understanding Rotating Assets," on page 3-11.

Tool Records and Stocked Tools

You create tool records in the Tools application, but tool balances are tracked using the Stocked Tools application.

Tool Records and Work Orders

Tools can be listed on job plans and work plans when you are estimating the resources that will be required to perform specific work. Tools can also be listed on work order actuals, when you are recording the actual costs for labor, materials and so on that were required to complete the work order.

If you want Maximo to create a reservation for a tool listed on a work order, check the **Reservation Required?** check box on the plans tab, and indicate which **Storeroom** the reservation should be made against. All tool reservations are deleted when the status of the work order changes to CLOSE.

Using the Tools Application

To access the Tools application, click the application link on your Start Center, or select **Inventory > Tools** from the Go To menu.

The Tools application contains the following tabs:

- **List**— to search Maximo for tool records.

- **Tool** — to enter, view, or modify tool records, and to specify alternate tools.
- **Storerooms** — to view a read-only list of information about storerooms that stock the tool.
- **Vendors** — to enter, view, modify, or delete information about vendors and manufacturers for an item.
- **Specifications** — to classify a tool and add, view, modify, or delete specifications that give details about the attributes of the tool.

Tools Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Rotating Tools application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Tools Help.

How Do I...	
add a commodity group to the database?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add or modify a commodity code in a commodity group?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
add a tool to the tool list for a storeroom?	Select **Add Tools to Storeroom** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a tool record?	Click the **New Tool** button in the toolbar.
delete a record?	Select **Delete Tool** from the Select Action menu.
duplicate a record?	Select **Duplicate Tool** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

How Do I...	
specify GL Account codes for a tool?	Select **Tool/Organization Details** from the Select Action menu.
specify rates for a tool?	Select **Tool/Organization Details** from the Select Action menu.
specify tax codes for a tool?	Select **Tool/Organization Details** from the Select Action menu.

Creating Tool Records

When creating tool records you can:

- add the tool to the tool list for one or more storerooms
- specify the tool rate, GL accounts, associated vendor, and tax codes to be used by each Organization
- add a list of vendors that carry the tool
- list the specifications for the tool
- attach documents outside of Maximo that relate to the tool

Duplicating Tools

You can use the **Duplicate Tool** action to create a copy of an existing tool record, for example if you own similar tools with different manufacturers. Once you duplicate a tool you can then modify it as needed.

Managing Tool Records

You create tool records using the Tools application, but you manage tool balances using the Stocked Tools application. Tools are added to storerooms using the **Add Tools to Storeroom** action in the Tools application.

Deleting Tools

You can delete a tool record using the **Delete Tool** action available from the Select Action menu.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Tools Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

7 The Planning Module

The Planning Module consists of applications used to plan work and create templates that can be copied to other Maximo records.

The Planning Module consists of the following applications:

Application	Function
Job Plans	Used to create a detailed description of how a job is to be performed and the resources required to complete it.
Routes	Used to list related work assets (assets and/or locations) that are considered "stops" along an inspection or maintenance route.
Safety Plans	Used to create a detailed plan of how to service assets or locations safely. **NOTE:** The Safety Plans application is documented in Chapter 11, "The Safety Module," on page 11-12.

You use the Job Plans application to create templates for preventive maintenance, repairs, inspections, and other tasks. You include:

- the steps that must be performed to complete the work
- the number of workers needed to complete the work and the job skills they must have
- the supplies and parts that will be needed
- the services required to complete the work
- the tools that must be available to complete the work

After these templates are created, they can be useful for planning worker schedules, inventory stocks, and budgets.

You use the Safety Plans application to define the safety information that is necessary to follow a specific job plan on a work asset. By identifying hazards, precautions to be taken against those hazards, and any specified Tag Out procedures for the asset or location, you can provide as much safety information as possible for your maintenance personnel.

You use the Routes application to list related assets and/or locations that require work to be performed along an inspection or maintenance circuit, for example listing all the fire extinguishers in a building that require an annual inspection. The stops along a route do not need to have the same job plan. A route can also act as a simple list of assets or locations.

Job Plans

A **job plan** is a template, with detailed description of work to be performed on an asset, item, or location. If you use job plans you do not have to enter the same information every time you create a work order for similar work. A job plan can be applied to an unlimited number of work orders. After you apply a job plan to a work order, its resource estimates and tasks are copied into a **work plan** for the work order. You then can modify the work plan so that the procedures, labor, materials, services, and tools are more specific to the work order, without affecting the original job plan template.

You use the Job Plans application to create, view, modify, or delete job plan records. A job plan typically includes procedural descriptions and lists of estimated labor, items and materials, services, and tools to be used on the job. To ensure that a job plan is performed in a safe manner, you can add safety plan information to the job plan via the assets that use the safety plan.

Multisite and Job Plans

Job Plans are at the System, or database level, but contain optional **Organization** and **Site** fields that allow you to create job plans at the Organization and Site levels.

The Job Plans application allows duplication of key fields, as long as it doesn't create conflicts. The Job Plan application uses the following rules to define uniqueness:

1. If there is a job plan at the system level (that is with null values for the **Organization** and **Site** fields) then no other job plan can share the same job plan ID.

2. If there is a job plan at the Organization level (that has a value in the **Organization** field but the **Site** field is null) no other job plan within that Organization can share the same job plan ID.

3. If there is a job plan at the Site level (that has a value in both the **Organization** and **Site** fields) all other job plans within that Organization must have a Site specified if they share the same job plan ID.

Job plan records contain optional **Organization** and **Site** fields for the job plan, and for each job plan task. These fields may be used to specify that a job plan or a task has been written for a particular Organization or Site. You can use the **Organization** and **Site** fields when writing job plans where the task details vary by Site. For example you can specify different laborers for different Organizations, that materials should come from a different storeroom depending on the Site, or that there are different tasks that must be performed at a particular Site.

When the **Organization** and **Site** fields are null, the information is copied to every work order that uses the job plan. When there is Organization and/or Site information specified for all or part of the job plan, Maximo copies only the job plan information that either matches the work order's Organization and Site or has a null **Organization** and **Site**.

NOTE: Your access to Organizations and Sites determine how much of a job plan record you can view. You cannot view job plan lines for Organizations and Sites that you do not have security authorization for.

Job Plans and Preventive Maintenance

A job plan can be assigned to an unlimited number of preventive maintenance (PM) or master PM records.

A job plan that does not have an Organization or Site specified for it may be used on any PM. If the job plan has an Organization and/or Site specified, then it can only be used for PMs for that Organization or Site, and cannot be used for master PM records (which are at the System level).

Job Plans and Work Orders

A job plan can be applied to an unlimited number of work orders. After you apply a job plan to a work order, its resource estimates and tasks are copied into a **work plan** for the work order. You then can modify a work plan so that the procedures, labor, materials, services, and tools are more specific to the work order, without affecting the original job plan template.

A job plan that does not have an Organization or Site specified for it may be used on any work order. If the job plan has an Organization and/or Site specified, then it can only be used for work orders for that Organization or Site.

Using the Job Plans Application

To access the Job Plans application, click the application link on your Start Center, or select **Plans > Job Plans** from the Go To menu.

The Job Plans application contains the following tabs:

- **List** — to search Maximo for job plan records.
- **Job Plan** — to enter, view, or modify a job plan record. This tab displays basic information about the job plan and is the tab where you specify the job plan tasks, labor, materials, and tools.
- **Work Assets** — to associate work assets and their corresponding safety plans with job plans.

Job Plans Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Job Plans application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Job Plans Help.

How Do I...	
add steps or tasks to a job plan?	On the Job Plan tab, click **New Row** in the Job Plan Tasks table window.
associate the job plan with an asset or location?	On the Work Assets tab, click **New Row** in the Work Assets and Safety Plans table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a job plan record?	Click the **New Job Plan** button in the toolbar.
delete a record?	Select **Delete Job Plan** from the Select Action menu.
duplicate a record?	Select **Duplicate Job Plan** from the Select Action menu.
list the labor required for a job plan?	On the Labor subtab of the Job Plan tab, click **New Row** to add a laborer or craft to the job plan.
list the materials required for a job plan?	On the Materials subtab of the Job Plan tab, click **New Row** or **Select Spare Parts**.
list services required for a job plan?	On the Services subtab of the Job Plan tab, click **New Row**.
list tools required for a job plan?	On the Tools subtab of the Job Plan tab, click **New Row**.
run reports?	Select **Run Reports** from the Select Action menu.
view the estimated costs for a job plan based on the labor, materials, services, and tools listed on the plan?	Select **View Costs** from the Select Action menu.

Creating Job Plans

Defining a Job Plan consists of the following steps:

- Defining the tasks by breaking the job down into steps in the Job Plan Tasks table window.
- Defining the labor craft/skills and hours on the Labor subtab.
- Defining the materials needed on the Materials subtab.
- Defining the services needed on the Services subtab.
- Defining the tools needed on the Tools subtab.

After examining your company's maintenance activities to identify the kinds of work orders that are repeatedly generated, you can create job plans that describe these common maintenance jobs. This can help you create estimates for the labor, materials, services, and tools that are required for preventive maintenance and periodic inspections.

Defining Job Plan Tasks

Each maintenance job can be broken down into a series of steps that must be performed to complete the job. Maximo calls these numbered steps or operations **tasks**. The Tasks table window on the Job Plans page contains a list of numbered tasks that have been defined for a job plan, along with a description of the work to be done for that step, and the estimated time for its completion.

For example, inspecting a fire extinguisher might include the following tasks:

- Check pressure
- Inspect gauge
- Complete inspection tag

You can assign the task's number to any estimated labor, materials, services, and tools that are associated with the task. This is helpful if you want to track and report information by task.

Each maintenance job can be broken down into a series of steps that must be performed to complete the job. You use the Job Plan Tasks table window to define a list of numbered tasks for the job plan, along with a description of the work to be done at that step and the estimated hours for its completion. Each job plan task can include the following information:

- **Sequence** — Used to identify the order in which tasks should be performed. Tasks can have the same sequence number if they should or could be performed simultaneously. After you apply a job plan to a work order, Maximo copies the sequence numbers to the work order's tasks. This sequence number can then be used in Maximo Project Manager.

- **Task ID** — Unique identifier of the task. The default is for Maximo to increment task numbers by 10, for example, 10, 20, 30, and so on. This gives you the flexibility to add new tasks between existing ones.

- **Description** — Description of the work to be done for the task.

- **Duration** — Estimated number of hours to perform the task.

- **Meter** — The meter associated with the measurement point on an asset, for example a pressure gauge.

Maximo sorts job plan tasks by **Sequence**, then by **Task** ID. If a job plan does not have a **Sequence** indicated, the system sorts tasks in numerically ascending order by **Task** ID, making the task with the lowest number the first step of your job plan.

You can enter task numbers for estimated labor, materials, services, and tools, although you are not required to do so. Task numbers on the subtabs do not need to be unique, but must match existing tasks in the job plan.

The task number you use for estimated labor, materials, services, or tools corresponds to the job plan task where it is used. This lets you track estimates by task through the use of reports, which can be valuable when the job plan is lengthy or complicated.

Defining Job Plan Labor

Some tasks might be performed by any maintenance worker, while others can require specialized skills to be performed safely, for example, working with electrical current. You use the Labor subtab to define the labor and craft needs of a job plan, including the required skill levels, vendor and contract, number or workers needed, and estimated hours to complete the work. You can specify either a labor or a craft on a line, but not both.

TIP: Since job plans are templates that can be reused, most planners specify crafts rather than laborers when planning labor. This allows planners to assign the work to laborers when work orders are created from the job plan.

NOTE: Labor records are created in the Labor application. Craft records are created in the Crafts application.

Defining Job Plan Materials

If you know that a job requires certain items or materials, for example replacement parts, you can record them as part of the job plan. You use the Materials subtab to define a materials list for the job plan, including items needed, quantity needed, and issuing storeroom and Site.

Each time you add, modify, or delete items or quantities on the Materials subtab, Maximo updates the following fields automatically

- **Line Cost** (Materials subtab)
- Estimated Total **Material Cost** (**View Costs** action)
- **Total Cost** (**View Costs** action)

NOTE: Item records are created in the Item Master application.

Defining Job Plan Services

If a job plan requires services that your company cannot provide and must purchase from an outside vendor, you can record them as part of the job plan. You use the Services subtab to define the services that must be purchased for the job plan, including the service, quantity, and vendor.

Each time you add, modify, or delete a service or quantity on the Services subtab, Maximo updates the following fields automatically

- **Line Cost** (Services subtab)
- Estimated Total **Service Cost** (**View Costs** action)
- **Total Cost** (**View Costs** action)

NOTE: Standard service records are created in the Service Items application.

Defining Job Plan Tools

If you know that specific tools are required for a job, you can record that information as part of a job plan. You use the Tools subtab to define a list of

tools needed by the job plan, including the number of tools needed, tool rate, and estimated line costs.

Each time you add, modify, or delete a tool, quantity, hours, or rate on the Tools subtab Maximo updates the following fields automatically

- **Line Cost** (Tools subtab)
- Estimated Total **Tool Cost** (**View Costs** action)
- **Total Cost** (**View Costs** action)

If you want Maximo to create a reservation for a tool listed on a job plan, check the **Reservation Required?** check box. You do not need to indicate which **Storeroom** the reservation should be made against, since job plans can be used by different Sites.

NOTE: Tool records are created in the Tools application.

Associating Work Assets with a Job Plan

You use the Work Assets tab to associate locations, assets, and items to job plans. You can assign Safety Plans to individual work assets at the same time. The table window displays the assets that have been associated with the Job Plan.

You can associate rotating items with a job plan.If you select the **Create WO When Purchasing This Rotating Asset?** check box, Maximo will create a work order each time the item is purchased, for example if the rotating asset requires installation.

Ownership of Job Plans

Individuals or groups can assume responsibility, or "ownership" of a work order in Maximo. You can specify the **Owner** or **Owner Group** for a work order when you create a job plan.

When a job plan is applied to a work order, the **Owner** or **Owner Group** field is copied from the job plan to the work order if the **Owner** or **Owner Group** field on the work order does not already contain a value.

The ownership value listed on a job plan has precedence over any ownership value listed on a PM when you generate work orders from a PM.

For more information about ownership of work orders, see “Ownership of Work Orders,” on page 14-5.

Duplicating Job Plans

You can use the **Duplicate Job Plan** action to create a copy of an existing job plan, for example if you want to create a similar job plan for two different Sites. Once you duplicate a job plan you can then modify it as needed.

NOTE: When you duplicate a job plan, Maximo duplicates only the portions of the job plan that you have security access to view based on your security authorizations.

Managing Job Plans

As a best practice, job plan records that are no longer needed should be disabled by having their status changed rather than deleted.

Job Plan Statuses

A Job Plan record can have one of the following statuses:

- **DRAFT** — Default status for new records. Job plan is still being created and has not yet been approved for use on work orders. Job plan records with a status of DRAFT cannot be associated with PMs, routes, or work orders.
- **ACTIVE** — Job plans that have been approved for use on work orders. A job plan record must be active to be associated with PMs, routes, or work orders
- **INACTIVE** — Job plans that are no longer required, for example one that has been replaced by a different job plan. Inactive job plan records do not appear in select value lists. Job plan records with a status of INACTIVE cannot be associated with PMs, routes, or work orders

Before you can change the status of a job plan record to INACTIVE, the following must be true:

- The job plan cannot be referenced on any PMs.
- The job plan cannot be referenced on any routes.

NOTE: When you are searching for a job plan to apply to a work order, job plans that have a status of DRAFT and INACTIVE will not be visible. Only ACTIVE job plans can be applied to PMs, routes, or work orders

Deleting a Job Plan

If a job plan record is not listed on any other Maximo record (for example listed on a work order) it can be deleted by selecting **Delete Job Plan** from the Select Action menu. Maximo will display an error message if the job plan can not be deleted.

NOTE: You can only delete a job plan if you have security authorization to view all of the job plan, that is access to all Organizations and Sites listed on the job plan.

Job Plan Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Routes

A **route** is a list of related work assets, which can be considered “stops” along the route. These route stops can be assets or locations, or a combination of the

two. A route can be a simple asset list. You can also create a route that lists assets that are related by location, for example all of the servers in a computer lab, or by type of asset, such as all fire extinguishers located throughout the site. Routes simplify building hierarchies of work orders for inspections.

You can use a route in the following ways:

- Apply the route to a preventive maintenance record to generate inspection-type work orders for all work assets listed as stops on the route.
- Apply the route to a work order and generate child work orders for each work asset listed as a stop on the route.

Multisite and Routes

Assets and Locations are defined at the Site level. Since Routes are a list of assets and or locations, routes are defined at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Routes and Other Applications

You can simplify your maintenance routines by creating a list of assets or locations that require the same types of periodic maintenance. You also might generate work orders for a list of assets or locations, so that the work can be done at the same time, while the labor, materials, and tools are available. In Maximo, this list of assets or locations is called a **route**.

Routes can be applied to records created in the following applications:

- Changes
- Preventive Maintenance
- Quick Reporting
- Releases
- Work Order Tracking

Using the Routes Application

To access the Routes application, click the application link on your Start Center, or select **Plans > Routes** from the Go To menu.

The Routes application contains the following tabs:

- **List** — to search Maximo for route records.
- **Route** — to enter, view, or modify routes.

Routes Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Routes application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Routes Help.

How Do I...	
add an asset or a location as a route stop?	Click **New Row** in the Route Stops table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a route record?	Click the **New Route** button in the toolbar.
delete a record?	Select **Delete Route** from the Select Action menu.
duplicate a record?	Select **Duplicate Route** from the Select Action menu.
remove an asset or location as a route stop?	In the Route Stops table window, click **Mark Row for Delete** next to the stop you want to remove.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Routes

Before you can apply a route to a work order or PM, you must create it in the Routes application. You can list both assets and locations on a single route. You can also enter a **Sequence** number to indicate that the stops should be worked on in a certain order.

NOTE: Before you can add assets or locations to a route, you must first create records for them in the Assets or Locations applications.

TIP: Routes for rotating assets (for example fire extinguishers) should be created by location, since actual assets at each location may change over time.

Managing Routes

You can add, modify, or delete route stops at any time. You can modify or delete routes at any time.

Routes Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

8 The Preventive Maintenance Module

Preventive maintenance (PM) work is maintenance work performed on a regular schedule in order to keep assets running efficiently. The applications in the Preventive Maintenance module can help you to plan and budget for regular maintenance work by planning the labor, material, service, and tool needs of your regularly scheduled maintenance and inspection work orders.

The Preventive Maintenance module consists of the following applications:

Application	Function
Master PM	Used to create generic preventive maintenance templates.
Preventive Maintenance	Used to plan periodic, preventive maintenance, and inspections for assets and locations.

You use the Master PM application to create generic maintenance templates. These can be for preventive maintenance, inspections, or any other type of periodic work. You can specify the frequency that the work should be performed, seasonal dates that apply to the PM, and one or more job plans that apply to the PM. Job plans are created in the Job Plans application. Job plans list tasks, labor, materials, service, and tool requirements needed to complete preventive maintenance, inspection, or other work that can be planned in advance.

Once you have created a Master PM you can use it to create associated PMs. Associated PMs are non-master PMs that are created and managed in the Preventive Maintenance application and are for a specific asset or location. Non-master PMs are used to generate preventive maintenance work orders for assets and locations.

Master PMs vs. Preventive Maintenance Records

Master PM records are defined at the System, or database level in Multisite. You use the Master PM application to define generic preventive maintenance records, either for general maintenance, or for rotating items (For more information about rotating items, see "Item Master Records and Assets," on page 6-20). You do not generate work orders with Master PMs or include them in PM hierarchies. Master PM records can be used to create Site specific associated PM records. When you use a Master PM to create an associated PM, Maximo copies the data to the associated PM, which can then be modified as needed.

Preventive Maintenance (PM) records are defined at the Site level You create PM records for a specific asset or location, at a specific Site. PM records can only be used to generate PM work orders at their specified Site. You can group PM records into hierarchies that reflect asset or location hierarchies.

Master PM Records

A **Master PM** is a template used to create other PM records. You can create generic Master PMs for general preventive maintenance or inspection tasks, for example a generic list to be used for a facilities inspection. You can also create Master PM records for rotating items, which can be used to create associated PM records for assets and locations that have the rotating item listed on their records.

A Master PM record is not used to generate work orders, it is used to create associated PM records, which are managed in the Preventive Maintenance application. Associated PM records contain Site specific information and are used to generate work orders for assets and locations. You can also use Master PMs to automatically update information on associated PMs.

Multisite and Master PM Records

Master PMs are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

When you list a rotating **Item** on a Master PM, you must specify which Item Set the item belongs to. The same item record may appear in more than one Item Set, but the selected Item Set will determine which Organizations can use the Master PM. For more information about Item Sets, see "Inventory and Multisite - Item Sets," on page 6-3.

Master PM Records and Items

When you create new Master PMs Maximo enters a value in the **Item Set** field based on the Site listed on your person record. You have the option of specifying a rotating **Item** for the Master PM. By default Maximo checks the **Create Associated PMs for Item's Location?** and **Create Associated PMs for Item's Asset?** check boxes, which allows you to create associated PMs for any asset or location record that lists the item in the record's **Rotating Item** field.

Master PM Records and Job Plans

You can specify one or more job plans on a Master PM record. A job plan describes the tasks that need to be performed on a work order, and the labor, materials, services, and tools that will be needed. Job plans are created in the

Job Plans application. Job plans are usually asset specific, they are written for a specific asset, item, or location.

Job plans are defined at the System level in Multisite, but can contain Site specific details. When Maximo copies job plan data to a PM work order, it copies the information on the job plan that applies to the work order Site.

NOTE: Job plans that have a **Site** specified for the record cannot be associated with a Master PM because they are Site specific.

Master PM Records and Preventive Maintenance

Master PM records are templates, that are used to create other PM records via the **Create Associated PMs** action in the Master PM Select Action menu. Associated or non-master PM records are viewed and managed in the Preventive Maintenance application. You can use the **Update Associated PM** action in the Master PM application to copy updated information from a Master PM to it's associated PMs.

NOTE: The information that can be copied when you use the **Update Associated PM** action is governed by settings on both the Master PM and associated PM records. For more information, see "Updating Associated PMs," on page 8-7.

Using the Master PM Application

To access the Master PM application, click the application link on your Start Center, or select **Preventive Maintenance> Master PM** from the Go To menu.

The Master PM application contains the following tabs:

- **List —** to search Maximo for master PM records.
- **Master PM** — to enter, view, or modify master PM records.
- **Frequency** — to enter, view, or modify scheduling criteria to use when generating work orders.
- **Seasonal Dates** — to specify a PM's active months or seasons.
- **Job Plan Sequence** — to add, view, modify, and sequence a progression of job plans for PM work.

Master PM Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Master PM application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Master PM Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
copy updated information from a Master PM record to its associated PMs?	Select **Update Associated PMs** from the Select Action menu.
create associated PM from a Master PM record?	Select **Create Associated PMs** from the Select Action menu.
create a master PM record?	Click the **New Master PM** button in the toolbar.
delete a record?	Select **Delete Master PM** from the Select Action menu.
duplicate a record?	Select **Duplicate Master PM** from the Select Action menu.

Creating Master PMs

Master PMs are templates for other PM records. You can create generic Master PMs for general preventive maintenance or inspection tasks, for example a generic list to be used for a facilities inspection. You can also create Master PM records for rotating items, which can be used to create associated PM records for assets and locations that have the rotating item listed on their records.

When you create a Master PM you can specify

- how frequently work orders should be generated from the PM, based on either elapsed time or meter readings
- the active days and dates when work orders can be generated
- one or more job plans that should be used when work orders are generated from the PM, and the sequence be followed when applying multiple job plans to work orders

Setting PM Frequency

You use the Frequency tab to specify how often work orders should be generated from a PM. You must specify a frequency for a PM before Maximo can use it to generate work orders. You do not generate work orders from a Master PM, but the frequency data is copied to associated PMs created from the Master PM.

The Frequency tab contains two subtabs

- **Time Based Frequency** — Used to define the **Frequency Units** (days, weeks, months, and years) and **Frequency** that should be used when generating time based PM work orders.

- **Meter Based Frequency** — Used to define one or more **Meters** and the criteria that determines when PM work orders should be generated based on meter readings.

  NOTE: You can only list continuous type meters on a Master PM. For more information about types of meters, see "Meter Types," on page 3-35.

You can create PMs that generate work orders based on elapsed time between work orders, or meter readings, or both. Typically PMs for assets measure both elapsed time between work orders and changes to meter readings. Although locations also support meters, typically PMs for locations are based solely on elapsed time between work orders.

Setting Seasonal Dates

You use the Seasonal Dates tab to specify the active days, dates, or seasons for a PM. For example, your plant runs a five day week, and does not run on Saturday or Sunday. If you do not want Maximo to generate PM work orders that are due on the weekend you would clear the **Saturday?** and **Sunday?** check boxes.

If the PM is for seasonal work such as air conditioning maintenance, or servicing snow removal equipment, you can use the Active Dates table window to indicate the start and end dates for the period of time that the PM should be active. You can list multiple active periods. When Maximo generates PM work orders, it checks the active dates listed on the Seasonal Dates tab.

CAUTION: Maximo only considers seasonal dates for PMs that are time based. Meter based frequencies are not affected by seasonal dates.

Job Plan Sequencing

You use the Job Plan Sequence tab to specify the order that job plans should be applied to PM work orders. The value in the **Sequence** field indicates that Maximo should use the job plan every **Nth** time that work orders are generated, where **n** = the sequence number. For example, if you have a job plan for monthly maintenance and a different job plan to be used once a quarter, the sequence for the monthly job plan would be "1" (every month) and the sequence for the quarterly job plan would be "3" (every three months). The following table contains some examples of sequencing for time based monthly maintenance.

	Monthly maintenance.	Monthly maintenance with a separate job plan for quarterly maintenance.	Monthly maintenance, with a separate job plan for six month and twelve month maintenance.
Month	**Sequence**	**Sequence**	**Sequence**
January	1	1	1
February	1	1	1
March	1	3	1

	Monthly maintenance.	Monthly maintenance with a separate job plan for quarterly maintenance.	Monthly maintenance, with a separate job plan for six month and twelve month maintenance.
Month	**Sequence**	**Sequence**	**Sequence**
April	1	1	1
May	1	1	1
June	1	3	6
July	1	1	1
August	1	1	1
September	1	3	1
October	1	1	1
November	1	1	1
December	1	3	12

Managing Master PMs

Once you have created a Master PM, you can create and update associated PMs based on information on the Master PM.

Creating Associated PMs

Associate PM records are records for specific assets or locations that are created from a Master PM or contain a reference to the Master PM. For example, you could create a master PM for regular oil changes for a certain model truck. Using that master PM, you could then create one associate PM for each truck of that model in your fleet.

Associate PMs can be created in two ways:

- Create associate PMs from a master PM using the **Create Associated PMs** action.
- Associate existing PMs with a master PM by entering an identifier in the record's **Master PM** field.

The Create Associated PMs dialog box contains two tabs, assets and locations. The tabs display all assets and locations that

- contain the rotating item listed on the Master PM
- do not already have a PM that references this Master PM
- have a status of NOT READY or ACTIVE
- belong to Sites that you have permission to view

NOTE: If the **Create Associated PMs for Item's Location?** check box has been cleared, you cannot create associated PMs for locations. If the

Create Associated PMs for Item's Asset? check box has been cleared, you cannot create associated PMs for assets.

Updating Associated PMs

A Master PM can be associated with PMs at more than one Site. When you use the **Update Associated PMs** action to update PM records, you can select which Sites you want to update.

Maximo updates the associated PMs if the PM references the Master PM and the **Override Updates from the Master PM?** check box on the associated PM record is cleared

NOTE: Maximo only updates PMs for an asset or location if the meters on the asset or location record match all of the meters listed on the Master PM.

Maximo copies information from the Master PM to the associated PM under the following conditions:

- If the **Update Existing PMs?** check box on the Frequency tab of the Master PM is selected, Maximo copies the values from the **Extended Date** and **Adjust Next Due Date?** fields to the associated PM.
- If the **Update Time Based Information on Existing PMs?** check box on the Time Based Frequency subtab of the Master PM is selected, Maximo updates the **Frequency**, **Frequency Units**, and **Alert Lead (Days)** fields.
- If the **Update Meter Based Information on Existing PMs?** check box on the Time Based Frequency subtab of the Master PM is selected, Maximo updates the **Frequency**, **Alert Lead**, and **Generate WO Ahead By** fields.
- If the **Update Existing PMs Seasonal Dates?** check box on the Seasonal Dates tab of the Master PM is selected, Maximo updates seasonal date information.
- If the **Update Job Plan Sequence in Existing PMs?** check box on the Job Plan Sequence tab of the Master PM is selected, Maximo updates the job plan sequence.

Deleting Master PMs

If a Master PM record does not have any associated PMs it can be deleted by selecting **Delete Master PM** from the Select Action menu. Maximo will display an error message if the Master PM can not be deleted.

Master PM Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Preventive Maintenance Records

A **Preventive Maintenance (PM)** record is a plan to perform periodic work on an asset or location, or a group of assets and locations that are listed on a route.

Many assets and locations require regular maintenance to ensure uninterrupted efficiency and to guard against breakdowns. Assets and locations may also require other non-preventive maintenance work that must also be figured into maintenance schedules, for example, periodic inspections.

You use the Preventive Maintenance (PM) application to create PM records for preventive maintenance, periodic maintenance, or periodic inspections or certifications. You define how often work should be performed based on the elapsed time and meter readings and seasonal dates. You can list job plans on the PM, which estimate the labor, materials, services, and tools needed to complete the work. When you generate work orders from the PM, Maximo copies job plan and safety plan information to the work order.

You can also group PMs into hierarchies that match your asset or location hierarchies. When you generate work orders from the PM, Maximo creates a work order hierarchy from the PM hierarchy.

Ownership of Preventive Maintenance Records

Individuals or groups can assume responsibility, or "ownership" of a work order in Maximo. When a group owns a work order, all members of that group see the work order in their Work View. If a member of a group takes ownership of a work order, they are responsible for managing the work order until it is complete, or delegated to another group or person.

Job plan and preventive maintenance records contain **Owner** and **Group Owner** fields, and when you generate a PM work order or apply a job plan to a work order, Maximo automatically copies the values in these fields to the work order. You can also assign ownership to a work order using the **Select Owner** and **Take Ownership** actions available in the Work Order Tracking application. Your company may also design a Workflow process that assigns ownership of work orders.

NOTE: When you generate a work order from a PM, the **Owner** or **Owner Group** listed on a Job Plan takes precedence over the **Owner** or **Owner Group** listed on a PM record.

Multisite and Preventive Maintenance

PM records are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Preventive Maintenance Records and Assets/Locations

You create PM records for a specific asset or location record. You can create multiple PMs for identical assets or locations using one of two methods:

- If the asset or location record lists a **Rotating Item** you can create a Master PM with the same **Item**. You can use the Master PM to create associated PMs for each individual asset or location.
- If the asset or location record does not list a **Rotating Item** you can create a PM record for one of the assets or location, then use the **Duplicate PM** action to create a PM for each additional asset or location.

Preventive Maintenance Records and Job Plans

You can specify one or more job plans on a PM record. A job plan describes the tasks that need to be performed on a work order, and the labor, materials, services, and tools that will be needed. Job plans are created in the Job Plans application. Job plans are usually asset specific, they are written for a specific asset, item, or location.

Job plans are defined at the System level in Multisite, but can contain Organization and Site specific details. When Maximo copies job plan data to a PM work order, it copies the information on the job plan that applies to the work order Site.

Preventive Maintenance Records and Master PMs

You can create PM records from a Master PM, or associate existing PMs with a Master PM. Master PMs can update information on associated PMs based on settings on both the PM and the Master PM record. For more information, see "Updating Associated PMs," on page 8-7.

Preventive Maintenance Records and Routes

You use the Routes application to create lists of related work assets, which are considered "stops" along the route. These route stops can be assets or locations, or a combination of the two. When you list a route on a PM record and generate work orders, Maximo creates a work order hierarchy with a top level work order, and child work orders for each of the route stops.

Preventive Maintenance Records and Safety Plans

You do not define safety information on a PM record. Safety information is defined on asset, item, and location records. You can also define safety information on job plans.

When you include asset, item, job plan, or location records that contain safety information on a PM, when you generate work orders Maximo copies the safety information to the work order.

Preventive Maintenance Records and Work Orders

You use PM records to generate work orders. Maximo generates work orders based on options set by your system administrator and the frequency, date criteria, and meters listed on the PM record. When Maximo creates work orders, it copies job plans to the work orders based on the data entered on the Job Plan Sequence tab of the PM.

Using the Preventive Maintenance Application

To access the Preventive Maintenance application, click the application link on your Start Center, or select **Preventive Maintenance > Preventive Maintenance** from the Go To menu.

The Preventive Maintenance application contains the following tabs:

- **List** — to search Maximo for PM records.
- **PM** — to enter, view, or modify Preventive Maintenance records and associate them with assets, locations, or GL accounts.
- **Frequency** — to enter, view, or modify scheduling criteria for the generation of work orders.
- **Seasonal Dates** — to specify a PM's active months or seasons.
- **Job Plan Sequence** — to add, view, modify, and sequence a progression of job plans for PM work.
- **PM Hierarchy** — to enter, view, or modify PM hierarchies to generate scheduled work order hierarchies.

Preventive Maintenance Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Preventive Maintenance application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Preventive Maintenance Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
change the value in the **Counter** field?	Select **Set PM Counter** from the Select Action menu.
create a preventive maintenance (PM) record?	Click the **New PM** button in the toolbar.
delete a record?	Select **Delete PM** from the Select Action menu.

How Do I...	
duplicate a record?	Select **Duplicate PM** from the Select Action menu.
enter a meter reading after a work order has been completed?	Select **Set Reading at Last WO** from the Select Action menu.
generate a work order based on one or more PMs?	Select **Generate Work Orders** from the Select Action menu. **TIP:** You can use the List tab to generate work orders from multiple PMs.
run reports?	Select **Run Reports** from the Select Action menu.
view the job plan sequence for work orders generated based on the PM?	Select **View Sequence** from the Select Action menu.

Creating PMs

You use the Preventive Maintenance application to create PM records. You can also create PM records in the Master PM application via the **Create Associated PMs** action.

When you create a PM record you specify an **Asset**, **Location**, or **Route** for the PM. You can create a PM record for either an asset or location, but not both. You define how often work should be performed based on the elapsed time and meter readings and seasonal dates. You can list job plans on the PM, which estimate the labor, materials, services, and tools needed to complete the work.

CAUTION: You must set a frequency for a PM before Maximo can generate work orders from it.

Setting Priority for PMs

Maximo uses values between 0 and 999 to indicate priority for work orders, assets, and locations. Since preventive maintenance is designed to reduce corrective work orders, the priority values set for PM records should be higher than the values used for corrective maintenance. For information about recommended priority values, see "Work Order Priority," on page 14-4.

Priority values specified for PMs are copied to the work orders that are generated from the PM in the following manner:

- When there is a PM hierarchy and the child PMs have priorities, the priority of the parent PM is copied to the parent work order, and the priorities of the child PMs are copied to the child work orders.
- When a PM has a job plan the PM priority is copied to the work order, and the job plan priority is copied to the work order tasks.
  - If the PM does not have a priority, the job plan priority will be copied to the work order as well as the tasks.

- If the job plan does not have a priority, the PM priority will be copied to the tasks as well as the work order.

When a PM has a route with priorities from a job plan, the PM priority will be copied to the work order, and the job plan priorities will be copied to the child work orders created for each route stop.

Setting PM Frequency

You use the Frequency tab to define the schedule for how often Maximo should generate work orders for the PM. You can create a PM schedule to generate work orders based on elapsed time between work orders or changes to asset meter readings over time, or both. For example, you might want to change the oil in a vehicle every three months or 3,000 miles, whichever comes first.

For time based PMs you specify the number of days between generating PM work orders using the following fields:

- **Frequency** — Number of time units (days, weeks, months, or years) to elapse between work orders you generate from this PM.
- **Frequency Units** — Defines the time units (days, weeks, months, or years) for the **Frequency** field.
- **Estimated Next Due Date** — Date the next work order is scheduled to be generated from the PM. This field should contain a value for Maximo to be able to generate work orders.

A typical PM schedule for an asset measures *both* elapsed time between work orders and changes to meter readings. The **Generate WO Based on Meter Reading (Do Not Estimate)?** check box allows you the option to generate work orders based on *either* an estimated next due date, or on the actual meter reading.

- **checked** (Yes) — This option does not allow Maximo to generate work orders until the specified meter reading has been reached. This is useful when the asset use schedule fluctuates, for example seasonal assets or fleet vehicles.
- **empty** (No) — This option allows Maximo to use an estimated due date to generate work orders. This estimate is based on elapsed time and average changes in meter readings. This option allows work orders to be generated even if meter readings are not entered as often as they should be. This is useful if the asset is in continuous operation, for example manufacturing plants.

Setting Seasonal Dates

For information about setting seasonal dates, see “Setting Seasonal Dates,” on page 8-5.

Job Plan Sequencing

For information about job plan sequencing, see “Job Plan Sequencing,” on page 8-5.

PM Hierarchies

A PM hierarchy is a group of PMs arranged in parent-child relationships. At the highest level of a PM hierarchy, one PM that is the parent. This top-level PM can have one or more child PMs. Each child PM can have one or more children, and so on. A child PM can have only one parent PM. You can create PM hierarchies that mirror your asset and location hierarchies.

You use PM hierarchies to generate hierarchies of scheduled work orders. When one PM in the hierarchy is due to be generated, Maximo generates PM work orders for every PM in the hierarchy. You can add a sequence number to each PM in a PM hierarchy; the sequence number is copied to work orders you generate from the PM.

You cannot delete a PM record that is part of a hierarchy. PM records that have a parent or child PMs must be removed from their hierarchies before you can delete them.

Managing PMs

Managing PMs includes generating PM work orders and keeping track of the status of assets and locations.

Generating PM Work Orders

You can generate work orders from a PM record in one of three ways:

- **Automatically (Time based)** — Your system administrator can use the Cron Task application to set up a PM cron task. A **cron task** is a software command to execute a task at a particular time.

- **Automatically (Meter based)** — If you select the **Generate WO When Meter Frequency is Reached?** check box, Maximo automatically checks to see if PM work orders should be generated every time meter readings are entered for an asset or location.

- **Manually** — Use the **Generate Work Orders** action available from the Select Action menu to generate work orders from one or more PM records. You can use the List tab to select multiple PMs to use to generate work orders.

When you generate work orders from a PM, Maximo checks the frequency criteria and determines if a work order should be generated. If the frequency criteria has not been met, no work orders are generated. If the asset or location does not have a status of ACTIVE, no work orders are generated. If the frequency criteria have been met, Maximo creates PM work orders, which can be viewed and managed using the Work Order Tracking application.

NOTE: Frequency must be set for a PM before work orders can be generated from it.

PM Statuses

A PM record can have one of the following statuses:

- **DRAFT** — Default status for new records. PM is still being created and has not yet been approved for use. PM records with a status of DRAFT cannot be used to generate work order records.

- **ACTIVE** — A PM record must be active before it can be used to generate work orders.When you change a PM's status to ACTIVE, Maximo automatically checks to make sure that the asset or location listed on the PM is in a status of either NOT READY or ACTIVE. You cannot change a PM status to ACTIVE if the asset or location listed on the PM is DECOMMISSIONED.

- **INACTIVE** — PM records with a status of INACTIVE cannot be used to generate work orders.

TIP: When you change the status of a PM record that is the top level of a PM hierarchy, you can also change the status of all of the records in the hierarchy by selecting the **Roll new status to all child PMs?** check box in the Change Status dialog box.

Preventive Maintenance Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

9 The Purchasing Module

The Purchasing Module is one of the Maximo modules devoted to financial and purchasing functions. The Financial Module allows administrators to set up currency codes, exchange rates, the Chart of Accounts that users access via the GL Account Navigator, and to perform cost management. The Contracts Module allows you to create master contracts, purchase contracts, lease/rental contracts, labor rate contracts, and warranty contracts. The Purchasing Module tracks requests for and purchases of materials and services, receipt of the purchases, and invoices for the purchases.

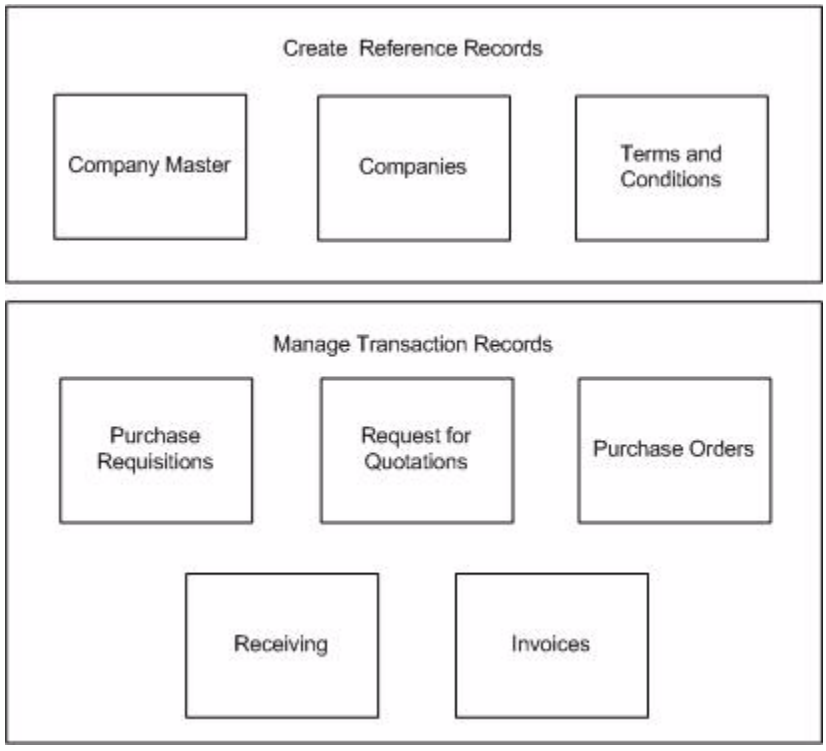
The Purchasing Module consists of the following applications:

Application	Function
Companies	Used to manage records for manufacturers, vendors, and other companies that do business with you.
Company Masters	Used to define companies that belong to a Company Set that can be shared by one or more Organizations.
Invoices	Used to record invoices and match against purchase orders and receipts for approval.
Purchase Orders	Used to purchase materials or services from an internal supplier or an external vendor.
Purchase Requisitions	Used to request the ordering of materials or services.
Receiving	Used to receive materials into inventory and record the receipt of services.
Request for Quotation	Used to request and manage vendor quotations for prices and delivery information for goods and services.
Terms and Conditions	Used to enter and maintain a library of terms and conditions to be used on contracts and purchasing documents. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations. **NOTE:** The Terms and Conditions application is documented in "Terms and Conditions," in Chapter 4, "The Contracts Module," on page 4-20.

Obtaining the materials and services required to complete work is an important part of any maintenance process. As inventory balances decrease in the storerooms, you must replenish these balances.

You use the Company Master and Companies applications to create records for the vendors that provide you with goods and contract labor, other service providers, and asset manufacturers. Any value appearing in a **Company** or **Vendor** field on a Maximo record should have a company record associated with it.

You can use the Terms and Conditions application to create a library of terms that can be used on purchasing records. These terms and conditions can also be used in the Contracts module when you are creating records for labor rate, lease/rental, master, purchasing, or warranty contracts.



You use the Purchase Requisitions application to request the purchase or goods or services. Purchase requisitions created automatically via the inventory reorder process are also visible in the Purchase Requisitions application. Purchase requisitions can also be created via Workflow from material requisitions (MRs) created in the Desktop Requisitions application described in "Desktop Requisitions Module," on page B-9.

Depending on your business processes, Maximo may automatically create purchase orders (POs) from PRs, or a purchasing agent may need to review and approve the PR before creating a PO. Large purchases may require the creation of a request for quotation (RFQ). You use the Request for Quotations application to create RFQs, record the vendors that the RFQ is sent to and the quotations received, and to award the quotation lines to one or more vendors. Once you have awarded quotation lines, you can create purchase contracts and POs from an RFQ.

You use the Purchase Orders application to create and manage purchase orders for items, materials, services, tools, and so forth. Purchase orders

created automatically via the inventory reorder process are also visible in the Purchase Orders application.

You use the Receiving application to record the receipt of ordered items and materials. When you receive items, Maximo increases balances in the Inventory application or issues direct issue items directly to an asset, location, or work order. You can use the **Receive Rotating Items** action to create records in the Assets application for rotating assets.

You use the Invoices application to record invoices received from vendors, which can be matched to POs. You can also manage scheduled payments for a contract in the Invoices application.

Purchasing and Inventory

The Purchasing module works closely with the Inventory module to maintain balances of items and materials in company storerooms.

When you reorder items either manually (using one of the reorder actions in the Inventory application), or automatically (via a reorder cron task set up by your system administrator), Maximo automatically creates one or more purchasing records for the reorder. Exactly what type of purchasing records are created is based on settings controlled by your system administrator. Your system administrator can configure Maximo so that when purchase requests are received one of the following types of records is created:

- Unapproved purchase requisitions (PRs)
- Approved purchase requisitions (PRs)
- Unapproved purchase orders (POs)
- Approved purchase orders (POs)

Internal vs. External Purchases

In order to centralize purchasing all inventory purchasing might be done through a central storeroom with all other storerooms "purchasing" their stock from that central storeroom.

Maximo supports this type of purchasing by allowing you to create two different types of purchase requisitions and purchase orders. Both PR and PO records contain an **Internal?** check box in the Vendor section of the record which is used to indicate if the PR/PO is an internal or external purchase.

- **Internal PR/PO** — requesting the transfer of materials from another company storeroom. When making internal purchases select the **Internal?** check box and enter **Storeroom** and **Storeroom Site** information.

- **External PR/PO** — requesting the purchase of the necessary materials or services from an outside vendor. When creating external PRs/POs you should leave the **Internal?** check box empty and enter **Company** information.

When creating a PR/PO you can fill in either the **Vendor** or the **Storeroom** field, but you can not enter data in both fields. When the **Internal?** check box

is empty the **Company** field is editable and the **Storeroom** field is read-only. Selecting this check box makes the **Storeroom** field editable and the **Company** field read-only. You must specify either a **Vendor** or a **Storeroom** on a purchase order.

You can create internal PRs and POs that specify a storeroom in a different Site and Organization within Maximo. You use the Issues and Transfers application in the Inventory module to transfer items from the "vendor" storeroom to the "purchasing" storeroom. When you transfer items across Organizations that require inspection, a courier must be used.

If your company uses a centralized purchasing department you can create purchase orders from purchase requisitions created at different Sites in an Organization. Maximo stores the **Ship To** information for an individual line item on the PO line. When you combine multiple purchase requisitions into a single PO, Maximo copies the **Ship To** information for each line from the PR.

Line Types

Purchase requisitions (PRs) and purchase orders (POs) list each item or service to be purchased on a separate line. Each PR or PO line must have a Line Type specified for it. Maximo allows you to select from the following default Line Types:

- **ITEM** — (the default) Use to order inventory items, that is items that have item records created for them in the Item Master application.
- **MATERIAL** — Use to order items or materials on a one time basis, that is items that do not have item records created for them in the Item Master application. You must enter a description, quantity, cost, and charge value. The charge value can be a work order, location, asset, or GL Account code.
- **SERVICE** — Use to order services on a one time basis, that is services that do not have records created for them in the Service Items application. Services require a description, line cost, and charge value. The charge value can be a work order, location, asset, or GL Account code.
- **STDSERVICE** — Use to order service items, that is services that have records created for them in the Service Items application.
- **TOOL** — Use to order tools, that is tools that have records created for them in the Tools application.

In addition there is one additional line type:

- **SPORDER** — Use to special order items or materials AND create an item record in the Item Master application for the item.

  NOTE: Your system administrator determines if this option is enabled.

Commodity Codes

Commodity codes can be defined and managed using the **Add/Modify Commodity Codes** action available from the Select Action menu of the following applications:

- Companies
- Item Master
- Purchase Orders
- Service Items
- Tools

Classifying items and services with commodity groups and commodity codes provides a way for you to analyze spending by item type. Once you have defined commodities you can associate them with company, contract, and item records. You can also associate commodities with individual PR or PO lines for items, service items, or tools that do not have commodity codes assigned to them, including special order materials or services.

NOTE: Commodity group or commodity code information added to a PR Line or PO Line is not copied to item records.

Purchasing and Contracts

The Purchasing module works closely with the Contracts module to define the specific financial relationship between buyer and seller.

Company records and contracts are both defined at the Organization level, whereas most purchasing is done at the Site level. When you enter a contract in one of the contracts applications, you must use the **Authorize Sites** action to authorize each Site that you want to be able to use the contract.

Terms and Conditions

You use the Terms and Conditions application to create and maintain a library of terms and conditions that describe the legal obligations between a buyer and a seller. Terms and conditions appear on records in the following applications:

- All contracts (Contracts Module)
- Invoices
- Purchase Requisitions
- Purchase Orders
- Requests for Quotation

NOTE: If the **Editable on Use?** check box is selected for a term you cannot edit the term once it has been copied to a record.

The terms and conditions in the library can be added to a contract from the Terms and Conditions tab of the individual applications. You can also create terms via the **New Row** button on the Terms and Conditions tab, but terms created in this manner are saved to the record and are not added to library.

For more information about terms and conditions, see "Terms and Conditions," on page 4-20.

Purchase Contracts

You can use the **View Contracts** button on the PR Lines tab of the Purchase Requisitions application and the PO Lines tab of the Purchase Orders application to view a list of contracts for the line item. If you have not specified a vendor on the record, the View Contracts dialog box lists all vendors with whom you have a contract for the line item. If there is a vendor specified on the record, the View Contracts dialog box lists only contracts that contain that item/vendor combination.

When you are creating a purchase requisition or purchase order that lists a lease/rental or purchase contact in the **Reference Contract** field you can use the **Contract Items** button on the PR Lines or PO Lines tab. The Contract Items dialog box allows you to view and select from the line items listed on the contract.

You use the applications in the Contracts module to create contract records, but you can also create contracts based on information contained on records in the Purchasing module.

- You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** action in the Purchase Requisitions and Purchase Orders application.

- You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** button in the Request for Quotations application.

Creating Purchasing Records from Contracts

Purchasing records can be created in the Contracts module. You can create purchasing records using the following actions available in the Purchase Contracts application:

- **Create RFQ** action
- **Create Release PO** action

Types of Purchase Orders

Maximo uses the following types of purchase orders:

- **CHG** — Change. A **change order** is a duplicate purchase order generated from an approved purchase order. If you must change an approved PO that has no receipts, you might prefer to do so by creating a change order. The change order preserves the audit trail by retaining the original PO while you make the necessary changes to the change order PO.

- **PARTS** — Parts. Used to indicate that the purchase order is for work order parts.

- **REL** — Released. Maximo creates a release type PO when you use the **Create Release PO** action available in the Purchase Contracts

application. A **blanket release** is a purchase order that you generate from a purchase contract. Your system administrator can set Maximo so it automatically approves REL type POs generated from valid contracts.

NOTE: Release type POs cannot be duplicated using the **Duplicate Purchase Order** action. They also cannot be changed to a change (CHG) type PO.

- **SERV** — Service. Used to indicate the purchase order is for services.
- **STD** — Standard. This is the default type for purchase orders created in the Purchase Orders application.

NOTE: You might need security authorization to change a PO type.

Payment Schedules

A **payment schedule** is a planned payment, usually a payment set up for a leased or rented asset or location, or a payment for a service or warranty contract. When you create a contract that requires a series of scheduled payments you first define the **Payment Period** using the Set Schedule dialog box. Then you use the **Manage Payments** action available in the Lease/ Rental Contract and Warranty Contracts applications to generate a payment schedule for each asset listed on the contract. Maximo creates an invoice with a status of SCHED (scheduled) for each installment payment in the schedule.

If the **Payment Schedule?** check box on a purchase contract is selected, the **Payment Schedule** button can be used to create a payment schedule for purchases made against the contract. For example, if a purchase contract requires a 50% down payment, with the remaining 50% due upon receipt of the order.

If your system administrator activates the "invoice due" escalation, Maximo automatically changes the status of an invoice from SCHED to either WAPPR or APPR when the **Due Date** on the invoice is reached.

Company Records

A **company master** record in Maximo represents a vendor from whom you purchase goods or services, asset manufacturers, and other companies that you do business with.

A **company** record contains Organization specific information about a vendor, such as contact names and addresses. If a company has multiple locations you can create separate records for each branch location and associate them with a parent company record.

NOTE: Company information must be entered in the Companies application before other applications, such as Inventory and Purchasing, can access it.

Multisite and Company Records

Company records are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Company Records vs. Company Master Records

Company Master records define the records that belong to a Company Set. Company Sets exist below the System level, but above the Organization level so that Organizations can share data. Each Organization is associated with a Company Set.

If your company has implemented a Multisite configuration that includes multiple Organizations, using Company Sets allows your Organizations to share master company data on the records created in the Company Masters application, and record Organization specific data, for example contacts and branches, on the records in the Companies application.

When creating a complex Multisite implementation you would create company records in the following order:

1. Create one or more Company Sets in the administrative Sets application.
2. Create company master records in the Company Master application.
3. Add company master records to one or more Organizations.
4. Use the Companies application to add Organization specific data to the company records.
5. If appropriate, create company branch records and associate them with a parent company record to create a hierarchy.

TIP: If your company's Multisite implementation consists of a single Organization, your system administrator can configure your Company Set so that records created in the Companies application are automatically added to the Company Masters application.

Company Records and Other Applications

Generally when a **Company** or **Vendor** field appears on a Maximo record, the value in the field represents a company record created in the Companies application.

Company Records and Contracts

Before you can create contract records you must first create company records for each vendor or company that will be listed on a contract.

You can use the **View Contracts** action available from the Select Action menu of the Companies application to view a read-only list of contracts associated with a company record.

Company Records and Purchasing

Before you can create purchasing records (PRs, RFQs, or POs) you must first create company records for each vendor or company that will be listed on a purchasing record.

Using the Companies Application

To access the Companies application, click the application link on your Start Center, or select **Purchasing > Companies** from the Go To menu.

The Companies application contains the following tabs:

- **List** — to search Maximo for company records.
- **Company** — to enter, view, and modify information on vendors, manufacturers, and other companies.
- **Contacts** — to enter, view, and modify contact information for multiple contacts.
- **Addresses** — to enter, view, and modify information about a single contact, company mailing address, and remit to information for a company.
- **Branches** — to enter, view, and modify information about multiple locations for the company.

Companies Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Companies application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Companies Help.

How Do I...	
associate commodity codes with a vendor?	Select **Associate Commodities** from the Select Action menu.
add a commodity group to the database?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add or modify a commodity code in a commodity group?	Select **Add/Modify Commodity Codes** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a company record?	Click the **New Company** button in the toolbar.

How Do I...	
delete a record?	Select **Delete Company** from the Select Action menu.
duplicate a record?	Select **Duplicate Company** from the Select Action menu.
view contract information related to the company?	Select **View Contracts** from the Select Action menu.

Creating Company Records

You can only use the Companies application to create a new company record if your system administrator has selected the **Automatically Add Companies to Company Master?** check box in the Sets application. When this check box is selected Maximo automatically creates a company master record when you create company records in the Companies application. If Maximo does not allow you to crate company records in the Companies application, you must use the Company Master application to create company records.

You can use the Company tab to enter information about a company, including purchasing and payment information, and information about whether the vendor is e-commerce enabled through Maximo. Your system administrator enables a company's Maximo e-commerce purchasing options.

You can categorize companies by type for reporting purposes. Maximo uses three defaults for company types:

- **Courier** — transit company
- **Manufacturer** — manufacturer of items or assets
- **Vendor** — vendor of items or assets

Your system administrator might have created customized company types specific to your business.

NOTE: The **Customer #** field in the Companies application stores the number used by the *company* to identify your company in *their* database.

You use the Contacts tab to add, view, and modify information about the people you need to contact at the company.

You use the Addresses tab to view and modify a company's general and Remit To contact information.

Using Company Branches

Many national vendors have local offices in major cities. If your company is large enough to have more than one location, locations in different cities might make their purchases from the local branch of the same national vendor. Maximo allows you to create branch records for a vendor company and track purchasing either at the branch level, or with the vendor as a whole.

For example, each plant location might purchase office supplies at the local office of a national chain, and do their shipping with the local office of an international shipping company. By entering company branches in Maximo,

you can track purchases for each plant location via its branch record, as well as the total purchases for all plant locations via the parent vendor record.

Company Branch Hierarchies

The branch hierarchy can be only one level deep, with a parent company record, and child branch records. Child records cannot be parents of other records, and parent records cannot be children of other records.

You use the Branches tab to create and remove associations between child and parent records. You can enter a company record manually, or use the **Detail Menu** button to look up companies. The Select Company page includes only companies that are not already parent or child records.

NOTE: You can associate only existing company records with the parent record. You cannot insert a new company record by adding a row to the Branches table window.

Duplicating Company Records

You can use the **Duplicate Company** action to create a copy of an existing company record, for example if you are creating records for company branches. Once you duplicate a company record you can then modify it as needed.

Managing Company Records

Once company master records have been created in the Company Master application and added to Organizations, you can add, view, or modify Organization specific information on a company record.

Disqualifying a Vendor

If your company decides to stop doing business with a vendor, you can mark the record to indicate that the vendor is disqualified from doing business with your company.

The **Disqualified Vendor?** check box on the Company tab is a Yes/No field. The default is "No": the box is not checked. Selecting this box disqualifies this company as a vendor, which means that you cannot create *new* RFQs, PRs, POs or invoices using this company as a vendor.

Disqualifying a vendor has no effect on existing transactions (POs and receipts) that already reference the vendor. A disqualified vendor affects only those records created *after* you disqualify the vendor. Therefore, Maximo no longer allows new POs to be created from PRs for the vendor, but POs approved before the vendor was disqualified are still valid.

Deleting Company Records

You can delete a company record using the **Delete Company** action available from the Select Action menu.

Company records cannot be deleted if branch records are associated with them. In order to delete a parent company record with associated child (branch) records, you first must sever all child relationships before you can

delete the record. To sever child relationships, delete all the branches listed in the Branches table window.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Companies Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Company Master Records

A **company master** record in Maximo represents a vendor from whom you purchase goods or services, asset manufacturers, and other companies that you do business with.

You use the Company Master application to create company master records that belong to a particular Company Set. Company master records contain information pertaining to companies such as the default contact person of the company, purchasing, e-commerce, and payment details of the company.

A **company** record contains Organization specific information about a vendor, such as contact names and addresses.

Multisite and Company Master Records

Company Master records are defined at the Company Set level. Company Sets exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new company master records must be unique within the Company Set.
- Records are available to all users in the Organizations that share the Company Set and who have security permissions to the application.

All company master records belong to a Company Set. Company Sets enable you to share information about companies between multiple Organizations. Each Organization is associated with a Company Set.

Company Master Records vs. Company Records

For more information about the relationship between company master and company records, see "Company Records vs. Company Master Records," on page 9-8.

Using the Company Master Application

To access the Company Master application, click the application link on your Start Center, or select **Purchasing > Company Master** from the Go To menu.

The Company Master application contains the following tabs:

- **List** — to search Maximo for company master records.
- **Company Master** — to add, view, or modify company master records.
- **Contacts** — to enter, view, and modify contact information for multiple contacts.
- **Addresses** — to enter, view, and modify addresses for the company.

Company Master Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Company Master application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Company Master Help.

How Do I...	
add a company master record to an Organization?	Select **Add Company Master to Organization** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a company master record?	Click the **New Company Master** button in the toolbar.
delete a record?	Select **Delete Company Master** from the Select Action menu.

Creating Company Master Records

You create company master records for any company that you do business with including vendors, service providers, and asset manufacturers. Once you create a company master you use the **Add Company Master to Organization** action to associate the company master record with one or more Organizations.

If your company's Multisite implementation consists of a single Organization, your system administrator can configure your Company Set so that records created in the Companies application are automatically added to the Company Masters application.

Managing Company Master Records

Once company master records have been created and associated with at least one Organization, you use the Companies application to record Organization specific data.

Disqualifying a Company Master

If your company decides to stop doing business with a vendor, you can check the **Disqualified Vendor?** check box on the record to indicate that the vendor is disqualified from doing business with your company.

Deleting Company Master Records

You can delete a company master record using the **Delete Company Master** action available from the Select Action menu. You cannot delete a company record if it has been associated with an Organization.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Company Master Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Invoices

An **invoice** is a bill from a vendor for delivered products or services.

The Invoices application lets you record invoices as well as debit and credit notes from vendors, and match invoice details against purchase orders (POs) and receipts. It also lets you create invoices for which there are no receipts. In addition, you can create an invoice for a parent company for goods and services rendered through any of its branches, and you can create an invoice for a branch company for goods and services rendered through its parent company.

After you purchase materials and services, your company receives bills, or invoices, from the vendors. Using Maximo to manage invoices lets you match invoice information against purchase orders and receipts of materials and services, so that the invoice can be approved and routed to Accounts Payable.

Multisite and Invoice Records

Invoices are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Invoice Records and Contracts

When you have contracts that contain a payment schedule, Maximo creates an invoice with a status of SCHED (scheduled) for each installment payment in the schedule.

If your system administrator activates the "invoice due" escalation, Maximo automatically changes the status of an invoice from SCHED to either WAPPR or APPR when the **Due Date** on the invoice is reached.

Invoice Records and Purchase Orders

After you purchase materials and services, your company receives bills, or invoices, from the vendors. You use the Invoices application to record vendor invoices as you receive them. When you create invoice records you can list purchase order (PO) details on the invoice if it is appropriate.

The invoice you create in Maximo may represent one of these invoice types:

- An invoice related to a single purchase order—you enter information such as the invoice number, corresponding PO number, any receipts recorded for the PO, and information specific to the invoice.
- An invoice related to many purchase orders for a single vendor—you enter general invoice data on the Invoice tab, including the vendor, then list the related POs on the Invoice Lines tab.
- An invoice without a related purchase order—typically, such an invoice represents a bill for which there is no purchase requisition or purchase order. You just enter invoice-specific information. This could be appropriate if, for example, you receive an invoice for rent or a phone bill.

When you list a purchase order on an invoice, Maximo automatically copies information from the purchase order to the PO Details section of the receipt, including the status of the PO in the Receiving application.

NOTE: Items, materials, and services do not need to be received in the Receiving application to have invoices created for them in the Invoices application.

Using the Invoices Application

To access the Invoices application, click the application link on your Start Center, or select **Purchasing > Invoices** from the Go To menu.

The Invoices application contains the following tabs:

- **List** — to search Maximo for invoice records.
- **Invoice** — to enter, view, or modify invoices, credit notes, or debit notes.
- **Invoice Lines** — to enter line items on the invoice.

- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the record.

Invoices Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Invoices application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Invoices Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
change the vendor on the invoice from the one listed on the purchase order?	Select **Change Vendor from PO** from the Select Action menu.
create an invoice record?	Click the **New Invoice** button in the toolbar.
delete a record?	Select **Delete Invoice** from the Select Action menu.
distribute standard service costs across all invoice line items?	Select **Allocate Services** from the Select Action menu.
duplicate a record?	Select **Duplicate Invoice** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Invoices

You use the Invoices application to record vendor invoices as you receive them. Invoice records can be created for the following types of payments:

- An invoice related to a single purchase order
- An invoice related to multiple purchase orders for a single vendor
- An invoice for a scheduled payment on a lease or rental contract
- An invoice without a related purchase order, for example for bills that do not require purchase orders or receipts, such as rent or phone bills.

Invoice Types

Maximo allows you to create the following types of invoices:

- **INVOICE** — (the default) Use to indicate a payment to a vendor.

- **CREDIT** — Use to indicate a credit issued by your company to a vendor, for example for returned items.

- **DEBIT** — Use to indicate a charge to your company from a vendor, for example additional charges not listed on a invoice.

Entering Invoice Lines

Maximo lets you select any purchase order, material receipt, or service receipt line items and copy them directly to the Invoice Lines tab. To copy PO line items to an invoice, the following conditions must be met:

- You must have security authorization to perform the function.
- The invoice status must be ENTERED, WAPPR (Waiting for Approval), or HOLD. For more information on invoice statuses, see "Invoice Statuses," on page 9-17.
- An approved PO must be identified in the **PO** field, or a vendor must be specified in the **Company** field on the Invoice tab.
- If the **Receipt Required?** check box is selected on any PO line item, the item must be received before it can be copied to the invoice.

You use the **Copy PO Lines** button to import the data from the purchase order to the Invoices application.

From the Invoice Lines tab, you can match the vendor invoice information to the PO and copy the appropriate lines from the PO to the Invoice Lines tab.

Not all invoices from vendors have a one-to-one correspondence of invoice to PO. And at times, you might receive an invoice, such as a phone bill, which has no PO. When you receive an invoice which has no PO, you must create the invoice and enter the information manually.

Duplicating an Invoice

You can use the **Duplicate Invoice** action to create a copy of an existing invoice, for example if you have similar standard orders from a vendor. When you duplicate an invoice, Maximo copies all of the information from the existing invoice, including line items. Once you duplicate an invoice you can then modify it as needed.

Managing Invoices

Once an invoice has been created, you use the invoice **Status** to indicate where it is in the processing cycle.

Invoice Statuses

An invoice can have one of the following statuses:

- **ENTERED** — Invoice has been entered. New invoices are created with a status of ENTERED. Some default fields are read-only.
- **WAPPR** — Invoice is waiting for approval. An invoice waiting for approval can be edited, but some default fields are read-only.

The WAPPR option is available only if the current invoice status is ENTERED or HOLD. Use this option to indicate that an invoice has been submitted for approval, perhaps to a higher level of management.

- **APPR** — Invoice has been approved. All fields are read-only.

  The APPROVE option is available only if the current invoice status is ENTERED, WAPPR, or HOLD. In addition, if you change the status directly to PAID without first approving the invoice, Maximo automatically approves the invoice.

- **HOLD** — Invoice is on hold for approval. An invoice on hold can be edited, but some default fields are read-only.

  The HOLD option is available only if the current invoice status is ENTERED or WAPPR. Use this option for any invoice that should not yet be approved or paid.

- **SCHED** — Scheduled. An invoice with a status of SCHED has been generated from a contract and is due on the date listed in the **Due Date** field.

- **CANCEL** — Invoice has been canceled. All fields are read-only, and record can no longer be modified.

  The CANCEL option is available only if the current invoice status is ENTERED, WAPPR, APPR, or HOLD. A canceled invoice is stored as a history record and cannot be modified.

- **PAID** — Invoice has been paid. All fields are read-only, and record can no longer be modified.

  The PAID option is available only if the current invoice status is ENTERED, WAPPR, APPR, or HOLD. In addition, if you change the status directly to Paid without first approving the invoice, Maximo automatically approves the invoice.

Deleting an Invoice

You can delete an invoice using the **Delete Invoice** action available from the Select Action menu. You can only delete an invoice if the status is ENTERED or WAPPR (waiting for approval).

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Invoices Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Purchase Orders

A **purchase order** (PO) is an authorized order from a purchasing agent or department to an internal supplier or external vendor.

You can use the Purchase Orders application to create purchase orders, either from purchase requisitions (PRs), requests for quotation (RFQs), or from scratch.

Multisite and Purchase Orders

Purchase Orders are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Purchase orders store **Ship To** and **Site** information at the line level, allowing you to create POs that combine requisition lines from one or more Sites in the same Organization on the same PO.

When you are creating an internal PO, the Site listed in the Delivery Details section of the line should meet at least one of the following conditions:

- requesting **Site** is the same as the PO **Site** (Site listed in the PO header)
- requesting **Site** and the PO **Site** belong to the same Organization
- requesting **Site**'s Organization and the PO **Site**'s Organization share the same Item Set

When you are creating an external PO, the Site listed in the Delivery Details section of the line should meet at least one of the following conditions:

- PO line's **Site** is the same as PO **Site**
- PO line's **Site** and the PO **Site** belong to the same Organization

For more information about internal and external purchase orders, see "Internal vs. External Purchases," on page 9-3.

Purchase Orders and Purchase Contracts

You can use the **Contract Items** button to view a list of items listed on contracts with the vendor specified in the **Company** field on the PO. If the PO **Type** = REL the Contract Items dialog box only displays contract items from the **Reference Contract**.

Maximo displays a message if more than one valid contract exists for an item or service item. You can use the **View Contracts** button to view a list of all valid contracts for the item. If the **Company** field on the PO is empty, Maximo displays all valid contracts for the item. If there is a value in the **Company** field, Maximo displays all valid contracts for the item/vendor combination.

Release purchase orders can be created via the **Create Release PO** action available in the Purchase Contracts application.

You can create contracts based on information contained on purchase orders. You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** action in the Purchase Orders application.

NOTE: Creating a contract from a PO does not affect the PO record, for example Maximo does not enter a value in the **Reference Contract** field.

Purchase Orders and Purchase Requisitions

You can create a purchase order (PO) from a purchase requisition (PR), but a PR is not required for the creation of a PO.

Purchase Orders and Storerooms

Some companies centralize their purchasing and use a central storeroom to supply other storerooms in the company. Maximo's Purchase Orders application allows you to generate a purchase order against another storeroom. Storeroom records contain a **Use on PR/PO?** check box that allows them to be used as the vendor for internal purchase orders.

You can think of a storeroom-to-storeroom purchase as a "transfer order," or an "internal PO," since Maximo uses the Purchase Orders and Issues and Transfers applications to track these types of item movements. For more information about internal and external purchase orders, see "Internal vs. External Purchases," on page 9-3.

Using the Purchase Orders Application

To access the Purchase Orders application, click the application link on your Start Center, or select **Purchasing > Purchase Orders** from the Go To menu.

The Purchase Orders application contains the following tabs:

- **List** — to search Maximo for purchase order records.
- **PO** — to enter, view, or modify POs, either from PRs, RFQs, or from scratch.
- **PO Lines** — to enter, view, or modify line items on the PO; also to view summary information from the Material Receipts and Service Receipts tabs in the Receiving application.
- **Ship To/Bill To** — to enter, view, or modify shipping information that will be used as a default on each line, and billing information for the entire order.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the record.

Purchase Orders Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Purchase Orders application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Purchase Orders Help.

How Do I...	
add a commodity group to the database?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add or modify a commodity code in a commodity group?	Select **Add/Modify Commodity Codes** from the Select Action menu.
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record’s status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
change the attributes for an asset?	Select **Move/Modify Assets** from the Select Action menu.
change the location of one or more assets?	Select **Move/Modify Assets** from the Select Action menu.
change the user or custodian for an asset?	Select **Move/Modify Assets** from the Select Action menu.
complete receipts for a PO when there are still items outstanding that you do not expect to receive?	Select **Complete Receipts** from the Select Action menu.
copy line items from a purchase requisition (PR) to a purchase order?	Select **Copy PR Line Items to PO** from the Select Action menu.
create a contract from a purchase order?	Select **Create Contract** from the Select Action menu.
create a purchase order?	Click the **New Purchase Order** button in the toolbar.
duplicate a record?	Select **Duplicate Purchase Order** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.

How Do I...	
modify a purchase order that has a status of approved (APPR)?	Select **Create Change Order** from the Select Action menu. **NOTE:** You cannot create a change order if there are receipts against the PO.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view advance ship notice information for a PO?	Select **View History** from the Select Action menu.
view purchase requisition information for a PO line?	Select **View PR Line Items** from the Select Action menu.
view related invoice lines for a PO?	Select **View Invoice Lines** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.
view the vendor status information for a PO?	Select **View History** from the Select Action menu.

Creating Purchase Orders

You can use a number of different methods to create a purchase order. You can create a purchase order in the following ways:

- click the **New Purchase Order** button in the Purchase Orders application
- select the **Create PO** action in the Purchase Requisitions application to create a PO from a PR
- click the **Create PO** button on the Vendors or Quotations tab of the Request for Quotation application to create a PO from an RFQ
- select the **Create Release PO** action in the Purchase Contracts application to create a PO from a purchase contract
- select one of the reorder actions in the Inventory application.

A purchase order can list items or services for a *single* vendor only. If you have multiple purchase requisitions for the same vendor, you can combine them in a single PO.

Adding PO Lines

When you create a purchase order, you list each item, material, service, or tool to be purchased on a separate line on the PO Lines tab. For information about the different line types, see "Line Types," on page 9-4.

You can create PO lines using any of the following methods:

- Select the **Copy PR Line Items to PO** action to copy lines from one or more purchase requisitions
- Click the **Vendor Items** button to choose from a list of items associated with the vendor listed on the PO.
- Click the **Contract Items** button to choose from a list of items that appear on contracts with the vendor listed on the PO.
- Click the **Select Spare Parts** button to choose from a list of spare parts for a particular asset.
- Click the **New Row** button to manually enter a new PO line.

TIP: If you are manually entering a series of items with similar information, you can speed data entry by entering values in one or more of the fields in the Default Table Data area.

Understanding Standard Services

Standard services are costs that are incurred on the purchase order as a whole, for example, taxes and shipping. While standard services can be recorded on the PO Lines tab, Maximo does not required them to be recorded, since the costs might not be known at the time the PO is created.

Standard costs can be entered on a purchase order or on an invoice. Some companies might require estimates of standard services for PO approvals. You can enter the estimate on the PO and update the information after the invoice is received.

Duplicating a Purchase Order

You can use the **Duplicate Purchase Order** action to create a copy of an existing purchase order, for example if you are making a similar order to one made in the past. Once you duplicate a PO you can then modify it as needed.

Managing Purchase Orders

Once a purchase order has been sent to the vendor the items on the PO are received in the Receiving application, and the PO is matched to invoices in the Invoices application.

You can use the **Complete Receipts** action to complete receipts for a PO when there are still outstanding line items on the PO that you do not expect to receive.

You can use the **View Invoice Lines** action to view invoice lines related to a purchase order.

Creating a Change Order

A **change order** is a duplicate purchase order generated from an approved purchase order. You preserve the audit trail by keeping the original PO, and making the necessary changes to the change order.

You can create a change order only if the following conditions are met:

- The status of the PO is APPR or INPRG.
- The PO type is not REL (a blanket release).
- If none of the line items on the original PO have been received.
- You have security authorization to perform the action.

Creating a change order does two things:

- Cancels the original PO.
- Creates a new, duplicate PO with the status of WAPPR.

You use the **Create Change Order** action to create a change order.

Purchase Order Statuses

Once a purchase order has been created, it usually must receive some type of approval before it is sent to the vendor. Every purchase order in Maximo has a status that indicates its position in the PO processing cycle. After you change a PO's status, Maximo records the date and time of the status change, and lets you record a memo.

A purchase order (PO) can have one of the following statuses:

- **WAPPR** — Waiting for Approval. New POs are created with a status of WAPPR. Some default fields are read-only.
- **INPRG** — In progress. All fields are read-only.
- **APPR** — Approved. All fields are read-only.
- **CAN** — Canceled. All fields are read-only, and the record can no longer be modified.
- **CLOSE** — Closed. All fields are read-only, and the record can no longer be modified. POs can be closed only if all lines have been received, and if lines that require inspection have been approved.

Purchase Orders Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Purchase Requisitions

A **purchase requisition** (PR) is a written request issued internally to a purchasing department to order items or services. Sometimes maintenance work requires parts, materials, or services that you cannot supply from your own storerooms or labor pool. In this case, you must create a purchase requisition (PR).

You use the Purchase Requisitions application to create purchase requisitions for items, supplies, and services, or to create a purchase order (PO) from a purchase requisition.

Your purchasing department uses the purchase requisition to create either a request for quotation (RFQ) for the items or services, or a purchase order (PO) after the purchase is approved.

Multisite and Purchase Requisitions

Purchase Requisitions are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Purchase Requisitions and Contracts

You can use the **Contract Items** button to view a list of items listed on contracts with the vendor specified in the **Company** field on the PR.

Maximo displays a message if more than one valid contract exists for an item or service item. You can use the **View Contracts** button to view a list of all valid contracts for the item. If the **Company** field on the PR is empty, Maximo displays all valid contracts for the item. If there is a value in the **Company** field, Maximo displays all valid contracts for the item/vendor combination.

You can create contracts based on information contained on purchase requisitions. You can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** action in the Purchase Requisitions application.

NOTE: If you select the **Copy to Contract?** check box, the PR line cannot be copied to a purchase order.

Purchase Requisitions and Purchase Orders

You can create a purchase order (PO) from a purchase requisition (PR), but a PR is not required for the creation of a PO.

Purchase orders store **Ship To** and **Site** information at the line level, allowing you to create POs that combine requisition lines from one or more Sites in the same Organization on the same PO.

NOTE: A PR line can be converted to either a contract, a request for quotation, or a purchase order. If you select the **Copy to Contract?** or **Copy to RFQ?** check box, the PR line cannot be copied to a purchase order.

Purchase Requisitions and Storerooms

Some companies centralize their purchasing and use a central storeroom to supply other storerooms in the company. Storeroom records contain a **Use on PR/PO?** check box that allows them to be used as the vendor for internal purchase requisitions.

Using the Purchase Requisitions Application

To access the Purchase Requisitions application, click the application link on your Start Center, or select **Purchasing > Purchase Requisitions** from the Go To menu.

The Purchase Requisitions application contains the following tabs:

- **List** — to search Maximo for PR records.
- **PR** — to enter, view, or modify purchase requisitions.
- **PR Lines** — to enter, view, or modify line items for a purchase requisition. A line can be an item or material from inventory, an item or material not from inventory, or a service.
- **Ship To/Bill To** — to enter, view, or modify shipping information that will be used as a default on each line, and billing information for the entire order.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the record.

Purchase Requisitions Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Purchase Requisitions application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Purchase Requisitions Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record’s status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.

How Do I...	
create a contract from a purchase requisition?	Select **Create Contract** from the Select Action menu.
create a purchase requisition (PR)?	Click the **New Purchase Requisition** button in the toolbar.
create a purchase order (PO) from a purchase requisition?	Select **Create PO** from the Select Action menu.
duplicate a record?	Select **Duplicate Purchase Requisition** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Units of Measure** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Purchase Requisitions

Creating a purchase requisition is a two part process:

- **Creating a PR** — Recording the details of the requisition: who is requesting the purchase, when it is needed, where it should be shipped, and so forth.
- **Adding Line Items** — Listing the materials, services, or tools you are requesting.

NOTE: You also can create PRs from the Inventory application using the **Reorder Items** action.

If you are creating an external PR, enter a value in the **Company** field. If you are creating an internal PR, enter a value in the **Storeroom** and **Storeroom Site** fields. You are not required to specify a vendor on a purchase requisition. Check the **No Vendor?** check box if you do not want to specify either a vendor or a storeroom for the PR. For more information about internal and external PRs, see "Internal vs. External Purchases," on page 9-3.

Entering PR Line Items

When you create a purchase requisitions, you list each item, material, or service to be purchased on a separate line on the PR Lines tab. For information about the different line types, see "Line Types," on page 9-4.

After the purchase requisition has been approved, you can assign its line items to one or more purchase orders. A purchase requisition can be closed after all its line items are assigned to a purchase order. A single purchase

requisition can list items or services for several vendors, as vendors are not required to be specified on a PR.

TIP: If you are entering a series of items with similar information, you can speed data entry by entering values in one or more of the fields in the Default Table Data area.

Requisitioning Spare Parts

If you know the asset that parts are being requisitioned for, you can use the **Select Spare Parts** button on the PR Lines table window to facilitate creating your requisition.

You have two options when using the **Select Spare Parts** button.

- Enter the asset number to view the list of spare parts defined in the asset record.
- If you have purchased the Illustrated Parts Catalog (IPC), you can navigate a list of parts that make up the asset, or use interactive exploded diagrams of the asset to select parts.

For more information about the IPC refer to the IPC Help.

Requisitioning Vendor Items

If the requisition is for a specific vendor, you can use the **Vendor Items** button on the PR Lines table window to facilitate creating your purchase requisition. This button displays all items that have been purchased from the selected vendor in the past.

Managing Purchase Requisitions

Once a purchase requisition has been submitted to the purchasing department a request for quotation might be created in the Request for Quotations application before the creation of a purchase order in the Purchase Orders application.

Maximo lets you create a purchase order directly from a single purchase requisition. When creating a PO from a PR, Maximo copies all of the line items and other relevant information from the PR to a single PO.

NOTE: Your system administrator can configure Maximo to automatically close a PR once all its lines have been copied to a PO.

Purchase Requisitions Statuses

Once a purchase requisition has been created, it usually must receive some type of approval. Every purchase requisition in Maximo has a status that indicates its position in the PR processing cycle.

