

Inventory Management Using MXES

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Inventory Management Using MXES

Rel. 6.0 05/2005

Part Number MED0139



MXES Curriculum for EAM

For Training Info, Course Descriptions, and Availability, go to:

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Key



*Instructor-Led
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*Virtual Classroom
Training*

Foundation

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0138	MXES Navigation & Querying	½ day, or 3-hr virtual		None

Upgrade

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0136	MXES for EAM - New Features	3 days		None (Note: for users upgrading from Maximo 5)

Implementation

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0146	MXES Immersion Training for EAM	5 days		MXES Navigation & Querying
MED0155	Maintenance Best Practices Using MXES	2 days		None

End-User / Functional

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0137	System Administration for MXES	3 days		MXES Navigation & Querying
MED0139	Inventory Management Using MXES	3 days		MXES Navigation & Querying
MED0143	Work Management Using MXES	3 days		MXES Navigation & Querying
MED0147	Using SQL with MXES	1 day		MXES Navigation & Querying
MED0148	Workflow Management Using MXES	5 days		MXES Immersion Training for EAM (Note: Extensive hands-on Maximo experience preferred)
MED0150	Purchasing with MXES	3 days		MXES Navigation & Querying
MED0151	Developing MXES Reports with Actuate	TBD		MXES Navigation & Querying, Using SQL with MXES
MED0152	Contract Management Using MXES	TBD		MXES Navigation & Querying
MED0153	Using the MXES Application Designer	TBD		MXES Navigation & Querying, System Administration for MXES
MED0154	The MXES KPI Manager (VCT)	3-hr virtual		Using SQL with MXES



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Key



*Instructor-Led
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*Virtual Classroom
Training*

Foundation

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0138	MXES Navigation & Querying	½ day, or 3-hr virtual		None
MED0140	Introduction to ITIL (VCT)	3-hr virtual		None

Implementation

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0149	MXES Immersion Training for IT	5 days		MXES Navigation & Querying
MED0145	Implementing ITIL with MXES	2 days		Introduction to ITIL (VCT)

End-User / Functional

<u>Course #</u>	<u>Course Name</u>	<u>Length</u>	<u>Delivery Options</u>	<u>Prerequisites</u>
MED0141	IT Service Management Using MXES	3 days		MXES Navigation & Querying
MED0142	IT Asset Configuration & Management in MXES	2 days		MXES Navigation & Querying
MED0137	System Administration for MXES	3 days		MXES Navigation & Querying
MED0147	Using SQL with MXES	1 day		MXES Navigation & Querying
MED0148	Workflow Management Using MXES	5 days		MXES Immersion Training for IT (<i>Note: Extensive hands-on Maximo experience preferred</i>)
MED0150	Purchasing with MXES	3 days		MXES Navigation & Querying
MED0151	Developing MXES Reports with Actuate	TBD		MXES Navigation & Querying, Using SQL with MXES
MED0152	Contract Management Using MXES	TBD		MXES Navigation & Querying
MED0153	Using the MXES Application Designer	TBD		MXES Navigation & Querying, System Administration for MXES
MED0154	The MXES KPI Manager (VCT)	3-hr virtual		Using SQL with MXES

Course Name	Manager Track		Implementation Track		Developer Track			Administrator Track			End-User Track			
	Managers, Supervisors, & Directors	Service Level Managers	Maximo Implementation Team	Workflow Implementation Team	Maximo Developer / Maximo App Support	Report Writer	Workflow Developer	Maximo Admin	Database Admin	Report Admin	Service Desk / Support Personnel & Supervisors	IT Asset Managers / Configuration Managers	Contracts Manager	Procurement Personnel
<u>MED0138</u> MXES Nav & Query (1/2 day)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<u>MED0137</u> System Admin for MXES (3 days)				✓	✓			✓	✓			✓		
<u>MED0140</u> Intro to ITIL (VCT) (3 hours)	✓													
<u>MED0141</u> IT Service Mgmt Using MXES (3 days)		✓									✓			
<u>MED0142</u> IT Asset Config & Mgmt in MXES (3 days)												✓		
<u>MED0145</u> Implement ITIL w/ MXES (2 days)	✓	✓	✓											
<u>MED0147</u> Using SQL with MXES (1 day)						✓			✓	✓				
<u>MED0148</u> Workflow Mgmt Using MXES (5 days)				✓			✓							
<u>MED0149</u> MXES Immersion Training for IT (5 days)			✓	✓	✓			✓						
<u>MED0150</u> Purchasing with MXES (3 days)														✓
<u>MED0151</u> Dev. MXES Reports w/ Actuate						✓				✓				
<u>MED0152</u> Contract Mgmt Using MXES													✓	
<u>MED0153</u> Using MXES App Designer			✓		✓									
<u>MED0154</u> The MXES KPI Manager (3 hours)						✓				✓				

Table of Contents

Unit 1: Course Overview

Unit Overview.....	1
--------------------	---

Chapter 1: Course Overview

Course Introduction	1-1
Course Goals and Objectives	1-2
Course Organization	1-4
Typographical Conventions.....	1-7

Chapter 2: Overview of Inventory in Maximo

Chapter Overview	2-1
Definitions	2-2
Inventory as Part of the Maintenance Process	2-5
Tracking Material in Inventory.....	2-7
Inventory in Relation to Other Applications.....	2-9
Inventory Applications	2-12
Just-in-Time Inventory and Maximo	2-15
Chapter Summary	2-17

Unit 2: Setting Up Inventory

Unit Overview.....	1
--------------------	---

Chapter 3: Storerooms

Chapter Overview	3-1
The Storerooms Application.....	3-2
Setting Up Storerooms.....	3-6
Chapter Summary	3-9
Workshop.....	3-10
Review Questions	3-11

Chapter 4: Classifications

Chapter Overview	4-1
Classifications Defined	4-2
Classification Hierarchies.....	4-3
The Classifications Application.....	4-4
Creating Classifications	4-6
Assigning Attributes to Classifications.....	4-8

Table of Contents continued

Applying a Classification to an Item	4-9
Chapter Summary	4-10
Workshop.....	4-11
Review Questions	4-12

Chapter 5: Items

Chapter Overview	5-1
The Item Master Application	5-3
Creating Item Records	5-8
Creating a Commodity Group.....	5-14
Condition Codes	5-17
Applying a Condition Code	5-19
Unit of Measure and Conversion	5-21
Alternate Items.....	5-25
Adding an Item to a Storeroom.....	5-27
Assigning a Vendor to an Item	5-30
Rotating Items.....	5-32
Item Assembly Structures	5-33
Meter Groups	5-35
Creating Service Item Records	5-36
Chapter Summary	5-38
Workshop.....	5-40
Review Questions	5-41

Chapter 6: Tools

Chapter Overview	6-1
The Tools Application	6-2
The Tool Tab.....	6-4
Creating Tool Records	6-7
Adding a Tool to a Storeroom	6-8
Assigning a Vendor to a Tool	6-10
Creating an Asset Record for a Tool	6-12
Stocked Tools	6-13
Viewing Tool Availability	6-18
Chapter Summary	6-19
Workshop.....	6-20
Review Questions	6-21

Table of Contents continued

Unit 3: Transactions

Unit Overview.....	1
Chapter 7: Reordering	
Chapter Overview.....	7-1
Materials Management Process.....	7-2
Reorder Theory.....	7-3
The Inventory Reorder Function.....	7-6
Reorder Defaults.....	7-10
Reordering Selected Items.....	7-12
Reordering Direct-Issue Items.....	7-15
Clearing Reorder Locks.....	7-16
Chapter Summary.....	7-17
Workshop.....	7-18
Review Questions.....	7-19
Chapter 8: Item Kits	
Chapter Overview.....	8-1
Overview of Kits.....	8-2
Defining an Item Kit.....	8-4
Assembling an Item Kit.....	8-6
Disassembling an Item Kit.....	8-7
Chapter Summary.....	8-8
Workshop.....	8-9
Review Questions.....	8-10
Chapter 9: Issues and Transfers	
Chapter Overview.....	9-1
Issues and Transfers Application Overview.....	9-2
Issuing a Reserved Item.....	9-5
Issuing an Unreserved Item.....	9-10
Issuing Metered Materials.....	9-14
Transferring Items.....	9-18
Transferring Out.....	9-19
Using the Select PO Items Option.....	9-21
Transferring Items Across Sites and Organizations.....	9-24
Location Types.....	9-25
Transferring an Item to a Courier Location.....	9-26
Transferring an Item In.....	9-28
Negative Availability.....	9-30
Returning Items.....	9-31
Issuing and Transferring Items from Inventory.....	9-32

Table of Contents continued

Transferring Items from Inventory	9-36
Viewing Inventory Transactions.....	9-37
Splitting Lots.....	9-40
Chapter Summary	9-43
Workshop.....	9-45
Review Questions	9-46

Unit 4: Managing Inventory

Unit Overview.....	1
--------------------	---

Chapter 10: Inventory Adjustments

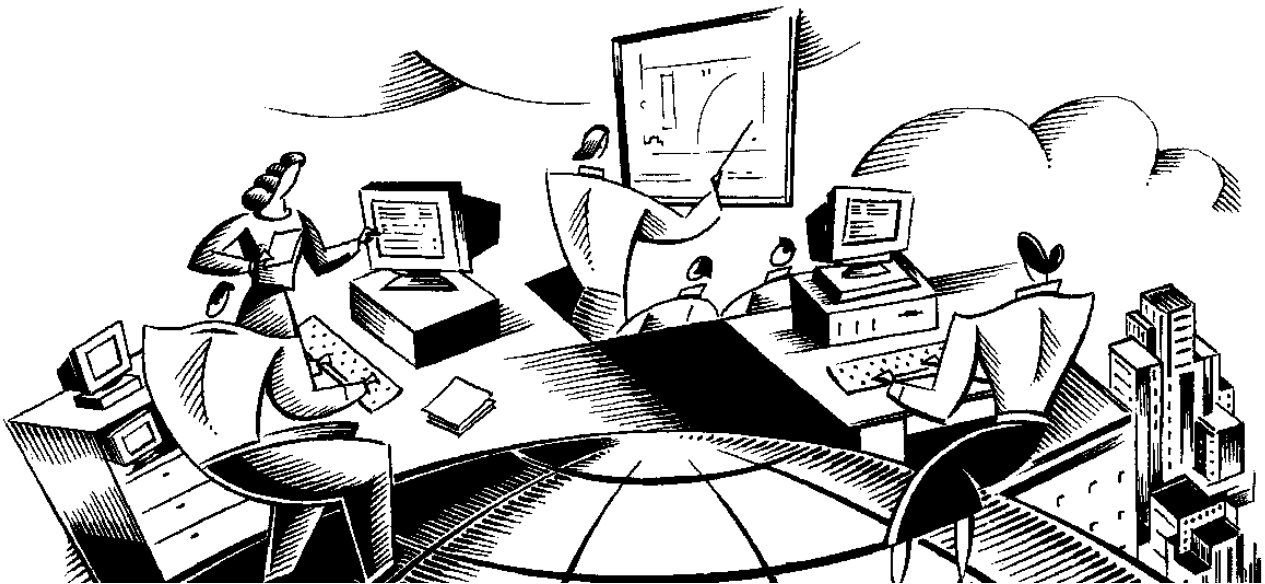
Chapter Overview	10-1
Viewing Item Information	10-2
Adjusting Inventory Balances.....	10-6
Physical Count and Balance Reconciliation	10-8
Standard Cost Adjustment	10-14
Average Cost Adjustment.....	10-15
ABC Analysis	10-16
Inventory Reports	10-20
Attachments	10-21
Chapter Summary	10-23
Workshop.....	10-24

Appendix A: Companies

Overview.....	A-1
The Company Master Application.....	A-2
The Companies Application	A-4
The Role of the Companies Application.....	A-9
Using the Companies Application	A-10
Entering Company Records	A-13
Summary	A-19
Workshop.....	A-20

Inventory Management Using MXES

Unit 1: Course Overview



In This Unit

This unit contains the following chapters:

Chapter	Title
1	Course Overview
2	Overview of Inventory in Maximo

Unit Overview

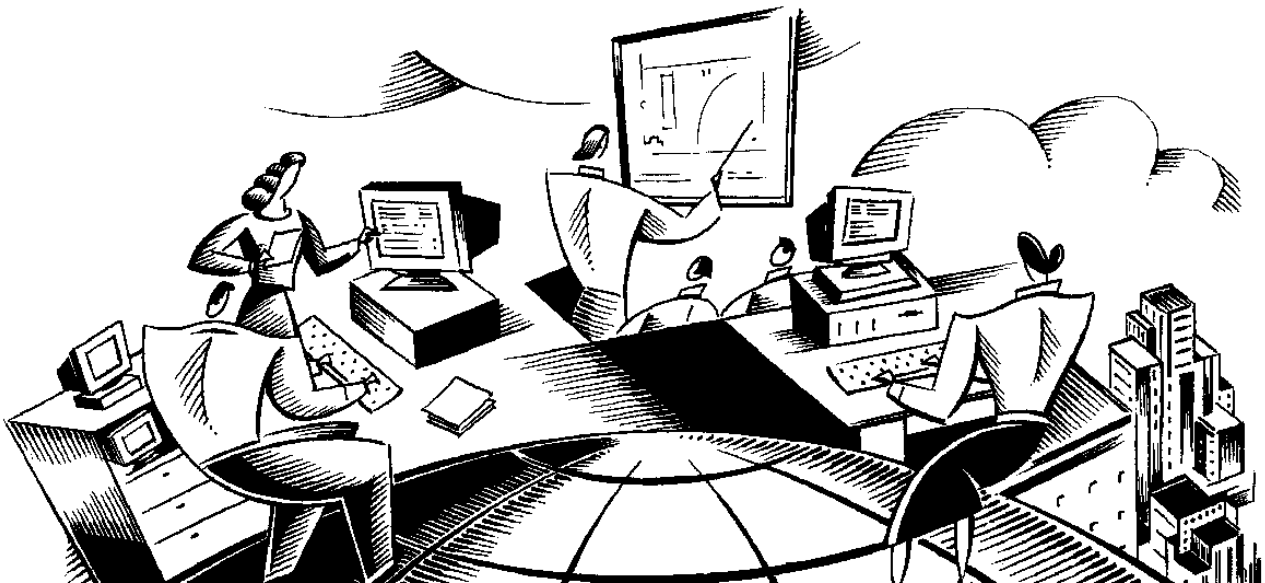
Unit Purpose

The purpose of this unit is to set the context for the remainder of the training. This unit will provide the following overviews:

- Overview of the course, including its objectives, organization units, chapters, and conventions
 - Overview of inventory in Maximo
-

Inventory Management Using MXES

Chapter 1: Course Overview



In This Chapter

This chapter contains the following topics:

Topic	See Page
Course Introduction	1-1
Course Goals and Objectives	1-2
Course Organization	1-4
Typographical Conventions	1-7

Course Introduction

Welcome

Welcome to *Inventory Management Using MXES*. When you have completed this course, you should be able to use the application to perform a variety of inventory functions.

Audience

This school is intended for people who will be using the Inventory module in Maximo.

Chapter Purpose

The purpose of this chapter is to:

- establish the goals and objectives for this course, and to
 - acquaint you with the features of both the course and the student guide.
-

Key Information

While working through some exercises in this course, you will need to make administrative changes to Maximo and then view those changes in Maximo. To access Maximo, you will need the information indicated below.

Maximo URL: _____

Maximo User Name: _____

Maximo Password: _____

Assigned Student Number: _____

Database Instance (if applicable): _____

Your instructor will now provide this information; please write the information in the spaces above.

Course Goals and Objectives

Course Overview

This course introduces users to the Maximo Inventory module—what it does, how it is designed, why it is designed that way, and how to use it.

Course Prerequisites

We assume that, before taking this course, you have taken the *MXES Navigation & Querying* course. You should also be comfortable using a personal computer and the Microsoft Windows operating system.

Course Goal

The overall goal of this school is to develop competency in using the Maximo Inventory module.

Course Learning Objectives

When you have completed this school, you should be able to:

- set up and use storerooms,
 - create an item set,
 - create items and add them to a storeroom,
 - create service item records,
 - create tool records and add them to a storeroom,
 - reorder items,
 - assemble and break apart item kits,
 - view item information,
 - make inventory adjustments,
 - add and modify units of measure and conversion, and
 - perform issues, transfers, and returns on assets.
-

continued on next page

Course Goals and Objectives continued

Your Learning Objectives



Now that you understand the basic objectives for the course, it is most important that you define the learning objectives *you* bring to the course. We want to make sure that these are clearly stated, mutually understood, and achieved.

List your objectives in the space below. We will conclude the course by asking you whether you have met your objectives. If you have not, we will then address your questions and unmet objectives.

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Course Organization

Organization

This course has been organized into teaching modules made up of chapters. Each chapter focuses on a specific aspect of inventory functions and processes.

Chapters

Each chapter in this book is an individual teaching module designed to provide an overview of its topic(s) and then provide in-depth instruction and practice.

Each chapter contains these components:

- A subject-matter overview and objectives

This component provides orientation and perspective for the chapter, along with learning objectives.

- Instruction in concepts and procedures

In this part of the chapter, the instructor and the text review relevant concepts, components, and procedures.

- Hands-on practice

You will practice most of the important procedures and concepts that the instructor introduces. You will have opportunities for brief hands-on practice during the body of the module and, in some cases, longer hands-on practice in a workshop at the end of the unit.

Notes Pages

Notes pages are provided at the end of each chapter. You can use these pages to capture information specific to your situation, or important points covered in class discussions.

continued on next page

Course Organization continued

Special Note: **Shared vs.** **Independent** **Databases**



- Throughout this course there could be up to 20 participants accessing the same database. If you are *sharing* a single database, your instructor will assign you a two-digit student number (for example, 01–20) to avoid confusion and/or conflicting records in the database.

Some exercises throughout this course will have an *xx* appended to data entry items. Whenever an *xx* is appended, substitute your assigned student number for the *xx*.

- If you are taking this course in an *independent*-database environment—that is, your database is independent from other students' databases and the instructor's database—student numbers are unnecessary. You can simply do the exercises using the records indicated, without adding a student number.

If you are not sure whether you are sharing a database, check with your instructor.

continued on next page

Course Organization continued

Unit/Chapter Organization

This table contains a list of units and chapters in the course manual.

Unit	Chapter	Name	Description
1	1	Course Overview	Course goals, objectives, organization, conventions, and agenda
	2	Overview of Inventory in Maximo	Description of the seven applications in the Inventory module and their interactions with other Maximo modules/applications
2	3	Storerooms	Setting up a storeroom and setting up a storeroom as a vendor
	4	Classifications	Defining and creating item sets
	5	Items	Using the item master application to create items, item kits, item assembly structures and assigning items to a storeroom
	6	Tools	Creating a new tool and adding it to a storeroom
3	7	Reordering	Reordering items
	8	Item Kits	Assembling and disassembling kits
	9	Issues and Transfers	Issuing, transferring, and returning items
4	10	Inventory Adjustments	Using the inventory application to set view item information, adjust inventory, and reorder items
N/A	Appendix A	Companies	Creating company masters in the Company Masters application and using the Companies application

Typographical Conventions

Introduction

We use a number of typographical conventions and icons in our course materials.

Conventions Used in the Course Materials

Here are some of the conventions you will see most frequently in the course materials:











Convention	Usage	Example
<i>Italics</i>	Introduces or emphasizes a term	A <i>system</i> is a single instance of a Maximo database.
Boldface	Indicates that the word or phrase names a menu item, field, button, or keyboard key	From the Go To drop-down menu, select Administration .
Arial font	Indicates that this is text you type into a field	Type <code>ASSET_NDX8</code> in this field.
Courier font	Indicates programming code, a system message, or part of a screen display	Maximo displays the following message: <code>Work order 1000 status changed to APPR.</code>

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Typographical Conventions continued

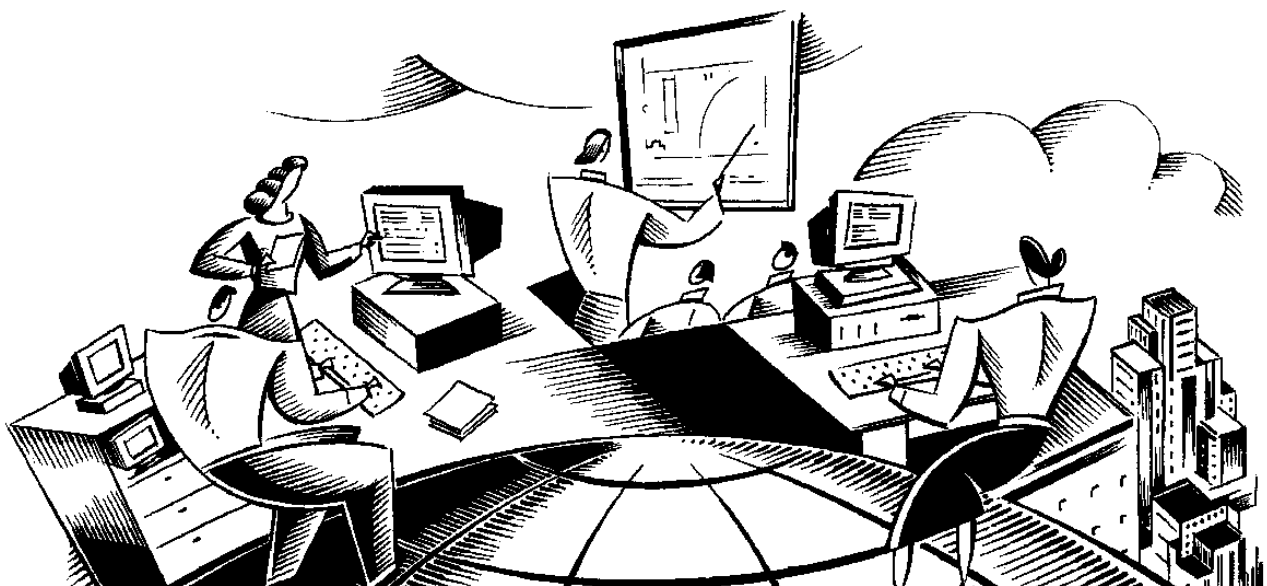
Icons

You will see several icons throughout this student guide. This table explains what they mean.

This icon...	Identifies...
	A procedure that you will practice on your own or with guidance from an instructor
	A paper-and-pencil exercise
	A special note or reminder
	A warning or cautionary note
	A question-and-answer session with the instructor, or a group discussion
	Your role in the next exercise is changing, e.g., from manager to user
	The data you are being asked to enter will be used in another exercise
	A challenge question or exercise
	An industry best practice, tip, or suggestion
	A recording that provides additional course content is available

Inventory Management Using MXES

Chapter 2: Overview of Inventory in Maximo



In This Chapter

This chapter contains the following topics:

Topic	Page
Chapter Overview	2-1
Definitions	2-2
Inventory as Part of the Maintenance Process	2-5
Tracking Material in Inventory	2-7
Inventory in Relation to Other Applications	2-9
Inventory Applications	2-12
Just-in-Time Inventory and Maximo	2-15
Chapter Summary	2-17

Chapter Overview

Introduction

Maximo is a strategic asset management system that includes fully functional, stand-alone inventory management tools.

Chapter Focus

In this chapter we look at the overall functionality of Maximo, paying particular attention to how the inventory functionality fits into the complete system. We will take a detailed look at all of the inventory functionality in later chapters of this book.

Learning Objectives

When you have completed this chapter, you should be able to:

- describe how inventory fits into the maintenance process in Maximo;
 - identify the applications of the Inventory module in Maximo; and
 - describe how Inventory applications interact with one another.
-

Definitions

Introduction

Before getting into a discussion about how inventory works in Maximo, you need to have a thorough understanding of the terminology used in Maximo. We will do that in this section.

Definitions

The following table lists and defines some of the important inventory terms used in Maximo.

Term	Definition
Assets	In Maximo, can be either rotating or non-rotating. <i>Non-rotating</i> assets do not move in and out of storerooms. A non-rotating asset has a unique asset number but does not have an item number because it is not tracked in inventory.
Direct Issue Items	Items that exist as item masters either stocked or non-stocked, and are flagged on the work order plans tab as Issue on Receipt or Direct Issue, depending on the screen, or materials that are entered on the plans work order plan that do not have item numbers.
Item Sets	Allow multiple organizations within a company to view, insert, and choose from a common set of items. An organization can be associated with only one item set. However, multiple organizations can use the same item set. Item sets are identified by a unique item set identifier, with each item in the set having a unique item number. When organizations are created, an item set is assigned to that organization to use. When you create an item, by default the item is cataloged into the item set associated with the organization to which your default insert site belongs.
Items	Records for items that are used by your organizations and can be stocked in your company's storerooms.

continued on next page

Definitions continued

Term	Definition
Kits	Collections of items that are issued as a single unit.
Rotating Items	Individual serialized assets that you define with a common item number, such as pumps or laptops. You designate an item as rotating because you want to know where that specific item exists at all times. Rotating items are generally maintained, not consumed
Rotating Tools	Individual serialized assets, such as nail guns or backhoes, that are defined by a common tool number. You mark a tool as rotating because it shares the same properties as an asset and you want to track each instance of that tool as an asset to monitor maintenance costs, downtime, and so forth.
Tools	Typically non-consumable items for which you charge an hourly rate for their use. Some examples of tools include air compressors, nail guns, calibration equipment, and heavy equipment such as cranes and excavators. You catalog these tools in an Item Set, which can then be shared by the organizations using that Item Set.

continued on next page

Definitions continued

Assets: General Categories

The general categories of assets identified and supported in Maximo are as follows:

- **Labor** includes the people who do the work, cause the work to be done, or support the work effort.
 - **Assets** include machinery, tools, and so forth.
 - **Locations** are the areas where assets are located.
 - **Items** are the materials needed to accomplish work. Within the item asset group you can further define subgroups:
 - *Spare parts* are items that are purchased or manufactured to replace, maintain, or repair assets or locations. When they break or wear out they are thrown away. Some examples are filters, motors, valves, and gears.
 - *Consumables* or *supplies* are items that are typically purchased and used up during the work or production process. Some examples are light bulbs, paper towels, and fuel.
 - *Repairable spares* are items that are essentially spare parts but will be repaired and are possibly interchangeable with other assets or locations. Examples include large motors, pumps, and saw blades.
-

Inventory as Part of the Maintenance Process

Introduction

Tracking and ordering the materials required for maintenance work is an important part of the maintenance process.