A purchase requisition (PR) can have one of the following statuses:

- **WAPPR** — Waiting for Approval. New PRs are created with a status of WAPPR. Some default fields are read-only.

After a line is assigned to a purchase order (PO)s, the line becomes read-only and can no longer be modified.

- **APPR** — Approved. Maximo's default configuration does not require approvals for PRs and PR line items that you transfer to POs. Your business rules might require approvals. All fields are read-only.

- **CLOSE** — Closed. Closing a PR indicates that all its line items have been assigned to one or more purchase orders. All fields are read-only, and the record can no longer be modified.

  If you try to close a PR and a line item has not yet been assigned, Maximo displays a message. Your system administrator can set Maximo to close PRs automatically after you transfer all the line items to POs.

- **CAN** — Canceled. An approved PR can be canceled only if none of its line items have been assigned to a purchase order. All fields are read-only, and the record can no longer be modified.

Purchase Requisitions Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Receipts

A **receipt** is a record of goods or services received from a vendor. You use the Receiving application to receive materials into inventory. You can use the Material Receipts tab to receive materials that have arrived as ordered, record partial shipments, and records items returned to vendors, for example items that have failed an inspection and been rejected. You can also create asset records when you receive rotating items.

If your company requires receipts for services, you can use the Service Receipts tab to record services received against an approved purchase order.

Multisite and Receiving

In a large company, you might have a centralized purchasing department for several locations. Maximo stores **Ship To** information on the PO line, allowing you to create purchase orders for more than one Site, but material and service receipts are managed at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Records can only be viewed by users who have security permission to the Site and the application.

Receiving and Assets

Assets that are also considered items, such as pumps and motors, can be stocked in inventory and rotated in and out of use in different locations. A

rotating asset has both an asset number and a rotating item number, allowing it to be tracked as an asset and as an inventory item, depending on its location at any given time. For more information about rotating assets, see "Item Master Records and Assets," on page 6-20.

If you purchase a new item that will act as a rotating asset, it must have an asset identifier specified for it when it is received. You create and save a receipt, then use the **Receive Rotating Items** action to specify an asset identifier and to record serial numbers for the items.

The Receive Rotating Items page includes an **Apply IAS** button for each line, allowing you to apply an existing item assembly structure the each new asset record as it is received.

Receiving and Companies

If the **Inspection Required?** check box is selected on a company record then goods ordered from the vendor will always require an inspection. When you record material receipts from the vendor in the Receiving application, each line will be received with a status of WINSP (waiting for inspection) to indicate that an inspection is required.

Receiving and Inventory

When you receive ordered items or materials listed on a purchase order Maximo updates the item balances for the storeroom.

If you receive an item into a storeroom that is not part of the storeroom's stock list Maximo adds the new item to the storeroom's stock list automatically.

Receiving and Invoices

By default, when Maximo creates PR or PO lines for services, the **Receipt Required?** check box is clear and you do not need to receive the service lines. When these service lines are recorded in the Invoices application Maximo automatically generates the receipt.

If your company requires receipts for services, you can use the Service Receipts tab to record services received against an approved purchase order. You can copy all the PO line items to the Service Receipts table window if all services have been received, or you can enter partial receipts.

Using the Receiving Application

To access the Receiving application, click the application link on your Start Center, or select **Purchasing > Receiving** from the Go To menu.

The Receiving application contains the following tabs:

- **List** — to search Maximo for purchase order records.

- **Material Receipts** — to report materials received on a purchase order.
- **Service Receipts** — to report services received on a purchase order.

Receiving Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Receiving application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Receiving Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
approve the receipt of an item that requires inspection?	Select **Change Inspection Status** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
enter asset numbers and other asset data when receiving rotating items?	Select **Receive Rotating Items** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Receipts

Receipts are created from approved purchase order records.

Receiving Materials

You use the Material Receipts tab to enter information about items received on an approved PO. You can copy all the PO line items to the Material Receipts table window if the entire order has been received, or you can enter partial receipts. For example, if items are back ordered, or parts of a large shipment arrive separately you can record partial receipts. You also can record receipt of the materials ordered on the PO and note any discrepancies between what you ordered, received, and rejected.

You also can receive materials not tracked in inventory, but that require a purchase order. For example, you might order a catered lunch or a new desk, neither of which would be stored in inventory or tracked by an item number. You would want, however, to track them on purchase orders and receipts.

When you record an item receipt, Maximo creates an inventory transaction for that item or charges the work order, asset, or location if the item is a direct issue. Maximo increases the balance of the item for the indicated storeroom by the quantity of the receipt and decreases the quantity on order by the quantity received.

After you save the receipt, the fields on the Material Receipts tab become read-only.

NOTE: Lotted items require that a lot number be specified before the line is saved.

Modifying Material Receipts

You might need to make changes when recording an item's receipt on the Material Receipts tab, for example, you might need to:

- Change the number in the **Quantity** field to record a partial shipment.
- Change the number in the **Rejected Quantity** field and provide a reason in the **Reject Code** field to represent rejected items, for example, damaged goods.

You use the Row Details to modify the receiving details for each line item that is received.

NOTE: If you record an item as rejected, your entry in the **Quantity** field for the same line item represents the items you are keeping (that is, the good items), not the total number of items in the shipment.

Returning Materials

Sometimes items that have been received must be returned. This might occur when items are rejected and are being shipped back to the vendor. You use the **Select Items for Return** button on the Material Receipts tab to return received items, creating a receipt with a negative quantity.

NOTE: You can return materials as long as the purchase order for the items is not a history record (status = CLOSE).

Receiving Services

Service receipts refers to data associated with any service provided by a vendor or contractor, such as repairs to assets. The service can be performed on or off site. You specify service purchases either in terms of a quantity and a unit cost, or as a single lump sum amount. Whichever terms you use on the service PO must be the same on the corresponding receipt transaction, which you record on the Service Receipts tab.

By default, when Maximo creates PR or PO lines for services, the **Receipt Required?** check box is clear and you do not need to receive the service lines.

When these service lines are recorded in the Invoices application Maximo automatically generates the receipt.

If your company requires receipts for services, you use the Service Receipts tab to record services received against an approved purchase order. You can copy all the PO line items to the Service Receipts table window if all services have been received, or you can enter partial receipts.

When managing service receipts, in general two things happen:

- Receipt of services is recorded in Maximo after a contractor or vendor submits a claim.
- An authorized individual checks the costs of the services and approves the receipt. Services always require approval.

NOTE: You also can record the receipt of services using Labor Reporting if the services are performed by a contractor listed in the Labor application.

Managing Receipts

Some items are simply received into inventory, and other require either inspection or serialization (creation of asset numbers), or both. All items requiring inspection are received into a holding location and transferred to their final destination after the inspection is performed. You define a single holding location for each Site using the Locations application.

You use the **Change Inspection Status** action available from the Select Action menu to change the inspection status of a line item from WINSP (waiting for inspection) to WASSET (waiting for asset) if the item is a rotating item, or to COMP (complete).

You use the **Receive Rotating Items** action available from the Select Action menu to create asset records for rotating items. Maximo changes the status of the receipt line from WASSET (waiting for asset) to COMP (complete).

Receiving Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Requests for Quotations

A **request for quotation** (RFQ) is a request that is sent out to one or more potential vendors. In the request, you can ask for specific costs and conditions for the delivery of an item or service. In the RFQ record you can specify line items, required delivery dates, and other conditions you want the vendor to meet for the delivery of the item or service.

A **request for proposal** (RFP) is similar to an RFQ, but is generally used for a large number of items or services. You can use the RFQ application to process RFPs. Within Maximo Requests for Proposals are referred to as Requests For Quotations.

Circumstances at your company might require you to obtain quotations from several vendors before deciding from whom to purchase materials or services. With the Request for Quotation application, you can:

- Create requests for quotations.
- Store quotations received from vendors
- Analyze quotations in order to make more informed purchasing decisions.
- Use the information you collect to create purchase orders
- Use the information you collect to create purchase contracts

Multisite and Requests for Quotations

RFQs are defined at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Request for Quotations and Companies

Before you can include a vendor on a request for quotation record, the vendor must have a record in the Company Master application.

Request for Quotations and Contracts

Request for Quotation records can be created via the **Create RFQ** action available in the Purchase Contracts application.

You can create contracts based on information contained on requests for quotation. Once you have awarded lines to vendors, you can create Blanket (Volume), Pricing, and Purchase type contracts via the **Create Contract** button in the Request for Quotations application.

Request for Quotations and Purchase Orders

Once you have received quotations from vendors and awarded quotation lines to one or more vendors, you can create a purchase order directly from the RFQ record using the **Create PO** button on the Vendors or Quotations tab of the record.

Request for Quotations and Purchase Requisitions

If you are creating a request for quotation for items on a particular purchase requisition, you can use the **Copy PR Line Items to RFQ** action to copy one or more lines from the PR to the RFQ.

Using the Request for Quotations Application

To access the Request for Quotations application, click the application link on your Start Center, or select **Purchasing > Request for Quotations** from the Go To menu.

The Request for Quotations application contains the following tabs:

- **List** — to search Maximo for RFQ records.
- **RFQ** — to enter, view, or modify general information about the RFQ, including a description of the RFQ, the desired date of the response, the close date of the RFQ, and other information pertinent to this specific quotation
- **RFQ Lines** — to enter the line items or services that require quotations, including the items, quantities desired, and other specific information.
- **Vendors** — to enter information about vendors to whom you intend to send the request for quotation.
- **Quotations** — to record, compare, and award quotations received from vendors.
- **Terms and Conditions** — to add, view, or delete terms and conditions that have been associated with the record.

Request for Quotations Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Request for Quotations application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Request for Quotations Help.

How Do I...	
add a conversion factor, for example from “case” to “each,” to the database?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
add a unit of measure, for example feet or gallons, to the database?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record’s status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
copy line items from an existing purchase requisition (PR) to a request for quotation?	Select **Copy PR Line Items to RFQ** from the Select Action menu.
create an RFQ record?	Click the **New RFQ** button in the toolbar.

How Do I...	
duplicate a record?	Select **Duplicate RFQ** from the Select Action menu.
modify a conversion factor?	Select **Unit of Measure and Conversion > Add/Modify Conversions** from the Select Action menu.
modify a unit of measure?	Select **Unit of Measure and Conversion > Add/Modify Measure Units** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Requests for Quotations

You create an RFQ under the following circumstances:

- The stock count of a stocked item drop below a certain level and you must make another bulk order.
- A requisition is received for an item or service that requires a quotation each time the item or service is ordered, due to price or other requirements.
- Someone at your site requests a quote for an item or service. It can be for a typically stocked item or for a unique item not usually ordered, such as a special order or non-stocked item.
- Commodity bulk buying must be done for a certain period of time. This is typical for many items with common commodity codes. The quotation might not be copied to a PO immediately, but the pricing is set.

You create a separate RFQ line for each different item or service that you want to request quotations for. You can create new RFQ lines in one of the following manners:

- by manually entering the necessary information in the RFQ application.
- by copying lines from one or more existing purchase requisitions to the RFQ using the **Copy PR Line Items to RFQ** action.

  NOTE: The RFQ must have a status of INPRG to copy PR lines to it.
- by using the **Create RFQ** action available in the Purchases Contracts application.

Adding Vendors to an RFQ

When you create an RFQ, you typically list the vendor or vendors who will receive the RFQ. If you intend to enter quotations from vendors on the

Quotations tab, you must enter the vendors on the Vendors tab prior to changing the status of the RFQ to SENT.

NOTE: The RFQ status must be INPRG in order to add vendors. Vendor records must exist in the Company Master application before they can be listed on an RFQ.

Managing Requests for Quotations

Once an RFQ has been created the RFQ process has the following stages:

1. Sending the RFQ to vendors listed on the RFQ
2. Recording and analyzing the quotations received from vendors.
3. Awarding the quotation for each item or service to a vendor.

Recording Quotation Lines

After you create an RFQ and send it to vendors, you receive responses from them including price, quantity, and other relevant information. The vendor can return a quotation for all lines, some lines, or just one line. The next step in the RFQ process is to record the information you receive from vendors, analyze that information, and then award each RFQ line to the vendor of your choice.

When recording vendor information and awarding quotation lines to vendors, you use both the Vendor and the Quotations tabs.

Awarding Quotation Lines to Vendors

After all quotations are received, they can be compared against one another to select the one that best meets your criteria. You can use the Item subtab of the Quotations tab to view all vendor quotations for a single item.

You can award quotations to make the conversion from an RFQ to a PO easier. You can award quotations on a line-by-line basis. However, an RFQ does not require that you award quotations.

Quotations are awarded on the Quotations tab, in the Quotations for Vendor table window of the Vendor subtab.

TIP: The **Awarded?** field of the Quotations for Vendor table window can be edited from the table window, without opening the Row Details.

Creating a PO from an RFQ

Before a PO can be created from an RFQ, the vendor's quotations must be recorded and RFQ lines must be awarded. POs can be created for one vendor at a time.

RFQ Statuses

RFQ records include a status to indicate its position in the RFQ processing cycle. A request for quotation (RFQ) can have one of the following statuses:

- **INPRG** — New RFQs are created with a status of INPRG. Some default fields are read-only.
- **READY** — Ready to be sent to vendors. You no longer can edit information on the RFQ or RFQ Lines tabs. All fields are read-only.
- **SENT** — Sent to vendors. The RFQ and RFQ Lines tabs are read-only. The Vendor tab can be edited, to allow recording of quotations, but new vendors cannot be added.
- **COMP** — Completed, meaning all quotations have been received. This status is used to prevent changes to the RFQ between awarding RFQ lines and creating POs. All fields are read-only except Quotation Lines.
- **CLOSE** — Closed, meaning all RFQ lines have been copied to POs. All fields are read-only, and records can no longer be modified.
- **CANCEL** — The RFQ has been canceled. You cannot delete an RFQ after you save it, but you can cancel it as long as no quotations have been awarded and no POs have been created. All fields are read-only, and records can no longer be modified.

Request for Quotations Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

10 The Resources Module

The Resources Module is used to create Maximo records for workers, both internal and external, and other people whose names or IDs might be listed on Maximo records.

The Resources Module consists of the following applications:

Application	Function
Crafts	Used to create and manage craft records.
Labor	Used to create and manage laborer and contractor records.
People	Used to create and manage records for people who are listed on Maximo records in any capacity.
Person Groups	Used to create and manage Person Group records that can be used on escalation, Workflow process and other records.
Qualifications	Used to create and manage certificate and qualification records.

There are several different Maximo applications used to manage records for individuals whose data appears on Maximo records.

- **User** — Used to create and manage records for all Maximo users, that is people who will be logging into Maximo to create and manage records. System administrators use the User application to manage user names, passwords, and security profiles.

- **People** — Used to create and manage records for people whose names may appear anywhere on a Maximo record. For example on a service request the values in the **Reported By** and **Affected Person** fields might be linked to person records.

- **Labor** — Used to create and manage records for all employees and contractors who will be performing work on tickets or work orders.

You use the People application to create records for a variety of workers at your company. Some companies may choose to create person records for all of their employees as a way to manage employee information (name, address, hire date and so forth). Others may choose to just create person records for laborers and other workers who will be using Maximo as part of their jobs.

You use the Person Group application to create groups of person records. Maximo uses person groups when performing automated tasks that require

user action on a record, for example escalations and Workflow. Assigning a record to a person group rather than an individual person ensures that the record will be acted on in a timely manner.

You use the Labor application to create records for workers and contractors who will be performing work on tickets and work orders.

You use the Crafts application to define skill levels, standard rates, and premium pay codes for crafts. You can associate labor records with one or more crafts to indicate their various job skills.

You use the Qualifications application to define the qualifications or certifications that employees have earned through training or educational programs. You can associate qualifications with labor records to verify that workers are qualified to perform specialized work.

Interaction Between Labor, Person, and User Records

When you create records for individuals, Maximo requires the creation of additional records in the following cases:

- **Labor** — A labor record *must* have a **person** record associated with it. A labor record should have a **user** record if the laborer is going to use Maximo to view work orders, report labor hours, and so forth. Other resources records are optional, but not required. For example a labor record can have
  - one or more crafts
  - one or more skill levels associated with a craft
  - one or more qualifications
- **Person** — A person record *does not* require any other resource records. A person can be a user and a laborer or neither. For example, someone calling the service desk to make a service request would not necessarily need to be a Maximo user, but your company might require that a person record exist for them.
- **User** — A Maximo user *must* have a **person** record. Other resource records (labor, craft and so forth) are optional, but not required.

Crafts

A **craft** represents an occupation or trade, and typically the craft name reflects the type of work done by members of the trade. If pay rates differ based on expertise you can create multiple skill levels and assign different pay rates to each skill level. For example, to make a distinction between a junior level mechanic and a senior level mechanic, you do not need to create two separate craft records. You can create a single craft record of MECHANIC and create two skill levels (JUNIOR and SENIOR) within the MECHANIC craft. Each skill level within a craft can have different standard pay rates.

Multisite and Craft Records

Craft records are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Crafts and Job Plans

Job plans are created at the system level, meaning that they can be used anywhere in your organization. For this reason, you probably will want to list the more general craft instead of specific laborers when listing the labor requirements for a job plan, since you cannot predict when or where the job plan will be utilized on a preventive maintenance record or work order.

Crafts and Labor Records

You can associate a labor record with a craft from either the Labor application or the Crafts application.

A single laborer might have many different job skills. The Crafts table window on a labor record allows you to list multiple crafts and skill levels for a laborer.

NOTE: You break the association between a labor record and a craft by deleting the labor record from the Associated Labor table window. When you do this, you are not deleting the labor record from the database, only removing the relationship between that labor record and the craft.

Craft Records and Work Orders

As with job plans, you may choose to list crafts instead of laborers when creating work plans on work orders. This allows the work order to be assigned to any available laborer in the craft, on any shift.

Crafts vs. Person Groups

A craft represents an occupation or trade. The members of a craft have the same job skills and can be assigned to perform a specific type of work on a ticket or work order. Crafts may include contract laborers. Examples of crafts include mechanics, electricians, plumbers, and so forth.

Person groups are a way to group individuals by job responsibilities as opposed to craft skills, for example supervisors or managers. The members of a person group can be assigned to perform similar types of tasks as part of an escalation or a Workflow process, for example approving status changes for records. Person groups might include individuals with different job skills, job titles, or from different departments within a company.

You can also use the Person Groups application to create groups of individuals who do not share job skills or responsibilities, but might work as a team on a project. For example a safety review team might include members from several different departments, crafts, or skill levels.

Using the Crafts Application

To access the Crafts application, click the application link on your Start Center, or select **Resources > Crafts** from the Go To menu.

The Crafts application contains the following tabs:

- **List** — to search Maximo for craft records.
- **Craft** — to create, view, modify, or delete craft records.
- **Associated Labor** — to add, view, modify, or delete the association between labor cords and crafts.

Crafts Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Crafts application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Crafts Help.

How Do I...?	
add outside rates for a craft?	On the Crafts tab, click **New Row** in the Outside Rates table window.
add premium pay codes for a craft?	On the Crafts tab, click **New Row** in the Premium Pay table window.
add skill levels for a craft?	On the Crafts tab, click **New Row** in the Skill Levels table window.
associate labor with a craft?	On the Associated Labor tab, click **New Row** in the Associated Labor table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a craft record?	Click the **New Craft** button in the toolbar.
delete a record?	Select **Delete Craft** from the Select Action menu.
disassociate a laborer from a craft?	On the Associated Labor tab, click the **Mark Row for Delete** button for the laborer in the Associated Labor table window.
duplicate a record	Select **Duplicate Craft** from the Select Action menu.

How Do I...?	
manage the list of codes for premium pay?	Select **Manage Premium Pay Codes** from the Select Action menu.
run reports	Select **Run Reports** from the Select Action menu.

Creating Craft Records

You use the Crafts application to create, view, modify, and manage craft records.

You can add one or more skill levels to a craft as a way to indicate which craft members have more experience. You add skill levels by creating new rows in the Skill Levels table window. Skill levels are defined by an administrator in the Domains application.

You use the Outside Rates table window to record and view the standard rates charged by vendors for contract labor for the craft and skill level.

NOTE: Outside rates associated with a labor rate contract can not be modified once the contract has been approved.

You use the Premium Pay table window to list premiums paid in addition to standard rates, for example premiums paid for working particular shifts, for working on holidays, or for possessing a particular qualification or certification. You create, view, modify and delete premium pay codes from the a master list of premium pay codes using the **Manage Premium Pay Codes** action in the Select Action menu. If the **Apply to New Crafts?** check box is selected for a pay code, Maximo automatically copies the pay code to a new craft record when the record is saved. You can add additional premium pay codes to a craft by creating new rows in the Premium pay table window.

You can associate a labor record with a craft from either the Labor application or the Crafts application. In the Crafts application you associate labor with a craft by creating new rows in Associated Labor table window on the Associated Labor tab.

If you are creating craft records with similar skill levels and pay codes you can simplify the record creation process by using the **Duplicate Craft** action available from the Select Action menu. When you duplicate a craft record Maximo copies the values listed on the record (skill levels, pay codes, laborers and so forth).

Managing Craft Records

You can break the association between a labor record and a craft by clicking the **Mark Row for Delete** button for the labor in the Associated Labor table window. You must click **Save** for the deletion to take effect. When you delete a labor record from the Associated Labor table window you are not deleting the labor record from the database, only removing the relationship between that labor record and the craft.

If a craft record is not listed on any other Maximo record (for example listed on a labor record, job plan, or work order) it can be deleted by selecting **Delete Craft** from the Select Action menu. Maximo will display an error message if the craft can not be deleted. For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Crafts Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Labor Records

A **labor record** represents an employee or contract laborer. Labor records are created for workers who will spend time working on tickets and/or work orders, where you want to track either their work hours, or the cost for the time they spend working.

You use the Labor application to create, modify, view, and delete labor records for employees and contractors. You can provide personal information, as well as work related information about a laborer such as their regular and premium hours worked, and overtime refused.

In addition, you can also specify crafts, skill levels, pay rates, qualifications and certifications associated with a labor record.

Multisite and Labor Records

Labor records are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Labor Records and Assignment Manager

In order to use Assignment Manager to schedule and dispatch work, labor records must have a calendar and shift specified. Click the **Show/Manage Values** button next to the **Calendar** field to access the Calendars dialog box to enter, view, or modify this information for a labor record.

Labor Records and Contracts

Labor records for contract labor can be associated with labor rate contracts. You use the Labor Rate Contracts application to create records for labor rate contracts. If the rate for the laborer is specified by a contract, the **Contract** field will contain a value.

Labor Records and Crafts

You can associate Labor records to Crafts in either the Labor application or the Craft application.

A single laborer might have many different job skills. The Crafts table window on a labor record allows you to list multiple crafts and skill levels for a laborer.

Labor Records and Person Records

Person records contain general personal information, and other information needed on Maximo records for non-labor records, such as Workflow and purchasing information. Labor records also contain personal information, but they are primarily designed to store information about the worker, for example craft, skill level, hours worked, certifications, and so forth.

A person record does not require any other resource records. Labor records however, cannot be created without a corresponding person record. When you create new labor records if you do not specify a value in the **Person** field, Maximo will prompt you to create a matching person record for the labor record.

The personal information (name, address, and so forth) in the People application is stored in database columns that are shared with the Labor application. The data in these fields can be entered or modified from either application.

Because person records are stored at the System level, but labor records are stored at the Organization level, a single person record can be listed on labor records in multiple Organizations. However a person record may only be listed on a single labor record within each Organization.

Labor Records and Work Orders

Although you can list labor records on job plans and work orders, you have more flexibility if you list craft records instead. Activities, tasks, and work orders can be assigned to individual laborers using the Assignment Manager application.

Time spent working on a work order can be recorded while work is being performed using the Timer, or after work has been completed using the Labor Reporting application. When you enter a labor code in a transaction in the Labor Reporting application, Maximo copies data from the labor record to the labor transaction. If a laborer has more than one craft, skill level, or rate listed on their labor record, you must indicate which craft, skill level, rate, or contract applies to the hours you are reporting.

Using the Labor Application

To access the Labor application, click the application link on your Start Center, or select **Resources > Labor** from the Go To menu.

The Labor application contains the following tabs:

- **List** — to search Maximo for labor records.
- **Labor** — to add, view, and modify data on labor records for employees and contractors, including personal information, year-to-date hours, and procurement card information.
- **Crafts** — to add, view, modify, and delete crafts, skill levels, and premium pay codes.
- **Qualifications** — to add, view, modify, and update qualifications and certifications for labor records.

Labor Buttons

The following table lists application specific buttons that appear in the Labor application.

Icon	Function	Location
	Change Qualification Status	▼ Table rows in the Qualifications table window **NOTE:** The Change Status icon that appears in the Toolbar is used to change the status of the Labor record.
	Extend/Renew Qualification	▼ Table rows in the Qualifications table window
	View History	▼ Table rows in the Qualifications table window

Labor Application Quick Reference

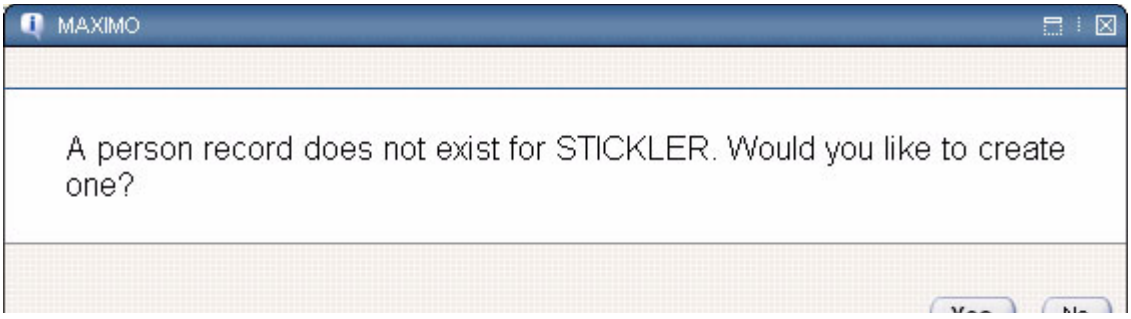
The following chart provides a quick reference to common tasks you perform with the Labor application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Labor Help.

How Do I...?	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a new courier or labor location to allow this laborer to receive issued and transferred inventory items?	Select **Create Labor Inventory Location** from the Select Action menu.
create a Labor record?	Click the **New Labor** button in the toolbar.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.

How Do I...?	
delete a record?	Select **Delete Labor** from the Select Action menu.
duplicate a record?	Select **Duplicate Labor** from the Select Action menu.
extend or renew a certification or qualification?	On the Qualifications tab, click **Extend/Renew Qualification**.
reset the fields in the Year to Date Hours section to zero?	Select **Zero Year to Date Hours** from the Select Action menu.
run reports	Select **Run Reports** from the Select Action menu.
view the status history and renewal history of a certification or qualification for a laborer?	On the Qualifications tab, click **View Qualification Status History** on the qualification's row.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Labor Records

You create records for laborers and contractors in the Labor application. Labor records cannot be created without a corresponding person record. When you create new labor records if you do not specify a value in the **Person** field, Maximo will prompt you to create a matching person record for the labor record.



You can associate a labor record with one or more crafts from either the Labor application or the Crafts application. In the Labor application you associate a labor with a craft by creating a new row in the Crafts table window on the Crafts tab. Maximo then copies the premium pay codes for that craft to the Premium Pay for table window.

If a laborer performs work that required special training you can note their qualifications on their labor record. You add, view, extend or renew qualifications and certifications on the Qualifications tab of a labor record. You can also use the Qualifications tab to note general training that may not be job related, for example a new employee orientation that covers general company procedures, or first aid certifications.

NOTE: Once you have saved a qualification you cannot delete it.

If you are creating labor records with similar employees, for example several contract laborers with the same skills hired from the same vendor, you can simplify the record creation process by using the **Duplicate Labor** action available from the Select Action menu.

Managing Labor Records

The information contained in the Personal section of the Labor application is stored in database columns that are shared with the People application. The data in these fields can be entered or modified from either application. Some fields on a labor record, for example, **YTD Hours**, are read-only and cannot be modified.

Deleting Crafts from a Labor Record

Crafts listed on a labor record can be deleted by clicking the **Mark Row for Delete** button for the row. You must click **Save** for the deletion to take effect. When a craft record is deleted from a labor record, the associated rows in the Premium Pay table window are also deleted from the labor record.

Crafts may *not* be deleted from a labor record if any of the following is true:

- if the labor record is referenced on an assignment record for a work order that is in any status except CLOSED or CAN (cancelled), the craft referenced on the assignment may not be deleted.
- if the labor record is referenced on a work plan for a work order that is in any status except CLOSED or CAN (cancelled), the default craft for the labor may not be deleted.
- if the listed craft is the **Default Craft for Labor** it may not be deleted.

  NOTE: If the listed craft is the **Default Craft for Labor** it can only be deleted if it is the only craft listed for the labor record.

Modifying Qualifications

Existing qualifications can be extended or renewed using the **Extend/Renew Qualification** button located on the qualification row.

Saved qualifications cannot be deleted, but they can have their status changed to inactive using the **Change Qualification Status** button located on the qualification row.

You can view the status and renewal history for a qualification using the **View Qualification Status History** button located on the qualification row.

Labor Record Statuses

A labor record can have one of the following statuses:

- **ACTIVE** — Default status for new records. A labor record must be active to be assigned to a work order.

- **INACTIVE** — Inactive labor records do not appear in select value lists. Labor records with a status of INACTIVE cannot be associated with new Maximo records.

When an worker or contractor is no longer employed, they should no longer be listed as someone who is available to be assigned work. Their labor record should not be deleted, since it is listed on existing Maximo records, but you do not want their labor ID listed on any future records.

You can change the status of a labor record to INACTIVE using the **Change Status** action available from the toolbar and the Select Action menu. The status of labor records may ***not*** be changed to INACTIVE if any of the following is true:

- the labor ID is listed on a work plan for a work order that is in any status except CLOSED or CAN
- the labor ID is listed on an assignment for a work order that is in any status except CLOSED or CAN
- the labor ID is listed on a job plan record

NOTE: The status of user and person records associated with labor records is not automatically changed when a labor's status changes to INACTIVE. The status of these records must be changed in the User and People applications.

A status change to INACTIVE is not permanent. The labor record's status can be changed back to ACTIVE, for example if historical labor actuals needed to be recorded.

NOTE: The status of a labor record may not be changed from INACTIVE to ACTIVE unless their associated person record also has a status of ACTIVE.

Deleting Labor Records

Labor records can be deleted using the **Delete Labor** action available from the Select Action menu.

CAUTION: Labor records that are listed on Maximo records should have their status changed to inactive rather than being deleted. Deleting labor records is not recommended.

Labor records may *not* be deleted if any of the following is true:

- the labor ID is listed on a work plan for a work order that is in any status except CLOSED or CAN
- the labor ID is listed on an assignment for a work order that is in any status except CLOSED or CAN
- the labor ID is listed on a job plan record
- The labor ID is listed as a labor transaction for work order that is in any status except CLOSED or CAN

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Labor Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Person Records

A **person record** is a record of an individual who might appear somewhere on a Maximo record, for example, in a **Reported By** or **Affected Person** fields on a service request, as a **Supervisor** on a labor record, or as the value in a Ship To or Bill To **Attention** field on a purchasing record.

You use the People application to create, modify, view, and delete records for individuals. This application stores personal and official information about individuals, such as Maximo users, laborers, asset owners, supervisors, and individuals who receive Workflow notifications.

Multisite and Person Records

Person records are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

NOTE: User records are at the System level, but labor records are at the Organization level.

Person Records and Workflow

Any individual who will be assigned records as part of a Workflow process needs to have a record created for them in the People application.

NOTE: As a best practice, Workflow assignments should be made to a person group rather than an individual.

If Workflow processes are created that make assignments to person records, the following fields on the person record should contain a value:

- **Supervisor**
- **Primary E-mail**
- **Primary Calendar**
- **Primary Shift**
- **Workflow E-mail Notification**

You use the **Workflow Delegate**, **Delegate From**, and **Delegate To** fields to indicate time periods when a Workflow process should route assignments to a designated alternate, for example when a worker is on vacation.

Person Records vs. Labor Records

For information about the difference between person records and labor records, see "Labor Records and Person Records," on page 10-7.

Using the People Application

To access the People application, click the application link on your Start Center, or select **Resources > People** from the Go To menu.

The People application contains the following tabs:

- **List** — to search Maximo for person records.
- **Person** — to add, view, or modify person records.

People Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the People application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the People Help.

How Do I...?	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create an Person record?	Click the **New Person** button in the toolbar.
change a record's status?	Click the **Change Status** button in the toolbar.
delete a record?	Select **Delete Person** from the Select Action menu.
indicate that a person's availability doesn't match their calendar?	Select **Modify Person Availability** from the Select Action menu.
view any assets or locations that list this person as an owner or custodian?	Select **View Related Assets and Locations** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Person Records

Person records can be created in more than one application:

- People application in the Resources module — Click the **New Person** button in the toolbar to create a new person record.

- Users application in the Administration module — User records must have an associated person record. When you create new user records if you do not specify a value in the **Person** field, Maximo will prompt you to create a matching person record for the user record.

- Labor application in the Resources module — Labor records must have an associated person record. When you create new labor records if you do not specify a value in the **Person** field, Maximo will prompt you to create a matching person record for the labor record.

When you create person records from either the Labor or Users application, all of the information from the Personal section of the labor or user record is copied to the new person record.

A person record can not be duplicated regardless of the current status of the record.

Managing Person Records

Person records can be deleted under specific circumstances. The recommended procedure for person records you no longer need is to change the status of the person record to INACTIVE.

Person Record Statuses

A person record can have one of the following statuses:

- **ACTIVE** — Default status for new records. A person record must be active to be assigned to a labor record or a user record.

- **INACTIVE** — Inactive person records do not appear in select value lists. Person records with a status of INACTIVE cannot be assigned to new labor records or new user records.

You can change the status of a person record using the **Change Status** action available from the toolbar and the Select Action menu. The status of person records may not be changed to INACTIVE if any of the following is true:

- The person ID is listed as a **Supervisor** on other person records.
- The person ID is listed as a **Supervisor** on a job plan record.
- The person ID is listed as a **Custodian** or a **User** for an asset or location.
- The person ID is listed on a ticket record as an **Owner**.
- The person ID is listed on a communications template or a ticket template.
- The person ID is listed as a **Ship To** contact or as a **Bill To** contact on a purchasing record.
- The person ID is listed as a member of a person group.
- The person ID is listed on a assignment or notification on a ac.tive Workflow process

CAUTION: Setting the status of a person record to INACTIVE will also set the associated labor and user records' statuses to INACTIVE if these records were not already INACTIVE. However, changing the status of an inactive person record to ACTIVE does *not* also change the

status of the associated labor and user records. The status of these records must be changed to ACTIVE in the Labor and User applications.

Deleting Person Records

Person records can be deleted using the **Delete Person** action available from the Select Action menu. Person records may not be deleted if any of the following is true:

- The person ID is listed on a user record
- The person ID is listed on a labor record
- The person ID is listed as a **Supervisor** on other person records
- The person ID is listed as a **Supervisor** on a job plan record
- The person ID is listed as a **Custodian** or a **User** on an asset or location
- The person ID is listed on a ticket record as an **Owner**
- The person ID is listed on a communications template or a ticket template
- The person ID is listed as a **Ship To** contact or as a **Bill To** contact on a purchasing record
- The person ID is listed as a member of a person group
- The person ID is listed on a assignment or notification on a active Workflow process

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

People Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Person Groups

A **person group** is a list of individuals who may have similar job responsibilities, levels of authority, and security clearances. After you define person groups, responsibility for records such as work orders, tickets, and purchasing records can be assigned to a group rather than an individual. This is useful for time sensitive records, since Maximo can determine which member of a group to route a record to based on their calendar and shift.

A person group also can receive a record routed by a Workflow process. If Maximo routes a record such as a purchase order or a work order to a person group, everyone in the group can receive the record unless the Workflow process is configured to send it only to the member whose calendar shows that they are available.

Person groups can also listed as the **Owner Group** on tickets and work orders, and as the **Work Group** on work orders.

Multisite and Person Group Records

Person Groups are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

You can specify which Organization and Site a member of a person group should be used for by entering a value in the **Use for Organization** or **Use for Site** field when you add a person to a group.

Person Groups and Workflow

When you create a Workflow process for a record the various tasks and decisions can be assigned to individuals or to groups. As a best practice when Workflow processes are designed, records should be assigned to person groups rather than individuals. Because different workers may fill a particular role on different shifts creating person groups for roles such as "supervisor" or "safety engineer" can simplify a Workflow process, as well as reduce the need for revisions as workers move in and out of roles.

When you create person groups you can also define alternates for each person to handle approvals when the lead is unavailable.

Using the Person Groups Application

To access the Person Groups application, click the application link on your Start Center, or select **Resources > Person Groups** from the Go To menu.

The Person Groups application contains the following tabs:

- **List** — to search Maximo for person group records.
- **Person Group** — to create, view, or modify person groups.

Person Groups Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Person Groups application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Person Groups Help.

How Do I...?	
add a person to a person group?	On the Person Group tab, click **New Row** in the People table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a Person Group record?	Click the **New Person Group** button in the toolbar.
delete a record?	Select **Delete Person Group** from the Select Action menu.

How Do I...?	
designate an alternate for a person?	In the People table window, click the person ID, then click **New Row** in the Alternates for table window to add an alternate for the selected person.
disassociate a person with a group?	On the Person Group tab, click **Mark Row for Delete** next to the person's ID in the People table window.
duplicate a record?	Select **Duplicate Person Group** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Person Groups

You use the Person Groups application to create, view, modify, and manage person group records.

You associate person records with a person group by creating new rows in the People table window.

You use the Alternates For table window to list which person or persons should receive Workflow notifications if the person listed in the People table window is unavailable.

NOTE: The Alternates For table window is paired with the People table window. For more information about paired table windows, see "Paired Table Windows," on page 2-25.

If you are creating person group records with similar member lists you can simplify the record creation process by using the **Duplicate Person Group** action available from the Select Action menu. Once a group has been duplicated you can then add or delete members from the new group as needed.

Managing Person Groups

You can add members to a person group using the **New Row** button at the bottom of the People or Alternates table window.

You can delete members of a person group by clicking the **Mark Row for Delete** button for the row. You must click **Save** for the deletion to take effect.

NOTE: The Person Group member designated as **Group Default** may not be deleted.

Deleting Person Groups

Person group records can be deleted using the **Delete Person Group** action available from the Select Action menu. Person group records may not be deleted if any of the following is true:

- The person group ID is listed on a work order that is in any status except CLOSED or CAN
- The person group ID is listed on a ticket that is in any status except CLOSED or CAN
- The person group ID is listed on any activities on a ticket template that has a status of ACTIVE
- The person group ID is listed on a communications template or a ticket template
- The person group ID is listed on a service group as the **Contact Group**.
- The person group ID is listed on a preventive maintenance (PM) record
- The person group ID is listed on a job plan record
- The person group ID is listed on a assignment or notification on a active Workflow process
- The person group ID is listed on an Organization record as the **Site Contact Group**.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Person Groups Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Qualifications

A **qualification** is an indication of a particular job skill or specialized training. A qualification is often, but not necessarily, indicated by a license or certificate, signifying proficiency in a particular skill or skills. A governing board can award a certificate. Some certificates have expiration dates and those who hold the certificates must renew them periodically.

You use the Qualifications application to create records of qualifications and certification requirements for qualifications. Once you have created qualification records, you can associate them with labor records in the Qualifications or Labor applications. You can also view qualifications associated with a particular labor code and can renew and change the status of their qualifications.

Multisite and Qualifications

Qualifications are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.

- Records can only be viewed by users who have security permission to the Organization and the application.

Qualifications and Labor Records

A qualification is often, but not necessarily, indicated by a license or certificate, signifying proficiency in a particular skill or skills. You list

qualifications on a labor record to show that the worker has completed some sort of general or specific training. Some examples of qualifications might include the following:

- General qualifications
  - Completed new employee orientation
  - First aid training
  - Cardiopulmonary Resuscitation (CPR)
  - Safety certifications
- Production
  - Journeyman Welder
  - Senior Reactor Operator License
  - Forklift Operator's License
- Facilities
  - Master Electrician's License
  - Journeyman Plumber Certification
- Fleet
  - Heavy Equipment Operator's License
  - Pilot's License
  - Certified Mechanic
- Technology
  - Certified Network Expert
  - Certified Systems Engineer
  - Certified Linux Engineer

Using the Qualifications Application

To access the Qualifications application, click the application link on your Start Center, or select **Resources > Qualifications** from the Go To menu.

The Qualifications application contains the following tabs:

- **List** — to search Maximo for Qualification records.
- **Qualification** — to create, view, or modify a certificate or qualification.
- **Associated Labor** — to add, view, modify, or delete the association between labor codes and the qualification. Note that once a qualification is associated with a labor code, the qualification may not be deleted.

Qualifications Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Qualifications application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Qualifications Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a qualification record?	Click the **New Qualification** button in the toolbar.
delete a record?	Select **Delete Qualification** from the Select Action menu.
extend or renew the qualification for a laborer?	On the Associated Labor tab, click **Extend/ Renew Qualification**.
list crafts and skill levels that are required for the qualification?	On the Qualification tab, click **New Row** in the Required Craft and Skill Levels table window.
list laborers who have earned this qualification?	On the Associated Labor tab, click **New Row** in the Labor table window.
list tools that require the qualification?	On the Qualification tab, click **New Row** in the Tools that Require the Qualification table window.
remove crafts and skill levels that are required for the qualification?	On the Qualification tab, click the **Mark Row for Delete** button for the craft in the Required Craft and Skill Levels table window.
remove tools that require the qualification?	On the Qualification tab, click the **Mark Row for Delete** button for the tool in the Tools that Require the Qualification table window.
run reports?	Select **Run Reports** from the Select Action menu.
view the status history and renewal history of a certification or qualification for a laborer?	On the Associated Labor tab, click **View Qualification Status History** on the laborer's row.

Creating Qualifications

You use the Qualifications application to create, view, modify, and manage qualification and certification records.

If certification is required for a qualification you can check the **Certification Required?** check box in the Certificate Information section of the qualification record. Any craft and skill levels that are required for the qualification can be listed in the Required Craft and Skill Levels table window. For example a 7018 Welder's certificate would only be issued to a laborer who is a journeyman welder. Tools that require the qualification or certification can be listed in the Tools That Require This Qualification table window.

You can associate a qualification with a labor record from either the Qualifications application or the Labor application. In the Qualifications application you associate a qualification with a labor record by creating new rows in the Labor table window on the Associated Labor tab.

Managing Qualifications

Qualification records can be deleted under specific circumstances. The recommended procedure for qualification records you no longer need is to change the status of the qualification record to INACTIVE.

Qualifications Statuses

A qualification record can have one of the following statuses:

- **ACTIVE** — Default status for new records. A qualification record must be active to be associated with a labor record.
- **INACTIVE** — Inactive qualification records do not appear in select value lists. Qualification records with a status of INACTIVE cannot be associated with labor records.

NOTE: A Qualification may not be made INACTIVE if it is referenced by an entry in either of the following tables:

- LABORQUAL (in ACTIVE Status)
- TOOLQUAL

Deleting Qualifications

Qualification records may be deleted by selecting **Delete Qualification** from the Select Action menu. A qualification record cannot be deleted if it is listed on a labor record or on a tool record.

Maximo will display an error message if the qualification can not be deleted. For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Qualifications Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

11 The Safety Module

The Safety module tracks safety information, which then can be supplied to workers after it is associated with work order, asset, location, and item records. This includes information that you might be required by law to provide to your workers.

The Safety Module consists of the following applications:

Application	Function
Hazards	Used to define hazards that exist in the workplace and define how to eliminate or mitigate them.
Lock Out/Tag Out	Used to create a detailed description of how to eliminate hazards associated with related assets or locations.
Precautions	Used to define precautions that can be taken to mitigate hazards in the workplace.
Safety Plans	Used to create a detailed plan of how to service assets or locations safely.

You use the Hazards and Precautions applications to create generic lists of possible hazards that exist in your workplace and possible precautions that can be taken to mitigate them. These lists then are used when adding safety information to assets, locations, and item records, and when creating safety plans. You associate hazards with assets in the Assets application and with locations in the Locations application. You associate hazards with item records in the Item Master application.

The Lock Out/Tag Out application is used to create specific procedures to be applied to specific assets or locations. These procedures describe how to eliminate a specific hazard. They might be as simple as turning off electrical current to an asset, or as complex as shutting down a nuclear reactor.

All the safety information is brought together in the Safety Plans application, where you can define the safety information necessary to provide a safe work environment. By identifying hazards, precautions to be taken against those hazards, and any specified Tag Out procedures for the asset or location, you can provide as much safety information as possible for your maintenance personnel.

Safety plans are associated with job plans via the work assets listed on the job plan. Safety plans can be listed on a work order manually, or can be copied automatically when the combination of a work asset (asset or location) and a job plan requires a safety plan. The job plan information can be copied to the

work order from either a preventive maintenance record or a route that is associated with the work order, or be manually applied to the work order.

Hazards

A **safety hazard** is any condition that exists or could exist in the workplace that might lead to worker injury, property damage, or financial loss.

You use the Hazards application to define a list of hazards that exist in your workplace, associate preventive measures (precautions) with these hazards, and attach documents or additional information pertinent to the hazard to the record. For example, a chemical that causes skin irritation might require wearing gloves and eye protection and be linked to a Material Safety Data Sheet (MSDS) and a safety video.

Hazards that you define in this application can be associated with a work asset and it's related assets in the Assets or Locations applications. Then, in the Safety Plans application, you can define a set of safety information necessary to ensure a safe work environment. Finally, in the Job Plans application, you can associate defined safety plans with specific job plans.

When you associate hazards with work orders, assets, locations, and items, you provide the opportunity for employees to be notified of potential dangers. When you associate a precaution or tag out procedures with a hazard, you provide another opportunity to reduce or eliminate the risks involved with the asset.

Multisite and Hazard Records

Hazards are at the Organization level. This means that:

- Key fields for new records must be unique for the Organization, but may duplicate record IDs used by other Organizations.
- Records can only be viewed by users who have security permission to the Organization and the application.

Hazards and Assets/Locations

A hazard record defines a general source of danger that is not specific to any particular asset or location.The same hazard may be listed on many different Maximo records. The relationship between hazards and work assets is defined as follows:

- Hazards are associated with *related* assets/locations.
- Related assets are associated with work assets on the Safety Related Assets subtab of the Safety tab.
- A work asset (asset or location) is *always* considered a related asset to itself.

You list hazards on the Safety tab of an asset or location record.

- You use the Hazards and Precautions subtab to associate precaution enabled hazards with the record. Maximo automatically displays the precautions associated with the hazard on the record. If you list a hazard that is also hazardous material enabled, Maximo automatically displays the hazardous materials data.

- You use the Hazardous Materials subtab to associate hazardous material enabled hazards with the record. If you list a hazard that is also precaution enabled, Maximo automatically displays the precautions.

- You use the Lock Out / Tag Out subtab to associate tag out enabled hazards with the record. Once you have created a tag out for the work asset and hazard, you can associate it with the work asset record.

- You use the Safety Related Assets subtab to associate related assets and locations whose safety information should be included when creating safety plans for the asset or location. A work asset (asset or location) is *always* considered a related asset to itself.

Hazards and Item Records

Hazards can be associated with item records in the Item Master application via the **Item/Organization Detail** action available from the Select Action menu. Item records are defined at the Item Set level in Maximo (which exists below the System level, but above the Organization level) and Hazards are defined at the Organization level. When hazard-associated items are listed on work plans, Maximo displays the hazardous material information on the record.

The **Can Have Hazardous Materials?** check box on the hazard record must be checked before it can be associated with an item record.

Hazards and Precautions

Precautions that can be taken against a hazard are defined in the Precautions application, but are applied in the Hazards application. The Associated Hazards table window on a precaution record is a read-only list of the hazard records that a precaution has been associated with.

The **Can Have Precautions?** check box must be selected on a Hazard record before you can associate precautions with the hazard. You list precautions on the Precautions tab of a hazard record. You can associate multiple precautions with a hazard.

Hazards are defined at the Organization level, but precautions are defined at the Site level, which allows you to use different precautions against the same hazard at different Sites.

Hazards and Safety Plans

You create safety plans to inform workers of hazards they may encounter while performing work.

- Precaution enabled hazards are listed on the Hazards and Precautions tab of a safety plan.
- Hazardous material enabled hazards are listed on the Hazardous Materials tab of a safety plan.
- Tag out enabled hazards are listed on the Tag Outs tab of a safety plan.

Hazards and Tag Outs

The Tag Outs tab on a hazard record displays a read-only list of tag outs that have been created to eliminate the hazard. The tags outs listed on this tab are associated with the hazard record because they are listed on the Lock Out/Tag Out subtab of the Safety tab of asset or location records. When a tag out-enabled hazard is listed on an asset or location record you can use the Lock Out/Tag Out application to create a tag out record to eliminate the hazard. Tag outs are created for a particular asset or location, but they may be associated with more than one hazard if the procedure eliminates more than one hazard. For example tagging out an asset might eliminate hazards from heat, electrical current, and rotating blades.

Using the Hazards Application

To access the Hazards application, click the application link on your Start Center, or select **Safety > Hazards** from the Go To menu.

The Hazards application contains the following tabs:

- **List** — to search Maximo for hazard records.
- **Hazards** — to create, view, or modify a hazard. Use to indicate whether the hazard can be associated with precautions, hazardous materials, and tag out procedures. Also use to list hazardous material information for the hazard.
- **Precautions** — to create, view, or delete associations with previously defined precautions.
- **Tag Outs** — to view a read-only list of tag out procedures. These tag outs have been associated with an asset against the hazard, either in the Assets or Locations applications.

Hazards Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Hazards application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Hazards Help.

How Do I...	
associate precautions with the hazard?	On the Precautions tab, click **New Row** in the Associated Precautions table window.
associate lock outs or tag outs with a hazard?	You associated tag outs records in the Assets or Locations applications that list the hazard on the record.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a hazard record?	Click the **New Hazard** button in the toolbar.
delete a record?	Select **Delete Hazard** from the Select Action menu.
duplicate a record?	Select **Duplicate Hazard** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Hazard Records

You use the Hazards application to define a list of hazards that exist or could exist in your workplace. You can define a list of hazards, for example, dust, chemicals, and electrical current, which can be applied to many assets or locations, or hazards that are specific to only one asset or location.

When you create hazard records you can

- associate the hazard with a **Type**, for example, "mechanical" or "health."
- define the associations available for the hazard. These associations determine where the record can be used.
- record hazardous material information about the health, flammability, reactivity, and contact rating for the hazard.
- associate precautions that can *mitigate* the hazard.
- associate tag outs that can *eliminate* the hazard.

CAUTION: In order for a hazard to be associated with assets or locations, appear in value lists, or have additional safety information associated with it, you **must** define the associations that are available for a hazard.

- **Can Have Precautions?** must be selected before you can list associated precautions on the Precautions tab. Precautions are defined in the Precautions application.
- **Can Have Hazardous Materials?** must be selected before you can enter data in the Hazardous Material Information section of the Hazard tab.

- **Can Have Tag Outs?** must be selected before you can associate tag outs with assets, locations, and safety plans to eliminate the hazard. Tag outs are defined in the Lock Out/Tag Out application.

  NOTE: If a hazard is tag out enabled it can not be precaution enabled or hazardous material enabled.

Hazards Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Lock Out/Tag Outs

A **tag out** procedure is designed to eliminate a hazard to ensure a safe work environment. Maximo uses the term **tag out** to describe the entire procedure, and the term **lock out** to describe the steps in a tag out procedure. Records created in the Lock Out/Tag Out application are identified by a tag out ID, which is also used to identify the tag out in other applications.

You can create tag out procedures that describe how to control hazardous energies, that is energy that if released could cause a serious accident or physical harm. Examples of hazardous energy include:

- electrical — electrical wiring and outlets, high voltage
- chemical — toxic chemicals, potential chemical reactions, fires, or explosions
- kinetic — moving parts, falling objects
- thermal radiation — heat, cold, radiation
- pressure — water pressure, pressurized gases, vacuum pumps

When you create a tag out procedure you provide information about how hazardous energies should be controlled. This may involve taking the work asset out of service so that the system cannot be accidentally operated.

Multisite and Lock Out/Tag Out Records

Tag out records are created for either a specific asset or location, Both of which are defined at the Site level in Multisite. Thus tag out records are defined at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Records can only be viewed by users who have security permission to the Site and the application.

Tag Outs and Assets/Locations

A tag out procedure is associated with a single asset or location. However, an asset or location may have multiple tag outs associated with it for eliminating different hazards or that correspond to different tasks or operating conditions.

You should create a tag out procedure for any asset or location that has hazards which have procedures to eliminate them.

Tag Outs and Hazards

You should create tag out enabled hazard records for all of the potentially hazardous energies that exist in your workplace. For some examples of hazardous energies, see "Lock Out/Tag Outs," on page 11-6.

Tag Outs and Safety Plans

When you list tag outs on a Safety Plan, you can only select from tag outs that have been created for the safety related assets of the work assets (assets and locations) listed on the Safety Plan.

NOTE: A work asset (asset or location) is *always* considered a related asset to itself.

Tag Outs and Work Orders

You use the **Select Safety Hazards** action in the Work Order Tracking application to select hazards that are associated with the related assets for the work order's asset or location. A work asset (asset or location) is *always* considered a related asset to itself. When you select hazards, Maximo displays any tag outs associated with the hazard on the Safety Plans tab of the work order record.

Using the Lock Out/Tag Out Application

To access the Lock Out/Tag Out application, click the application link on your Start Center, or select **Safety > Lock Out/Tag Out** from the Go To menu.

The Lock Out/Tag Out application contains the following tabs:

- **List** — to search Maximo for Lock Out/Tag Out records.
- **Lock Out/Tag Out** — to create, view, or modify tag out procedures.

Lock Out/Tag Out Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Lock Out/Tag Out application. For more detailed information,

including prerequisites to performing an action and detailed procedures, refer to the Lock Out/Tag Out Help.

How Do I...	
add lock out operations to a tag out record?	Click **New Row** in the Lock Out Operations table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a tag out record?	Click the **New Tag Out** button in the toolbar.
delete a record?	Select **Delete Tag Out** from the Select Action menu.
duplicate a record?	Select **Duplicate Tag Out** from the Select Action menu.
remove a lock out operation from a tag out record?	Click the **Mark Row for Delete** button for the row in the Lock Out Operations table window.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Tag Outs

You create a tag out procedure to eliminate a defined hazard on a specific asset or at a specific location. A tag out procedure can be written to eliminate one or more hazards for a specific asset or at a specific location.

To create a tag out procedure, you describe the lock out tasks needed to accomplish the tag out. You use the Lock Out Operations table window to define the steps to follow to remove a work asset from service and place it in a safe condition. A safe condition might be defined as the asset or location has been isolated, had power shut down, been vented, been drained, is de-pressurized, and so on.

These operations can include the following:

- An **Asset** listed in the Assets application, or a **Location** listed in the Locations application, but not both.
- A **Description** of a locking device not listed in either the Assets or the Locations application, for example, a valve that needs to be opened.
- A **Description** of an instruction or action to be taken, not referring to any device or asset, for example, "Notify control room before performing the next operation."
- You can indicate if there is a **Locking Device Required State** at each step, for example, "Circuit breaker closed."
- The **Apply Sequence** values indicate the order the steps are to be completed in. You also can indicate a **Remove Sequence** if the order of the steps is different when the procedure is reversed.

You can use the **Duplicate Tag Out** action to create a copy of an existing tag out, for example if you have multiple assets that need the same tag out. Once you duplicate a tag out you can then modify it as needed.

Managing Lock Out/Tag Out Records

Because a tag out record is created for a specific asset or location, a tag out record cannot be applied to other assets or locations.

You can delete a tag out record using the **Delete Tag Out** action available from the Select Action menu. A tag out may *not* be deleted if any of the following is true:

- Tag out contains lock out operations.
- Tag out is associated with a hazard.

Lock Out/Tag Out Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Precautions

A **safety precaution** is a preventive measure that you take to mitigate a hazard that cannot be completely eliminated, for example wearing hearing protection when working in an area where you are exposed to loud noises.

The Precautions application lets you define precautions against hazards in the workplace. You then can associate these precautions with workplace hazards in the Hazards application.

When you define safety precautions and associate them with workplace hazards, you provide information about how employees can mitigate or eliminate hazards involved with workplace tasks. Using the Attached Documents feature, you can also associate a precaution with more information in the form of a word processor file, spreadsheet, or Web page.

Multisite and Precaution Records

Precautions are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Records can only be viewed by users who have security permission to the Site and the application.

Hazards are defined at the Organization level, but precautions are defined at the Site level, which allows you to use different precautions against the same hazard at different Sites.

Precautions and Assets/Locations

Precautions are not associated with asset or location records. You do not take precautions because of an asset or location, you take precautions because of a hazard associated with that asset or location. When you list a hazard on the Hazards and Precautions subtab of the Safety tab in the Assets or Locations application, Maximo displays any precautions associated with the hazard on the asset or location record.

Precautions and Hazards

You use precautions to mitigate the effects of a workplace hazard. Whenever a precaution-enabled hazard record is associated with a Maximo record, Maximo automatically displays the precautions associated with the hazard.

Precautions are associated with hazards in the Hazards application. The **Can Have Precautions?** check box on a hazard record must be selected before you can associate precautions with the hazard. The Associated Hazards table window on a precaution record shows the hazards that the precaution has been associated with. The same precaution could be applied to more than one hazard. For example, you might wear gloves to protect you from multiple hazards.

Precautions and Safety Plans

When you list a hazard on the Hazards and Precautions tab of the safety plan, Maximo displays any precautions associated with the hazard.

Using the Precautions Application

To access the Precautions application, click the application link on your Start Center, or select **Safety > Precautions** from the Go To menu.

The Precautions application contains the following tabs:

- **List** — to search Maximo for precaution records.
- **Precaution** — to create, view or delete precautions. Also use to view a read-only list hazards that the precaution has been associated with in the Hazards application.

Precautions Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Precautions application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Precautions Help.

How Do I...	
associate hazards with a precaution?	Hazards are associated with precautions in the Hazards application.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a precaution record?	Click the **New Precaution** button in the toolbar.
delete a record?	Select **Delete Precaution** from the Select Action menu.
duplicate a record?	Select **Duplicate Precaution** from the Select Action menu.

Creating Precaution Records

You can define a list of precautions, for example, wear a hard hat, wear eye protection, wear gloves, which can be applied to many hazards, or define precautions that are specific to a particular hazard.

When creating precaution records, consider what to name the precautions. For example, if your company uses more than one type of protective glove, you might name the records GLOVE1 - Latex glove, GLOVE2 - Rubber glove, GLOVE3 - Leather glove, and so forth.

You can use the **Duplicate Precaution** action to create a copy of an existing precaution, for example if you are creating a similar list of precautions for different Sites. Once you duplicate a precaution you can then modify it as needed.

Managing Precaution Records

Once you create and save a precaution record the only field that you can edit is the **Description**. You can delete a precaution record using the **Delete Precaution** action available from the Select Action menu. You cannot delete a precaution if it is associated with a hazard.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Precaution Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Safety Plans

A **safety plan** contains safety information for an asset or location, including hazards, precautions, hazardous materials, and tag out procedures to follow in order to perform the work safely. This information can range from the safety information necessary to follow a specific job plan on a specific work asset, to a general plan for how to handle a hazardous situation.

For example, an asset, such as a pump, must be shut down in a particular way to minimize electric shock, or materials leakage, before any maintenance can be performed. Or before maintenance personnel can enter a particular location safely they must be notified that they might be exposed to chemicals and should wear eye protection and protective clothing.

You must clearly associate safety requirements and procedures with work orders to fulfill regulatory requirements of agencies such as the Occupational Safety and Health Administration (OSHA) in the United States. You must show that employees have been informed of hazards they might encounter while performing work, as well as actions they must take to prevent accidents.

Safety plans provide a means of compiling all safety related information about the asset or location in one record, which can then be copied to job plans and work orders.

Multisite and Safety Plans

Safety Plans are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Records can only be viewed by users who have security permission to the Site and the application.

Safety Plans and Assets/Locations

A safety plan is created for specific work assets (assets or locations). You can list multiple work assets on the same safety plan, for example if your company owns several identical pumps or motors, and the work assets require the same safety information.

Safety Plans and Hazards

You create a safety plan to inform workers of hazards they may encounter while performing work.

- The list of hazards available on the Hazards and Precautions tab is restricted to precaution enabled hazards. Maximo automatically displays the precautions associated with the hazard. If you list a hazard that is also hazardous material enabled, Maximo automatically displays the hazardous materials data.

- The list of hazards available on the Hazardous Materials tab is restricted to hazardous material-enabled hazards. If you list a hazard that is also precaution-enabled, Maximo automatically displays the precautions.

  NOTE: If a work order's work plan includes an item that has a hazardous material-enabled hazard associated with it, Maximo automatically displays the precautions.

- The list of hazards available on the Tag Outs tab is restricted to tag out enabled hazards.

- The list of hazards available when you select the **Select Hazards** action from the Select Action menu is restricted to hazards listed on safety related assets on the work asset records. A work asset (asset or location) is *always* considered a safety related asset to itself.

Safety Plans and Job Plans

You associate safety plans with a job plan via the work assets (assets and locations) that you include on the job plan.

You list assets, items, or locations that the job plan applies to on the Work Assets tab. Because a job plan can list more than one work asset, a job plan can have more than one safety plan associated with it. When a work asset is listed on a work order Maximo checks for a required safety plan for the combination of the work asset and the job plan. When the combination of a work asset (asset or location) and a job plan requires a safety plan Maximo automatically copies the safety plan to the work order.

Safety Plans and Precautions

When you associate hazards with a safety plan, Maximo automatically displays the associated precaution information.

Safety Plans and Tag Outs

You can list multiple work assets on the same safety plan, for example if your company owns several pumps or motors that share the same safety information. Tag out procedures are work asset specific. If you list multiple work assets on a safety plan that have tag outs, you would need to list each tag out on the safety plan. When you apply the safety plan to a work order, Maximo displays the tag out that matches the asset or location to the work order.

Safety Plans and Work Orders

A safety plan can be associated with a work order in the following ways:

- You can select a value in the **Safety Plan** field to apply an existing safety plan.

- If the combination of the work asset (asset or location) and the job plan listed on the work order requires a safety plan Maximo automatically

copies the safety plan to the work order. Job plan data can be copied to a work order from a preventive maintenance record or a route.

- You can create a safety plan for the work order on the Safety Plan tab.

When you select safety plans for a work order you can choose to

- view all safety plans
- view safety plans that match the asset or location on the work order
- view safety plans that are listed on the job plan for the work order

Only one safety plan can be attached to each work order. When you associate a safety plan with a work order Maximo displays the following information from the safety plan:

- hazards, precautions, and associated work assets from the Hazards and Precautions tab.
- hazards and precautions from the Hazardous Materials tab.
- tag outs from the Tag Outs tab. If a safety plan lists multiple work assets, Maximo displays the tag out that matches the asset or location on the work order.

Using the Safety Plans Application

To access the Safety Plans application, click the application link on your Start Center, or select **Safety > Safety Plans** from the Go To menu.

The Safety Plans application contains the following tabs:

- **List** — to search Maximo for safety plan records.

- **Safety Plan** — to create, view, or modify safety plans and to view work assets associated with a selected safety plan.

- **Hazards and Precautions** — to enter or view hazards associated with the selected safety plan and to view precautions against those hazards. Precautions are defined in the Precautions application.

- **Hazardous Materials** — to enter or view details about hazardous materials associated with the selected safety plan. Hazardous Materials are defined in the Hazards application.

- **Tag Outs** — to enter or view hazards defined for each work asset and tag out procedures associated with each hazard. Tag Outs are created in the Lock Out/Tag Out application.

Safety Plans Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Safety Plans application. For more detailed information, including

prerequisites to performing an action and detailed procedures, refer to the Safety Plans Help.

How Do I...	
associate precautions with hazards listed on the safety plan?	Precautions are associated with hazards in the Hazards application.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
create a safety plan?	Click the **New Safety Plan** button in the toolbar.
delete a record?	Select **Delete Safety Plan** from the Select Action menu.
duplicate a record?	Select **Duplicate Safety Plan** from the Select Action menu.
list work assets (assets or locations) for the safety plan?	On the Safety Plan tab, click **New Row** in the Work Assets table window.
list hazards on the safety plan?	On the Hazards and Precautions tab, click **New Row** in the Hazards table window.
list hazardous materials on a safety plan?	On the Hazardous Materials tab, click **New Row** in the Hazardous Materials table window.
list lock outs or tag outs on a safety plan?	On the Tag Outs tab, click **New Row** in the Hazards table window to add a hazard, then click **New Row** in the Tag Outs for table window.
run reports?	Select **Run Reports** from the Select Action menu.
select hazards for work assets and related assets to include on the safety plan?	Select **Select Hazards** from the Select Action menu.

Creating Safety Plans

You can create a safety plan any time you have safety information that you want to reuse. A safety plan can be applied to more than one asset, location, job, or situation.

A safety plan should include all the information needed to perform a specific type of work safely. Before you create a new safety plan, think about the following questions:

- Which work assets might use the safety plan? When designing a safety plan, the work asset combined with the type of work (job plan) dictates which safety information is required.
- What other assets or locations might have associated hazards or other safety concerns that should be considered?
- Which hazards relate to the work assets's related assets? (A work asset (asset or location) is always considered a safety related asset to itself.)

- Are there hazardous materials associated with the asset or location or the type of work that is going to be performed?
- Are there tag outs created for the asset or location that might apply to this safety plan?

If the safety plan is for an asset or location, you indicate it in the Work Assets table window on the Safety Plan tab.

Associating Hazards and Precautions

You can associate hazard records with a safety plan. If these hazards have associated precautions, Maximo displays this information on the safety plan. These hazards and their associated precautions are defined in the Hazards application.

If the hazard is associated with more than one asset, you create a separate row in the Hazards table window for each **Related Location** or **Related Asset**. For example, if you create a safety plan for electrical current at a location, the location might have more than one electrical outlet. Each outlet must be identified separately on the safety plan.

TIP: If you enter a value in the **Related Location** or **Related Asset** field, Maximo copies the value to work order records that list the safety plan, allowing workers to know which work assets are associated with the hazards.

Associating Hazardous Materials

You use the Hazardous Materials tab to associate hazards that have hazardous material data defined for the hazard record, with the safety plan. The data can include, for example, Material Safety Data Sheets (MSDS), health ratings, and flammability ratings.

If the hazardous material is associated with more than one asset, you create a separate row for each asset or location.

NOTE: If a hazard is both precaution-enabled and hazardous material-enabled, Maximo automatically displays the data on both the Hazards and Precautions and the Hazardous Materials tabs.

Listing Tag Outs

You use the Tag Outs tab to list tag out-enabled hazards and associate tag outs with the safety plan. Tag outs are asset or location specific.

- If the hazard is associated with more than one asset or location, you must create a separate row for each asset or location and its tag out. For example, if you shut down a ventilation system, each fan has its own tag out, specific to its asset or location record.
- If a tag out eliminates more than one hazard, you must associate the tag out with each hazard individually.

Duplicating a Safety Plan

You can use the **Duplicate Safety Plan** action to create a copy of an existing safety plan, for example if you are creating similar safety plans for different

work assets. When you duplicate a safety plan, Maximo copies all the information from the original to the duplicate, including all work asset and hazard information. Once you duplicate a safety plan you can then modify it as needed.

Managing Safety Plans

You can delete a safety plan using the **Delete Safety Plan** action available from the Select Action menu. You cannot delete a safety plan if it is associated with any open or active (non-history) record.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Safety Plans Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

12 The Service Desk Module

A **Service Desk** is a single point of contact for users who need help or support with hardware or software issues. A service desk might also log calls for non-IT maintenance requests and route them to the appropriate maintenance team. Some service desks function as an internal service desk whose customers are within the same company and others function as a service provider to external clients.

Maximo's Service Desk applications are designed to conform to Information Technology Infrastructure Library (ITIL®) standards, but can support all asset types (facilities, fleet, information technology, and production) and can be configured to meet a variety of needs.

The Service Desk Module consists of the following applications:

Application	Function
Activities	Used to report work on activity class work orders.
Changes	Used to create records to track changes made to information technology (IT) assets.
Incidents	Used to create records of incidents that result in an interruption to or reduction in the quality of a service.
Problems	Used to create records of the underlying problems that cause incidents and service requests.
Releases	Used to create records to plan and record the release of changes to information technology (IT) assets.
Service Requests	Used to create records of customer calls or e-mail requesting service.
Solutions	Used to create a library of reusable solutions which can be applied to incident and problem records
Ticket Templates	Used to create templates for common service desk calls.

You use the Ticket Templates application to create templates to be applied to common service desk calls. You can define details that will be copied to the ticket record when the template is applied in one of the ticket applications (Service Requests, Incidents, and Problems applications), for example who is responsible for the type of work to be done, and what activities should be included on the ticket.

You use the Service Requests application to record requests for information, maintenance, and service.

You use the Incidents application to record any event which is not part of the standard operation of a service, and which causes, or may cause, an interruption to, or a reduction in, the quality of that service.

You use the Problems application to record any event which causes, or could potentially cause, incidents which disrupt service.

You use the Changes application to plan, review, and approve changes for assets and locations. Typically you create change records when there is a need to alter an information technology asset and you want to manage that change via the Changes application.

You use the Releases application to plan, review, and authorize the release of a change to an asset or location. Typically you create release records when you are testing and releasing a series of changes into the "live" environment for an information technology asset or location.

You use the Activities application to manage activity work orders created in other applications. Non Service Desk workers or technicians can use the Activities application to report completion of activity work orders assigned to them by Service Desk agents.

You use the Solutions application to create and manage records of known solutions to issues. Solution records can be restricted to just Service Desk agents, or can be shared with self-service customers.

Depending on your business needs, your company may choose to implement some or all of the Service Desk applications. You can pick and choose the applications that best support your business processes. The Service Desk module is flexible enough to allow for many different implementation models.

Service Desk Terms

This guide uses the following terms when discussing the service desk applications:

- A **service organization** is a department or organization that has implemented Maximo to manage their operations and processes. This might be a maintenance department, facilities department, physical plant department, IT department, call center or service desk, operations group, IT asset management group, an engineering department, or other group.

- A Service Desk **agent** is a Maximo user who is responsible for taking calls and managing service requests, incidents, problems, and changes using the Service Desk applications.

- A **requestor** is a user or person who calls or e-mails the Service Desk, or reports issues or requests via the Self-Service Service Request module.

About Ticket Records

The records created in the following Service Desk applications are stored in the TICKET table in the database:

- Incidents application
- Problems application
- Service Request application

Maximo distinguishes these records by the value in the **Class** column in the database. By default, when Maximo creates a ticket record, it enters a value in the **Class** field to indicate if the record is a service request, incident, or problem record.

Maximo uses the **Class** field as a filter to determine which records from the TICKET table to display for each of the ticket applications. You cannot search for records of a different **Class** from within an application. For example, you cannot use the Service Requests application to search for incident records, you must use the Incidents application.

NOTE: Maximo assigns the **Class** value to new records automatically. The only place where the **Class** field is visible is on a Related Records tab.

About Work Orders

The records created in the following Service Desk applications are stored in the WORKORDER table in the database:

- Activities application
- Changes application
- Releases application

NOTE: Work orders can also be created in the Quick Reporting and Work Order Tracking applications, but cannot be viewed in the Service Desk applications.

Maximo distinguishes these records by the value in the **Class** column in the database. By default, when Maximo creates a work order record, it enters a value in the **Class** field to indicate if the record is an activity, change, release, or work order record.

Maximo uses the **Class** field as a filter to determine which records from the WORKORDER table to display for each of the work order applications. You cannot search for records of a different **Class** from within an application. For example, you cannot use the Activities application to search for change records, you must use the Changes application.

NOTE: Maximo assigns the **Class** value to new records automatically. The only place where the **Class** field is visible is on a Related Records tab.

Tickets and Work Orders

A ticket record is used to record a customer request or issue, while a work order record records the details of the work performed to resolve the issue.

While an incident or problem record may require work to be performed, it is recorded on the Activities tab, and activity records are work order records.

When you want to create standardized templates for ticket records you use the Ticket Templates application to list the details and activities for the ticket. When you want to create standardized templates for work orders, you use the Job Plans application to list the tasks, labor, materials, services, and tools for the work.

NOTE: Because the information about creating and managing tickets and work orders in each of the Service Desk applications are similar, the information is presented in the following general overviews, and is not repeated for each application.

Multisite and Ticket Records

Because Service Desks are frequently used to manage information technology assets for an entire company, ticket records are created at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

If the ticket is going to be managed at the Site level, you can indicate a Site on the ticket record. Site information may be recorded on ticket records in a number of ways. The **Asset Site** field will default to the Site listed on the person record of the **Affected Person**.

Multisite and Work Orders

Work orders are defined at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- The key field must be unique for work orders where CLASS = WORKORDER.
- Records can only be viewed by users who have security permission to the Site and the application.

Creating Tickets

Ticket records are created in the Service Requests, Incidents, and Problems applications. Because the resolution of a ticket sometimes involves the creation of additional service request, incident, or problem records, Maximo allows you to create ticket records from within a ticket record via the **Create <record>** actions. These actions are available from the Select Action menu in the following applications:

- Activities
- Changes
- Incidents

- Problems
- Quick Reporting
- Releases
- Service Requests
- Work Order Tracking

Ticket records can also be created automatically using data from e-mail messages, system monitoring tools, or external software applications.

TIP: Entering a **Classification** on a ticket can help limit the number of duplicate tickets that are entered in the system. You can use the **Show Similar Tickets** action to search for tickets with the same classification.

Using Ticket Templates

Frequently the calls that a Service Desk receives will include similar, unrelated service requests, for example every time a new employee is hired, the service desk receives a request for a computer to be configured for them.

You can use the Ticket Templates application in the Planning module to create standardized templates for issues that generate a high-volume of similar tickets. A ticket template can include response activities and an **Owner** or **Owner Group** who will assume responsibility for the ticket. You apply templates to a ticket record using the **Apply <ticket class> Template** action found in the Select Action menu of each ticket application.

Once a ticket template is copied to a ticket record, the information from the template can be modified as needed. Using ticket templates reduces the amount of time Service Desk agents spend on data entry and allows for a pre-planned response to high-volume calls. For more information about creating and using ticket templates, refer to the Ticket Templates Help.

Ownership of Tickets

Individuals or groups can assume responsibility, or "ownership" of a ticket in Maximo. When a group owns a ticket, all members of the group see the ticket in their Work View. You can assume or assign ownership of a ticket using the **Select Owner** and **Take Ownership** actions. When ownership of a ticket changes from a group to an individual, the ticket no longer appears in the Work View of other group members.

When an agent takes ownership of a ticket they are responsible for managing the ticket until it is resolved (that is, service is restored to the customer or business unit), or the ticket is delegated to another group or person.

Your company may design a Workflow process that automatically assigns ownership of new tickets to the appropriate agent or group. Ownership of a ticket can be changed, for example if a more knowledgeable or technical group needs to address the issue, or because an service level agreement (SLA) calls for escalation of the ticket to a different group if it is not resolved within a certain period of time.

NOTE: The **Owner** and **Owner Group** fields are read-only. Values can only be entered in these fields via the **Select Owner** and **Take Ownership** actions.

Classifying Tickets

Maximo includes a feature called Classifications which can be used to structure records into organized hierarchies. Using classifications helps you to more easily locate records, and helps to ensure that records are not duplicated unintentionally.

Your system administrator creates one or more different classification hierarchies using the Classifications application. By default Classifications allows you to classify and search the following types of records:

- assets
- items
- locations
- solutions
- tickets (service requests, incidents, problems)
- work orders (activities, changes, releases, work orders)

You can classify solutions, tickets, and work orders by entering a value in the **Classification** field on a record.

Priority and Tickets

Maximo uses values between 1 and 4 to indicate priority for service requests, incidents, and problems with 1 being the most urgent priority and 4 being the lowest priority. You can use the priority values on a ticket to help determine which ticket a service desk agent should work on first when there are "competing" tickets for similar assets or locations.

Maximo uses two priority fields on tickets:

- **Reported Priority** — Priority of the ticket as determined by the person making the request or reporting the issue.

- **Internal Priority** — Priority of the ticket as determined by the service desk agent. This value can differ from the value in the **Reported Priority** field.

Activity, change and release records contain an **Asset/Location Priority** field. For information about asset and location priorities, see “Asset/Location Priority,” on page 3-3.

Related Records

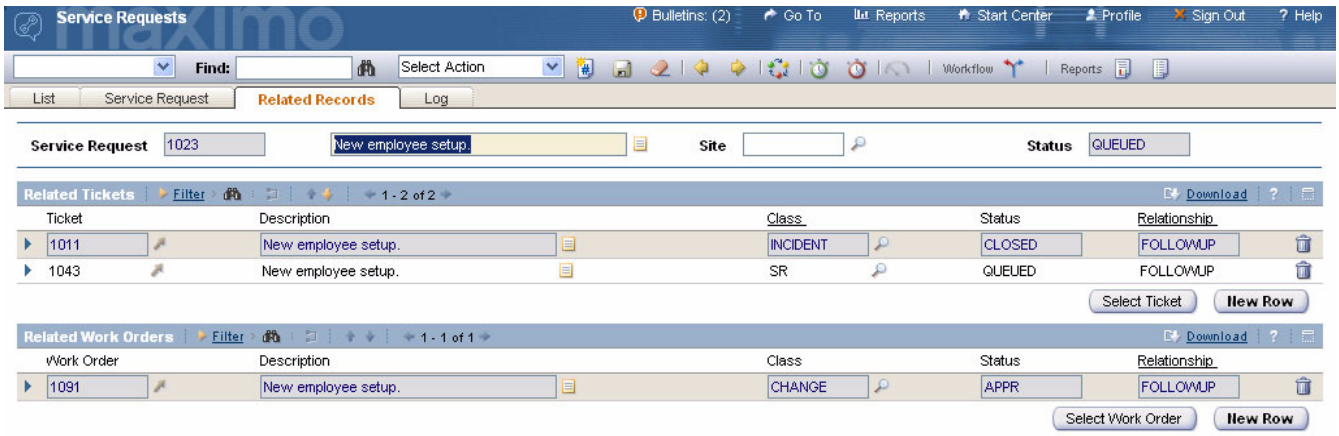
The Service Desk applications all contain a Related Records tab, which allows you to view all of the tickets and work orders that have a relationship to or provide additional information about the record you are viewing. A single record can be related to many other records.

NOTE: The Related Records relationship is non-hierarchical. With the exception of global issues (discussed in “Global Issues,” on page 12-8) associating one record with another does not create any type of direct relationship or cause one record to control the status of another record.

Types of Related Records

The Related Records tab contains two table windows, displaying all ticket records and work order records that are related to the current record. The value in the **Relationship** field identifies how the ticket or work order is related to the current record.

Service Requests application - Related Records tab



There are five relationship types:

- **Global** — indicates that the record is a Global Issue. This ticket type is applied to a record when the **Global Issue?** check box is selected on an incident or problem record. Work order records cannot be Global Issues.

- **Follow up** — indicates that a record has been created as a follow-up to another record via one of the **Create <record>** actions, for example **Create Change**. Both tickets and work orders can be created as follow-up records.

- **Originator** — indicates that the current record was generated from the related record. This type is applied to a record when follow-up record is created via one of the **Create <record>** actions, for example **Create Change**. Both tickets and work orders can create other records.

- **Related** — indicates that a record has been related to the current record to provide additional information. This type is applied to records that are added to one of the Related records tables using the **New Row** button. Both tickets and work orders can be related in this manner.

- **Related to Global** — indicates that the record is related to a Global Issue. This type applies to tickets that contain a value in the **Related to Global ID** field. This type of relationship does not apply to work orders.

Relating Other Records to a Ticket

Relationships between records can be created using one of the following methods:

- creating one or more records via the **Create <record>** actions available in the Select Action menu.
- associating one or more work orders with a record via the **Select Work Orders** button in the Related Work Orders table window.
- associating one or more tickets with a record via the **Select Ticket** button in the Related Tickets table window.
- associating one or more records with a record via the **New Row** button in the Related Tickets and Work Orders table window.
- selecting the **Show Similar Tickets** action, then selecting one or more tickets and clicking **Relate Records**.

Global Issues

A **global issue** is an incident or problem that potentially affects multiple users, or is likely to be the root cause of additional issues. For example, a problem with an e-mail server could potentially affect many e-mail accounts, or flooding from a burst pipe is likely to cause additional reports of problems. Using global issues allows you to indicate that multiple records have the same underlying cause, and manage and address a single incident or problem record, rather than managing multiple records individually.

NOTE: Only incident and problem records can be global issues. However, other record types might be associated with a global record.

Creating Global Issues

You indicate that an incident or a problem is a global issue by selecting the **Global Issue?** check box on the record.

Global Issues Check Box

When you change the status of a global issue ticket, all of the tickets and work orders that are related to the record automatically inherit the status changes.

If you determine that a ticket is not in fact a global issue, you can clear the **Global Issue?** check box, and any tickets and work orders related to the record will no longer inherit their status changes from the record.

Relating Other Records to Global Issues

You can use the **Show Similar Tickets** action to related service requests, incidents, and problems to a global issue record. You can also indicate that an incident or problem record is related to a global issue by entering the identifier for a global issue in the **Related to Global ID** field on the record. A record can be related to only one global issue at a time. Once a record has been marked as "related to" a global issue it will inherit all status changes from the global issue.

When a global issue has follow-up records, that is records created from the global issue, the follow-up records cannot be related to the global issue. In addition, you cannot relate a record to a global issue that has a status of CLOSE.

NOTE: A ticket can be a global issue or related to a global issue, but not both.

Managing Tickets

Once you've taken ownership of a ticket, or ownership of a ticket has been assigned to you, you are responsible for managing that ticket until it is either resolved, or ownership of the ticket is assigned to another individual or group.

Managing Activities

Activity records describe high level work added directly to a ticket during the ticket management process. Activities can be managed from the Activities tab of an incident or problem record, or by using the Activities application.

A service desk agent can assign each activity to a different **Owner** or **Owner Group** if needed. For example, hiring a new employee might generate a service request that includes the following activities:

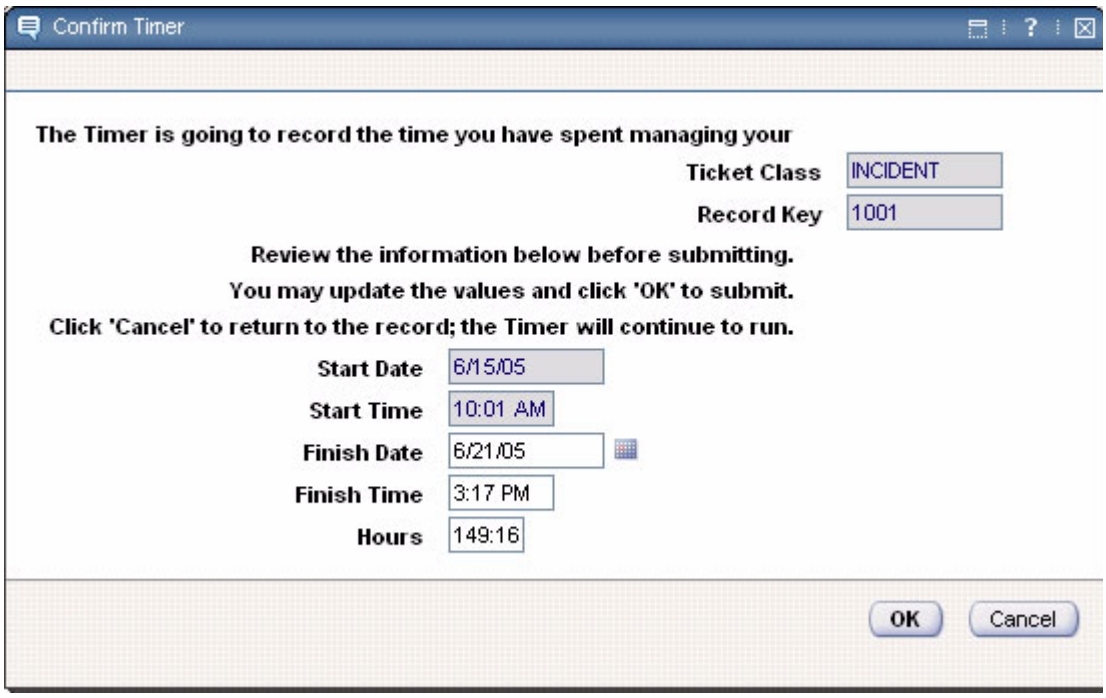
- Issue security badge — assigned to the Security group
- Issue computer — assigned to the Information Technology group
- Assign telephone number — assigned to the Telecommunications group

Time Management

Frequently companies want to capture data about the amount of time workers spend on activities or tasks. You may need this information because your Service Desk has a goal to resolve issues within a certain time frame, or to show that response times are in compliance with an existing service level agreement (SLA). Or you may need a record of a laborer's working hours to calculate costs or for billing outside labor.

All of the ticket applications include a **Start Timer** and **Stop Timer** button in the toolbar. When you start the timer, Maximo begins recording labor actuals for the ticket and enters a new row in the Time Tracking table window on the Activities tab. When you stop the timer, Maximo calculates the elapsed time. When you confirm the details, Maximo complete the entry in the Time Tracking table window.

Confirm Timer dialog box



NOTE: You can edit the values in the Confirm Timer dialog box, for example if you were not working on a record and forgot to stop the timer.

You can use the **View Costs** action to view the total labor hours for a record.

Working with Solutions

A **solution** is a predefined response to a problem or commonly asked question. A solution record consists of a symptom, a cause, and a resolution. A solution record is a means of capturing information so that it can be shared with others.

Service Desk agents can record solutions and workarounds in the Solutions application. Solution records contain **Symptom**, **Cause**, and **Resolution** text fields. Both the Incidents and Problems applications contain a **Search Solutions** button in the toolbar. When you select a solution to apply to a record, Maximo copies the details to the Solutions Details tab of the record.

Service Desk calls frequently include a large percentage of "How do I..." questions or requests for information. You can create a knowledge base of solutions and frequently asked questions that customers can access by utilizing **Self-Service Access?** check box on solution records.

The Incidents and Problems applications include a **Search Solutions** button in the toolbar which allows you to search for solution records. When you apply a solution to an incident or problem record, Maximo copies the information to the Solution Details tab.

Working with Logs

The Service Desk applications all contain a Log tab, which allows you to create and view the Work Log and the Communications Log for a record. Both the Work Log and the Communications Log provide a means of communicating information about a ticket or work order.

Service Desk agents and maintenance workers create the entries in the Work Log, which is used to record telephone conversations, work performed, observations, and feedback from customers. Maximo makes the entries in the Communications Log, which is used to maintain a record of e-mail communications created from the record via the **Create Communication** action.

Understanding the Work Log

You use the Work Log to record work-related information about a ticket or work order. You create an entry in the work log using the **New Row** button on the Work Log subtab. When you create a Work Log entry, you must specify a **Type** (Client Note, Update, or Work). You can check **Viewable?** check box to make the entry visible to the individuals listed in the **Reported By** and **Affected Person** fields on the record.

Self-service users can view any Work Log entries marked as viewable, and create additional Work Log entries in response. For example at the resolution of a ticket a Service Desk agent might request feedback from the customer, which the customer can provide via a Work Log entry.

Understanding the Communications Log

The Communications Log displays outbound messages sent between Service Desk agents and customers.

Entries in the Communications Log subtab are read-only. Maximo automatically creates entries in the Communications Log when you use the **Create Communication** action to create an e-mail message.

Using Communication Templates

You can use the Communication Templates application in the Administration module to create standardized templates for frequently used e-mail communications. You can also use communication templates to create e-mail notifications for use with Maximo's Workflow and escalation processes. For more information about creating and using communication templates, refer to the Communications Template help or the *Maximo System Administrator's Guide*.

Failure Reporting

One of the goals of problem management is to get to the root cause of an incident, as well as recording the resolution of the incident. Maximo accomplishes this objective with the use of failure reports. A **failure report** is a coded description of the failure, usually expressed in terms of a Problem code, Cause code, and Remedy code.

The Problem, Cause, Remedy structure of a failure code is different from the Symptom, Cause, and Resolution structure of a solution record. The content of a solution record is free form text and can differ from one record to the next. The content of failure codes are standardized and stored in the database so that they can be reused. This allows you to run reports to try to identify historical failure trends. This analysis may influence preventive maintenance activity or frequency, the creation of problem tickets to investigate a permanent solution, and possibly change tickets to implement an improvement plan.

Ticket Statuses

Records created in the Service Requests, Incidents, and Problems applications are all ticket records, and are stored in the TICKETS table. Every ticket record has a status that indicates its position in the ticket life cycle. After you change a ticket's status, Maximo records the date and time of the status change, and lets you record a memo.

NOTE: Your system administrator sets the security authorizations that let users change ticket statuses.

A ticket record can have one of the following statuses:

- **NEW** — Default status for new ticket records. You cannot change a ticket status back to NEW once its status has been changed.
- **QUEUED** — A ticket's status changes to QUEUED when ownership is given to a person or group (a value exists in the **Owner** or **Owner Group** field).
- **INPRG** — In progress. Someone has taken ownership of the ticket and is working on it. When you change the status of a ticket to INPRG Maximo enters a value in the **Actual Start** field.
- **PENDING** — Status for tickets that are waiting for some external action (for example response from user, vendor response, parts on order, and so forth).
- **RESOLVED** — Indicates that a solution or service has been provided. When you change the status of a ticket to RESOLVED Maximo enters a value in the **Actual Finish** field. If necessary, you can reopen a ticket and change the status from RESOLVED back to QUEUED, INPRG or PENDING.
- **CLOSED** — The ticket becomes a history record and cannot have its status changed again. You must use the **Edit History <ticket>** action if you need to edit the ticket.

  NOTE: The following actions are no longer available once a ticket has had its status changed to CLOSED:

  - Change Status
  - Apply Ticket Template
  - Delete Ticket
  - Apply SLA
  - Modify SLAs

Deleting Tickets

You can delete a ticket record using the **Delete <ticket>** action available from the Select Action menu. A ticket record may only be deleted when all of the following conditions are met:

- the ticket must be in a status of NEW or QUEUED and the ticket must never have been in any other status.
- the ticket must never have been in Workflow
- the ticket cannot be marked as a Global Issue
- the ticket cannot have any activity records associated with it
- the ticket cannot have labor transactions logged against it
- the ticket cannot have any related tickets associated with it, and the ticket cannot be listed as a related ticket on any other record
- the ticket cannot have had other records created from it via the **Create <record>** actions (that is, it can not be an originating record for any other record)
- the ticket can not have any Work Log entries

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Creating Work Orders

Work order records are created in the Changes and Releases applications in the Service Desk. For information about other Maximo applications that can be used to create work orders, see "Creating Work Orders Using Maximo," on page 14-2. Because the resolution of a work order sometimes involves the creation of additional work orders, you can create records from within a work order record via the **Create <record>** actions. These actions are available from the Select Action menu in the following applications:

- Activities
- Changes
- Incidents
- Problems
- Quick Reporting
- Releases
- Service Requests
- Work Order Tracking

NOTE: You cannot create activity records in the Activities application. Activity work orders are created in the Incidents and Problems applications.

One difference between a ticket and a work order is that you can create a work plan for a work order that includes estimated tasks, labor, materials, services, and tools. For information about creating job plans, see "Creating Job Plans,"

on page 7-4. For information about creating work plans, see "Creating a Work Plan," on page 14-32.

Managing Work Orders

Whether or not you have created a work plan for a work order, you will probably want to report the actual labor hours, materials, services, and tools that were used to complete the work order.

You can report labor actuals for a work order using the **Start Timer** and **Stop Timer** button in the toolbar. When you start the timer, Maximo begins recording labor actuals for the work order and enters a new row on the Labor subtab. When you stop the timer, Maximo calculates the elapsed time. When you confirm the details, Maximo complete the entry on the Labor subtab.

For more information about reporting actuals, see "Recording Actuals," on page 14-39.

Work Order Statuses

Records created in the Changes and Releases applications are work order records, and are stored in the WORKORDER table. Every work order record has a status that indicates its position in the work order processing cycle. After you change a work order's status, Maximo records the date and time of the status change, and lets you record a memo.

NOTE: Your system administrator sets the security authorizations that let users change work order statuses.

A work order record can have one of the following statuses:

- **WAPPR** — Waiting for Approval; default for work orders created in the Changes, Releases, and Work Order Tracking applications.
- **WSCH** — Waiting to be Scheduled; default for work orders generated from Preventive Maintenance.
- **APPR** — Approved. After you approve a work order, Maximo reserves the work plan items in inventory and records cost and rate data. If rates change in Inventory, Labor, or Tools, the work plan reflects the rates in effect when the work order was approved.
- **WMATL** — Waiting for Material. You can use this option for work orders with a status of WAPPR, APPR, or INPRG. Indicates that you cannot initiate the work order because you do not have needed material. After the direct issue items requisitioned for the work order have been issued in Issues and Transfers, the work order status changes to approved (APPR).

- **WPCOND** — Waiting for Plant Conditions. Status for work orders that require a particular plant condition in order to be worked on, for example, for a production line to be shut down.

- **INPRG** — In Progress; default for work orders created in Quick Reporting. This status initiates the work order. If you do not have sufficient items to complete the work order, Maximo changes the status to WMATL.

- **COMP** — Completed. Indicates that all physical work is finished. If the asset is down, Maximo displays a reminder message.

- **CLOSE** — Closed. Change status to CLOSE after the electronic "paperwork" on a work order is complete and you want to finalize the record. Maximo removes inventory reservations for items not issued to the work order. The work order becomes a history record and cannot be edited.

- **CAN** — Canceled. If you select multiple work orders, Maximo cancels the ones that have not been initiated or for which no actuals have been reported. If the work order has been approved, Maximo removes inventory item reservations for the work order. The work order becomes a history record.

- **HISTEDIT** — Edited in History. Indicates that a work order with a status of CLOSE has been edited. This status does not appear on a work order record itself, but is displayed in the Status History to indicate that changes were made after the work order was closed.

Activities

An **activity** is a specific class of work order, used to describe general work that needs to be done on a ticket record. For example a ticket for a network printer problem might include three activities: check network connection, check printer, and check network.

You create activities on incident and problem records to describe general, high-level work that must be performed to resolve the ticket. Activities can be assigned to different teams, different departments, or vendor or contract labor. A service desk agent can assign activities to other individuals or groups and still retain ownership of the ticket.

Multisite and Activities

Work orders are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.

- Key fields for new records must be unique for all work orders where CLASS = ACTIVITY.

- Records can only be viewed by users who have security permission to the Site and the application.

Using the Activities Application

To access the Activities application, click the application link on your Start Center, or select **Service Desk > Activities** from the Go To menu.

The Activities application contains the following tabs:

- **List** — to search Maximo for activity work order records.
- **Activity** — to view, or modify activity records.
- **Plans** — to enter, view, modify, or delete information about planned job tasks, labor, materials, services, and tools.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Actuals** — to enter, view, or modify actual work order start and finish times, labor hours and costs, material quantities, service costs, and tool costs.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.

Activities Buttons

The following table lists application specific buttons that appear in the Activities application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar

Activities Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the activity application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Activities Help.

How Do I...	
apply one or more service level agreements to a work order?	Select **Apply SLAs** from the Select Action menu.
assign an owner to a work order?	Select **Select Owner** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.

How Do I...	
change the attributes for an asset?	Select **Move/Modify Asset** from the Select Action menu.
change the attributes for a location?	Select **Move/Modify Asset** from the Select Action menu.
change the location of an asset?	Select **Move/Modify Asset** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create an activity record?	Activity records are created on the Activities tab of the Incidents and Problems applications, and on the Plans tab of the Changes and Releases applications.
create a communication from the current record?	Select **Create Communication** from the Select Action menu.
delete a record?	Select **Delete Activity** from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Lo**g from the Select Action menu.
delete a work plan from a work order?	Select **Remove Work Plan** from the Select Action menu.
duplicate a record?	Select **Duplicate Activity** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Activity** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Lo**g from the Select Action menu.
plan an asset modification or move?	Select **Move/Modify Asset** from the Select Action menu.
remove a service level agreement from a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a service level agreement to apply to a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a work order?	Select **View > Costs** from the Select Action menu.
view the ownership history for a record?	Select **View > History** from the Select Action menu.
view purchase orders for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.

How Do I...	
view purchase requisitions for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view service level agreements applied to a work order?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View > History** from the Select Action menu.
view warranties for the asset listed on a work order?	Select **View > Warranties** from the Select Action menu.
view warranties for the location listed on a work order?	Select **View > Warranties** from the Select Action menu.
view the work plan for the hierarchy (the work order, its children, and tasks)?	Select **View > Entire Plan** from the Select Action menu.

Creating Activities

You do not create activity records in the Activities application. Activity work orders are defined as child work orders and cannot exist without a parent record. Activities can be created on the Activities tab of an incident or problem record, or via the **Create Activities** action available from any ticket or work order application.

Managing Activities

You can manage activities on the Activities tab of an incident or problem record, or in the Activities application. For information about reporting time spent working on activities see "Time Management," on page 12-9.

Activities Statuses

Activities are work orders. For information about work order statuses, see "Work Order Statuses," on page 14-5.

Activities Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Change Records

An **change** is a specific class of work order, used to plan the alteration of an information technology asset. This can include the addition, modification, or removal of approved, supported, or baseline:

- applications
- associated documentation
- desktop builds
- environments

- hardware
- networks
- software
- systems

Change Management is the practice of ensuring that all changes to information technology assets are carried out in a planned and authorized manner. This includes ensuring that there is a reason for the change, identifying the specific assets and IT services affected by the change, planning the change, testing the change, and having a back out plan should the change result in unexpected consequences.

Multisite and Change Records

Work orders are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Key fields for new records must be unique for all work orders where CLASS = CHANGE.
- Records can only be viewed by users who have security permission to the Site and the application.

Using the Changes Application

To access the Changes application, click the application link on your Start Center, or select **Service Desk > Changes** from the Go To menu.

The Changes application contains the following tabs:

- **List** — to search Maximo for change records.
- **Change** — to create, view, or modify change records.
- **Plans** — to enter, view, or modify information on work orders in a hierarchy, and to enter, view, modify, or delete information about planned job tasks, labor, materials, services, and tools.
- **Related Records** — to add, view, or delete related work order and ticket records.
- **Actuals** — to enter, view, or modify actual work order start and finish times, labor hours and costs, material quantities, service costs, and tool costs.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.

Changes Buttons

The following table lists application specific buttons that appear in the Changes application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar

Changes Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Changes application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Changes Help.

How Do I...	
apply a route to a work order?	Select **Apply Route** from the Select Action menu.
apply one or more service level agreements to a work order?	Select **Apply SLAs** from the Select Action menu.
assign an owner to a work order?	Select **Select Owner** from the Select Action menu.
assign a work order to a new parent?	Select **Assign to New Parent** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change the attributes for an asset?	Select **Move/Modify Asset** from the Select Action menu.
change the attributes for a location?	Select **Move/Modify Asset** from the Select Action menu.
change the location of an asset?	Select **Move/Modify Asset** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a change record?	Click the **New Change** button in the toolbar.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.

How Do I...	
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a record?	Select **Delete Change** from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
delete a work plan from a work order?	Select **Remove Work Plan** from the Select Action menu.
duplicate a record?	Select **Duplicate Change** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Change** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
plan an asset modification or move?	Select **Move/Modify Asset** from the Select Action menu.
remove a service level agreement from a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a service level agreement to apply to a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a work order?	Select **View > Costs** from the Select Action menu.
view the ownership history for a record?	Select **View > History** from the Select Action menu.
view purchase orders for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view purchase requisitions for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view service level agreements applied to a work order?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View > History** from the Select Action menu.

How Do I...	
view warranties for the asset listed on a work order?	Select **View > Warranties** from the Select Action menu.
view warranties for the location listed on a work order?	Select **View > Warranties** from the Select Action menu.
view the work plan for the hierarchy (the work order, its children, and tasks)?	Select **View >Entire Plan** from the Select Action menu.

Creating Change Records

Change records can be created in the Changes application, or via the **Create Change** action available from any ticket or work order application.

Managing Change Records

In addition to the creation of change records, change management involves

- assessing the impact, cost, benefit, and risk of the change
- developing a justification for the change
- obtaining approval for the change
- managing the change implementation
- monitoring and reporting on the implementation
- recording the change
- reviewing and closing the change record

Changes Statuses

Changes are work orders. For information about work order statuses, see "Work Order Statuses," on page 14-5.

If planned asset moves exist for the change record, Maximo executes them when the change status is changed to COMP (complete).

Changes Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Incident Records

An **incident** is any event which is not part of the standard operation of a service, and which causes, or may cause, an interruption to, or a reduction in, the quality of that service.

You use the Incidents application to create, view, modify, or delete incident records. Incident management is the resolution and prevention of incidents that affect the normal operation of a company's information technology (IT) services. This includes ensuring that all failures are corrected, preventing any recurrence of those failures, and the use of preventive maintenance to reduce the number of failures.

Multisite and Incident Records

Tickets are at the System or database level.

- Key fields for new records must be unique within the Maximo database.
- The key field must be unique for tickets where CLASS = INCIDENT.
- Records are available to all users of the database who have security permissions to the application.

Using the Incidents Application

To access the Incidents application, click the application link on your Start Center, or select **Service Desk > Incidents** from the Go To menu.

The Incidents application contains the following tabs:

- **List** — to search Maximo for incident records.
- **Incident** — to add/create, view, or modify incident records.
- **Activities** — to create, view, modify, delegate, and delete activity work orders and to report labor actuals.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Solution Details** — to associate, create, or view solution information.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.
- **Failure Reporting** — to enter, view, or modify asset and location failure information to help identify trends.

Incidents Buttons

The following table lists application specific buttons that appear in the Incidents application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar
	Search Solutions	▼ Toolbar
	Select Owner	▼ Table rows in the Activities table window

Icon	Function	Location
	Change Activity Status	▼ Table rows in the Activities table window

Incidents Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Incidents application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Incidents Help.

How Do I...	
apply one or more service level agreements to a ticket?	Select **Apply SLA** from the Select Action menu.
assign an owner to a ticket?	Select **Select Owner** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record?	Click the **New Incident** button in the toolbar.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.
create an incident record using a ticket template?	Click the **New Incident** button in the toolbar, then select **Apply Incident Template** from the Select Action menu.
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a solution record from the information on the Solutions Details tab of the record?	Select **Create > Solution** from the Select Action menu.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a record?	Select **Delete Incident** from the Select Action menu.

How Do I...	
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
duplicate a record?	Select **Duplicate Incident** from the Select Action menu.
find tickets with the same **Classification** as the current record?	Select **Show Similar Tickets** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Incident** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
remove a service level agreement from a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a service level agreement to apply to a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a ticket?	Select **View Costs** from the Select Action menu.
view the costs for the ticket hierarchy (the ticket, its activities, tasks, and child work orders)?	Select **View Costs** from the Select Action menu.
view the ownership history for a record?	Select **View History** from the Select Action menu.
view service level agreements applied to a ticket?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Incident Records

Incident records can be created in the Incidents application, or via the **Create Incident** action available from any ticket or work order application.

If your company has created templates for common incidents you can apply a template to a new incident record by selecting the **Apply Incident Template** action from the Select Action menu. Maximo copies data from the ticket template, which you can then edit as needed.

Managing Incident Records

The primary goal of incident management involves the restoration of normal service as quickly as possible.

Incident Record Statuses

Incidents are ticket records. For information about ticket statuses, see "Ticket Statuses," on page 12-12.

Incidents Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Problem Records

A **problem** is an unknown underlying cause of one or more incidents. Once the root cause of the problem is known and a temporary workaround or a permanent solution has been identified and provided, the problem record can be closed, and any related incident records can also be resolved and closed.

You use the Problems application to create, view, modify, or delete problem records. Problem management is the resolution and prevention of problems that affect the normal operation of a company's information technology (IT) services. This includes ensuring that all failures are corrected, preventing any recurrence of those failures, and the use of preventive maintenance to reduce the number of failures.

Multisite and Problem Records

Tickets are at the System or database level.

- Key fields for new records must be unique within the Maximo database.
- The key field must be unique for tickets where CLASS = PROBLEM.
- Records are available to all users of the database who have security permissions to the application.

Problem Records and Incidents

In Maximo, a problem record can be created in the Problems application or from an incident record. When a problem record is created from an incident, it is for reference purposes only. The problem record is not created to resolve an incident. When you change the status of a problem record to RESOLVED, Maximo does **not** change the status of the originating incident record to RESOLVED.

Using the Problems Application

To access the Problems application, click the application link on your Start Center, or select **Service Desk > Problems** from the Go To menu.

The Problems application contains the following tabs:

- **List** — to search Maximo for problem records.
- **Problem** — to create, view, or modify problem records.
- **Activities** — to create, view, modify, delegate, and delete activity work orders and to report labor actuals.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Solution Detail**s — to associate, create, or view solution information.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.
- **Failure Reporting** — to enter, view, or modify asset and location failure information to help identify trends.

Problems Buttons

The following table lists application specific buttons that appear in the Problems application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar
	Search Solutions	▼ Toolbar
	Select Owner	▼ Table rows in the Activities table window
	Change Activity Status	▼ Table rows in the Activities table window

Problems Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Problems application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Problems Help.

How Do I...	
apply one or more service level agreements to a ticket?	Select **Apply SLA** from the Select Action menu.
assign an owner to a ticket?	Select **Select Owner** from the Select Action menu.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.
create a problem record?	Click the **New Problem** button in the toolbar.
create a problem record using a ticket template?	Click the **New Problem** button in the toolbar, then select **Apply Problem Template** from the Select Action menu.
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a solution record from the information on the Solutions Details tab of the record?	Select **Create > Solution** from the Select Action menu.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a record?	Select **Delete Problem** from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
duplicate a record?	Select **Duplicate Problem** from the Select Action menu.
find tickets with the same **Classification** as the current record?	Select **Show Similar Tickets** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Problem** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
remove a service level agreement from a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

How Do I...	
select a service level agreement to apply to a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a ticket?	Select **View Costs** from the Select Action menu.
view the costs for the ticket hierarchy (the ticket, its activities, tasks, and child work orders)?	Select **View Costs** from the Select Action menu.
view the ownership history for a record?	Select **View History** from the Select Action menu.
view service level agreements applied to a ticket?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Problem Records

Problem records can be created in the Problems application, or via the **Create Problems** action available from any ticket or work order application.

If your company has created templates for common problems you can apply a template to a new problem record by selecting the **Apply Problem Template** action from the Select Action menu. Maximo copies data from the ticket template, which you can then edit as needed.

Managing Problem Records

There are two aspects of problem management, reactive and proactive. Reactive problem management involves resolving problems that are the root causes of incidents, and preventing further incidents based on the problem. Proactive problem management involves trying to identify potential problems before they lead to incidents that disrupt normal operations.

When the underlying cause of a problem has been identified, the problem record can be marked as a known error by selecting the **Is Known Error?** check box. This means that the cause of the service disruption and the means to remedy the situation have both been identified.

Problem Record Statuses

Problems are ticket records. For information about ticket statuses, see “Ticket Statuses,” on page 12-12.

Problems Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Release Records

A **release** is a specific class of work order, used to describe one or more tested and authorized changes that is being introduced into a "live" or production environment.

Release Management is the practice of designing and implementing procedures for the distribution and installation of hardware, software, and configuration changes to information technology systems.

Multisite and Release Records

Work orders are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- Key fields for new records must be unique for all work orders where CLASS = RELEASE.
- Records can only be viewed by users who have security permission to the Site and the application.

Using the Releases Application

To access the Releases application, click the application link on your Start Center, or select **Service Desk > Releases** from the Go To menu.

The Releases application contains the following tabs:

- **List** — to search Maximo for release records.
- **Release —** to create, view, modify, or delete release records.
- **Plans** — to enter, view, or modify information on work orders in a hierarchy, and to enter, view, modify, or delete information about planned job tasks, labor, materials, services, and tools.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Actuals** — to enter, view, or modify actual work order start and finish times, labor hours and costs, material quantities, service costs, and tool costs.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.

Releases Buttons

The following table lists application specific buttons that appear in the Releases application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar

Releases Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Releases application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Releases Help.

How Do I...	
apply a route to a work order?	Select **Apply Route** from the Select Action menu.
apply one or more service level agreements to a work order?	Select **Apply SLAs** from the Select Action menu.
assign an owner to a work order?	Select **Select Owner** from the Select Action menu.
assign a work order to a new parent?	Select **Assign to New Parent** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change the attributes for an asset?	Select **Move/Modify Asset** from the Select Action menu.
change the attributes for a location?	Select **Move/Modify Asset** from the Select Action menu.
change the location of an asset?	Select **Move/Modify Asset** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a release record?	Click the **New Release** button in the toolbar.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.

How Do I...	
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a record?	Select **Delete Release** from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
delete a work plan from a work order?	Select **Remove Work Plan** from the Select Action menu.
duplicate a record?	Select **Duplicate Release** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Release** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
plan an asset modification or move?	Select **Move/Modify Asset** from the Select Action menu.
remove a service level agreement from a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a service level agreement to apply to a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a work order?	Select **View > Costs** from the Select Action menu.
view the ownership history for a record?	Select **View > History** from the Select Action menu.
view purchase orders for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view purchase requisitions for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view service level agreements applied to a work order?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View > History** from the Select Action menu.

How Do I...	
view warranties for the asset listed on a work order?	Select **View > Warranties** from the Select Action menu.
view warranties for the location listed on a work order?	Select **View > Warranties** from the Select Action menu.
view the work plan for the hierarchy (the work order, its children, and tasks)?	Select **View >Entire Plan** from the Select Action menu.

Creating Release Records

Release records can be created in the Releases application, or via the **Create Release** action available from any ticket or work order application.

Managing Release Records

In addition to the creation of release records, release management involves:

- planning the release of the change(s)
- authorizing the hardware and software changes, for example software licensing
- testing the hardware and software changes in a test environment
- authorizing the release of the changes to the production environment
- managing the release implementation
- monitoring and reporting on the implementation
- reviewing and closing the release record

Releases Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Service Requests

A **service request** is a communication from an internal or external customer that reports an issue, requests information, or requests some sort of service. A service request record provides a means of tracking all Service Desk interactions with customers: walk up customers, phone calls, e-mail requests, and so forth.

You use the Service Request application to enter, view, and modify service request records. Depending on how your company chooses to implement the Service Desk module, a service request may lead to the creation of additional ticket or work order records.

Maximo also includes a self-service Service Requests Module where users can log their own service requests. The self-service Service Requests Module is described in Appendix B, "Maximo's Self-Service Applications," on page B-1.

Multisite and Service Requests

Tickets are at the System or database level.

- Key fields for new records must be unique within the Maximo database.
- The key field must be unique for tickets where CLASS = SR.
- Records are available to all users of the database who have security permissions to the application.

Using the Service Requests Application

To access the Service Requests application, click the application link on your Start Center, or select either

- **Service Desk > Service Requests**
- **Work Orders > Service Requests**

from the Go To menu.

The Service Requests application contains the following tabs:

- **List** — to search Maximo for service request records.
- **Service Request** — to create, view, or modify service request records.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Log** — to create, view, and modify Work Log entries, and view Communication Log entries.

Service Request Buttons

The following table lists application specific buttons that appear in the Service Request application.

Icon	Function	Location
	Start Timer	▼ Toolbar
	Stop Timer	▼ Toolbar

Service Requests Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Service Requests application. For more detailed information,

including prerequisites to performing an action and detailed procedures, refer to the Service Requests Help.

How Do I...	
apply one or more service level agreements to ticket?	Select **Apply SLA** from the Select Action menu.
assign an owner to a ticket?	Select **Select Owner** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record?	Click the **New Service Request** button in the toolbar.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a service request record using a ticket template?	Click the **New Service Request** button in the toolbar, then select **Apply Service Request Template** from the Select Action menu.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a record?	Select the **Delete Service Request** action from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
duplicate a record?	Select the **Duplicate Service Request** action from the Select Action menu.
find tickets with the same **Classification** as the current record?	Select **Show Similar Tickets** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Service Request** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.

How Do I...	
remove a service level agreement from a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select a service level agreement to apply to a ticket?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a ticket?	Select **View Costs** from the Select Action menu.
view the costs for the ticket hierarchy (the ticket, its activities, tasks, and child work orders)?	Select **View Costs** from the Select Action menu.
view the ownership history for a record?	Select **View History** from the Select Action menu.
view service level agreements applied to a ticket?	Select **View SLAs** from the Select Action menu.
view the status change history for a record?	Select **View History** from the Select Action menu.

Creating Service Requests

Service request records can be created

- in the Service Requests application
- in the self-service Create Service Request application
- via the **Create Service Request** action available from any ticket or work order application

If your company has created templates for common service desk calls you can apply a template to a new service request record by selecting the **Apply Service Request Template** action from the Select Action menu. Maximo copies data from the ticket template, which you can then edit as needed.

Managing Service Requests

Depending on the nature of the request, service requests may be managed and closed in the Service Requests application, or they may require the creation of additional ticket or work order records to fulfill the request.

Service Requests Statuses

Service requests are ticket records. For information about ticket statuses, see "Ticket Statuses," on page 12-12.

Service Request Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Solutions

A **solution** is a predefined response to a problem or commonly asked question. A solution record consists of a symptom, a cause, and a resolution. Solutions can be associated with incident and problem records.

You use the Solutions application to create, approve, and manage solution records. Maximo contains a separate application, Search Solutions, that can be used to search for and view solution records.

NOTE: Your security authorizations will determine your ability to create, view, modify, or delete solution records.

Multisite and Solutions

Solutions are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

Using the Solutions Application

To access the Solutions application, click the application link on your Start Center, or select **Service Desk > Solutions** from the Go To menu.

The Solutions application contains the following tabs:

- **List** — to search Maximo for Solution records.
- **Solution** — to create, view, or modify solution records.

Solutions Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Solutions application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Solutions Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.

How Do I...	
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a solution record?	Click the **New Solution** button in the toolbar.
delete a solution record?	Select **Delete Solution** from the Select Action menu.
duplicate a solution record?	Select **Duplicate Solution** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Solutions

Solution records can be created in the Incidents application, or via the **Create Solution** action available in the Incidents and Problems applications.

A solution record defines a symptom, a cause, and a resolution. To make it easier for agents and customers to find a solution record that matches their issue, you can associate a **Classification** with the solution record. When you search solutions, Maximo displays solutions that match the Classification on the incident or problem record. If Maximo doesn't find any matching records, users can clear the **Classification** field and perform a search of all solutions.

Managing Solutions

Some solutions records may be designed solely for Service Desk agent use, while other may be intended to be used by self-service customers. By default the **Self-Service Access?** check box on a solution record is cleared. Select the check box if you want the solution to be accessible to self-service users.

Solutions Statuses

A solution record can have one of the following statuses:

- **DRAFT** — Default status for new records. The solution is still being created and has not yet been approved for use. Solution records with a status of DRAFT cannot be associated with incident or problem records.
- **ACTIVE** — Default status for new records. A solution record must be active to be associated with an incident or problem record. Self-service users can only view solutions with an ACTIVE status.
- **INACTIVE** — Inactive solution records do not appear in select value lists. Solution records with a status of INACTIVE cannot be associated with new ticket records.

Solutions Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Ticket Templates

A **ticket template** is a model for a generic or standardized service desk ticket record. You use the Ticket Templates application to create and manage generic templates that can be used to create service desk ticket records for common or high volume service desk calls. When you apply a ticket template to a service request, incident, or problem record, Maximo copies information from the template to the ticket, saving data entry time.

Multisite and Ticket Templates

Ticket Templates are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

Ticket Templates and the Ticket Applications

Ticket templates can be applied to records created in the following applications:

- Incident
- Problem
- Service Request

When you apply a ticket template to a ticket record, Maximo copies all of the values from the template to the ticket. You can change these values if necessary.

Using the Ticket Templates Application

To access the Ticket Templates application, click the application link on your Start Center, or select **Service Desk > Ticket Templates** from the Go To menu.

The Ticket Templates application contains the following tabs:

- **List** — to search Maximo for ticket template records.
- **Template** — to create, view, or modify ticket templates.

Ticket Templates Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Ticket Templates application. For more detailed information,

including prerequisites to performing an action and detailed procedures, refer to the Ticket Templates Help.

How Do I...	
add activities to a ticket template?	Click **New Row** in the Activities table window.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a ticket template?	Click the **New Template** button in the toolbar.
delete a record?	Select **Delete Template** from the Select Action menu.
duplicate a record?	Select **Duplicate Template** from the Select Action menu.

Creating Ticket Templates

When you create a ticket template, you specify what **Class** of records the template is going to be used for:

- **INCIDENT** — Templates to be used in the Incidents application.
- **PROBLEM** — Templates to be used in the Problems application.
- **SR** — Templates to be used in the Service Requests application.

You can specify the following information on a ticket template:

- **Owner** or **Owner Group** — For more information about ownership, see "Ownership of Tickets," on page 12-5.

- **Internal Priority** — For more information about priority, see "Priority and Tickets," on page 12-6.

- **Service Group**, **Service,** and **Vendor** — For more information about service groups and services, see "Service Catalog," on page 13-1.

- **Classification** — For more information about classifications, see "Using Classifications," on page 2-35.

- **Activities** — For more information about activities, see "Activities," on page 12-15.

Managing Ticket Templates

You must change the status of a ticket template to ACTIVE before Maximo users can apply it to ticket records.

There are no restrictions on deleting ticket templates because the values from a template record are copied to ticket records, not referenced from the template.

Ticket Template Statuses

A ticket template can have one of the following statuses:

- **DRAFT** — Default status for new records. Template is still being created and has not yet been approved for use on other records. Ticket template records with a status of DRAFT cannot be used with ticket records.Once you move the ticket template out of DRAFT status you cannot set it back to DRAFT.
- **ACTIVE** — A ticket template record must be active to be used with ticket records.
- **INACTIVE** — Inactive ticket template records do not appear in select value lists. Templates with a status of INACTIVE cannot be used with ticket records. You can change the status of an INACTIVE ticket template to ACTIVE.

Ticket Templates Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

13 The Service Management Module

Service Level Management (SLM) is the process of defining, agreeing upon, documenting, and managing the levels of service that a service provider delivers to customers (either internal or external), and services that you receive from vendors. Typically service level management also includes monitoring and reporting functions to monitor that the agreed upon service levels are being maintained.

Maximo provides two applications specifically designed for service level management. The Service Management Module consists of the following applications:

Application	Function
Service Catalog	Used to create service groups and catalog the services provided by those groups.
Service Level Agreements	Used to define agreements between service providers and customers, documenting agreed upon levels of service.

You use the Service Catalog to define all of the services that you provide or procure for your organization. You create a service group for each type of service, and create a list of services provided by that group. **Service Groups** and **Services** can be listed on tickets and work orders created in the Service Desk module.

You use the Service Level Agreements (SLAs) application to define and document the agreements between the service provider and the customer, documenting the agreed upon service levels for the services being provided. Information included on an SLA record includes the type of commitment, how the commitment will be measured, and what escalations are in place to help the service organization meet the commitments.

You can define escalations on an SLA, or use the administrative Escalations application to define escalation criteria, and the actions and notifications that should happen when a record reaches or exceeds the criteria set on the escalation. You can also create Key Performance Indicator (KPI) reports for SLAs, or apply KPIs created in the KPI Manager application.

Service Catalog

The **service catalog** is a list of all the services that your service organization provides to others, or that your company purchases from a service provider.

You use the Service Catalog application to create a high-level definition of the categories of services that your company provides or procures. Service group and service definitions are stored in the COMMODITIES table, and can be used to manage records by their associated services. Service groups and services can be used to categorize services associated with assets, asset types, contracts, locations, service level agreements, tickets, and work orders.

NOTE: You can only create, view, modify, or delete service type commodities in the Service Catalog application.

Multisite and the Service Catalog

The Service Catalog is defined at the Item Set level. Item Sets exist below the System level, but above the Organization level so that Organizations can share data. This means that:

- Key fields for new records must be unique within the Item Set.
- Records are available to all users in the Organizations that share the Item Set and who have security permissions to the application.

Service Catalog and Assets

You use the Service Catalog application to associate assets with a service group. You can also associated asset types with a service group. For example, if you created an IT service group, you could associate all assets where **Type** = IT with the service group. You also can associate assets with a service group in the Assets application via the **Associate Services** action.

Service Catalog and Contracts

Maximo stores service groups in the COMMODITIES table. You can use the **Associate Commodities** action available in the Lease/Rental Contracts, Master Contracts, and Purchase Contracts applications to associate a service group or service with a contract.

Service Catalog and Locations

You use the Service Catalog application to associate locations with a service group. You also can associate locations with a service group in the Locations application via the **Associate Services** action.

Service Catalog and Purchasing

Maximo stores service groups in the COMMODITIES table. If your company organizes and manages purchasing by commodity this allows you to track your spending by service group and service.

Service Catalog and the Service Desk

Service Desks typically use services or service groups to categorized tickets when assigning service level agreements, assigning ownership, or for reporting purposes. Both ticket and work order records contain a **Service Group** and **Service** field which allow you to indicate that a service group is responsible for the record.

Service Catalog and Service Level Agreements

Service level agreement (SLA) records contain a **Service Group** and **Service** field that enable SLA matching capabilities at a high level.

Service Catalog Records vs. Service Item Records

You use the Service Catalog application to create service groups and services which are stored in the COMMODITIES table in the database. You use service groups and services to *categorize* services associated with assets, asset types, contracts, locations, service level agreements, tickets, and work orders.

You use the Service Items application to create standard service records which are stored in the ITEM table in the database. You use standard services for *planning* and *purchasing* services, that is creating job plans and work plans, and when creating purchasing records (purchase contracts, PRs, POs and so forth).

Using the Service Catalog Application

To access the Service Catalog application, click the application link on your Start Center, or select **Service Management > Service Catalog** from the Go To menu.

The Service Catalog application contains the following tabs:

- **List** — to search Maximo for service catalog records.
- **Service Group** — to create, view, or modify service group records and delete services.

Service Catalog Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Service Catalog application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Service Catalog Help.

How Do I...	
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.

How Do I...	
associate an asset with a service group?	Select **Associate Assets/Locations** from the Select Action menu.
associate a location with a service group?	Select **Associate Assets/Locations** from the Select Action menu.
create a service?	Click **New Row** in the Services table window.
create a service group record?	Click the **New Service Group** button in the toolbar.
delete a record?	Select **Delete Service Group** from the Select Action menu.
remove the association between an asset and a service group?	Select **Associate Assets/Locations** from the Select Action menu.
remove the association between a location and a service group?	Select **Associate Assets/Locations** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view asset records that list the service group?	Select **View Related Records** from the Select Action menu.
view asset types that list the service group?	Select **View Related Records** from the Select Action menu.
view contracts that list the service group?	Select **View Related Records** from the Select Action menu.
view location records that list the service group?	Select **View Related Records** from the Select Action menu.
view service level agreements that list the service group?	Select **View Related Records** from the Select Action menu.
view tickets that list the service group?	Select **View Related Records** from the Select Action menu.
view work orders that list the service group?	Select **View Related Records** from the Select Action menu.

Creating the Service Catalog

You first must create a service group before you can create services in the Service Catalog.

When you are creating a service group record you can enter either a **Contact** or **Contact Group**, but not both.

Service Group Types

When you are creating service group records you can specify that the record applies to services of a particular Type. By default Maximo allows you to create the following types of services:

- BOTH — services that are both provided and procured

- PROCURE — services that are procured
- PROVIDE — services that are provided

Creating Services

Every service you create is associated with a service group.

When you create services for a service group, Maximo copies the values from the **Type**, and **Contact** or **Contact Group** fields from the service group record to the service records.

Managing the Service Catalog

If you modify the value in the **Contact** or **Contact Group** fields, Maximo does not change the defaulted value for this field on any services associated with the Service Group.

Viewing Related Records

You can use the **View Related Records** action available from the Select Action menu to view the relationships that exist between a service group and the following types of records:

- tickets
- work orders
- assets and locations
- asset types
- service level agreements
- contracts

NOTE: The **View Related Records** action is also available in the Detail Menu from the **Service** field.

Deleting Services

If a service group does not have any services listed you can delete it by selecting **Delete Service Group** from the Select Action menu. Maximo will display an error message if the service group can not be deleted.

NOTE: You can delete a service group that is referenced by another record, such as a ticket, work order, or invoice, and the service reference will remain on that record.

Service Catalog Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Service Level Agreements

A **service level agreement** (SLA) defines the agreement and formal commitments between a service provider and a customer. The agreement documents the service to be provided or received, the agreed upon service

levels for the service, and the means of measuring or quantifying the level of service.

A **service** is a set of tasks provided by the service provider that meets one or more customer needs. A **service level** defines the means of measuring or quantifying the level of service that the service organization provides to the customer. A **commitment** is any service, product, or responsibility that can be measured in a qualitative or quantitative way and that the service provider must meet to fulfill the service level agreement with the customer. An SLA can have one or more commitments, each having their own escalation points. An **escalation** is a Maximo function that can be set to automatically monitor critical processes.

Service Level Agreement Types

There are three types of service level agreements:

- **Customer** - An agreement between your company, acting as the service provider, and an external customer.
- **Internal** - An agreement between your company, acting as the service provider, and an internal customer, for example other departments within the company. Also known as an operating level agreement (OLA).
- **Vendor** - An agreement between an external vendor who is providing services to your company. Also known as an underpinning agreement.

Multisite and Service Level Agreements

Service level agreements are at the System, or database level. This means that:

- Key fields for new records must be unique within the Maximo database.
- Records are available to all users of the database who have security permissions to the application.

You have the option to create SLAs at the Site, Organization, or System level. If you specify an **Organization** or **Site** for an SLA record, then the associated escalation is restricted to that Organization or Site. If you leave both the **Organization** and **Site** fields empty, the escalation is available to all Organizations and Sites that use the database.

Service Level Agreements and Assets/Locations

Service level agreements can be created for specific assets, asset types, or locations. You use the Assets and Locations tab to list individual assets and locations, or to specify asset types that the SLA applies to. If you list an asset type on an SLA then all assets of that type are covered by the SLA.

Service Level Agreements and Contracts

Vendor type service level agreements can be associated with contracts created in the Contracts module.

You can associate a SLA with a contract via the **Associate Contracts** action in the Service Level Agreements application or via the **Associate SLA** action available from the Select Action menu in the following applications:

- Lease/Rental Contracts
- Master Contracts
- Purchase Contracts
- Warranty Contracts

Service Level Agreements and Escalations

An **escalation** is a Maximo process that monitors time sensitive records and initiates actions and notifications when those records are not acted upon in a timely manner. You use escalations to ensure that the service provider complies with the commitments specified in the SLA. You can schedule escalations to automatically monitor and evaluate conditions, and then trigger actions, ownership changes, and notifications based on those conditions.

Maximo includes a default escalation for the following commitment types:

- Contact
- Response
- Resolution
- Other

You use the Escalation tab to modify default escalations, or to define new escalation points, and the actions and notifications that will be taken when those points are reached.

NOTE: Administrators can use the Escalations application in the Configuration module to define escalations.

Service Level Agreements and Tickets

You can apply service level agreements to ticket records via the **Apply SLA** action available from the Select Action menu in the following applications:

- Incident
- Problems
- Service Requests

You use the **View SLAs** action to view all of the service level agreements, if any, that are applied to a ticket record. The View Service Level Agreement dialog box is read-only. You use the **Select/Deselect SLAs** action to select a service level agreement to apply to a ticket, or to remove a service level agreement from a ticket.

NOTE: Deselecting an SLA removes its association with the current record. It does not delete the SLA record from the database.

Service Level Agreements and Work Orders

You can apply service level agreements to work order records via the **Apply SLA** action available from the Select Action menu in the following applications:

- Activities
- Changes
- Releases
- Work Order Tracking

You can use the **View SLAs** action to view all of the service level agreements, if any, that are applied to a work order record. The View Service Level Agreement dialog box is read-only. You use the **Select/Deselect SLAs** action to select a service level agreement to apply to a work order, or to remove a service level agreement from a work order.

NOTE: Deselecting an SLA removes its association with the current record. It does not delete the SLA record from the database.

Using the Service Level Agreements Application

To access the Service Level Agreements application, click the application link on your Start Center, or select **Service Management > Service Level Agreements** from the Go To menu.

The Service Level Agreements application contains the following tabs:

- **List** — to search Maximo for SLA records.
- **Service Level Agreement** — to create, view, or modify service level agreements.
- **Related SLAs** — to associate or view related service level agreements.
- **Assets and Locations** — to associate or view assets and locations for a service level agreement.
- **KPIs** — to add, view, modify, or delete key performance indicators (KPIs) for a service level agreement.
- **Escalation** — to add, view, modify, or delete escalations for a service level agreement.

Service Level Agreement Buttons

The following table lists application specific buttons that appear in the Service Level Agreements application.

Icon	Function	Location
	SQL Expression Builder	▼ SLA Tab - Additional SLA Criteria section ▼ Escalation Tab - Escalation section
	Define Escalation	▼ Commitments table window

Service Level Agreements Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Service Level Agreements application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Service Level Agreements Help.

How Do I...	
activate an escalation?	Maximo automatically activates the escalation on an SLA when you change the status from DRAFT to ACTIVE. If you create an escalation for an SLA with a status of ACTIVE, select **Escalation > Activate/Deactivate Escalation** from the Select Action menu to activate the escalation.
associate contracts with a VENDOR type service level agreement?	Select **Associate Contracts** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a service level agreement (SLA) record?	Click the **New SLA** button in the toolbar.
deactivate an escalation on a service level agreement?	Select **Escalation > Activate/Deactivate Escalation** from the Select Action menu.
delete the escalation on a service level agreement?	Select **Escalation > Delete Escalations** from the Select Action menu.
delete a record?	Select **Delete SLA** from the Select Action menu.
duplicate a record?	Select **Duplicate SLA** from the Select Action menu.

How Do I...	
run reports?	Select **Run Reports** from the Select Action menu.
validate the escalation for a service level agreement?	Select **Escalation > Validate Escalations** from the Select Action menu.
view contracts associated with a service level agreement?	Select **Associate Contracts** from the Select Action menu.

Creating Service Level Agreements

You use the Service Level Agreements application to create records for service level agreements, the commitments that define the SLA, and the escalations that will ensure compliance.

You can use the **Duplicate SLA** action to create a copy of an existing service level agreement. When you duplicate an SLA, Maximo copies the header attributes, commitment values, and associated assets and locations to the new SLA, but it does not copy the associated escalation, related SLAs, KPIs, or associated contracts.

Ranking Service Level Agreements

Your system administrator can configure Maximo to allow users to apply only one SLA to a record, or to allow the application of multiple SLAs to a record. When multiple SLAs are allowed the system administrator must choose whether to prioritize them based on a numerical rank or by commitment stringency. Maximo uses the value in the **Ranking** field to determine the comparative ranking of competing SLAs.

For more detailed information about how Maximo ranks multiple SLAs, refer to the Service Level Agreements Help.

Associating Related SLAs

Some service level agreements exist to support a SLA, and others are supported by other SLAs. You use the Related SLAs tab to create, modify, view, and delete associations between an SLA and other SLA records. The Related SLAs tab has two subtabs:

- SLAs that this SLA Supports
- Supporting SLAs

When you associate an SLA record with another SLA record Maximo validates the commitments of the SLAs you are trying to associate and warns you if there are any conflicting or less stringent commitments. You cannot list the same SLA as both a supporting and a supported SLA.

Adding Assets and Locations to an SLA

If there is an **Organization** specified for the SLA, then the list of assets or locations is limited to the records for the Sites within that Organization. If there is a **Site** specified for the SLA, then the list of assets or locations is limited to the records for the specified Site.

Managing Service Level Agreements

When an SLA is in DRAFT or INACTIVE status, you can edit or add information on the service level agreement, Assets and Locations, and Escalation tabs.

When the SLA is in ACTIVE status, you can edit or add information only on the Related SLAs and KPIs tabs.

When you change the values in a commitment line of an SLA that has any related SLAs, upon saving the record, Maximo compares the commitments of the associated SLAs and warns you if there are any conflicting or less stringent commitments. Maximo only validates one level up and one level down from the current record, checking all direct parents and all direct children of the selected SLA.

Service Level Agreement Statuses

A service level agreement (SLA) record can have one of the following statuses:

- **DRAFT** — Default status for new records. Service level agreement is still being created and has not yet been approved for use on other records. SLA records with a status of DRAFT cannot be associated with Maximo records. When an SLA is in DRAFT status, the associated escalation is also in DRAFT status. Once you have set an SLA to ACTIVE or INACTIVE status, you cannot set it back to the DRAFT status.

- **ACTIVE** — Set an SLA to ACTIVE when you are ready for the SLA to be used. A SLA record must be active to be associated with Maximo records. When an SLA is in ACTIVE status, Maximo sets the associated escalation to ACTIVE status as well.

- **INACTIVE** — Inactive SLA records do not appear in select value lists. SLA records with a status of INACTIVE cannot be associated with new Maximo records. When you change the status of an SLA to INACTIVE, Maximo displays a message asking whether you want to deactivate the associated escalation as well. You can change the status of an INACTIVE SLA to ACTIVE.

Deleting Service Level Agreements

You can delete a service level agreement record using the **Delete SLA** action available from the Select Action menu. When you delete an SLA, the associated escalation is deleted as well.

You cannot delete a service level agreement if any of the following is true:

- the status of the SLA is ACTIVE
- the SLA has been applied to any record
- the service level agreement supports another SLA

TIP: If you cannot delete a service level agreement, you can change the status to INACTIVE to keep it from being applied to new records.

Service Level Agreements Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

14 The Work Orders Module

Work orders are the core of maintenance management. A work order specifies a particular task to be accomplished, and the labor, materials, services, and tools needed to complete the work. When you create a work order in Maximo you initiate the maintenance management process and create a historical record of work requested and performed.

The Work Orders Module consists of the following applications:

Application	Function
Assignment Manager	Used to dispatch urgent work and schedule future work requirements.
Labor Reporting	Used to report hours worked by labor (employees) or contractors. You can enter hours worked by labor ("timecard" reporting), contract/vendor, ticket, or work order.
Service Requests	Used to create records of customer calls or e-mail requesting service. **NOTE:** The Service Requests application is documented in Chapter 12, "The Service Desk Module," on page 12-1.
Quick Reporting	Used to create work orders that do not require planning, and to report actuals, equipment downtime, failure reporting, and meter readings against open work orders.
Work Order Tracking	Used to perform every function related to processing work orders.

You use the Work Order Tracking application to create, view, and manage work orders. This application contains all of the functions that Maximo includes for processing work orders.

The Quick Reporting application is a simplified version of the Work Order Tracking application that can be used to quickly report actuals for work that has already been performed, either on open work orders or on work orders that you create in Quick Reporting.

Work order labor requirements can be viewed in the Assignment Manager application. You use the Assignment Manager application to schedule planned work, for example preventive maintenance work orders, and to dispatch urgent or emergency work.

You use the Labor Reporting application to report the type and total number of hours of work that was performed by external contractors or internal employees. You can enter labor information by work order, labor ("timecard" reporting), ticket, or contract/vendor.

Creating Work Orders Using Maximo

You can use several applications in Maximo to create work orders:

- **Changes** — Use to create work orders related to Service Desk tickets.
- **Condition Monitoring** — Use to generate work orders to correct problem conditions found during monitoring procedures.
- **Incidents** — Use to create work orders related to Service Desk tickets.
- **Preventive Maintenance** — Use to generate scheduled maintenance work orders.
- **Problems** — Use to create work orders related to Service Desk tickets.
- **Quick Reporting** — Use to create work orders and report actual work done for simple jobs, unplanned work, or work not performed by the maintenance department.
- **Releases** — Use to create work orders related to Service Desk tickets.
- **Service Requests** — Use to create work orders related to Service Desk tickets.
- **Work Order Tracking** — Use to create and report on high-volume or complex work orders.

Classes of Work Orders

All work orders, regardless of the application that created them, reside in the WORKORDER table in the database. Maximo uses the value in the **Class** field to filter which records from the WORKORDER table to display in each of the work order applications. Maximo automatically enters a value in the **Class** field when creating records, and the field is read-only.

The work order classes are:

- **ACTIVITY** — work orders where CLASS = ACTIVITY and the **Is Task?** flag = N are *activities*. Work orders where CLASS = ACTIVITY and the **Is Task?** flag = Y are *tasks*. These work orders can be created in one of the following ways:
  - Tasks inserted on a work order where CLASS = WORKORDER. Because task work orders are a different class, you can configure Maximo to automatically number then separately from work orders with a CLASS = WORKORDER.

- Tasks inserted on a work order where CLASS = CHANGE or RELEASE.
- Activities inserted on the Activities tab of either the Incidents or Problems application.
- Activities created via the **Create Activities** action in one of the ticket or work order applications.

- **CHANGE** — work orders created in the Changes application or via the **Create Change** action in one of the ticket or work order applications.
- **RELEASE** — work orders created in the Releases application or via the **Create Release** action in one of the ticket or work order applications.
- **WORKORDER** — Work orders created in the Work Order Tracking, Quick Reporting, Preventive Maintenance, or Condition Monitoring applications or via the **Create Work Order** action in one of the ticket or work order applications.

NOTE: By default Maximo does not consider class when automatically generating work order numbers. Your system administrator can configure Maximo to automatically number each work order class separately.

Types of Work Orders

The most common general categories of work orders include:

- **CP — Capital Project** work orders are part of major projects designed to improve the physical assets or infrastructure of an organization. Maximo allows you to build a work order hierarchy and view costs for all work orders associated with a capital project. Typical capital projects include:
  - Production - purchase and installation of major equipment (assets)
  - Facilities - new construction, renovation, addition to a facility
  - Fleet - purchase or repair of equipment (assets)
  - Technology - Information Management System installation/upgrade, computer hardware, audio-visual equipment/systems
- **CM — Corrective** maintenance work is work that needs to be done, but does not have to be performed immediately. You can schedule corrective work if necessary. CM work orders can be generated via condition monitoring, or you can enter this type of work order in the Work Order Tracking application.
- **EM — Emergency** maintenance work orders are problems that must be corrected immediately, because they are life threatening, can damage assets, cause production to stop, or are urgent.
- **EV — Event report** work orders represent any unscheduled event that stops work (production) but does not necessarily require a maintenance crew to fix.
- **PM — Preventive maintenance** records are used over and over on a periodic basis to generate preventive maintenance work orders. You create

Preventive Maintenance records in the Preventive Maintenance module. However, you process preventive maintenance work orders in Work Order Tracking application.

Work Order Priority

Maximo uses values between 0 and 999 to indicate priority for work orders, assets, and locations. Maximo can use these different priority values to generate a calculated priority to help schedulers determine the overall priority of a work order among "competing" work orders for similar assets or locations.

Maximo uses two priority fields on work orders:

- **Priority** — If the work order is created in Work Order Tracking you can specify the priority of the work order. Work Orders generated from a PM inherit their priority from the PM. For more information, see “Setting Priority for PMs,” on page 8-11.

- **Asset/Location Priority** — Maximo copies the priority value from the asset record. If no priority value is specified on the asset record, Maximo copies the priority from the location record.

Since Maximo can use these values to generate a calculated priority, and the result of a calculation is always a *larger* number, MRO Software suggests that customers limit the priority values assigned to assets, locations, and work orders to a range of 0 to 10. Your priority scale might be similar to the following:

Priority	Assigned Priority	Comments
Life Safety (any work that could result in a life threatening situation if not completed in a timely manner)	11 +	The priority value for life safety work should be set higher than the maximum value that can result from the selected priority calculation.
Urgent work (for example, assets will be damaged if work is not completed.)	10	
Urgent work	9	
Preventive Maintenance	8	Preventive Maintenance should have a higher priority than corrective work, since it is designed to reduce corrective work orders.
Preventive Maintenance	7	
High priority corrective work	6	
High priority corrective work	5	
Medium priority corrective work	4	
Medium priority corrective work	3	
Low priority corrective work	2	
Low priority corrective work	1	

Priority	Assigned Priority	Comments
Work that is low priority, but should be completed if time is available.	0	

TIP: Entering a value in the **Priority** field on work orders can help you manage your Workflow In Box by allowing you to sort work orders by priority.

Ownership of Work Orders

Individuals or groups can assume responsibility, or "ownership" of a work order in Maximo. When a group owns a work order, all members of that group see the work order in their Work View. If a member of a group takes ownership of a work order, they are responsible for managing the work order until it is complete, or delegated to another group or person.

Job plan and preventive maintenance records contain **Owner** and **Group Owner** fields, and when you generate a PM work order or apply a job plan to a work order, Maximo automatically copies the values in these fields to the work order. You can also assign ownership to a work order using the **Select Owner** and **Take Ownership** actions available in the Work Order Tracking application. Your company may also design a Workflow process that assigns ownership of work orders to individuals or groups.

Quick Reporting vs. Work Order Tracking

The Quick Reporting application is a simplified version of the Work Order Tracking application, and can be configured by your system administrator to meet the needs of your site. The Quick Reporting application is designed to simplify reporting actuals and other data after the work has been completed. More complex work orders should be created and managed using the Work Order Tracking application.

Work Order Statuses

Every work order in Maximo has a status that indicates its position in the work order processing cycle. You can create work orders with different statuses depending on which application you use to create or generate them.

After you change a work order's status, Maximo records the date and time of the status change, and lets you record a memo.

If the **Inherit Status Changes?** check box on a work order record is checked, Maximo will change the status of the work order when the status of its parent work order is changed.

NOTE: You might need security authorization to change work order statuses.

A work order record can have one of the following statuses:

- **WAPPR** — Waiting for Approval; default for work orders created in the Changes, Releases, and Work Order Tracking applications.

- **WSCH** — Waiting to be Scheduled; default for work orders generated from Preventive Maintenance.

- **APPR** — Approved. After you approve a work order, Maximo reserves the work plan items in inventory and records cost and rate data. If rates change in Inventory, Labor, or Tools, the work plan reflects the rates in effect when the work order was approved.

- **WMATL** — Waiting for Material. You can select this option for work orders with a status of WAPPR, APPR, or INPRG. Maximo changes a work order's status to WMATL to indicate that you cannot initiate the work order because the necessary items or materials are not available in inventory. After the direct issue items requisitioned for the work order have been issued in Issues and Transfers, Maximo changes the work order status to approved (APPR).

- **WPCOND** — Waiting for Plant Conditions. Status for work orders that require a particular plant condition in order to be worked on, for example, for a production line to be shut down.

- **INPRG** — In Progress; default for work orders created in Quick Reporting. This status initiates the work order and indicates that physical work has been started. If you do not have sufficient items to complete the work order, Maximo changes the status to WMATL.

- **COMP** — Completed. Indicates that all physical work is finished. If the asset is down, Maximo can display a reminder message. If failure reporting is required, Maximo can display a reminder message.

- **CLOSE** — Closed. Change status to CLOSE after the electronic "paperwork" on a work order is complete and you want to finalize the record. Maximo removes inventory reservations for items not issued to the work order. The work order becomes a history record and cannot be edited.

- **CAN** — Canceled. If you select multiple work orders, Maximo cancels the ones that have not been initiated or for which no actuals have been reported. If the work order has been approved, Maximo removes inventory item reservations for the work order. The work order becomes a history record.

- **HISTEDIT** — Edited in History. Indicates that a work order with a status of CLOSE has been edited. This status does not appear on a work order record itself, but is displayed in the Status History to indicate that changes were made after the work order was closed.

NOTE: Once the status of a work order has been changed to CLOSE or CAN it becomes a history record. You must use the **Edit History Work Order** action to modify the record.

Assignments

A **work order** is a request for work to be performed. The work may require that different tasks be performed, and may require the services of different laborers or crafts. Maximo creates a separate **requirement** for each task/labor combination listed on a work order's work plan. If two mechanics are required for a task, two requirements are created. Similarly, if two different crafts are required for a task, Maximo creates a requirement for each craft. Once a labor requirement has been assigned to an appropriate laborer, it is considered an **assignment.**

You use the Assignment Manager application to match laborers to work order requirements. You can use Assignment Manager for planning future work over a seven day period, or to dispatch available labor to requirements for the current day's work. Workers can also use Assignment Manager to assign themselves to work.

Multisite and Assignment Manager

Work orders and labor transactions are managed at the Site level in Multisite. However, when assigning labor to work orders, you should remember that labor records are at the Organization level. If your company has laborers who work at more than one Site it is possible to assign them work at any Site within their Organization.

Assignment Manager and Other Applications

In order to most effectively use Assignment Manager to prioritize and assign work to laborers there are a number of record fields in other applications that should contain values.

The following table lists fields that should contain values. Fields that are *required* for Assignment Manager functions are listed in **bold** text.

Module and Application	Record	Field
Administration > Calendars	Calendar	▼ **Shift**
Work Orders > Work Order Tracking	Work Order	▼ **Priority** ▼ Asset/Location Priority
Preventive Maintenance > Preventive Maintenance	Preventive Maintenance	▼ **Priority**
Assets >Assets	Asset	▼ Location ▼ **Priority**
Assets > Locations	Location	▼ Priority
Resources > Labor	Labor	▼ **Craft** ▼ **Calendar** ▼ **Shift** ▼ Work Location

For information about how to search the database for records that do not have a value specified for a field, see "Searching for Null Values," on page 2-12.

Assignment Manager and Labor Records

Labor records can be created in the Labor application for both internal and external (contract) laborers. In order to most effectively view and manage labor records in the Assignment Manger application, labor records should include a value in their **Calendar** and **Shift** fields.

The bottom half of the Assignment Manager page displays the Labor List and calendar grid. The Labor List displays labor records that match your default saved query in the Labor application. If you do not have a default saved query in the Labor application, the Labor List displays all labor records.

NOTE: When a labor record lists more than one craft or skill level, Maximo displays craft designated as **Default?** on the labor record.

You can filter the Labor List using the table filter (described in "Using the Table Filter to Refine Search Results," on page 2-10), or you can change the labor query being used to generate the Labor List via the **Select Labor Query** action or button. For example, if you are in charge of scheduling, you might create different queries for different crafts, or for different shifts.

For information about creating a saved query, see "Saving a Query," on page 2-8.

Understanding Labor Availability

The right side of the Labor List contains a calendar grid, displaying worker's available hours over a seven day period starting with the current date. By default, the first date displayed is the current date.

- If the laborer is available to be scheduled for work that day, there will be a numeric value displayed. A value of 0:00 indicates that the worker has no available hours in the shift, for example if they have already been assigned enough work hours to fill their shift.

- Empty fields indicate days that are designated as non-work days for the labor code's calendar, for example weekends or holidays.

Initially the available hours displayed are based on the following calculation:

```
labor shift - calendar exceptions - personalized labor
exceptions
```

where

labor shift = the calendar defined on the labor record, for example "day" or "night."

calendar exceptions = any standard calendar exceptions, for example national holidays.

personalized labor exceptions = any personal calendar exceptions, for example vacations.

The calendar grid allows you to plan or schedule labor assignments over a seven day range. Maximo recalculates available labor hours as assignments are made. You can change the date range displayed in the calendar grid by clicking the **Select Work Date** button or choosing **Select Work Date** from the Select Action menu.

Filtering the Labor List

You have several options for filtering the laborers that are displayed in the Labor List. You can:

- Use the **Select Labor Query** action to select a different labor query.
- Sort one table column at a time. For more information, see "Sorting Columns," on page 2-22.
- Filter the Labor List using the table window filter. For more information, see "Filtering Table Windows," on page 2-22.
- Select one or more requirements in the Work List, then click the **Filter Labor to Match Work** button to display only laborers that match the selected work requirements.
- Click the **Refresh Labor List** button to refresh the Labor List.

Assignment Manager and Work Orders

Maximo generates the assignments that you see in the Assignment Manager application from information that has been entered onto a work order. When a work plan is created for a work order Maximo creates an assignment for each labor or craft listed on the work plan. For example, if the work plan calls for two electricians to work for four hours to complete a job, Maximo will create two separate four hour assignments, one for each of the two electricians required by the work plan.

If a work order does not have a defined work plan, Maximo still creates a requirement. You can then assign the requirement to an appropriate laborer using Assignment Manager. When the requirement is assigned Maximo enters a default duration of one hour, which can then be modified as needed.

The top half of the Assignment Manager page displays the Work List. The Work List displays all work requirements for work orders with work plans, plus any "unplanned" work orders. You also can add new requirements to the Work List on the Assignment Manager page via the **New Row** button.

Understanding Work Priority

Maximo allows values between 0 and 999 to indicate priority for work orders, assets, and locations. Maximo can use these different priority values to generate a calculated work priority to help schedulers determine the overall priority of a work order among "competing" work orders for similar assets or locations.

NOTE: Since Maximo is designed to allow a calculated work priority, by default a *larger* priority value is considered to be more urgent.

The calculated work priority can be the work order priority, or a combination of the work order priority and the asset/location priority. Maximo can be set to use any one of the following formulas to determine work priority:

Option	Formula
NONE	no calculation
PRIORITY (the default)	Work Order Priority
EQPRIORITY	Asset/Location Priority
PRIORITY + EQPRIORITY	Work Order Priority + Asset/Location Priority
2 * PRIORITY + EQPRIORITY	2 * Work Order Priority + Asset/Location Priority
PRIORITY + 2 * EQPRIORITY	Work Order Priority + 2 * Asset/Location Priority

The formula Maximo uses to calculate work priority can be selected by selecting **Set Preferences > Set Priority Preferences** from the Select Action menu.

NOTE: You might need security authorization to change work priority settings.

Filtering the Work List

You have several options for filtering the work requirements that are displayed in the Work List. You can:

- Use the Search Toolbar to enter a different query and display a different set of work requirements. For more information about using Maximo's search functionality, see "Searching the Maximo Database," on page 2-6.
- Sort one table column at a time. For more information, see "Sorting Columns," on page 2-22.
- Filter the Work List using the table window filter. For more information, see "Using the Table Filter to Refine Search Results," on page 2-10.
- Select one or more laborers in the Labor List, then click the **Filter Work to Match Labor** button to display only requirements that match the selected labor.
- Click the **Refresh Work List** button to refresh the Work List.

Using the Assignment Manager Application

To access the Assignment Manager application, click the application link on your Start Center, or select **Work Orders > Assignment Manager** from the Go To menu.

The Assignment Manager application contains a single page with two table windows.

Assignment Manager Buttons

The following table lists application specific buttons that appear in the Assignment Manager application.

Icon	Function	Location
	Filter Work to Match Labor — Click to filter the Work List to display records that match the selected labor records.	▼ Work List ▼ Select Action menu
	Filter Labor to Match Work — Click to filter the Labor List to display records that match the selected work requirements.	▼ Labor List ▼ Select Action menu
	Refresh — Click to refresh the rows displayed in table window. Maximo will update the rows displayed to match the *current* queries.	▼ Work List ▼ Labor List
	Select Work Date — Click to change the dates displayed in the Labor List calendar grid.	▼ Toolbar ▼ Select Action menu
	Assign Labor — Click to assign the selected work requirements to the selected laborer.	▼ Toolbar ▼ Select Action menu
	Start Assignment — Click to start an assignment.	▼ Toolbar ▼ Select Action menu
	Interrupt Assignment — Click to interrupt an assignment. Maximo modifies the assignment, assigning a status of INTERPT to the unfinished work.	▼ Toolbar ▼ Select Action menu
	Finish Assignment — Click to finish an assignment. When all assignments on a work order are finished, Maximo either completes or closes the work order.	▼ Toolbar ▼ Select Action menu
	Detail Menu > Go To Work Order Tracking — Click to view the selected work order in the Work Order Tracking application.	▼ Work List
	Show Assignments — Click to view a laborer's assignments during the selected seven day period. Use to reassign, reschedule, or remove assignments from a labor record.	▼ Labor List
	Modify Availability — Click to modify a laborer's availability to have work assigned to them on a given day or shift.	▼ Labor List

Assignment Manager Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Assignment Manager application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Assignment Manager Help.

How Do I...	
assign a work requirement to a laborer?	Select one or more work requirements in the Work List, then select a laborer in the Labor List, and select **Assign Labor** from the Select Action menu.
change the date range displayed in the Labor list calendar grid?	Select **Select Work Date** from the Select Action menu.
change the labor query used to generate the Labor list?	Select **Select Labor Query** from the Select Action menu.
create a new requirement record?	Work requirements are generated when you add a labor requirement to a work order.
delete a saved labor query?	Select **Select Labor Query** from the Select Action menu.
find laborers whose craft, skill level, vendor, contract, or Organization matches a work requirement?	Select a work requirement, then select **Filter Labor to Match Work** from the Select Action menu.
find work requirements whose craft, skill level, vendor, contract, or Organization matches those of an available laborer?	Select a laborer, then select **Filter Work to Match Labor** from the Select Action menu.
modify an existing labor query?	Select **Select Labor Query** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
set the number of rows displayed in the Modify Availability dialog box?	Select **Select Labor Query** from the Select Action menu.
specify how Maximo should determine work order priority?	Select **Set Preferences > Set Priority Preferences** from the Select Action menu.
specify the response time for work orders of a certain priority?	Select **Set Preferences > Set Priority Preferences** from the Select Action menu.
specify whether Maximo creates a labor transaction when an assignment is finished?	Select **Set Preferences >Set Parameter Preferences** from the Select Action menu.
specify whether Maximo creates a labor transaction when an assignment is interrupted?	Select **Set Preferences >Set Parameter Preferences** from the Select Action menu.
specify whether Maximo should change the status of a work order to COMPLETE or CLOSE when an assignment is completed?	Select **Set Preferences >Set Parameter Preferences** from the Select Action menu.
start recording labor actuals for an assignment?	Select **Start Assignment** from the Select Action menu.

How Do I...	
stop or finish recording labor actuals for a completed assignment?	Select **Finish Assignment** from the Select Action menu.
stop or pause recording labor actuals for an incomplete assignment?	Select **Interrupt Assignment** from the Select Action menu.
view all laborers?	Select **Show All Labor** from the Select Action menu.

Creating Assignments

Work requirements can be created via all of the applications that create or generate work orders. For a list of applications that can create work orders, see "Creating Work Orders Using Maximo," on page 14-2.

Assignment records are managed in the Assignment Manager application.

The Assignment Manager application can be used by a variety of workers to assign labor to work orders. Using Assignment Manager

- Planners can plan future assignments by labor availability over any seven day period.
- Dispatchers can dispatch currently available workers to incoming work requests.
- Workers can use Assignment Manager to assign themselves to open work requirements.

Scheduling Future Work

Once you have selected one or more requirements from the Work List, there are three ways to assign the work to a laborer:

- Click a date with available hours in the laborer's calendar in the Labor List
- Click a labor code, then click **Assign Labor** in the toolbar
- Click a labor code, then select **Assign Labor** from the Select Action menu

The **Assign Labor** button and action perform the same function.

Managing Assignments

Using Assignment Manager, you can

- add hours to a laborer's availability, for example if a laborer is covering another worker's shift.
- note when laborers are unavailable to be assigned to work, for example when they are in training, or on vacation.
- reassign or reschedule which laborers will perform scheduled work
- un-assign work that was previously assigned to a laborer

- filter the table windows to match work to labor, or match labor to work
- start, interrupt, and finish dispatched assignments, and track the resulting labor transactions

For more information about how to perform these actions, refer to the Assignment Manager Help.

Viewing Assignments for a Worker

You can view work assigned to a laborer by clicking the **Show Assignments** button for the Labor Code. The Show Assignments page displays work assigned to the laborer over the seven day range currently displayed in the Labor List calendar grid.

From the Show Assignments page you can:

- **reschedule** an assignment by changing the **Scheduled Date**
- **reassign** an assignment by changing the **Labor Code**
- **un-assign** the assignment by clearing the **Labor Code**
- **delete** the assignment from the laborer using the **Mark For Delete** button

CAUTION: Deleting the assignment deletes the requirement from the work order.

Dispatching Work

Dispatchers schedule urgent work, that is requirements that should be carried out during the current day's shift. The procedures for dispatching work are similar to those for planning future work, but the work is assigned to the *current shift* (by default the first date in the calendar grid) rather than to future shifts.

TIP: By default new work orders created in the Work Order Tracking and Work Request applications do *not* have a **Target Start** or **Scheduled Start** date indicated. To find new work requests you should search by the **Reported Date** field.

Once a requirement has been assigned to a laborer, you can use the dispatch functions to indicate when work on the assignment has started, been interrupted, and has been finished.

Dispatch Function	Description
Start Assignment	Use the **Start Assignment** action to indicate that work has been started on an assignment. By default Maximo will begin recording labor actuals for an assignment once its status has been changed to STARTED.
Interrupt Assignment	Use the **Interrupt Assignment** action when an assignment with a status of STARTED needs to be stopped for any reason. When you interrupt an assignment Maximo logs a labor transaction for the completed portion of the work, then modifies the assignment, assigning a status of INTERPT to the remaining work hours.

Dispatch Function	Description
Finish Assignment	Use the **Finish Assignment** action to indicate that work on an assignment has been completed. Maximo stops recording labor actuals once an assignment's status is changed to COMPLETE. Assignment statuses are linked to the work order that contains the work requirement. When the last assignment for a work order has been completed, Maximo changes the status of the work order to COMP. Maximo can be set to CLOSE work orders once all assignments have been finished using the **Set Preferences** action. Note that once a work order has been closed it becomes a history record and can only be modified using the **Edit History** action.

NOTE: When a work order's status is changed to COMP in the Work Order Tracking application, Maximo changes the status of all assignments on the work order to COMPLETE. When a work order's status is changed to CLOSE and the work order becomes a history record, Maximo deletes all of the assignments for that work order.

Assignment Statuses

An assignment can have one of the following statuses:

- **WAITASGN** — Waiting for assignment. When work requirements are created they have an initial status of waiting for assignment.
- **ASSIGNED** — Assigned. When a work assignment has been assigned to a laborer, the assignment status changes to ASSIGNED. If the labor code is deleted from an assignment, the assignment status reverts back to WAITASGN.
- **STARTED** — Started. When you click **Start Assignment** Maximo changes the assignment status to STARTED.
- **INTERPT** — synonym to WAITASGN. If an assignment with a status of STARTED is interrupted, Maximo logs a labor transaction to the database for the completed portion of the work, then modifies the assignment, assigning a status of INTERPT to the remaining work hours.
- **COMPLETE** — Complete. When you click **Finish Assignment**, Maximo changes the assignment status to COMPLETE. When a work order's status is changed to COMP, Maximo changes the status of all assignments on the work order to COMPLETE. When a work order's status is changed to CLOSE, Maximo deletes all of the assignments for that work order.

NOTE: Requirements can exist in the Work List with an empty **Status** field. This type of requirement comes from an unplanned work order. After you assign the requirement to a laborer, its status becomes ASSIGNED.

Deleting Assignments

Deleting an assignment is different from un-assigning in that the action removes the work requirement from both the work order record and the database. You should only delete assignments when the task or labor code is

not required for the work order, for example if an error was made when the work plan was created.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Assignment Manager Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Labor Reporting

A **labor transaction** is a record of the amount of time a laborer or contractor spent performing work. You use the Labor Reporting application to report the type and total number of hours of work performed by external contractors or internal employees.

Using the Labor Reporting application you can:

- record daily attendance for a labor code to track when a worker starts and ends their work day
- enter labor transactions by contract or vendor
- enter labor transactions by labor code to track time spent on specific tasks
- enter labor transactions by ticket and select all the labor requirements on the ticket
- enter labor transactions by work order and select all the labor requirements on the work order

Multisite and Labor Reporting

Labor records are at the Organization level, but labor reporting is done at the Site level. Care should be taken to make sure that hours are reported against the correct Site, as work order numbers can be duplicated at different Sites.

Labor Reporting and Contracts

You can report work hours by contract number or by vendor name using the **Enter by Contract/Vendor** button in the toolbar or action in the Select Action menu. Vendor records are created in the Company Master application. Labor contract records are created in the Labor Contracts application. For more information, see "Labor Rate Contracts," on page 4-6.

Labor Reporting and Invoices

Some companies consider a work order that requires outside labor as being the equivalent of a purchase order for that labor. Maximo allows you to create invoices directly from a labor transaction, without having to create a purchase order record. You use the **Create Invoice** action to create invoice records from labor transactions in the Labor Reporting application.

NOTE: You can only create invoices for labor transactions that have been approved and have a defined vendor.

Labor Reporting and Labor Records

You can report work hours against any labor record with a status of ACTIVE using the **Enter by Labor** button in the toolbar or action in the Select Action menu. Labor records are created in the Labor application. For more information, see “Labor Records,” on page 10-6.