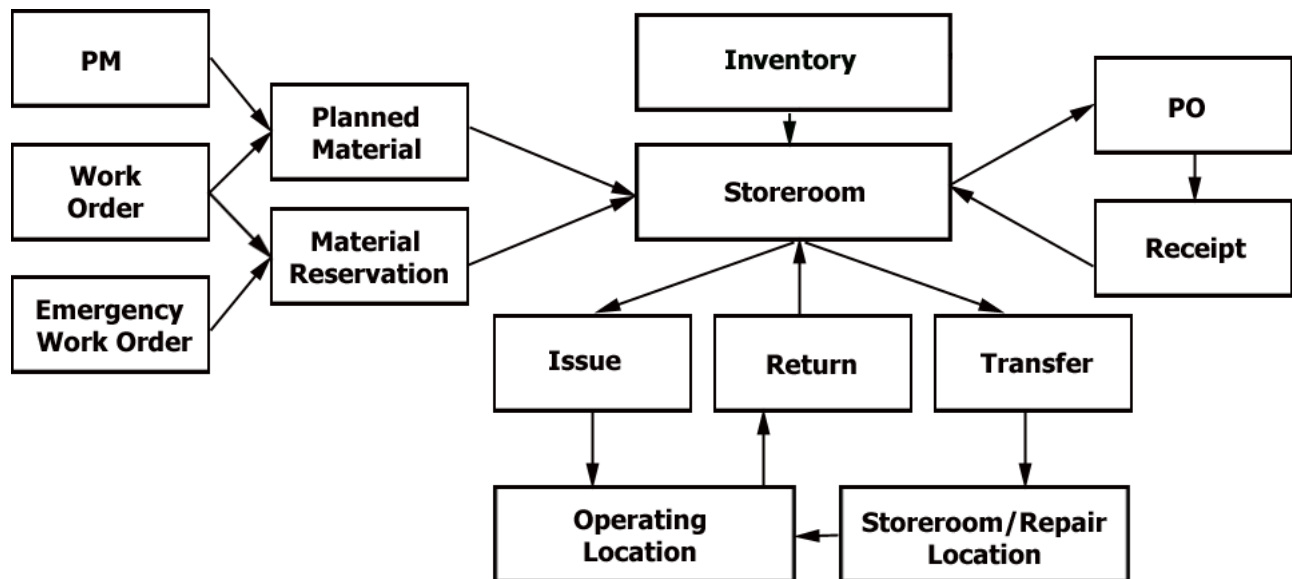
The Role of the Inventory Module

Inventory is one of the central modules in Maximo. It functions in a dynamic relationship with Work Orders, Preventive Maintenance, Purchase Orders, Assets, Tools, and Companies applications. These other applications affect the quantity of items in inventory and identify where those items are needed or located, as well as who sells them to your company.

Materials and Services on Work Orders

An important part of Maximo work orders is the planning and usage of materials and services.

The diagram below illustrates the typical business flow between inventory and other processes in Maximo. Work orders and PMs cannot be completed without the necessary materials and services.



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Inventory as Part of the Maintenance Process continued

Inventory Module Goals

The Maximo Inventory module has two primary goals:

- To maximize the availability of items for upcoming work tasks
 - To reduce the outstanding inventory balances and related carrying costs
-

Achieve Your Inventory Goals

Maximo helps you achieve your inventory goals by enabling you to:

- track items in stock;
 - locate alternate or substitute items;
 - know when stock falls below minimum acceptable levels;
 - generate appropriate purchasing records (PRs and POs) when restocking is necessary;
 - track the receipt of items into inventory;
 - track and analyze vendor activity;
 - manage inventory locations;
 - issue or transfer items; and
 - create, view, and duplicate item assembly structures.
-

Tracking Material in Inventory

Introduction

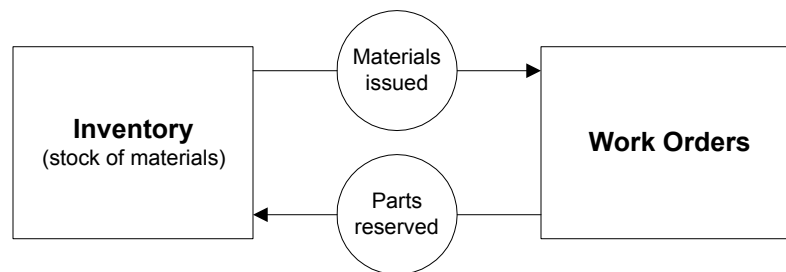
The Inventory module in Maximo tracks materials needed for your business functions such as operations, maintenance and support. You use the various applications within the Inventory module to model your storeroom configuration and track all transactions that affect the state of your storerooms.

Storeroom Depletion

When users plan work or request materials, it has a direct effect on the applications within Inventory.

Planned materials on a work order are reserved in inventory when the work order is approved.

Material balances are decreased when materials are issued to a work order.



Maintaining Storeroom Balances

As balances decrease in Maximo storerooms, we need a way to replenish these balances. The Maximo Inventory applications work in conjunction with the Purchasing applications to provide a way to track requests for purchases and receipts of materials.

Inventory personnel perform a reorder function in the Inventory application to evaluate stock and create PRs for parts that need to be ordered.

Purchasing personnel process PRs to ensure that all parts are ordered from vendors on purchase orders (POs).

When vendors ship materials, inventory personnel receive them into the storerooms, which increases balances and satisfies the requirements of the PO.

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Tracking Material in Inventory continued

Creating PRs and POs



Your Maximo administrator can enable you to create PRs or POs automatically during the reorder process. For more information about Maximo and reordering, see Chapter 7, “Reordering.”

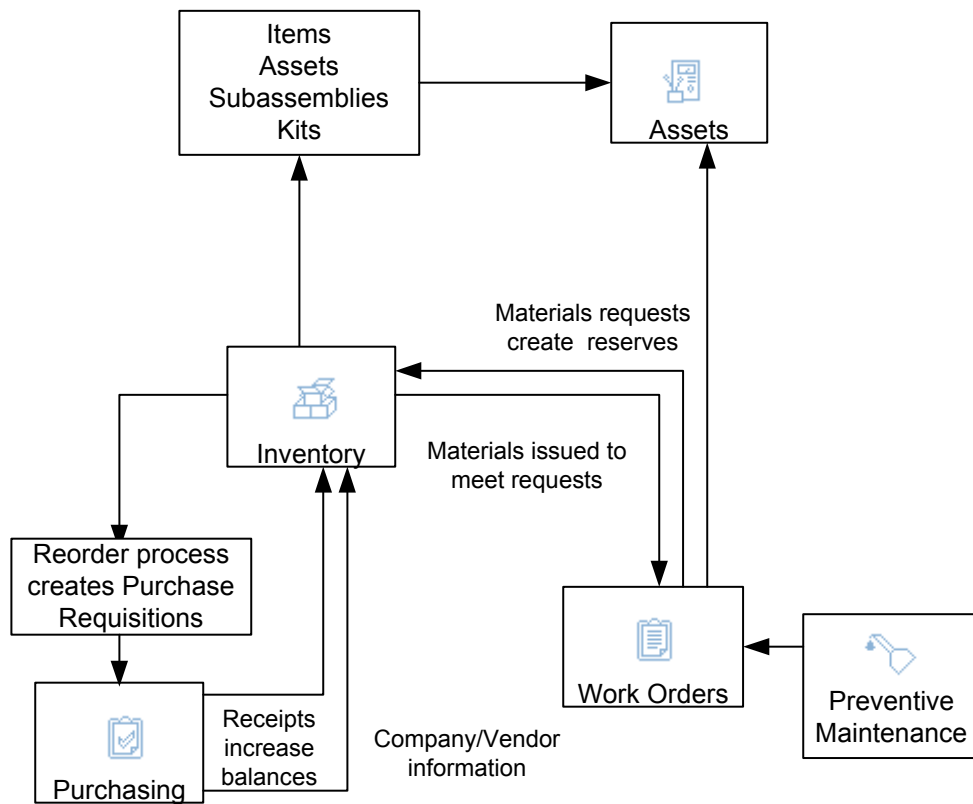
Inventory in Relation to Other Applications

Introduction

The Inventory module and its data are central to several functions in Maximo. In this section we review Inventory's important relationships. These relationships will be explored in more detail throughout this course.

Diagram

This diagram illustrates the relationships between the Inventory module and other modules in Maximo.



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Inventory in Relation to Other Applications continued

Inventory and PMs

The Inventory module and the PMs module have the following important relationships:

- PMs will often be associated to Job Plans so that, when the PM generates a work order, the Job Plan is attached to the work order. Job Plans that contain materials lists become part of the work order planned materials. During the PM work order generation process, Maximo checks the due date of the PM, including additional lead time, and generates a work order in the WAPPR status. The process then adds the Job Plan to the work order and changes the status of the work order to WSCH, at which time Maximo creates a reservation for any planned materials.
 - When a user runs the reorder process in the Inventory application, this reservation of items affects whether the items are reordered. This reservation is maintained until either the materials are issued or the work order is closed or canceled.
-

Inventory and Work Orders

The Inventory module and the Work Orders module have the following important relationships:

- Before anyone can reference a stocked or nonstocked item on a work order, the item must exist in inventory.
 - When a user includes an item on a work order, Maximo decreases the inventory balance for that item.
 - When a user requests direct issue items on a work order, Maximo does not automatically issue a reorder for these items. You must consider direct-issue items in the inventory reordering process.
 - When a user approves a work order, Maximo reserves the items it needs in inventory. When a user runs the reorder process in the Inventory module, this reservation of items affects whether the items are reordered. This reserve is maintained until the work order is closed or canceled.
 - You can issue items directly to a work order from the Issues and Transfers application or from the Inventory application.
-

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Inventory in Relation to Other Applications continued

Inventory and Purchasing

The Inventory and Purchasing modules have the following important relationships:

- You can produce a PR or a PO by reordering items from the Inventory application.
 - Maximo updates inventory balances as you receive items on a PO, provided the order is not an issue on receipt order.
 - Maximo automatically charges issue on receipt items to the appropriate work order, asset, location, or GL account.
 - The Companies application in the Purchasing module holds the “Who do I buy it from?” information for inventoried items.
-

Inventory and Assets

The Inventory and Assets modules have the following important relationships:

- You can establish and create rotating item/asset records by linking an existing item record to an asset record.
 - The Where Used tab in Inventory tracks items according to which pieces of equipment are using them.
-

Inventory Applications

Overview

The Inventory module consists of eight applications: Item Master, Service Items, Tools, Stocked Tools, Inventory, Issues and Transfers, Condition Codes, and Storerooms.

Use this application...	To...
Item Master	<ul style="list-style-type: none"> • define items that will be stocked in your storerooms • catalog in an item set, which can then be shared by the organizations using that item set • define an item's commodity codes, order and issue units, and condition codes • define whether the item is lotted, rotating, or condition enabled • define alternate items that can be used in their place • specify the safety hazards and tax codes that vary by organization • create item kits, which are collections of items that are issued as a single unit • add an item to one or more storerooms • define vendors that carry an item • create an item assembly structure • attach documents outside of Maximo that relate to an item

continued on next page

Inventory Applications continued

Overview

continued

Use this application...	To...
Service Items	define and store information (e.g., vendor, cost) regarding the services your company uses on a regular basis
Tools	manage information about the tools used to perform work
Stocked Tools	<ul style="list-style-type: none"> • manage existing tools in storerooms • view stocked tool balance summaries, balance details, availability, and issue history • add new bin location and balance information for a stocked tool • associate vendors with a tool and analyze vendor data • view a list of all assets associated with a rotating tool • add or modify where a rotating tool is used as a spare part (child tool) on a parent asset • issue, return, or transfer a stocked tool • view a tool's inventory transactions • zero year-to-date issue quantities for a tool • adjust a tool's physical count and current balance • reconcile balances
Inventory	<ul style="list-style-type: none"> • run the reorder routine to replenish stocked items, as well as order those items flagged for direct issue to work orders • manage item/vendor relationships • issue an item to a work order • manage item/storeroom relationships • transfer items into or out of a storeroom

continued on next page

Inventory Applications continued

Overview

continued

Use this application...	To...
Issues and Transfers	<ul style="list-style-type: none"> • issue items directly to a work order, location, or asset, or against a general ledger account either within a site or across sites within an organization • transfer items from one storeroom to another, either within a site, across sites within an organization, or across organizations • manage reservations
Condition Codes	define codes for condition-enabled items. Condition-enabled items have a value or worth you want to assign and track based on their physical condition.
Storerooms	<ul style="list-style-type: none"> • add and maintain information about storeroom locations • view the items stocked in a storeroom

Just-in-Time Inventory and Maximo

Introduction

Because the industry average cost to maintain inventory is 20 percent of the total inventory cost, many companies are moving to a just-in-time system to increase the availability of parts needed for upcoming work and to minimize the inventory levels and associated carrying costs.