Labor Reporting and the Service Desk

You can report work hours by ticket number using the **Enter by Ticket** button in the toolbar or action in the Select Action menu. Ticket records are created in the Service Requests, Incidents, and Problems applications. For more information, see Chapter 12, "The Service Desk Module," on page 12-1.

Labor Reporting and Work Order Tracking

You can report work hours by work order number using the **Enter by Work Order** button in the toolbar or action in the Select Action menu. Work order records are created in the Quick Reporting and Work Order Tracking applications. For more information, see “Work Orders,” on page 14-24.

The labor hours that are reported in the Labor Reporting application are included when Maximo calculates costs for labor actuals in the Work Order Tracking application.

There are two functional differences between the Labor Reporting application and the Actuals tab in the Work Order Tracking application:

- The Actuals tab in the Work Order Tracking application only allows you to record labor hours for the current work order. The Enter by Work Order dialog box in the Labor Reporting application allows you to record labor hours for multiple work orders.

- Reported labor in the Labor Reporting application with the types WORK (actual work time), TRAV (travel time), or WMATL (waiting materials) must have a charge value. The labor can be charged against a work order, asset, location, or GL Account code. Any other work type does not require a charge value.

Using the Labor Reporting Application

To access the Labor Reporting application, click the application link on your Start Center, or select **Work Orders > Labor Reporting** from the Go To menu.

The Labor Reporting application contains a single page with one table window, which displays labor transaction records. You use the Transactions table window to add, modify, or delete labor transactions. You also use the table window to select records for approval and invoicing.

Labor Reporting Buttons

The following table lists application specific buttons that appear in the Labor Reporting application.

Icon	Function	Location
	Enter By Work Order	▼ Toolbar
	Enter By Labor	▼ Toolbar
	Enter By Ticket	▼ Toolbar
	Enter By Contract/Vendor	▼ Toolbar

Labor Reporting Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Labor Reporting application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Labor Reporting Help.

How Do I...	
approve labor actuals?	Select one or more labor transactions, then select **Approve Labor** from the Select Action menu.
create an invoice for one or more labor transactions?	Select one or more labor transactions, then select **Create Invoice** from the Select Action menu.
record daily attendance (time card)?	Select **Daily Attendance** from the Select Action menu.
report labor hours by contract?	Select **Enter by Contract/Vendor** from the Select Action menu.
report labor hours by laborer?	Select **Enter by Labor** from the Select Action menu.

How Do I...	
report labor hours by ticket (service request, incident, or problem)?	Select **Enter by Ticket** from the Select Action menu.
report labor hours by vendor?	Select **Enter by Contract/Vendor** from the Select Action menu.
report labor hours by work order?	Select **Enter by Work Order** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.

Creating Labor Transactions

The Transactions table window displays labor transactions that you entered in the Labor Reporting application or in any other Maximo application where you can record labor actuals. By default, Maximo displays the most recent transactions first.

Creating Labor Transactions

You create labor transactions when you report labor actuals in any of the following applications:

- in the Assignment Manager application via the **Start Interrupt** and **Finish Assignment** actions
- in the Activities application via the **Start** and **Stop Timer** buttons
- in the Changes application via the **Start** and **Stop Timer** buttons or by recording labor actuals on the Labor subtab of the Actuals tab
- in the Incidents application via the **Start** and **Stop Timer** buttons
- in the Labor Reporting application via any of the actions listed in "Reporting Labor Transactions," on page 14-20.
- in the Problems application via the **Start** and **Stop Timer** buttons
- in the Quick Reporting application by recording labor actuals on the Labor subtab
- in the Releases application via the **Start** and **Stop Timer** buttons or by recording labor actuals on the Labor subtab of the Actuals tab
- in the Service Requests application via the **Start** and **Stop Timer** buttons
- in the Work Order Tracking application by recording labor actuals on the Labor subtab of the Actuals tab

For information about creating labor transactions in another application, refer to the appropriate sections of this guide.

Reporting Labor Transactions

You can report labor transactions in the Labor Reporting application in one of the following ways:

Action	
Enter by Contract/ Vendor action or button	Use when reporting work performed by a vendor or contract labor. Maximo validates that the contract and vendor match.
Enter by Labor action or button	Use when reporting hours by labor code to either track the time spent on specific tasks or record daily attendance.
Enter by Ticket action or button	Use when reporting hours by ticket. You can enter the ticket number and select or enter all labor transactions for the ticket. When you report labor hours by ticket, Maximo copies the **Asset**, **Location**, and **Start Date** values from the ticket to the labor transaction.
Enter by Work Order action or button	Use when reporting hours by work order. You can enter the work order number and select or enter all labor transactions for the work order. When you report labor hours by work order, Maximo copies the **Asset**, **Location**, and **Start Date** values from the work order to the labor transaction.
Daily Attendance action	Use when recording when a worker starts and ends the work day. Maximo records the time that you select the **Daily Attendance** action. Maximo calculates the **Hours** worked based on the **Start Time** and **Finish Time**.
New Row button	Use to report new labor transactions in the Transactions table window.

When you record labor actuals, if the reported labor has a **Type** of WORK, TRAV (Travel), or WMATL (Waiting for Materials), you must charge it to a work order, location, asset, or General Ledger account. Maximo does not require a charge value for other work types.

Managing Labor Reporting

You can use Labor Reporting to edit labor transactions created in other applications unless the status of the ticket or work order is closed or cancelled.

You can edit a labor transaction until it is approved.

Approving Labor

Some companies require approval for labor transactions, and Maximo requires approval before invoices can be created from labor transactions. Each transaction record has an **Approved?** check box. A check mark in the **Approved?** check box indicates that a transaction has been approved.

You use the **Approve Labor** action in the Select Action menu to approve one or more labor transactions. Labor transactions must be saved before they can be approved.

NOTE: You may need security authorization to approve labor actuals.

CAUTION: Once a labor transaction has been approved it can no longer be edited or deleted.

Your system administrator can configure Maximo to automatically approve inside labor transactions, automatically approve outside labor transactions, and to automatically approve invoices created from labor transactions.

Deleting Labor Transactions

If a labor transaction record has not been approved it can be deleted by clicking the **Mark Row for Delete** button next to the row in the table window, then clicking **Save**.

For more information about the record deletion rules, refer to the *Maximo System Administrator's Guide*.

Labor Reporting Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Quick Reporting

A **work order** created in the Quick Reporting application is used for reporting work performed after it has been completed. You can enter actual labor and material usage information, or report events, such as asset failures or downtime, that do not require planning and scheduling.

NOTE: After you save a work order in Quick Reporting, it also can be accessed via the Work Order Tracking application.

Multisite and Quick Reporting

Work orders are at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- The key field must be unique for work orders where CLASS = WORKORDER.
- Records can only be viewed by users who have security permission to the Site and the application.

Using the Quick Reporting Application

To access the Quick Reporting application, click the application link on your Start Center, or select **Work Orders > Quick Reporting** from the Go To menu.

The Quick Reporting application contains the following tabs:

- **List** — to search Maximo for work order records.

- **Quick Reporting** — to enter, view, or modify work orders, record actuals for labor, materials, and tools, and perform failure reporting.

Quick Reporting Application Quick Reference

The following chart provides a quick reference to common tasks you perform with the Quick Reporting application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Quick Reporting Help.

How Do I...	
apply a route to a work order?	Select **Apply Route** from the Select Action menu.
assign a work order to a new parent?	Select **Assign to New Parent** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change the attributes for an asset?	Select **Move/Modify Assets** from the Select Action menu.
change the attributes for a location?	Select **Move/Modify Assets** from the Select Action menu.
change the location of an asset?	Select **Move/Modify Assets** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar. Select **Change Status** from the Select Action menu.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create >Incident** from the Select Action menu.
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a work order record?	Click the **New Work Order** button in the toolbar.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a work order record?	Select **Delete Work Order** from the Select Action menu.

How Do I...	
duplicate a work order record?	Select **Duplicate Work Order** from the Select Action menu.
enter meter readings for an asset?	Select **Enter Meter Readings** from the Select Action menu.
enter meter readings for a location?	Select **Enter Meter Readings** from the Select Action menu.
plan an asset modification or move?	Select **Move/Modify Assets** from the Select Action menu.
report asset downtime?	Select **Report Downtime** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
view costs for a work order?	Select **View** > **Costs** from the Select Action menu.
view purchase orders for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view purchase requisitions for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view the status change history for a work order?	Select **View> View History** from the Select Action menu.

Creating Work Orders

You can create a work order with Quick Reporting to report unplanned maintenance work that has already been completed. For creating work orders that require planning or scheduling, or for adding additional data to a work order created through Quick Reporting, use the Work Order Tracking application.

If a work order is being created for an asset or location that has meters associated with it, you can use the **Enter Meter Readings** action to record meter readings. You can use the **Report Downtime** action to record downtime for an asset.

You can use the **Duplicate Work Order** action to create a copy of an existing work order, for example if you need to perform the same work for similar assets or locations. Once you duplicate a work order you can then modify it as needed.

Managing Work Orders

Work orders created in the Quick Reporting application can also be viewed and managed in the Work Order Tracking application.

Reporting Actuals

Quick Reporting work orders are created with a status of WAPPR, which changes to INPRG after the work order is saved. If you create a work order after the job has been completed, you must save the work order before you can report Actuals for labor, materials, or tools.

You also can use Quick Reporting to record actuals for any approved work order, regardless of which application was used to create it.

Work Order Statuses

For a list of possible statuses for work orders, see "Work Order Statuses," on page 14-5.

Deleting a Work Order

For information about deleting work orders, see "Deleting a Work Order," on page 14-41.

Quick Reporting Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

Work Orders

A **work order** is a request for work to be performed. Using work orders allows you to both track work that has been performed in the past and future work that is being planned. The information contained on a work order includes the tasks performed, labor hours or services required for the work, materials and tools needed to do the work, and the assets worked on, or locations where the work was performed.

You can use the Work Order Tracking application to plan, review, and approve work orders for assets, locations, or other work charged to general ledger (GL) accounts.

You can use the Work Order Tracking application to perform every function related to processing work orders. These tasks include creating, approving, and initiating work orders, checking their status history, and closing or reworking them when appropriate.

Multisite and Work Orders

Work orders are defined at the Site level. This means that:

- Maximo requires that key fields be unique to a Site, but allows duplication of record IDs used by other Sites or Organizations.
- The key field must be unique for work orders where CLASS = WORKORDER.

- Records can only be viewed by users who have security permission to the Site and the application.

Work Orders and Assets/Locations

Work orders are often created for an asset or location. Asset records are created in the Assets application, and location records are created in the Locations application.

When there is a value in the **Location** field on a work order, Maximo automatically copies information from the location record to the work order. Use the **Move/Modify Assets** action if the work order involves changing the location of the asset or modifying it's location in an asset hierarchy.

When there is a value in the **Asset** field on a work order, Maximo automatically copies information from the asset record to the work order including the **Failure Class** for the asset. You use the Failure Reporting tab to record failure data for the asset or location.

The **Asset Up?** check box indicates the Up/Down status of the asset as recorded using the **Report Downtime** action.

The **Asset/Location Priority** field displays the asset priority. Maximo displays the location priority only if there is *no* value specified for asset priority.

If an asset record has meters associated with it, you can enter meter readings for an asset using the **Enter Meter Readings** action.

Work Orders and Contracts

When the asset listed on a work order is under warranty, Maximo displays a message to alert you to that fact. You can use the **View Warranties** action to view any warranties that apply to the work order.

The **Warranties Exist?** check box read-only. Maximo automatically checks the **Warranties Exist?** check box if warranties exist for the asset or location listed on the work order.

The **Contract** field on a work order is used to display a warranty or service contract that applies to a work order. Warranty and service contracts are created in the Warranty Contracts application.

Work Orders and Inventory

You can list materials requirements for a work order on the Materials subtab of the Plans tab. When the work order status is changed to APPR (approved), Maximo creates an inventory reservation for these items. If the work order status is then unapproved or canceled, Maximo removes the reservations. Item records are created in the Item Master application and managed in the Inventory application.

You can list service requirements for a work order on the Services subtab of the Plans tab.

You can list tool requirements for a work order on the Tools subtab of the Plans tab. When the work order is approved, Maximo creates an inventory reservation for these items. Tools records are created in the Tools application, and managed (issued and returned) using the Stocked Tools application.

You record actual usage of materials, services, and tools on the Actuals tab. When Maximo calculates work order costs it uses materials, services, and tools actuals in the calculation.

Work Orders and Issues and Transfers

When you record item use on a work order, Maximo creates a material transaction record in the database. Item usage on work orders can be recorded in one of two ways:

- record materials issued to the work order using the Issues and Transfers application.
- record material usage using the Actuals tab of the Work Order Tracking application.

Because Maximo updates inventory balances when you perform either of these actions, it is possible for the same item to be subtracted from inventory twice, thereby causing inaccurate item counts. To ensure accurate inventory records, your company should establish a policy for each site regarding whether item use will be recorded in the Issues and Transfers application or in the Work Order Tracking application.

Work Orders and Job Plans

You can use the applications in the Planning module to create templates for job plans and safety plans.

A job plan describes the tasks that need to be performed on a work order, and the labor, materials, services, and tools that will be needed. Job plans are created in the Job Plans application.

When you select a job plan to apply to a work order, or generate a work order from a Condition Monitoring or PM record with an associated job plan, Maximo copies data from the job plan to the work order. This information can be viewed in the Plans tab. You can then modify the data as needed without affecting the original job plan. If no job plan exists that meets your needs, you can create one in the Tasks table window on the Plans tab.

A safety plan describes hazards and precautions, hazardous materials, lock outs and tag outs that apply to specific assets and locations. Safety plans are created in the Safety Plans application, and are similar to job plans. They are templates that can be copied to work orders. After the safety plan has been applied, you can add, edit, or delete plan information on the work order without affecting the original safety plan. If no safety plan exists that meets your needs, you can create one on the Safety Plan tab.

After you apply a job plan that includes a safety plan to a work order, or generate a work order from a Condition Monitoring or PM record with an associated job plan, Maximo copies safety information from the job plan to the

work order. This safety information can be viewed on the Safety Plan tab. You can then modify the data as needed without affecting the original safety plan.

Work Orders and Labor Records

You can list labor and craft requirements for a work order on the Labor subtab of the Plans tab. Maximo uses the labor values listed on the Plans tab to create the requirements that appear in the Assignment Manager application. You use the Assignment Manager application to assign work to individual laborers. Labor records for both internal (employee) and external (contract) laborers are created in the Labor application.

You record actual usage of labor hours on the Actuals tab. When Maximo calculates work order costs it uses labor actuals in the calculation. You can also use the Labor Reporting application to report labor actuals against a work order.

Work Orders and Meters

You can record meter readings for an asset or location via the **Enter Meter Readings** action available from the Select Action menu. When you record meter readings for an asset or location, Maximo updates values in the following fields on Meters tab of the asset or location record:

- **Last Reading**
- **Last Reading Date**
- **Last Reading Inspector**

Work Orders and Preventive Maintenance

Regular inspections and preventive maintenance can help reduce the number of emergency work orders that are generated at your company. You use the Master PM application to create master PM records which are used as templates to create other PM records. You use the Preventive Maintenance application to create PM records, which can generate PM work orders.

You can schedule Maximo to generate work orders based on elapsed time, or meter readings, or a combination of the two. When a work order has been generated from a PM there is a value in the **PM** field. When you generate a work order from a PM, Maximo copies data from the PM to the work order, including job plan and safety plan data.

Work Orders and Purchasing

Frequently items, materials, or services must be ordered in order to complete a work order. You can create purchase requisitions using either the Purchase Requisitions application, or in the self-service Desktop Requisitions application.

You use the **View PO Information** action to view current purchase requisitions and purchase orders for items and services for the work order.

If you select the **Issue on Receipt?** check box for a PR line, the item will be issued directly to the work order upon receipt. Services are direct issue by default.

Work Orders and the Service Desk

Work orders can also be created using Maximo's Service Desk applications. For information about the different classes of work orders that can be created using Maximo, see "Classes of Work Orders," on page 14-2.

The following Select Action menu options allow you to create tickets and work orders from within any of the Service Desk or work order applications:

- **Create Service Request**
- **Create Incident**
- **Create Problem**
- **Create Change**
- **Create Release**
- **Create Work Order**

The Related Records tab on a ticket or work order record records the relationship between the originating record and the follow up record(s).

Work Orders and Service Level Agreements

A service level agreement (SLA) is a written agreement between a service provider and customer that documents the agreed-upon service levels for a service.

You use the **View SLA** action to view all service level agreements that apply to a work order and its tasks.

You use the **Apply SLA** action when you want Maximo to search for and apply applicable service level agreements. Maximo searches for active SLAs that match the characteristics of the work order. If no applicable SLA is found, Maximo displays a message.

You use the **Select/Deselect SLA** action to select and delete associations between a work order and one or more service level agreements. When you apply an SLA to a work order, Maximo automatically does the following:

- Selects the **SLA Applied?** check box on the work order. This check box is read-only.

- Enters a value in the **Target Start** date field when an SLA with a Response type commitment is applied to the record.

- Enters a value in the **Target Finish** date field when an SLA with a Resolution type commitment is applied to the record.

NOTE: Applying a SLA to a work order only applies it to that record, it does not apply the SLA to any task work orders listed on the record. If you want to apply the SLA to a task, you must open each task work order individually and apply the SLA to each task.

NOTE: You might need security authorizations to apply and remove SLAs from a work order.

Using the Work Order Tracking Application

To access the Work Order Tracking, click the application link on your Start Center, or select **Work Orders > Work Order Tracking** from the Go To menu.

The Work Order Tracking application contains the following tabs:

- **List** — to search Maximo for work order records.
- **Work Order —** to create, view, or modify work orders, view identifiers for an applied job plan and safety plan, view PM and scheduling information. If the work order is a follow-up work order, you can view the identifier of its originating work order. You also can identify the failure hierarchy for the work asset.
- **Plans** — to enter, view, or modify information on work orders in a hierarchy, and to enter, view, modify, or delete information about planned job tasks, labor, materials, services, and tools.
- **Related Records** — to add, view, or delete related ticket and work order records.
- **Actuals** — to enter, view, or modify actual work order start and finish times, labor hours and costs, material quantities, service costs, and tool costs.
- **Safety Plan** — to add, view, modify, or delete safety information associated with a work order.
- **Log** — to create, view, edit, and delete Work Log entries, and view Communication Log entries.
- **Failure Reporting** — to enter, view, or modify asset and location failure information to help identify trends.

Work Order Tracking Application Quick Reference

The following chart provides a quick reference to common tasks performed in the Work Order Tracking application. For more detailed information, including prerequisites to performing an action and detailed procedures, refer to the Work Order Tracking Help.

How Do I...?	
apply a route to a work order?	Select **Apply Route** from the Select Action menu.
apply one or more service level agreements to a work order?	Select **Apply SLAs** from the Select Action menu.

How Do I...?	
assign an owner to a work order?	Select **Select Owner** from the Select Action menu.
assign a work order to a new parent?	Select **Assign to New Parent** from the Select Action menu.
bookmark a record so that I can view it at a later time?	Select **Add to Bookmarks** from the Select Action menu.
change the attributes for an asset?	Select **Move/Modify Assets** from the Select Action menu.
change the attributes for a location?	Select **Move/Modify Assets** from the Select Action menu.
change the location of an asset?	Select **Move/Modify Assets** from the Select Action menu.
change a record's status?	Click the **Change Status** button in the toolbar.
create a change work order from the current record?	Select **Create > Change** from the Select Action menu.
create a communication from the current record?	Select **Create > Communication** from the Select Action menu.
create an incident record from the current record?	Select **Create > Incident** from the Select Action menu.
create a job plan record from a work order's work plan?	Select **Create Job Plan from Work Plan** from Work Plan from the Select Action menu.
create a problem record from the current record?	Select **Create > Problem** from the Select Action menu.
create a release work order from the current record?	Select **Create > Release** from the Select Action menu.
create a service request record from the current record?	Select **Create > Service Request** from the Select Action menu.
create a work order record?	Click the **New Work Order** button in the toolbar.
create a work order record from the current record?	Select **Create > Work Order** from the Select Action menu.
delete a safety plan from a work order?	Select **Remove Safety Plan** from the Select Action menu.
delete the work log from the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
delete a work order record?	Select **Delete Work Order** from the Select Action menu.
delete a work plan from a work order?	Select **Remove Work Plan** from the Select Action menu.
duplicate a work order record?	Select **Duplicate Work Order** from the Select Action menu.

How Do I...?	
enter meter readings for an asset?	Select **Enter Meter Readings** from the Select Action menu.
enter meter readings for a location?	Select **Enter Meter Readings** from the Select Action menu.
modify data on a record with a status of CLOSE?	Select **Edit History Work Order** from the Select Action menu.
modify the work log for the current record?	Select **Modify/Delete Work Log** from the Select Action menu.
plan an asset modification or move?	Select **Move/Modify Assets** from the Select Action menu.
remove a service level agreement from a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
report asset downtime?	Select **Report Downtime** from the Select Action menu.
run reports?	Select **Run Reports** from the Select Action menu.
select hazards to associate with a work order?	Select **Select Safety Hazards** from the Select Action menu.
select a service level agreement to apply to a work order?	Select **Select/Deselect SLAs** from the Select Action menu.
take ownership of a record?	Select **Take Ownership** from the Select Action menu.
view costs for a work order?	Select **View > Costs** from the Select Action menu.
view the ownership history for a work order?	Select **View> Work Order History** from the Select Action menu.
view purchase orders for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view purchase requisitions for materials and services for a work order?	Select **View > PO Information** from the Select Action menu.
view service level agreements applied to a work order?	Select **View SLAs** from the Select Action menu.
view the status change history for a work order?	Select **View> Work Order History** from the Select Action menu.
view warranties for the asset listed on a work order?	Select **View > Warranties** from the Select Action menu.
view warranties for the location listed on a work order?	Select **View > Warranties** from the Select Action menu.
view the work plan for the hierarchy (the work order, its children, and tasks)?	Select **View > Entire Plan** from the Select Action menu.

Creating a Work Order

You can create a work order using a number of different Maximo applications. For a list of applications that can be used to create work orders, see "Creating Work Orders Using Maximo," on page 14-2.

Creating work orders often involves planning how the work will be performed. You use the Plans and Safety Plans tabs to plan work orders.

Creating a Work Plan

Work orders can range from the relatively simple (a single worker replacing a bulb in a lighting fixture) to the extremely complex (teams of workers coordinating a nuclear plant shutdown for routine maintenance). The more complex a work order is, the more likely you will need to create a plan for what needs to be accomplished, who will perform the work, and what materials and tools will be needed to complete the work. A **work plan** describes the tasks that need to be performed on a work order, and the labor, materials, services, and tools that will be needed. You create and view work plans on the Plans tab.

You can create a work plan in one of two ways:

- Associate a job plan with the work order by entering a value in the **Job Plan** field on the Work Order tab. After you select a job plan, Maximo copies the information to the Plans tab of the work order. If there is a safety plan associated with the job plan, Maximo also copies the safety plan information to the Safety Plans tab. Once Maximo has copied the job plan to the work order it becomes a work plan, and can be modified as needed.

- Create a custom work plan using the Plans tab. Defining a work plan consists of the following tasks:

  - Defining the tasks or steps needed to complete the work. Tasks are entered in the Tasks table window. You can indicate that the tasks need to be performed in a particular sequence, and provide estimates of how long each task will take to perform. You can also use the Tasks table window to add measurement point data for an asset. Measurement points are created in the Condition Monitoring application.

  - Define the labor, crafts, and skill levels that will be required for the work. Labor requirements are entered on the Labor subtab. Labor records are created in the Labor application.

  - Define the items and materials that will be needed to complete the work. Material requirements are entered on the Materials subtab. Item records are created in the Item Master application.

  - Define the services that will need to be purchased to complete the work. Service requirements are entered on the Services subtab. Service records are created in the Service Items application.

  - Define the tools that will be needed to complete the work. Tool requirements are entered on the Tools subtab. Tool records are created in the Tools application.

For more information about creating job plans and work plans, refer to the Help.

Defining Work Plan Tasks

When you define tasks for a work order, Maximo numbers each task. Task numbers must be unique within each work plan.

Maximo sorts tasks by **Sequence**, then by **Task** ID. If a work plan does not have a **Sequence** indicated, the system sorts tasks in numerically ascending order by **Task** ID, making the task with the lowest number is the first step of your work plan. By default, Maximo increments task numbers by 10, for example, 10, 20, 30 and so on. This gives you the flexibility to add new tasks between existing ones.

Selecting Multiple Records on Plans and Actuals

Maximo allows you to select multiple records when defining work plan labor, material, service, and tool needs, or recording actuals. The following buttons appear on both the Plans and Actuals tabs:

- **Select Craft** — Appears on the Labor subtab. Click to select from a list of craft records.
- **Select Materials** — Appears on the Materials subtab. Click to select from a list of item records.
- **Select Asset Spare Parts** — Appears on the Materials subtab. Click to select from a list of spare parts for the asset.
- **Select Standard Services** — Appears on the Services subtab. Click to select from a list of service item records.
- **Select Tools** — Appears on the Tools subtab. Click to select from a list of tool records.

When you select multiple records, Maximo creates a separate row for each record on the appropriate subtab.

Adding a Safety Plan to a Work Order

A **safety plan** describes hazards and precautions, hazardous materials, lock outs and tag outs that apply to specific assets and locations. You create and view safety plans on the Safety Plan tab. When you are creating safety plans for a work order you want to consider the asset or location that is being worked on, but also any hazards that might exist in the surrounding area.

You can create a safety plan in one of the following ways:

- Associate a safety plan with the work order by entering a value in the **Safety Plan** field on the Work Order tab. After you select a safety plan, Maximo copies the information to the Safety Plan tab of the work order. Once Maximo has copied the safety plan to the work order it can be modified as needed.
- Associate a job plan with the work order by entering a value in the **Job Plan** field on the Work Order tab. If the combination of the job plan and the work asset (asset or location) listed on the work order require a safety

plan, Maximo copies the safety information to the Safety Plan tab of the work order. Once Maximo has copied the safety plan to the work order it can be modified as needed.

- Create a custom safety plan using the Safety Plan tab. Defining a safety plan consists of the following tasks:
  - Enter a **Location** or **Asset** on the Work Order tab. Location records are created in the Locations application. Asset records are created in the Assets application.
  - Define the safety hazards to include on the safety plan. You can select hazards using the **Select Safety Hazards** action, or add them to the Hazards table window. Maximo copies information for the selected hazard to the appropriate subtab. Hazard records are created in the Hazards application.
  - Define the Hazardous Materials that apply to the safety plan. Hazardous materials information is defined on a hazard record.
  - Define the tag outs procedures that apply to the asset or location. Tag outs records are created in the Lock Out/Tag Out application.

You can add a safety plan to a work order until the status of the work order is APPR (Approved). Your system administrator determines which work order statuses allow editing of Safety Plan information.

NOTE: If a work order already has a safety plan applied to it, you must use the **Remove Safety Plan** action to remove the existing safety plan before you can select another safety plan.

For more information on Safety Plans, see "Safety Plans," on page 11-12.

Duplicating a Work Order

You can use the **Duplicate Work Order** action to create a copy of an existing work order, for example if you need to perform the same work for similar assets or locations. Once you duplicate a work order you can then modify it as needed.

Managing Work Orders

Managing a work order will often involve additional work orders, for example follow up work, or managing a project that involves multiple work orders. Managing work orders also involves recording costs, communications, and other data about the work.

You use the Plans and Related Records tabs to create, view, modify, and delete associations between work order records. You use the Actuals, Log, and Failure Reporting tab to record data about the work done on a work order.

Work Order Hierarchies

A **work order hierarchy** is a group of work orders arranged in parent-child relationships. A work order hierarchy is often used when you have a large maintenance project that might need to be broken down into smaller jobs to be

completed. Hierarchies let each smaller job be handled as an individual work order, while having a relationship to the larger project.

At the highest level of a work order hierarchy, one work order is the parent. This top-level work order can have one or more child work orders. Each child work order can have one or more children, and so on. A child work order can have only one parent. The lowest level of any branch of the hierarchy is usually the task level containing the steps that are defined in a work plan or job plan.

Hierarchies let you view work order costs individually and as part of the project totals. You can view the actuals for the parent, as well as the combined totals of the parent and all its child work orders via the **View Costs** action.

After work orders are grouped into hierarchies, you can easily change all statuses, view all estimated and actual costs, and put work orders into a sequence so that workers can perform tasks in a defined order. You also can move a work order to another hierarchy.

Understanding Work Order Hierarchy Terms

The table below lists common terms used when discussing work order hierarchies.

Work Order	Application indicators	Database indicators
Top Level — The work order at the top of a multi-level hierarchy.	**Parent WO** field is blank.	PARENT column is null WOCLASS field = WORKORDER
Parent — Any work order that has children or tasks associated with it. **NOTE:** A work order can be both a parent and a child in a multi-level hierarchy.	Rows in the Child or Task table window on the Plans tab.	HASCHILDREN = Y
Child — A work order that has a parent.	**Parent WO** field contains a value. When you move to the parent work order, work order appears in the Children table window.	Has value in the PARENT column
Task — A step to be performed as part of a work order's work plan. The lowest branch of the hierarchy structure. Tasks are also child work orders. **NOTE:** In previous Maximo releases Task work orders have been referred to as "operations" or "detail" work orders.	**Parent WO** field contains a value When you move to the parent work order, work order appears in the Tasks table window.	Has value in the PARENT column ISTASK = Y WOCLASS field = ACTIVITY

Viewing and Navigating Work Order Hierarchies

You use the Plans tab to entire, view, and modify work order hierarchies when creating work plans. The Actuals tab contains a duplicate of the work order hierarchy for recording actuals.

- The **Parent WO** field on the Work Order tab displays the parent work order. You can navigate to the parent work order by clicking the **Detail Menu** button next to the **Parent WO** field. If the work order is a top-level work order, or is not part of a hierarchy, this field will be blank.

- The Children table window displays any child work orders associated with the work order. This table is collapsed by default.

  - To open the Children table window click **Show Table**.
  - To collapse the table window click **Hide Table**.

  You can navigate to a child work order by clicking the **Detail Menu** button next to the **Work Order** field.

- The Tasks table window displays any task work orders associated with the current work order. You can navigate to a task work order by clicking the **Detail Menu** button next to the **Work Order** field in the row details.

Building a Work Order Hierarchy

To build a hierarchy you create the top level work order, then create or associate child work orders. For example, your company has decided to change to more energy efficient lighting, which requires replacing the lighting fixtures for the entire plant. You might create a work order for the entire project, and a child work order for each building location. Each child work order could have a work plan (tasks) detailing the steps at each location.This lets you track the costs of the work done at each building location and also keep a running total of costs for the entire project.

Work order hierarchies are created in a number of different ways. You can create a work order hierarchy using any of the following methods:

- creating children on the Plans tab via the **New Row** button on the Children table window

- associating existing work orders with a parent via the **Select Work Orders** button

- associating existing work orders with a parent via the **Assign to New Parent** action

- applying a route to a work order

- generating a work order hierarchy from a PM hierarchy

- adding tasks to a work order on the Plans tab via the **New Row** button on the Tasks table window

- applying a job plan to a work order

Adding Children to a Work Order

The Children table window on the Plans tab contains a subset of the work order fields, allowing you to create child work orders via the **New Row** button. Once created and saved, you can open each child work order individually to enter or modify values for work order fields not contained in the Children table window. For more information about moving between

parent and child work orders, see "Viewing and Navigating Work Order Hierarchies," on page 14-35.

NOTE: If there is a **Priority** assigned to the parent work order, it is copied to child work orders created from within the Children table window.

You may want to build a hierarchy from existing work orders, for example to track costs on a project. You can associate existing work orders as child work orders using the **Select Work Orders** button in the Children table window. You can also associate existing work orders with a hierarchy, or change the hierarchy association of a child or task work order using the **Assign to New Parent** action.

NOTE: If there is a **Priority** assigned to the parent work order, it is *not* copied to existing work orders that are associated with a hierarchy.

TIP: The **Assign to New Parent** action is available from the Results subtab, allowing you to select multiple work orders to be assigned to a parent.

Adding Tasks to a Work Order

You use the Task table window on the Plans tab to add Tasks to a work order. Each task also can be managed as a child work order, and Maximo assigns each task its own work order number. You can view the work order number for a task in the **Work Order** field in the Work Reference Information section.

You build a work order hierarchy when you add Tasks to a work order on the Plans tab as described in "Creating a Work Plan," on page 14-32.

Applying a Route to a Work Order

You can apply a route to a work order or you can specify one on a PM. When you apply a route, the original work order is the parent, and the route stops are child work orders, which can have job plan tasks associated with them.

Generating a WO Hierarchy From a PM Hierarchy

PM hierarchies group assets or locations with the same PM schedules in parent-child relationships. When you generate work orders from a PM that is the part of a hierarchy, work orders are generated for the entire hierarchy. You generate PM work orders in the Preventive Maintenance application and can view the work orders in Work Order Tracking.

Status Changes and Hierarchy Records

Status changes for a work order hierarchy can be configured to meet the needs of your company.

The **Inherit Status Changes?** check box on a work order record specifies whether the work order will inherit status changes from its parent work order. If the check box is selected (the default), the work order's status will change when the parent work order's status changes.

You can change the status of the child work order manually using the **Change Status** button in the Children of Work Order table window. You can change the status of the task work order using the **Change Status** button in the Tasks for Work Order table window. However, if the child work order has

its **Inherit Status Changes?** check box selected, any subsequent changes to the parent's status will be applied to the child work order, if appropriate.

Work Order Hierarchies vs. Related Records

By definition, every work order hierarchy has a single, top-level work order that is the parent for the entire hierarchy. Each work order in the hierarchy can have a single parent, but many children. A work order hierarchy can contain many levels.

In contrast, the associations that appear on the Related Records tab are non-hierarchical. There are no restrictions to the number of relationships a work order can have. A work order can be related to many ticket and work order records.

Associating Existing Records with a Work Order

The Related Records tab in the Work Order Tracking application functions the same as the Related Records tab in the Service Desk applications. For information about using the Related Records tab to relate tickets and work orders, see"Relating Other Records to a Ticket," on page 12-8.

Entering Meter Readings

If an asset or location has meters associated with it, you can enter meter readings using the **Enter Meter Readings** action. The Enter Meter Readings dialog box displays all of the meters associated with the asset or location, and the reading and date of the last meter reading.

Downtime Reporting

When an asset is not running, the downtime is generally one of the following two types:

- **planned downtime** — the asset is scheduled to be down and available for maintenance work to take place.
- **unplanned downtime** — the asset goes down unexpectedly.

Maximo lets you report both planned and unplanned downtime. Reducing unplanned downtime saves you money. To reduce costs caused by unplanned downtime, you can use Work Order Tracking to report downtime, then analyze downtime trends and take action to reduce unplanned downtime in the future, for example, by increasing your preventive maintenance schedule.

In order to report downtime, an **Asset** number must be specified on the work order. You report downtime using the **Report Downtime** action available from the Select Action menu. The **Report Downtime** action allows you to report asset downtime in two ways:

- **Change Status** — Use to record a single status change for an asset If you need to report downtime as it occurs, you change the asset's operational status from Up to Down, or vice versa.
- **Report Downtime** — Use to record two status changes for an asset. If you need to report downtime after the work order is completed you would select this option to record 1) when the asset came down for repairs and 2) when it was returned to service.

Types of Downtime

Maximo recognizes two types of downtime:

- **Operational** — occurs during a time when the asset normally would be in use and stops work or production.
- **Non-operational** — occurs during a time that does not stop work or production, even though the asset is down. For example, if a production line is down during the night shift, but the line does not normally run during that shift.

Recording Actuals

You use the Actuals tab to enter, view, and modify data about the actual work order job tasks and usage of labor, materials, services, and tools.

Each work order record contains an **Accepts Charges?** check box which specifies whether or not you can report actuals against the work order. If the check box is selected (the default), you can charge actuals against the work order. If the check box is cleared you cannot enter charges against the work order, but must report actuals against the work order's parent work order.

A work order must be approved before you can record actuals against it. To report Actuals for labor, material, service, and tool usage, click the appropriate subtab. If the work plan did not estimate labor, materials, services, or tools, you can use the **Select Labor**, **Select Materials**, **Select Tools**, or the **New Row** button to add rows to the subtab's table window.

Maximo allows you to select multiple records from the work plan when recording actuals. The following buttons appear on the Actuals subtabs:

- **Select Planned Labor** — Appears on the Labor subtab. Click to select from a list of the labor requirements recorded on the Plans tab.
- **Select Reserved Items** — Appears on the Materials subtab. Click to select from a list of reserved inventory items.

  CAUTION: If planned materials exist, they should be copied when recording actuals to ensure that material reservations in the Inventory application are reconciled.

- **Select Asset Spare Parts** — Appears on the Materials subtab. Click to select from a list of spare parts for the asset.
- **Select Planned Tools** — Appears on the Tools subtab. Click to select from a list of tool requirements recorded on the Plans tab.
- **Select Issued Tools** — Appears on the Tools subtab. Click to select from a list of tools that have been issued to work orders.

When you select multiple records, Maximo creates a separate row for each record on the appropriate subtab. You can then edit the values to reflect the actual labor, materials, or tools used on the work order.

Removing a Work Plan

There may be instances where a work plan must be removed from a work order, for example

- A job plan was applied to a work order in error.
- Work plan information is incorrect and must be replaced with different information.

If the work order has not been approved, you can use the **Remove Work Plan** action to clear the **Job Plan** field and remove

- all planned tasks
- all planned labor
- all planned materials and associated hazards
- all planned services
- all planned tools

NOTE: You might need security authorization to perform this action.

CAUTION: This action removes the work plan immediately.

Using the Logs

Work order records contain a Log tab, which allows you to create and view the Work Log and the Communications Log for a record. Both the Work Log and the Communications Log provide a means of communicating information about a work order.

Maintenance workers create the entries in the Work Log. Maximo makes the entries in the Communications Log, which is used to maintain a record of e-mail communications created from the record via the **Create Communication** action.

Using the Work Log

You use the Work Log to record work-related information about a work order. You create an entry in the work log using the **New Row** button on the Work Log subtab. When you create a Work Log entry, you must specify a **Type** (Client Note, Update, or Work), and you can make the entry visible to the individuals listed in the **Reported By** and **Affected Person** fields by checking the **Viewable?** check box.

NOTE: Once you have saved a Work Log entry it cannot be deleted.

Using the Communications Log

Entries in the Communications Log subtab are read-only. Maximo automatically creates entries in the Communications Log when you use the **Create Communication** action to create an e-mail message.

Failure Reporting

Failure reporting is a long-term process where you gather data about failures so that you can analyze trends and take steps to avoid problems in the future. For example, in looking back over the failure reports for a pump, you might notice that the pump often breaks down about one week before its monthly

preventative maintenance check is scheduled. You might decide to change the frequency of the PM checks to every other week, rather than every four weeks.

Failure data for assets and locations is recorded on their work orders. This failure data must belong to one or more failure hierarchies, which you create in the Failure Codes application.

A failure hierarchy is an organized set of problems, causes, and remedies related to asset and location failures. The failure hierarchy is identified by its top-level component, called a **failure class**. There must be an associated failure class for each asset or location that you want to report failures for. This association is made in the Assets and Locations applications.

TIP: Indicating a **Failure Class** and **Problem Code** on a work order can help limit the number of duplicate work orders that are entered in the system. Maximo displays a message if the same problem code has already been entered for the asset or location.

Recording Failure Data

You report failures on the Failure Reporting tab, using failure hierarchies that were created in the Failure Codes application. You build the failure report by entering codes for a Problem, Cause, and Remedy for the failure.

NOTE: You also can enter and view a **Failure Class** and **Problem Code** on the Work Order tab.

NOTE: If you encounter a Problem, Cause, or Remedy that are not listed in Maximo, use the Failure Codes application to add the data to the failure hierarchy, then return to Work Order Tracking to complete your failure reporting.

Conducting Failure Analysis

Failure analysis is how you examine asset failure history, reported over a significant period of time. You can create asset or location failure reports to look for breakdown trends, average time between failures, and so on.

By correlating this failure information with other data available to you, for instance, preventive maintenance schedules for an asset or location, you can develop ways to reduce or limit asset failures in the future. For example, you might want to review your preventive maintenance schedule, or you might be able to identify a branch of faulty inventory items.

Work Order Statuses

For information about work order statuses see “Work Order Statuses,” on page 14-5.

Deleting a Work Order

If changes have been made to planned work you may find that you need to delete a work order, either because the work is no longer required, or because a child or task work order is not necessary for the project. Work orders can be deleted if they meet the following criteria:

- status is waiting approval (WAPPR) and the work order has never been approved (APPR)

- work order does not have child or task work orders
- work order does not have assets moved against it
- work order is not a follow-up work order
- work order is not the top-level of a PM work order hierarchy
- work order was not generated from the Purchasing module, for example a Receiving inspection work order
- work order is not listed on any material requisitions, purchase requisitions, or requests for quotation
- work order is not in Workflow and has never been in Workflow

Work orders that do not meet the deletion criteria can still have their status changed to cancelled (CAN).

To delete a task work order when viewing the parent work order, click the **Mark Row for Delete** icon in the Task table window for the task(s) you want to delete.

To delete a child work order when viewing the parent work order, **Move To** the child work order, then select **Delete Work Order** from the Select Action menu.

To delete a work order, select **Delete Work Order** from the Select Action menu.

CAUTION: The **Delete Work Order** action deletes the work order immediately.

Work Order Tracking Reports

For information about the reports available with this application, refer to the *Report Administration and Development Guide*.

A Keyboard Shortcuts

You can use the following keyboard shortcuts to navigate the Maximo application pages.

Button	Button Name or Action	Keyboard Shortcut
General Navigation		
	Move from one interface element to the next.	Tab key
	Select buttons, links, and menu options.	Enter key
	Select or clear a check box.	Spacebar
	Display field help for field in focus	Alt + F1
Global Navigation Links **NOTE:** The shortcut highlights the link, you must click the Enter key to activate it.		
	Bulletins	Alt + B
	Go To	Alt + G
	Reports	Alt + R
	Start Center	Alt + C
	Profile	Alt + P
	Sign Out	Alt + S
	Help	Alt + H
	Return	Alt + R
	Return with Value	Alt + W
Toolbar Buttons		
or	Insert New Record	Ctrl + Alt + I
	Save Record	Ctrl + Alt + S
	Clear changes	Ctrl + Alt + C
	Previous Record	Ctrl + Alt + P

Button	Button Name or Action	Keyboard Shortcut
	Next Record	Ctrl + Alt + N
	Change Status	Ctrl + Alt + A
	Create KPI	Ctrl + Alt + K
Application Specific Toolbar Buttons		
	Assign Labor (Assignment Manager)	Ctrl + Alt + L
	Finish Assignment (Assignment Manager)	Ctrl + Alt + F
	Interrupt Assignment (Assignment Manager)	Ctrl + Alt + U
	Select Work Date (Assignment Manager)	Ctrl + Alt + W
	Start Assignment (Assignment Manager)	Ctrl + Alt + T
	Start Timer (Activities, Changes, Incidents, Problems, Releases, Service Requests)	Ctrl + Alt + B
	Stop Timer (Activities, Changes, Incidents, Problems, Releases, Service Requests)	Ctrl + Alt + E
Table Windows		
	Next Row	Ctrl + ↓
	Previous Row	Ctrl + ↑
Filter	Open/Close table window Filter	Ctrl + Z
	Previous Page	Ctrl + <
	Next Page	Ctrl + >
Date Fields		
	Insert today's date	Ctrl + =
	Move back one day	Ctrl + Minus Sign
	Move forward one day	Ctrl + Plus Sign
Select Date Dialog Box		
	Next Month	Ctrl + →
	Previous Month	Ctrl + ←
	Next Year	Ctrl + ↑
	Previous Year	Ctrl + ↓

B Maximo's Self-Service Applications

This appendix documents Maximo's self-service applications, which are designed to guide the occasional Maximo user through the registration and record creation process.

This appendix includes information about the following self-service processes:

- "User Self-Registration," on page B-1
- "Service Requests Module," on page B-3
- "Desktop Requisitions Module," on page B-9

User Self-Registration

You need to have a **user name** and a **password** to allow you to sign into Maximo. Usually these are provided to you by your system administrator. If you do not have a user name and need to sign into Maximo to create a service request or a purchase requisition, you can register yourself using the **register now** link on the sign in page.

Maximo Sign In

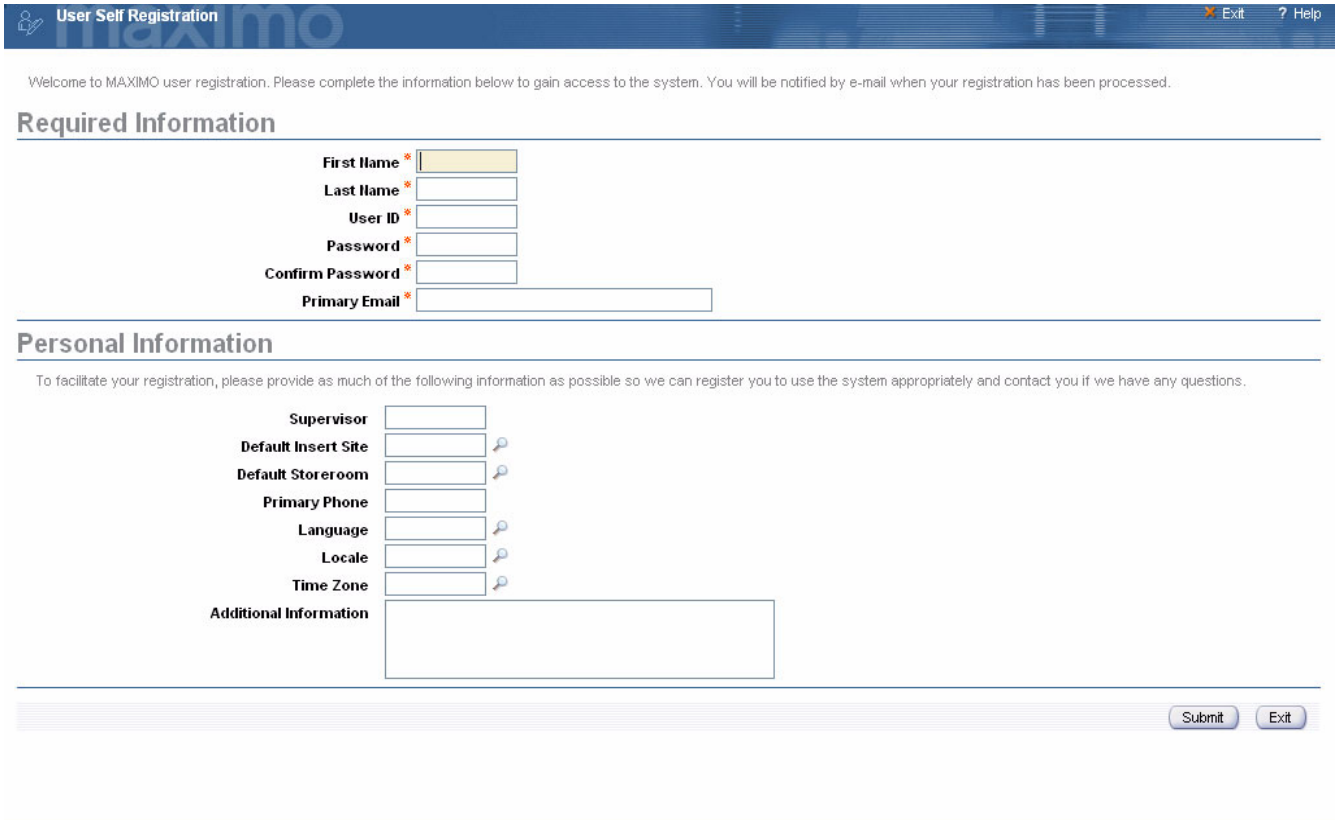
To register yourself as a Maximo user, complete the following steps:

1 Enter the Maximo URL provided by your company to display the Maximo sign in screen.

2 Click **register now**.

The User Self Registration page appears.

User Self Registration Screen



3 Fill in the required fields. An asterisk (*) indicates a required field.

4 Fill in additional fields as needed.

5 Make a note of the **User ID** and **Password** that you entered.

NOTE: Your **User ID** and **Password** are case sensitive.

6 Click **Submit**.

Your registration is submitted. You will receive e-mail notification when your Maximo registration is approved.

Maximo's Self-Service Applications

The Self Service module contains two modules designed for the self-service user:

- Service Requests

- Search Solutions
- Create Service Requests
- View Service Requests

- Desktop Requisitions
  - Create Requisition
  - View Requisitions
  - View Templates
  - View Drafts

Service Requests Module

Maximo's software suite can be configured to meet the needs of a variety of different businesses, including:

- Production (manufacturing and utilities)
- Hotels, universities, and other facilities
- Buses, trains, aircraft, and other fleet vehicles
- Information technology (IT) assets and services

Some businesses may use the Service Requests module solely as a means to log maintenance requests, while others will expect you to search the solution library for answers to frequently asked questions (FAQs) and other information that might help you solve your problem without submitting a service request.

You can create and submit service requests using the Create Service Request application.

Viewing Bulletin Board Messages

Maximo's Bulletin Board allows users with the appropriate security permissions to send broadcast messages to all Maximo users. Messages can be routed to all users, or just selected Organizations, Sites, or person groups.

Before entering a service request, you should check the bulletin board to see if there are any messages relevant to your problem. For example, a bulletin board message that the telephone system is down for repairs would mean that you probably do not need to log a service request for your telephone because the problem has already been reported as affecting multiple users.

TIP: The number after the Bulletins link indicates the current number of bulletin board messages.

To view bulletin board messages from any application page, complete the following steps:

1. Click the Bulletins link at the top of the application page.

   The Bulletin Board appears displaying a list of messages.

2. To view the entire text of a message, click the message.

   The bulletin board expands to display the entire message.

3 To read a different message, click the message.

4 To close the bulletin board click **OK**.

About Solutions

Maximo's Solutions application allows the creation of a library of documents that contains the resolutions to common problems. Before creating a service request you should use the Search Solutions application to see if the solution to your problem is already documented.

Searching for Solutions

You can search for solutions using two different methods:

- **Keyword** — Enter keywords in the **Solution Description** field to search all text fields on a solution record (**Description**, **Symptom**, **Cause**, and **Resolution**).
- **Classifications** — Drilldown through the Classifications structure to find all solutions related to a particular category of problems, for example computer hardware or software.

To use keywords to search for solutions, complete the following steps:

1 In the Service Desk Actions portlet window, click the Search Solutions link.

The Search Solutions application appears.

2 Enter a keyword in the **Solution Description** field, for example to search for records relating to a computer error message enter the word "error."

3 Click **Find**.

Solutions matching your search are displayed in the View Solutions table window.

4 To view a solution, click the underlined Solution ID in the View Solutions table window.

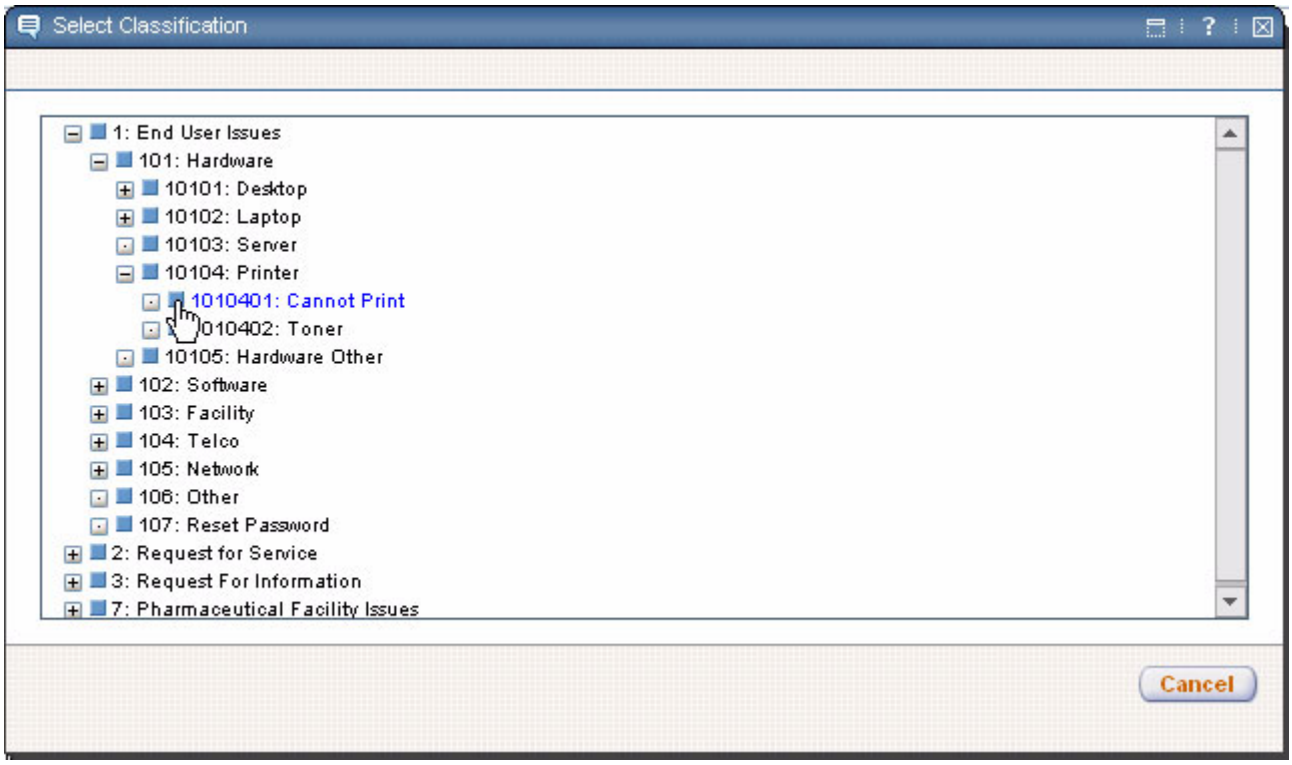
To use Classifications to search for solutions, complete the following steps:

1 In the Service Desk Actions portlet window, click the Search Solutions link.

The Search Solutions application appears.

2 Next to the **Classification** field, click the **Detail Menu** button and select Select Classification.

The Classify dialog box appears.



3 Drill down through the Classification to find the category you are looking for, for example:

   1: End User Issues > 101: Hardware > 10104: Printer > 1010401: Cannot Print

4 Click the **Select Record** button next to the category to return the value.

   Maximo copies the **Classification** and **Description** to the Search Solutions page.

5 Click **Find**.

   Solutions matching your search are displayed in the View Solutions table window.

6 To view a solution, click the underlined Solution ID in the View Solutions table window.

About Service Requests

A **service request** is a request for work of some kind, for example repair of a piece of equipment, or configuration of a computer. A service request can also be a request for information, for example how to perform a particular task.

If after searching solutions as described in "Searching for Solutions," on page B-4 you fail to find the solution to your problem you can use the Create Service Request application to create a service request.

Self-Service Service Requests and Maximo

The self-service Create Service Request application creates a ticket record that can be viewed by a service desk agent using the Service Request application in the Service Desk module.

Creating a Service Request

There are three ways that you can create a service request:

- From the Search Solutions application
- From the Create Service Request application
- From an e-mail

NOTE: As a best practice, before creating a service request for an information technology issue, you should first search the solutions library. If you are creating a service request for maintenance, you may not need to perform this step.

Creating a Service Request from Search Solutions

To create a service request from the Search Solutions application, complete the following steps:

1. Search for a solution to your problem using the Search Solutions application.

2. If you cannot find a solution to your problem, click the **No-Create a Service Request** button at the bottom of the page.

   The Create Service Request page appears. Information contained in your user profile may be copied to the record automatically.

3. Enter a description of the service request in the **Summary** and **Details** fields.

4. If appropriate, enter a **Classification** for the service request by clicking the **Detail Menu** button to select an option from the menu and retrieve a classification value.

5. If appropriate, click **Attach File** or **Attach Web Page** to attach documents outside of Maximo to the service request, for example to attach a screen capture of an error message.

6. Click **Submit**.

   A dialog box appears displaying the number of your service request.

7 Click one of the following:

- **View Details** — to view the details of the service request you just created.
- **Return to Start Center** — to return to your start center.
- **Create Another Service Request** — to return to the Create Service Request application.

Creating a Service Request from Create Service Requests

To create a service request from the Create Service Request application, complete the following steps:

1 Click the Create Service Request link in either the Service Desk Actions portlet or from the Go To menu.

The Create Service Request page appears. Information contained in your user profile may be copied to the record automatically.

2 Enter a description of the service request in the **Summary** and **Details** fields.

3 If appropriate, enter a **Classification** for the service request by clicking the **Detail Menu** button to select an option from the menu and retrieve a classification value.

4 If appropriate, click **Attach File** or **Attach Web Page** to attach documents outside of Maximo to the service request.

5 Click **Submit**.

A dialog box appears displaying the number of your service request.

6 Click one of the following:

- **View Details** — to view the details of the service request you just created.
- **Return to Start Center** — to return to your start center.
- **Create Another Service Request** — to return to the Create Service Request application.

Creating a Service Request from an E-mail

Maximo can be configured to create service requests automatically from information included in an e-mail message. Your service desk should provide you with instructions on where to send e-mail service requests and what information to include in the e-mail.

Viewing Service Requests

You can use the View Service Request application to view service requests that you have entered, service requests for assets where you are listed as an **Owner** or a **Custodian**, and service requests where you are listed as the **Affected User**.

To view a service requests, select one of the following choices:

- click the View Service Requests link in the Service Desk Actions portlet window on your Start Center
- select Service Requests > View Service Requests from the Go To menu
- click the **View Details** button in the dialog box after you have created a service request

Searching for Service Requests

To search for a service request in the View Service Requests application, complete the following steps:

1. Click View Service Requests.

   The View Service Requests application appears displaying your service requests.

2. If necessary, enter values in one or more search fields.

3. Click **Find**.

   Service requests matching your criteria are displayed in the View Service Requests table window.

4. To view a service request, click the underlined Service Request ID in the View Service Requests table window.

Modifying Service Requests

Once you have submitted a service request you cannot modify it. You can however add attachments and make notations in the Log. For example, if there is an entry in the Log from a Service Desk agent requesting more information, you can reply by adding a log entry of your own. Updates that you add to the Log are visible to Service Desk agents as CLIENTNOTE entries in the Work Log.

To add an attachment to a service request, complete the following steps:

1 Open a service request record.

2 Select one of the following options:

- **Attach File** — to attach a document to the record.
- **Attach Web Page** — to attach a Web page to the record.

3 Click **OK**.

The new attachment appears in the Attachments table window.

To make a notation in the Log, complete the following steps:

1 Open a service request record.

2 Click **Update Service Request**.

The Update Service Request Log dialog box appears.

3 Enter a description of the update in the **Summary** and **Details** fields.

4 Click **OK**.

The log update appears in the Log table window.

Deleting Service Requests

Self-service users cannot delete a service request once it has been submitted.

For information about deletion rules for service requests, see "Deleting Tickets," on page 12-13. For additional information about record deletion rules, refer to the *Maximo System Administrator's Guide*.

Desktop Requisitions Module

Maximo's Desktop Requisitions module is a self-service module designed to be used by both novice and experienced Maximo users to create purchase requisitions. A **requisition** is a written request for something that needs to be purchased. Desktop Requisitions allows you to requisition

- Items
- Materials
- Services
- Standard Service
- Tools

from either an internal source, such as a company storeroom, or from an external vendor.

Using Desktop Requisitions you can also:

- create template requisitions for repeat orders

- create a list of favorite items that you order frequently
- view open, draft, and template requisitions
- check the status of your order

Desktop Requisitions and Maximo's Purchasing Module

Requisitions created in Desktop Requisitions use the same business logic as Maximo's automatic inventory reordering process. This means that your system administrator can configure Maximo to automatically create new *external* requests (for purchases from an outside vendor) as any one of the following:

- Unapproved purchase requisitions (PRs)
- Approved purchase requisitions (PRs)
- Unapproved purchase orders (POs)
- Approved purchase orders (POs)

Your system administrator can also configure Maximo to automatically create new *internal* requests (for example requesting items from a central storeroom) as any one of the following:

- Unapproved purchase requisitions (PRs)
- Approved purchase requisitions (PRs)
- Unapproved purchase orders (POs)
- Approved purchase orders (POs)

Once a desktop requisition has been converted to a new PR or PO, it can be viewed in either the Purchase Requisitions or the Purchase Orders application in the Purchasing Module.

Desktop Requisition Buttons

The following table lists application specific buttons that appear in the Desktop Requisitions applications.

Icon	Name	Function	Location
	Add to Favorites	Add the row to your favorite items list.	▼ Create Requisition application ▼ View Requisitions application
	Create/Edit Requisition	Opens the selected draft in the Create Requisition application.	▼ View Drafts application
	Create Requisition	Create a requisition from the current template.	▼ View Templates application
	Create Template	Create a template requisition from the selected record.	▼ View Requisitions application
	Delete Row	Delete the selected row from the requisition.	▼ Create Requisition application ▼ View Drafts application
	Distribute Cost	Distribute the cost of the line item to more than one GL Debit Account.	▼ Create Requisition application ▼ View Requisitions application

Icon	Name	Function	Location
	Print View	Print the current record.	▼ View Drafts ▼ View Requisitions ▼ View Templates
	Search	Return to the application Search page.	▼ View Drafts ▼ View Requisitions ▼ View Templates

Creating a Requisition

You use the Create Requisition application to create new desktop requisitions. When you create a requisition Maximo may enter values in some of the fields, for example the **Requested By** field.

NOTE: These values are copied from your person record. If you have security permissions to do so, you can edit information stored in your person record using the Profile link in the navigation links.

Creating a requisition is a three step process.

- ▼ Step one — Enter shipping and charge information for the requisition.
- ▼ Step two — Enter a line item for each different item, material, service, or tool that you are requesting.
- ▼ Step three - Review the entire requisition before submitting it.

TIP: If you need to interrupt the requisition creation process you can click **Save As Draft** and your work will be saved as a draft requisition that you can return to at a later time.

To create a desktop requisition, complete the following steps:

1 Click Create Requisition.

The Create Requisition application appears.

2 You can accept the automatically generated **Requisition** number, or enter a different value.

3 Enter a description in the requisition **Description** field. To enter additional information, click **Long Description**.

4 If appropriate, enter the **Date Required**.

5 The **Requested By** field defaults to your person ID. If you are creating a requisition for another person, enter a value in the **Requested For** field.

6 The default **Priority** of 0 is the lowest priority. You can enter a higher priority number. We suggest using a range of 0 to 9, with 9 the highest priority.

Step 1 - Shipping and Charge information

7 If necessary, enter or edit the values in the Shipping Information section. By default Maximo copies these values from your person record.

8 If necessary, enter or edit the values in the Charge Information section. By default Maximo copies these values from your person record.

9 Click **Continue**.

Step 2 - Requisition lines

10 Enter a line item for each different item, material, service, or tool that you are requesting by selecting one of the following options:

- Click **New Row** to add a new requisitions line.
- Click **Add Line Item** and select from the menu to add a new requisition line using one of the following options:
  - **Select Materials** to select from a list of materials.
  - **Favorite Items** to select from a list of favorite items you have created using the **Add to Favorites** button.
  - **Spare Parts** to search for an asset record and select spare parts from those listed on the asset record.
  - **Existing Requisitions** to copy line items from existing requisitions and templates that you have created.

  NOTE: Draft requisitions are not available from this action.

  - **Supplier Catalog(s)** to select line items from vendor's e-commerce catalogs.

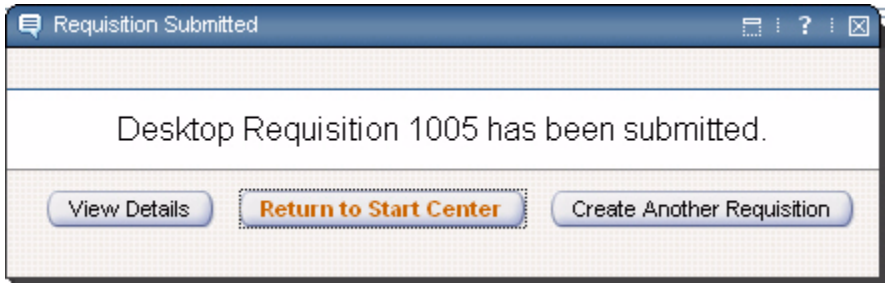
11 Click **Continue**.

Review and Submit

12 Review the requisition. If you need to edit the requisition you can use the **Back** button to return to the previous steps.

13 Click **Submit**.

The Requisitions Submitted dialog box appears.



14 Click one of the following:

- **View Details** — to view the details of the requisition you just created.
- **Return to Start Center** — to return to your start center.
- **Create Another Service Request** — to return to the Create Requisition application.

Creating Requisition Templates

You can use the View Requisitions application to create template requisitions for orders that you place frequently.

You can create a template requisition in one of two ways:

- From the Requisitions table window, click the **Create Template** icon.
- From the Details tab of a requisition, click the **Create Template** button.

Once you have created a template requisition, you can view it in the View Requisitions application.

Creating Requisitions Using Templates

You can create a new requisition from a template in one of the following ways:

- From the View Templates application, click the **Create Requisition** icon for the requisition in the Template Requisitions table window.
- From the details of a Template in the View Templates application, click the **Copy to New Requisition** button.
- In the Create Requisition application, enter a value in the **Template** field.

Saving Draft Requisitions

If you need to interrupt the requisition creation process you can click **Save As Draft** and your work will be saved as a draft requisition that you can return to at a later time.

You can view and modify any requisitions you have saved as drafts by clicking the **View Drafts** link.

Viewing Requisitions

To view requisitions, select one of the following choices:

- click View Requisitions on your Start Center
- select Desktop Requisitions > View Requisitions from the Go To menu
- click View Details in the Requisition Submitted dialog box after you have created a requisition

Searching for Requisitions

To search for a requisition, complete the following steps:

1 Click View Requisitions.

The View Requisitions application appears displaying your requisitions.

NOTE: It may be necessary to click the **Filter Table** button to view your requisitions.

2 If necessary, enter values in one or more search fields.

3 Click **Find**.

Requisitions matching your criteria are displayed in the Requisitions table window.

4 To view a requisition, click the underlined Requisition ID in the Requisitions table window.

Modifying or Deleting Requisitions

Once a requisition has been submitted it cannot be modified or deleted via the applications in the Desktop Requisitions module. For information about deleting purchase requisitions or purchase orders, see Chapter 9, "The Purchasing Module," on page 9-1.

Requisition Statuses

A desktop requisition record can have one of the following statuses:

- **WAPPR** — Waiting on Approval
- **APPR** — Approved
- **CAN** — Canceled
- **CLOSE** — Closed

C IT Asset Life Cycle Management

Asset management involves the management of your assets from requisitioning, through delivery, installation and configuration, servicing and maintenance over the life of the asset, to finally decommissioning and returning or disposing of the asset.

Information technology (IT) assets include computer hardware and software that is connected to a network, as well as wireless and remote devices, such as laptop computers, personal digital assistants (PDAs), wireless telephones, and pagers. Because IT assets are configurable, are often moved as needed, and are frequently leased rather than purchased, the management of IT assets has some differences from general asset management as discussed in "Managing Asset Records," on page 3-14.

Each company has different business needs, and therefore will have different IT asset management processes. This appendix provides additional information specific to IT asset management, and describes how you can use Maximo to implement some of the more common IT asset management processes.

IT Asset Terminology and Maximo

There is specific terminology that is often used when discussing information technology assets. Because Maximo can be used to manage many kinds of assets, not just IT assets, the terminology used throughout Maximo to label fields and actions is often generic.

The following are some common terms used when discussing IT assets, and the equivalent term that is used in Maximo. For example, what the Information Technology Infrastructure Library (ITIL) calls a "configuration item" is not called an "item" in Maximo but an "asset." Maximo reserves the term "item" for materials management in the Inventory applications.

Information Technology Term	Maximo Equivalent
asset repository	physical repository = storeroom or operating location data repository = specification
component	any part of an asset hierarchy (asset, subassembly, or spare part)
configuration item	asset record, rotating asset record, IT asset record ("Item" refers to materials management in Maximo.)

Information Technology Term	Maximo Equivalent
configuration template	item assembly structure
discovery tool	Maximo Discovery or other third party network device interrogator.
inventory management (computer)	asset management ("Inventory management" refers to consumable items in Maximo.)
knowledge base	Solutions application
maintenance contracts	service contracts, warranty contracts
network	asset hierarchy (Note that the term "network" is also used when referring to location systems in Maximo.)
seat	workstation or software license
software license	contract item (Software licenses can be tracked as an item record or asset record, depending on your business needs.)
system	asset hierarchy, bundled asset (The term "system" refers to location systems in Maximo.)
technology refresh	release
vendor	company record

Information Technology (IT) Asset Records

When creating records in Maximo, the different elements of your company's IT infrastructure can fall into one of two categories:

- **Assets** — An asset can be a piece of equipment or machinery, or a subassembly or component of an asset, or a piece of technology, for example computer software. Any leased asset should have an asset record. Any asset that requires a maintenance history or serialization should have an asset record.

- **Items** — An item can be any consumable item, material, or spare part. Any item that is going to be requisitioned on a regular basis should have an item record. Any item that is going to be stocked in a company storeroom should have an item record. Machinery or technology that is so inexpensive that your company has decided that it will be replaced rather than repaired when it malfunctions might also be categorized as an item rather than as an asset.

  NOTE: In this context an item record refers to a non-rotating inventory item record. For information about rotating item records and IT assets, see "Creating Rotating Item Records," on page C-6.

The following table gives some examples of how one might categorize a variety of IT assets. Your company's business needs, including the sort of data you need to track for individual assets, will determine how your company categorizes the elements of your information technology infrastructure. For example, software licenses can be tracked as items on a software license contract, or you can also create asset records for individual licenses.

NOTE: You create item records for all of the elements of your information technology infrastructure to use with contracts and purchasing.

Possible Serialized Assets	Possible Consumable or Contract Items
Central Processing Units (CPUs)	Antivirus software
Cell phones	Cables and connectors
Computer Monitors	CD media
Desktop Workstations	Docking stations
Disk drives	E-mail software
Ethernet cards	Floppy diskettes
Hubs	Inexpensive software
Laptop computers	Install mounts and brackets
Mainframes and other servers	Keyboards
Modems	Mouse devices
Network printers/ local printers	Networking software
Pagers	Office software
Personal Digital Assistants (PDAs)	Printer/copier paper
Routers	Security software
Scanners	Server racks
Servers	Server software
Switches	Toner cartridges

IT Assets and Classifications

Maximo includes a feature called Classifications which can be used to organize and categorize Maximo records. Maximo's IT Asset reconciliation process uses the value in the **Classification** field when it matches asset records to deployed asset records. IT assets *must* have a IT **Classification** for reconciliation purposes. This **Classification** is designated on the rotating item record, created in the Item Master application. When you list a **Rotating Item** on an asset record, Maximo automatically copies the item's **Classification** to the asset record.

Your system administrator can create one or more different classification hierarchies using the Classifications application. MRO Software recommends that you base your classifications for information technology assets on the United Nations Standard Product and Services Classification (UNSPC) codes.

IT Assets and Contracts

Because IT assets are often leased rather than owned, Maximo includes extensive contract functionality to support the leasing of IT assets. For more information about contracts, see Chapter 4, "The Contracts Module," on page 4-1.

IT Assets and Lease/Rental Contracts

Both lease and rental type contracts are created using the Lease/Rental Contracts application. When you requisition items that are listed on a valid purchase contract, Maximo automatically copies the **Contract Reference** to the purchasing record. If more than one valid contract exists for an item, Maximo asks you to select which contract to use.

When you create asset records in the Receiving application for items that have a **Contract Reference**, Maximo automatically associates the new asset records with the lease or rental contract. You can view the asset records on the Associated Assets tab of the Lease/Rental Contracts application. For more information about creating IT asset records in the Receiving application see "Receiving Rotating Assets," on page C-7.

IT Assets and Service/Warranty Contracts

Both service and warranty type contracts are created using the Warranty Contracts application. You use the Associated Assets tab in the Warranty Contracts application to list the assets that are covered by the service or warranty contract, the **Start Date** for the contract, and any meters that might be associated with the contract, for example you might create a meter to track server failures.

IT Assets and Software License Contracts

Computer software is purchased using a PRICE, BLANKET, or PURCHASE type contract, and payment information is recorded on the purchase contract, not the license contract. Usually, software is licensed, not sold, meaning that you have to follow the terms of the license agreement which defines how you may use the software.

You create software license (SWLICENSE) contracts to record the details of the software license, not a software purchase. Software license type contracts are created using the Purchase Contracts application. A software licence contract records the terms of a software license, for example whether you can make copies of the software, or the number of users allowed to use the software. A **user** is an individual or a device that is logged into a system and/or is using the software

For more information about managing software licenses, see "Managing Software Licenses," on page C-18.

IT Assets and Job Plans

You can use the Job Plans application to create templates that include a detailed description of work to be performed, and labor, material, service, and tool requirements. Job plans can be created for assets, items, and locations, and can be used in the Activities, Changes, Releases, and Work Order Tracking applications.

You can use the Job Plans application to create job plans for rotating item records. If you select the **Create WO When Purchasing This Rotating Asset?** check box for the item in the Work Assets and Safety Plans table window, Maximo will automatically generate a work order when the specified item is received in the Receiving application. You can use this feature to

create job plans and generate work orders for installing and configuring IT assets.

IT Assets and Locations

IT assets are always associated with a location. You should note that in Maximo a labor type location is considered an inventory location, used when inventory is issued to a worker. Assets should be associated with operating type locations. You can use the Domains application in the Configuration module to create synonyms for operating type locations. For example, you might create a "user" location to be used with individuals, and "office" or "mobile" location types to be used with teams or departments.

If you are creating locations that will be used to store IT assets, for example a hardware cage or a software storeroom, you may want to consider whether you want to create some locations with a **Type** = OPERATING. The **Move/ Modify Assets** and **Swap Assets** actions only allow you to move assets between *operating* locations. You must use one of the inventory applications to move assets out of an inventory type location into an operating location before you can use the **Move/Modify Assets** and **Swap Assets** actions. For more information about location types, see “Location Types,” on page 3-26.

IT Assets and Purchasing

Maximo includes two different applications that can be used to requisition IT assets:

- **Desktop Requisitions** — used by self-service users to create material requisitions. If desired, you can create a Workflow process to convert material requisitions to purchase requisitions or purchase orders.

- **Purchase Requisitions** — used by purchasing departments to create purchase requisitions, which can be converted to purchase orders.

When a purchasing agent create a purchase requisition or purchase order for an item, Maximo automatically matches the vendor and item to valid purchase contracts. If you do not list a vendor on a PO, or there are multiple valid contracts, Maximo displays all valid contracts for the item.

When you receive assets that list a lease contract as the **Contract Reference**, Maximo automatically lists the asset records on the Associated Assets tab of the lease contact.

For information about creating IT asset records in the Receiving application see “Receiving Rotating Assets,” on page C-7.

Creating IT Asset Records

When you create asset records for IT assets they are always *rotating asset* records, that is, they include a **Rotating Item** value on the record. In Maximo you can track rotating assets by their common item number in the Inventory application, and by individual asset number in the Assets application. This

flexibility allows you to track IT assets as they move in and out of storage or repair areas during the asset's life cycle.

NOTE: The term *rotating item* is used when referring to inventory records and management, and the term *rotating asset* is used when referring to asset records and maintenance.

Creating Rotating Item Records

The first step in creating an IT asset record occurs when you create rotating item records in the Item Master application. These rotating item records will be used when you create asset records, and when requisitioning and purchasing assets. For more information about creating item records, see "Creating Item Master Records," on page 6-24.

NOTE: You should create item records before you begin procurement/purchasing of IT assets.

When creating item records that will be used for IT assets, the following fields are **required**:

- **Rotating?** check box must be selected.
- **Classification** field must contain a value that falls under the parent IT classification. MRO Software recommends that you base your classifications for information technology assets on the United Nations Standard Product and Services Classification (UNSPC) codes. Maximo copies **Specifications** and **Attributes** values from the classification record to the item record.

When creating item records that will be used for IT assets, the following fields are recommended:

- **Commodity Group** or **Commodity Code** field should contain a value if your company tracks expenditures by commodity.
- **Capitalized?** check box should be selected if the item is a capitalized expense. Capitalized items are always issued and returned at zero cost, regardless of the cost carried in inventory. Non-capitalized items are issued and returned at the standard or average cost, based on settings in the Organizations application.
- **Inspect on Receipt?** check box should be selected if you want to require inspection of the item upon receipt.

You use the Item Assembly Structure tab to create the item assembly structure for the item record, which includes a list of rotating items and non-rotating items that make up the item. You can use the item assembly structure to create a configuration template that you can use when creating IT asset records.

For example, if you are creating an item record for the top-level item in a computer workstation, you would use the Item Assembly Structure tab to list all of the hardware and software components that are included in the workstation. This workstation might consist of a central processing unit (CPU), a compact disc (CD) drive, a monitor, keyboard, a mouse, operating

system and other OEM software. You would list all of the components that are delivered with the asset on the Item Assembly Structure tab. You would *not* include software that would be added later by your IT department and managed via a software license contract.

Creating Rotating Asset Records

The second step in creating an IT asset record is to create the asset record in the Assets application. Maximo automatically copies the **Classification**, **Specifications** and **Attributes** from the item record to the asset record. For more information about creating asset records, see "Creating Asset Records," on page 3-11.

NOTE: You can also create asset records in the Receiving application. The procedure for this is described in "Receiving Rotating Assets," on page C-7.

When creating asset records for IT assets, the following field is required:

- **Rotating Item** — IT assets are always rotating assets.

  NOTE: Once you save an asset record the **Rotating Item** field becomes read-only. To change the **Rotating Item** listed on an asset record, use the **Change Item Number** action.

When creating asset records for IT assets, the following fields are recommended:

- **Type** — Enter a value if you are using Maximo to track multiple asset types and you want to be able to filter records by asset type.

- **Maintain Hierarchy?** check box should be checked if you want to "bundle" assets and maintain the asset hierarchy when assets are moved.

  NOTE: When you want to modify the asset hierarchy for bundled assets you need to clear the **Maintain Hierarchy?** check box.

- **Serial #** — Can be used to record the serial number or service tag for an IT asset.

You use the **Apply Item Assembly Structure** action in the Assets application to copy the item assembly structure from the item record to the asset record. Maximo copies the rotating items to the Subassemblies table window, and the non-rotating items to the Spare Parts table window. If a rotating item in the item assembly structure has children, the children are also copied to the asset hierarchy. Once you have copied the item assembly structure to the asset record, you can add, modify, or delete elements without affecting the original IAS listed on the item record.

Receiving Rotating Assets

You can also create IT asset records in the Receiving application when you receive ordered items.

To create IT asset records in the Receiving application, complete the following steps:

1. Open the Receiving application.

2. On the List tab, select a PO with a status of Approved (APPR) or In Progress (INPRG).

3. On the Materials Receipts tab, click **Select Ordered Items**. Maximo opens the Select Ordered Items dialog box and displays the items ordered on this purchase order.

4. Click the **Select Record** check box for each line you want to receive, or click the **Select All Records** check box in the table header to select all of the items.

5. Click **OK**. Maximo copies the items to the Materials Receipts tab.

6. Click **Save**.

7. If necessary, inspect the items. Items require inspection if the **Inspect on Receipt?** check box on the item record is selected, or if the **Inspection Required?** check box is selected on the PO line for the item. Maximo receives items that require inspection into a Holding location, and assigns them a status of Waiting for Inspection (WINSP). Rotating items that do not require inspection are received into a Holding location with a status of Waiting for Serialization (WASSET).

   a. Select **Change Inspection Status** from the Select Action menu. Maximo opens the Change Inspection Status dialog box.

   b. Click the **Select Record** check box for each line you want to inspect, or click the **Select All Records** check box in the table header to select all of the items.

   c. If appropriate, edit the **Quantity Accepted** and **Reject Quantity** fields and add **Reject Codes**, for example "damaged".

   d. Click **OK**. Maximo closes the Change Inspection Status dialog box and changes the status of the rotating items to Waiting for Serialization (WASSET).

8. From the Select Action menu, select **Receive Rotating Items**. Maximo opens the Receive Rotating Items dialog box.

9. To specify the asset identifier for each item you can either:

   - Enter a value in the **Asset** field for each row.

   - Click **Autonumber** to have Maximo generate asset numbers.