Maximo can accommodate a just-in-time system and help reduce costs by allowing you to set important reorder properties that enable Maximo to replenish items as economically as possible.

Definition

A *just-in-time* system is typically part of a production system in which materials are purchased and units are produced only as needed to meet actual customer demand. In such a system, inventory levels are reduced to the minimum.

Look Forward to Stock Inventory

Using a just-in-time system for maintenance, users base their purchasing and stock levels on upcoming work rather than on past usage. Because parts and equipment 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.

Where Does Maximo Fit In?

You can use Maximo for several important components of a just-in-time system:

- To identify and use reliable vendors
 - To set inventory stocking levels
 - To assign lead times, reorder points (ROP), and economic order quantities (EOQ) for items
-

Vendors

Inventory and Purchasing personnel can work together with the Maximo vendor analysis functionality to identify reliable vendors, assign primary vendors for each item, and determine whether to disqualify unreliable vendors.

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Just-in-Time Inventory and Maximo continued

Safety Stock

Most companies maintain some level of safety stock for an emergency, particularly for parts required by critical processes, such as production spares and safety items or hard-to-acquire materials and tools. After you have considered your historical use of specific items, determine the projected use, considering equipment age and condition, lead time to acquisition, distance, and cost of emergency delivery. To help you do this, Maximo includes year-to-date issue information and ABC analysis functionality.

Set Important Reorder Values

Maximo enables you to set important reorder values so that you can tailor the reorder routine to best meet your needs. Values to consider include the reorder point, economic order quantity, safety stock, lead time, order and issue units.

Chapter Summary

Overview

The Inventory module is one of the central modules in Maximo. It functions in a dynamic relationship with the Work Orders, Purchasing, and Assets modules and with the Companies application in the Resources module.

Inventory and Its Relationship to Maximo Applications

The Inventory module is central to applications in other Maximo modules in the following ways:

This module...	Uses Inventory in this way...
Preventive Maintenance	When Maximo generates a PM work order, the approved work order reserves items it needs from Inventory. The timing of generating PM work orders must allow sufficient lead time for the Inventory reorder process.
Work Orders	When a user approves a work order, Maximo reserves the items it needs in Inventory.
Purchasing	When you reorder items in Inventory, Maximo automatically creates PRs and POs. As a user receives items in the Purchasing module that are not issued on receipt items, Maximo updates their balances in Inventory.
Assets	You can establish and create Rotating Item/Asset records that are tracked in inventory by linking an existing item record to an asset record.
Tools	You can create tools, add them to storerooms, and use them on job plans and work orders.
Companies	Keeps track of the vendors that sell the inventory items to your company.

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Chapter Summary continued

Inventory Module

The Inventory module consists of eight applications:

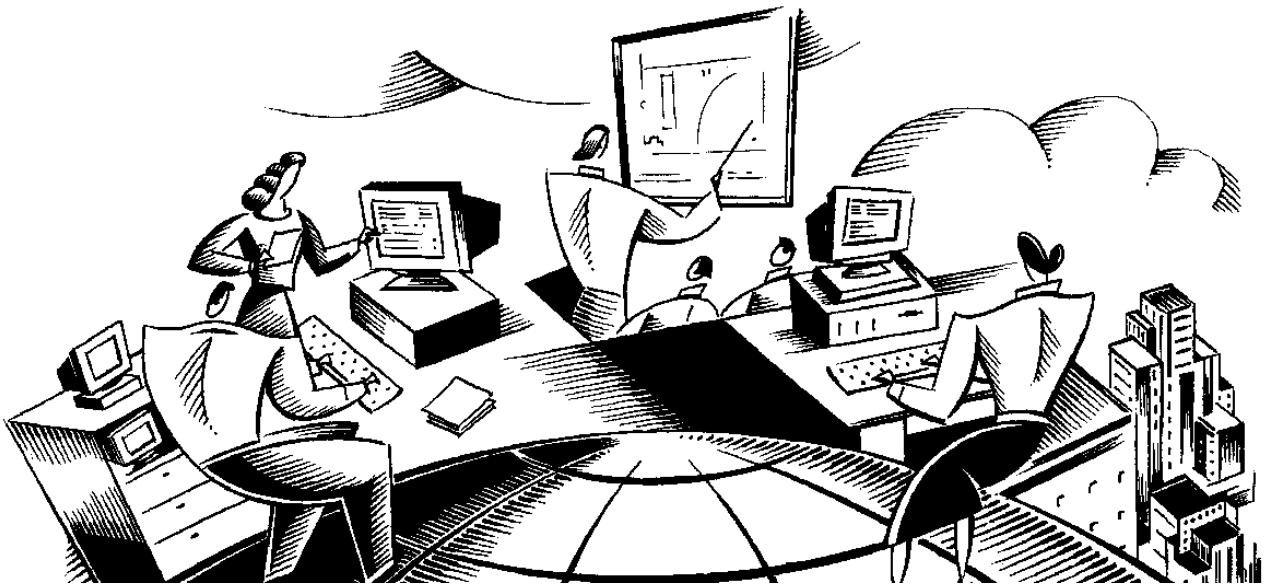
- Item Master
 - Service Items
 - Tools
 - Stocked Tools
 - Inventory
 - Issues and Transfers
 - Condition Codes
 - Storerooms.
-

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Inventory Management Using MXES

Unit 2: Setting Up Inventory



In This Unit

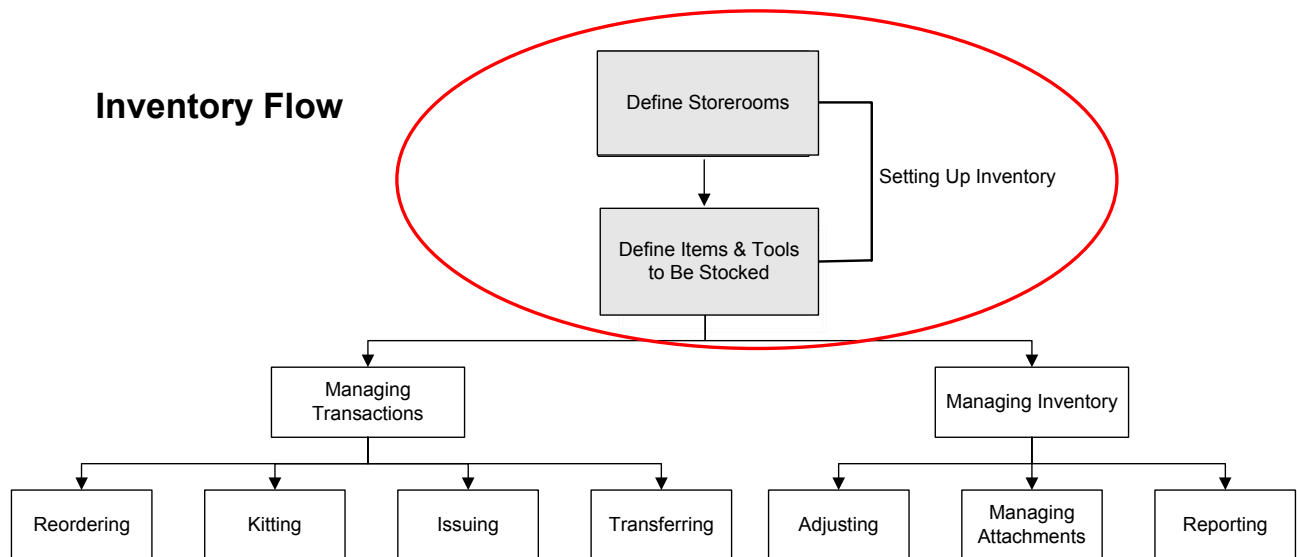
This unit contains the following chapters:

Chapter	Title
3	Storerooms
4	Classifications
5	Items
6	Tools

Unit Overview

Unit Purpose

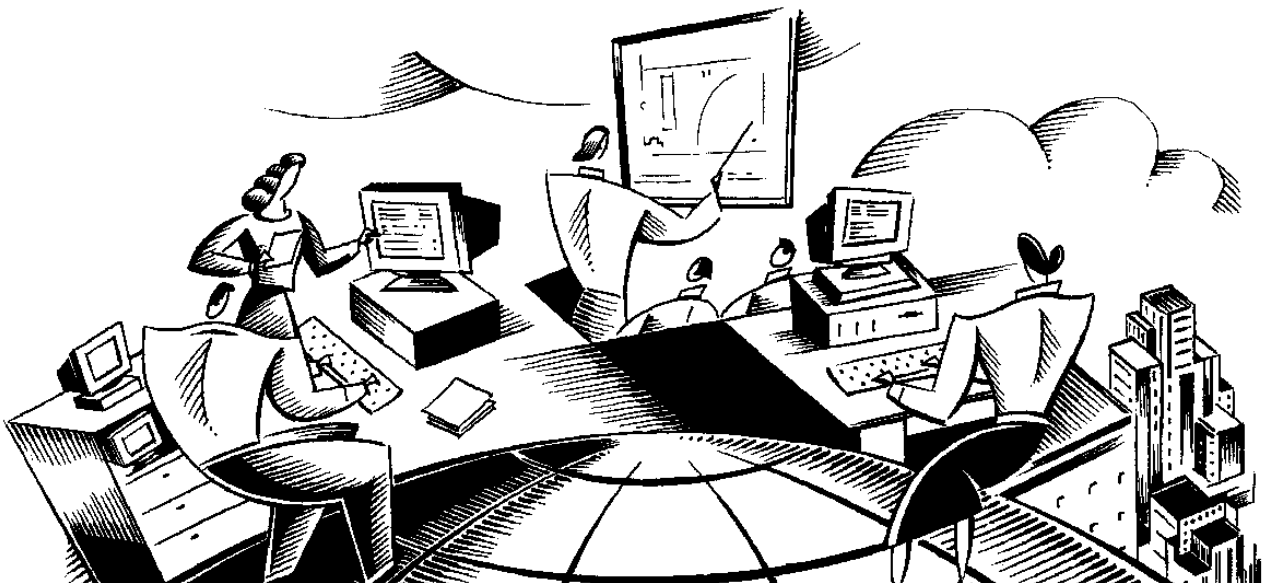
The following graphic illustrates the flow of the inventory process in a typical company. The first step is to set up your inventory. This includes defining your storerooms and defining the items and tools you will stock in those storerooms.



This unit will focus on the circled and shaded areas in the above graphic: Setting Up Inventory.

Inventory Management Using MXES

Chapter 3: Storerooms



In This Chapter

This chapter contains the following topics:

Topic	See Page
Chapter Overview	3-1
The Storerooms Application	3-2
Setting Up Storerooms	3-6
Chapter Summary	3-9
Workshop	3-10
Review Questions	3-11

Chapter Overview

Introduction

Setting up your storerooms in Maximo is not a difficult process, but it is the first step toward managing your inventory.

Chapter Focus

This chapter focuses on using the Storerooms application. We will discuss setting up storerooms and setting up storerooms as vendors.

Learning Objectives

When you have completed this chapter, you should be able to:

- Identify best business practices for setting up storerooms
 - Navigate the Storerooms application
 - Set up a storeroom
 - Set up a storeroom as a vendor
-

The Storerooms Application

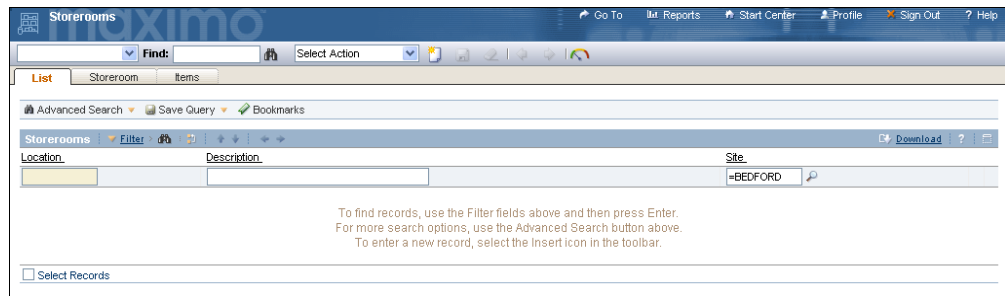
The Storerooms Application

Inventory items can be kept in one or more storeroom locations. Each item has its own bin(s), current balance, physical count, last physical count date, expiration date, and so forth. The Storerooms application displays information about the item at the specified storeroom location.

The Storerooms application allows you to create an electronic replica of the physical area where materials and spare parts are kept. General ledger accounting information, as well as addresses for shipping and receiving, is established and maintained here.

In this application you can view information about the current balance of an item at all of its locations. You can see balance information down to the bin and/or lot level for each location.

There are three tabs in Storerooms: List, Storeroom, and Items. When you initially access the application, you are brought to the List tab as illustrated in the following graphic.



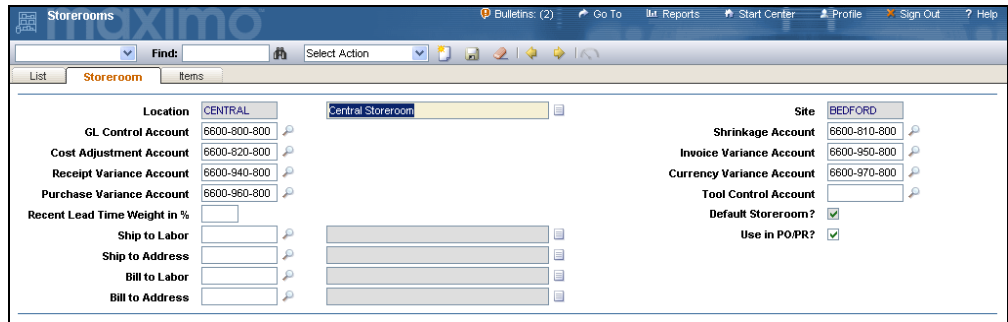
The List tab is used to access a list of storerooms. You can search the database for a specific record or group of records using the filter fields (Location, Description, Site) located above the List table.

continued on next page

The Storerooms Application continued

Storeroom Tab

The Storeroom tab enables you to create new storeroom records and define the GL account codes to be associated with the storeroom.



The Storeroom tab contains the following fields:

Field	Description
Location	Location name and description.
GL Control Account	Control account for inventory items. You use the general ledger (GL) accounts to track expenses for the storeroom location. When you add an item to a storeroom (into inventory), the account number defaults to the inventory record that Maximo creates.
Cost Adjustment Account	Account that tracks changes in either the average price or the standard price from manual inventory price adjustments. These changes result from using the Adjust Average Cost and Adjust Standard Cost actions, respectively.
Receipt Variance Account	Debit account to track the variance between PO and Invoice exchange rates. This account contains the differences between the inventory standard cost and the receipt cost (specific to the storeroom) for any items in the associated storeroom location. It is used for standard costing only.
Purchase Variance Account	Purchase price variance account for variance between PO and original last and standard price.
Recent Lead Time Weight in %	Weight in percent given to the most recent receipt of an order.

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The Storerooms Application continued

Storeroom Tab continued

Field	Description
Ship to and Bill to Labor and Address	Maximo defaults values for the Ship to and Bill to addresses based on the site, but you can change them as necessary. Maximo uses these values as the ship-to and bill-to information on PRs and POs generated by the reorder process.
Site	Site of the storeroom.
Shrinkage Account	Shrinkage cost account for manual adjustment for inventory quantity.
Invoice Variance Account	Invoice price variance account for variance between invoice and PO prices.
Currency Variance Account	Variance between PO and invoice exchange rates.
Tool Control Account	Control account for tools. When you add a tool to a storeroom (as a stocked tool), the account number defaults to the stocked tool record that Maximo creates.
Default Storeroom?	If checked, the storeroom is the default storeroom for this site.
Used in PO/PR?	If checked, the storeroom can be used as a vendor in internal purchase requisitions and purchase orders. If you set up a storeroom as a vendor in this way, you can check the Internal? check box when you are creating a purchase order (located in the Vendor section in the Purchase Orders application) and select the storeroom as the vendor.

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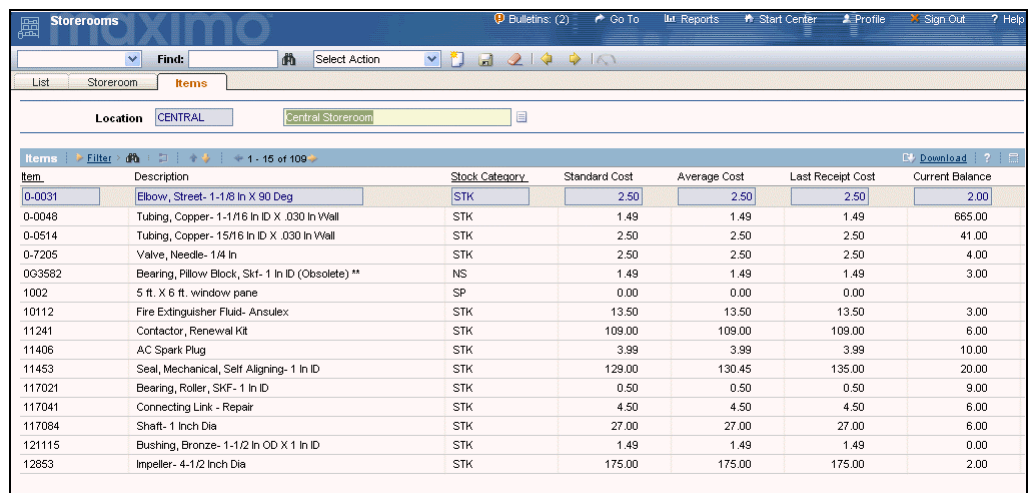
The Storerooms Application continued

The Items Tab

The Items tab contains a read-only list of items associated with the specified storeroom. To view items from the Storerooms application, either you must first add the items to a storeroom using the Item Master application, or they must be received, transferred, or returned to a storeroom.

The Items tab contains the following fields:

- Item number and Description
- Stock Category
- Standard Cost
- Average Cost
- Last Receipt Cost
- Current Balance



Item	Description	Stock Category	Standard Cost	Average Cost	Last Receipt Cost	Current Balance
0-0031	Elbow, Street- 1-1/8 In X 90 Deg	STK	2.50	2.50	2.50	2.00
0-0048	Tubing, Copper- 1-1/16 In ID X .030 In Wall	STK	1.49	1.49	1.49	665.00
0-0514	Tubing, Copper- 15/16 In ID X .030 In Wall	STK	2.50	2.50	2.50	41.00
0-7205	Valve, Needle- 1/4 In	STK	2.50	2.50	2.50	4.00
003582	Bearing, Pillow Block, Skt- 1 In ID (Obsolete) **	NS	1.49	1.49	1.49	3.00
1002	5 ft. X 6 ft. window pane	SP	0.00	0.00	0.00	
10112	Fire Extinguisher Fluid- Ansulex	STK	13.50	13.50	13.50	3.00
11241	Contact, Renewal Kit	STK	109.00	109.00	109.00	6.00
11406	AC Spark Plug	STK	3.99	3.99	3.99	10.00
11453	Seal, Mechanical, Self Aligning- 1 In ID	STK	129.00	130.45	135.00	20.00
117021	Bearing, Roller, SKF- 1 In ID	STK	0.50	0.50	0.50	9.00
117041	Connecting Link - Repair	STK	4.50	4.50	4.50	6.00
117084	Shaft- 1 Inch Dia	STK	27.00	27.00	27.00	6.00
121115	Bushing, Bronze- 1-1/2 In OD X 1 In ID	STK	1.49	1.49	1.49	0.00
12853	Impeller- 4-1/2 Inch Dia	STK	175.00	175.00	175.00	2.00

Setting Up Storerooms

Introduction

The purpose of a storeroom is to provide your business with the parts and materials needed to keep your business operations, maintenance, and support functions operating at maximum efficiency by managing and supplying materials. A well-managed inventory system helps alleviate downtime and improve productivity.

In this section we will add storeroom locations. We will be using these storerooms throughout the course.

Storeroom Considerations

A systematic approach to inventory will ensure that:

- the parts are available when needed,
- redundant items are not being purchased,
- items will be automatically reordered as needed,
- obsolete items are reported on for depletion,
- cost-effective methods are being used for purchasing lot type items, and
- item usage costs are being documented and reported to plant management.

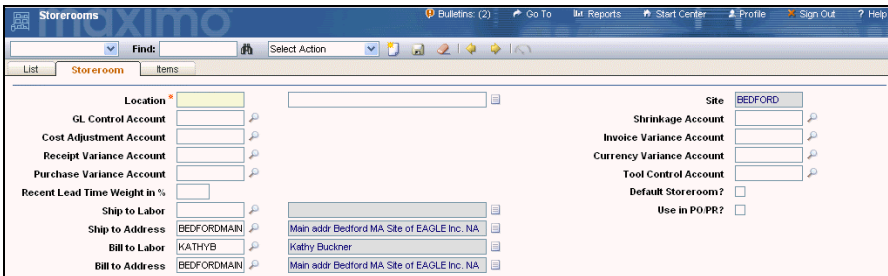


Using Maximo to manage a storeroom should improve material costs, identify equipment spare parts and usage, and identify equipment with problems.

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Setting Up Storerooms continued

Adding a Storeroom Location

Follow these steps to add a storeroom location:

Step	Action
1	<p>Access the Storerooms application from the Inventory module and click on the New Storeroom icon.</p> <p><u>Result:</u> A new record opens.</p> 
2	<p>Enter CNTRL-XX (<i>the name of the storeroom</i>) in the Location field.</p>
<p>3</p> 	<p>Enter Central Storeroom XX in the Description field.</p> <p><u>Note:</u> You can click on the Long Description button to enter further information about the storeroom.</p>
<p>4</p> 	<p>Click on the Select Value button next to the GL Control Account field and select a code. You will have to select three different sets of numbers.</p> <p><u>Result:</u> The GL Control Account field is populated with your choice.</p> <p><u>Note:</u> We will discuss Control Accounts in more detail in the next section.</p>
5	<p>Click the Save icon.</p> <p><u>Result:</u> The storeroom is created.</p>

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Setting Up Storerooms continued

Control Accounts

You use the general ledger (GL) accounts to track expenses for the storeroom location. You designate the *inventory control account* to specify which inventory account Maximo charges for items. The inventory control account is the control account for inventory items.

The *tool control account* applies only to tools.

When you add an item to a storeroom (into inventory), Maximo defaults the account number to the inventory record that it creates. When you add a tool to a storeroom, Maximo defaults the account number to the stocked tool record that it creates.

For specific information regarding the use of GL accounts in Maximo, see the *Financial Manager's Guide*.

Deleting a Storeroom Location

Although it is generally not recommended, to delete records from Maximo, you can delete a storeroom location from the Storerooms application by choosing Delete Storeroom from the Select Action menu. However, you cannot delete a storeroom if items are stocked in it.

Chapter Summary

Storeroom Application

You use the List tab to view a list of storerooms fitting your search criteria.

You use the Storeroom tab to view information about a specific storeroom.

You use the Items tab to view a read-only list of items and tools that are stocked in a specific storeroom.

Control Accounts

The inventory control account specifies the inventory account Maximo charges for items.

The tool control account specifies the inventory account Maximo charges for tools.

Workshop

Exercises

In the following exercise you will create a storeroom.

Objective

The objective of this workshop exercise is to ensure that you are comfortable with creating storeroom locations in Maximo.