10. You can use the **Serial #** column to enter serial numbers for each asset, or you can enter this information in the Assets application.

11. If appropriate, click the **Apply IAS** icon on the item row. Maximo opens the Apply Item Assembly Structure dialog box.

a To specify the asset identifier for each item in the table window you can either:

- Enter a value in the **Asset** field for each row.
- Click **Autonumber** to have Maximo generate asset numbers.

b If appropriate, enter a **GL Account** and a **Rotating Suspense Account** for each row.

c Click **OK**. Maximo closes the Apply Item Assembly Structure dialog box.

12 Click **OK**. Maximo closes the Receive Rotating Items dialog box.

13 Click **Save**. Maximo automatically transfers the item from the Holding location to the **Asset**, **Location**, **Storeroom**, or **Work Order** specified on the purchase order.

NOTE: When creating asset records in the Receiving application, you should be aware of the following:

- The **Type** field on asset records created in the Receiving application does not contain a value.
- The Status of asset records created in the Receiving application is NOT READY. You must use the **Change Status** action in the Assets application to change an asset's status to OPERATING.
- You cannot enter serial numbers for assets created via the **Apply IAS** action in the Receiving application. You can add serial numbers to these asset records in the Assets application.

Managing IT Asset Records

This section describes how you can use Maximo to help you manage your information technology assets, which can include both hardware and software assets. For additional information about how you can use Maximo to manage software licenses, see "Managing Software Licenses," on page C-18.

Install, Move, Add, Change (IMAC)

Hardware and software installations, moves, additions, and changes are all common activities related to IT assets, for example when employees are hired, change positions, or leave the company. IT departments often use the acronym IMAC (Installation, Move, Add, Change) to describe the movement of components through an organization.

- **Install** - installing new hardware, software, printers and so on (including configuration), for example when a new employee is hired.
- **Move** - physical relocation of hardware, for example when an employee is transferred from one building to another.

- **Add** - installation of **new** hardware and software, for example when an employee needs additional memory or new software.

- **Change** - upgrading **existing** hardware and software, reconfiguring existing hardware or software, and physically moving and redeploying hardware or software.

The IMAC process your company uses will vary, based on the needs of your business. The following sections describe some of the ways that Maximo can be used when performing common IMAC activities.

Installing IT Assets

Installing a new IT asset might include one or more of the following tasks:

- Inspection of the asset upon receipt — Items require inspection if the **Inspect on Receipt?** check box on the item record is selected, or if the **Inspection Required?** check box is selected on the PO line for the item. Maximo receives items that require inspection into a Holding location, and assigns them a status of Waiting for Inspection (WINSP).

- Creation of asset records — IT asset records can be created using the Assets application, or when assets are received, as described in "Receiving Rotating Assets," on page C-7.

- Installation of hardware or software — You can use the Job Plans application to create job plans for installations. Job plans can be used in the Activities, Changes, Releases, and Work Order Tracking applications.

- Configuration of the asset — You can use the **Apply Item Assembly Structure** action in the Assets application to copy an item assembly structure from the item record to the asset record. You can use the Job Plans application to create job plans for hardware and software configurations.

- Association of the asset with a service group or service — You use the **Associate Services** action in the Assets application to associate an asset with a service group or a service.

- Association of the asset with a Service Level Agreement — You use the Associated Assets tab in the Service Level Agreements application to list assets, asset types, and locations on an SLA.

- Association of the asset with a service or warranty contract — You use the Associated Asset tab in the Warranty Contracts application to list assets and locations on a service or warranty contract.

- Association of a software asset with a software license contract — When you list a software license contract as the **Contract Reference** on a purchase order, Maximo automatically lists the contract on the asset record.

- Changing the asset status to OPERATING — You use the **Change Status** action in the Assets application to change the status of an asset record from NOT READY to OPERATING. For more information about asset statuses, see "Asset Statuses," on page 3-15.

  TIP: You can change the status of multiple asset records from the List tab.

- Issuing an asset to an individual — You can use the **Associate Users and Custodians** action in the Assets application to list one or more individuals as a user or custodian of an asset.

TIP: You can use the Job Plans application to create job plans for rotating item records. If you select the **Create WO When Purchasing This Rotating Asset?** check box for the item in the Work Assets and Safety Plans table window, Maximo will automatically generate a work order when the item specified on the job plan is received in the Receiving application. You can use this feature to create job plans and generate work orders for installing and configuring IT assets.

Moving IT Assets

Moving an IT asset refers to the physical relocation of hardware, for example moving computers, printers, or servers. For example, most computers move several times during their lifecycle due to repairs, redeployments, exchanges, transfers, or the disposal of the computer.

You use the **Issue Current Item** action in the Inventory application to move an asset (rotating item) from a storeroom location to another asset (as a subassembly or component of the asset), operating location, or an individual. Items can also be issued to and charged against a work order or General Ledger account.

If the **Attach to Parent Asset on Issue?** check box is selected on a rotating item record, when the item is issued to an asset Maximo automatically attaches the rotating item to the asset as a subassembly (child asset).

NOTE: Maximo also performs the same action if the rotating item is issued to a work order for an asset.

You use the Issues and Transfers application to issue or transfer an asset (rotating item) from a storeroom location to an asset, operating location, or an individual. Items can also be issued or transferred to and charged against a work order or General Ledger account.

You use the **Move/Modify Asset** action available in the Activities, Changes, and Releases applications to plan a move or modification for one or more assets. You can move an asset to a new location, to a new parent (new location in the asset hierarchy), or to a new bin in a storeroom. You can modify the attributes for an asset, for example a computer that was purchased with additional memory.

You use the **Move/Modify Assets** action available in the Assets, Purchase Orders, and Work Order Tracking applications to make a move or modification to one or more assets. You can move an asset to a new location (including a different Site), to a new parent (new location in the asset hierarchy), or to a new bin in a storeroom. You can add, modify, or delete users and custodians listed on an asset record. You can modify the attributes for an asset, for example the speed of a central processing unit (CPU).

NOTE: You cannot use the **Move/Modify Assets** action to move rotating assets *out of* inventory locations (Courier, Holding, Labor, Vendor); you must issue or transfer rotating assets using either the Inventory or Issues and Transfers application. However, you can use the **Move/Modify Assets** action to move assets *into* a storeroom location.

You use the **Swap Assets** action available in the Assets application to replace one asset with another, for example when an asset fails or malfunctions. You can swap a single pair of assets, or multiple pairs of assets. You can specify a **GL Debit Account** and a **GL Credit Account** when you perform a swap.

NOTE: You cannot use the **Swap Assets** action to move rotating assets *out of* inventory locations (Courier, Holding, Labor, Vendor); you must issue or transfer rotating assets using either the Inventory or Issues and Transfers application.

Adding to IT Assets

Adding an IT asset refers to the installation of **new** hardware or software. This may involve adding software, drivers, peripherals, additional memory, a new hard drive, and so on. Performing an "add" activity may involve purchasing or licensing.

You use the Changes application to plan and implement changes to the configuration of existing IT assets. You can create change work orders in the Changes application, or by using the **Create Change** action available from the Select Action menu of the following applications:

- Incidents
- Problems
- Quick Reporting
- Releases
- Service Requests
- Work Order Tracking

You use the Releases application to release tested and authorized changes to the "live" or production environment. You can use the Releases application to plan, review, and manage the release of authorized versions or configurations of assets into your production environment, for example large scale hardware or software roll-outs. You can create release work orders in the Releases application, or by using the **Create Release** action available from the Select Action menu of the following applications:

- Changes
- Incidents
- Problems
- Quick Reporting
- Service Requests
- Work Order Tracking

You use the Spare Parts tab in the Assets application to add new subassemblies (assets) and spare parts (items) to the asset hierarchy listed on an asset record. For example, if your company tracks software as an asset, and new software is installed on a workstation, you would add the software to the subassemblies listed on the Spare Parts tab of the workstation record.

Changing IT Assets

Changing an IT asset refers to changing the configuration of **existing** hardware or software settings. This may involve activities such as configuring an asset, upgrading hardware, and software updates such as operating system patches, application updates, or security patches.

You use the Changes application to plan and implement changes to the configuration of existing IT assets. You can create change work orders in the Changes application, or by using the **Create Change** action available from the Select Action menu of the following applications:

- Incidents
- Problems
- Quick Reporting
- Releases
- Service Requests
- Work Order Tracking

You use the Releases application to release tested and authorized changes to the "live" or production environment. You can use the Releases application to plan, review, and manage the release of authorized versions or configurations of assets into your production environment, for example large scale hardware or software roll-outs. You can create release work orders in the Releases application, or by using the **Create Release** action available from the Select Action menu of the following applications:

- Changes
- Incidents
- Problems
- Quick Reporting
- Service Requests
- Work Order Tracking

You use the **Move/Modify Asset** action available in the Activities, Changes, and Releases applications to plan a move or modification for one or more assets. You can move an asset to a new location, to a new parent (new location in the asset hierarchy), or to a new bin in a storeroom. You can modify the attributes for an asset, for example if memory is added to a computer.

You use the **Move/Modify Assets** action available in the Assets, Purchase Orders, and Work Order Tracking applications to make a move or modification to one or more assets. You can move an asset to a new location (including a different Site), to a new parent (new location in the asset hierarchy), or to a new bin in a storeroom. You can add, modify, or delete users and custodians listed on an asset record. You can modify the attributes for an asset, for example the version of software.

Decommissioning IT Assets

Decommissioning IT assets refers to de-installing, decommissioning, and disposing of an IT asset. This may occur due to the end of a lease or license, or when an IT asset is being replaced or retired because it is technologically obsolete.

You can use the Job Plans application to create a job plan that lists all of the tasks related to decommissioning an asset. Once you have created a job plan, it can be used when you create work orders in the Changes, Releases, or Work Order Tracking applications. Decommissioning an IT asset might include one or more of the following tasks:

- locating the asset — You can use information contained on the asset record to physically locate an asset, including information in the following fields:

- **Location** — use to locate stationary assets, for example mainframes
- **Parent** — use to locate bundled assets or subassemblies
- **Bin** — use to locate assets in a storeroom
- **Users** and **Custodians** — use to locate mobile assets, for example laptop computers

▼ reconfiguring an asset — If you must return a leased asset with the same configuration that it had when it was received, you can create a job plan for the configuration. The job plan can contain any necessary steps in the configuration, such as installing or removing software, or deleting sensitive or company confidential data.

▼ reconciling your leased assets — For information about how to use the applications in the Deployed Assets and Reconciliation modules to reconcile your asset records in Maximo with data discovered by an asset discovery tool, see "Deployed Asset Management," on page C-15.

▼ shipping a leased asset back to the vendor — There are two ways that you can process leased assets that are being returned to a vendor. You can use the original purchase order to return leased items in the Receiving application via the **Select Items for Return** button. Or you can use the **Move/Modify Assets** action available in the Assets, Purchase Orders, and Work Order Tracking applications to move the leased assets to a storeroom, then use the Issues and Transfers application to return the items to the vendor via the **Select Items for Return** button.

▼ canceling an existing lease or rental agreement — You can use the Escalations application to create an escalation that automatically cancels a lease or rental agreement once a particular condition has been met, for example when all assets on the lease have been returned, or the **End Date** on the contract has been reached.

▼ changing the status of an asset record to DECOMMISSIONED — You use the Assets application to change the status of an asset record from OPERATING to DECOMMISSIONED. For more information about decommissioning asset records, see "Decommissioning an Asset," on page 3-15.

TIP: You can change the status of multiple asset records from the List tab.

▼ moving an asset to a salvage location — You use the **Move/Modify Assets** action available in the Assets, Purchase Orders, and Work Order Tracking applications to move one or more assets to a salvage location. Depending on your business processes this might involve a move to a new location (including a different Site), to a new parent, or to a new bin in a storeroom.

▼ ordering a replacement — You can use either Desktop Requisitions or the Purchase Requisitions application to requisition IT assets. You can also use the Escalations application to create an escalation that includes notifications when leases are about to expire. You can create escalations that extend or renew a lease, or that cancel a lease and notify the appropriate parties that it is time to negotiate a new contract.

Deployed Asset Management

Maximo can maintain two distinct sets of data about information technology (IT) assets in two different Maximo modules, the Assets module and the Deployed Assets module. If your company has purchased an asset discovery tool, for example Maximo Discovery, and Maximo Fusion, you can track the presence and configuration of IT assets that have been deployed in a network environment.

Deployed Asset Management involves the following components:

- Asset Discovery Tool, for example Maximo Discovery
- Maximo Fusion
- Maximo's Deployed Assets Administration Module
- Maximo's Reconciliation Module
- Maximo's Deployed Assets Module

Asset Discovery Tool

In order to gather data about IT assets deployed across a network you need an asset discovery tool such as Maximo Discovery, or another tool another tool, such as Microsoft® SMS or Tivoli® Configuration Manager. An asset discovery tool scans computers, network devices, and network printers that are connected to a network and records information about the hardware and software installed on those assets.

To import the data collected by the asset discovery tool requires Maximo Fusion. Maximo Fusion is an integration tool that lets you transform data from the asset discovery tool's format to the Maximo format and then imports the data into Maximo.

Maximo Fusion includes data schema definitions for the following products:

- Altiris® Inventory Solution®
- Centennial Discovery®
- Hewlett Packard's Inventory Manager using Radia®
- IBM's Tivoli® Configuration Manager
- Maximo® Deployed Assets
- Maximo® Discovery
- Microsoft® SMS

Maximo Fusion

Maximo Fusion is an integration tool developed by MRO Software to import deployed asset information technology data into Maximo. You use Maximo

Fusion to map your discovery tool's data schema to the format required by Maximo. Maximo Fusion transforms the collected data and imports it into Maximo.

With Maximo Fusion, you can combine data collected by different asset discovery tools or data in multiple databases created by the same discovery tool and integrate it into Maximo, creating a central repository for enterprise IT asset management, reporting, and decision support.

For more information about Maximo Fusion, refer to the *Maximo Fusion Installation Guide* and the *Maximo Fusion System Administrator's Guide*.

The Deployed Assets Administration Module

Because the discovery tools collecting deployed asset data do not always use consistent naming conventions, Maximo includes a Deployed Assets Administration module that includes applications that let you standardize naming conventions and control how Maximo displays deployed asset data. Authorized users can access the Deployed Assets Administration applications by selecting **Administration > Deployed Assets** from the Go To menu in Maximo.

The Deployed Assets Administration module includes the following applications that let you specify how Maximo should translate inconsistent names used by asset discovery tools to standard naming conventions.

- **Adapter Conversion** — Use to specify the translation of adapter names, both media adapters (such as video and sound cards) and network adapters.
- **Manufacturer Conversion** — Use to specify the translation of manufacturer names.
- **Operating System Conversion** — Use to specify the translation of operating system names.
- **Processor Conversion** — Use to specify the translation of central processing unit (CPU) names.
- **Software Conversion** — Use to specify the translation of software application names.
- **Software Suite Setup** — Use to define which software applications belong to a software suite.
- **Software Usage Setup** — Use to define how Maximo displays software usage frequency information collected by an asset discovery tool.

Records in these conversion applications specify one or more variations of a name, and the target name that the variants should be translated into when Maximo Fusion imports data into Maximo. Maximo uses the target name when it displays imported data in the Deployed Assets applications or in reports.

For more information about the Deployed Asset Administration module see Chapter 5, "The Deployed Assets Module," on page 5-1, or refer to the *Maximo System Administrator's Guide*.

The Deployed Assets Module

The Deployed Assets Module contains three applications that let you view hardware and software data collected by an asset discovery tool and imported into Maximo via Maximo Fusion. Maximo automatically creates the records in the Deployed Assets applications when you import data. The Deployed Assets Module consists of the following applications:

- **Computers** — Displays data about specific computers deployed at your company.
- **Network Devices** — Displays information about deployed network devices such as routers, switches, and hubs.
- **Network Printers** — Displays information about deployed network printers.

You access these applications by selecting **Assets > Deployed Assets** from the Go To menu in Maximo. For more information about the Deployed Assets applications, see Chapter 5, "The Deployed Assets Module," on page 5-1.

The Reconciliation Administration Module

The applications in the Reconciliation module let you configure the process Maximo uses to compare and reconcile the IT asset information in the Assets application with the deployed asset data maintained in the Deployed Assets applications. The reconciliation process identifies successful matches between IT assets and deployed assets as well as discrepancies and variances between the two sets of records.

You can use this comparison to determine whether or not the IT assets deployed at your company match the record of authorized assets maintained in the Assets application. Authorized users can view reconciliation results in the Reconciliation module applications or in reports. You can also view reconciliation results in the Assets application using the **Asset Details** action available from the Select Action menu. Discrepancies might be caused by a variety of factors, including:

- Incorrect data entry
- Reconfigured hardware or software
- Retired hardware or software
- Theft
- Unauthorized use of hardware and software

You can access the Reconciliation Module applications by selecting **Administration > Reconciliation** from the Go To menu in Maximo. The Reconciliation module includes the following applications:

- **Reconciliation Tasks** — This application combines one or more link rules and, if necessary, a task filter and one or more comparison rules into a reconciliation task. This application also lets you specify how Maximo reports results for comparison rule evaluations: all results, failed reconciliations, or successful reconciliations.
- **Task Filters** — This application defines a subset of either assets or deployed assets to reconcile. If you do not define a task filter for a reconciliation task, Maximo compares all top-level IT assets with all deployed assets when it processes the reconciliation task.

- **Link Rules** — This application establishes a relation between a top-level IT asset and a computer, network printer, or network device in deployed assets. The link rule establishes the basis of the comparison by identifying the object and attribute in IT assets to link to a specific attribute in deployed assets.

- **Comparison Rules** — This application identifies objects or attributes of a child or parent IT asset to compare with objects or attributes of a child or parent deployed asset when Maximo executes a reconciliation task.

- **Link Results** — This application lists successful one-to-one links Maximo establishes between a top-level IT asset and a computer, network printer, or network device in deployed assets.

- **Reconciliation Results** — This application lists link failures that occur when Maximo does not find a successful one-to-one link between an IT asset and a deployed asset specified in a link rule; failures occur when the reconciliation process finds no link or finds multiple links. In addition, the application lists results of comparison rule evaluations.

For more information about the Reconciliation Module, refer to the *Maximo Reconciliation Module Implementation Guide*.

Managing Software Licenses

You need to know what software is installed on your company's computers so that you are in compliance with licensing agreements, so that you don't purchase software that you already own, or purchase more software licenses that you need. You also need to be able to track licenses that become available through retiring or decommissioning desktops.

You need to know which versions and patch levels you are running for software such as operating systems, network software, and anti-virus software to be able to protect your company's network from viruses, Trojan horses, worms, and other programs that can damage or disable your network.

Managing Software IT Assets involves the creation of records in the following applications:

- **Item Records** — You use the Item Master application to create item records for software licenses. Software licenses can be tracked as a group as items on a software license contract, or as individual assets. You should create *rotating* item records for software that will be tracked via the Assets application. For more information about creating rotating item records, see "Creating Rotating Item Records," on page C-6.

  NOTE: You must create item records before you can create contract or purchasing records for the items.

- **Software Contract Records** — You use the Purchase Contracts application to create purchase contracts that record the pricing and payment information for software purchases and licenses.

  You also use the Purchase Contracts application to create software license contracts, which record the specific terms of the license agreement. For

example the use of license keys, maintenance fees, and if the software is transferable.

NOTE: You should create contract records before you create purchasing records.

- **Asset records** — If you choose to track software as a serialized IT asset, you can use either the Assets application or the Receiving application to create asset records. For more information about creating IT asset records, see "Creating Rotating Asset Records," on page C-7.

Managing Software License Contract Details

Additional information about software license contracts can be entered, viewed and modified via the **Software License Details** action available from the Select Action menu of the Purchase Contracts application. This action is only available with contracts where Type = SWLICENSE.

The value in the **License Type** field determines the values Maximo writes to the fields in the Software License Type dialog box. For example, for Named User type licenses, you can list authorized users in the Named Users table window, which is collapsed by default.

Software License Contract Types

Maximo includes the following **License Types** for software license contracts:

- **CONCURRENT** — Concurrent software licenses allow a group of users to share a fixed number of software licenses. When you use this type of licensing, software can be installed on any number of computers, provided that the actual usage of the software does not exceed the number of licenses. For example, if you have 100 licenses, you can have no more than 100 computers using the software at any one time.

- **ENTERPRISE** — Enterprise licenses allow you to copy and distribute the software for unlimited use across your organization.

- **NAMED USER** — Named user licenses limit software use to a named set of users. The license cannot be transferred to users not on the agreed upon list.

- **OEM** — Original Equipment Manufacturer license. OEM licenses usually refer to software licenses that come bundled with a computer, for example the operating system that comes installed on a laptop. Usually these licenses are limited to use on the computer they came supplied on, and cannot be re-used, even if the original machine is no longer in use.

- **RETAIL** — Retail licenses can refer to single or limited multiple user licenses. With a retail license you cannot copy the software, but you can transfer the software to a different machine or user.

- **SELECT** — Select license refer to a volume agreement. You establish an agreed upon volume of points. As users log onto the software, points are calculated. When you reach the maximum volume of points, additional users are not allowed to log onto the software.

- **SUBSCRIPTION** — Subscription licenses are based on units of time. With a subscription license you purchase the right for authorized users to use the software for a set period of time, for example one year.

NOTE: Once a contract is approved the software **License Type** field becomes read-only.

Monitoring Software Usage

You can use the applications in the Deployed Assets and Deployed Assets Administration modules to monitor software license usage and compliance. You use the Deployed Asset Administration applications to determine how Maximo categorizes variations in manufacturer and software naming conventions, as well as determine which software products are considered part of a software suite.

You use the Software Usage Setup application to specify the range of usage that corresponds with different usage labels, for example "weekly," "monthly," and "occasionally." Maximo can track usage frequency data for both individual software applications and application suites. Maximo determines the frequency for a software suite based on the component application with the highest usage count.

You can view software usage data in the Computers application. The Applications and Suites subtabs on the Software tab contain **Usage** and **Last Usage Date** fields.

User's Guide Index

A

action menu 2-16
ACTIVE status 7-8, 8-14, 10-10, 10-14, 10-21, 12-38, 12-41, 13-11
activities
  creating 12-18
  managing 12-9, 12-18
  statuses 12-14, 12-18
Activities application 12-15
  accessing 12-16
  Activity tab 12-16
  Actuals tab 12-16
  buttons 12-16
  List tab 12-16
  Log tab 12-16
  Multisite and 12-15
  Plans tab 12-16
  quick reference 12-16
  Related Records tab 12-16
Activities tab
  Incidents 12-23
  Problems 12-27
Activity tab 12-16
actuals
  recording 14-39
  reporting 14-24
  selecting multiple labor, materials, or tools 14-33
Actuals tab
  Activities 12-16
  Changes 12-19
  Releases 12-30
  Work Order Tracking 14-29
Adapter Conversion application 5-2
Add Item to Storeroom action 6-22
Add to Bookmarks
  action 2-14
  button 2-14, 2-22
Addresses tab
  Companies 9-9
  Company Master 9-13
Advanced Search button 2-7
agent 12-2
alternate items 6-24
ampersands (&) 2-11
application
  data sharing between 1-9
  opening 2-5
  pages 2-15
  running more than one simultaneously 2-6
  sections 2-18
  self-service 2-6
  simple 2-6
  standard 2-6
  tabs and subtabs 2-17
  types 2-6
Apply Item Assembly Structure action 6-25
Apply Route action 14-37
APPR status 4-4, 9-18, 9-24, 9-29, 12-14, 14-6
asset assembly structures 3-12
  See also asset hierarchy
asset hierarchy 3-12
  creating 3-13
  elements of 3-12
  navigating 3-14
  viewing 3-14
Asset tab 3-9
Asset/Location Drilldown *See* Drilldown
assets 3-2
  Classifications 3-4, C-3
  company records and 3-5
  condition monitoring 3-5
  contracts and 3-5, C-3
  creating records 3-11
  creating records for information technology assets C-5
  decommissioning 3-15, C-13
  deployed assets and 3-5
  item records and 3-6
  job plans and C-4
  leased C-4
  locations and 3-2, 3-6, C-5
  managing assets 3-14
  managing information technology assets C-9
  meters and 3-6
  Multisite and 3-4
  preventive maintenance and 3-7
  priority 3-3
  purchasing and C-5
  rotating 3-11, C-7
  safety information 3-7
  software C-4
  statuses 3-15
  types 3-8
  users and custodians 3-14
  warranties C-4
  work orders 3-8
Assets and Locations tab 13-8
Assets application 3-4
  accessing 3-8
  Asset tab 3-9
  buttons 3-9
  List tab 3-8
  Meters tab 3-9
  quick reference 3-9
  Safety tab 3-9
  Spare Parts tab 3-9
  Specifications tab 3-9
Assets tab 3-27
Assign Labor
  action 14-13
  button 14-11, 14-13
ASSIGNED status 14-15
Assignment Manager application 14-7
  accessing 14-10
  assignment statuses 14-15
  buttons 14-11
  creating assignments 14-13
  deleting assignments 14-15
  dispatching work 14-14
  labor and 14-8
  Labor List 14-8
  managing assignments 14-13
  Multisite and 14-7
  prerequisites 14-7
  quick reference 14-12
  re-assigning assignments 14-14
  rescheduling assignments 14-14
  scheduling work 14-13
  Work List 14-9
  work orders and 14-9

Associate Folders action 2-43
Associate Users and Custodians button 3-9
Associated Assets tab
    Lease/Rental Contracts 4-11
    Warranty Contracts 4-24
Associated Contracts tab 4-13
Associated Labor tab
    Crafts 10-4
    Labor Rate Contracts 4-8
    Qualifications 10-19
Attached Documents
    actions 2-43
    direct attachments 2-42
    referential attachments 2-42
    types of attachments 2-42
    using 2-42
authorized assets 5-1

B

blanket contracts 4-2
bookmarks
    adding 2-14
    deleting 2-15
    managing 2-15
    using 2-14
branches 9-10
Branches tab 9-9
browser
    Back button 2-2
    Forward button 2-2
    menu 2-2
    pop-up blocker 2-1
    settings 2-1
    supported version 2-1
    toolbar 2-2
Bulletin Board
    link 2-3
    Start Center portlet 2-4
    viewing messages B-3
buttons
    See also field buttons, table window buttons, toolbar buttons
    Add to Bookmarks 2-14, 2-22
    Advanced Search 2-7
    Assign Labor 14-11
    Change Status 2-17
    Close Details 2-21
    Create KPI Option 2-17
    Delete 2-14
    Detail Menu 2-11
    Download 2-14
    Edit Portlet 2-5
    Filter Labor to Match Work 14-11
    Filter Work to Match Labor 14-11
    Finish Assignment 14-11
    Go To Work Order Tracking 14-11
    Interrupt Assignment 14-11
    Long Description 2-11
    Mark Row for Delete 2-22
    Maximize 2-18
    Maximize Portlet Window 2-5
    Minimize 2-18
    Minimize Portlet Window 2-5
    Modify Availability 14-11
    More Search Fields 2-7
    New Row 2-24
    Next Page 2-14
    Next Row 2-14
    Previous Page 2-14
    Previous Row 2-14
    Refresh 14-11
    Remove Portlet 2-5
    Save Current Query 2-8
    Save Query 2-7
    Select Date 2-11, 2-30
    Select Date and Time 2-11
    Select Value 2-11
    Select Work Date 14-11
    Show Assignments 14-11
    Start Assignment 14-11
    Undo Delete 2-22
    View Details 2-21
    View Search Tips 2-7
    View/Manage Queries 2-8
    WHERE Clause 2-7

C

calculated work priority 14-10
calendar grid 14-8
CAN status 4-5, 9-24, 9-29, 12-15, 14-6
CANCEL status 9-18, 9-38
change order 9-6
    creating 9-23
change records
    creating 12-22
    managing 12-22
    statuses 12-14, 12-22
Change Status button 2-17
Change tab 12-19
Changes application 12-18
    accessing 12-19
    Actuals tab 12-19
    buttons 12-20
    Change tab 12-19
    List tab 12-19
    Log tab 12-19
    Multisite and 12-19
    Plans tab 12-19
    quick reference 12-20
    Related Records tab 12-19
characteristic meters 3-35
characters 2-11
Classifications 2-32, 3-2, 3-4
    classifying a record 2-37
    linking items to 6-26
    Multisite and 2-36
    searching 2-36
    ticket records and 12-5
    tickets and 12-6
    using 2-35
Clear button 2-21
Clear Changes button 2-17
Close Details button 2-21, 2-23
CLOSE status 4-5, 9-24, 9-29, 9-38, 12-15, 14-6
CLOSED status 12-12
columns
    database columns 1-6
    defined 1-7
    sorting table window columns 2-22
commodities 6-3
commodity codes 9-5

commodity groups 6-3
Communication tab 5-7
communication templates
using 12-11
communications log
tickets 12-11
work order 14-40
COMP status 9-38, 12-15, 14-6
companies
branch hierarchy 9-11
branch locations 9-10
company masters and 9-8
contracts and 9-8
creating records 9-10
deleting records 9-11
disqualifying as a vendor 9-11
duplicating 9-11
managing records 9-11
purchasing and 9-9
types 9-10
Companies application 9-7
accessing 9-9
Addresses tab 9-9
Branches tab 9-9
Company tab 9-9
Contacts tab 9-9
List tab 9-9
Multisite and 9-8
quick reference 9-9
Company Master application 9-12
accessing 9-13
Addresses tab 9-13
Company Master tab 9-13
Contacts tab 9-13
List tab 9-13
Multisite and 9-12
quick reference 9-13
Company Master tab 9-13
company masters
creating 9-13
deleting 9-14
disqualifying 9-14
managing 9-14
Company Set (Multisite) 1-9
Company tab 9-9
Comparison Rules application 5-4
COMPLETE status 14-15
Computer tab 5-6
computers
creating records 5-7
Deployed Asset Administration and 5-5
managing records 5-8
Maximo Fusion and 5-5
Reconciliation and 5-6
Computers application 5-4
accessing 5-6
Communication tab 5-7
Computer tab 5-6
Displays tab 5-7
Image Devices tab 5-7
List tab 5-6
Media Adapters tab 5-7
Multisite and 5-5
Network tab 5-7
Processors tab 5-6
quick reference 5-7
Software tab 5-7
Storage tab 5-6
Users tab 5-7
condition codes
assets and 6-5
creating 6-6
inventory and 6-5
issues and transfers and 6-5
item records and 6-6
managing 6-6
tools and 6-6
Condition Codes application 6-4
accessing 6-6
Multisite and 6-5
quick reference 6-6
condition monitoring
assets 3-17
locations 3-17
managing 3-19
meters and 3-17
preventive maintenance and 3-17
work orders and 3-17
Condition Monitoring application 3-16
accessing 3-17
Condition Monitoring tab 3-18
generating a work order 3-19
List tab 3-18
Multisite and 3-16
quick reference 3-18
Condition Monitoring tab 3-18
Contacts tab
Companies 9-9
Company master 9-13
continuous meters 3-35
Contract Lines tab
Lease/Rental Contracts 4-11
Purchase Contracts 4-17
Warranty Contracts 4-24
Contract tab
Labor Rate Contracts 4-8
Lease/Rental Contacts 4-11
Master Contracts 4-13
Purchase Contracts 4-17
Warranty Contracts 4-24
contracts
details 4-3
revising 4-5
statuses 4-4
terms and conditions 4-3
types 4-2
courier location 3-26
Craft tab 10-4
crafts
creating records 10-5
job plans and 10-3
labor and 10-3
managing records 10-5
skill levels 10-5
work orders and 10-3
Crafts application 10-2
accessing 10-4
Associated Labor tab 10-4
Craft tab 10-4
List tab 10-4
Multisite and 10-3
quick reference 10-4
Crafts tab 10-8
Create Change Order action 9-24
Create KPI Option button 2-17
Create Requisitions application B-11
Create Service Request application B-7

D

data fields 2-28
database
  components 1-6
  data sharing 1-9
  operators 2-11
  overview 1-6
  relational 1-8
  structure in Maximo 1-8
dates
  entering 2-30
  Select Date dialog box 2-30
DECOMMISSIONED status 3-15, 3-32
default table data 2-23
Delete button 2-14
Delete Work Order action 14-41
deleting records 2-45
deployed assets 3-2, 5-1
  administration 5-2, C-15
  asset discovery tools C-15
  Deployed Assets Administration module C-16
  Deployed Assets module C-17
  Reconciliation administration module C-17
Desktop Requisitions Module B-9
  buttons B-10
  creating a requisition B-11
  creating requisitions using templates B-13
  creating templates B-13
  modifying requisitions B-14
  Purchasing Module and B-10
  requisition statuses B-14
  saving draft requisitions B-13
  searching requisitions B-13
  viewing requisitions B-13
Detail Menu button 2-11
  using 2-32
Device Cards tab 5-9
direct issue items 6-17
discovered assets 5-1
Displays tab 5-7
DMS *See* Document Management System
Document Management System 2-42
  defined 2-42
documents
  attaching 2-43
Download button 2-14, 2-21
downtime
  non-operational 14-39
  operational 14-39
  planned 14-38
  reporting 14-38
  unplanned 14-38
DRAFT status 4-4, 7-8, 8-14, 12-38, 12-41, 13-11
Drilldown 3-3
  actions 2-35
  creating 3-3
  details display 2-33
  navigation 2-34
  Open Drilldown action 2-32
  using 2-32

E

economic order quantity 6-13
Edit Portlet button 2-5
editable table windows 2-24
Enter Meter Readings action 14-23
ENTERED status 9-17
equipment *See* assets
Escalation tab 13-8
escalations 13-7
EXPIRD status 4-5
external purchase requisition 9-3

F

failure analysis 14-41
failure class 3-20, 14-41
failure codes
  assets and 3-21
  cause 3-20
  creating 3-22
  failure class 3-20
  failure reporting 3-23
  locations and 3-21
  managing 3-23
  problem 3-20
  remedy 3-20
  work orders and 3-21
Failure Codes application 3-20
  accessing 3-21
  Failure Codes tab 3-21
  List tab 3-21
  Multisite and 3-21
  quick reference 3-22
Failure Codes tab 3-21
failure hierarchy 3-20
  building 3-22
failure reporting 14-40
  failure analysis 14-41
  recording failure data 14-41
Failure Reporting tab
  Incidents 12-23
  Problems 12-27
  Work Order Tracking 14-29
field buttons 2-11
  Detail Menu 2-11
  Long Description 2-11
  Select Date 2-11
  Select Date and Time 2-11
  Select Value 2-11
fields 1-6, 2-26
  accepts nulls 2-27
  buttons 2-11
  calculated values 2-27
  data entry 2-26
  data types 2-27
  default values 2-27, 2-29
  defined 1-6
  entering partial values 2-30
  entering values 2-30
  Field Help 2-28
  key 1-7
  read/write 2-26
  read-only 2-26

required 2-26
value list 2-28
files 1-7
defined 1-6
Filter Labor to Match Work button 14-9, 14-11
Filter Table button 2-21, 2-22
Filter Work to Match Labor button 14-10, 14-11
Find button 2-21
Find field 2-9
Finish Assignment
action 14-15
button 14-11, 14-15
Frequency tab
Master PM 8-3
Preventive Maintenance 8-10

G

gauges 3-35
General Ledger Accounts 2-38
See also GL Account codes
generating a work order
with Condition Monitoring 3-19
with PM application 8-13
GL Account codes
component sequence 2-40
components 2-38
defined 2-38
editing 2-41
entering 2-41
fully defined accounts 2-39
mandatory components 2-39
optional components 2-39
partially defined accounts 2-39
valid account codes 2-39
global issues 12-7, 12-8
creating 12-8
relating other records to 12-9
Go To menu
link 2-3
list of modules and applications 1-2
Go To Work Order Tracking button 14-11

H

Hazardous Materials tab 11-14
hazards
assets and 11-2
creating records 11-5
items and 11-3
locations and 11-2
precautions and 11-3
safety plans and 11-3
tag outs and 11-4
Hazards and Precautions tab 11-14
Hazards application 11-2
accessing 11-4
Hazards tab 11-4
List tab 11-4
Multisite and 11-2
Precautions tab 11-4
quick reference 11-4
Tag Outs tab 11-4
Hazards tab 11-4
Help
button 2-21
Field Help 2-28
link 2-3
Hide Table button 2-21, 14-36
hierarchies 1-8
asset assembly structure 3-12
company branch hierarchy 9-11
failure hierarchy 3-22
item assembly structure 6-25
location 3-29, 3-30
PM hierarchy 8-13
work order hierarchy 14-34
adding children 14-36
adding tasks 14-37
building 14-36
change status 14-37
terms 14-35
viewing 14-35
HISTEDIT status 12-15, 14-6
History tab 3-27
HOLD status 9-18
holding location 3-26
hyphens (-) 2-11

I

IAS *See* item assembly structures
IMAC *See* install, move, add, change
Image Devices tab 5-7
INACTIVE status 7-8, 8-14, 10-11, 10-14, 10-21, 12-38, 12-41, 13-11
Inbox 2-4
Incident tab 12-23
incidents
creating 12-25
managing 12-25
statuses 12-12, 12-26
Incidents application 12-22
accessing 12-23
Activities tab 12-23
buttons 12-23
Failure Reporting tab 12-23
Incident tab 12-23
List tab 12-23
Log tab 12-23
Multisite and 12-23
quick reference 12-24
Related Records tab 12-23
Solution Details tab 12-23
index 1-7
INPRG status 9-24, 9-38, 12-12, 12-15, 14-6
install, move, add, change
adding assets C-12
changing assets C-12
installing assets C-10
moving assets C-11
internal purchase requisition 9-3
INTERPT status 14-15
Interrupt Assignment
action 14-14
button 14-11, 14-14
inventory
condition codes and 6-7

creating kits 6-11
creating records 6-11
item records and 6-7
kits 6-4
managing 6-11
purchasing and 6-8
reordering 6-8
storeroom records and 6-8
viewing item availability 6-12
Inventory application 6-7
accessing 6-8
Inventory tab 6-8
List tab 6-8
Multisite and 6-7
quick reference 6-8
Reorder Details tab 6-8
Rotating Asset tab 6-8
using 6-10
Where Used tab 6-8
Inventory tab 6-8
Invoice Lines tab 9-15
Invoice tab 9-15
invoices
contracts and 9-15
creating 9-16
deleting 9-18
duplicating 9-17
entering invoice lines 9-17
managing 9-17
purchase orders and 9-15
statuses 9-17
types 9-16
Invoices application 9-14
accessing 9-15
Invoice Lines tab 9-15
Invoice tab 9-15
List tab 9-15
Multisite and 9-14
quick reference 9-16
Terms and Conditions tab 9-16
Issue tab 6-16
issues and transfers
condition codes and 6-15
direct issue items 6-17
inventory and 6-15
purchasing and 6-16
work orders and 6-16
Issues and Transfers application 6-14
accessing 6-16
Issue tab 6-16
List tab 6-16
Multisite and 6-15
quick reference 6-17
Transfer In tab 6-16
Transfer Out tab 6-16
Item Assembly Structure tab 6-23
item assembly structures
applying 3-13, 6-25, C-7
creating 6-25, C-6
Item Master application 6-19
accessing 6-22
Item Assembly Structure tab 6-23
Item tab 6-22
List tab 6-22
Multisite and 6-19
quick reference 6-23
Specifications tab 6-22
Storerooms tab 6-22
Vendors tab 6-22
Item Sets (Multisite) 6-3, 6-19
Item tab 6-22
items
alternate items 6-24
assets and 6-20
balances 6-13
categories 6-10
commodity codes and 6-20
condition codes and 6-21
contracts and 6-21
creating records 6-24
deleting 6-26
determining reorder point 6-12
inventory and 6-21
issuing 6-17
linking to Classifications 6-26
managing 6-26
managing item counts 6-13
managing vendors 6-26
reordering 6-13
requisitioning vendor items 9-28
returning 6-19, 9-32
safety information and 6-22
storerooms and 6-22
transferring 6-18
viewing availability 6-12
Items tab 6-34

J

Job Plan Sequence tab
Master PM 8-3
Preventive Maintenance 8-10
Job Plan tab 7-3
job plans
associating work assets 7-7
creating 7-4
defining labor 7-6
defining materials 7-6
defining services 7-6
defining tasks 7-5
defining tools 7-6
deleting 7-8
duplicating 7-7
managing 7-8
ownership 7-7
preventive maintenance and 7-3
statuses 7-8
task sequence 7-5
work orders and 7-3
Job Plans application 7-2
accessing 7-3
Job Plan tab 7-3
List tab 7-3
Multisite and 7-2
quick reference 7-3
Work Assets tab 7-3

K

key fields 1-7
defined 1-7

key word 1-7
kits 6-4
creating 6-11, 6-25
managing 6-14, 6-26
KPIs tab 13-8

L

labor
approving actuals in Labor Reporting 14-20
Assignment Manager and 10-6
availability for assignments 14-8
contracts and 10-6
crafts and 10-7
creating records 10-9
defining job plan labor 7-6
deleting crafts 10-10
deleting records 10-11
managing records 10-10
modifying qualifications 10-10
person records and 10-7
statuses 10-10
work orders and 10-7
Labor application 10-6
accessing 10-7
buttons 10-8
Crafts tab 10-8
Labor tab 10-8
List tab 10-8
Multisite and 10-6
Qualifications tab 10-8
quick reference 10-8
labor contracts 4-2
labor hours
reporting (Labor Reporting) 14-20
reporting (Quick Reporting) 14-24
reporting (Service Desk) 12-9, 12-14
reporting (Work Order Tracking) 14-39
Labor List (Assignment Manager) 14-8
calendar grid 14-8
filtering 14-9
labor location 3-26
labor rate contracts
associating labor 4-9
company records and 4-7
crafts and 4-7
creating 4-9
invoices and 4-7
labor and 4-7
labor reporting and 4-7
managing 4-9
rate schedules 4-9
work orders and 4-7
Labor Rate Contracts application 4-6
accessing 4-8
Associated Labor tab 4-8
Contract tab 4-8
labor contracts 4-2
List tab 4-8
Multisite and 4-6
Properties tab 4-8
quick reference 4-8
Rate Schedule tab 4-8
Terms and Conditions tab 4-8
Labor Reporting application 14-16
accessing 14-18
approving labor 14-20
buttons 14-18
contracts and 14-16
creating labor transactions 14-19
deleting labor transactions 14-21
invoices and 14-17
labor and 14-17
Multisite and 14-16
quick reference 14-18
reporting labor hours 14-20
Service Desk and 14-17
work orders and 14-17
Labor tab 10-8
labor transaction timer 12-14
lead time 6-12
lease contracts 4-2
lease/rental contracts
associating assets with 4-12
company records and 4-10
creating 4-12
invoices and 4-10
payment schedules 4-12
Lease/Rental Contracts application 4-10
accessing 4-11
Associated Assets tab 4-11
Contract Lines tab 4-11
Contract tab 4-11
lease contracts 4-2, 4-10
List tab 4-11
Multisite and 4-10
Properties tab 4-11
quick reference 4-11
rental contracts 4-2, 4-10
Terms and Conditions tab 4-11
lines
invoice 9-17
purchase contract 4-20
purchase order 9-22
purchase requisition 9-27
purchasing line types 9-4
quotation 9-37
warranty contracts 4-25
Link Results application 5-4
Link Rules application 5-4
location hierarchy 3-30
building from IAS 3-31
planning 3-30
Location tab 3-27
locations 3-29
assets and 3-24
condition monitoring and 3-24
contracts and 3-24
creating 3-28
decommissioning 3-32
inventory and 3-25
managing 3-32
meters and 3-25
networks 3-31
preparing to create 3-29
preventive maintenance 3-25
priority 3-3
safety information 3-25
statuses 3-32
systems 3-30
terms 3-29
types of 3-26
work orders 3-26
Locations application 3-23
accessing 3-27

Assets tab 3-27
creating a hierarchical system 3-31
creating a network system 3-31
History tab 3-27
List tab 3-27
Location tab 3-27
Meters tab 3-27
Multisite and 3-24
quick reference 3-27
Safety tab 3-27
Specifications tab 3-27
lock out
defined 11-6
Lock Out/Tag Out application 11-6
accessing 11-7
List tab 11-7
Lock Out/Tag Out tab 11-7
Multisite and 11-6
quick reference 11-7
Lock Out/Tag Out tab 11-7
Log tab
Activities 12-16
Changes 12-19
Incidents 12-23
Problems 12-27
Releases 12-30
Service Requests 12-34
Work Order Tracking 14-29
logging in *See* signing in
logging out *See* signing out
logs 12-11
communications log 12-11, 14-40
Service Desk 12-11
work log 12-11, 14-40
work order 14-40
Long Description button 2-11
lower action limit 3-19
lower warning limit 3-19

M

Manage Folders action 2-43
Manage Library action 2-43
Manage Systems action 3-31
Manufacturer Conversion application 5-2
Mark Row for Delete button 2-22
master contracts 4-3
creating 4-14
creating associating contracts 4-15
managing 4-15
Master Contracts application 4-13
accessing 4-13
Associated Contracts tab 4-13
Contract tab 4-13
List tab 4-13
master contracts 4-3
Multisite and 4-13
Properties tab 4-13
quick reference 4-14
Terms and Conditions tab 4-14
Master PM application 8-2
accessing 8-3
Frequency tab 8-3
Job Plan Sequence tab 8-3
List tab 8-3
Master PM tab 8-3
Multisite and 8-2
quick reference 8-3
Seasonal Dates tab 8-3
Master PM tab 8-3
master PMs
create associated PMs 8-6
creating 8-4
deleting 8-7
items and 8-2
job plan sequencing 8-5
job plans and 8-2
managing 8-6
preventive maintenance and 8-3
seasonal dates 8-5
setting frequency 8-4
updating associated PMs 8-7
Material Receipts tab 9-31
materials
defining job plan materials 7-6
receiving 9-31
Maximize button 2-18
Maximize Portlet Window button 2-5
Maximo
applications 1-2
components 1-2
configuration 1-xxv
database 1-8
fields 2-26
hierarchies 1-8
implementation 1-xxv
launching 2-1
modules 1-2
overview 1-1
personalization 1-xxv
searching 2-6
Toolbar 2-15
user 10-1
Maximo Fusion C-15
Maximo Toolbar 2-15
measurement points
creating 3-18
limits for characteristic meters 3-19
limits for gauge meters 3-19
meters and 3-18
Media Adapters tab 5-7
Meter Group tab 3-38
meter groups
assets and 3-37
creating 3-38
deleting 3-39
items and 3-37
locations and 3-37
managing 3-39
meters and 3-38
modifying 3-39
Meter Groups application 3-37
accessing 3-38
List tab 3-38
Meter Group tab 3-38
Multisite and 3-37
quick reference 3-38
Meter tab 3-36
meters
assets and 3-34
characteristic 3-35
condition monitoring and 3-34
continuous 3-35
creating records 3-36
deleting 3-14, 3-36

entering readings 14-23, 14-38
gauge 3-35
inventory and 3-34
locations and 3-34
managing 3-36
meter groups and 3-35
preventive maintenance and 3-35
types 3-35
Meters application 3-33
accessing 3-35
Meter tab 3-36
Multisite and 3-34
quick reference 3-36
Where Used tab 3-36
Meters tab
Assets 3-9
Locations 3-27
Minimize button 2-18
Minimize Portlet Window button 2-5
Modify Availability button 14-11
More Search Fields button 2-7
Move/Modify Asset button 3-9
MRO Software Support 1-xxvii
Multisite
applications and 1-11
defined 1-9
Organization level 1-10
overview 1-9
Set level 1-9
Site level 1-10
System level 1-9

N

Navigation Bar 2-3
navigation links 2-3
Network Device tab 5-9
network devices
creating records 5-10
Deployed Asset Administration and 5-8
managing records 5-10
Reconciliation and 5-9
Network Devices application 5-8
accessing 5-9
Device Cards tab 5-9
List tab 5-9
Multisite and 5-8
Network Device tab 5-9
quick reference 5-9
Network Printer tab 5-11
network printers
computers and 5-11
creating records 5-12
Deployed Asset Administration and 5-11
managing records 5-12
Reconciliation and 5-11
Network Printers application 5-10
accessing 5-11
List tab 5-11
Multisite and 5-10
Network Printer tab 5-11
quick reference 5-11
Network tab 5-7
networks (locations) 3-29
creating 3-31
viewing 3-32
New Record button 2-17
New Row button 2-22, 2-24
NEW status 12-12
Next Page button 2-14, 2-21
Next Record button 2-17
Next Row button 2-14, 2-21
nonstocked items 6-10
NOT READY status 3-15, 3-32
null
defined 1-7, 2-12
searching for null values 2-12

O

OLA
see operating level agreement 13-6
Open Drilldown action 2-32
operating level agreement 13-6
operating location 3-26, 3-29
OPERATING status 3-15, 3-32
Operating System Conversion application 5-2
operators 2-11
Organization (Multisite) 1-10, 1-12
ownership
job plans 7-7
preventive maintenance 8-8
tickets 12-5
work orders 14-5

P

PAID status 9-18
parent-child relationship 1-8
passwords 1-13, 2-1
self-registration B-1
payment schedules 4-12, 9-7
PENDING status 12-12
People application 10-12
accessing 10-13
List tab 10-13
Multisite and 10-12
Person tab 10-13
quick reference 10-13
Person Group tab 10-16
person groups
creating 10-17
deleting 10-17
managing 10-17
Workflow and 10-16
Person Groups application 10-15
accessing 10-16
List tab 10-16
Multisite and 10-15
Person Group tab 10-16
quick reference 10-16
person records
creating 10-13
deleting 10-15
labor records and 10-13
managing 10-14
statuses 10-14
Person tab 10-13

pipes (|) 2-11
Plans tab
Activities 12-16
Changes 12-19
Releases 12-30
Work Order Tracking 14-29
PM hierarchies 8-13
PM Hierarchy tab 8-10
PM tab 8-10
PMs
assets/locations and 8-9
creating 8-11
generating a PM work order 8-13
hierarchies 8-13
job plans and 8-9
managing 8-13
master PMs and 8-9
ownership 8-8
priority 8-11
routes and 8-9
safety plans and 8-9
seasonal dates 8-12
setting frequency 8-12
statuses 8-13
work orders and 8-10
PNDREV status 4-4
PO Lines tab 9-20
PO *See* purchase orders
PO tab 9-20
portlets 2-4
personalizing 2-5
PR Lines 9-27
PR Lines tab 9-26
PR *See* Purchase Requisition
PR tab 9-26
Precaution tab 11-10
precautions
assets and 11-10
creating records 11-11
hazards and 11-10
locations and 11-10
managing records 11-11
safety plans and 11-10
Precautions application 11-9
accessing 11-10
List tab 11-10
Multisite and 11-9
Precaution tab 11-10
quick reference 11-10
Precautions tab 11-4
Preventive Maintenance application 8-8
accessing 8-10
Frequency tab 8-10
Job Plan Sequence tab 8-10
List tab 8-10
Multisite and 8-8
PM hierarchies 8-13
PM Hierarchy tab 8-10
PM tab 8-10
quick reference 8-10
Seasonal Dates tab 8-10
Previous Page button 2-14, 2-21
Previous Record button 2-17
Previous Row button 2-14, 2-21
pricing contracts 4-2
primary key 1-7
primary system 3-29
printing
HTML User's Guide 1-xxiv
PDF User's Guide 1-xxiv
priority
asset 3-3
calculated work priority 14-10
location 3-3
PM 8-11
recommended values 14-4
ticket 12-6
work order 14-4
work order calculations 14-9
problem records
creating records 12-29
incidents and 12-26
managing 12-29
Problem tab 12-27
problems
statuses 12-12
Problems application 12-26
accessing 12-26
Activities tab 12-27
buttons 12-27
Failure Reporting tab 12-27
List tab 12-27
Log tab 12-27
Multisite and 12-26
Problem tab 12-27
quick reference 12-27
Related Records tab 12-27
Solution Details tab 12-27
Processor Conversion application 5-2
Processors tab 5-6
Profile link 2-3
Properties tab
Labor Rate Contracts 4-8
Lease/Rental Contracts 4-11
Master Contracts 4-13
Purchase Contracts 4-17
Warranty Contracts 4-24
purchase contracts 4-2
adding lines 4-20
company records and 4-16
creating 4-19
invoices and 4-16
managing 4-20
purchasing and 4-17, 9-6
software license contracts 4-20, C-4
Purchase Contracts application 4-16
accessing 4-17
blanket contracts 4-2, 4-16
Contract Lines tab 4-17
Contract tab 4-17
List tab 4-17
Multisite and 4-16
pricing contracts 4-2, 4-16
Properties tab 4-17
purchase contracts 4-2, 4-16
quick reference 4-17
software license contracts 4-3, 4-16
Terms and Conditions tab 4-17
purchase orders
adding PO lines 9-22
change order 9-23
creating 9-22
creating from RFQ 9-37
duplicating 9-23
managing 9-23
purchase contracts and 9-19
purchase requisitions and 9-20
statuses 9-24

storerooms and 9-20
types 9-6
Purchase Orders application 9-19
accessing 9-20
List tab 9-20
Multisite and 9-19
PO Lines tab 9-20
PO tab 9-20
quick reference 9-21
Ship To/Bill To tab 9-20
Terms and Conditions tab 9-20
purchase requisitions
contracts and 9-25
creating 9-27
entering line items 9-27
external 9-3
internal 9-3
managing 9-28
purchase orders and 9-25
statuses 9-28
storerooms and 9-26
Purchase Requisitions application 9-24
accessing 9-26
List tab 9-26
Multisite and 9-25
PR Lines tab 9-26
PR tab 9-26
quick reference 9-26
Ship To/Bill To tab 9-26
Terms and Conditions tab 9-26
purchasing
contracts and 9-5
creating records from contracts 9-6
inventory and 9-3
purchase contracts and 9-6

Q

QBE (query by example) *See* query
Qualification tab 10-19
qualifications
creating 10-20
deleting 10-21
labor and 10-18
managing 10-21
statuses 10-21
Qualifications application 10-18
accessing 10-19
Associated Labor tab 10-19
List tab 10-19
Multisite and 10-18
Qualification tab 10-19
quick reference 10-19
Qualifications tab 10-8
query 2-6
defined 1-8
results 2-14
saving 2-8, 2-9
QUEUED status 12-12
Quick Reporting application 14-21
accessing 14-21
List tab 14-21
Multisite and 14-21
quick reference 14-22
Quick Reporting tab 14-22
Quick Reporting tab 14-22
quotation lines
awarding to vendors 9-37
recording 9-37
Quotations tab 9-35

R

Rate Schedule tab 4-8
rate schedules 4-9
READY status 9-38
Receive Rotating Items action 9-30
receiving
assets and 9-29
companies and 9-30
creating receipts 9-31
inventory and 9-30
invoices and 9-30
managing receipts 9-33
materials 9-31
materials with changes 9-32
returning materials 9-32
rotating items 9-29, C-7
services 9-32
Receiving application 9-29
accessing 9-30
List tab 9-30
Material Receipts tab 9-31
Multisite and 9-29
quick reference 9-31
Service Receipts tab 9-31
Reconcile Balances action 6-13
reconciliation 5-3, C-17
Reconciliation Results application 5-4
Reconciliation Tasks application 5-4
records 1-7
automatic numbering of 2-28
creation varies by application 2-28
defined 1-6
deleting 2-45
displaying additional 2-20
editing a record 2-44
general procedure for creating 2-29
heading 2-18
making inactive 2-44
sorting 2-22
Refresh button 14-11
Refresh Labor List button 14-9
Refresh Work List button 14-10
related documentation 1-xxvi
database 1-8
installation 1-xxvi
Multisite 1-xxvi
reports 1-xxvi
system administration 1-xxvi
related records
associating 12-8
tickets 12-6
types 12-7
viewing (Service Catalog) 13-5
viewing (Service Desk) 12-7
Related Records tab
Activities 12-16
Changes 12-19
Incidents 12-23
Problems 12-27
Releases 12-30

Service Requests 12-34
Work Order Tracking 14-29
Related SLAs tab 13-8
Release tab 12-30
releases (purchasing) 9-6
releases (Service Desk)
creating 12-33
managing 12-33
statuses 12-14
Releases application 12-30
accessing 12-30
Actuals tab 12-30
buttons 12-31
List tab 12-30
Log tab 12-30
Multisite and 12-30
Plans tab 12-30
quick reference 12-31
Related Records tab 12-30
Release tab 12-30
Remove Portlet button 2-5
remove sequence 11-8
Remove Work Plan action 14-40
rental contracts 4-2
Reorder Details tab 6-8
reorder point 6-12
reorder process 6-12
actions 6-13
lead time 6-12
reorder point 6-12
repair location 3-26
Report Downtime action 14-38
Reports link 2-3
request for proposal 9-33
Request for Quotations application 9-33
accessing 9-35
List tab 9-35
Multisite and 9-34
quick reference 9-35
Quotations tab 9-35
RFQ Lines tab 9-35
RFQ tab 9-35
Terms and Conditions tab 9-35
Vendors tab 9-35
requestor 12-2
requests for quotation
adding vendors 9-36
awarding quotation lines 9-37
companies and 9-34
contracts and 9-34
creating 9-36
creating PO from 9-37
managing 9-37
purchase orders and 9-34
purchase requisitions and 9-34
recording quotation lines 9-37
statuses 9-37
requisitioning
spare parts 9-28
vendor items 9-28
RESOLVED status 12-12
result set 2-19
Results subtab 2-14
Return link 2-3
Return with Value link 2-3
REVISD status 4-5
RFQ Lines tab 9-35
RFQ *See* requests for quotation
RFQ tab 9-35
rotable spares *See* rotating assets
rotables *See* rotating assets
Rotating Asset tab 6-8
rotating assets 3-6, 3-11, 6-20
rotating equipment *See* rotating assets
rotating items 3-6, 6-20
creating 6-24
information technology assets and 6-25
rotating parts *See* rotating assets
Rotating Tool Assets tab 6-31
Route tab 7-9
routes
applying 7-9, 14-37
creating 7-10
managing 7-10
Routes application 7-8
accessing 7-9
List tab 7-9
Multisite and 7-9
quick reference 7-10
Route tab 7-9
Row Details 2-23
rows 1-7
check boxes 2-14
displaying additional 2-20
selecting 2-14

S

Safety Plan tab
Safety Plans 11-14
Work Order Tracking 14-29
safety plans
adding to work orders 14-33
assets and 11-12
associating hazardous materials 11-16
associating hazards 11-16
associating precautions 11-16
creating 11-15
duplicating 11-16
hazards and 11-12
job plans and 11-13
listing tag outs 11-16
locations and 11-12
managing 11-17
precautions and 11-13
tag outs and 11-13
work orders and 11-13
Safety Plans application 11-12
accessing 11-14
Hazardous Materials tab 11-14
Hazards and Precautions tab 11-14
List tab 11-14
Multisite and 11-12
quick reference 11-14
Safety Plan tab 11-14
Tag Outs tab 11-14
safety stock 6-12
Safety tab
Assets 3-9
Locations 3-27
salvage location 3-26
Save button 2-17
Save Current Query button 2-8
Save Query button 2-7
saved queries 2-8, 2-9

SCHED status 9-18
Search Solutions application B-4
Search Toolbar 2-7
searching 2-6
    advanced 2-13
    Advanced Search button 2-13
    basic 2-8
    null values 2-12
    toolbar 2-7
    using saved queries 2-8
    using SQL WHERE clause 2-13
    using the Find field 2-9
    using wildcard characters 2-12
    viewing results 2-14
Seasonal Dates tab
    Master PM 8-3
    Preventive Maintenance 8-10
sections 2-18
security
    overview 1-12
    passwords 1-13
segment 2-38
Select Action menu 2-16
Select Date and Time button 2-11
Select Date button 2-11, 2-30
Select Items for Transfer button 6-18
Select Labor button 14-33
Select Labor Query action 14-8
Select Materials button 14-33
Select PO Items button 6-18
Select Row check box 2-14
Select Spare Parts button 9-28
Select Tools button 14-33
Select Value button 2-11, 2-31
Select Work Date button 14-11
Select Work Orders button 14-36
semicolons 2-11
SENT status 9-38
sequence
    job plan 7-5
    Lock Out apply 11-8
    Lock Out remove 11-8
    route 7-10
    work order task 14-33
serialized assets *See* rotating assets
serialized equipment *See* rotating assets
service catalog
    assets and 13-2
    contracts and 13-2
    creating service groups 13-4
    creating services 13-5
    deleting services 13-5
    locations and 13-2
    managing 13-5
    purchasing and 13-2
    related records 13-5
    Service Desk and 13-3
    service group types 13-4
    service level agreements and 13-3
Service Catalog application 13-1
    accessing 13-3
    List tab 13-3
    Multisite and 13-2
    quick reference 13-3
    Service Group tab 13-3
service contracts 4-3, 4-22
service desk 12-1
    agent 12-2
    terminology 12-2
Service Group tab 13-3
service items
    creating records 6-29
    job plans and 6-28
    managing 6-29
    purchasing 6-28
    work orders and 6-28
Service Items application 6-27
    accessing 6-28
    List tab 6-28
    Multisite and 6-27
    quick reference 6-28
    Service tab 6-28
Service Level Agreement tab 13-8
service level agreements
    assets and 13-6
    contracts and 13-7
    creating 13-10
    deleting 13-11
    escalations and 13-7
    locations and 13-6
    managing 13-11
    ranking 13-10
    related SLAs 13-10
    statuses 13-11
    tickets and 13-7
    types 13-6
    work orders and 13-8
Service Level Agreements application 13-5
    accessing 13-8
    Assets and Locations tab 13-8
    buttons 13-9
    Escalation tab 13-8
    KPIs tab 13-8
    List tab 13-8
    Multisite and 13-6
    quick reference 13-9
    Related SLAs tab 13-8
    Service Level Agreement tab 13-8
service organization 12-2
service receipts 9-32
Service Receipts tab 9-31
Service Request tab 12-34
service requests
    Create Service Request application B-7
    creating (self-service) B-6
    creating (Service Desk) 12-36
    creating from e-mail B-8
    creating from Search Solutions B-6
    managing 12-36
    modifying (self-service) B-8
    searching (self-service) B-8
    self-service B-5
    self-service module B-3
    statuses 12-12
    View Service Request application B-8
Service Requests application 12-33
    accessing 12-34
    buttons 12-34
    List tab 12-34
    Log tab 12-34
    Multisite and 12-34
    quick reference 12-34
    Related Records tab 12-34
    Service Request tab 12-34
Service tab 6-28
service tickets *See* tickets
services
    See also service items

defining job plan services 7-6
Sets (Multisite) 1-11, 6-19
Ship To/Bill To tab
Purchase Orders 9-20
Purchase Requisitions 9-26
Show Assignments button 14-11, 14-14
Show Path to Top button 2-35
Show Table button 2-21, 14-36
Sign Out link 2-3
signing in
to Actuate 2-1
to Maximo 2-1
signing out
of Actuate 2-3
of Maximo 2-3
Site (Multisite) 1-10, 1-12, 3-29
SLA *See* service level agreements
Software Conversion application 5-3
software license contracts 4-3, 4-20, C-4, C-18
license types C-19
managing license details C-19
monitoring software usage C-20
Software Suite Setup application 5-3
Software tab 5-7
Software Usage Setup application 5-3
Solution Details tab
Incidents 12-23
Problems 12-27
solutions 12-10
creating 12-38
managing 12-38
Search Solutions application B-4
searching B-4
statuses 12-38
Solutions application 12-37
accessing 12-37
List tab 12-37
Multisite and 12-37
quick reference 12-37
Solution tab 12-37
sort key 1-7
spare parts 3-12
in asset assembly structures 3-13
requisitioning 9-28
Spare Parts tab 3-9
special characters 2-11
special order items 6-10
Specifications tab
Assets 3-9
Item Master 6-22
Locations 3-27
Tools 6-37
SQL *See* Structured Query Language
standard services 9-23
See also service items
Start Assignment
action 14-14
button 14-11, 14-14
Start Center 2-4
components 2-4
defined 2-4
link 2-3
multiple 2-4
portlets 2-4
STARTED status 14-15
status
activity 12-18
asset 3-15
asset up/down status 14-38
assignment 14-15
change 12-22
contract 4-4
desktop requisition B-14
incident 12-26
invoice 9-17
job plan 7-8
labor 10-10
location 3-32
overview 2-44
person records 10-14
preventive maintenance 8-13
problem 12-29
purchase order 9-24
purchase requisition 9-28
qualification 10-21
request for quotation 9-37
service level agreement 13-11
service request 12-36
solution 12-38
ticket 12-12
ticket templates 12-41
work order 12-14, 14-5
stock categories 6-10
stocked equipment *See* rotating assets
stocked items 6-10
Stocked Tool tab 6-30
stocked tools
creating records 6-32
managing records 6-32
Stocked Tools application 6-30
accessing 6-30
List tab 6-30
Multisite and 6-30
quick reference 6-31
Rotating Tool Assets tab 6-31
Stocked Tool tab 6-30
Vendors tab 6-31
Where Used tab 6-31
stockrooms *See* storerooms
Storage tab 5-6
Storeroom tab 6-34
storerooms
creating a storeroom record 6-34
inventory and 6-33
items and 6-33
managing 6-35
purchasing and 6-34
Storerooms application 6-33
accessing 6-34
Items tab 6-34
List tab 6-34
Multisite and 6-33
quick reference 6-34
Storeroom tab 6-34
Storerooms tab
Item Master 6-22
Tools 6-37
Structured Query Language 1-8
subassemblies 3-12
subtabs 2-17
Results 2-14
Saved Queries 2-9
SUSPND status 4-5
Swap Asset button 3-9
System (Multisite) 1-9, 1-11
system requirements (Maximo) 2-1
systems (locations) 3-29, 3-30
creating a hierarchical system 3-31

creating a network system 3-31
viewing 3-32

T

table filter
refining search results 2-10
table window buttons 2-21
See also buttons
Add to Bookmarks 2-22
Clear 2-21
Close Details 2-21
Download 2-21
Filter 2-21
Find 2-21
Help 2-21
Hide Table 2-21
Mark Row for Delete 2-22
New Row 2-22
Next Page 2-21
Next Row 2-21
Previous Page 2-21
Previous Row 2-21
Show Table 2-21
Undo Delete 2-22
View Details 2-21
table windows 2-19
buttons 2-21
creating new rows 2-24
default table data 2-23
editable 2-24
filter 2-14, 2-22
navigating 2-20
paired 2-25
Row Details 2-23
tasks 14-33
tables (database) 1-7
tabs 2-17
tag outs
apply sequence 11-8
assets and 11-7
creating 11-8
hazards and 11-7
locations and 11-7
managing 11-9
safety plans and 11-7
work orders and 11-7
Tag Outs tab
Hazards 11-4
Safety Plans 11-14
Task Filters application 5-4
tasks
defining 7-5, 14-33
task ID 7-5
Template tab 12-39
terms and conditions 9-5
contracts and 4-3, 4-21
creating 4-22
managing 4-22
purchasing and 4-21
Terms and Conditions application 4-20
accessing 4-21
Multisite and 4-21
quick reference 4-21
Terms and Conditions tab
Invoices 9-16
Labor Rate Contracts 4-8
Lease/Rental Contracts 4-11
Master Contracts 4-14
Purchase Contracts 4-17
Purchase Orders 9-20
Purchase Requisitions 9-26
Request for Quotations 9-35
Warranty Contracts 4-24
ticket templates 12-5
creating 12-40
managing 12-40
statuses 12-41
tickets and 12-39
Ticket Templates application 12-39
accessing 12-39
List tab 12-39
Multisite and 12-39
quick reference 12-39
Template tab 12-39
tickets
about 12-3
classes 12-3
classifying 12-6
creating 12-4
deleting 12-13
managing 12-9
managing activities 12-9
Multisite and 12-4
ownership 12-5
priority 12-6
related records 12-6
solutions and 12-10
statuses 12-12
templates 12-5
time management 12-9
tildes (~) 2-12
Tool tab 6-37
toolbar buttons 2-16
See also buttons
Change Status 2-17
Clear Changes 2-17
Create KPI Option 2-17
New Record 2-17
Next Record 2-17
Previous Record 2-17
Save Record 2-17
toolbars
browser 2-2
Maximo 2-15
Search 2-7
tools
assets and 6-36
creating records 6-38
defining job plan tools 7-6
deleting 6-38
duplicating tool records 6-38
managing records 6-38
stocked tools and 6-36
work orders and 6-36
Tools application 6-35
accessing 6-36
List tab 6-36
Multisite and 6-35
quick reference 6-37
Specifications tab 6-37
Storerooms tab 6-37
Tool tab 6-37
Vendors tab 6-37
Transfer In tab 6-16

Transfer Out tab 6-16

U

underpinning agreement 13-6
Undo Delete button 2-22
upper action limit 3-19
upper warning limit 3-19
user name 2-1, 2-4
    self-registration B-1
user record 10-1
users and custodians
    assets 3-14
Users tab 5-7

V

Vendor Items button 9-28
vendor location 3-26
vendors
    disqualifying 9-11
Vendors tab
    Item Master 6-22
    Request for Quotations 9-35
    Stocked Tools 6-31
    Tools 6-37
View Costs action 14-35
View Details button 2-21, 2-23
View Search Tips button 2-7
View Work Order & PMs button 2-35
View/Manage Queries button 2-8

W

WAITASGN status 14-15
WAPPR status 4-4, 9-17, 9-24, 9-28, 12-14, 14-6
warranty contracts 4-3
    adding contract lines 4-25
    adding meter lines 4-25
    associating assets with 4-25
    company records and 4-23
    creating 4-24
    duplicating 4-25
    invoices and 4-23
    managing 4-25
    work orders and 4-23
Warranty Contracts application 4-22
    accessing 4-23
    Associated Assets tab 4-24
    Contract Lines tab 4-24
    Contract tab 4-24
    List tab 4-24
    Multisite and 4-23
    Properties tab 4-24
    quick reference 4-24
    service contracts 4-3, 4-22
    Terms and Conditions tab 4-24
    warranty contracts 4-3, 4-22
WHERE Clause button 2-7
Where Used tab
    Inventory 6-8
    Meters 3-36
    Stocked Tools 6-31
wildcard characters 2-12
    placement 2-12
    using 2-12
WMATL status 12-14, 14-6
work assets 7-7
Work Assets tab 7-3
Work List (Assignment Manager) 14-9
    filtering 14-10
work log
    tickets 12-11
    work order 14-40
Work Order tab 14-29
Work Order Tracking application 14-24
    accessing 14-29
    Actuals tab 14-29
    Failure Reporting tab 14-29
    List tab 14-29
    Log tab 14-29
    Multisite and 14-24
    Plans tab 14-29
    quick reference 14-29
    Related Records tab 14-29
    Safety Plan tab 14-29
    Work Order tab 14-29
work orders
    adding children to the hierarchy 14-36
    applications used to create 14-2
    applying routes to 14-37
    assets and 14-25
    building a WO hierarchy 14-36
    building hierarchy on Plans tab 14-37
    change status 14-37
    classes 12-3, 14-2
    contracts and 14-25
    corrective 14-3
    creating (Quick Reporting) 14-23
    creating (Service Desk) 12-13
    creating (Work Order Tracking) 14-32
    deleting 14-41
    dispatching 14-14
    duplicating 14-34
    emergency 14-3
    entering meter readings 14-38
    event report 14-3
    generating a PM work order 8-13
    generating hierarchy from PM hierarchy 14-37
    hierarchy 14-34
    hierarchy terms 14-35
    inventory and 14-25
    issues and transfers and 14-26
    job plans and 14-26
    labor and 14-27
    locations and 14-25
    logs 14-40
    managing (Quick Reporting) 14-23
    managing (Service Desk) 12-14
    managing (Work Order Tracking) 14-34
    meters and 14-27
    Multisite and 12-4
    ownership 14-5
    preventive maintenance and 14-27
    preventive maintenance type 14-3
    priority 14-4
    purchasing and 14-27

related records 14-38
reporting actuals 14-39
reporting labor hours 12-14
safety plans 14-33
Service Desk and 12-3, 14-28
service level agreements and 14-28
statuses 12-14, 14-5
types 14-3
viewing a hierarchy 14-35
work plan
creating 14-32
defined 14-32
defining tasks 14-33
removing 14-40
selecting multiple labor, materials, or tools 14-33
Workflow 2-4
capabilities 1-13
Inbox 1-15, 2-4
overview 1-13
process examples 1-14
WPCOND status 12-15, 14-6
WSCH status 12-14, 14-6
WSTART status 4-4

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Contents

About This Guide **1**
Why Read This Guide? 1
Who Should Read This Guide? 1
Related Documentation 1
Support 1

What is the Application Designer? **3**
Overview 3

Application Technology **4**
User Interface Architecture 4
Controls 4
Presentation XML 6
Process of modifying the presentation XML 7
Exporting and importing presentation XML's 7
Control layout 7
Editing XML files 8

Before using the Application Designer **9**
Setting up an environment 9
Usage rules and recommendations 10

Using the Application Designer to edit Maximo applications **11**
How to add a value list to a field 11
How to create and apply a crossover domain 13
Creating the crossover domain 14
Applying the crossover domain 14
How to display data in Maximo applications from linked objects 15
How to create application restrictions 17
How to duplicate an application 18
How to create a new application 18
How to layout a new tab 20
How to delete a user-created application 20
How to control the size of fields 21
How to optimize the placement of input fields for data entry 22
How to add buttons and select action menu items 22
How to define signature options for an application 23
How to assign and override the default label value for a textbox control 23
Assigning a value to a default label field 24
Overriding a value in the default label field 24
How to define default values for fields 25
How to define a table's default filter 25

How to modify application dialogs 26
How to move controls across tabs 27
How to move controls across applications 27
How to move user interface configurations across servers 28
How to export multiple applications 28
How to link to an external URL 29
How to link to an application from a text field 29
How to modify contents of the Go To menu 30

Appendix A – List of Signature Options 31
Common Signature Options 31
Specific Signature Options 32

Appendix B – Controls Reference Information 34
Appbar 34
Attachments 35
Blank Line 37
Button Group 38
Checkbox 39
Combobox 43
Data Source 47
Default Value 51
Help Grid 53
HyperLink 55
Image 59
Include 61
Listbox 63
Menubar 66
Multiline Textbox 68
Multipart Textbox 72
Parameter Value 77
Parameter Values 78
Pushbutton 81
Radio Button 83
Radio Button Group 85
Section 89
Section Column 93
Section Header 95
Section Row 97
Static Text 98
Tab 101
Tab Group 104
Table 105
Table Column 111
Textbox 118
Tree 122
Tree Attribute 127
Tree Node 128

About This Guide

Why Read This Guide?

This guide provides a starting point for users who want to use the Application Designer to create new applications or modify existing applications in Maximo.

Who Should Read This Guide?

Any user involved with configuring Maximo can benefit from reading this guide. All users should read the Application Designer's online help content before performing any of the steps outlined in this guide.

Related Documentation

- Online help for Application Designer
- *Maximo System Administrator's Guide*

Support

To find the nearest corporate office, visit the company contact page at the MRO Web site:

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The MRO Software Support Online Web site includes information on product releases, software patches, and documentation updates. To find the most current version of a document, refer to the Support Web sites Knowledge Base.

What is the Application Designer?

This section provides overview information for the Application Designer application introduced in Maximo Enterprise Suite (MXES).

Overview

The Application Designer is a tool that lets you configure the user interface for Maximo applications to meet your specific business needs.

The easy-to-use Application Designer interface enables you to change the appearance of Maximo applications without editing a line of code. The drag and drop functionality built into the Application Designer greatly simplifies the process of using this tool.

The Application Designer lets you perform the following common modifications to a selected application's user interface:

- Moving fields and sections
- Adding new fields, tabs, and tables with columns and rows

Advanced capabilities include:

- Creating or duplicating applications
- Defining signature options
- Editing the Toolbar or the Select Action menu.

Although you can create a new or duplicate an existing application with this tool, you may need to perform the following additional activities to fully enable a new application:

- Create database tables and columns
- Define user access to the application
- Develop Java code
- Develop workflow processes

Application Technology

User Interface Architecture

The following sections discuss the user interface (UI) and general architecture of the Application Designer, including the following topics:

- Controls
- Presentation XML (Extensible Markup Language)
- Process of modifying the presentation XML
- Exporting and importing presentation XML's
- Control layout
- Editing XML files

Controls

Maximo uses "controls," numerous pre-fabricated elements like tables and textboxes, to build the user interface for its applications. The individual controls are part of Maximo's code and cannot be modified. Some types of controls like sections act as containers for other types of controls, such as tab groups, textboxes, or static text. The behavior of each control depends on its binding to a Maximo business object (MBO) attribute. Attributes store values from the Maximo database that are referenced in a control.

Note See Appendix B, Controls Reference Information, for detailed descriptions of each individual control.

The following table lists the controls available in the Application Designer.

Control Name	Description
Tabgroup	A container for adding tabs.
Tab	An individual tab in a tab group.
Section	A container for adding controls such as section columns, section rows, fields, buttons, combo

Control Name	Description
	boxes, and check boxes.
Section Column	A column in a section. This control can be only be used in a row within a section.
Section Row	A row in a section.
Section Header	A container to label a section or a table window, with the capability to display dynamic values in its label. This control contains the parameter values control which is a container for the parameter value control.
Parameter Values	A container for the parameter value control to be used in sections and table windows.
Parameter Value	Dynamic values that reside within a section header.
Combobox	A combo box with drop-down functionality.
Checkbox	An HTML check box.
Blank Line	Inserts white space in a section.
Help Grid	Help text displayed in dialog boxes.
Image	Allows you to insert an image.
Listbox	An open, drop-down menu which displays dynamic content.
Multiline Textbox	A text input box with multiple lines.
Multipart Textbox	Two text boxes next to each other; one for displaying text and the other a description.
Static Text	Informational text displayed in an application.
Textbox	A text input box with a single line.
Table	A container for a table window.
Table Column	A container for a column in a table window.
Tree	A container for a hierarchical structure.
Tree Attribute	A value to describe the tree node control within the tree control.
Tree Node	A container for defining the child elements within the tree control.
Appbar	A container that displays all the applications, belonging to the current module, except for the currently displayed application.
Menubar	A menu bar that contains signature options for

Control Name	Description
	the Search, Query, and Bookmark menus.
Hyperlink	A hyperlink that supports both text and graphics.
Button Group	A container for adding buttons.
Pushbutton	Individual buttons that belong to the button group.
Radio Button Group	A container for radio buttons.
Radio Button	An individual radio button that belongs to the radio button group.
Default Value	Forces a default value for a control that resides within a container.
Attachments	An attachments icon that allows you to attach different types of information to a Maximo record, including images, spreadsheets, and Web pages.

Presentation XML

Maximo maintains information about the controls used to compose an application's user interface in XML format, and stores this information in the database. Maximo assigns a unique ID to each control used in an application, and the Application Designer accesses these controls by referencing their unique ID's.

When you run MAXINST to create the Maximo database, the install program places the presentation XML content in the MAXPRESENTATION table.

Every application's presentation XML has a tag for each control it uses to build the user interface. Each tag has a series of attributes, and their values determine how the control behaves when you view the application. The location of the tags in an application's XML presentation relative to other tags determines the order and sequence of the user interface elements that you see in a screen.

When you access an application, Maximo retrieves the application's XML code from the database and stores it in the application server's memory. For each control referenced in the XML, the user interface framework of Maximo fetches that control's code. Based on the values of the attributes passed to it in the XML, Maximo builds the HTML description of the element that the control represents in memory. The application server holds all tags in memory while Maximo incrementally builds the complete HTML description for a screen. Once completed, the application server passes the HTML from the application server to the client (user's Web browser). The XML remains in the server's cache and waits for the next time a user accesses the application.

Process of modifying the presentation XML

When you display an application in the Application Designer, Maximo loads its presentation XML in memory. When you edit the application by moving, adding, and changing attribute values and deleting controls, the Application Designer edits the XML in memory to reflect changes you make.

When you save an application, the application server saves the XML in memory to the database. Additionally, when you next use that application, the server loads the XML from the database and renders the application in a browser window.

Note Controls that represent user interface elements carried over from versions of Maximo earlier than 6.0 have an ID that loosely corresponds to the JSP tag structure in the first Web-based version of the product. The difference in control ID's from 5.x to 6.0 will make it easier to identify user interface elements when comparing 5.X to 6.0 screens.

Exporting and importing presentation XML's

You have to use the Application Designer to export XML presentation information to a physical file that you can save. This feature enables you to transport application screens from one environment to another, such as from development to production.