**Exercise:
Creating a
Storeroom**

Create two storeroom locations and assign one of them as a vendor:

- 1)
 - 2)
-

Review Questions

Review Questions



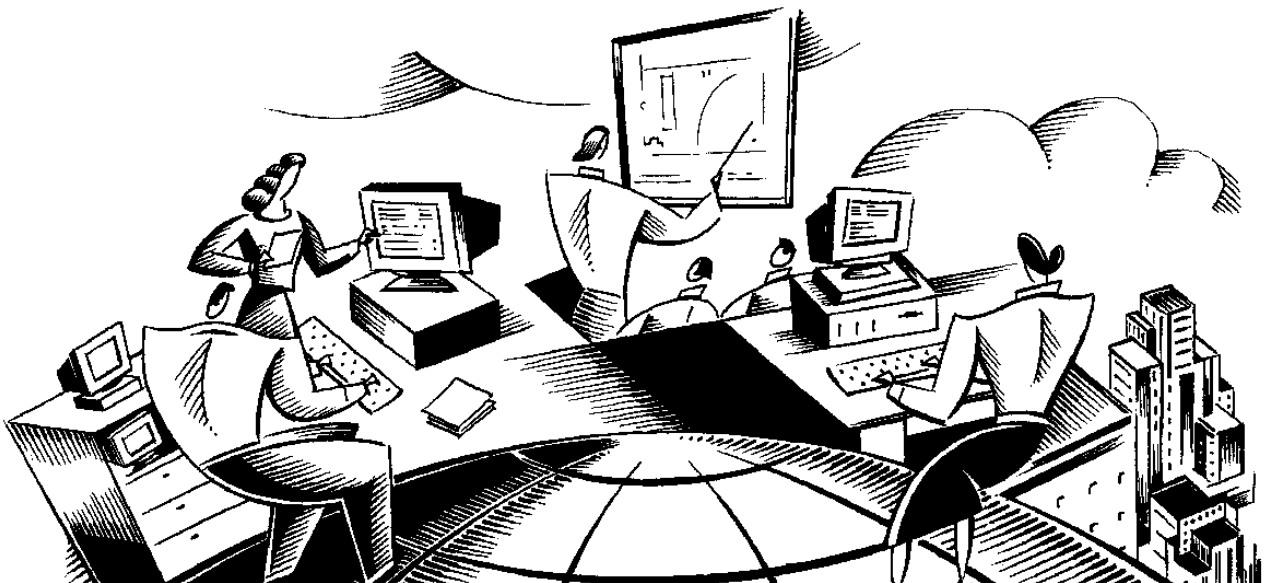
1. What would you do if you wanted to see how many of a particular item were in stock?

 2. What needs to happen before you can view an item from the Storerooms application?
-

NOTES:

Inventory Management Using MXES

Chapter 4: Classifications



In This Chapter

This chapter contains the following topics:

Topic	See Page
Chapter Overview	4-1
Classifications Defined	4-2
Classification Hierarchies	4-3
The Classifications Application	4-4
Creating Classifications	4-6
Assigning Attributes to Classifications	4-8
Applying a Classification to an Item	4-9
Chapter Summary	4-10
Workshop	4-11
Review Questions	4-12

Chapter Overview

Introduction

After you set up your storeroom, you will define the items and tools that will be stored in them. However, before you can do that, you need to have an understanding of classifications because they are applied to the items you will be creating.

Chapter Focus

This chapter focuses on providing you with an understanding of classifications so that you can use them when creating your inventory items.

Learning Objectives

When you have completed this chapter, you should be able to:

- define classifications and their role in Maximo, and
 - create a classification.
-

Classifications Defined

Introduction Maximo includes functionality called *classifications* to help companies keep track of their increasingly complex list of assets.

Definition You use the Classifications application to create classifications and establish an overall classification hierarchy. After they are created, classifications can aid you in retrieving historical data from other applications in Maximo.

Classifications provide a way to logically store information, and can be used on Locations, Assets, Items, Work Orders, Tickets, and Solutions. You can classify almost anything and conduct a search for those things that have been classified. A classification can stand alone, or you can group it with other classifications for further descriptions, such as centrifugal, shunt, or gate.

Classifications can show the relationship of assets. For example, a bearing belongs to a motor, which belongs to a pump, which belongs to a boiler, which belongs to a building, which belongs to a location. The classification path for this is: LOCATION \ BUILDING \ BOILER \ PUMP \ MOTOR \ BEARING.

Terminology The Classifications application is in the Administration module. The following table defines the terms that are specific to Maximo and the Classifications application.

Term	Definition
Classification level	The hierarchical position of a classification.
Classification	A means of identifying something. For example, <i>truck, valve, request, ticket, computer,</i> and <i>1021</i> can each be a classification. A classification is a word, a number, or an alphanumeric.
Parent	The highest level of the classification.
Children	Classifications that fall under the parent classification.
Attribute	A means of grouping characteristics of a classification. It allows you to logically group similar characteristics. For example, for a classification path of PROBLEM \ COMPUTER you might have an attribute of MEMORY SIZE. An attribute's name can be either numeric or alphanumeric.

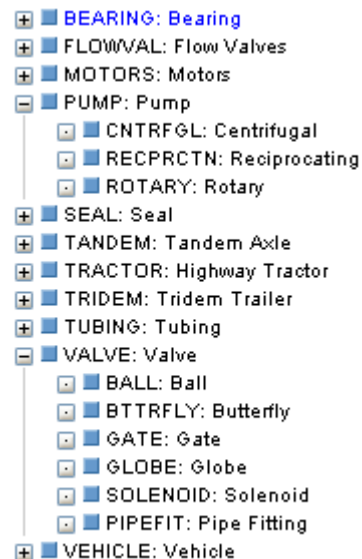
Classification Hierarchies

Classification Structures

Classification structures are similar to directory structures in construction and in the way they are displayed. You build a classification structure from the top down in parent-child relationships. First you create a parent (a classification), then you add its children (each is also a classification). Each child can then become a parent and have its own children. This can go on indefinitely. The structure from the top-level parent to the child you are working with is called the *classification path*.

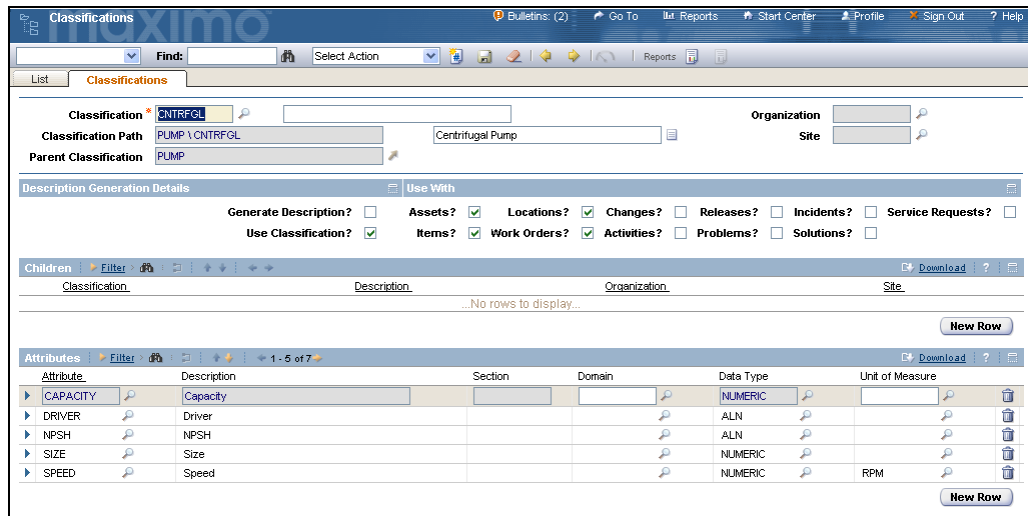
Classification Drilldown

The following graphic shows the classification drill-down structure that is available from the Detail Menu button next to the Classification field in relevant applications. To choose a classification, you drill down to the appropriate classification and select it.



The Classifications Application

Classifications Tab



You use the Classifications tab to add, modify, duplicate, or delete classifications. The following table describes some of the fields and check boxes on the Classifications tab.

Field/Check Box	Description
Classification	The name of the classification.
Description	A description of the classification.
Organization	The organization to which the classification belongs. The Organization and Site fields are null by default, but when a node is for a specific organization, it can be defined with that organization in the Organization field. Anytime a node has been defined for an organization, all of its children must be for the same organization. The same would go for sites. After a site is defined, everything under it must be for the same site.
Classification Path	Lists the name of the classification along with parent and children classifications.
Site	The site to which you want to apply the classification. The classification structure exists at the system level but allows optional organization/site definition.

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The Classifications Application continued

Classifications Tab continued

Field/Check Box	Description
Parent Classification	The name of the parent of the current classification.
Generate Description?	When checked, this check box will automatically generate descriptions for assets, items, and locations that are linked with the classification.
Use Classification?	When checked, this check box uses the classification in generated descriptions.
Use With check boxes	All of these check boxes are used for determining whether a classification node can be used to classify the different objects. When classifying a location, the lookup will only display and allow classifications with the Use With set to Y. A classification node that is set to N must have all of its children set to N as well. A Y can have a child of N, but an N cannot have a child of Y. This will ensure that the classification drill-down functions properly. Inserted nodes will inherit their parent's flag settings. Newly inserted top-level nodes will have all flags set to Y by default. If an object, an asset for example, is classified with a certain node, that node cannot have its Use With Assets flag set to N. When a Use With flag is changed from Y to N (an asset, for example), all of its children will be set to N as well. If the node or any of its children are currently being used to classify an asset, the change cannot be made to any of those nodes.

The **Children** section of the screen is used to enter the children of a parent classification.

The **Attributes** section of the screen is used for adding attributes pertaining to the classification. An attribute is a means of grouping characteristics of a classification. For example, for a classification of *pump*, you might have an attribute of *horsepower*.

Creating Classifications

Introduction

Before you begin setting up classifications, you need to evaluate your company's item lists and determine the number of classification levels you will use.

Add/Modify Options

As you work with the Classifications application, you will use some of the Action menu options. The Action menu has a list of Add/Modify properties that bring up Add/Modify dialog boxes for:

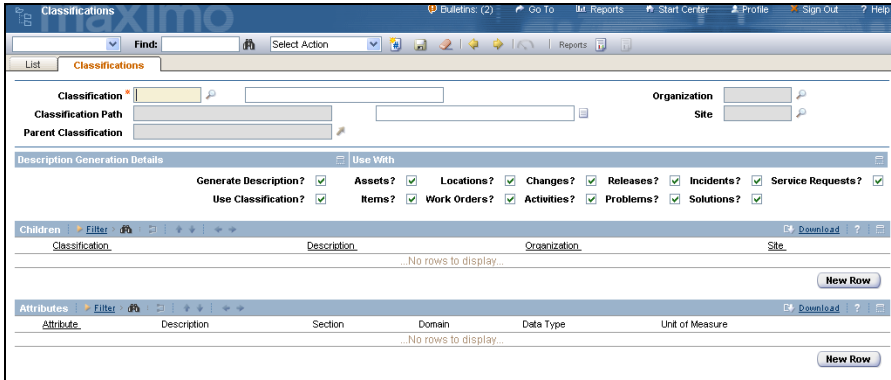
- classifications,
- attributes, and
- units of measure.

Use these options to work directly with the entire list for a chosen field.

Adding a Classification



Follow these steps to add a classification:

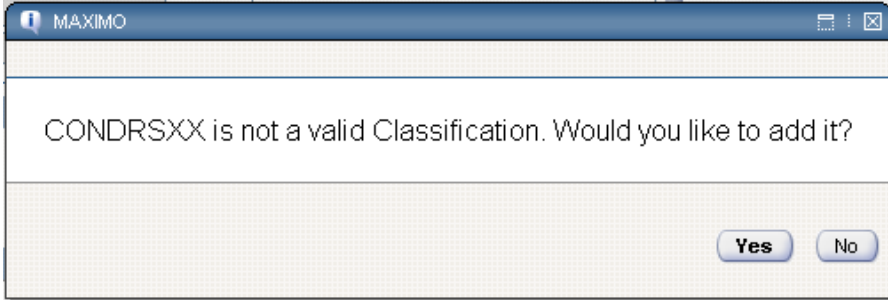
Step	Action
1	Access the Classifications application from the Administration module.
2	<p>Click on the New Classification icon.</p> <p><u>Result:</u> Maximo displays the Classifications screen.</p> 

continued on next page

Creating Classifications continued

Adding a Classification

continued

Step	Action
3	Enter CONDRSXX in the Classification field and press Tab . <u>Result:</u> You receive the following message: 
4	Click Yes and enter Condenser for the new classification description.
5	Keep the Description Generation Details check boxes as they appear.
6	Create three classifications that will be children of this classification by clicking on the New Row button in the Children section of the screen and entering the following information: <ul style="list-style-type: none"> • AIRCLDXX Description = Air Cooled • WTRCLDXX Description = Water Cooled • EVAPXX Description = Evaporative Keep the Description Generation Details check boxes as they appear.
7	Click Save to save the record.

Assigning Attributes to Classifications

Introduction

After you have created a classification, you might want to set up attributes for it. The Attributes section of the Classifications tab allows you to easily enter attributes with a description, measure unit, domain, and so forth.