Exporting an XML presentation to a file also lets you edit the XML directly with a text editor rather than with the Application Designer. For example, a title modification that applies to all screens is easier to do with the search and replace functionality of a text editor rather than editing each application screen using the Application Designer as the user interface editor.

Note If you manually edit an XML file, you must load that file to the database for changes to take effect using the Import File Definitions feature.

MRO recommends that you limit XML edits to simple changes, such as modifying labels, to ensure that changes migrate with subsequent upgrades of Maximo.

Control layout

The positioning of controls in the Maximo user interface is completely relative. The user interface is neither pixel based nor is it grid based as in 5.x releases. There are no set locations where controls can live on a screen. The exact placement location of a control is relative to other controls on the screen. The relative aspect of the spacing also provides for dynamic sizing of a section's columns and overall width. For example, a section that contains fields of various widths will automatically size itself relative to the largest field (widest) in that section.

Editing XML files

There are times when editing the XML file of a presentation is more efficient than using the Application Designer to make changes. In some cases, the only way for you to make a desired change to a presentation is to edit system level XML code.

If you want to make a presentation change by editing XML code, you must first use the export function in the Application Designer to export the desired application's XML code to a file. Once exported, you must save the file to a local directory, and then edit that file with a simple text editor. Once completed, you can import the modified XML file using the import function of the Application Designer.

Before using the Application Designer

This section of the document provides pointers about setting up a client machine and the general system environment before using the Application Designer.

Setting up an environment

Before using the Application Designer, please consider the following recommendations:

- To optimize the amount of information you can view with your monitor without scrolling, set your resolution to 1280x1024.

  A higher resolution makes it easier to keep floating dialog boxes, like the Control Palette and Control Properties, outside of the application's configurable screen area.

- Employ three separate environments—development, staging, and production—for designing, testing, and deploying changes made with the Application Designer.

  For example, the development environment can be on your own dedicated workstation where you can make configuration changes using the Application Designer. The staging environment can be a server machine where you merge and test individual configurations created in the development environment. After staging, you migrate the changes to your production environment so that they are available to all users.

  Employing a multi-stage model insulates your production environment from configuration changes made in development and staging.

Usage rules and recommendations

You should familiarize yourself with the following rules and recommendations when using the Application Designer:

1. Only one user should edit an application on the same server.
2. MRO recommends that you create the data source and associated objects for a new application in Database Configuration before creating screens with the Application Designer.
3. You can only delete user-created or duplicated applications. You cannot delete applications shipped with the product.
4. When you drag a control from the palette onto the workspace, the Application Designer positions the control to the top and left of the target control. Target controls are highlighted with a yellow background color.
5. You can drag most controls into container type controls, such as a section or table.
6. The package key you use when installing Maximo determines what applications you can edit with the Application Designer.

Using the Application Designer to edit Maximo applications

This section provides information on how to perform common application configuration tasks using the Application Designer and other Maximo configuration applications, such as Database configuration and domains.

How to add a value list to a field

Maximo uses domains to limit the choice of values that you can enter in a field or to filter what values that can display in a list. To add a domain to a field, you need to perform the following tasks:

- Use the Domains application to create a new domain.
- Use Database Configuration to create a new attribute and to associate the new domain with it.
- Configure the database.
- Use the Application Designer to add a textbox with a lookup list to the user interface and to bind the textbox to the attribute you created in Database Configuration.

The following example shows how you use the Application Designer to add a textbox control to the Assets application with a lookup that lets you identify your company's assets as being in a state of: ACTIVE, PENDING, or INACTIVE.

1. Open the Domains application by choosing Go To > Configuration > Domains.
2. Click Add New Domain > Add New ALN Domain.
3. Enter "Assetstatus" in the Domain field, "Asset Status" in the Description field, "UPPER" in the Data Type field, and "8" for the Length.

4. In the ALN Domain screen, click New Row, and enter “ACTIVE” in the Value and Description fields.

5. Repeat Step 4, and enter values of “PENDING” and “INACTIVE.”

6. Click OK, and then click Save.

7. Open the Database Configuration application by choosing Go To > Configuration > Database Configuration.

8. Type “ASSET” in the Object field, and press Enter.

9. Click on “ASSET” to open the object record.

10. Click the Attributes tab, and then click New Row.

11. Enter “STATE” in the Attribute field, and then enter the following values:

    - “UPPER” in the Type field
    - “8” in the Length field
    - “Activity State” in the Title field
    - “INACTIVE” in the Default Value field
    - “ASSETSTATUS” in the Domain field

12. Click Save.

13. To save the changes to your database, complete the following:

    - Sign out of Maximo.
    - Shut down the application server (Ctrl + C), and then wait a minute.
    - Open a command shell (Start > Run > cmd), and navigate to the <maximo_root>/tools/maximo directory.
    - Run configdb.bat.

      Refer to the *Maximo System Administrator’s Guide* for additional details on configuring the database.

    - Restart the application server, and login to Maximo.

14. Open the Application Designer application by choosing Go To > Configuration > Application Designer.

15. Type “ASSET” in the Application field, and press Enter.

16. Click on ASSET to open the Assets application in the AD workspace.

17. Click the Asset tab.

18. Click on the Control Palette icon.

19. Click on the Section label that holds the Asset and Status fields. The section background turns green.

20. Drag and drop the textbox control on top of the Asset field. Notice that the input box displays “INVALID BINDING” because the control is not bound to a data field.

21. Select the textbox control (the background turns green), and click the Control Properties icon.

22. Type “STATE” in the Attribute field, and press Tab. Note that the text box field becomes bound and its label changes to Activity State (which is the description you entered when you first created the attribute).

23. Type “VALUELIST” in the Lookup field, and press Tab. Note that the AD adds a lookup icon next to the field so that Activity State will now show a list of values (e.g., ACTIVE, PENDING, and INACTIVE) during lookup.

24. Click Save.

25. Open the Assets application by choosing Go To > Assets > Assets and open an asset in the Asset tab to view your changes.

The preceding example is a generic way to create simple value lists. You can view more application-specific value list presentations in lookups.xml in the <maximo_root>/resource/presentations/system directory. You can add more or modify the existing value lists by editing the contents of this file with a text editor.

If you edit lookups.xml or any other presentation-related XML file, you will need to import the presentation file into the database by using the Import Application Definition button, which is available from both the Applications and Workspace tabs of the Application Designer.

How to create and apply a crossover domain

A crossover is the mechanism that Maximo uses to copy data from a child object to a main object based on a value you enter in an application’s user interface. You might build a crossover, for example, to accomplish the following:

- Copy the supervisor’s name for a user who creates a material receipt to the newly created record.

- Copy the phone number and address of a person after you enter their name in an application.

- Copy the parent asset number (assetnum) to a work order after you enter the asset number in a new work order record.

Creating a crossover is a multi-procedure process. The first procedure is to create the crossover using the Domains application. The second procedure is to apply the crossover using the Database Configuration application.

To illustrate how to create and apply a crossover, let's describe how to use a crossover to copy the parent asset number to a new work order record.

The WORKORDER object manages work order records. To create a work order record, you generally enter an asset number. Maximo stores that value as part of the work order record in WORKORDER. Additionally, the ASSET object maintains information about assets, including the parent asset number, in its attributes. The PARENT attribute points to the parent asset number.

The crossover enables Maximo to copy and save the parent asset number of an asset once you create a work order and enter an asset number.

Creating the crossover domain

Follow the steps below to create the crossover:

1. Open the Domains application by choosing Go To > Configuration > Domains.
2. Click Add New Domain > Add New Crossover Domain.
3. Enter "ASSET2WO" as the Domain name.
4. Click New Row in the Crossover Domain section.
5. Enter "ASSET" in the Object field. This step defines ASSET as the source object of the crossover.
6. Enter "assetnum=:assetnum and siteid=:siteid" in the Validation Where Clause field.
7. Click New Row in the Crossover Fields section.
8. Enter "PARENT" in the Source Field and "PARENTASSET" in the Destination Field.

Applying the crossover domain

1. Open the Database Configuration application by choosing Go To > Configuration > Database Configuration.
2. Type "WORKORDER" in the Object field, and click Enter.
3. Click WORKORDER to open the Work Order table.
4. Click the Attributes tab, and then click New Row.
5. Enter "PARENTASSET" in the Attribute field, and click Save.

6. Click Filter, and enter “ASSETNUM” in the Attribute field.

7. Press Enter to open the ASSETNUM details section, and enter “ASSET2WO” in the Domain field.

8. Click Save.

9. Configure the database by running configdb.bat.

   Refer to the *Maximo System Administrator’s Guide* for additional details on configuring the database.

In summary, by completing the preceding procedures you:

- Created a crossover domain that retrieves asset information when a user enters an asset number in a work order record.
    - The crossover uses the value for ASSETNUM and SITEID and runs it through the Where Clause to find a matching record for the ASSETNUM+SITEID combination in the ASSET object.
    - Once located, the crossover takes the value of the PARENT attribute (the source) of the matching record in the ASSET object and copies it to PARENTASSET attribute (the destination) in the WORKORDER object.
    - The Parent Asset Number now appears in the work order record, but the data is static. Static means that the parent asset number data will not change in the work order record even if someone subsequently modifies the parent asset value in the ASSET object.

How to display data in Maximo applications from linked objects

Maximo binds the presentation XML for each of its applications to a single main object that represents a data table in the Maximo database. The Work Order Tracking application, for example, uses WORKORDER as its main object. The user interface for a Maximo application uses controls that are bound to database attributes of the main object to present data in a browser window. The Work Order Tracking application, for example, displays information from the WORKORDER object.

Additionally, because most applications need to present data that resides in other objects, you need to use the Database Configuration application to define “relationships” between objects. The relationships you create between objects enables data from related tables to be available to the main object and subsequently to your application.

The Work Order Tracking application, for example, needs to display data stored in the Asset object. Complete the following steps to link the ASSET object to the WORKORDER object so that Asset Number and other ASSET

table information can display in Work Order Tracking. This example assumes that you are adding a multipart textbox control to Work Order Tracking to display Asset Number and Description.

1. Open the Database Configuration application by choosing Go To > Configuration > Database Configuration.

2. Type “WORKORDER” in the Object field, and click Enter.

3. Click WORKORDER to open the Work Order table.

4. Click the Relationships tab, and then click New Row. To create a binding, parent to child relationship between the WORKORDER and ASSET objects, type the following information:

   - “ASSET” in the Relationship field
   - “ASSET” in the Child Object field
   - “assetnum=:assetnum and siteid=:siteid” in the Where Clause field

   The Where Clause value ensures that lookups in the Asset table return a unique record value.

5. Click Save.

   Now that you have created a relationship between the WORKORDER and ASSET objects, you can add controls to the Work Order Tracking application that bind to attributes in the Asset table. For example, the following steps show how you can add a multipart textbox control that displays Asset Number and Description.

6. Open the Application Designer by choosing Go To > Configuration > Application Designer.

7. Open Work Order Tracking in the Workspace tab.

8. Select the Work Order tab.

9. Click a section where you want to add the multipart textbox control.

10. Click the Control Palette button.

11. Drag the multipart textbox control into the selected section, and then click on the control.

12. Click the Control Properties button to open the Multipart Textbox Properties dialog box. To assign the control a field label and to bind to the Asset Number and Description attributes, type the following information:

    - “Asset” in the Default Label field
    - “ASSETNUM” in the Attribute field
    - “ASSETMAIN” in the Menu Type field

- "ASSET" in the Lookup field
- "ASSET" in the GOTO Application field
- "ASSET.DESCRIPTION" in the Attribute for Part 2 field
- "READONLY" in the Input Mode for Part 2 field

13. Click Save.

Refer to the Database Configuration section in the *Maximo System Administrator's* guide for more information on defining relationships.

How to create application restrictions

You can use the Application Designer to define restrictions on what records can display in an application. You can filter what data a user can see when opening an application by entering a query in the application's presentation control. You might want to filter what records a specific application displays when it and several other applications use the same data source, but not all of the data records in the set are applicable to all of the applications.

To define an application restriction, complete the following steps:

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.
2. Type the name of the application you wish to open, or press Enter to display a list of applications.
3. As an example, open the Assets application in the Workspace tab.
4. Click Select Action > Toggle Show All Controls.
5. Click the "presentation…" control.
6. Click the Control Properties button to open the Presentation Properties dialog box.
7. In the Where Clause field, enter "inactive='0'". The Application Designer interprets the query as "select * from asset where inactive='0'".
8. Click Save.

   When you open the Assets application, you will only see records where the inactive attribute has a value of "0".

How to duplicate an application

You can use the Application Designer to duplicate an existing Maximo application. In previous releases, duplicating an application was referred to as “cloning.” If you duplicate an application, you create a copy of the application’s presentation and application definition.

To duplicate an existing application, complete the following steps:

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.

2. Type the name of the application you wish to open, or press Enter to display a list of applications.

3. Open the application you want to duplicate in the Workspace tab.

4. Open the Duplicate Application dialog box by choosing Select Action > Duplicate Application Definition.

5. Enter a unique name for the duplicated application in the Application field, and a text description in the Description field. The name you enter in the Description field is what will appear in the navigation bar of the application.

6. Click OK to open the new application in the Workspace tab.

7. Click Save.

   The new application appears in the same module as the original application. To view the new application:

   - Sign out of Maximo (refreshes the list of applications in the “Go To” menu)
   - Sign in to Maximo
   - Navigate to the new application

How to create a new application

The Application Designer lets you create three different types of new applications:

- Standard power application
- Single page
- Self service

Maximo uses a different template for each application type to create the basic user interface structure of the application.

A power application is a multi-tab application. The template used to create a power application lets you build an application with the following characteristics:

- Multi-tabs, including the standard List and Workspace tabs
- Select action menu
- Toolbar buttons and other user interface components contained in a regular Maximo application

A single page application uses a variation of the power application's template. There are no tabs, but regular toolbar options are available.

A self service application uses a more restrictive template with fewer user interface options. The template is designed for creating a record and not browsing data, so there is no default list table window and no ordinary toolbar.

To create a new application, complete the following steps:

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.
2. Click New Application Definition in the toolbar to open the Create a New Application dialog box.
3. Enter a unique name for the new application in the Application field.
4. Enter a brief description of the new application in the Description field. This name becomes the title of the application in the Maximo navigation bar and in the Go To menu.
5. Enter the name of the main object (primary database table) for the application in the Main Object field.

   Note that the main object you enter here should already exist in the Maximo database. Use Database Configuration to define new objects.
6. Enter the name of the Maximo module for this application. If needed, click the select value icon to display a list of modules.
7. Click the button for the type of application you want to create:

   - Power App
   - Single Page App
   - Self Service App

   The new application opens in the Workspace tab.
8. Click Save Application Definition to save your new application to the database.

Maximo sets the default security to Read. All users who have access to the application in their security profile can read records but not insert or delete.

You can define additional signature options for a new application using the Add/Modify Signature Options select action. Refer to Appendix A for a complete list of signature options.

You can use the Controls and the Properties floating dialog boxes to add or modify controls (such as tabs, buttons, and table windows) in the new application.

To view your new application in the Maximo “Go To” menu, sign out and then back into Maximo.

How to layout a new tab

When you create a new application or add a new tab to an existing application, the Application Designer displays an empty screen. This is the starting point to begin laying out the structure and location for all the elements that will make up this new screen.

To begin the layout of a new screen, add a section control. This control designates a space where you can add additional controls. You can break the layout of the page vertically by adding additional section controls.

You can break a section into horizontal segments or columns by adding section column controls to the section control. A section by default can not render itself and only acts a container for other controls. You can make a section display a bar and a minimize/maximize button by completing the Section Properties dialog box.

Once you create the basic layout of a screen with the section controls, you can begin adding additional controls that display data such as the textbox control.

How to delete a user-created application

You must use a database editor (for example, SQL Plus) to delete an application that you created in the Application Designer.

Note Deleting an application does not remove any custom tables, fields, or domains that you might have created to support the application. Additionally, you must shut down the Maximo application server before you delete an application created with the Application Designer.

To delete an application that you created or duplicated, open a database editor and complete the following steps:

1. Login as an administrator.

2. Type the following commands, and replace the variable <APPLICATION NAME> with the name of the application you want to delete.

Enter the application name in uppercase. For example, if the name of the application you want to delete is Test, replace <APPLICATION NAME> with <TEST> in all the commands.

```
delete from maxapps where app='<APPLICATION NAME>';

delete from maxpresentation where app='<APPLICATION NAME>';

delete from sigoption where app='<APPLICATION NAME>';

delete from applicationauth where app='<APPLICATION NAME>';

delete from maxlabels where app='<APPLICATION NAME>';

delete from maxmenu where moduleapp='<APPLICATION NAME>' and
menutype !='MODULE';

delete from maxmenu where moduleapp='<MODULE NAME>' and
elementtype='APP' and keyvalue='<APPLICATION NAME>';

delete from appdoctype where app= '<APPLICATION NAME>';
```

3. Logout of the database editor.

   Executing the above statements delete the application from the Maximo database.

How to control the size of fields

Maximo restricts how much of a field appears in the user interface so that fields of varying lengths do not show jagged edges when stacked on top of each other.

The settings are kept in this file:

<maximoroot>\applications\maximo\maximouiweb\webmodule\webclient\common\fieldsizegroups.jsp

For string fields (ALN, UPPER, LOWER), the defined sizes are:

- If the database size is 1 or 2 characters, then the field length displayed on a screen is 2.
- If the database size is 3 through 30 characters, then the field length displayed on a screen is 10.
- If the database size is greater than 30 characters, then the field length displayed on a screen is 40.

Note There is no specific unit of measure for field lengths displayed on screens.

The code for ALN, LOWER, UPPER field types appears below:

```
fieldtypegroup = new Hashtable();
fieldtypegroup.put(new Integer("2"), new Integer("2"));
```

```
fieldtypegroup.put(new Integer("30"), new Integer("10"));
fieldtypegroup.put(new Integer("31"), new Integer("40"));
fieldsizegroups.put(new Integer(FIELD_TYPE_ALN).toString(), fieldtypegroup);
fieldsizegroups.put(new Integer(FIELD_TYPE_LOWER).toString(),
fieldtypegroup);
fieldsizegroups.put(new Integer(FIELD_TYPE_UPPER).toString(),
fieldtypegroup);
```

Note If you make any changes to the fieldsizegroups.jsp file, you must rebuild the maximo.ear file

How to optimize the placement of input fields for data entry

When you design the user interface for a predominantly data entry application, it is crucial to order input fields to optimize the use of the Tab key to navigate between fields. Tabbing order goes from top to bottom and from left to right. You can delete fields not needed for data entry on an input screen, or move those fields to another screen.

If you wish to change the position for a large number of data input fields in an application, MRO recommends that you duplicate an existing application and then change the order of the input fields.

How to add buttons and select action menu items

You can add new toolbar buttons and select action menu items to an application by choosing one of the following select actions in the Application Designer:

- Add/Modify Toolbar Menu
- Add/Modify Select Action Menu

When adding a new button, the name you enter in the Key Value field will display in the toolbar when you mouse over the icon that represents the action associated with the button, such as Insert or Delete. Additionally, you can specify:

- The name of the image file that will represent the button in the toolbar
- The position of the button in the toolbar
- Which tabs will display the new toolbar button

The steps to add a new select action menu item are very similar to adding a new button, and both share the same dialog box for entering attributes.

How to define signature options for an application

The Application Designer enables you to add or modify signature options for a new or existing application. Signature options, which are listed in Appendix A, specify privileges for using Maximo applications, menu options, and toolbar items.

To define signature options, complete the following steps:

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.
2. Open an application in the Workspace tab.
3. Choose Select Action > Add/Modify Signature Options to open the signature options dialog box.
4. Click New Row.
5. Enter a valid signature value, for example INSERT or SAVE, in the Option field.
6. Enter a description for the signature option in the Description field.
7. You can enter additional signature options in the Option Also Grants field that Maximo will automatically grant along with the primary signature option. For example, if you add the INSERT option to the select action menu, you may also want to automatically grant CANCEL and DELETE.
8. In the Option Also Revokes field, enter any options that will be automatically revoked as a result of adding the primary option.
9. Click OK.

   Use commas to separate multiple entries in the Option Also Grants and Option Also Revokes fields.

How to assign and override the default label value for a textbox control

All controls that have a text field component, such as Textbox or Multiline Textbox, have two label fields: Default Label and Label. Both of these fields, which appear in the Control Properties dialog box, are blank when you first drag a textbox control into an application. The field name that displays in the user interface is the name for the control. For example, if you drag a Multiline Textbox into an application, its name becomes “multilinetextbox...”.

A textbox control acquires a Default Label when you link the control to an object attribute. This Default Label displays in the user interface and is read only. However, you can override the Default Label value for a control by entering a different value in the Label field. The value in the Label field

overrides the Default Label name inherited from the object attribute. This feature enables textbox controls linked to the same object attribute to have different labels in different applications. Maximo stores the label values for textbox fields in the MAXLABELS table.

Assigning a value to a default label field

Complete the following steps to assign a value to the Default Label for a textbox control.

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.
2. Open an application in the Workspace tab, for example, the Assets application.
3. Click the Asset tab, and select a section control.
4. Click the Control Palette button to open the Controls dialog box.
5. Drag the Textbox control into the highlighted section.
6. Select the Textbox control, and click the Control Properties button.
7. In the Textbox Properties dialog box, click the lookup icon for the Attribute field, and select ORGID.

   Notice that the field label in the workspace and the Default Label field in the dialog box change to Organization, which is the value in the Title field for the ORGID attribute.

Note You define the value of the Title field in the Database Configuration application. All textbox controls that bind to the ORGID attribute, for example, inherit the value of Organization in the Default Label field.

8. Click Save.

Overriding a value in the default label field

Complete the following steps to override the Default Label value for a textbox control.

1. Open the Application Designer application by choosing Go To > Configuration > Application Designer.
2. Open an application in the Workspace tab, for example, the Assets application.
3. Click the Asset tab, and select a textbox control.
4. Select the Textbox control, and click the Control Properties button.
5. In the Textbox Properties dialog box, enter a new name for the textbox control in the Label field. If the Default Label has a value of

Organization, for example, you may want to enter a different, but similar value in the Label field, such as Org ID.

Notice that the field label in the workspace for the textbox control changes to “Org ID.”

6. Click Save.

How to define default values for fields

You can specify a default value for a field by entering that value in the Default Value field of the attribute to which the field is bound. You specify a default value in the Details section for the attribute in the Database Configuration application. For example, if you want the GLACCOUNT attribute in the WORKORDER table to default to a specific account number, then you would enter that number in the Default Value field. The GL Account Number you entered will appear as the default value in all fields that are bound to the GLACCOUNT attribute.

Alternatively, you can define a field default value that is local to an application by using the Default Value control by completing the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.

2. Open an application in the Workspace tab.

3. Open the Control Palette.

4. Drag the Default Value control into the section that contains the field for which you want to assign a default value. If you do not see the Default Value control in the Section, click Select Action > Toggle Show All Controls.

5. Open the properties dialog box for the control, and enter the following:

    - The name of the attribute bound to the field to which you are assigning the default value

    - Enter the desired default value in the Value field

    - Select ‘Insert’ for Default Type

6. Click Save.

How to define a table’s default filter

You can use the Application Designer to define a default query for a table window using the Default Value control. When you first open the table,

Maximo uses the query value or values you define, to filter the records displayed from a table. For example, if you query the attribute ITEM_DESCRIPTION and specify a value of MOTOR, then the table will only display item records that have MOTOR somewhere in the description. You can also use % as a wildcard and = for exact match. If you set the value to =MOTOR, Maximo displays item records with only MOTOR in the item description.

Complete the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.

2. Open an application in the Workspace tab.

3. Drag the Default Value control into the section that contains the table for which you want to define a default filter. If you do not see the Default Value control in the Section, click Select Action > Toggle Show All Controls.

4. Open the properties sheet for the control, and enter the following:

   - The name of the attribute of the column to which you are assigning the default query

   - Enter the desired value in the Value field (Use a comma as a delimiter if you filter based on multiple values)

   - Select 'Query' for Default Type

5. Click Save.

How to modify application dialogs

You can use the Application Designer to edit application-specific dialog boxes that Maximo stores within the XML presentation of the application.

Complete the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.

2. Open an application in the Workspace tab.

3. Click the Edit Dialogs button to open a list of dialog boxes specific to the application.

   You can edit the dialog content in the same way that you would edit any other user interface element in the workspace.

4. The Maximo user interface also provides general purpose dialogs that are used by more than one application. To edit these dialogs, such as Change Status, you must use a text editor to update the library.xml file located in the following directory:

<maximo_root>\resources\presentation\system

5. If you edit library.xml or any other presentation type XML file, you must import the updated file into the database by using the Import Application Definition button in the Application Designer. The import functionality is available in both the Applications and Workspace tabs.

How to move controls across tabs

Use the Copy or Cut and Paste buttons to move a control or a section grouping of controls from one tab to another within the same application. Select the individual control or a section control that contains other controls, and click on Copy or Cut. Click the desired tab, and then select the target control (usually a section). Click the Paste button in the toolbar.

How to move controls across applications

You can move an individual control or a section container of controls across applications by editing the XML presentation code and using the import/export buttons of the Application Designer.

Complete the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.
2. Open the source application in the Workspace tab.
3. Click the Export Application Definition button.
4. Choose File > Save As to save the XML definition to a file.
5. Open the destination application in the Workspace tab.
6. Repeat Steps 3 and 4.
7. Open the saved source and destination XML files in a text editor, such as WordPad.
8. In the XML of the source file, navigate to the section ID or the individual control ID that you want to copy. Select and copy the line(s) of code.

   Use the unique ID of a control in the Application Designer's property sheet to simplify searching in XML presentation files.
9. Open the destination file, and search for the location where you want to copy the code from the source file. For example, choose Ctrl+V or choose Edit > Paste in a Windows environment.

10. Save both XML files.

11. In the Application Designer, open the destination application in the Workspace tab.

12. Click the Import Application Definition button, and enter the destination XML file name with your edit.

13. Click OK.

    To view your change, click the Tab in the destination application that contains the XML code.

Note When you copy a control like a Multipart Textbox to a different Maximo application, the control must link to an attribute that exists in the main object table for both applications to view data from the database. If the attribute relationship does not exist, the Multipart Textbox control copied to the source destination application does not contain any property values.

How to move user interface configurations across servers

You can move your user interface configurations to other servers using the export and import functionality of the Application Designer. These features enable you to easily move Maximo applications between multiple environments, for example testing and production, while different people in your organization configure individual applications.

If you or someone in your organization wants to update the user interface configuration for an application, it is good practice first to export the existing user interface XML file(s) to a backup directory. If you want to restore this instance of the user interface in the future, use the Import Application Definition feature. When you import an application, you are overwriting the application in your database and not in the presentations directory.

You can locate presentation XML files in the <maximo_root>\resources\presentations directory. These files are for illustration and reference. Do not modify them. However, you can copy one of these files, save it with a new name, and then make modifications. You can then import the modified file into Maximo using the Application Designer.

How to export multiple applications

You can copy multiple applications at the same time to another server by exporting the XML presentations to a single file.

Complete the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.

2. In the Applications tab, click Select Records.

3. Check each application whose XML presentation you want to export.

4. Click the Export Application Definition button.

5. A new browser window opens a single XML file with the presentation code for each application you exported.

   Note that the Import Application Definition function reads the beginning and an end point for each application embedded in the XML file and loads the code appropriately. You can find the start point for an application by searching for the “presentation id” text string.

6. Choose File > Save As to save the XML file to a directory.

How to link to an external URL

You can create a link to an external Web site from a Maximo application using the HyperLink control. Drop the HyperLink control into a section or table container, and then enter a valid URL for the destination site in the URL field of the control’s property sheet.

When you click on the URL link within the application, Maximo opens the destination site in a new browser window.

How to link to an application from a text field

Many text fields in Maximo applications already contain GOTO links to other applications, but you can create your own link by defining the GOTO Application and Menu Type fields of certain controls, such as Multipart Textbox, Textbox, and Table Column.

Complete the following steps:

1. Open the Application Designer by choosing Go To > Configuration > Application Designer.

2. Open an application in the Workspace tab.

3. Select a textbox control, and click the Control Properties button.

4. Enter values in the GOTO Application and Menu Type fields.

   You can locate the Menu Type ID values in menus.xml, which is located in <maximo_root>\resources\presentations\system.

For example, if you select the Asset field in Work Order Tracking, the properties dialog box has a value of “ASSET” in the GOTO Application field and a value of “ASSETMAIN” in the Menu Type field.

How to modify contents of the Go To menu

The Application Designer does not currently allow you to customize the Go To menu for an application. However, when creating a new application, the Application Designer lets you specify in which module you would like the new application to appear. When duplicating applications, the newly created application will be available in the same module as the originating application.

Appendix A – List of Signature Options

This appendix lists the signature options available to new and existing applications. See “How to define signature options for an application” for more information.

Common Signature Options

Control Name	Description
STATUS	Change Status
INSERT	New
SAVE	Save
CLOSE	Close
CANCEL	Cancel
CLEAR	Clear Changes
PREVIOUS	Previous
NEXT	Next
ASSOCFOLD	Associate Folders
MANAGEFOLD	Manage Folders
MANAGELIB	Manage Library
DUPLICATE	Duplicate Work Order
DELETE	Delete
BOOKMARK	Add to Bookmarks
RUNREPORTS	Run Reports
SEARCHBOOK	Bookmarks
SEARCHMORE	More Search Fields
SEARCHSQRY	Save Current Query
SEARCHTIPS	View Search Tips
SEARCHVMQR	View/Manage Queries
SEARCHWHER	Where Clause

Specific Signature Options

Control Name	Description	Example
ACTIVATE	Activate	Activate Process
ADDMOD	Add/Modify	ADDMODACTN - Add/Modify Actions
APPLYIAS	Apply Item Assembly Structure	
APPLYPRAD	Apply Price Adjustment	
APPLYRTE	Apply Route	
APPLYSLA	Apply SLAs	
APPR/APPROVE	Approve	
ASGNEWPRNT	Assign to New Parent	
ASSIGNWF	View Workflow Assignments	
ASSOCCOMM	Associate Commodities	
ASSOCSLA	Associate SLAs	
ASTLOCCOMM	Associate Services	
AUTHSITES	Authorize Sites	
COMMCODE	Add/Modify Commodity Codes	
COMP	Complete	Complete Work Order
CONVERSION	Add/Modify Conversions	
CREATE	Create	CREATEWO – Create Work Order
CURBALADJ	Current Balance	
DRAFT	Change Status to Draft	
DRILLDOWN	Open Drilldown	
EDITHIST	Edit History	Edit History Work Order
EXPIRE	Change Status to Expire	
FIELDDEFS	Set Field Defaults	
GENERATEWO	Generate Work Orders	
HELPWF	Workflow Help	
HISTORYWF	View Workflow History	
INACTIVATE	Inactivate	Inactivate a person
INPRG	Change Status to In Progress	
INVTRANS	View Inventory Transactions	
MASSMOVE	Move/Modify Assets	
MEASUNIT	Add/Modify Units of Measure	
METERREAD	Enter Meter Readings	
METHIST	Manage Meter Reading History	
METHISTUPD	Update Meter History	
METREADNEW	Enter Most Recent Meter Reading	
METREADOLD	Enter Meter History	
METRESET	Reset/Replace Meters	
MODDELWL	Modify/Delete Work Log	
MODIFYSLAS	Select/Deselect SLAs	
MOVEASSET	Move/Modify Assets	
MOVEVAR	Move Variants	
NEWWRKPKG	Create Work Package	

Control Name	Description	Example
NOPORTLET	Hide Portlet	
OWNER	Select Owner	
OWNERSHIP	Take Ownership	
PNDREV	Change Status to Pending Revision	
QUEUED	Problem in queue	
READ	Read access	Read access to Work Order Tracking
RECONCILE	Reconcile Balances	
REMOVEWP	Remove Work Plan	
REORDER	Reorder Items	
REORISS	Reorder Direct Issue Itms/Svcs	
RESOLVED	Resolve problem	
REVCONT	Revise Contract	
REVHIST	View Revision History	
ROUTEWF	Route Workflow	
SELASPARTS	Select Asset Spare Parts	
SHOWPLAN	Entire Plan	
SIMILARTKT	Show Similar Tickets	
STARTTIMER	Start Timer	
STOPTIMER	Stop Timer	
STOPWF	Stop Workflow	
SUSPND	Change Status to Suspend	
TEMPLATE	Apply Template	Apply Problem Template
TRANSFER	Transfer Current	Transfer Current Item
UNAPPROVE/UNDOAPPR	Unapprove/Undo Approval	Undo Approval of Work Order
USERCUST	Associate Users and Custodians	
VALIDATE	Validate	Validate Process
VIEWCONT	View Contracts	
VIEWCOSTS	View Costs	
VIEWHIST	View History	
WMATL	Set status to Waiting for Material	Set Work Order status to Waiting for Material
WO_SLAS	View SLAs	
WSTART	Change Status to Waiting to Start	
ZEROYTD	Zero Year to Date Quantities	

Appendix B – Controls Reference Information

This appendix lists the controls available in the Application Designer control palette. Each control contains an introduction, rules, example, and properties description section. The controls appear in alphabetical order.

Appbar

The Appbar, short for application bar, is a menu bar that is always open at the top of a page. The Appbar automatically lists all applications in a Maximo module except the currently active application. An application bar appears in Maximo self service applications like Desktop Requisitions and Service Requests that do not use tabs.

Rules

This is not a container control.

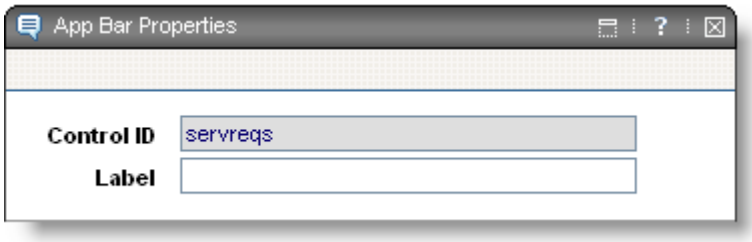
You can place this control inside the following container control:

- Client area

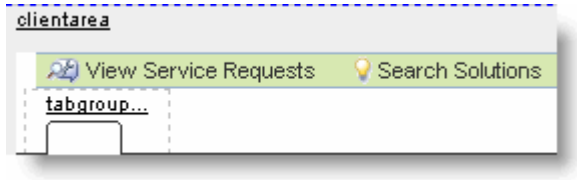
Note To view the client area in Application Designer, select Toggle Show All Controls from the Select Action menu.

Example

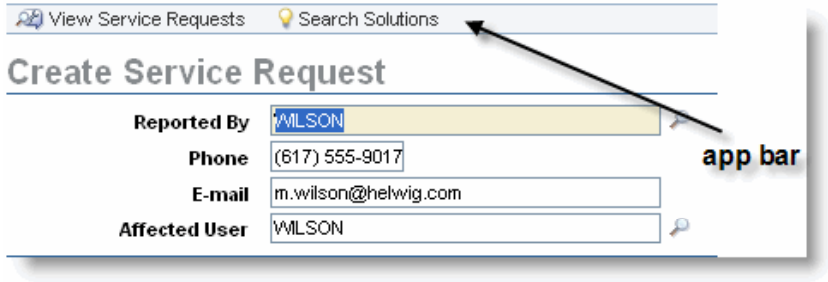
1. **Appbar Properties dialog box configured in the Application Designer.**



2. **Appbar as it appears in the Application Designer workspace.**



3. **Appbar as it appears in the Create Service Request application.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Appbar control. This value does not display in the user interface.

Attachments

You can activate the drop down menus and dialog boxes associated with Attachments by dropping the control into any Section container in a Maximo or custom application. However, you cannot access the functions used to build the Attachments control through the Application Designer interface.

The Attachments control lets you change the label for Attachments that appear in various Maximo applications. For example, you can view Attachments in Assets > Asset. A paper clip icon appears next to the Attachments label.

Rules

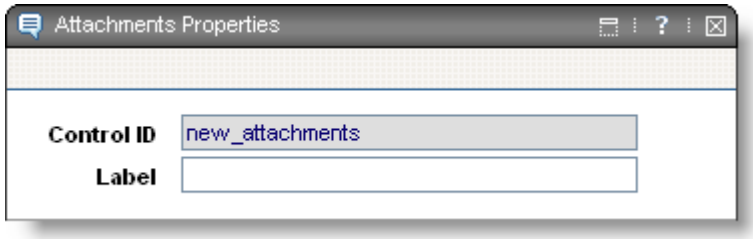
This is not a container control.

You can place this control inside the following container control:

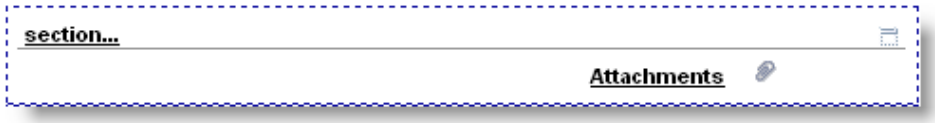
- Section

Example

1. **Attachments Properties dialog box configured in the Application Designer.**



2. **Attachments control as it appears in the Application Designer workspace.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Attachments control. The label value identifies the control to the user. If you do not enter a label, the title defaults to “Attachments” in the user interface. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.

Blank Line

A Blank Line inserts vertical white space in a section. You might, for example, use this control to add white space between text boxes or rows in a table. Blank lines provide spacing between controls to improve readability or to visually separate different types of controls within a section.

A Blank Line does not have configurable properties and simply functions as graphical element without intelligence. A Blank Line does not have a label. Blank lines, like Sections Columns and Section Rows, are transparent in the Maximo user interface.

Rules

This is not a container control.

You can place this control inside the following container control:

- Section

Example

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.

Button Group

A Button Group is a container control that holds pushbuttons. The Button Group defines the layout for the buttons it holds, including alignment within the container and the title for the group.

Rules

You can place the following control in this container control:

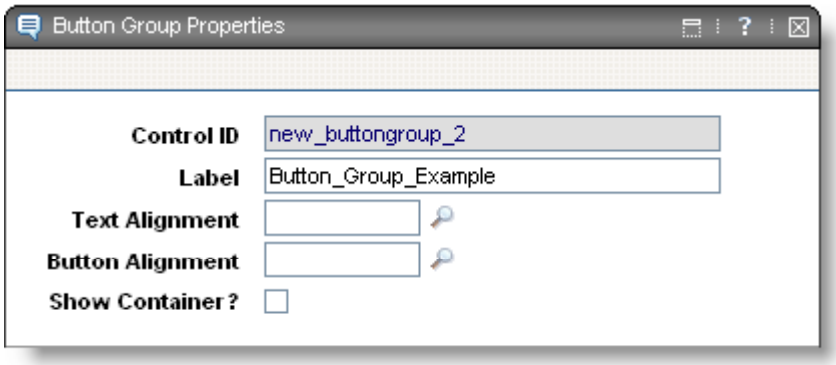
- Pushbutton

You can place this control inside the following container control:

- Section
- Table

Example

1. **Button Group Properties dialog box configured in the Application Designer.**

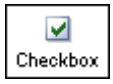


2. **Button group as it appears in the Application Designer workspace.**

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Button Group control. The label value identifies the control to the user. If you do not enter a label, the Button Group title is transparent in the user interface. Most Button Groups do not have a label in Maximo, because the control functions primarily as a container that holds a layout for its children pushbuttons. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Text Alignment	Select an alignment value to position the Button Group label within the control. The options are Left, Center, or Right. The text label always displays to the left of any pushbuttons you add to the group.
Button Alignment	Reserved for future use.
Show Container?	Select this property to display a shaded background of horizontal lines for a Button Group container. Note that you cannot view background shading for a Button Group control in a Table container.

Checkbox



A Checkbox is an input type of control that typically enables a user to select one or more items from a list or to indicate a yes/no response to a question. A selected box, for example, indicates a Yes response to a question. Also, a Checkbox can display information that is inherited from the database, which you may be able to edit depending on the Input Mode property setting.

Checkbox is similar to a text type of control, such as Textbox and Multiline Textbox, because it has a text field component or label that is visible in the user interface. The dialog boxes for these types of controls usually have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the

presentation level are not stored in the MAXATTRIBUTE OR MAXLABELS table.

Checkboxes appear in most applications and, depending on property settings, can accept user input or display information from the database.

Rules

This is not a container control.

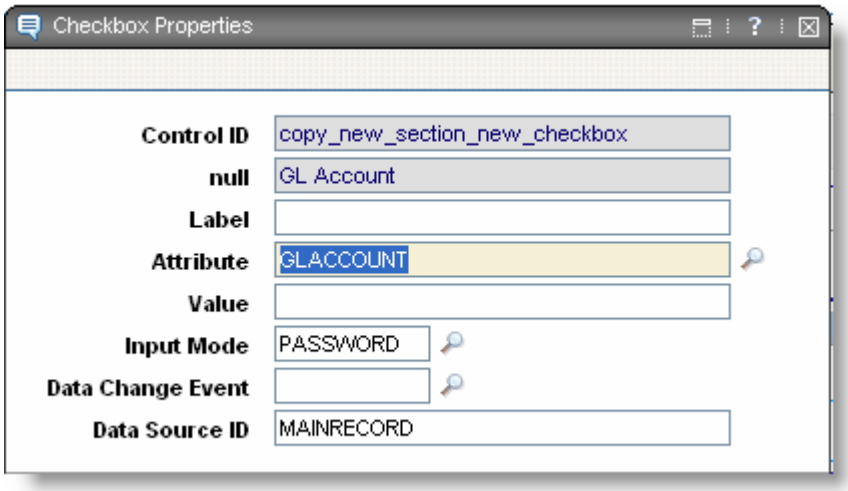
You can place this control inside the following container control:

- Section

Example

1. **Checkbox control dropped into section without defined properties.**

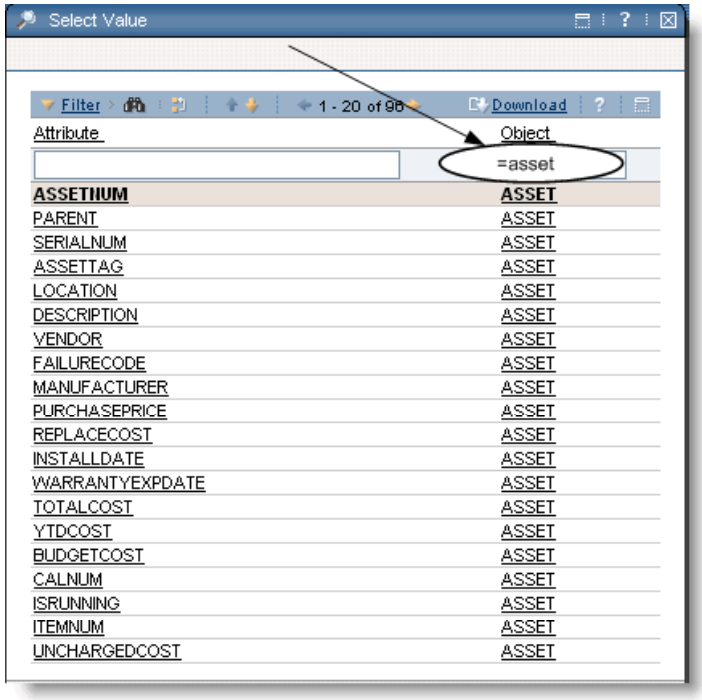
2. **Checkbox Properties dialog box.**



3. **Checkbox with defined properties.**

Note The label for the Checkbox control displays in the application with a question mark as “GL Account?”

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Null (aka Default Label)	This label defaults to the text value associated with the database attribute you bound to the Checkbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Attribute	You can associate a Checkbox with a database attribute by using the Select Value dialog box. To create the example for this control, you can enter "=asset" in the Object field to display all the attributes in the ASSET table.  Select the "GLACCOUNT" attribute to inherit the "GL Account?" label for the Checkbox. Not all attributes you select will have a database default label value.
Value	Reserved for future use.
Input Mode	Select one of options listed below for the Input Mode: • Default • Query • Password • Readonly • Password • Required

Attribute Name	Description
	Readonly • Password Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Data Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Data Source ID	If you want this control to use a different Data Source ID than the default of MAINRECORD, then enter that value here. See the Data Source ID description for the Combobox control for additional information on data sources.

Combobox

A Combobox is an input and text type of control that enables a user to select one or more items from a drop-down list. Like the Checkbox and Textbox controls, the Combobox also has a text field component or label that is visible in the user interface.

The dialog boxes for these types of controls usually have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the presentation level are not stored in the MAXATTRIBUTE OR MAXLABELS table.

Comboboxes appear less frequently than Checkboxes but are still widespread throughout most Maximo applications. Depending on property settings, Comboboxes typically let you make a single selection from a drop-down list of values displayed from the database.

Rules

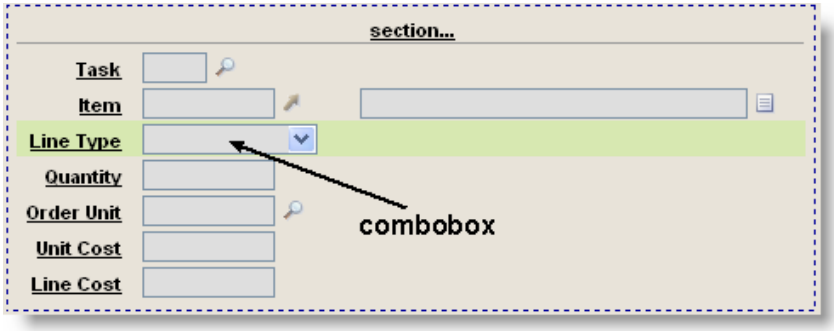
This is not a container control.

You can place this control inside the following container control:

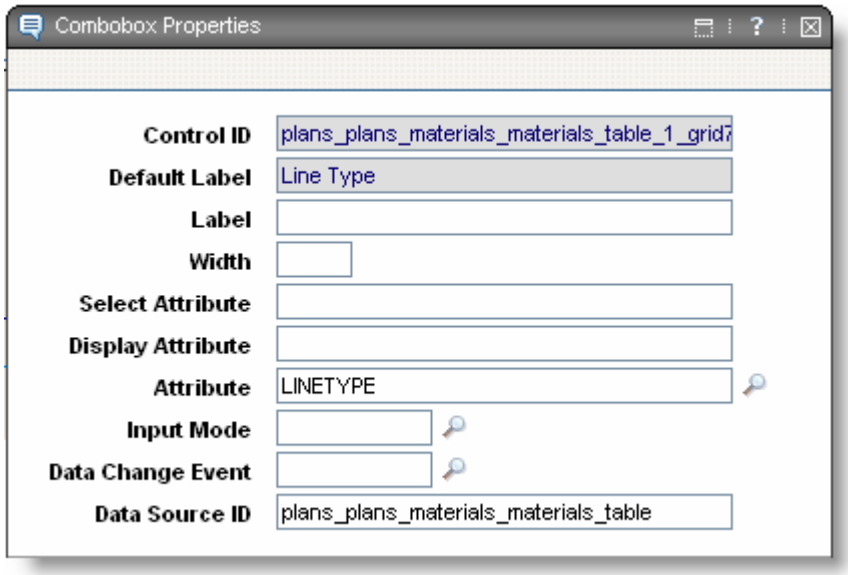
- Section

Example

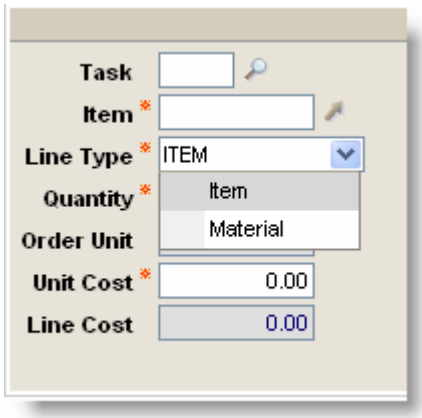
1. **Combobox control in Details section of the Materials subtab in Work Order Tracking > Plans. The control label is Line Type. The application is Application Designer.**



2. **The Line Type Combobox Properties dialog box in the Application Designer.**



3. **Combobox as it appears in the Materials subtab of Work Order Tracking application.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the Combobox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Width	The Width field enables you to enter a numeric value to

Attribute Name	Description
	increase or decrease the default size of the Combobox in the user interface. For example, a Combobox has an approximate width of 120 pixels. To enlarge the width of the box, you must enter a value greater than 120 in the Width field.
Select Attribute	The values displayed in this field (if available) are bound to the data source and attribute you select for the control. A Select Attribute value displays in the textbox portion for the Combobox and is a synonym or abbreviation of the Display Attribute. For example, if you create a Combobox called Status, you might default or define values like WAPPR for Waiting for Approval and APPR for Approved.
Display Attribute	The values displayed in this field (if available) are bound to the data source and attribute you select for the control. Display Attribute values display in the pull-down menu for the Combobox. For example, if you create a Combobox called Status, you might default or define values like Waiting for Approval and Approved.
Attribute	You can associate a Combobox with a database attribute by using the Select Value dialog box. To create the example for this control, you can enter "=wpmaterial" in the Object field to display all the attributes in the WPMATERIAL table. Select "LINETYPE" to inherit the "Line Type" label for the Combobox. Not all attributes you select will have a database default label value.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write

Attribute Name	Description
	Password Readonly – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Data Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Data Source ID	The ID of the data source for this control. A data source connects a control to a business object that displays and edits data using the control. Every presentation must minimally define at least one data source named MAINRECORD, which represents the main object for the application. In Work Order Tracking, for example, MAINRECORD links to the WORKORDER object. Similarly, in Purchasing, MAINRECORD links to the PO object. The "mboname" attribute that typically appears in the first line of the presentation file defines the link between the MAINRECORD data source and a business object. The MAINRECORD data source might be the only data source defined in a presentation. If other data sources exist, they are typically children of the MAINRECORD. The presentation defines child data sources via relationships using a "parentdatasrc" attribute (if the parent is not MAINRECORD) and a "relationship" attribute. For example, the Work Order Lock Out table in Work Order Tracking has a parentdatasrc="WOTagOut_table" and a relationship="WOTAGLOCK." If a Data Source ID property is not explicitly defined for a control, the control looks at its parent (and up the presentation hierarchy to its parent's parent) until it can find a data source that it

Attribute Name	Description
	can bind to. If there is not a control that defines an alternate data source, the control uses the MAINRECORD ID as its data source. The Materials subtab in Work Order Tracking > Plans, for example, uses a Table control for entering planned material against a work order. The Materials table in Application Designer has a Relationship property value of "SHOWPLANMATERIAL." Additionally, if you open Database Configuration > WORKORDER > Relationships, you can view the details of SHOWPLANMATERIAL. This relationship uses the WPMATERIAL table to show the planned material for a given work order. Because all the children controls of the Materials table pull data from WPMATERIAL and not WORKORDER, they do not have MAINRECORD as the Data Source ID. Instead, the Materials Table control and all its children have a Data Source ID of "plans_plans_materials_materials_table" that captures the shared relationship between the Materials Table and its children controls.

Data Source

A Data Source is a miscellaneous type of control that is mostly used in Maximo dialogs. Unlike most controls, it is transparent and does not render anything visible in the user interface like a Textbox or a Table. A Data Source control functions as a hook to a business object that other controls can reference and use as its source for table data. If you reference an inserted Data Source control, it enables you to override the default data source for the presentation or the current Parent Data Source. The example for this control shows how the Belongs To field in the Apply Item Assembly Structure uses the "parentitem" Data Source ID to identify a parent asset number.

Rules

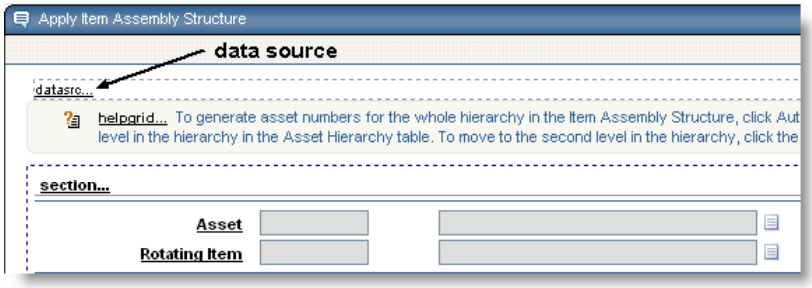
This is not a container control.

You can place this control inside the following container controls:

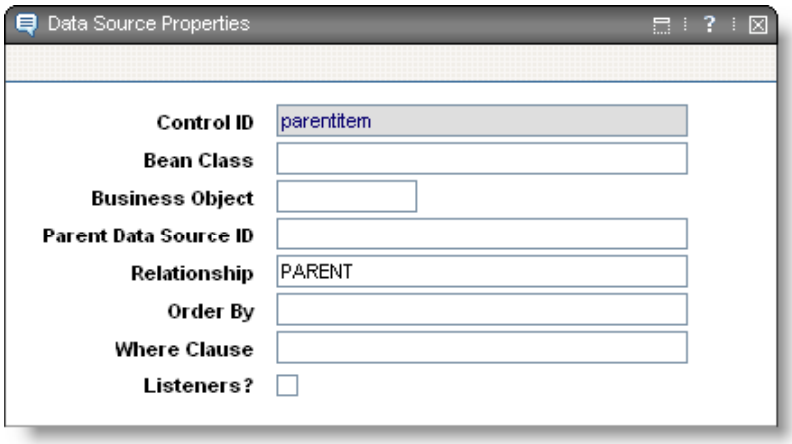
- Section
- Tab
- Table
- Clientarea

Example

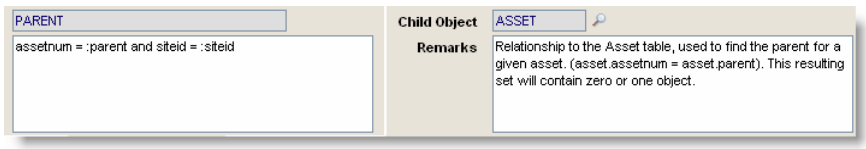
1. **Data Source control as it appears in Application Designer > Asset > Apply Item Assembly Structure dialog.**



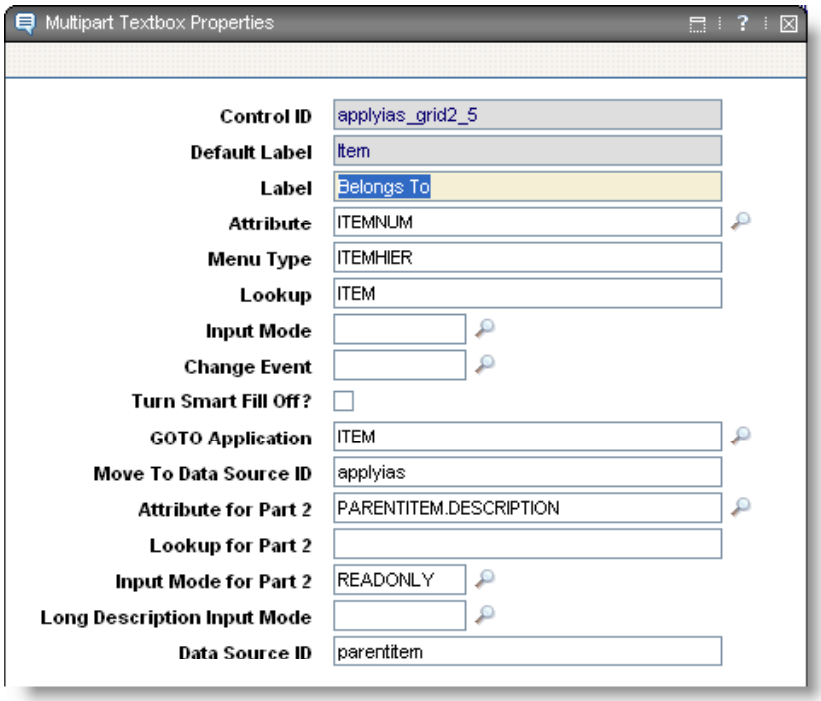
2. **Data Source Properties configured in the Application Designer for the Apply Item Assembly Structure dialog.**



3. **Parent relationship defined in Database Configuration for Asset.**



4. Belongs To field in the Application Designer > Apply Item Assembly Structure dialog configured to use "parentitem" defined in Step 2 to identify a parent asset number.



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Bean Class	Reserved for future use.
Business Object	The main MBO reference for the application. For example, Work Order Tracking uses WOTRACK and Assets uses ASSET. Every Maximo application works with a MBO and MBOSet. The set of work orders displayed on the List tab in the Work Order Tracking application, for example, is a MBOSet. Each individual work order is a MBO. An application's presentation tag defines the main MBO for the application. MBOs are responsible for the following types of functions: • Field validation • Updating the database • Business processing logic

Attribute Name	Description
	By default, the presentation tag for an application defines the main MBO to use when saving or displaying data through the user interface. All controls in the application share the same MBO reference via the Parent Data Source ID property. Unless overridden, all controls added to an application bind to the Parent Data Source ID. If you wish an individual control to display and process information from a different MBO, you can enter a different Parent Data Source ID.
Parent Data Source ID	If you wish this control to inherit data from a source other than MAINRECORD, enter that value in this field. You might, for example, want to define a new parent data source in an application like Work Order Tracking where a table needs to pull data from an object other than WORKORDER. The Parent Data Source ID lets you build relationships with a different data source using Where Clauses.
Relationship	You enter a relationship value in this field. You can search for values in the Database Configuration > Relationships tab. If you enter a relationship, it is automatically inherited by any controls that point to this data source. Relationships enable a control to display information from different Maximo business objects. For example, if you entered SPAREPART, the table will be able to display information based on the defined relationship. When you enter a relationship in the Table control, it automatically prefixes any child column attributes added to the table. So, for SPAREPART, you only have to enter the column attribute name and not the full relationship of SPAREPART <attribute>.
Order By	Reserved for future use.
Where Clause	Reserved for future use.
Listeners	Enter the ID(s) of one or more controls whose display values will be refreshed based on changes to this data source. Control ID(s) can reside anywhere inside the application. You must separate multiple values with a comma.

Default Value

A Default Value is a miscellaneous type of control that lets you define the insert or query default value for any control. Unlike most controls, it is transparent and does not render anything visible in the user interface like a Textbox or a Table. The following XML from the Inventory presentation shows a query type defaultvalue ID of "rotateasset_rotasset_default" in Inventory > Inventory > Rotating Assets. Maximo configures this control to pull all the rotating asset records from the Asset table for the storeroom location you specify in the query search.

See the Example section for illustrations of how Maximo configures the Default Value Properties dialog box for this control and how the Associated Assets search table appears in the Application Designer.

```
<table id="rotateasset_rotasset" relationship="ASSET"
label="Associated Assets">

  <defaultvalue id="rotateasset_rotasset_default"
dataattribute="location" fromdatasrc="MAINRECORD"
fromattribute="location" defaulttype="query" />

- <tablebody id="rotateasset_rotasset_tablebody" filterable="true"
displayrowsperpage="14">

  <tablecol id="rotateasset_rotasset_tablebody_1"
dataattribute="assetnum" />



  <tablecol id="rotateasset_rotasset_tablebody_2"
dataattribute="location" />

  <tablecol id="rotateasset_rotasset_tablebody_3"
dataattribute="location.description" sortable="false"

    />

   ....
```

Rules

This is not a container control.

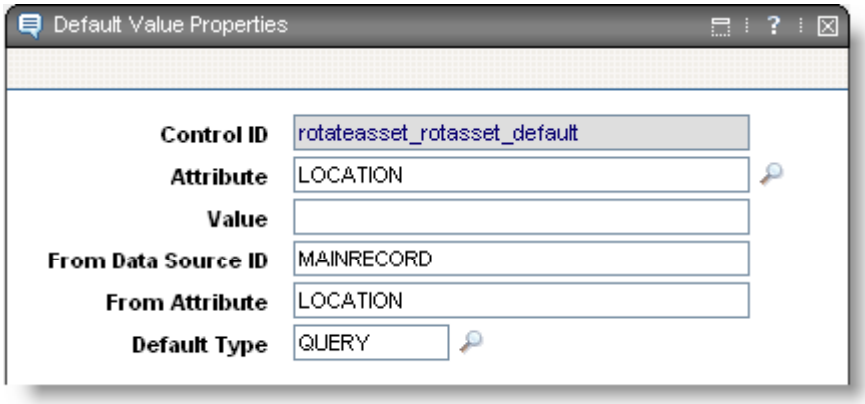
You can place this control inside the following container controls:

- Section
- Table
- Presentation

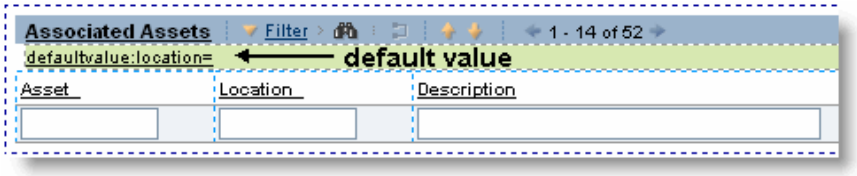
Note To view the presentation tag in Application Designer, select Toggle Show All Controls from the Select Action menu.

Example

1. **Default Value Properties dialog box configured in the Application Designer for Inventory > Inventory > Rotating Assets.**



2. **Portion of Associated Assets table with Default Value control displayed in Application Designer.**



When you perform the query, Maximo populates the Location field for the Query by Example (QBE) with the value of the attribute defined by the From Data Source and From Attribute properties. For example, it copies the value from the Location attribute in the MAINRECORD (Asset Table) to the Location field in the QBE.

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Attribute	Select an attribute from a data source to update or query. You can set the update/query value using one of the following methods: 1) Define a static value using the Value property. 2) Read a value from the database by defining the From Attribute and From Data Source ID properties. **Note**: You can use the Select Value dialog box to select an attribute from the MAINRECORD or any other table in Maximo. If you enter "=" before the object name, the dialog box displays only attributes for the table you specify. You can also enter wildcard characters like "%"

Attribute Name	Description
	before or after a text string in the Attribute or Object field to filter your search.
Value	The alphanumeric value you type in this field becomes a static default value for an insert or query action using the specified Attribute property. In the Inventory application, for example, you might set attribute to LOCATION, Value to CENTRAL, and Default Type to QUERY. As a result, whenever you query inventory records the Storeroom field automatically defaults to CENTRAL. Also, you might set attribute to LASTCOST, Value to 32.95, and Default to INSERT. As a result, when you insert an inventory record the Last Cost field always defaults to 32.95.
From Data Source ID	Enter the Data Source ID for the From Attribute, if configured.
From Attribute	If you do not configure a static default value with the Value property, then you can enter a From Attribute that updates or queries the database with its value.
Default Type	Select a Default Type of either Insert or Query.

Help Grid

A Help Grid is HTML text that you can insert on top of a page or in a Maximo dialog box. The text can function as a label or provide instructions on how to enter data. A Help Grid can have a label and inline HTML text.

Help grids typically appear in dialog boxes within the Maximo user interface. To view dialog boxes in the Application Designer, open an application and click the Edit Dialogs button in the toolbar.

Rules

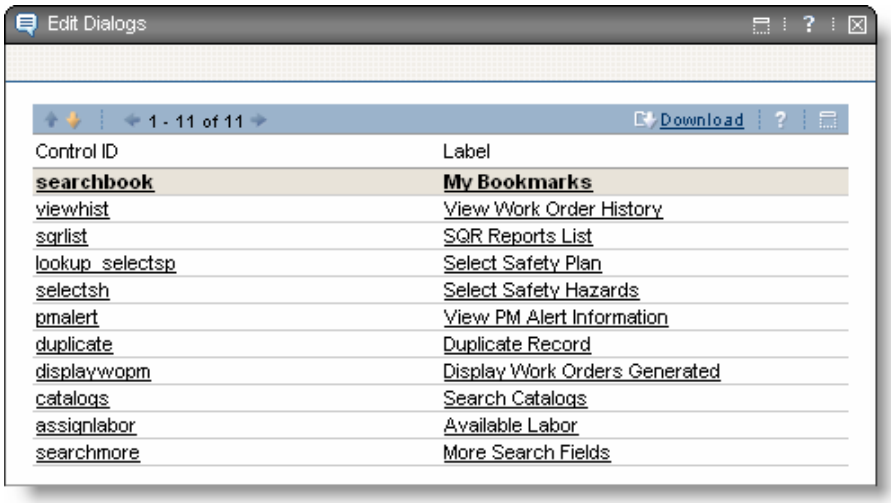
This is not a container control.

You can place this control inside the following container controls:

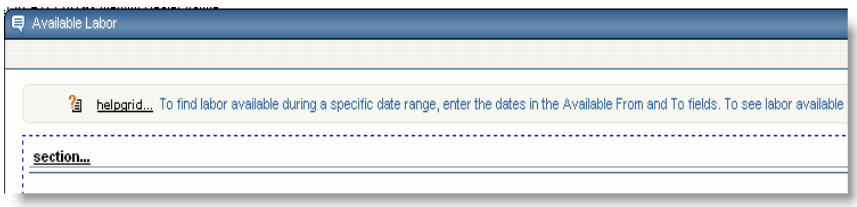
- Section
- Section Column
- Tab
- Dialogs

Example

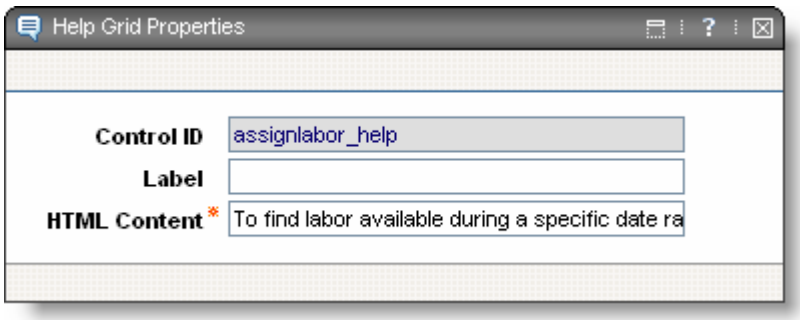
1. **Open WOTRACK in the Application Designer, then click Edit Dialogs in the toolbar to open Edit Dialogs.**



2. **Open the "Available Labor" dialog. A portion of the Help Grid text appears below.**



3. **Select the "helpgrid…" control and the Control Properties icon to open Help Grid Properties.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Help Grid control for a specific application. The label you enter is not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
HTML Content	Informational or instructional help text displayed in the Help Grid control.

HyperLink

The Hyperlink control supports text and graphics. This control lets you configure a label as a hyperlink. When you click on the label, it can automatically display a menu, a dialog box, or it can take you to an entirely different place within or outside the application. You can, for example, configure a hyperlink to take you to a URL. The Start Center, Go To, and Sign Out links in the Maximo navigation bar are examples of hyperlinks.

Rules

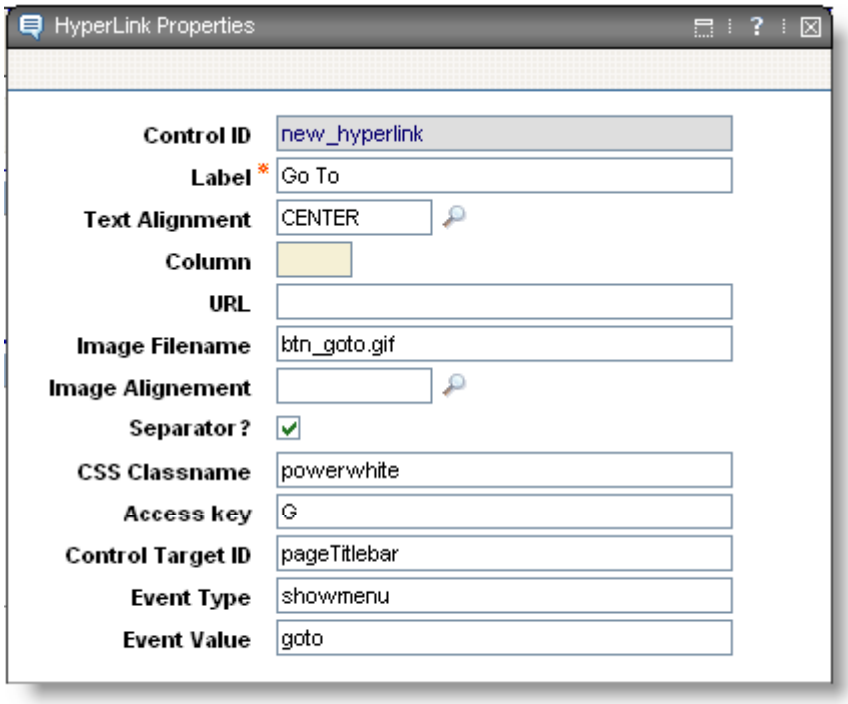
This is not a container control.

You can place this control inside the following container control:

- Section

Example

1. **HyperLink Properties dialog box configured to display the Maximo Go To menu.**



2. **Hyperlinks as they appear in the navigation bar for all Maximo applications.**

3. **Presentation text for navigation bar hyperlink IDs in the library.xml system file.**

```
<    Bulletins

<hyperlink id="bboardlink" label="Bulletins:"
mboname="BULLETINBOARD" mxevent="showbboard"
classname="powerwhite" image="btn_bboard.gif" accesskey="B"
/>

Go To

<hyperlink id="gotolink" label="Go To" mxevent="showmenu"
targetid="pageTitlebar" eventvalue="goto"
classname="powerwhite" image="btn_goto.gif" accesskey="G" />

Reports

<hyperlink id="reportslink" label="Reports"
mxevent="showmenu" targetid="pageTitlebar"
eventvalue="reportsmenu" classname="powerwhite"
```

```
image="btn_reporting.gif" accesskey="R" />
```

Start Center

```
<hyperlink id="sslink" label="Start Center" mxevent="startcenter"
classname="powerwhite" image="btn_startcenter.gif"
separator="false" accesskey="C" />
```

Profile

```
<hyperlink id="profilelink" label="Profile" mxevent="showmenu"
targetid="pageTitlebar" eventvalue="profile"
classname="powerwhite" image="btn_profile.gif" accesskey="P"
/>
```

Sign Out

```
<hyperlink id="signoutlink" label="Sign Out" mxevent="signout"
classname="powerwhite" image="btn_signout.gif" accesskey="S"
/>
```

Help

```
<hyperlink id="helplink" label="Help" mxevent="showmenu"

Targetid="pageTitlebar" eventvalue="help"
classname="powerwhite" image="btn_help.gif" accesskey="H" />
```

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Hyperlink control. This value displays in the user interface. You click the label to initiate the link. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Text Alignment	Select Left, Center, or Right to align the hyperlink label within a section.
Column	Enter a numeric value in this field that will position the hyperlink at the beginning, middle, or end of a column depending on the Text Alignment setting. By default, each Section control has seven columns that are transparent to the user. For example, if you enter “3” in this field and “Center” for Text Alignment, then Maximo centers the hyperlink above or below column three. If the hyperlink you want to display is wider than its column, you cannot use the Text Alignment property and

Attribute Name	Description
	Maximo automatically extends the column width to contain the hyperlink.
URL	If you want the hyperlink to take you to a URL, enter the value here.
Image Filename	To add a graphic next to the hyperlink, enter a file name in this field. This field defaults to the path of the images directory so that you do not have to enter the full path for a graphic file. You can specify any type of graphic that a browser is capable of displaying, such as .gif, .jpeg, or .bmps. Some graphic files may require a plug-in. **Note**: You can place any graphic file into the Maximo library of images. However, if you insert and apply a graphic file without a .gif extension, then you need to rebuild/deploy the Maximo .EAR file.
Image Alignment	If you associate an image with the Hyperlink control, you can align the image to the right or left of the control label by selecting Right or Left.
Separator?	Reserved for future use.
CSS Classname	Enter the class name for a cascading style sheet. The value you enter can change the layout and appearance of the hyperlink control. The “powerwhite” value entered in the example for this control changes the hyperlink font color to white. You can search for CSS classnames in the following directory: <maximo_root>\applications\maximo\maximouiweb\webmodule\webclient
Access Key	Enter a letter from the hyperlink label to use as part of a keyboard shortcut. For example, the access key for the Go To hyperlink is G. Press Alt + G <enter> to drop down the Maximo main menu. Maximo underlines the access key in the user interface.
Control Target ID	Enter a Control ID, if different from the current button control, to which the system sends the Event property (if defined) for processing. The Control Target ID for the Go To hyperlink example is “pageTitlebar.”
Event Type	You can link a hyperlink to a user interface operation or "event.” When you click the hyperlink, it triggers the event you specify in this field. The Event Type for the Go To hyperlink is “showmenu.” The “showmenu” event displays the Maximo Go To menu.

Attribute Name	Description
	To view all of the events defined in Maximo, you must export the system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory. When completed, you can search the XML files for event values using the text string "MXEVENT." The Application Designer processes events in the following order: 1. If you specify a Target ID property, it sends the event to the Control ID specified in the property for processing. 2. If you do not specify a Target ID property, it sends the event to the application's JSP main page for processing. It calls the method (i.e., a function defined in a class) identified by the MXEVENT property to process the event. 3. If 1 and 2 do not work, it tries to load the dialog box associated with the specified event.
Event Value	Defines the event called when you select a hyperlink. The event value for the Go To menu is "goto."

Image

Images appear in many places throughout the Maximo user interface as visual markers that identify an application you can open or action you can perform. Image icons in the Maximo toolbar represent common functions like Save, Cut, Copy, and Paste. The settings in the Images Properties dialog box enable you to edit the height, width, and alignment for a specified image file.

The image icons you see in the Maximo user interface reside in the following directory:

c:\maximo\applications\maximo\maximouiweb\webmodule\webclient\images

You can access the graphic files in the images directory using the Image control in the Application Designer.

Rules

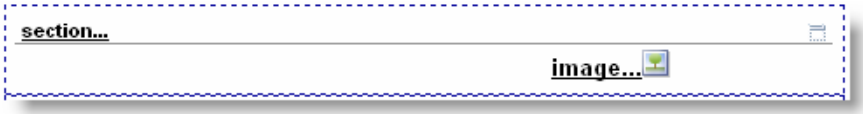
This is not a container control.

You can place this control inside the following container control:

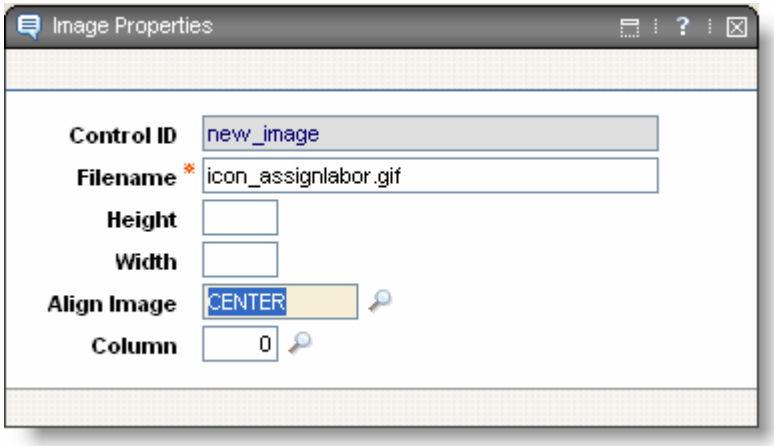
- Section

Example

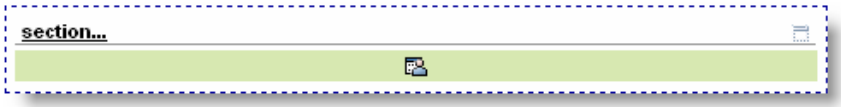
1. **Image control dropped into a section in the Application Designer.**



2. **Image Properties dialog box configured to display the Assign Labor icon.**



3. **Assign Labor image displayed in a section of the Application Designer.**



Properties

Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Filename	To add a new graphic to the user interface, enter a file name in this field. If you want to edit an existing graphic, its file name appears here. This field defaults to the path of the images directory so that you do not have to enter the full path for a graphic file. You can specify any type of graphic that a browser is capable of displaying, such as .gif, .jpeg, or .bmps. Some graphic files may require a plug-in. **Note**: You can place any graphic file into the Maximo library of images. However, if you insert a graphic file without a .gif extension into Maximo, then you need to rebuild/deploy the Maximo .EAR file.
Height	Enter a numeric value in this field that will increase or decrease the height of the image.
Width	Enter a numeric value in this field that will increase or decrease the width of the image. If you change the default width or height of a graphic, it can result in image distortion.
Align Image	Choose Left, Center, or Right to align an image with the left, center, or right margin of a section.
Column	This field subdivides the section in which the image appears into four equal segments or columns that are transparent in the user interface. You can change the position of the image by moving the graphic into one of the columns.

Include

The Include control is one of the basic controls that Maximo uses together with presentation, page, and clientarea to create an XML presentation file. The presentation file represents the graphical layout for an application. The presentation control is a container that can include only one page control. The page control differentiates the main page, which uses the browser's entire clientarea, from the application's dialogs. Dialogs display as "popups" in the presentation. A presentation can define its own dialogs or use

the Include control to obtain dialog definitions from the library.xml file. The presentation file also uses the Include control to acquire common application functions like header and footer from library.xml.

The clientarea control differentiates the body of a page or dialog from its header and footer. The clientarea must contain one or more Sections, a Table, and/or a Tabgroup that act as containers for all the other controls that comprise the presentation.

The presentation for applications like Incidents, for example, use the Include control to obtain table definitions for the Work and Communication Logs from the library.xml system file. The Include control enables you to import pre-defined layouts from library.xml into different Maximo presentations.

The following example is an extract from the Work Order Tracking application presentation that shows how the include control imports the standard Maximo header and footer definitions from library.xml.

```
<presentation id= “wotrack” … version=“6.0.0”>

        <page id= “mainrec”>

                <include id=“pageHeader”/>

                        <clientarea id= “clientarea”>

                        …

                        …

                        <clientarea>

                <include id=“pageFooter”/>

        </page>

        </presentation>
```

Rules

This is not a container control.

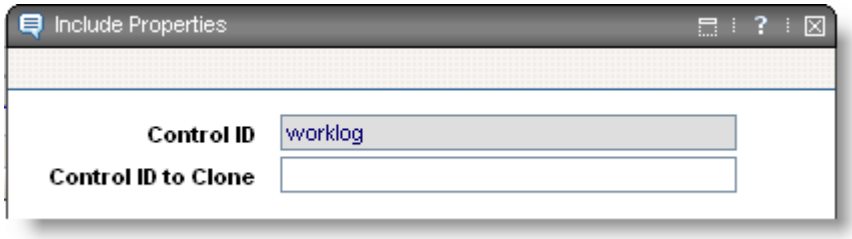
You can place this control inside the following container controls:

- Page
- Tab
- Section

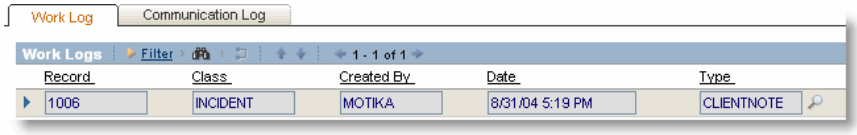
Note To view the page tag in Application Designer, select Toggle Show All Controls from the Select Action menu.

Example

1. **Include Properties dialog box configured in the Application Designer for Incidents > Log > Work Log.**



2. Work Log table format inherited from "comlog" in library.xml.



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Control ID to Clone	Enter a Control ID from library.xml. This property enables you to include the same library element multiple times in a presentation.

Listbox

A Listbox is a text type of control that displays a list of selected items in a box that is always open. The Listbox has a text field component or label that is visible in the user interface.

Listbox controls have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the presentation level are not stored in the MAXATTRIBUTE OR MAXLABELS table.

Listboxes display information from the paired Business Object Name and attribute values you specify in the properties dialog box. Additionally, you

can filter what information displays and how it is sorted using the Where Clause and Order By property values.

Rules

This is not a container control.

You can place this control inside the following container control:

- Section

Example

No current example for this control. Not widely used in Maximo applications.

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the Listbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Height	Enter a numeric value in this field that will increase or decrease the height of the Listbox.
Width	Enter a numeric value in this field that will increase or decrease the width of the Listbox.
Bean Class	Reserved for future use.
Attribute	You can associate a Listbox with a database attribute by using the Select Value dialog box. If the attribute you select has a default label value, it will display in the Default Label field.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required

Attribute Name	Description
	The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Business Object Name	Reserved for future use.
Parent Data Source ID	Reserved for future use.
Order By	Reserved for future use.
Where Clause	Reserved for future use.
Auto-Refresh?	Select this box if you want the information in the Listbox to automatically refresh whenever there is a change to the MBO.
Key Attribute	Reserved for future use.
Key Value	Reserved for future use.

Menubar

The Menubar, short for menu bar, is similar in appearance to the Appbar. The bar that appears at the top of the List tab in most Maximo applications is an example of a menu bar. This menu bar can contain signature security options like Advanced Search, Save Query, and Bookmark. The options in the menu bar usually contain drop-down menus with additional option choices. Advanced Search, for example, has the More Search Fields, Where Clause, and View Search Tips options.

Rules

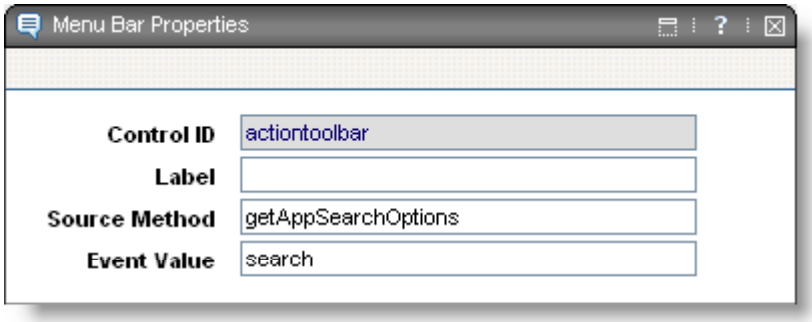
This is not a container control.

You can place this control inside the following container control:

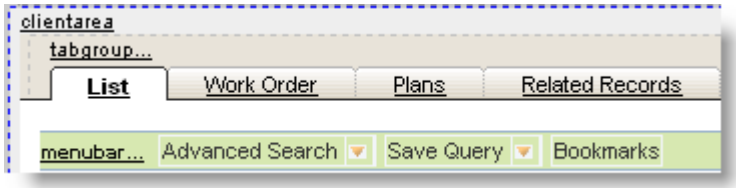
- Tab

Example

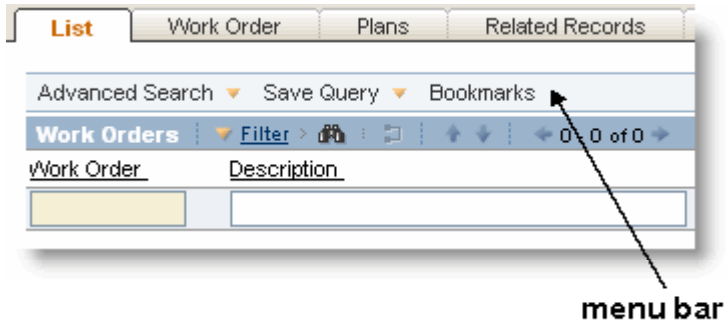
1. **Menubar Properties dialog box configured in the Application Designer.**



2. **Menubar as it appears in the Application Designer workspace.**



3. **Menubar as it appears in Work Order Tracking.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Menubar control. This value does not display in the user interface. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Source Method	The piece of code functionality that calls the menu bar, its signature security options, and layout. The method that calls the standard Maximo search menu bar is "getAppSearchOptions."
Event Value	Defines the event called when you select an option on the menu bar. For example, the Event Value for the search menu bar is "search."

Multiline Textbox

A Multiline Textbox is a control that displays information or accepts user input in a large box that holds several lines of text. The textbox has a text field component or label that is visible in the user interface. Textboxes are often linked to select value lookups and detailed menus. A select value lookup lets you select and then display a single value from a list of records. A textbox linked to a detailed menu can contain diverse options, such as a select value lookup, jumps to other applications, or views of different records. The Menu Type property you configure for a Textbox controls the format and content of the detailed menu.

Textbox controls have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the presentation level are not stored in the MAXATTRIBUTE or MAXLABELS table.

Textboxes display table information from the Data Source ID and Attribute values you specify in the properties dialog box.

Rules

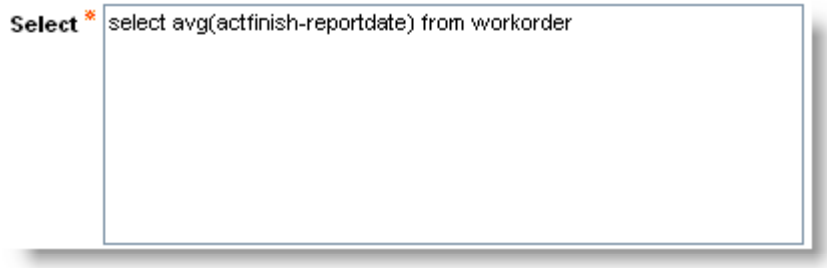
This is not a container control.

You can place this control inside the following container control:

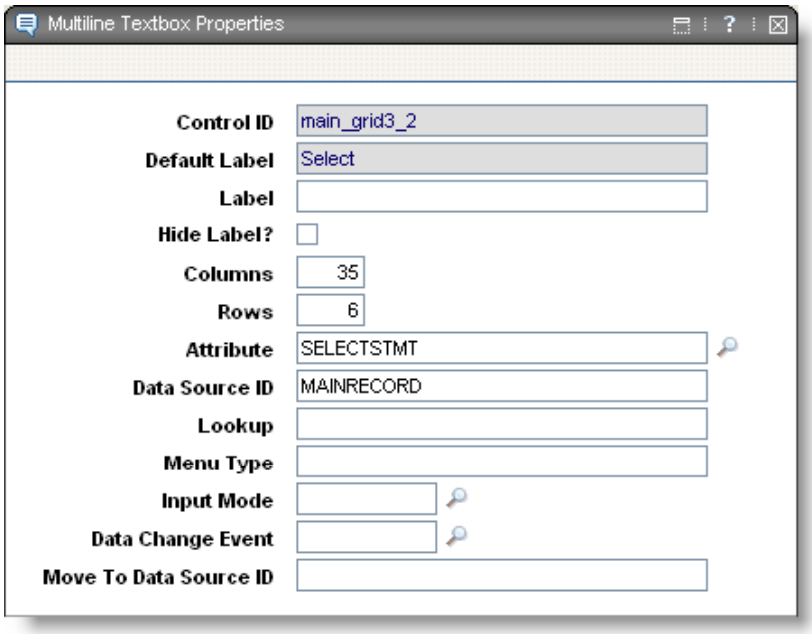
- Section

Example

1. **Multiline textbox example in Reporting > KPI Manager. The textbox is in the KPI tab and part of the Select Query table.**



2. **The Multiline Textbox Properties dialog box for the preceding KPI example.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the textbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Hide Label?	By default, the label value always appears in the user interface. Select this box to hide the label.
Columns	The number of columns in the Multiline Textbox. Most Multiline Textboxes in Maximo, including the preceding example, have a column value of “35.” To increase or decrease the width of the box, enter a value greater than or less than “35.”
Rows	Enter an integer for the number of rows you want in the Multiline Textbox.
Attribute	You can associate a Textbox with a database attribute by using the Select Value dialog box. If the attribute you select has a default label value, it will display in the Default Label field. The Attribute for the preceding example is

Attribute Name	Description
	SELECTSTMT from the KPIMAIN table.
Data Source ID	The Data Source ID for this control. It points to the main MBO or object that the control uses for entering and displaying data. Each application links to a main object that represents the Parent Data Source for all child controls in the application. Individual or groups of controls within an application can inherit attributes from objects that are not the primary data source. In the preceding example, the table associated with MAINRECORED is KPIMAIN. See the Data Source ID description for the Combobox control for additional information on data sources.
Lookup	You can enter a value in the Lookup property that links the Textbox to a pre-formatted lookup table. The lookup table pulls records from the main table. Users can populate the Textbox by selecting a record from the table. The value, called a lookup ID, defines the XML presentation content and format of a select value table. WORKORDERISTASK, for example, is the Lookup property for the Parent WO textbox in Work Order Tracking. Lookup ID's reside in a system XML file called lookups.xml. You cannot edit system XML files from the Application Designer. However, you can view the content of these types of files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.
Menu Type	You can enter a value in the Menu Type property that links the textbox to a pre-formatted drop-down menu. The value, called a menu ID, defines the XML presentation content and format of a drop-down menu. WORKORDER, for example, is the Menu Type for the Parent WO textbox in Work Order Tracking. Menu ID's reside in a system XML file called menus.xml. You cannot edit menus.xml from the Application Designer. However, you can view the content of this file or other system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.
Input Mode	Select one of options listed below for the Input Mode: • Default • Query • Password • Readonly • Password • Required

Attribute Name	Description
	Readonly • Password Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Data Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Move to Data Source ID	The value you enter lets you move to a record stored in a different object. You can select any Data Source ID from the presentation. Refer to the Data Source ID property description. By default, Maximo sends the Move To event to the ResultsBean, which contains a set of records displayed in the List tab. The Move To event affects the Move to Data Source

Attribute Name	Description
	ID object.

Multipart Textbox

A Multipart Textbox is a two-part control that contains side-by-side textboxes that can display information from different sources. You can input information, populate a box by selecting a value from a list, or simply display an attribute description from a table. Typically, a Multipart Textbox in Maximo consists of a text label, a textbox pull-down menu, and an expanded description for an attribute. The source of the information in each textbox can come from separate tables. The layout of the control places information from different sources in the same area of the screen.

Textboxes have labels that are usually visible in the user interface. Labels describe the type of information displayed in the box. Textboxes are often linked to select value lookups and detailed menus. A select value lookup lets you select and then display a single value from a list of records. A Textbox linked to a detailed menu can contain diverse options, such as a Select Value dialog box, jumps to other applications, or views of different records. The Menu Type property you configure for a textbox controls the format and content of the detailed menu.

Textbox controls have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the presentation level are not stored in the MAXATTRIBUTE or MAXLABELS table.

The Multipart Textbox enables you to display a second attribute from the same or a different database table on the same line. Most Maximo applications typically use the second part of a Multipart Textbox to display a full description for an asset, location, or work order number displayed in the first textbox. The example for this control shows that Asset number 11230 is an Emergency Generator.

Textboxes display table information from the Data Source ID and attribute values you specify in the properties dialog box.

Rules

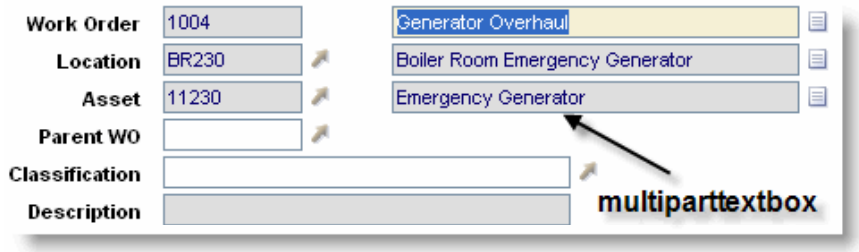
This is not a container control.

You can place this control inside the following container control:

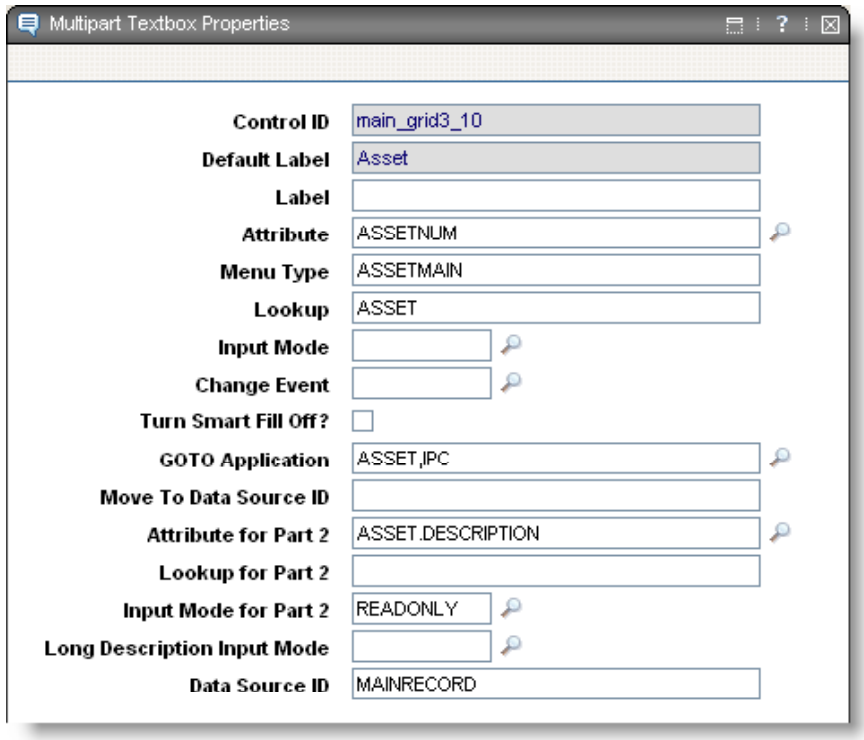
- Section

Example

1. **Asset Number Multipart Textbox in the Work Order tab for the Work Order Tracking application.**



2. **Asset Number Multipart Textbox Properties dialog box in the Application Designer.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the textbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Attribute	You can associate a textbox with a database attribute by using the Select Value dialog box. If the attribute you select has a default label value, it will display in the Default Label field. The example for this control displays a record number of 11230 with a field label of Asset.
Menu Type	You can enter a value in the Menu Type property that links the textbox to a pre-formatted drop-down menu. The value, called a menu ID, defines the XML presentation content and format of a drop-down menu. This example uses the pre-formatted menu for assets called ASSETMAIN. Menu ID's reside in a system XML file called menus.xml. You cannot edit this file from the Application Designer. However, you can view the content of this file or other system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.
Lookup	You can enter a value in the Lookup property that links the textbox to a pre-formatted lookup table. The lookup table pulls records from the main table. Users can populate the textbox by selecting a record from the table. The value, called a lookup ID, defines the XML presentation content and format of a select value table. ASSET, for example, is the Lookup property for the Multipart Textbox example. Lookup ID's reside in a system XML file called lookups.xml. You cannot edit system XML files from the Application Designer. However, you can view the content of these types of files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.

Attribute Name	Description
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Turn Smart	By default, Maximo enables the "Smart Fill" feature. To

Attribute Name	Description
Fill Off?	disable, clear the check box. This feature enables you to enter a partial value in a text box field. Maximo attempts to match the partial text string entered to a valid value(s) in the database. If Maximo finds one matching value, it automatically populates the field so that you can continue entering information. If Maximo finds more than one matching value, it displays a Select Value dialog box with a list of matching values. If you clear the smart fill feature, Maximo does not validate the data you enter in the textbox.
GOTO Application	You can configure a pull-down menu associated with a textbox to have options that will take the user to different applications. Use the Select Value dialog box for this property to choose application names that will appear in the pull-down menu. In the example for this control, you would see "Go To Assets" as an option in the pull-down menu because the GOTO Application property lists "ASSET" as a value.
Move to Data Source ID	The value you enter lets you move to a record stored in a different object. You can select any Data Source ID from the presentation. Refer to the Data Source ID definition below. By default, Maximo sends the Move To event to the ResultsBean, which contains a set of records displayed in the List tab. The Move To event affects the Move to Data Source ID object.
Attribute for Part 2	You can associate the second part of a Multipart Textbox with a database attribute by using the Select Value dialog box. Typically, you configure the second part of a multipart control to display the full description information for the record selected in the first part. The example for this control displays Emergency Generator, which is the ASSET.DESCRIPTION for the asset number selected.
Lookup for Part 2	You can enter a value in the Lookup for Part 2 property that links the second part of the Multipart Textbox to a pre-formatted lookup table. See the previous Lookup property description for additional information.
Input Mode for Part 2	See the previous Input Mode property description for information about this field. In this example and in most cases where the second part of a Multipart Textbox contains a full description, the property value will be READONLY.
Long Description Input Mode	If Attribute for Part 2 is a long description, you can select this box to set the description to read only. If you leave this field cleared (the default), you can edit the long description.
Data Source ID	The Data Source ID for this control. It points to the main MBO or object that the control uses for entering and

Attribute Name	Description
	displaying data. Each application links to a main object that represents the Parent Data Source for all child controls in the application. Individual or groups of controls within an application can inherit attributes from objects that are not the primary data source. In the case of a Multipart Textbox, you must configure the two different attributes that comprise the control to pull data from the same object. See the Data Source ID description for the Combobox control for additional information on data sources.

Parameter Value

The properties for the Parameter Value control define the dynamic values that display in a Section Header. For example, the task table in Work Order Tracking > Plans tab has a variable value similar to "(0)," where the variable values displayed to the user reflects the attribute configuration setting (i.e., WONUM) in the Parameter Value control.

When you move a section, all of its children, including Section Header and the Parameter Value(s) controls, automatically move with it.

A Parameter Value control works with the following:

- Parameter Values
- Section Header

A Parameter Value is transparent in the Maximo user interface. Section headers along with the Parameter Value and Values controls enable you to display dynamic values in the label for a Table or Section. In the Section Header example, the settings you configure in the Section Header and Parameter Values set xxx in the Table Header to the current WONUM (i.e., 1000).

Rules

You can place the following controls in this container control:

- Parameter Values

You can place this control inside the following container controls:

- Section
- Table

You can associate a Parameter Value with Section Headers inserted into Table or section controls. To create a Section Header with dynamic values, complete the following steps:

1. Insert Section Header into a Section or Table control
2. Drag Parameter Values into the Section Header container
3. Parameter Value automatically appears with the Parameter Values control

Example (See Section Header Example)

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Parameter Position	This property points to the Parameter Values Property field you want to replace. See the Parameter Values Property field for more information.
Attribute	Select a data attribute from a data source to display as the Label property in the Table or Section Header. **Note**: You can use the Select Value dialog box to select an attribute from the MAINRECORD or any other table in Maximo. If you enter "=" before the Object name, the dialog box displays only attributes for the table you specify. You can also enter wildcard characters like "%" before or after a text string in the Attribute or Object field to filter your search.
Data Source ID	If you want this control to use a different Data Source ID than the default of MAINRECORD, then enter that value here. See the Data Source ID description for the Combobox control for additional information on data sources.

Parameter Values

Parameter Values are container controls that attach to a Section Header and can reside in a Table or Section. This control can hold dynamic values that represent replaceable values in the Section Header label. The Plans tab in the Work Order application, for example, uses the Parameter and Parameter Values controls to display children and tasks of work orders.

The property attribute in the Parameter Values control (e.g., the default is "label") contains the dynamic values defined in the Parameter Value control. For example, the task table in Work Order Tracking > Plans tab has a

variable value similar to "(0)," where the variable values displayed to the user is a result of the configuration settings in the Parameter Value and Values controls. The property attribute for the Parameter Values control, for example, has a default value of "label."

When you move a section, all of its children, including Section Header and the Parameter Value(s) controls, automatically move with it.

A Parameter Values control works with the following:

- Parameter Value
- Section Header

Parameter Values are transparent in the Maximo user interface. Section Headers along with the Parameter Value and Values controls enable you to display dynamic values in the label for a Table or Section. In the Section Header example, the settings you configure in the Section Header and Parameter Values set xxx in the table header to the current WONUM (i.e., 1000).

Rules

You can place the following controls in this container control:

- Parameter Value

You can place this control inside the following container controls:

- Section
- Table

You can associate Parameter Values with Section Headers inserted into Table or Section controls. To create a Section Header with dynamic values, complete the following steps:

1. Insert Section Header into a Section or Table control
2. Drag Parameter Values into the Section Header container
3. Parameter Value automatically appears with the Parameter Values control

Example (See Section Header Example)

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Property	The Property field has a default value of "Label," which is a variable that displays dynamic values inherited from the Parameter Value control in the Table or Section control. For example, the sample XML from Work Order Tracking > Plans shown below illustrates how Parameter Values and Parameter Value work together to populate the

Attribute Name	Description
	"Children of Work Order (0)" heading with work order numbers. < table id="plans_children_table" orderby="wosequence" label="Children of Work Order {0}" collapsable="true"collapsed="true" relationship="SHOWCHILDREN" beanclass="psdi.webclient.beans.workorder.SelectW O RecordsBean"> <sectionheader id="plans_children_table_sectionheader"> <paramvalues id="plans_children_table_1_sec_params" property="label"> < paramvalue id="plans_children_table_1_sec_param_1" position="0" datasrc="MAINRECORD" dataattribute="wonum" /> The XML shows how (0) is dynamically updated to display the current work order according to the value of the Position attribute. The first position value is 0, the second is 1, and the third is 2, and so on. If the work order in the first position was 1003, then the header for this table would display "Children of Work Order 1003." The key fields in the XML are: Orderby = wosequence SQL statement that sorts work orders to display in numeric sequence Relationship = SHOWCHILDREN Defines database relationship for showing children work orders Property = label The Parameter Values Property field that is dynamically updated and passed to the Table Header for display Position = 0 Select the work order in the first position Datasource ID = MAINRECORD Points to the default data source for the Work Order Tracking application (WORKORDER)

Attribute Name	Description
	Dataattribute = wonum Defines the data value (e.g., work order number) to display in the Table Header

Pushbutton

A Pushbutton control is a rectangular box with round corners that looks like a button. You push a button to initiate a Maximo event like invoking a dialog box with a list of records or displaying an empty row for entering a new record.

Rules

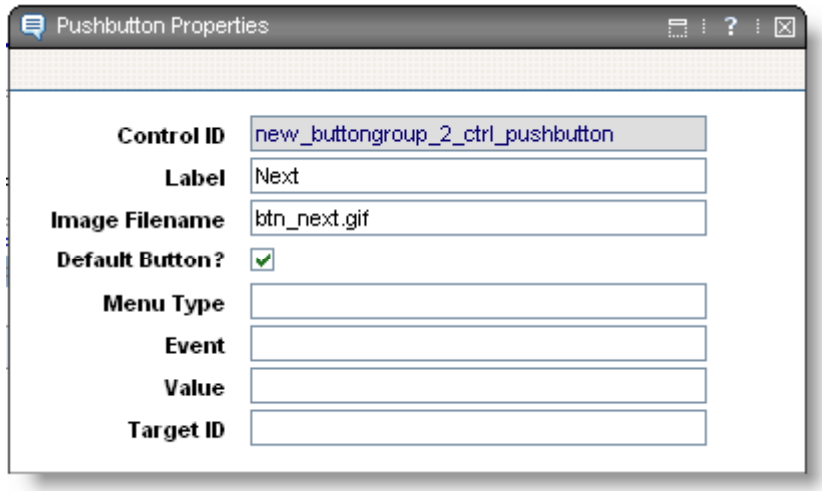
This is not a container control.

You can place this control inside the following container control:

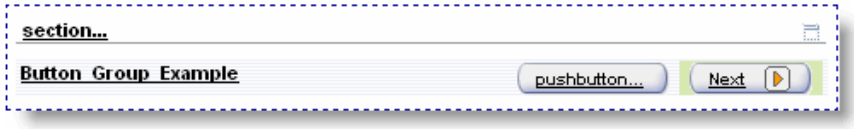
- Button Group

Example

1. **Pushbutton Properties dialog box configured in the Application Designer.**



2. **Pushbutton as it appears in the Button Group in the Application Designer workspace.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the button control. The label value identifies the control to the user. If you do not enter a label, the button is blank in the user interface. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Image Filenam e	Enter the name of a button-related graphic file, such as btn_next.gif, to insert the image inside of the button. For example, if you have a button called Next, you may want to insert an arrow icon using btn_next.gif. You can specify icons used in Maximo that reside in the following directory: c:\maximo\applications\maximo\maximouiweb\webmodule\webclient\images
Default Button?	Select this field to make a button the active button in a Button Group. Maximo highlights the label text of the active button in the user interface. You may want to make the most frequently used button (e.g., New Row) the default button.
Menu Type	You can enter a value in the Menu Type property that links the button to a pre-formatted drop-down menu. The value, called a menu ID, defines the XML presentation content and format of a drop-down menu. Menu ID's reside in a system XML file called menus.xml. You cannot edit this file from the Application Designer. However, you can view the content of this file or other system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.
Event	You can link a button to a user interface operation or "event." When you press the button, it triggers the event you specify in this field.

Attribute Name	Description
	To view all of the events defined in Maximo, you must export the system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory. When completed, you can search the XML files for event values using the text string "MXEVENT." The Application Designer processes events in the following order: 1. If you specify a Target ID property, it sends the event to the Control ID specified in the property for processing. 2. If you do not specify a Target ID property, it sends the event to the application's JSP main page for processing. It calls the method (i.e., a function defined in a class) identified by the MXEVENT property to process the event. 3. If 1 and 2 do not work, it tries to load the dialog box associated with the specified event. For example, in Work Order Tracking > Plans there is a "Children of Work Order xxxx" table that has a button called "Select Assets." When you press this button, a Select Assets dialog box opens that displays a list of asset records. The dialog displays because Maximo processes the "selectallssets" event specified for this button using the logic described above.
Value	Reserved for future use.
Target ID	Enter a Control ID, if different from the current button control, to which the system sends the Event property (if defined) for processing.

Radio Button

A Radio Button is a control that allows users to choose one of a predefined set of options. Radio Buttons appear in groups of two or more. When you select a Radio Button, the previously selected button in the same group is deselected.

Rules

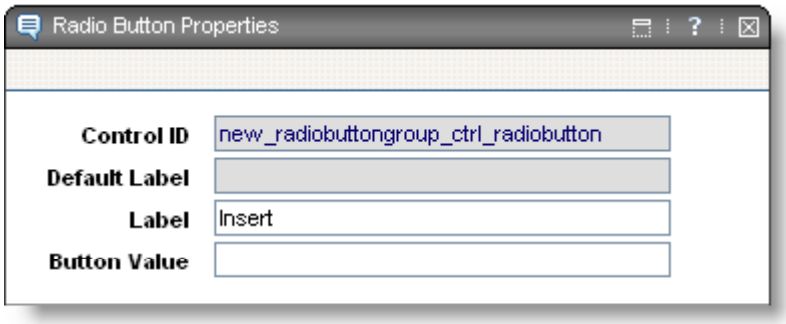
This is not a container control.

You can place this control inside the following container control:

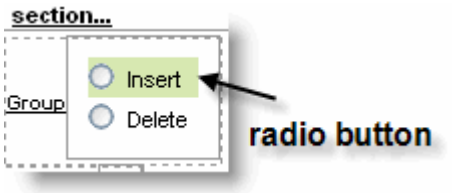
- Radio Button Group

Example

1. **Radio Button Properties dialog box configured in the Application Designer.**



2. **Radio Button as it appears in the Application Designer workspace.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the Radio Button Group. This is a read only field.
Label	The name you assign to the Radio Button Group control. This value overrides an entry in the Default Label field. The label value identifies the control to the user. If you do not enter a label or inherit a default label, the Radio Button Group title is transparent in the user interface.

Attribute Name	Description
	The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Button Value	Enter a data attribute for an individual button control. If you do not automatically populate a Radio Button Group with a predefined list of values linked to a data attribute, then you can enter individual values for each button that you manually add to a group.

Radio Button Group

A Radio Button Group is a container control that holds Radio Buttons. A Radio Button is a control that allows users to choose one of a predefined set of options. Radio Buttons appear in groups of two or more. When you select a Radio Button, the previously selected button in the same group is deselected. Radio buttons typically appear as little circles that are either empty (for unselected) or contain a dot (selected).

The Radio Button Group defines the layout for the buttons it holds, including a group title, text alignment for button labels, and whether or not to show a border. You can bind a Radio Button Group to a database attribute that automatically populates the group with buttons, label values, and so on. Binding to a database attribute saves time because you do not have to define the individual Radio Button controls for the group. When you make a selection in the Radio Button Group, the value automatically updates the attribute in the database. If you link a Radio Button Group to a database attribute, then you can edit the group in the Database Configuration and Domains applications. Maximo binds most Radio Button Groups to an attribute.

Rules

You can place the following control in this container control:

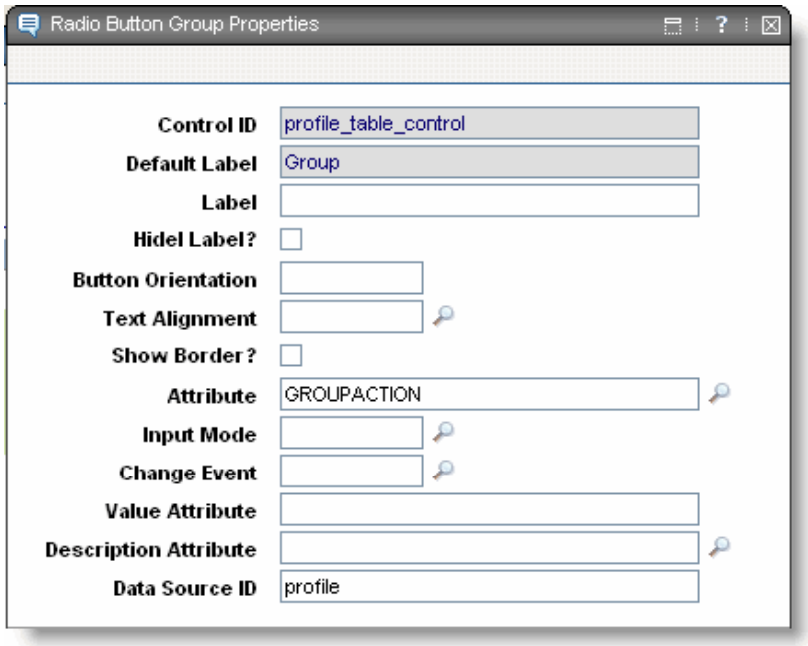
- Radio Button

You can place this control inside the following container control:

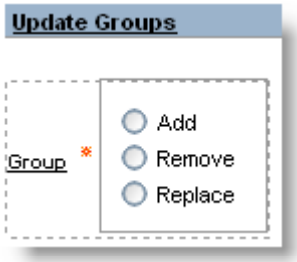
- Section

Example

1. **Radio Button Group Properties dialog box for the Set Security Profile dialog. To display, select Go To > Configuration > Application Designer and open the Users application. Choose Edit Dialogs in the toolbar, then select Select Security Profile from the list. Scroll down to the Update Groups section and select Group. This control binds to the GROUPACTION attribute.**



2. **Radio Button Group as it appears in the Application Designer workspace. This group inherits its buttons and layout from the GROUPACTION attribute.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the Radio Button Group. This is a read only field.
Label	The name you assign to the Radio Button Group control. This value overrides an entry in the Default Label field. The label value identifies the control to the user. If you do not enter a label or inherit a default label, the Radio Button Group title is transparent in the user interface. You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Hide Label?	Select this field to hide the Label or Default Label value in the user interface.
Button Orientation	Enter a value of Vertical or Horizontal to align the radio buttons in a group either vertically or horizontally.
Text Alignment	Select a value of Left, Center, or Right to position button labels relative to the radio button icon. The text label for the button group always displays to the left of any radio buttons you add to the group.
Show Border?	Select this field to draw a rectangular border around the Radio Button Group.
Attribute	Select an attribute from a data source to display its label value as the Default Label property for the Radio Button Group. Not all attributes you select will have a database default label value. Additionally, when you bind a Radio Button Group to an attribute, you can inherit a list of Radio Buttons without the need to define the buttons individually with the Radio Button control.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password • Query • Readonly • Required

Attribute Name	Description
	Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Value Attribute	Optionally, if you do not automatically populate a Radio Button Group with a list of buttons, you can enter a data value in this field that automatically updates the database when you select a button. For example, if you have a button with a Description Attribute of "Waiting for Approval," you might define the Value Attribute as "WAPPR." Maximo writes "WAPPR" to the database and displays "Waiting for Approval" in the user interface.

Attribute Name	Description
Description Attribute	Optionally, you can lookup or enter a data attribute that displays a text label for the Value Attribute in the user interface. See Value Attribute.
Data Source ID	If you want this control to use a different Data Source ID than the default of MAINRECORD, then enter that value here. See the Data Source ID description for the Combobox control for additional information on data sources.

Section

A Section is a container type of graphical control. Containers occupy real estate on a page and function as storage for other types of controls. A Section is a parent to children controls placed inside it. When you move a Section or other type of container control, its children automatically move with it.

Section controls without labels do not have visible borders and appear transparent in an application page. Sections with labels have a horizontal blue bar with a minimize icon that appear on top of the Section. At a minimum, you start all new application layouts by inserting a Section. Most Maximo applications have multiple pages with many sections and columns. See the Example for information on how to populate a Section control with multiple columns.

Sections are one of the primary components of the Maximo user interface. A Section is typically an application page that you can expand or minimize. Sections contain groupings of fields that hold similar or related data. Additionally, most Maximo tabs have many parent and children Sections that allow you to layout and define the user interface. Controls within Sections display information or accept user input.

Rules

You can place the following controls in this container control:

- Attachments
- Blank Line
- Button Group
- Checkbox
- Combobox
- Default Value
- Hyperlink
- Image
- Include
- Listbox
- Radio Button Group
- Section Header
- Section Row
- Static Text
- Textbox

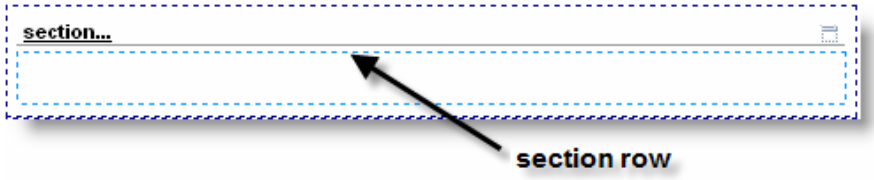
- Data Source
- Multiline Textbox

You can place this control inside the following container controls:

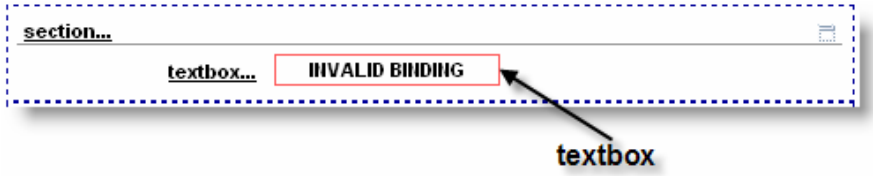
- Dialogs
- Tab
- Table
- Section Columns

Example

1. **Section container with Section Row.**



2. **Section container with a Textbox.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Section control. The label value identifies the control to the user. If you do not enter a label, the Section is transparent in the user interface and does not have a title. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Show Border?	If you have added a Label, selecting this box also adds blue horizontal rules to the top and bottom of the Section. The border property does not work without a defined label.
Collapsed?	Selecting this box collapses a Section and its contents if you have defined a Label for the Section. You see the collapsed Section when you run the application, but not in the

Attribute Name	Description
	Application Designer workspace. To expand a section in the user interface, click the Maximize Section icon in the application.
Description	Text you enter in this field displays under the Section's label in the title bar.

Data Source ID	If you want this control to use a different Data Source ID than the default of MAINRECORD, then enter that value here.
	
	Each Maximo application has a presentation file that represents the graphical layout of the application pages displayed in a browser window. Each presentation file has a Presentation ID tag that can include any number of controls, dialogs, and data sources.
	
	The Presentation ID tag defines the main Maximo Business Object (MBO) for the application. For example, the MBO for the Work Order application is WORKORDER.
	
	The example below shows the first line of XML text in the Work Order Tracking presentation.
	
	`presentation id="wotrack" resultstableid="results_showlist" mboname="WORKORDER" orderby="WONUM" beanclass="psdi.webclient.beans.workorder.WorkorderAppBean" version="6.0.0">`
	
	`page id="mainrec">`
	
	Although the controls within an application can inherit data from different data sources, the default data source is always "MAINRECORD." In Work Order Tracking, any control whose Data Source ID is MAINRECORD pulls data from the WORKORDER table. MAINRECORD is the Parent Data Source ID for the presentation. To have individual controls inherit data from a different source, you must define a different Parent Data Source ID.
	
	See the Data Source ID description for the Combobox control for additional information on data sources.

Business Object	The main MBO reference for the application. For example, Work Order Tracking uses WOTRACK and Assets uses ASSET. Every Maximo application works with a MBO and MBOSet. The set of work orders displayed on the List tab in the Work Order Tracking application, for example, is a MBOSet. Each individual work order is a MBO. An application's presentation tag defines the main MBO for the application. MBOs are responsible for the following types of functions:

Attribute Name	Description
	• Field validation • Updating the database • Business processing logic By default, the presentation tag for an application defines the main MBO to use when saving or displaying data through the user interface. All controls in the application share the same MBO reference via the Parent Data Source ID property. Unless overridden, all controls added to an application bind to the Parent Data Source ID. If you wish an individual control to display and process information from a different MBO, you can enter a different Parent Data Source ID.
Parent Data Source ID	If you wish this Section control to inherit data from a source other than MAINRECORD, enter that value in this field. You might, for example, want to define a new parent data source in an application like Work Order Tracking where a table needs to pull data from an object other than WORKORDER. The Parent Data Source ID lets you build relationships with a different data source using Where Clauses.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required

Attribute Name	Description
	Query – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Listeners	Enter the ID(s) of one or more controls whose display values will be refreshed based on changes to this data source. Control ID(s) can reside anywhere inside the application. You must separate multiple values with a comma.

Section Column

A Section Column is a vertical column control that lets you divide a Section Row into headings. A Section Column is a container that can hold child sections. A Section Column is a child to a parent section. When you move a Section, all of its children automatically move with it.

You can insert Section columns into Section Rows. When you drag a Section Column into a Section Row, it automatically creates two Section Columns. A Section Column does not have a label. Its only function is to hold child sections. A child section can hold, for example, a Section Header that lets you assign column headings for a multi-column section.

Sections Columns like Section Rows are transparent in the Maximo user interface. Except for tables, all graphical elements in Maximo that have multiple columns have a transparent Section Column within a Section Row that is within a parent section.

Rules

You can place the following control in this container control:

- Section

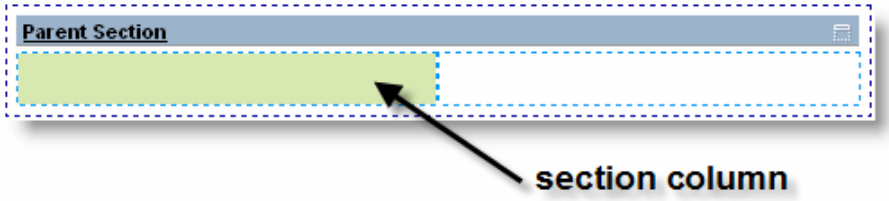
You can place this control inside the following container control:

- Section Row

Example

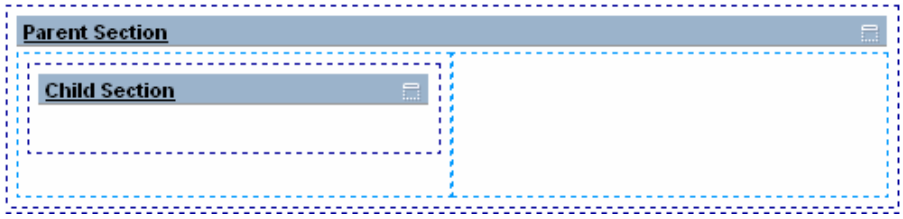
To create a multi-column section layout, complete the following steps:

1. Insert Section
2. Insert Section Row
3. Insert a Section Column



To create a multi-column section layout with a child section, complete the following steps:

1. Insert Section
2. Insert Section Row
3. Insert Section Columns (to subdivide the section into columns)
4. Drop a new section into each Section Column
5. Add controls to each new Section



Note To view the page tag in Application Designer, select Toggle Show All Controls from the Select Action menu.

1. You can drop Section Columns into Section Rows, but not Sections.
2. You use Section Columns to subdivide a Section, but you cannot drop controls into a Section Column.

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.

Section Header

A Section Header is a control that can contain dynamic values in its label. The Plans tab in the Work Order application, for example, uses the Section Header and related Parameter and Parameter Values controls to display children and tasks of work orders. The Section Header is a container control.

Use this control to assign a column or table heading for a Section or Table. A Section Header can contain replaceable values depending on how you configure the Parameter Value and Parameter Values controls. For example, the label attribute for the Section Header in the task table in Work Order Tracking > Plans tab has a variable value similar to "(0)," where the variable value is defined by the Parameter Value control. When you move a Section, all of its children, including Section Header and related controls, automatically move with it.

Sections Headers are transparent in the Maximo user interface. To view a grouping of Section Header, Parameter Values, and Parameter Value controls in the Application Designer, you must choose Select Action > Toggle Show All Controls from a tab. Section Headers along with the Parameter Value and Values controls enable you to display dynamic values in the "Tasks for Work Order xxxx" label for the table in the previous example. The settings you configure in the Section Header and Parameter Values set "xxxx" in the header to the current WONUM (i.e., 1000).

Rules

You can place the following control in this container control:

- Parameter Value
- Parameter Values

You can place this control inside the following container controls:

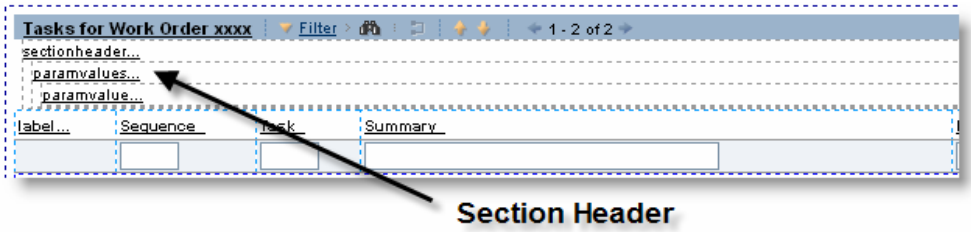
- Section
- Table

Example (Work Order Tracking > Plans >Task Table)

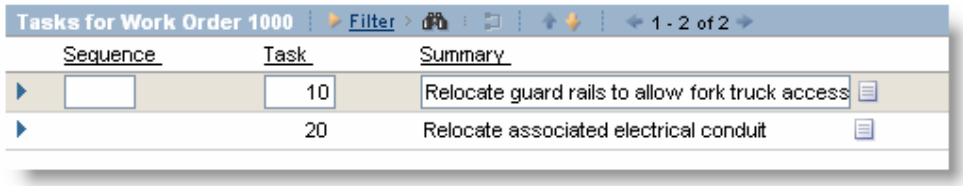
To create a Section Header with dynamic values, complete the following steps:

1. Insert Section Header into a Section or Table control
2. Drag Parameter Values into the Section Header container
3. Parameter Value automatically appears with the Parameter Values control

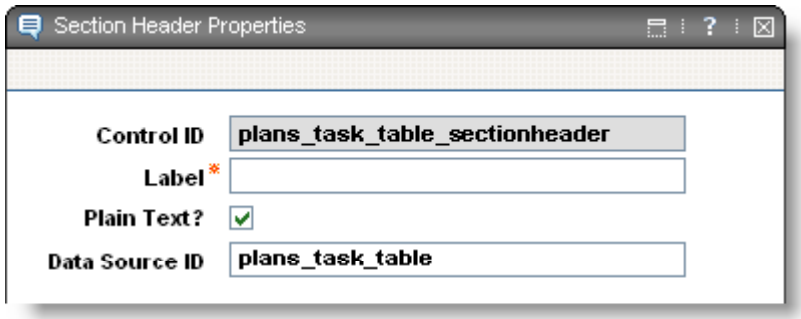
Work Order Tracking (WOTRACK) Section Header opened in Application Designer:



Work Order Tracking Section Header as it appears in Maximo:



Work Order Tracking Section Header dialog box as it appears in Application Designer:



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The label contains a variable that displays dynamic values inherited from the Parameter Value and Values controls in the Table or Section control.
Plain Text	Any text you enter in this field removes the CSS (cascading style sheet) class definition for a label so that it looks like plain text in the user interface.
Data Source ID	If you want this control to use a different Data Source ID than the default of MAINRECORD, then enter that value here. Each Maximo application has a presentation file that represents the graphical layout of the application pages displayed in a browser window. Each presentation file has a Presentation ID tag that can include any number of controls, dialogs, and data sources. The Presentation ID tag defines the main Maximo Business Object (MBO) for the application. For example, the MBO for the Work Order application is WORKORDER. See the Data Source ID description for the Combobox control for additional information on data sources.

Section Row

A Section Row is a container type of graphical control that holds Section Columns. A Section Row is a horizontal row that lets you partition a Section into columns that in turn hold child sections. A Section Row is a child to a parent section. When you move a Section, all of its children automatically move with it.

You can insert Section Columns into Section Rows. A Section Row does not have a label. Its only function is to hold Section Columns. Sections Rows are transparent in the Maximo user interface. Except for tables, all graphical elements in Maximo that have multiple columns have a transparent Section Row within a Section.

Rules

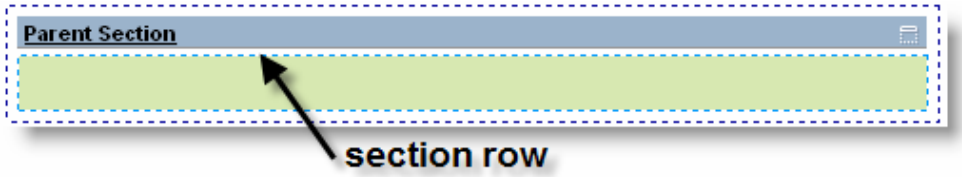
You can place the following control in this container control:

- Section Column

You can place this control inside the following container control:

- Section

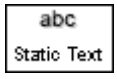
Example



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.

Static Text



Static Text is a text control that lets you enter and configure free form text in a Section. It also lets you specify a database attribute that you can configure and position within a Section as if it were unbound text. You can position static text using the Text Alignment, Column, or Span properties. You typically see applications use static text in Date search dialog boxes. The static text functions as a To or From label in a Date Search dialog box like the SEARCHMORE dialog in Work Order Tracking.

In addition to configuring Static Text to function as a plain text label, you can configure the plain text to behave as a hyperlink that will take you to a URL when clicked. When configured as a URL, the Static Text uses a larger font and looks more like a URL string than plain text.

Rules

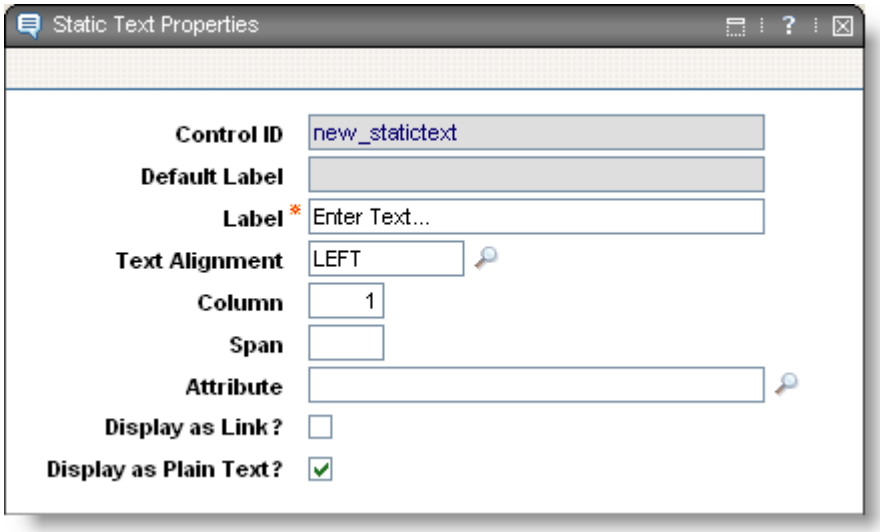
This is not a container control.

You can place this control inside the following container control:

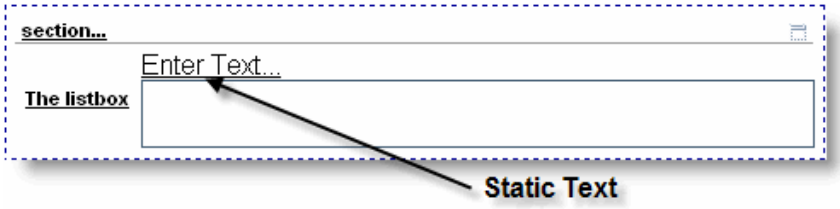
- Section

Example

1. **Static Text Properties dialog box configured in the Application Designer.**



2. **Static Text example as it appears in the Application Designer workspace.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the Listbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Text Alignment	Select Left, Center, or Right to align Static Text within this control. Typically, you associate static text with a control that resides in a Section. You can place the text above or below the control.
Column	Enter a numeric value in this field that will position the static text at the beginning, middle or end of a column depending on the Text Alignment setting. By default, each control has seven columns that are transparent to the user. For example, if you enter “3” in this field and “Center” for Text Alignment, then Maximo centers the Static Text above or below column three. If the Static Text you want to display is wider than its column, you cannot use the Text Alignment property and Maximo automatically extends the column width to contain the Static Text.
Span	Enter a numeric value in this field that will enable the Static Text to bridge one or more columns.
Attribute	You can associate static text with a database attribute by using the Select Value dialog box. If the attribute you select has a default label value, it will display in the Default Label field.
Display as Link?	By default, Static Text does not display as a URL link. Select this field to configure the control as a URL link.
Display as Plain Text?	Any text you enter in this field removes the CSS (cascading style sheet) class definition for a label so that it looks like plain text in the user interface.

Tab

A Tab is a container control. Formatting a Tab(s) is the starting point for designing the structure and layout of a new application or extending the layout of an existing application. You would typically add a Section control as the first element in a Tab and then add other controls to complete your screen layout. For example, you can break the layout of the page vertically by adding additional Section controls. Also, you can break a section horizontally by adding Section Columns.

Rules

You can place the following controls in this container control:

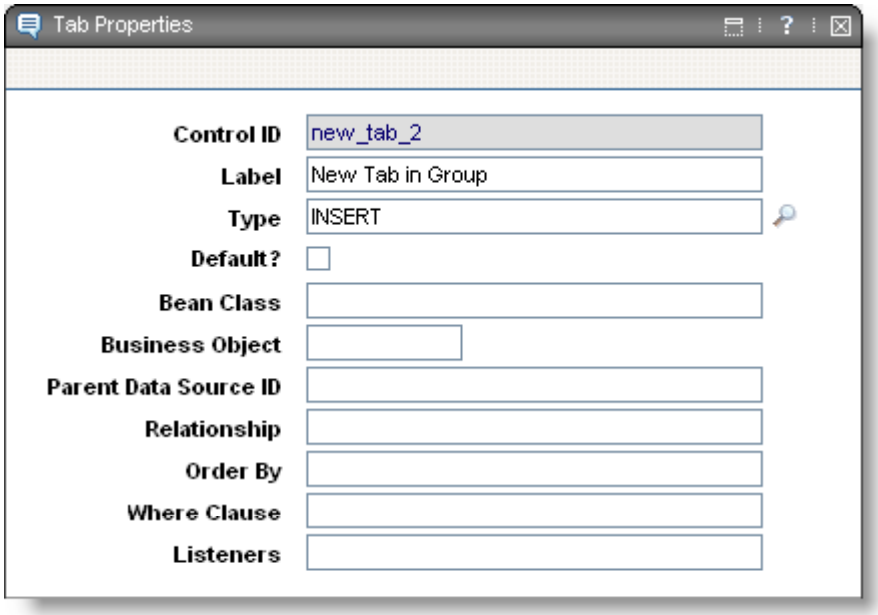
- Data Source
- Menubar
- Table
- Section
- Help Grid
- Include
- Tree

You can place this control inside the following container controls:

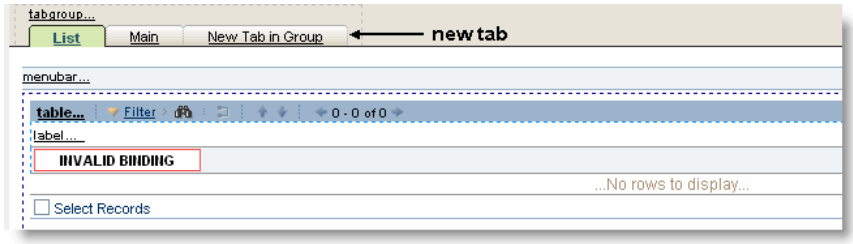
- Tabgroup

Example

1. **Tab Properties dialog box configured in the Application Designer.**



2. **New Tab as it appears in the Application Designer workspace.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The name you assign to the Tab control for a specific application. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Type	Select the type of tab you want to add to the Tabgroup. Valid values are List or Insert. Choosing List formats the tab as a standard Maximo search tab with a filter table. Choosing Insert formats the tab as an empty workspace where you can build an application screen by inserting and configuring controls.
Default?	This property indicates which tab, either a List or Insert, to enable when you first open an application and display a record. When you create a new power application, List tab is the default.
Bean Class	Reserved for future use.
Business Object	The main MBO reference for the application. For example, Work Order Tracking uses WOTRACK and Assets uses ASSET. Every Maximo application works with a MBO and MBOSet. The set of work orders displayed on the List tab in the Work Order Tracking application, for example, is a MBOSet. Each individual work order is a MBO. An application's presentation tag defines the main MBO for the application. MBOs are responsible for the following types of functions:

Attribute Name	Description
	• Field validation • Updating the database • Business processing logic By default, the presentation tag for an application defines the main MBO to use when saving or displaying data through the user interface. All controls in the application share the same MBO reference via the Parent Data Source ID property. Unless overridden, all controls added to an application bind to the Parent Data Source ID. If you wish an individual control to display and process information from a different MBO, you can enter a different Parent Data Source ID.
Parent Data Source ID	If you wish the Tab control to inherit data from a source other than MAINRECORD, enter that value in this field. You might, for example, want to define a new parent data source in an application like Work Order Tracking where the tab and its children controls pull data from an object other than WORKORDER. The Parent Data Source ID lets you build relationships with a different data source using Where Clauses.
Relationship	You enter a relationship value in this field. You can search for values in the Database Configuration > Relationships tab. If you enter a relationship, it is automatically inherited by any input child controls within the tab. Relationships enable controls to display or write to different Maximo business objects.
Order By	Reserved for future use.
Where Clause	Reserved for future use.
Listeners	Enter the ID(s) of one or more controls whose display values will be refreshed based on changes to this data source. Control ID(s) can reside anywhere inside the application. You must separate multiple values with a comma.

Tab Group

A Tabgroup is a container type of control that holds tabs. Tabgroups are part of the template for power applications. When you create a new power application, you will see a Tabgroup control with the standard Maximo List and Main (workspace) tabs. You can add additional tabs as required by your business application.

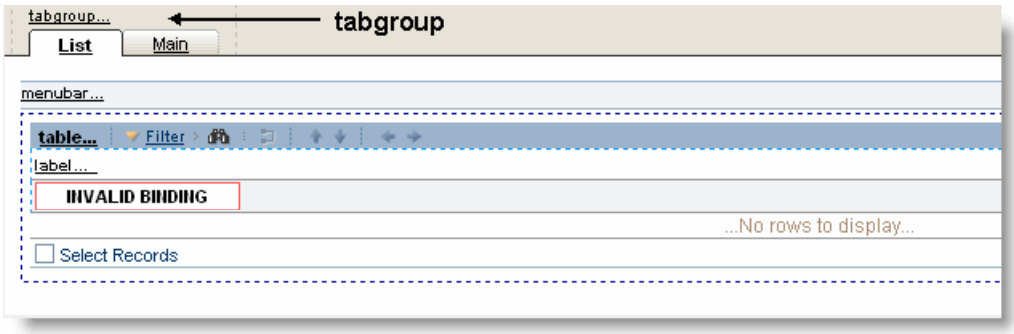
Rules

You can place the following control in this container control:

- Tab

Example

The Tabgroup control as it appears in the Application Designer when you create a new power application.



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Format	Leave blank (the default) or choose one of the following layout options: • CARDECK • DEFAULT • WIZARD The wizard option replaces the standard Maximo tab layout with arrows that point to the tab headings. The cardeck option appears in single-page applications that do not employ tabs.

Attribute Name	Description
Style	The Style option defaults to FORM, which is a style attribute for the control. The Form style defines the appearance of the main tab group.
Change Event	Reserved for future use.

Table

The Table control is a container control with the basic layout elements of a table window, including a toolbar with filter and search functionality and icons for previous/next row and page. The basic Table layout also includes a Table Column control and a details box where you can enter a Section. The Table control is similar to the table window in the List tab of most Maximo applications. Maximo tables enable you to search for and display records from one or more tables in a columnar format. You can use the standard filter feature to display only records that meet specified criteria.

Rules

You can place the following controls in this container control:

- Table Column
- Section

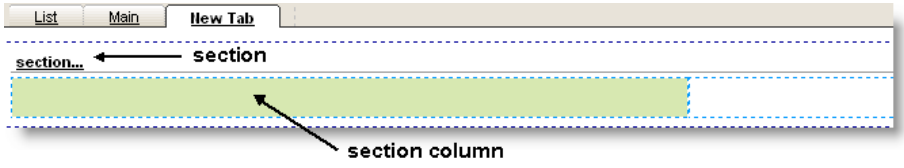
You can place this control inside the following container controls:

- Section Column
- Tab
- Dialog Box

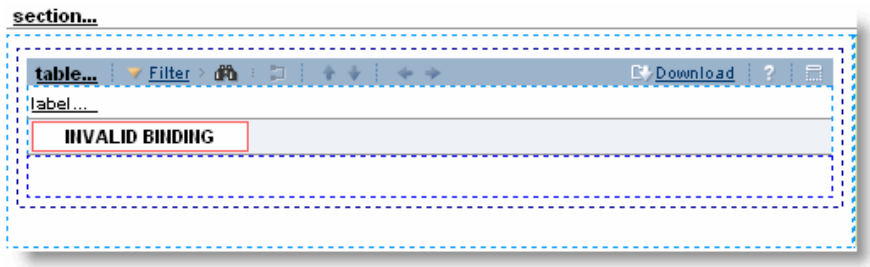
Note You can insert a Section control into the details section of a Table window. The details section is an empty, rectangular box at the bottom of the window.

Example

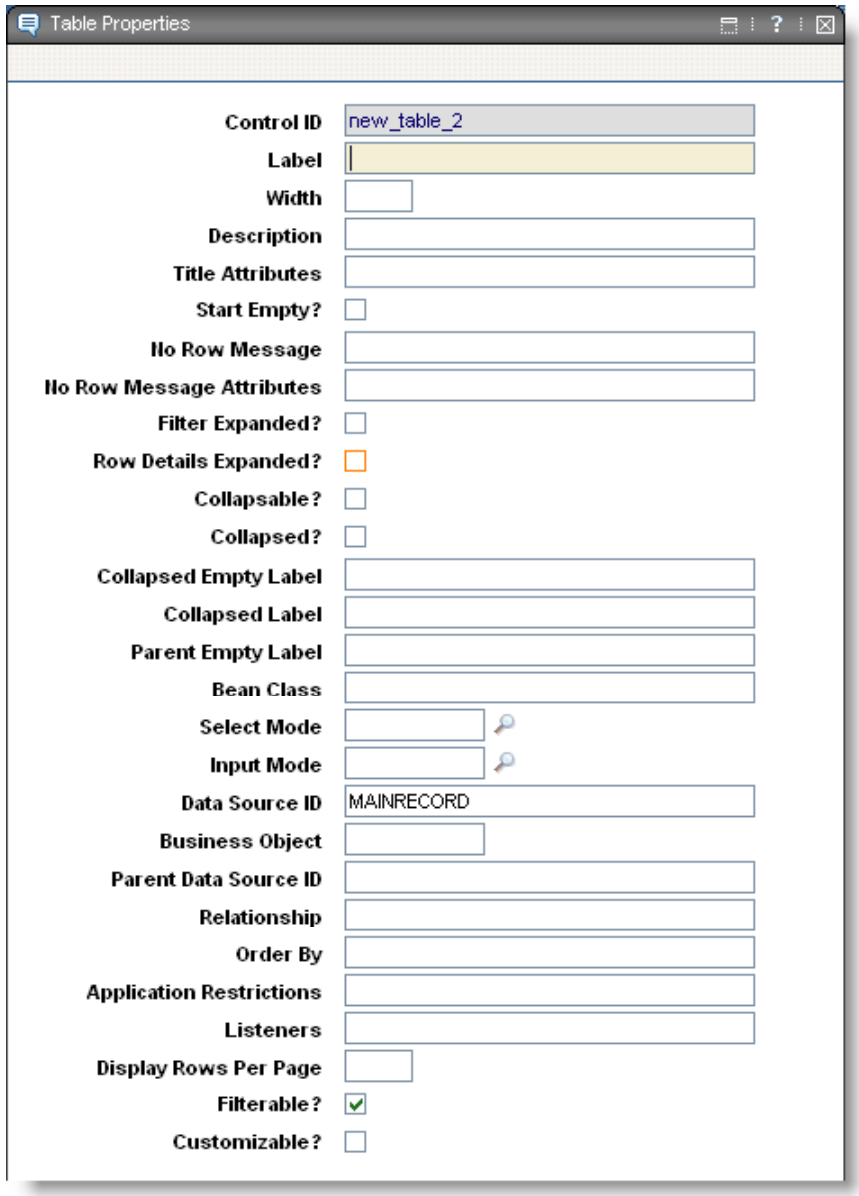
1. **Section control dropped into a Tab container. Section Row dropped into the Section container. Section Column dropped into the Section Row.**



2. **Table control dropped into the Section Column.**



3. **Table Properties dialog box in the Application Designer.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Label	The text value you enter becomes the title of the table and displays in the toolbar. Maximo stores this value in the MAXLABELS table. You can edit this value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Width	Enter a numeric value to resize the width of a table. The default window size for a table is approximately 1000, or the full width of a page. You can decrease the width of a table to approximately 400. The table control needs a width of 400 to maintain the contents of the toolbar, including table title and icons.
Description	Text you enter in this field displays under the table's label in the title bar.
Title Attributes	Reserved for future use.
Start Empty?	Select this box if you want the table to always open without displaying records. If you leave this box cleared (the default), Maximo automatically populates the table with records that match the search query when opened.
No Row Messages	By default, you see the message "…No rows to display…" when you open a table without rows. To override the default text message, enter a value in this field.
No Row Message Attributes	Reserved for future use.
Filter Expanded?	Select this box if you want to display an empty query filter row when you open a table. If cleared, the default, the filter row does not display with an open table. See also Filterable?.
Row Details Expanded?	Select this box if you want a table to display the expanded detail sections for each record in the table. The default is not to expand the detail sections for a table row.
Collapsable?	Select this box to enable the Show/Hide icons in the table toolbar. You must select this field to

Attribute Name	Description
	use the "Collapsed?" property. By default, this property is cleared.
Collapsed?	If you selected "Collapsable?", then you can select this box to display only the table title and not any row details when you open a table in an application. By default, this property is cleared.
Collapsed Empty Label	When a table is collapsed and empty, the value you enter here will override the table title (i.e., Label property) in the user interface.
Collapsed Label	When a table is collapsed, the value you enter here will override the table title in the user interface.
Parent Empty Label	If this table is a child of a parent table, and that table is empty, the value you enter here will override the parent's table title.
Bean Class	Reserved for future use.
Select Mode	You can restrict a table to displaying one or multiple records from a database table. You can choose either Multiple or Single. The Work Order Tracking list table, for example, has this field set to "MULTIPLE."
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a Table control, the input mode defaults to read/write so that you can both display or add new records to the table. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display

Attribute Name	Description
	asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Data Source ID	The Data Source ID for this control. It points to the main MBO or object that the control uses for entering and displaying data. Each application links to a main object that represents the Parent Data Source for all child controls in the application. Individual or groups of controls within an application can inherit attributes from objects that are not the primary data source. See the Data Source ID description for the Combobox control for additional information on data sources.
Business Object	The main MBO reference for the application. For example, Work Order Tracking uses WOTRACK and Assets uses ASSET. Every Maximo application works with a MBO and MBOSet. The set of work orders displayed on the List tab in the Work Order Tracking application, for example, is a MBOSet. Each individual work order is a MBO. An application's presentation tag defines the main MBO for the application. MBOs are responsible for the following types of functions: • Field validation • Updating the database • Business processing logic By default, the presentation tag for an application defines the main MBO to use when saving or displaying data through the user interface. All controls in the application share the same MBO reference via the Parent Data Source ID property. Unless overridden, all controls added to an application bind to the Parent Data Source ID. If you wish an individual control to display and process information from a

Attribute Name	Description
	different MBO, you can enter a different Parent Data Source ID.
Parent Data Source ID	The Parent Data Source ID points to the main MBO associated with an application, for example, WOTRACK. Unless overridden, all controls inherit the value stored in the application's presentation tag.
Relationship	You enter a relationship value in this field. You can search for values in the Database Configuration > Relationships tab. If you enter a relationship, it is automatically inherited by any input child controls within the table. Relationships enable a table to display information from different Maximo business objects. For example, if you entered SPAREPART, the table will be able to display information based on the defined relationship. When you enter a relationship in the Table control, it automatically prefixes any child column attributes added to the table. So, for SPAREPART, you only have to enter the column attribute name and not the full relationship of SPAREPART <attribute>.
Order By	Enter the name of an attribute to use when sorting information in the table. For example, you can sort on QUANTITY to list records according to their numeric value. If you enter ASC QUANTITY, the table displays records in ascending order from the lowest to the highest numeric value. If you enter DSC QUANTITY, the table displays records in descending order from the highest to the lowest numeric value.
Application Restrictions	Enter a Where Clause that filters information displayed in the table. If you enter a restriction, it modifies the overall Where Clause for the application. You cannot change the restriction at runtime.
Listeners	Enter the ID(s) of one or more controls whose display values will be refreshed based on changes to this data source. Control ID(s) can reside anywhere inside the application. You must separate multiple values with a comma.
Display Rows Per Page	The maximum number of rows you wish to display on a page.
Filterable?	This field adds a filter row for searching to the table. It defaults to enable. This setting automatically passes to the Filterable? property

Attribute Name	Description
	in all Table Column controls. You must select this box to use the Filter Expanded? property. See also Filter Expanded?
Customizable?	Reserved for future use.

Table Column

The Table Column control is a container type control that lets you define additional column headings for a table. Maximo columns let you display or insert data from tables. You can use the standard filter feature to display only records that meet specified criteria.

Rules

You can place the following controls in this container control:

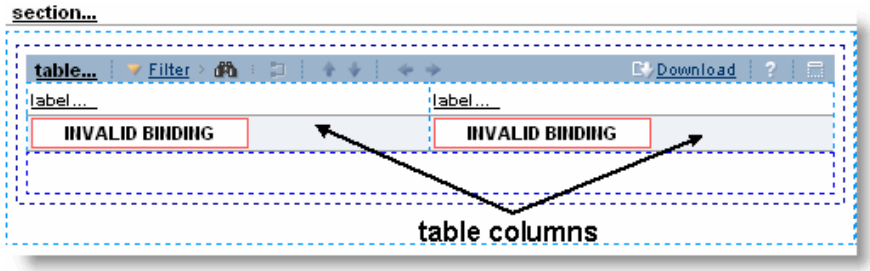
- Checkbox
- Textbox

You can place this control inside the following container controls:

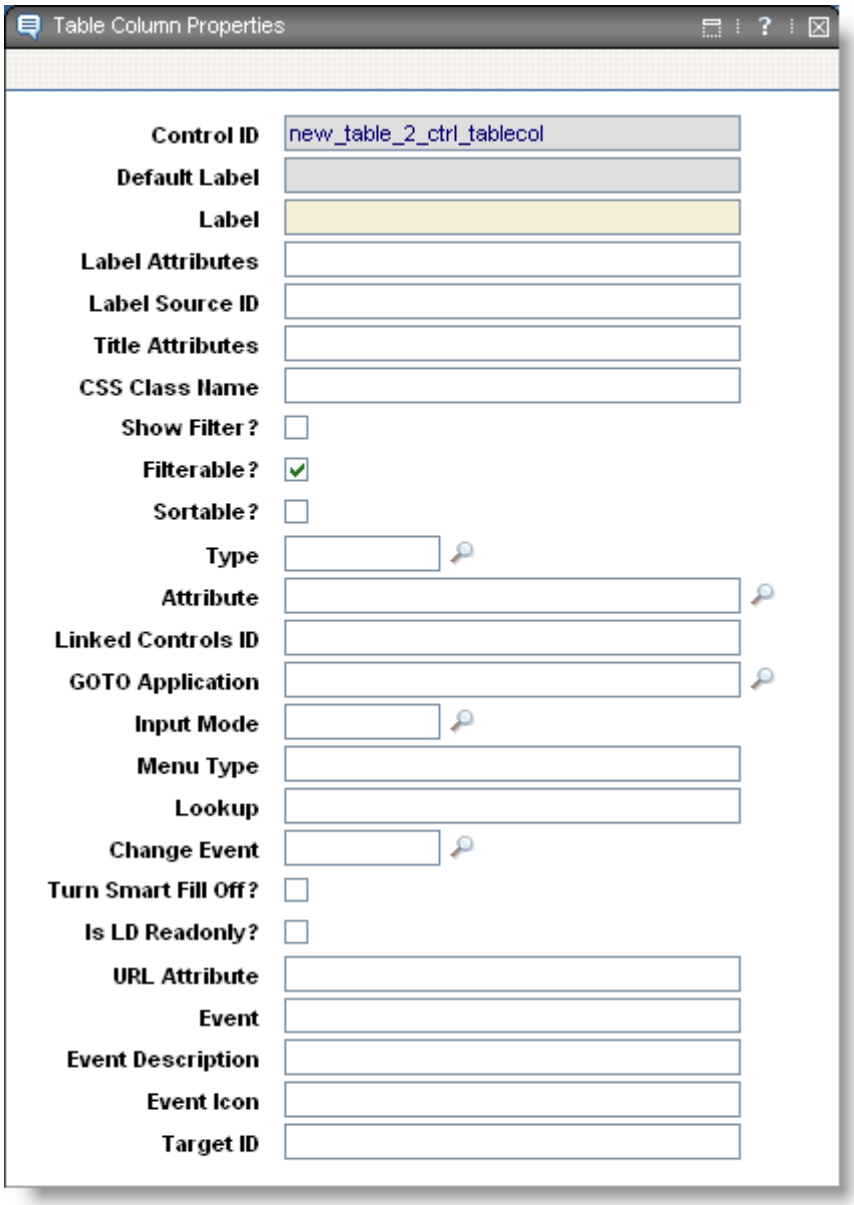
- Table

Example

1. **Table Column dropped into a table.**



2. **Table Column Properties dialog box in the Application Designer.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label, which becomes the Table Column heading, defaults to the text value associated with the database attribute entered in the Attribute property. For example, if you enter ASSETNUM as the attribute, the Default Label

Attribute Name	Description
	becomes Asset. This is a read only field.
Label	The text value you enter here replaces the Default Label as the Table Column heading. Maximo stores this value in the MAXLABELS table. You can edit this value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Label Attributes	You can enter a comma separated list of data attributes to use when building the Default Label for this control. The Label Attributes and Label Source ID properties enable you to display dynamic values in the Default Label for a Table Column.
Label Source ID	Enter an object name that is the data source for the Label Attributes property.
Title Attributes	Reserved for future use.
CSS Class Name	Enter the class name for a cascading style sheet. The value you enter can change the layout and appearance of the Table Column. Typically, you would not use this field with a Table Column control.
Show Filter?	If you select the Filterable? and Show Filter? properties, you will see the filter Textbox control for this column in the table's filter row.
Filterable?	If you select the Table control's Filterable? property, it automatically passes this setting to the Filterable? property in each Table Column. You can select or clear Filterable? at the table column level. Filterable?, when selected, indicates that you can search on the attribute associated with the Table Column label.
Sortable?	If selected, you can sort the records in the table by clicking on the column's label. The first time you click on a label it sorts the records in ascending order for that column's values. The second time you click a label, it sorts the records in descending order.
Type	You can link a Table Column to events and links. If you select Event, it maps the column to an event type, description, and icon. BOOKMARK and TOGGLEDETAILSTATE are event examples. Link adds an underline to a value, usually a record number, which causes

Attribute Name	Description
	the detail record to open when you select the value. In the Related Work Orders tab there is an event column before the Work Order Number column called "toggledetailstate" with a description of "Show Detail." This column places a View/Show Details icon next to the work order number column that lets you open or close the details section for a selected work order. The Work Order Number column in the Work Order List tab has a Type value of Link. Link adds an underline to all work order numbers that appear in the column.
Attribute	You can associate a Table Column with a database attribute by using the Select Value dialog box. For example, if you enter ASSETNUM in the Attribute field, Maximo populates the Default Label with "Asset." This column displays asset numbers and "Asset" displays as the Table Column heading. Not all attributes you select will have a database default label value.
Linked Controls ID	You can enter a Control ID here that gets automatically updated whenever there is a change to this column's attribute value. The Control ID must reside somewhere within the application.
GOTO Application	You can configure a pull-down menu associated with a Table Column to have options that will take the user to different applications. Use the Select Value dialog box for this property to choose application names that will appear in the pull-down menu.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets

Attribute Name	Description
	the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
Menu Type	You can enter a value in the Menu Type property that links the Table Column to a pre-formatted drop-down menu. The value, called a menu ID, defines the XML presentation content and format of a drop-down menu. WORKORDER, for example, is the Menu Type for the Parent WO textbox in Work Order Tracking. Menu ID's reside in a system XML file called menus.xml. You cannot edit this file from the Application Designer. However, you can view the content of this file or other system .xml files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\ system directory.
Lookup	You can enter a value in the Lookup property that links the Table Column to a pre-formatted lookup table. The lookup table pulls records from the main table. Users can populate the Table Column by selecting a record from the

Attribute Name	Description
	table. The value, called a lookup ID, defines the XML presentation content and format of a select value table. WORKORDERISTASK, for example, is the Lookup property for the Parent WO textbox in Work Order Tracking. Lookup ID's reside in a system XML file called lookups.xml. You cannot edit system XML files from the Application Designer. However, you can view the content of these types of files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\system directory.
Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Turn Smart Fill Off?	By default, Maximo enables the "Smart Fill" feature. To disable, clear the check box. This feature enables you to enter a partial value in a text box field. Maximo attempts to match the partial text string entered to a valid value(s) in the database. If Maximo finds one matching value, it automatically populates the field so that you can continue entering information. If Maximo finds more than one matching value, it displays a Select Value dialog box with a list of matching values. If you clear the smart fill property, Maximo does not validate the data you enter in the textbox.
Is LD Readonly?	By default, Maximo sets a Long Description associated with a Table Column attribute to editable. Select this field to make the Long Description read only.
URL Attribute	Enter a URL value if you set the Type property for this control to "Link." The URL value becomes a hyperlink.

Attribute Name	Description
Event	If you select “Event” as the Type property for a Table Column, Maximo performs the action defined in this field. Continuing the example for the Type property above, entering “toggledetailstate” lets you view or close the details section of a work order. Users can also define their own events. Virtually every action you perform in Maximo, such as clicking Next or saving a record, triggers an event. Events defined in a presentation file are tied to a method in the code or an event tag in the JSP pages. Maximo is an event driven product. When you perform an action, Maximo sends an “event” to the back end which invokes and runs a method associated with the event. There is no directory listing of events, however, you can search for events and event descriptions in presentations using the search words “mxevent” and “mxevent_desc.” See also Type.
Event Description	Indicates the tool tip that appears above a selected field or icon. For example, “Mark row for deletion” or “View Details.” See also Event.
Event Icon	Point to an image (.gif file) that represents an event. The image icons you see in the Maximo user interface reside in the following directory: c:\maximo\applications\maximo\maximouiweb\webmodule\webclient\images You can access the graphic files in the images directory using the Image control in the Application Designer.
Target ID	Enter a Control ID, if different from the current Table Column control, to which the system sends the Event property (if defined) for processing.

Textbox

A Textbox control is a single line text input box that displays information you enter or select from a list. Textboxes have labels that are usually visible in the user interface. Labels are text fields that describe the type of information displayed in the box.

Textboxes are often linked to select value lookups and detailed menus. A select value lookup lets you select and then display a single value from a list of records. A Textbox linked to a detailed menu can contain diverse options, such as a Select Value dialog box, jumps to other applications, or views of different records. The Menu Type property you configure for a Textbox controls the format and content of the detailed menu.

Textbox controls have a Default Label property that enables the control to inherit a read-only label from the attribute you configure for the control. The Default Label value comes from the database object. Alternatively, you can override an inherited Default Label by entering a different value in the Label property. This value is local to the application's presentation file. Labels you enter at the presentation level are not stored in the MAXATTRIBUTE OR MAXLABELS table.

Textboxes display object information from the Data Source ID and attribute values you specify in the properties dialog box.

Rules

This is not a container control.

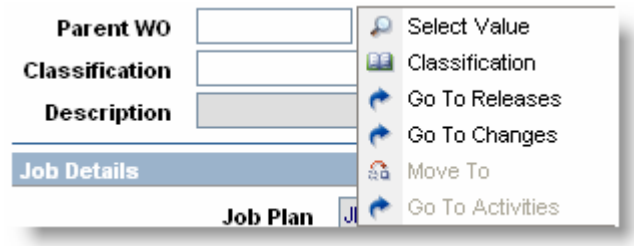
You can place this control inside the following container control:

- Section

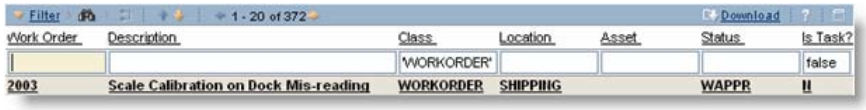
Example

1. **Parent WO textbox field in the Work Order Tracking application.**

2. **Detailed menu for the Parent WO field.**



3. **Select value table row for the Parent WO field.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Default Label	This label defaults to the text value associated with the database attribute you bound to the textbox. This is a read only field.
Label	You can enter a text value in this field that overrides the Default Label value. The label you enter here is specific to the application and not stored in the MAXATTRIBUTE or APPFIELDDEFAULTS tables.
Attribute	You can associate a textbox with a database attribute by using the Select Value dialog box. If the attribute you select has a default label value, it will display in the Default Label field.
Menu Type	You can enter a value in the Menu Type property that links the textbox to a pre-formatted drop-down menu. The value, called a menu ID, defines the XML presentation content and format of a drop-down menu. WORKORDER, for example, is the Menu Type for the Parent WO textbox in Work Order Tracking. Menu ID's reside in a system XML file called menus.xml. You cannot edit menus.xml from the Application Designer. However, you can view the content of this file or other system .xml files by selecting a main tab from the Application

Attribute Name	Description
	Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation \system directory.
Lookup	You can enter a value in the Lookup property that links the textbox to a pre-formatted lookup table. The lookup table pulls records from the main table. Users can populate the textbox by selecting a record from the table. The value, called a lookup ID, defines the XML presentation content and format of a select value table. WORKORDERISTASK, for example, is the Lookup property for the Parent WO textbox in Work Order Tracking. Lookup ID's reside in a system XML file called lookups.xml. You cannot edit system XML files from the Application Designer. However, you can view the content of these types of files by selecting a main tab from the Application Designer and choosing Select Action > Export System XML. This action exports the library.xml, lookups.xml, and menus.xml files to the <maximo_root>\resources\presentation\ system directory.
Detail Image	Reserved for future use.
Input Mode	Select one of options listed below for the Input Mode: • Default • Password • Password Readonly • Password Required • Query • Readonly • Required The Default option sets the Input Mode for all controls to "edit." If you do not select an Input Mode for a control, Maximo automatically sets the mode to read/write so that you can both enter or display information in the field. If you enter information in a read/write text field, it posts to the database column specified by the Attribute property. Input Mode Option Descriptions: **Default** – sets control to "edit" so you can

Attribute Name	Description
	display or input values and mode is read/write **Password** – sets control to display asterisks (blanked out) for displayed or input values and mode is read/write **Password Readonly** – sets control to display asterisks and mode is read only **Password Required** – sets control to display asterisks and the control is required **Query** – sets control to display a typed value and mode is read only **Readonly** – sets control to display grayed-out text and mode is read only **Required** – sets control to display a typed value and record cannot be saved unless there is a value in the control
QBE Prepend	If you set Input Mode to "Query," then you can filter the record search by adding a text string prefix that acts as filter. For example, the More Search Fields dialog uses the QBE Prepend feature to add date search filters similar to ">=". You enter the value here to save key strokes when searching for records that meet specific date criteria.
Change Event	You can configure an input control to perform either of the following actions based on any data change to the control: • REFRESHTABLE • RESETCHILDREN Choosing REFRESHTABLE forces the table that is the data source for the input control to refresh its data. Choosing RESETCHILDREN forces any children of the control's data bean to delete and reacquire their MBOSetRemote references.
Turn Smart Fill Off?	By default, Maximo enables the "Smart Fill" feature. To disable, clear the check box. This feature enables you to enter a partial value in a text box field. Maximo attempts to match the partial text string entered to a valid value(s) in the database. If Maximo finds one matching value, it automatically populates the field so that you can continue entering information. If Maximo finds more than one matching value, it displays a Select Value dialog box with a list of

Attribute Name	Description
	matching values. If you clear the smart fill feature, Maximo does not validate the data you enter in the textbox.
Readonly Long Description?	By default, Maximo sets a Long Description associated with a textbox attribute to editable. Select this field to make the Long Description read only.
GOTO Application	You can configure a pull-down menu associated with a textbox to have options that will take the user to different applications. Use the Select Value dialog box for this property to choose application names that will appear in the pull-down menu.
Display Type	Reserved for future use.
Move to Data Source ID	The value you enter lets you move to a record stored in a different object. You can select any Data Source ID from the presentation. Refer to the Data Source ID definition below. By default, Maximo sends the Move To event to the ResultsBean, which contains a set of records displayed in the List tab. The Move To event affects the Move to Data Source ID object.
Data Source ID	The Data Source ID for this control. It points to the main MBO or object that the control uses for entering and displaying data. Each application links to a main object that represents the Parent Data Source for all child controls in the application. Individual or groups of controls within an application can inherit attributes from objects that are not the primary data source. See the Data Source ID description for the Combobox control for additional information on data sources.