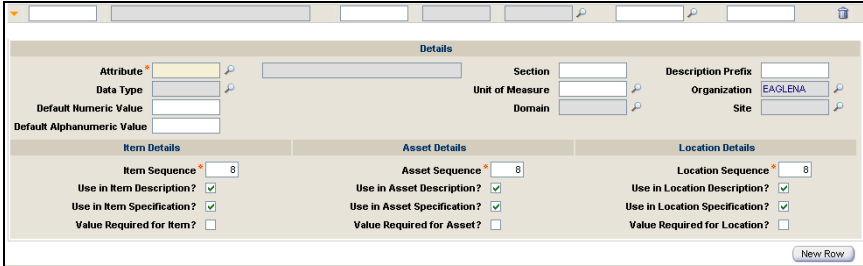
Attributes Section

As mentioned earlier, attributes are characteristics of assets that are kept in common and can be applied to any classifications. For the Attribute, Domain, Data Type, Unit of Measure, Organization, and Site fields you can either use the Select Value button to select from existing values, or you can create new values, just as with the Classification fields. The Domain field allows you to indicate the possible values for the attribute. The Section field indicates which section the attribute is for. We will discuss Units of Measure in detail later in the course.

Assigning Attributes



Follow these steps to assign an attribute to a classification:

Step	Action
1	<p>From the Attributes section of the Classifications tab, click on the New Row button.</p> <p><u>Result:</u> A new row is created.</p> 
2	<p>Fill in the Attribute field in the Attributes table window as follows:</p> <p>Attribute: Capacity</p> <p><u>Note:</u> This attribute already exists. If it didn't, you would be prompted to create a new one.</p>
3	<p>Click Save.</p>

Applying a Classification to an Item

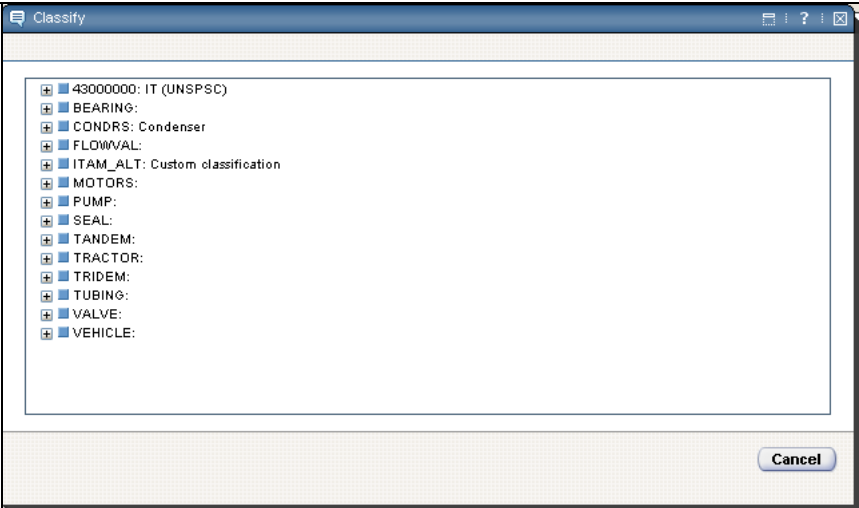
Introduction

We will go briefly into the Item Master application to see how you can apply a classification to an item.

Applying a Classification to an Item

Follow these steps to apply a classification to an item:



Step	Action
1	Go to the Item Master application in the Inventory module, then search for and select item SPPMP765 .
2	Click on the Specifications tab.
3	<p>Click on the Detail Menu button next to the Classification field and select Classify.</p> <p><u>Result:</u> The Classify dialog box appears.</p> 
4	Drill down the PUMP tree and select the blue button next to RECPRCTN .
5	<p>Save the record.</p> <p><u>Result:</u> The item is now classified as a reciprocating pump and all the associated attributes are listed.</p>

Chapter Summary

Classifications Defined

Classifications are used to logically store detailed information about assets, locations, items, work orders, tickets, and solutions defined in Maximo.

Classification Hierarchies

By clicking on the Select Parent Classification option on the Select Value button next to the Parent Classification field, you can view the drill-down of the various classification hierarchies.

Creating Classifications

You can create a new classification by clicking on the New Classification button in the Classifications application. Classifications provide you with a means to logically store information, and can show the relationship of assets.

Assigning Attributes to Classifications

Attributes are characteristics of assets that are kept in common and can be applied to any classifications.

Workshop

Exercise

In the following exercise you will create classifications.

Objective

The objective of this workshop exercise is to ensure that you are comfortable with creating classifications in Maximo.

**Exercise:
Creating
Classifications**

Create two classifications that would be typical for your organization and assign each of them 3 children and 3 attributes.



Review Questions

Review Questions



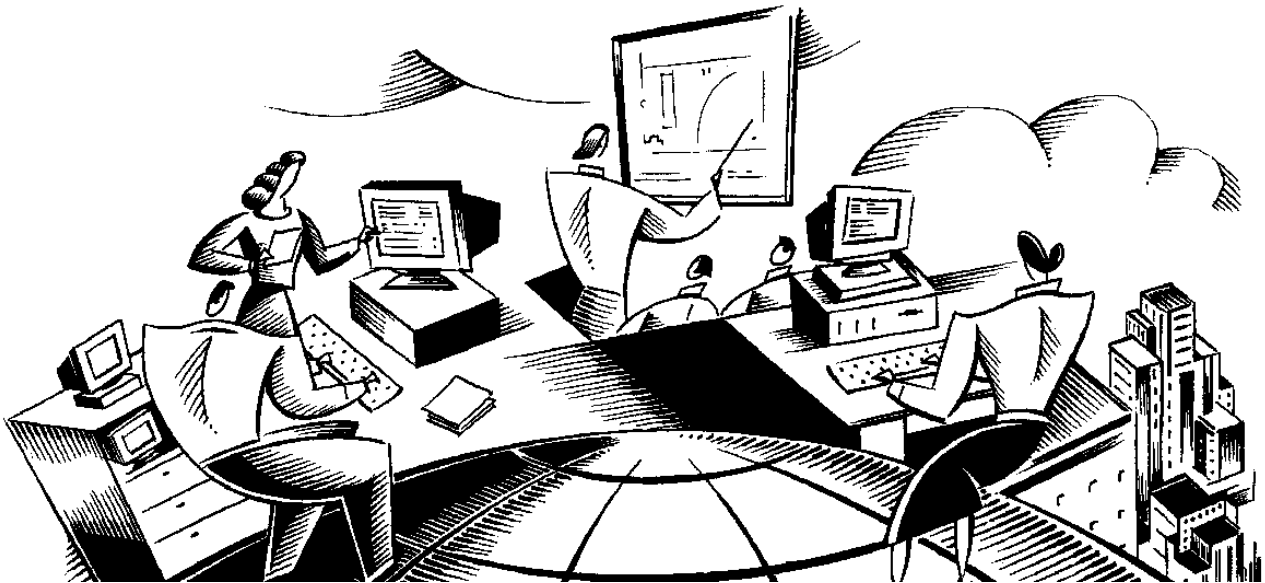
1. How do you look at the tree directory structure for the classification?
 2. How do you ensure that a classification description you create is used for assets, items, and locations that are linked with the classification?
-

NOTES:

NOTES:

Inventory Management Using MXES

Chapter 5: Items



In This Chapter This chapter contains the following topics:

Topic	See Page
Chapter Overview	5-1
The Item Master Application	5-3
Creating Item Records	5-8
Creating a Commodity Group	5-14
Condition Codes	5-17
Applying a Condition Code	5-19
Unit of Measure and Conversion	5-21
Alternate Items	5-25
Adding an Item to a Storeroom	5-27
Assigning a Vendor to an Item	5-30
Rotating Items	5-32
Item Assembly Structures	5-33
Meter Groups	5-35
Creating Service Item Records	5-36
Chapter Summary	5-38
Workshop	5-40
Review Questions	5-41

Chapter Overview

Introduction

In this chapter we will build our master list of items that will be used by our organization(s). An *item* is the basic unit for things that are tracked in inventory. Although we will use several applications, the main application we will use is the Item Master application, which is in the Inventory module.

Chapter Focus

You will learn how to create item records, item assembly structures, and service items.

Learning Objectives

After you complete this chapter you should be able to:

- define *item set* and discuss its uses;
 - identify how and when to use the Item Master application;
 - create new item and service item records;
 - create new units of measure;
 - define conversion rates;
 - create an item assembly structure; and
 - use condition codes and commodity groups.
-

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Chapter Overview continued

Key Definitions

It is important that you understand the following key terms as they apply to inventory:

Term	Definition
Item	The basic unit for things that are tracked in inventory.
Item set	<p>Maximo establishes items at the enterprise level so that multiple organizations can use them. Cost, vendor information, and so forth differ among the organizations, but the overall item definition list (item master) can be shared between all business units. Therefore, items are created in an item set.</p> <p>An item set consists of an item set ID that groups items. Item numbers are unique within an item set.</p> <p>When you are creating an organization, you specify the item set that this organization will use. Only one item set can be specified for an organization. However, multiple organizations can use the same item set.</p>
Rotating item	An individual serialized asset that you define with a common item number, such as a pump or laptop. You designate an item as rotating because you want to know where that specific item exists at all times.

The Item Master Application

Introduction

The Item Master application is used to define items that will be stocked in your storerooms. When you create item records, you can:

- define the main attributes of the item (such as commodity codes; order and issue units; and whether the item is lotted, rotating, or condition-enabled);
 - define any alternate items that can be used in their place;
 - list the condition codes applied to the item;
 - create condition-enabled items to track the value of an item as its condition changes;
 - specify the safety hazards and tax codes that vary by organization;
 - create item kits;
 - add the item to one or more storerooms;
 - define other information related to the item, such as vendors that carry the item, item specifications, and item assembly structures (IAS); and
 - attach documents outside of Maximo that relate to the item.
-

Tabs and Functions

The Item Master application has the following tabs:

Use this tab...	To...
List	Search the database using any combination of available fields.
Item	Enter, view, or modify items, and specify alternate items.
Storerooms	View a read-only list of information about storerooms that stock the item.
Vendors	Enter or view information on one or more vendors for an item, as well as associated information such as manufacturer, model, and catalog number.
Specifications	Enter, view, and modify specification templates containing detailed information specific to a type of inventory item.
Item Assembly Structure	Enter, view, and modify an IAS.

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The Item Master Application continued

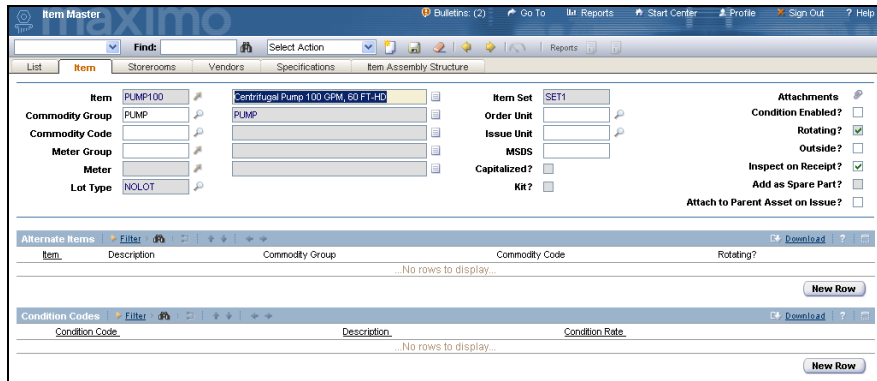
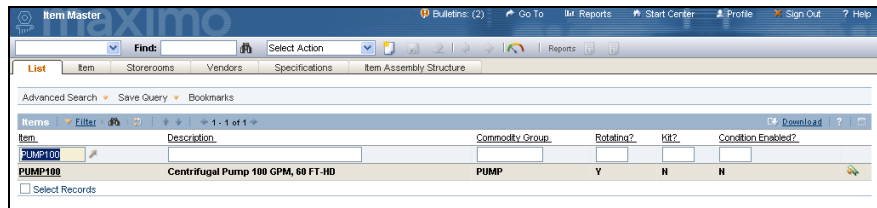
How the Tabs Function



In the following example, we will further investigate the relationships among the Item Master tabs.

Item PUMP100 is a centrifugal pump. We will take a look at all the information contained on the Item Master concerning this pump.

Step	Action
1	From the Inventory module, open the Item Master application. <u>Result:</u> The Item Master application opens to the Search tab.
2	In the Item field, type Pump100 and then click on the Filter Table button  . <u>Result:</u> The Item Pump100 displays on the List tab.
3	Click on the item to view its details. <u>Result:</u> The Item PUMP100 displays on the Item tab.