Tree

The Tree control is a container type of control that works with the Tree Node and Tree Attribute controls. You can use these controls to build dynamic, hierarchical tree structures in Maximo with specific MBOs, such as CLASSSTRUCTURE, that support hierarchical data. The Classifications application uses the Tree controls and the CLASSSTRUCTURE MBO to

build classification hierarchies. The Security Profile hierarchy in the Users application is another example of how Maximo employs the Tree controls.

Rules

You can place the following controls in this container control:

- Tree Node

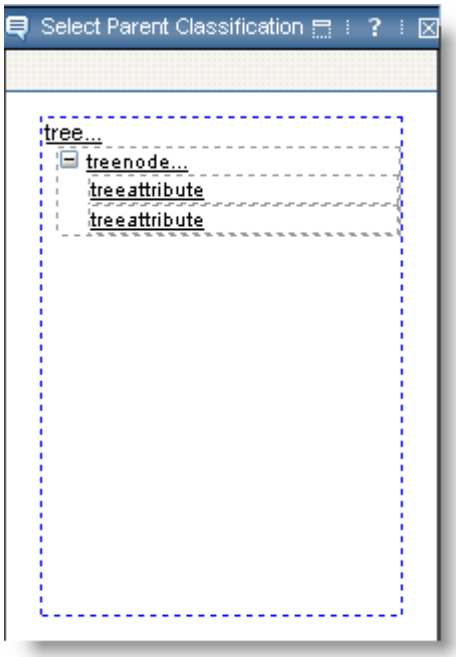
You can place this control inside the following container controls:

- Dialogs
- Tab

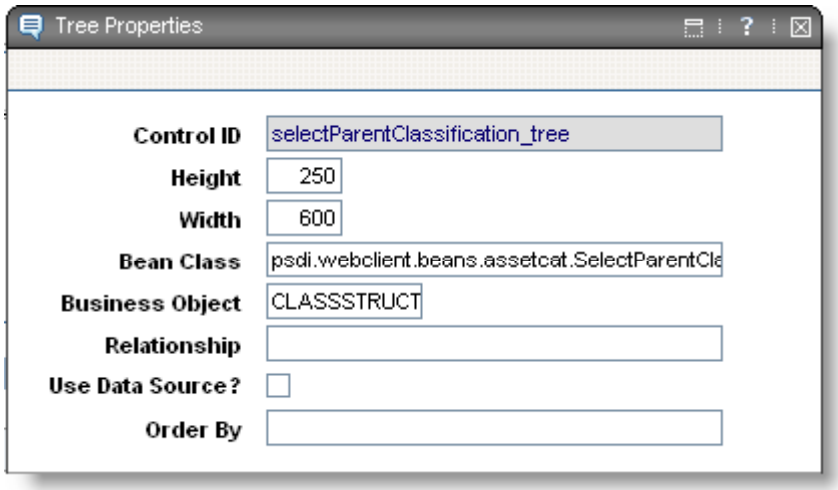
Example

The following Select Parent Classification tree example illustrates how the combination of Tree, Tree Node and Tree Properties controls work together to graphically display an existing hierarchical data structure in Maximo.

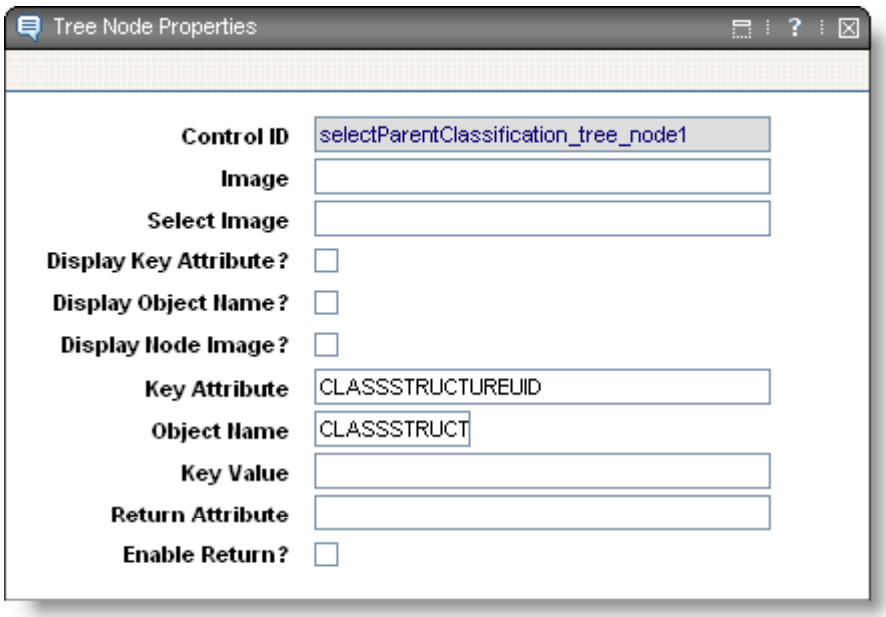
1. **The Select Parent Classification tree structure in the Application Designer workspace. To view this dialog box select Go To > Configuration > Application Designer > ASSETCAT > Select Parent Classification dialog.**



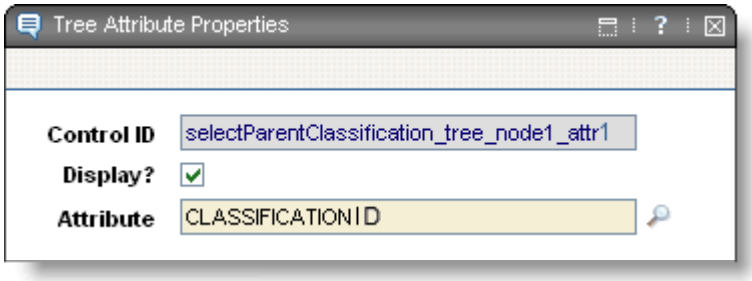
2. **Tree Properties dialog box for Select Parent Classification in the Application Designer workspace.**



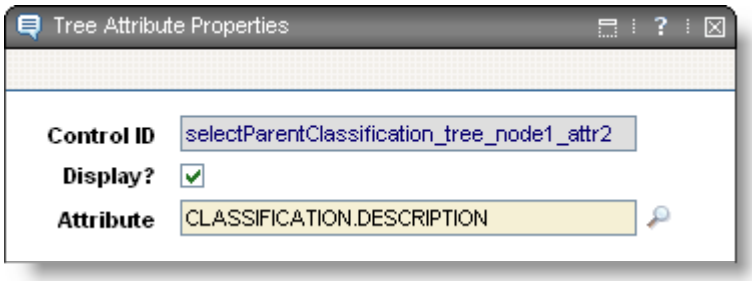
3. **Tree Node Properties dialog box for Select Parent Classification in the Application Designer workspace.**



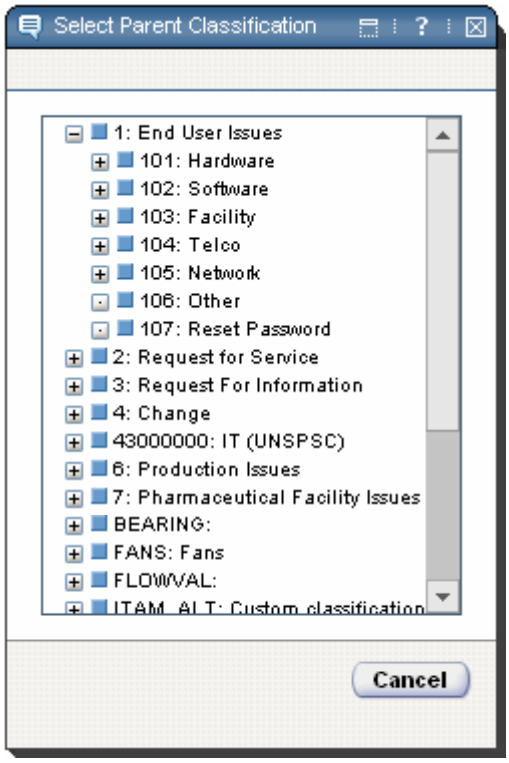
4. **Tree Attribute Properties dialog box for Select Parent Classification with CLASSIFICATION attribute in the Application Designer workspace.**



5. **Tree Attribute Properties dialog box for Select Parent Classification with CLASSIFICATION.DESCRIPTION attribute in the Application Designer workspace.**



6. **The Administration > Classifications > Parent Classification > Select Parent Classification dialog box with data structure in the Maximo user interface.**



Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Height	Enter a numeric value in this field that will increase or decrease the height of this control.
Width	Enter a numeric value to increase or decrease the width of this control.
Bean Class	Reserved for future use.
Business Object	The main MBO reference for the application. For example, Work Order Tracking uses WOTRACK and Assets uses ASSET. The primary MBO for the Classifications application is CLASSSTRUCTURE. Every Maximo application works with a MBO and MBOSet. The set of work orders displayed on the List tab in the Work Order Tracking application, for example, is a MBOSet. Each individual work order is a MBO. An application's presentation tag defines the main MBO for the application. MBOs are responsible for the following types of functions: • Field validation • Updating the database • Business processing logic
Relationship	You can enter a relationship value in this field. Maximo relationships reside in the Database Configuration > Relationships tab. If you enter a relationship, it is automatically inherited by any input child controls within the tree. Relationships enable controls to display or write to different Maximo business objects.
Use Data Source?	Reserved for future use.
Order By	Reserved for future use.

Tree Attribute

The Tree Attribute control describes the type of data that appears in each Tree Node. For example, the tree attributes in the Classifications tree structure are responsible for displaying Classification IDs and Descriptions in the user interface. The following XML shows how the Tree Attribute controls point to ID and Description data attributes in the Classifications presentation:

```
<treeattribute id="selectParentClassification_tree_node1_attr1"
dataattribute="classificationid" display="true" />

<treeattribute id="selectParentClassification_tree_node1_attr2"
dataattribute="classification.description" display="true" />
```

Rules

This is not a container control.

You can place this control inside the following container control:

- Tree Node

Example

See the preceding Tree control example.

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Display?	Select this box to display the defined Attribute value in the Tree Node.
Attribute	You can associate what values display in the tree node structure with a database attribute by using the Select Value dialog box. To create the example for this control, you can enter "=classstructure" in the Object field to display all the attributes in the CLASSSTRUCTURE table. Select the "CLASSIFICATIONID" attribute to display Classification ID as one of the Tree Node properties. In the Tree example, you also define another Tree Attribute property called "CLASSIFICATION.DESCRIPTION" to display the Classification Description value.

Tree Node

The Tree Node control is a container type of control that works with the Tree and Tree Attribute controls. A Tree Node defines the structure of a hierarchical tree.

Rules

You can place the following controls in this container control:

- Tree Attribute

You can place this control inside the following container control:

- Tree

Example

See the preceding Tree control example.

Properties

Attribute Name	Description
Control ID	A unique, alphanumeric identifier assigned to each control in a presentation. You cannot edit this value.
Image	To add a graphic next to the Tree Node, enter a file name in this field. This field defaults to the path of the images directory so that you do not have to enter the full path for a graphic file. You can specify any type of graphic that a browser is capable of displaying, such as .gif, .jpeg, or .bmps. Some graphic files may require a plug-in. **Note:** You can place any graphic file into the Maximo library of images. However, if you insert a graphic file without a .gif extension into Maximo, then you need to rebuild/deploy the Maximo .EAR file.
Select Image	Enter the name of a graphic file here that will replace the typical blue box that appears to the right of the + (open) and – (close) images when you open a Tree Node structure.
Display Key Attribute?	Select this property to display the Key Attribute as part of the Tree Node label.

Attribute Name	Description
Display Object Name?	Select this property to display the Object Name as part of the Tree Node label.
Display Node Image?	Select this property to display the Node Image as part of the Tree Node label.
Key Attribute	Reserved for future use.
Object Name	Reserved for future use.
Key Value	Reserved for future use.
Return Attribute	Enter an attribute name whose value gets returned to the browser when you click the blue square next to a Tree Node line item.
Enable Return?	Select this property to enable the Return Attribute property functionality (i.e., clicking the blue square).

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September 2005

Maximo Project Manager User's Guide

mro software™

make it *all* count

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Contents

About This Guide v
Audience v
Related Documentation v
Support v

Chapter 1: Maximo Project Manager Overview 1-1
Starting Maximo Project Manager 1-1
Using Maximo Data in Microsoft Project 1-3
Process Overview 1-3
Creating a Project in Microsoft Project Using Maximo Data 1-4
Difference in Maximo and Maximo Project Manager Query Results 1-5
Using the Maximo Menu 1-6
Select Work Orders 1-6
Select Work Orders Dialog Box 1-10
Update Work Orders 1-12
Save Work Orders to Maximo 1-13
Save Work Orders to Maximo Dialog Box 1-14
Select PMs 1-14
Select PMs Dialog Box 1-17
Load Resources 1-18
Load Resources Dialog Box 1-19

Chapter 2: Maximo Project Manager Scenarios 2-1
Planning Work for a Shutdown Period 2-1
Example 1: A Specific Location 2-1
Example 2: Using Customized Maximo Fields 2-2
Evaluating Schedule Dates of the Shutdown Project 2-3
Scheduling a Work Order Backlog 2-3
Holding the Schedule Dates from Session to Session 2-4
Creating a Preventive Maintenance Workload Forecast 2-5
Creating a Resource Leveled Total Workload Schedule 2-6
Example 1 2-6
Example 2 2-6

Chapter 3: Maximo and Microsoft Project Integration Points 3-1
Default Mapping 3-1
Work Order Tracking Fields 3-1
Child Work Orders 3-1
PM Field Mapping 3-2
Crafts, Tools, and People 3-2
Crafts 3-3
Tools 3-3
People 3-4
Scheduling Constraints 3-4
Saved Schedule Date Mapping 3-5
Conditional Mapping 3-6
Progress Field Mapping 3-6
Progress Logic Flow 3-6

Appendix A: Customizing Maximo Project Manager A-1
Sample Copy of MaximoProject.ini File A-1
Saving Login Settings A-14
[system] Section. A-14
Mapping Columns for Data Transfer from Maximo to
Microsoft Project A-15
[wofieldmap] Section A-16
[pmfieldmap] Section. A-17

Appendix B: Multi-Language Set Up B-1
About the importlang.bat Utility. B-1
Running the importlang.bat Utility B-1

Index Index-1

About This Guide

This guide explains how to use Maximo™ Project Manager to exchange information between Microsoft® Project and Maximo, and how Maximo Project Manager enhances Microsoft Project.

Maximo Project Manager users must be familiar with Microsoft Project and Maximo.

Audience

This guide lets planners, forecasters, and other managers use Microsoft Project to plan and schedule Maximo data.

Related Documentation

Document	Description
Online help	Provides instructions for using the application.
Maximo Project Manager Installation Guide	Provides information about: ▼ System requirements ▼ Preparations for a successful installation ▼ Installation instructions

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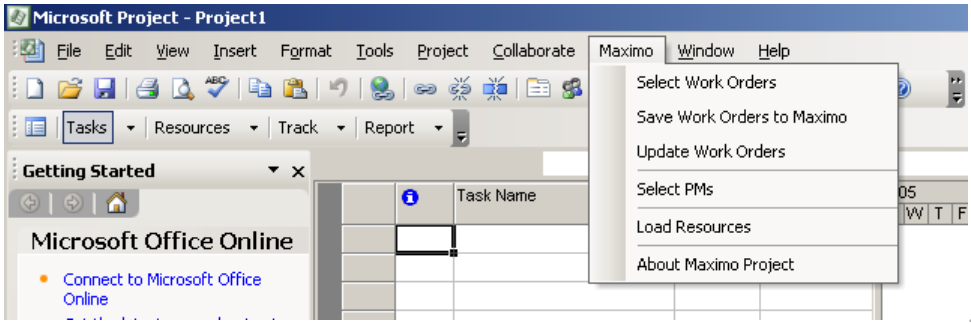
Maximo Project Manager Overview

1

Maximo Project Manager adds a Maximo menu to the Microsoft Project menu bar, so you can:

- Map work order and PM data from the MAXIMO database to Microsoft Project.
- Create Maximo work orders from tasks that you created in Microsoft Project
- Filter work order, PM, and calendar data from the MAXIMO database.

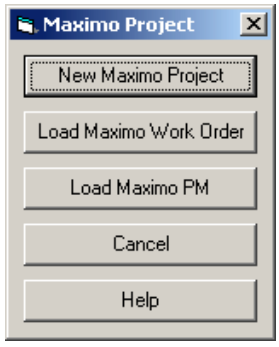
Maximo Menu



After filtering the Maximo data, you can perform project planning tasks with the Maximo work orders and save schedule data back to existing work orders in the MAXIMO database.

Starting Maximo Project Manager

When you open Maximo Project Manager, the Maximo Project Manager Startup dialog box opens.



Select the type of project to work on in Microsoft Project:

Option	Description
New Maximo Project	Opens a new session in Microsoft Project that creates Maximo work orders when you select **Maximo > Save WO to Maximo**.
Load Maximo Work Order	Opens a Maximo project in Microsoft Project that displays work orders. The Select Work Orders dialog box opens so you can transfer work order data from Maximo into Microsoft Project.
Load Maximo PM	Opens a Maximo project in Microsoft Project that forecasts certain PMs. The Select PMs dialog box opens so you can transfer PM data from Maximo into Microsoft Project.
Cancel	Opens standard Microsoft Project, without Maximo Project Manager's functionality.

Using Maximo Data in Microsoft Project

These procedures show how to transfer work order or PM data from a MAXIMO database into Microsoft Project.

Process Overview

These steps summarize how to create a project in Microsoft Project using Maximo data:

1. Create and save a Maximo query.
2. Create a new project in Microsoft Project.
3. Log in to Maximo from Microsoft Project.
4. Select a Maximo work order or PM query.
5. Modify the project.
6. If you selected a work order query, return schedule data and insert new work orders into the MAXIMO database.

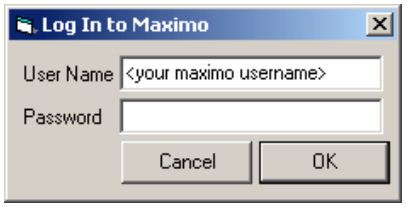
Creating a Project in Microsoft Project Using Maximo Data

1. In Maximo's Work Order Tracking or Preventive Maintenance application, create and save a query.

2. In Microsoft Project, open a new Maximo project.

3. In the Maximo Project Manager Startup dialog box, click **New Maximo Project**.

   The Log In to Maximo dialog box opens.



4. Enter the user name and password for your MAXIMO database.

NOTE You can set default login values for the Log In to Maximo dialog box in the MaximoProject.ini file.

5. Click **OK**.

6. Select the type of data to transfer from Maximo to Microsoft Project:

   - To transfer work order data, select **Maximo > Select Work Orders**.
   - To forecast PMs in Microsoft Project, select **Maximo > Select PMs**.

   The Select Work Orders or Select PMs dialog box opens.

7. Click the row containing the appropriate query. You see only public queries and queries you created.

   - To filter the results, click the Advanced tab.
   - To preview the results, click the Preview tab.

8. After selecting the appropriate query, click **OK** to transfer the work order or PM data, including assignments, craft and tool resources, and resource availability.

   NOTE The results may differ when using the same query in Maximo and Maximo Project Manager.

9. Use Microsoft Project to perform project planning and management tasks.

10. Save the project in a Microsoft Project file (.MPP) so you can schedule or update it later.

11 (Optional) To save the data back to Maximo, select **Maximo > Save WO to Maximo**.

NOTE If the active project includes several subprojects, all work order data is saved to Maximo. However, if the active project includes PM subprojects and work order subprojects, only the work order data is saved.

12 (Optional) To update the saved project from Maximo, select **Maximo > Update Work Orders**.

Difference in Maximo and Maximo Project Manager Query Results

The results may differ when using the same query in Maximo and Maximo Project Manager.

Maximo	Maximo Project Manager
Displays only the selected work orders or PMs.	Displays the parent and its entire child hierarchy, providing a more comprehensive and accurate schedule.

Using the Maximo Menu

Maximo Project Manager adds Maximo menu options and dialog boxes to Microsoft Project.

Select Work Orders

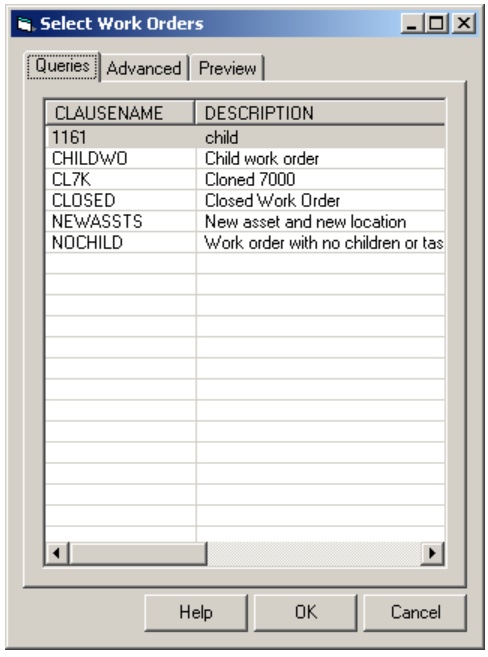
You use this dialog box:

- To display public queries and queries you saved in Maximo's Work Order Tracking application. The available queries depend on the sites you have access to.
- To preview the results of a query.

This dialog box contains these tabs:

Queries Tab

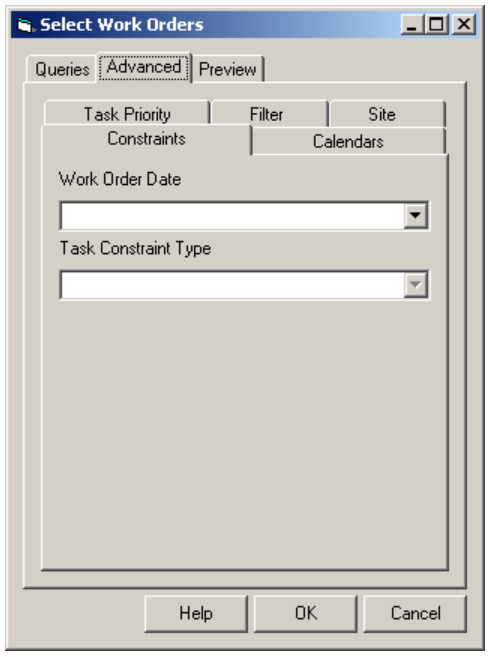
You use this tab to display public queries and queries you saved in Maximo's Work Order Tracking application.



Advanced Tab

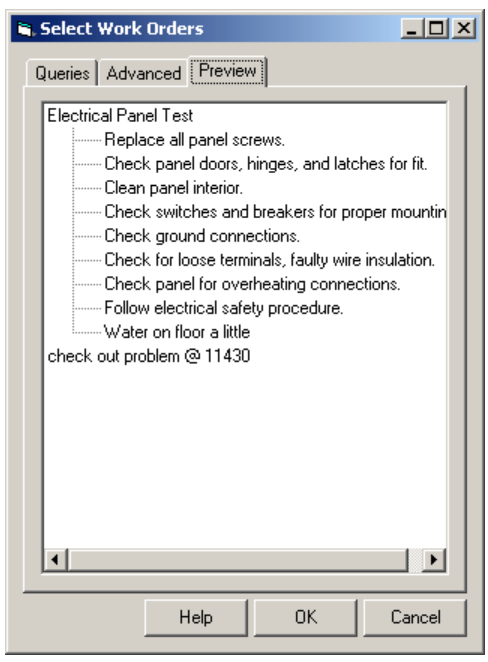
You use this tab:

- To filter the query results by site, task priority, work order status, and date.
- To determine whether to retrieve asset and labor calendars from Maximo.



Preview Tab

You use this tab to check the results of the selected query. The results may differ when using the same query in Maximo and Maximo Project Manager.



To select work orders:

1. In Microsoft Project, select **Maximo > Select Work Orders**.

   The Select Work Orders dialog box opens, displaying the Queries tab.

2. Click the row containing the appropriate query. You see only public queries and queries you saved in Maximo.

3. Click the Advanced tab to filter the query results. Use these subtabs:

   ▼ **Constraints:** Select a scheduling constraint for your project. You may select only one constraint type.

   NOTE Use this option to use Maximo's Schedule or Target date to schedule the work order in Microsoft Project.

   NOTE You can only constrain tasks that are not summaries of other tasks. Mixing child and parent constraints can violate Microsoft Project's business rules and cause problems with work order transfers.

   In practice, when you constrain work orders, Maximo Project Manager uses that constraint on all tasks at the lowest hierarchical level.

   To manipulate groups of tasks, transfer the parent tasks from Maximo, then set the constraints in Microsoft Project.

Constraints	Procedure	Description
Work Order Date	Select a work order date: **Scheduled Start**, **Scheduled Finish**, **Target Start**, **Target Finish**. NOTE Leaving this field blank disables the **Task Constraint Type** field.	Constrains the task by scheduling or targeting the work order's start and finish dates.
Task Constraint Type	Select a constraint type: **Must Start On**, **Start No Earlier Than***, **Start No Later Than, Must Finish On, Finish No Earlier Than***, or **Finish No Later Than.** *Recommended selections NOTE The available selections depend on the date in the **Work Order Date** field.	Constrains the task by starting or finishing it on specified dates.

- **Calendars:** Transfer Maximo asset and labor calendars to Microsoft Project. Enter specific dates within which to transfer the calendars.

NOTE Transferring calendar data can significantly impact performance; make the date range as small as possible.

NOTE When you transfer asset calendars into Microsoft Project, they are the inverse of what they are in Maximo.

Maximo's asset calendar displays when the asset is operating. Microsoft Project's asset calendar displays the asset's downtime (when it is available for preventive maintenance).

Upon receiving the asset calendar from Maximo, Maximo Project Manager names the calendar with the asset number, and makes the asset calendar an attribute of the work order being scheduled.

- **Task Priority:** Filter the query results by work order, calculated, or location/asset priority. When Maximo's work orders are copied to Microsoft Project, they become tasks and are assigned a priority based on Maximo's priority setting for the work order.

  Select one setting (which uses the value from a column of the MAXIMO database's WORKORDER table):

Maximo Priority Field	Column	Description
Work Order	WOPRIORITY	(Default) This is the priority level of the work order assigned in the work order or by a job plan.
Calculated Priority	CALCPRIORITY	Maximo calculates this value using a formula combining the Work Order Priority and Location/Asset Priority values to produce the Work Priority value.
Location/Asset Priority	ASSETLOCPRIORITY	This is the priority level of the asset or location specified on a work order.

- **Filter:** Include only child work orders of the specified status(es) in your results set.

  Select each status to include. To select all statuses, click **All**. To clear all statuses, click **None**.

- **Site:** Include child work orders for the specified sites in your results set.

  Select each site to include. To select all sites, click **All**. To clear all sites, click **None**.

4. To preview the results, click the Preview tab.

5. After selecting the appropriate query, click **OK** to transfer the work order data, including assignments, craft and tool resources, and resource availability from Maximo to Microsoft Project.

NOTE The results may differ when using the same query in Maximo and Maximo Project Manager.

Select Work Orders Dialog Box

This dialog box contains these elements:

Tab	Element	Description
Queries	Clause Name	Displays the names of public queries and the queries you created in Maximo's Work Order Tracking application.
	Description	Displays the descriptions of the queries.
Advanced: Constraints subtab	Work Order Date	Displays these work order date selections: ▼ **Scheduled Start** ▼ **Scheduled Finish** ▼ **Target Start** ▼ **Target Finish** Select one of the preceding items. If a given work order has a value in the selected date field, that value becomes a constraint for the corresponding task. Leaving this field blank disables the **Task Constraint Type** field.
	Task Constraint Type	Lists these constraint types for your project, depending on the selection you made in the **Work Order Date** field: ▼ **Must Start/Finish On** ▼ **Start/Finish No Earlier Than** ▼ **Start/Finish No Later Than** Select one of the preceding items. You can only constrain tasks that are not summaries of other tasks. Mixing child and parent constraints can violate Microsoft Project's business rules and cause problems with work order transfers. In practice, when you constrain work orders, Maximo Project Manager uses that constraint on all tasks at the lowest hierarchical level. To manipulate groups of tasks, transfer the parent tasks from Maximo, then set the constraints in Microsoft Project, after transferring the work orders.

Advanced: Calendars subtab	Transfer Asset Calendars	Select this option to transfer the Maximo calendars associated with assets.
	Transfer Labor Calendars	Select this option to transfer the Maximo calendars associated with labor.
	From To	Select start and end dates to transfer asset and location calendars.
Advanced: Task Priority subtab These elements use values from a column of the MAXIMO database's WORKORDER table.	▼ Work Order Priority Column: WOPRIORITY	(Default) This is the priority level of the work order assigned in the work order or by a job plan.
	▼ Calculated Priority Column: CALCPRIORITY	Maximo calculates this value using a formula combining the Work Order Priority and the Location/Asset Priority values to produce the Work Priority value.
	▼ Location/Asset Priority Column: ASSETLOCPRIORITY	The priority level of the asset or location is specified on a work order.
Advanced: Filter subtab	Value	Displays the work order's status list. When you transfer work orders from Maximo to Microsoft Project, only child work orders with the selected statuses are transferred with their parent work order. Parent work orders are not restricted by filtering the child status. For example, if your query transfers a work order hierarchy into Microsoft Project, and the work is in progress, you can choose to transfer only open work orders in the work structure.
	Description	Displays descriptions of the work order statuses.
	All	Selects all statuses. Clear any statuses you do not want to include in the work order data.
	None	Clears all selected statuses.
Advanced: Site subtab	Site ID	Displays the sites available to you. When you select a site, any child work orders for that site are transferred to Microsoft Project.
	Description	Shows site descriptions.
	All	Selects all sites.
	None	Clears all selected sites.
Preview	Tree View	Displays a list of selected work orders. To display or close sub-levels in the hierarchy, click + or – to the left of the current top-level work order.

All tabs	OK	Transfers the selected work order data, including assignments, craft, people, and tool resources, and their calendars to Microsoft Project. The results may differ when using the same query in Maximo and Maximo Project Manager. ▼ Maximo displays only the selected work orders or PMs. ▼ Maximo Project Manager displays the parent and its entire child hierarchy, providing a more comprehensive and accurate schedule.
	Cancel	Closes the dialog box.
	Help	Opens the help topic for the dialog box.

Update Work Orders

You use the Update Work Orders dialog box to periodically update a set of work orders displayed in a current Microsoft Project session with the lastest Maximo data.

Maximo Project Manager matches the data from the incoming work orders to the existing work orders and updates Microsoft Project with the incoming Maximo data.

NOTE To make extensive changes to the structure of a project or transfer a new hierarchy from Maximo, create a new project instead.

This menu option works as follows:

- If a Maximo work order exists as a task in Microsoft Project, data from the Maximo work order updates the task in Microsoft Project.
- If a Maximo child work order is not a task in the current project, a new child work order is added to Microsoft Project as a subtask, placed after all the parent's existing children. No links are established for new child work orders.
- New top-level work orders in Maximo are not transferred to Microsoft Project.

To update work orders:

1. In Maximo's Work Order Tracking or Preventive Maintenance application, create and save a query.
2. In Microsoft Project, display the appropriate project.
3. Select **Maximo > Update Work Orders**. Maximo updates work order and task data in Microsoft Project. The updated data displays in the project.

Save Work Orders to Maximo

The **Save WO to Maximo** menu option is available only when the current project in Microsoft Project is a work order project.

You use this dialog box to return scheduling data to the MAXIMO database. Tasks that you created in Microsoft Project are inserted into the MAXIMO database as Maximo work orders.

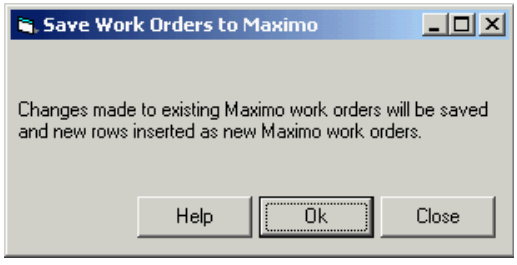
This data is updated in Maximo:

- A work order's scheduled dates (SCHEDSTART and SCHEDFINISH) from the corresponding task's start and finish dates.
- A work order's estimated duration (ESTDUR) from the corresponding task's Duration.
- Other data as specified in the [wofieldmap] section of the MaximoProject.ini file.

To save work orders to Maximo:

1. In Microsoft Project, display the project whose data you want to save back to Maximo.
2. Select **Maximo > Save WO to Maximo**.

   The Save Work Orders to Maximo dialog box opens.



   NOTE An error indicates any rejected work orders. Possible causes include:

   - Work order status (if it is cancelled, completed, or closed).
   - Date format (if the one in Microsoft Project does not match the client workstation's locale setting).

3. Click **OK**.

   Maximo Project Manager updates the work order data in Maximo.

NOTE If the active project includes several subprojects, all work order data is saved to Maximo. However, if the active project includes PM subprojects and work order subprojects, only the work order data is saved. Maximo ignores the PM data.

Save Work Orders to Maximo Dialog Box

This dialog box contains these elements:

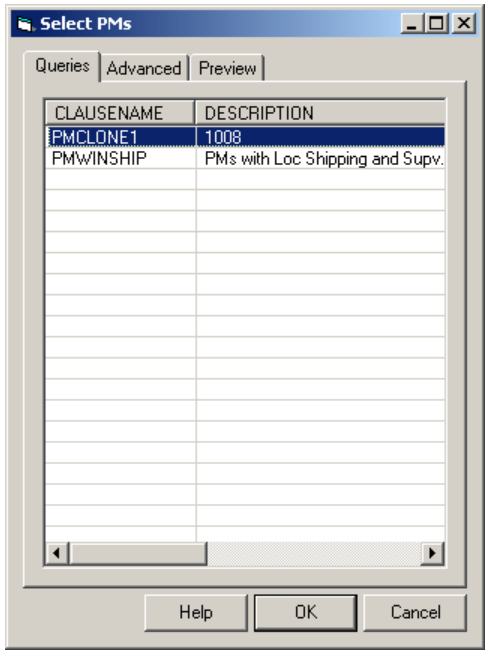
Element	Description
Help	Opens the help topic for the dialog box.
OK	▼ Saves the work order data from Microsoft Project to the MAXIMO database. ▼ Inserts tasks that you created in Microsoft Project into the MAXIMO database as Maximo work orders.
Close	Does not save any data to Maximo.

Select PMs

You use this dialog box to select public queries and queries you saved in Maximo's Preventive Maintenance application.

Forecasting works only on top-level PMs, which forecast the complete hierarchical structure. Build your queries accordingly.

NOTE Work orders are not created in the MAXIMO database, only forecasted as tasks for analysis in Microsoft Project.



This dialog box contains these tabs:

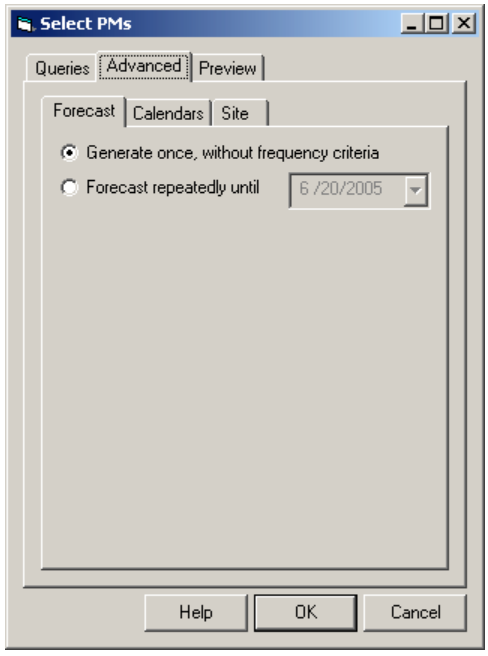
Queries Tab

You use this tab to display public queries and queries you saved in Maximo's Preventive Maintenance application.

Advanced Tab

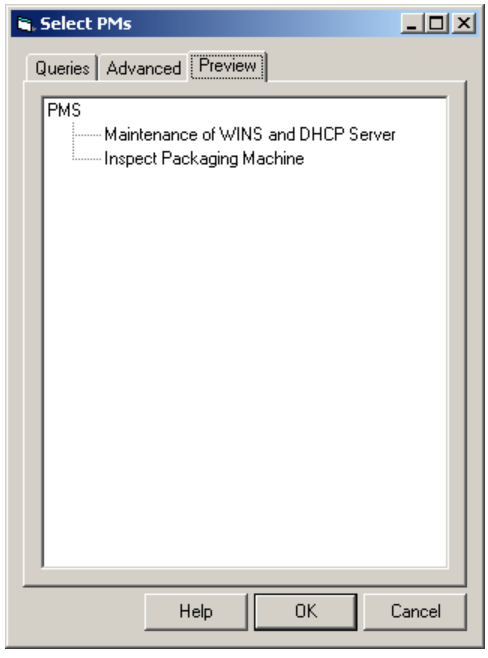
You use this tab:

- To determine the period for which Maximo Project Manager will forecast preventive maintenance records.
- To filter the results for child PMs by site.
- To determine whether to retrieve asset and labor calendars from Maximo.



Preview Tab

You use this tab to check the results of the selected query. The results may differ when using the same query in Maximo and Maximo Project Manager.



To select PMs:

1. In Microsoft Project, select **Maximo > Select PMs**.

   The Select PMs dialog box opens, displaying the Queries tab.

2. Click the row containing the appropriate query.

3. To filter the results, click the Advanced tab.

Use these subtabs to filter your query.

Subtab	Description
Forecast	Use this subtab to determine the period for which Maximo Project Manager will forecast PMs. Each option forecasts a set of PM work orders from the selected top-level PM hierarchy, then populates Microsoft Project with the work order data. ▼ **Generate Once, without frequency criteria**: starts from today's date. ▼ **Forecast repeatedly until**: starts from today's date until the date you enter. NOTE The number of sets of work orders forecasted depends on the controlling frequency of the hierarchy. Any PM in the hierarchy can trigger all PMs to be forecasted as a set. NOTE Maximo Project Manager only forecasts PMs with ACTIVE status in Maximo.
Calendars	Use this subtab to transfer Maximo asset and labor calendars to Microsoft Project. Enter specific dates within which to transfer the calendars. NOTE Transferring calendar data can significantly impact performance; make the date range as small as possible. NOTE When you transfer asset calendars into Microsoft Project, they are the inverse of what they are in Maximo. Maximo's asset calendar displays when the asset is operating. Microsoft Project's asset calendar displays the asset's downtime (when it is available for preventive maintenance). Upon receiving the asset calendar from Maximo, Maximo Project Manager names the calendar with the asset number, and makes the asset calendar an attribute of the work order being scheduled.
Site	Use this subtab to include child PMs for the specified sites in your results set. Check the box for each site to include. To select all sites, click **All**. To clear all sites, click **None**.

4. To preview the results, click the Preview tab. The results may differ when using the same query in Maximo and Maximo Project Manager.

5. After selecting the appropriate query, click **OK** to transfer the PM data, including assignments, craft, people, and tool resources, and their calendars from Maximo to Microsoft Project.

Select PMs Dialog Box

This dialog box contains these elements:

Tab	Element	Description
Queries	Clause Name	Displays the names of public queries and the queries you created using Maximo's Preventive Maintenance application.
	Description	Displays the descriptions of the queries.
Advanced: Forecast subtab		Determines the period for which Maximo Project Manager will forecast PMs.
	Generate Once, without frequency criteria	Starts from today's date.
	Forecast repeatedly until	Starts from today's date until the date you enter. The number of work order sets depends on the controlling frequency of the hierarchy. **NOTE** The number of sets of work orders forecasted depends on the controlling frequency of the hierarchy. Any PM in the hierarchy can trigger all work orders to be forecasted as a set. **NOTE** If all the next due dates on the queried PMs are after the date you enter in the **Forecast repeatedly until** field, a message indicates that no work orders are forecasted.
Advanced: Calendars subtab	Transfer Asset Calendars	Select this option to transfer the Maximo calendars associated with assets.
	Transfer Labor Calendars	Select this option to transfer the Maximo calendars associated with labor.
	From To	Select start and end dates from which to transfer asset and location calendars.
Advanced: Site subtab	Site ID	Displays your available sites. If you select a site, child PMs from that site are transferred from Maximo to Microsoft Project.
	Description	Displays site descriptions.
	All	Selects all sites.
	None	Clears all selected sites.
Preview	Tree View	Displays a list of selected PMs. To display or close sub-levels in the hierarchy, click + or – to the left of the current top-level PM.

All tabs	OK	Populates Microsoft Project with the selected PM data from the MAXIMO database. The results may differ when using the same query in Maximo and Maximo Project Manager. ▼ Maximo displays only the selected work orders or PMs. ▼ Maximo Project Manager displays the parent and its entire child hierarchy, providing a more comprehensive and accurate schedule.
	Cancel	Closes the dialog box.
	Help	Opens the help topic for the dialog box.

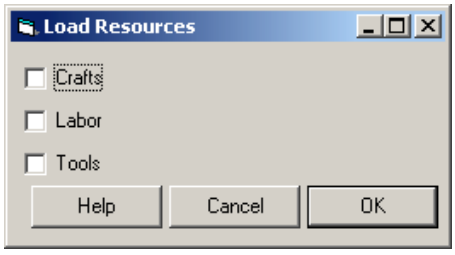
Load Resources

You use this dialog box to transfer crafts, tools, and labor from Maximo into Microsoft Project. The resources then display in Microsoft Project's Resource Information dialog box.

To load resources:

1 In Microsoft Project, select **Maximo > Load Resources**.

The Load Resources dialog box opens.



2 Select the item(s) to transfer. You can transfer crafts, labor, tools, or any combination of the three.

3 Click **OK**.

Maximo Project Manager closes the dialog box and transfers the selected items from Maximo to Microsoft Project. The transferred data displays in Microsoft Project's Resource Information dialog box.

Load Resources Dialog Box

This dialog box contains these elements:

Element	Description
▼ Crafts ▼ Labor ▼ Tools	Select the item(s) to transfer data from Maximo to Microsoft Project.
OK	Transfers the selected resources from Maximo to Microsoft Project.
Cancel	Closes the dialog box without retrieving any data from Maximo.
Help	Opens the help topic for the dialog box.

Maximo Project Manager Scenarios

2

Maximo Project Manager's additions to Microsoft Project let you apply resource leveling and specialized scheduling tasks to Maximo work order and PM data. After modifying the project, you can return schedule dates to existing Maximo work orders.

These examples use Maximo Project Manager to manage craft availability for work orders and PMs.

Planning Work for a Shutdown Period

Example 1: A Specific Location

Suppose several of your pending hierarchical work order projects must be done in specific locations. To schedule those projects eligible to be included in a shutdown period beginning December 10:

1. In Maximo's Work Order Tracking application, create a work order hierarchy containing all shutdown details. Assign the top-level work orders a Work Order Type of CP, for a capital project.

2. In the Work Order Tracking application, create and save a query. Select these values:

Field	Value
Work Order Type	CP
Scheduled Start	December 10, 2005

3. Log in to Microsoft Project.

4. Select **Maximo > Select Work Orders**.
   The Select Work Orders dialog box opens.

5. On the Queries tab, select the appropriate query.

6. To preview the work order set, click the Preview tab.

   NOTE (Optional) To modify your query, return to Maximo.

7. To retrieve the Maximo data, click **OK**.

8 Use Microsoft Project to resource level the project and adjust the work order dates.

9 In Microsoft Project, add another task to the Gantt chart, including a description and duration.

10 Select **Maximo > Save WO to Maximo**.

The schedule dates update the work orders in the MAXIMO database, for use by Work Order Tracking.

Tasks you created in Microsoft Project are inserted into Maximo as work orders.

Example 2: Using Customized Maximo Fields

Suppose your MAXIMO database is customized so the first set of extra work order fields is used to make a Yes or No selection field called **Shutdown Required**. You then can create a project in Microsoft Project and filter for a list of work orders that have this field set to Yes.

1 In Maximo's Work Order Tracking application, create a work order query to meet your criteria.

2 Log in to Microsoft Project.

3 Select **Maximo > Select Work Orders**.

The Select Work Orders dialog box opens.

4 On the Queries tab, select the appropriate query.

5 To preview the new work order set, click the Preview tab.

NOTE (Optional) To modify your query, return to Maximo.

6 To retrieve the Maximo data, click **OK**.

7 Use Microsoft Project to resource level the project and adjust the work order dates.

8 Work with the Shutdown Required work orders in Microsoft Project to create a schedule for the work that must be done during a defined shutdown period.

9 Select **Maximo > Save WO to Maximo**.

The schedule dates update the work orders in the MAXIMO database, for use by Work Order Tracking.

Tasks you created in Microsoft Project are inserted into Maximo as work orders.

Refreshing the Shutdown Project Data

You must refresh this project weekly to include new Maximo work orders in the Work Shutdown schedule. To run the update, select the same query used to create the original project.

10 In Microsoft Project, open the current project.

11 Select **Maximo > Update Work Orders**.

12 Repeat Steps 3-9 of this procedure. When you launch the query, the project updates with current Maximo data.

The task data in Microsoft Project will reflect changes to the original work orders and will insert new work orders that meet the query criteria.

Evaluating Schedule Dates of the Shutdown Project

In an ongoing project, you often want to compare the current schedule dates to those from the last scheduling session or to the original target dates.

Filtering, highlighting, or reporting on date variances in Microsoft Project helps you see which tasks are slipping behind schedule from one scheduling session to the next.

To compare dates:

1 In the MaximoProject.INI file, map the TARGSTARTDATE and SCHEDSTART fields in the MAXIMO WORKORDER table to the spare date fields in Microsoft Project (example: Date1 and Date2).

2 In Microsoft Project, create a filter to compare dates.

3 In your open session (showing the latest update from Maximo and the latest schedule calculation), select the new filter and click **Highlight**.

All tasks showing slippage are highlighted.

Scheduling a Work Order Backlog

With Maximo Project Manager, you can manage a pending work order backlog for a location. Suppose many corrective maintenance work orders are backlogged for the Shipping location.

You want to create a project schedule that includes only work orders that are approved, waiting for approval, or waiting to be scheduled.

1 In Maximo's Work Order Tracking application, create a work order query to filter for work orders meeting these criteria:

- **Work Order Type** = CM
- **Status** = APPR, WAPPR, and WSCHED
- **Location** = Shipping

2 Log in to Microsoft Project.

3 Select **Maximo > Select Work Orders**.

The Select Work Orders dialog box opens.

4 Select the appropriate query.

5 To preview the selected Maximo data, click the Preview tab.

6 Click **OK**.

Maximo Project Manager retrieves the work order data from Maximo and transfers it into Microsoft Project.

7 Use Microsoft Project to resource level the project.

8 Select **Maximo > Save WO to Maximo**.

The Save Work Orders to Maximo dialog box opens.

9 Click **OK** to save the schedule dates back to the work orders in the MAXIMO database, for use by Work Order Tracking.

Holding the Schedule Dates from Session to Session

You can hold the schedule dates for a set of work orders from session to session.

Suppose that you manually place the backlog tasks on the Microsoft Project Gantt chart where you want them to be done, but don't want the dates overridden by a Microsoft Project schedule calculation.

1 In the next Maximo Project Manager session, select **Maximo > Select Work Orders**.

The Select Work Orders dialog box opens.

2 Click the Advanced tab.

3 Click the Constraints subtab. Choose an appropriate combination of **Work Order Date** and **Task Constraint Type**.

NOTE Recommended selection: **Start No Earlier Than**.

4 Click **OK**.

Microsoft Project assigns the date constraints according to your specifications.

NOTE Only the lowest-level tasks in any hierarchy of the project receive constraints, which roll up the hierarchy. To constrain a branch of a hierarchy, constrain its first detailed subtask.

Creating a Preventive Maintenance Workload Forecast

You can use Microsoft Project to plan the human resources requirements for planned maintenance and for future preventive maintenance projects.

1. In Maximo's Preventive Maintenance application, create a PM query.
2. Log in to Microsoft Project.
3. Select **Maximo > Select PMs**.

   The Select PMs dialog box opens.
4. On the Queries tab, select the appropriate query.
5. Click the Advanced tab. On the Forecast subtab, select **Forecast repeatedly until**. Select a date in the future until which you want to forecast PMs.

NOTE If all the next due dates on the queried PMs are after the date you specify in the **Forecast repeatedly until** field, no work orders will be forecasted, and a message will appear telling you so.

6. To preview the selected Maximo data, click the Preview tab.
7. Click **OK**.

   Maximo Project Manager retrieves the PM data from Maximo and transfers it into Microsoft Project.
8. Use Microsoft Project to review your future workload and look for conflicts between craft availability and work.
9. Resource level future work projects to see what the realistic dates for the work orders are, making any manual adjustments to the work order dates. Decide how to fix schedule overruns, add or subtract crafts, assign dependencies, etc.
10. Save the resulting project file as reference data.

Creating a Resource Leveled Total Workload Schedule

Use Microsoft Project to combine multiple .mpp files containing work order and PM data from your MAXIMO database. You can save the resulting project file as reference data.

Example 1

To consolidate projects quickly, view them together.

1. Open both projects individually in Microsoft Project.
2. Select **Window > New Window**. The New Window dialog box opens.
3. Press **Shift + click** to select the projects. Both projects are highlighted.
4. Press **OK** to view them together in a new window.

Example 2

To establish more permanent relationships between projects, consolidate them.

1. Select a project to be the master project, and open it.
2. On the Gantt chart, click the row in which to insert the subproject.
3. Select **Project > Insert** and select the subproject(s) to insert.

For more information on the following, see the Microsoft Project documentation:

- Merging projects
- Inserting subprojects into a master project
- Combining project views
- Sharing resources

Maximo and Microsoft Project Integration Points

3

This chapter describes the mapping between MAXIMO database tables and Microsoft Project fields.

Default Mapping

Maximo includes these default field mappings between data in its work order and PM tables and Microsoft Project's standard Gantt chart view.

Work Order Tracking Fields

This table describes how Work Order Tracking fields in Maximo are mapped to Microsoft Project.

Maximo Field	Microsoft Project Field
Work Order Number (WONUM)	Task Notes
Description	Task Name

Child Work Orders

Child work orders at the same level of any given work order hierarchy are linked together according to their Maximo work order sequence (WOSEQUENCE) numbers.

Maximo Field	Microsoft Project Field
Child WOs	MSP Sub tasks
Task Number Sequencing	Links
(WOSEQUENCE) determines…	Smaller sequence numbers become predecessors to larger sequence numbers. Maximo Project Manager creates finish to start links between numbered work orders.

PM Field Mapping

This table describes how PM fields in Maximo are mapped to Microsoft Project.

Maximo Field	Microsoft Project Field
PM Number (PMNUM)	Task Notes
Description	Task Name

Crafts, Tools, and People

If you assign the same resource multiple times to a task, Maximo Project Manager combines the entries by adding the units and taking the maximum hours.

For example, suppose a resource appears multiple times in a work plan, and is assigned multiple times to the same operation or to the work order itself. The entries are combined. The work plan contains these assignments:

Labor Code	Description	Quantity	Hours
ME1	Mechanic First Class	2	8:00
ME1	Mechanic First Class	1	6:00

Maximo Project Manager assigns three mechanics for eight hours to complete the task.

Crafts

This table describes how Maximo's Crafts fields are mapped to Microsoft Project.

Maximo Data	Microsoft Project Field
Crafts, from LABOR Table	**MSP Resources**
LABORCODE	Resource Name
NAME	Resource Notes
PAYRATE	Standard Rate
Payrate x OTscale (calculation of these two fields)	Overtime Rate
"CRAFT"	Resource Code
Work Plan Labor	**Assignments**
Assignment Work Plan row	Assignment
Work Plan quantity (CRAFTQTY)	Assignment Units
Work Plan Hours (LABORHRS) x Work Plan Quantity (CRAFTQTY) (calculation of these two fields)	Assignment Work Hours

Tools

This table describes how Maximo's Tools fields are mapped to Microsoft Project.

Maximo Data	Microsoft Project Field
Tools, from TOOL Table	**MSP Resources**
TOOLNUM	Resource Name
Description	Resource Notes
Tool Rate	Standard Rate
"TOOL"	Resource Code
Work Plan Tools	**Assignments**
Assignment Work Plan row	Assignment
Work Plan Quantity (TOOLQTY)	Assignment Units
Work Plan Hours (TOOLHRS) x Work Plan Quantity (TOOLQTY) (calculation of these two fields)	Assignment Work Hours

People

This table describes how Maximo's People fields are mapped to Microsoft Project.

Maximo Data	Microsoft Project Field
People, from PERSON Table	**MSP Resources**
PERSONID	Resource Name
DISPLAYNAME	Resource Notes
Calendar/Shift (optional)	Working Time
	Resource Type= "Labor"
	Labor Type= "Person"
Work Plan Labor	**Assignments**
Assignment Work Plan row	Assignment
Work Plan Quantity	Assignment Units
Work Plan Hours	Assignment Work Hours

Scheduling Constraints

To constrain schedules, use the **Advanced Options** dialog boxes:

1. Define a date constraint:
   - Start: **Scheduled Start** or **Target Start**
   - Finish: **Scheduled Finish** or **Target Finish**
2. Define a date constraint type:
   - Start: **Must Start On**, **Start No Earlier Than**, or **Start No Later Than**
   - Finish: **Must End On**, **End No Earlier Than**, or **End No Later Than**

NOTE You can only constrain tasks that are not summaries of other tasks. Mixing child and parent constraints can violate Microsoft Project's business rules and cause problems with work order transfers.

In practice, when you constrain work orders, Maximo Project Manager uses that constraint on all tasks at the lowest hierarchical level.

To manipulate groups of tasks, transfer the parent tasks from Maximo, then set the constraints in Microsoft Project, after transferring the work orders.

Maximo's start and finish date constraints correspond to this Microsoft Project task data.

Maximo Start Date Constraints	Microsoft Project Task Data
Scheduled Start (SCHEDSTART)	ConstraintDate
Target Start (TARGSTARTDATE)	ConstraintDate

Maximo Finish Date Constraints	Microsoft Project Task Data
Scheduled Finish (SCHEDFINISH)	ConstraintDate
Target Finish (TARGCOMPDATE)	ConstraintDate

Maximo Start Date Constraint Types	Microsoft Project Task Data
Must Start On	ConstraintType
Start No Earlier Than	ConstraintType
Start No Later Than	ConstraintType

Maximo Finish Date Constraint Types	Microsoft Project Task Data
Must End On	ConstraintType
End No Earlier Than	ConstraintType
End No Later Than	ConstraintType

Saved Schedule Date Mapping

After using Maximo Project Manager for planning activities, you can save work order scheduling dates to Maximo. Select **Maximo > Save WO to Maximo**.

Data is stored in both applications.

Microsoft Project Field	Maximo Field
Task Field is saved to...	**Work Orders**
Duration	ESTDUR
Start	SCHEDSTART
Finish	SCHEDFINISH

Conditional Mapping

This section describes conditional field mapping.

Progress Field Mapping

During data transfer, Maximo uses these conditions to determine the progress data to transfer to Microsoft Project.

- If the Maximo **Actual Start** (ACTSTART) field contains a value, Maximo transfers progress-related data to Microsoft Project.
- Otherwise, only the value in the **Estimated Duration** field is transferred.

Maximo Field	Microsoft Project Field
Estimated Duration (ESTDUR)	Duration
Remaining Duration (REMDUR)	RemainingDuration
Actual Hours (ACTLABHRS)	ActualDuration
Actual Start (ACTSTART)	ActualStart
Actual Finish (ACTFINISH)	ActualFinish

Progress Logic Flow

This logic is used during data transfer.

Condition	Result
If there is no ACTSTART	ESTDUR → Duration
If there is an ACTSTART	ACTSTART → Actual Start
If there is an ACTFINISH	ACTFINISH → Actual Finish
If there is no ACTFINISH	These conditions affect the transfer: ▼ If there is a REMDUR, REMDUR → Remaining Duration ▼ If there is no REMDUR, ESTDUR → Duration ▼ If there are ACTLABHRS, ACTLABHRS → Actual Duration

Customizing Maximo Project Manager

A

You can use the MaximoProject.ini file to customize how Maximo and Microsoft Project integrate.

Use a text editor to change settings in the MaximoProject.ini file, which is located in the MaxProjectClient directory of the machine where you installed Maximo Project Manager.

MaximoProject.ini Section	Function
[system]	(Optional) Sets the login default values and automatic login for the Log In to Maximo dialog box that connects to the Maximo Application Server.
[wofieldmap]	Lets you map additional field pairs between Microsoft Project and MAXIMO's work order database columns.
[pmfieldmap]	Lets you map additional field pairs between Microsoft Project and MAXIMO's PM database columns.

Sample Copy of MaximoProject.ini File

```
; MaximoProject.INI

;  NOTE: Semicolons (;) placed before lines of text in this file
indicate
;  to the application that the text can be ignored. For the
application to
;  be able to read a value, you must remove the semicolon (if one
exists)
;  at the beginning of its line.


;  The [system] section enables you to customize field defaults
for the
:  MAXIMO Login dialog box that connects your system to MAXIMO
MXServer.
;  You can set defaults for one or more of the fields. If you do
not alter
;  the values or remove the semicolons for any of the [system]
parameters,
;  the Host field displays "LocalHost" and the User Name and
Password fields
;  are empty.
```

```
;  If the LOGINMODE=Auto line is uncommented, the login dialog
box will not
;  appear and you will be logged in automatically using the
Hostname, Username,
;  and Password values defined below.

;  The value for the MONIKER is determined by querying the jCOM
server. Use the
;  following URL: http://localhost:<port>/bea_wls_internal/com
(where <port> is
;  the port for the jCOM server.

[system]
MONIKER=objref:TUVPVwEAAAAABAIAAAAAAMAAAAAAAABGABAAAAAAAABKaW50
ZWdyYVRhbGtUb01lV2hhdHNBbGxUaGlzVGhlbh0AFgAHADEANwAyAC4AMgAyAC4
AMQA1AC4AMQA4ADAAWwA3ADAAMAAyAF0AAAAAAAoA//8AAAAAAAAAAAAA:
HOSTNAME=ATLANTIS/MXServer

LOGINMODE=MANUAL
USERNAME=wilson
PASSWORD=wilson

;  The [wofieldmap] section enables you to map additional MAXIMO
work order
;  fields to specified Microsoft Project task fields. MAXIMO
Project Manager
;  uses these mapped field pairs to transfer data from MAXIMO to
Microsoft
;  Project.  You can define up to 99 rows (field pairs) in this
section. Each
;  row starts with a numbered keyword (WOMAPROW1-WOMAPROW99).
The parameters
;  for each row include the work order field name, the Microsoft
Project task
;  field name, and the title that you want to appear as the
column header in
;  the Microsoft Project Gantt chart.

;  Below is a sample [wofieldmap] section. Note that these
fields would not be
;  mapped (and no data would be transferred) unless the
semicolon were removed
:  from the beginning of each line.

[wofieldmap]
;WOMAPROW1=assetnum text2 asset FALSE
;WOMAPROW2=location text3 location FALSE

;  The [pmfieldmap] section enables you to map additional PM
work order fields
;  to specified Microsoft Project task fields. MAXIMO Project
Manager uses these
;  mapped field pairs to transfer data from MAXIMO to Microsoft
Project. The
;  format is the same as in the [wofieldmap] section above,
except MAXIMO PM
;  fields are used instead of work order fields.

[pmfieldmap]
;PMMAPROW10=lastcompdate date1 Last Completion Date

;Do not edit the fields below unless you are sure you know what
you are doing
```

```
[field-WONUM]
lookuptype=false
editable=false

[field-PARENT]
lookuptype=false
editable=false

[field-STATUS]
lookuptype=valuelist
lookuptable=SYNONYMDOMAIN
keyfield=MAXVALUE
description=description
editable=false

[field-STATUSDATE]
lookuptype=false
editable=false

[field-WORKTYPE]
lookuptype=valuelist
lookuptable=SYNONYMDOMAIN
keyfield=MAXVALUE
description=description
editable=true

[field-DESCRIPTION]
lookuptype=false
editable=true

[field-ASSETNUM]
lookuptype=table
lookuptable=ASSET
keyfield=ASSETNUM
description=description
editable=true

[field-LOCATION]
lookuptype=table
lookuptable=LOCATIONS
keyfield=LOCATION
description=description
editable=true

[field-JPNUM]
lookuptype=table
lookuptable=JOBPLAN
keyfield=JPNUM
description=description
editable=true

[field-FAILDATE]
lookuptype=false
editable=true

[field-CHANGEBY]
lookuptype=false
editable=true

[field-CHANGEDATE]
lookuptype=false
editable=true
```

```
[field-ESTDUR]
lookuptype=false
editable=true

[field-ESTLABHRS]
lookuptype=false
editable=true

[field-ESTMATCOST]
lookuptype=false
editable=true

[field-ESTLABCOST]
lookuptype=false
editable=true

[field-ESTTOOLCOST]
lookuptype=false
editable=true

[field-PMNUM]
lookuptype=false
editable=false

[field-ACTLABHRS]
lookuptype=false
editable=true

[field-ACTMATCOST]
lookuptype=false
editable=true

[field-ACTLABCOST]
lookuptype=false
editable=true

[field-ACTTOOLCOST]
lookuptype=false
editable=true

[field-HASCHILDREN]
lookuptype=false
editable=true

[field-OUTLABCOST]
lookuptype=false
editable=true

[field-OUTMATCOST]
lookuptype=false
editable=true

[field-OUTTOOLCOST]
lookuptype=false
editable=true

[field-HISTORYFLAG]
lookuptype=false
editable=true

[field-CONTRACT]
lookuptype=table
```

```
lookuptable=CONTRACT
keyfield=CONTRACTNUM
description=description
editable=true

[field-WOPRIORITY]
lookuptype=false
editable=true

[field-TARGCOMPDATE]
lookuptype=false
editable=true

[field-TARGSTARTDATE]
lookuptype=false
editable=true

[field-WOEQ1]
lookuptype=false
editable=true

[field-WOEQ2]
lookuptype=false
editable=true

[field-WOEQ3]
lookuptype=false
editable=true

[field-WOEQ4]
lookuptype=false
editable=true

[field-WOEQ5]
lookuptype=false
editable=true

[field-WOEQ6]
lookuptype=false
editable=true

[field-WOEQ7]
lookuptype=false
editable=true

[field-WOEQ8]
lookuptype=false
editable=true

[field-WOEQ9]
lookuptype=false
editable=true

[field-WOEQ10]
lookuptype=false
editable=true

[field-WOEQ11]
lookuptype=false
editable=true

[field-WOEQ12]
lookuptype=false
```

```
editable=true

[field-REPORTEDBY]
lookuptype=table
lookuptable=PERSON
keyfield=PERSONID
description=DISPLAYNAME
editable=true

[field-REPORTDATE]
lookuptype=false
editable=true

[field-PHONE]
lookuptype=false
editable=true

[field-PROBLEMCODE]
lookuptype=false
editable=false

[field-CALENDAR]
lookuptype=table
lookuptable=CALENDAR
keyfield=CALNUM
description=description
editable=true

[field-DOWNTIME]
lookuptype=false
editable=true

[field-ACTSTART]
lookuptype=false
editable=true

[field-ACTFINISH]
lookuptype=false
editable=true

[field-SCHEDSTART]
lookuptype=false
editable=true

[field-SCHEDFINISH]
lookuptype=false
editable=true

[field-REMDUR]
lookuptype=false
editable=true

[field-CREWID]
lookuptype=valuelist
lookuptable=ALNDOMAIN
keyfield=VALUE
description=description
editable=true

[field-SUPERVISOR]
lookuptype=table
lookuptable=PERSON
keyfield=PERSONID
```

```
description=DISPLAYNAME
editable=true

[field-WOEQ13]
lookuptype=false
editable=true

[field-WOEQ14]
lookuptype=false
editable=true

[field-WOJP1]
lookuptype=false
editable=true

[field-WOJP2]
lookuptype=false
editable=true

[field-WOJP3]
lookuptype=false
editable=true

[field-WOJP4]
lookuptype=false
editable=true

[field-WOJP5]
lookuptype=false
editable=true

[field-WOL1]
lookuptype=false
editable=true

[field-WOL2]
lookuptype=false
editable=true

[field-WOL3]
lookuptype=false
editable=true

[field-WOL4]
lookuptype=false
editable=true

[field-WOLABLNK]
lookuptype=false
editable=true

[field-RESPONDBY]
lookuptype=false
editable=true

[field-ASSETLOCPRIORITY]
lookuptype=false
editable=true

[field-CALCPRIORITY]
lookuptype=false
editable=true
```

```
[field-CHARGESTORE]
lookuptype=false
editable=true

[field-FAILURECODE]
lookuptype=table
lookuptable=FAILURECODE
keyfield=FAILURECODE
description=description
editable=true

[field-WOLO1]
lookuptype=false
editable=true

[field-WOLO2]
lookuptype=false
editable=true

[field-WOLO3]
lookuptype=false
editable=true

[field-WOLO4]
lookuptype=false
editable=true

[field-WOLO5]
lookuptype=false
editable=true

[field-WOLO6]
lookuptype=false
editable=true

[field-WOLO7]
lookuptype=false
editable=true

[field-WOLO8]
lookuptype=false
editable=true

[field-WOLO9]
lookuptype=false
editable=true

[field-WOLO10]
lookuptype=false
editable=true

[field-GLACCOUNT]
lookuptype=false
editable=true

[field-ESTSERVCOST]
lookuptype=false
editable=true

[field-ACTSERVCOST]
lookuptype=false
editable=true
```

```
[field-DISABLED]
lookuptype=false
editable=true

[field-ESTATAPPRLABHRS]
lookuptype=false
editable=true

[field-ESTATAPPRLABCOST]
lookuptype=false
editable=true

[field-ESTATAPPRMATCOST]
lookuptype=false
editable=true

[field-ESTATAPPRTOOLCOST]
lookuptype=false
editable=true

[field-ESTATAPPRSERVCOST]
lookuptype=false
editable=true

[field-WOSEQUENCE]
lookuptype=false
editable=true

[field-HASFOLLOWUPWORK]
lookuptype=false
editable=true

[field-WORTS1]
lookuptype=false
editable=true

[field-WORTS2]
lookuptype=false
editable=true

[field-WORTS3]
lookuptype=false
editable=true

[field-WORTS4]
lookuptype=false
editable=true

[field-WORTS5]
lookuptype=false
editable=true

[field-SOURCESYSID]
lookuptype=false
editable=true

[field-OWNERSYSID]
lookuptype=false
editable=true

[field-PMDUEDATE]
lookuptype=false
editable=true
```

```
[field-PMEXTDATE]
lookuptype=false
editable=true

[field-PMNEXTDUEDATE]
lookuptype=false
editable=true

[field-WORKLOCATION]
lookuptype=table
lookuptable=LOCATIONS
keyfield=LOCATION
description=description
editable=true

[field-EXTERNALREFID]
lookuptype=false
editable=true

[field-SENDERSYSID]
lookuptype=false
editable=true

[field-FINCNTRLID]
lookuptype=false
editable=true

[field-GENERATEDFORPO]
lookuptype=false
editable=true

[field-GENFORPOLINEID]
lookuptype=false
editable=true

[field-ORGID]
lookuptype=false
editable=false

[field-SITEID]
lookuptype=false
editable=false

[field-TASKID]
lookuptype=false
editable=true

[field-INSPECTOR]
lookuptype=false
editable=true

[field-MEASUREMENTVALUE]
lookuptype=false
editable=true

[field-MEASUREDATE]
lookuptype=false
editable=true

[field-OBSERVATION]
lookuptype=false
editable=true
```

```
[field-POINTNUM]
lookuptype=false
editable=true

[field-WOJO1]
lookuptype=false
editable=true

[field-WOJO2]
lookuptype=false
editable=true

[field-WOJO3]
lookuptype=false
editable=true

[field-WOJO4]
lookuptype=false
editable=true

[field-WOJO5]
lookuptype=false
editable=true

[field-WOJO6]
lookuptype=false
editable=true

[field-WOJO7]
lookuptype=false
editable=true

[field-WOJO8]
lookuptype=false
editable=true

[field-ISTASK]
lookuptype=false
editable=false

[field-ESTTOTALCOST]
lookuptype=false
editable=true

[field-WOCLASS]
lookuptype=false
editable=true

[field-VENDOR]
lookuptype=false
editable=true

[field-ORIGRECORDCLASS]
lookuptype=false
editable=true

[field-ORIGRECORDID]
lookuptype=false
editable=true

[field-JUSTIFYPRIORITY]
lookuptype=false
```

```
editable=true

[field-RISK]
lookuptype=false
editable=true

[field-ENVIRONMENT]
lookuptype=false
editable=true

[field-BACKOUTPLAN]
lookuptype=false
editable=true

[field-BACKOUTPLAN_LONGDESCRIPTION]
lookuptype=false
editable=true

[field-MOVETOLOC]
lookuptype=false
editable=true

[field-MOVETOPARENT]
lookuptype=false
editable=true

[field-WOACCEPTSCHARGES]
lookuptype=false
editable=true

[field-OWNER]
lookuptype=false
editable=true

[field-CLASSSTRUCTUREID]
lookuptype=table
lookuptable=CLASSSTRUCTURE
keyfield=CLASSSTRUCTUREID
description=description
editable=true

[field-PARENTCHGSSTATUS]
lookuptype=false
editable=true

[field-OWNERGROUP]
lookuptype=table
lookuptable=PERSONGROUP
keyfield=PERSONGROUP
description=description
editable=true

[field-COMMODITYGROUP]
lookuptype=false
editable=true

[field-COMMODITY]
lookuptype=false
editable=true

[field-WORKORDERID]
lookuptype=false
editable=true
```

```
[field-WHOMISCHANGEFOR]
lookuptype=false
editable=true

[field-REASONFORCHANGE]
lookuptype=false
editable=true

[field-VERIFICATION]
lookuptype=false
editable=true

[field-PERSONGROUP]
lookuptype=table
lookuptable=PERSONGROUP
keyfield=PERSONGROUP
description=description
editable=true

[field-LEAD]
lookuptype=table
lookuptable=PERSON
keyfield=PERSONID
description=DISPLAYNAME
editable=true

[field-MOVETOBINNUM]
lookuptype=false
editable=true

[field-PERFORMMOVETO]
lookuptype=false
editable=true

[field-LANGCODE]
lookuptype=false
editable=true

[field-INTERRUPTIBLE]
lookuptype=false
editable=true

[field-WOGROUP]
lookuptype=false
editable=true

[field-ONBEHALFOFID]
lookuptype=false
editable=true

[field-HASLD]
lookuptype=false
editable=true
```

Saving Login Settings

Use the [system] section to set login default values (optional) and automatic login for the Log In to Maximo dialog box that connects to the Maximo Application Server.

You can assign defaults for each login field (username and password). To change a default for a field, enter a default value to the right of the equal sign.

If the LOGINMODE=Auto line is uncommented, the login dialog box does not appear, and you are logged in automatically using the system values defined in the MaximoProject.ini file.

[system] Section

Sample parameters:

```
[system]
LOGINMODE=Auto
HOSTNAME=<your web server name>/MXServer
USERNAME=wilson
PASSWORD=wilson
```

NOTE If no defaults are set, enter values for the **User Name** and **Password** fields when you log in to the Maximo Application Server.

Mapping Columns for Data Transfer from Maximo to Microsoft Project

The [wofieldmap] and the [pmfieldmap] sections let you map field pairs between Maximo and Microsoft Project. Consequently, you can transfer data from specified work order or PM columns in Maximo to new fields in the corresponding task in Microsoft Project.

Each specified task field appears in a new column of the Gantt Chart table. Since you can save these field pairs in the MaximoProject.ini file, you can select **Maximo > Update Work Orders** to refresh the data for your project.

For both sections, each map line contains:

- Key name
- MAXIMO column name
- Microsoft Project task field name
- Title to be used as a column header in Microsoft Project's Gantt Chart table

[wofieldmap] Section

Use this section to transfer specific work order data in Maximo to Microsoft Project where the data resides with the current work order project and is displayed in the Gantt Chart table.

Sample entry:

```
[wofieldmap]
WOMAPROW1=lead text1 Lead
```

In the preceding entry, the map line contains:

Item	Description
WOMAPROW1	Key name
lead	MAXIMO column name
text1	Microsoft Project task field
Lead	Column header in Microsoft Project

Parameters for this section:

Key Name

The key name always starts with WOMAPROW. You can define up to 99 rows (WOMAPROW1-WOMAPROW99) in this section. You must not change the key name.

Work Order Column Name

The MAXIMO database column from where data is transferred to Microsoft Project and stored in the current project. The data from the MAXIMO column appears in the project's Gantt Chart table.

NOTE The transfer also supports Maximo data relationships. For example, ASSETNUM.DESCRIPTION retrieves the description of the asset associated with the work order.

Microsoft Project Field

The Microsoft Project task field that holds the incoming Maximo work order column data. This field name is language-dependent; it must match the field name in Microsoft Project.

NOTE Select a datatype for the Microsoft Project field that is compatible with the datatype of the MAXIMO Work Order column. You must spell MAXIMO column names and Microsoft Project fields correctly.

Title

The column title in Microsoft Project that displays the Maximo data. The title you enter here replaces the name of Microsoft Project's extra field name and appears as the title in the appropriate column in the Microsoft Project Gantt chart. The name can be in any language.

[pmfieldmap] Section

Use this section to transfer specific PM data in Maximo to Microsoft Project where the data resides with the current PM project and appears in a Gantt Chart table.

Sample entry:

```
[pmfieldmap]
PMMAPROW1=worktype text1 Work Type
```

In the preceding entry, the map line contains:

Item	Description
PMMAPROW1	Key name
worktype	MAXIMO column name
text1	Microsoft Project task field
Work Type	Column header in Microsoft Project

Parameters for this section:

Key Name

The key name always starts with PMMAPROW. You can define up to 99 rows (PMMAPROW1-PMAPROW99) in this section. You must not change the key name.

PM Column Name

The MAXIMO database column where Maximo stores PM column data that you transfer to Microsoft Project. The data from the MAXIMO column appears in the project's Gantt Chart table.

NOTE The transfer also supports Maximo data relationships. For example, ASSETNUM.DESCRIPTION will retrieve the description of the asset associated with the work order.

Microsoft Project Field

The Microsoft Project task field that holds the incoming Maximo work order column data. This field name is language-dependent; it must match the field name in Microsoft Project.

NOTE Select a datatype for the Microsoft Project field that is compatible with the datatype of the MAXIMO PM column. You must spell MAXIMO column names and Microsoft Project fields correctly.

Title

The column title of the field in Microsoft Project that holds the MAXIMO column data. The title you enter here replaces the name of Microsoft Project's extra field name and appears as the title in the appropriate column in the Microsoft Project Gantt chart. The name can be in any language.

Key Name

The key name always starts with WOFIELDMAP. You can define up to 40 rows (WOFIELDMAP1-WOFIELDMAP40) in this section. You must not change the key name.

Work Order Column Name

The database column where Maximo stores data you transfer from Microsoft Project.

Microsoft Project Field

The Microsoft Project task field containing the data you transfer to the MAXIMO work order column. This field name is language-dependent; it must match the field name in Microsoft Project.

WARNING You can use only these Microsoft Project task fields:

- Date1-Date10
- Text1-Text10
- Cost1-Cost10
- Number1-Number10

NOTE Select a datatype for the Microsoft Project field that is compatible with the datatype of the MAXIMO Work Order column.

Multi-Language Set Up

B

If you are installing Maximo Project Manager in an environment where you have multiple languages enabled for Maximo, you will need to run the importlang.bat utility for Maximo Project Manager, the same way you did for Maximo. You will need to run the utility once for each additional language (besides your base language) that you have enabled.

About the importlang.bat Utility

Importlang.bat populates the corresponding multi language table of the MAXIMO database with data from the .XML file. The usage of the importlang.bat batch file is as follows:

```
-infile <path and filename of project.xml file>

-propfile <path to maximo.properties file>

-l <language code 1> -l <language code 2>
```

Example

The most common usage of the importlang.bat utility for Maximo Project Manager is as follows:

```
importlang.bat -infile
C:\maximo\tools\maximo\<langcode>\project\project.xml -l FR -l
ES
```

NOTE Your language code will differ, depending on what language you are importing. For example, FR means French; ES means Spanish.

Running the importlang.bat Utility

For each secondary language that you are enabling, you will need to do the following:

1. Install the Maximo Server portion of the installation program on your Maximo application server.
2. Run the importlang.bat file included in the installation program for that language.

Example

In your Maximo environment, you have English established as your base language, but also have users that access Maximo in French and Chinese.

You install Maximo Project Manager in English (both the server and client portions). You then insert the French Maximo Project Manager CD, install only the server portion, and run the importlang.bat file for French. Then, you insert the Chinese Maximo Project Manager Installation CD, install only the server portion, and run the importlang.bat file for Chinese.

CAUTION When you re-install the server portion of Maximo Project Manager, your project.xml file will be overwritten with the version on the CD. If you have made any customizations to the project.xml file that you do not want erased, select **No** when the installation program asks you if you want to overwrite the existing file.

Index

A

Audience, intended ii-v

B

Backlog, scheduling 2-3

C

Calendars 1-9, 1-16
Child work order
    Field mapping 3-1
Constraint types
    Finish Date 3-5
    Start Date 3-5
Constraints 1-8, 3-4
    Finish Date 3-5
    Start Date 3-5
Crafts 3-3
    Field mapping 3-3

D

Dialog boxes
    Load Resources 1-18
    Maximo Project Manager Startup 1-1
    Save Work Orders 1-13
    Select PMs 1-14
    Select Work Orders 1-6
Documentation, related ii-v

F

Field mapping 3-1
    Child work orders 3-1
    Crafts 3-3
    People 3-4
    PMs 3-2
    Progress 3-6
    Schedule Date 3-5
    Tools 3-3
    Work orders 3-1
Filtering 1-9
Finish Date constraints 3-5
Forecast repeatedly until 1-17
Forecasting PMs 1-16

I

importlang.bat utility B-1
Integration 3-1

L

Links 3-1
Load Resources dialog box 1-18
Logic
    Progress mapping 3-6
Login settings A-14

M

Mapping fields 3-1
Maximo menu 1-1, 1-6
    Load Resources 1-18
    Save WO to Maximo 1-13
    Select PMs 1-14
    Select Work Orders 1-6
    Selections 1-6
    Update Work Orders 1-12
Maximo Project Manager Startup dialog box 1-1
MaximoProject.ini file A-1
    pmfieldmap section A-17
    system section A-14
    wofieldmap section A-16
Multiple languages
    import language utility B-1

P

Parent/child hierarchy 1-5
People 3-4
    Field mapping 3-4
PM
    Example 2-5
    Field mapping 3-2
    Forecast repeatedly until 1-17
    Scenarios 2-5
Preview selected work orders 1-5
Progress
    Field mapping 3-6
    Logic flow 3-6
Project
    Creating using Maximo data 1-3

Q

Query
    Results 1-5

S

Save WO to Maximo menu option 1-13
Save Work Orders dialog box 1-13
Scenarios 2-1
Schedule dates
    Evaluating 2-3
    Holding 2-4
Select PMs dialog box 1-14
Select Work Orders dialog box 1-6
Start Date constraints 3-5
Support ii-v

T

Task Priority 1-9
Tools 3-3
    Field mapping 3-3

U

Update Work Orders action 1-12
Using Maximo data in Microsoft Project 1-3

W

Work order
    Example 2-2
    Field mapping 3-1
    Scenarios 2-3