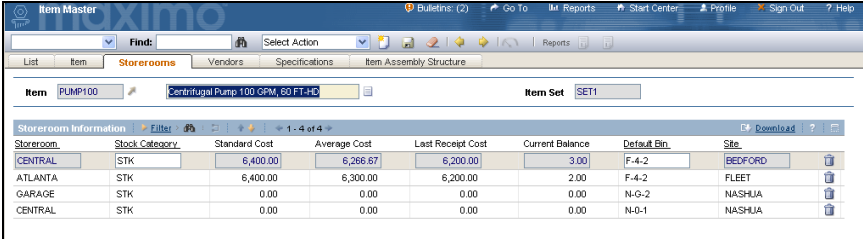
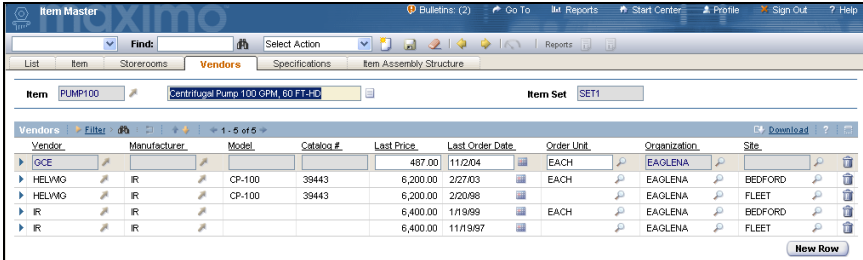


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The Item Master Application continued

How the Tabs Function

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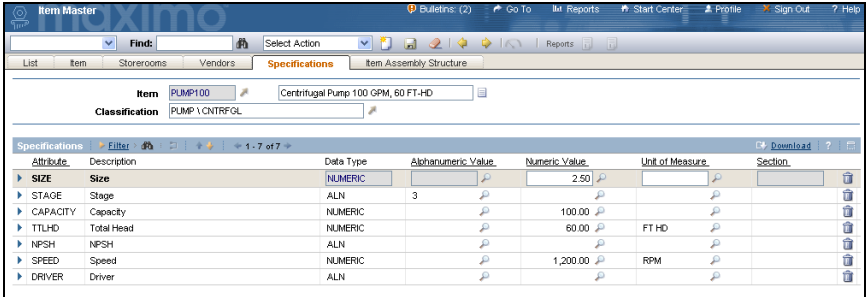
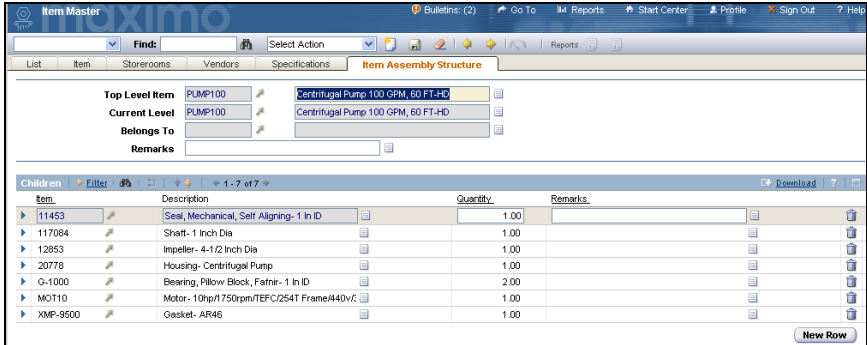
Step	Action
4	<p>Click on the Storerooms tab.</p> <p><u>Result:</u> The Storerooms tab displays and indicates that the Central (Bedford) storeroom has 3 units of this item in stock. The Atlanta Storeroom also has 2 units in stock. The Garage and Central (Nashua) storerooms both have zero balances.</p>  <p>With this tab, you can view information about the current balance of an item at all its locations. You can see balance information down to the bin and/or lot level for each location.</p> <p><u>Note:</u> This balance reflects the total balance of the entire storeroom for this item, regardless of bin location.</p>
5	<p>Click on the Vendors tab.</p> <p><u>Result:</u> The Vendors tab shows you detailed information on each vendor associated with this pump.</p> 

continued on next page

The Item Master Application continued

How the Tabs Function

continued

Step	Action																																																								
6	<p>Click on the Specifications tab.</p> <p><u>Result:</u> The Specifications tab shows you the Specifications information for this pump.</p>  <table border="1" data-bbox="542 772 1403 930"> <thead> <tr> <th>Attribute</th> <th>Description</th> <th>Data Type</th> <th>Alphanumeric Value</th> <th>Numeric Value</th> <th>Unit of Measure</th> <th>Section</th> </tr> </thead> <tbody> <tr> <td>SIZE</td> <td>Size</td> <td>NUMERIC</td> <td></td> <td>2.50</td> <td></td> <td></td> </tr> <tr> <td>STAGE</td> <td>Stage</td> <td>ALN</td> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CAPACITY</td> <td>Capacity</td> <td>NUMERIC</td> <td></td> <td>100.00</td> <td></td> <td></td> </tr> <tr> <td>TTLHD</td> <td>Total Head</td> <td>NUMERIC</td> <td></td> <td>60.00</td> <td>FT HD</td> <td></td> </tr> <tr> <td>NPSH</td> <td>NPSH</td> <td>ALN</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPEED</td> <td>Speed</td> <td>NUMERIC</td> <td></td> <td>1,200.00</td> <td>RPM</td> <td></td> </tr> <tr> <td>DRIVER</td> <td>Driver</td> <td>ALN</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Attribute	Description	Data Type	Alphanumeric Value	Numeric Value	Unit of Measure	Section	SIZE	Size	NUMERIC		2.50			STAGE	Stage	ALN	3				CAPACITY	Capacity	NUMERIC		100.00			TTLHD	Total Head	NUMERIC		60.00	FT HD		NPSH	NPSH	ALN					SPEED	Speed	NUMERIC		1,200.00	RPM		DRIVER	Driver	ALN				
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7	<p>Click on the Item Assembly Structure tab.</p> <p><u>Result:</u> You can view all of the children in the IAS for this item.</p>  <table border="1" data-bbox="555 1228 1416 1392"> <thead> <tr> <th>Item</th> <th>Description</th> <th>Quantity</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>11453</td> <td>Seal, Mechanical, Self Aligning- 1 In ID</td> <td>1.00</td> <td></td> </tr> <tr> <td>117084</td> <td>Shaft- 1 Inch Dia</td> <td>1.00</td> <td></td> </tr> <tr> <td>12853</td> <td>Impeller- 4-1/2 Inch Dia</td> <td>1.00</td> <td></td> </tr> <tr> <td>20778</td> <td>Housing- Centrifugal Pump</td> <td>1.00</td> <td></td> </tr> <tr> <td>G-1000</td> <td>Bearing, Pillow Block, Fatfri- 1 In ID</td> <td>2.00</td> <td></td> </tr> <tr> <td>MOT110</td> <td>Motor- 10hp/1750rpm/TEFC/254T Frame/440v/3</td> <td>1.00</td> <td></td> </tr> <tr> <td>XMP-9500</td> <td>Gasket- AR46</td> <td>1.00</td> <td></td> </tr> </tbody> </table> <p><u>Note:</u> Although you can use any item as the top level of an IAS, you can apply an IAS to assets or operating locations only if the top level is a rotating item.</p>	Item	Description	Quantity	Remarks	11453	Seal, Mechanical, Self Aligning- 1 In ID	1.00		117084	Shaft- 1 Inch Dia	1.00		12853	Impeller- 4-1/2 Inch Dia	1.00		20778	Housing- Centrifugal Pump	1.00		G-1000	Bearing, Pillow Block, Fatfri- 1 In ID	2.00		MOT110	Motor- 10hp/1750rpm/TEFC/254T Frame/440v/3	1.00		XMP-9500	Gasket- AR46	1.00																									
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The Item Master Application continued

Storerooms Tab Inventory items can be kept in one or more storeroom locations. Each item/location has its own bin(s), current balance, physical count, last physical count date, expiration date, and so forth. The Storerooms tab displays information about the item at the specified storeroom location.

Vendors Tab Use this tab to enter or view information on one or more vendors for an item, as well as associated information such as manufacturer, model, and catalog number. An item can have one or more vendors.

Note: The vendors you can view are based on the site where you logged in.

Specifications Tab Use the Specifications tab to associate specific inventory items, such as motors or bearings, with an asset specification template. You can also use this tab to view information about an inventory item, such as attributes. Maximo uses the current inventory number to locate any corresponding specification template for the item.

When the Classification and Subclassification fields are empty, it indicates that the parent maintains the item assembly hierarchy only.

Item Assembly Structure Tab An *item assembly structure* (IAS) is a list of the individual parts and subassemblies that are required components of an item. You can use an IAS as a template, copying it to an asset or location record rather than retyping the parts information.

The IAS is built onto an item record, and the item number at the top of the hierarchy then identifies the IAS. Although you can define an IAS for any item, you use IAS's primarily on rotating and kitted items.

We will learn more about building an IAS later in this chapter.

Creating Item Records

Introduction

When you create an item, you begin by entering information on the Item tab. In this section, you will learn the important terms and fields on this tab.

Item Tab Fields

The following table lists and describes the various fields on the Item tab.

Field	Description
Commodity Group	<p>ITEM.COMMODITYGROUP</p> <p>The Commodity Group that is associated with the item. By associating an item to a commodity group, you can analyze spending by transaction or by vendor based on that commodity group. In addition, commodity groups can be tied to specific GL resource codes to further track spending using resource accounting. See the <i>Finance Manager's Guide</i> for more information.</p>
Commodity Code	<p>ITEM.COMMODITYCODE</p> <p>The Commodity Code associated with the item. In the commodity group you can define a second level of classification: the commodity code. By associating an item to a commodity code you can analyze spending by transaction or by vendor based on that commodity code.</p>
Meter	<p>ITEM.METERNAME</p> <p>Meter associated with the item. Maximo allows multiple meters. Each meter is added to the Meter application, then can be used in Maximo. There are three types of meters: Continuous (e.g., hours in flight, odometer mileage), Gauge (e.g., temperature such as in an oven), and Characteristic (e.g., oil color). Continuous meters are used to prompt work orders by the PM application, while Gauge and Characteristic are used by the Condition Monitoring application.</p> <p>Meters are added to Assets and to Locations. They can be updated using the Enter Meter Readings action in the Assets, Locations, WO, and Quick Reporting applications, and when issuing an item.</p>

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Creating Item Records continued

Item Tab Fields continued

Field	Description
Meter Group	<p>ITEM.GROUPNAME</p> <p>Meter group for the item. Meter groups are used to simply add a group of meters to an asset or location. Rotating items can also have meter groups.</p> <p>For ease of use, when a rotating item is put on an asset, all of the meters in the rotating item's meter group default onto that asset's meter tab.</p> <p>The same is true for locations. When a rotating item is put on a location, all of the meters in the rotating items meter group default to the locations meter tab. Non-rotating items <i>do not</i> use meter groups. Instead, non-rotating items can be associated with a single meter only.</p>
Lot Type	<p>ITEM.LOTTYPE</p> <p>Specifies whether the item is tracked by lot (LOT) or is not a lotted item (NOLOT). LOT is used for an item that is lotted, typically has an expiration date, and is able to be assigned lot numbers upon receipt. NOLOT means that the item does not need to be tracked by lots. Click Select Value to view a list of valid lot types.</p>
Item Set	<p>ITEM.ITEMSETID</p> <p>When organizations are created, an item set is assigned to that organization to use. When you create an item, by default the item is cataloged into the item set associated with the organization to which your default insert site belongs.</p>
Order Unit	<p>ITEM.ORDERUNIT</p> <p>The unit used to order the item. For example, you might order a certain item from the vendor by CASE.</p>
Issue Unit	<p>ITEM.ISSUEUNIT</p> <p>The unit used to issue the item out from the storeroom, as well as to track the number of the item in the storeroom. For example, you order the item from the vendor by CASE, but you issue it out as EACH.</p>

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Creating Item Records continued

Item Tab Fields continued

Field	Description
MSDS	<p>ITEM.MSDSNUM</p> <p>Material Safety Data Sheet (MSDS) number mandated by the Occupational Safety and Health Association (OSHA). The MSDS, which describes product dangers, must be available to purchasers and users of commercial quantities of all hazardous materials.</p>
Capitalized?	<p>ITEM.CAPITALIZED</p> <p>Yes/No check box that specifies whether the item is to be financially accounted for as a capitalized or noncapitalized cost. Selecting this check box indicates that the item is capitalized. An empty check box indicates a noncapitalized item, the default. You can change the setting for this field only by using the Change Capitalized Status action.</p> <p>Capitalized items will always be issued and returned at zero cost, regardless of the cost carried in inventory. Noncapitalized items will be issued and returned at the standard, last, or average cost, as specified in Multisite.</p>
Kit?	<p>ITEM.ISKIT</p> <p>Yes/No check box that specifies whether the ITEM record is a kit record. Selecting this check box indicates that the item is a kit.</p>
Attachments	<p>The field contains a Detail Menu item from which you can View, Add New, or Add from Library any attachments you want to associate with the item.</p>
Condition Enabled?	<p>ITEM.CONDITION</p> <p>Yes/No check box that sets the item as condition enabled. When you check the Condition Enabled? check box, the screen shows the Condition Codes table window under the Alternate Items table window.</p>

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Creating Item Records continued

Item Tab Fields continued

Field	Description
Rotating?	ITEM.ROTATING Yes/No check box indicating whether the item is a rotating asset. Selecting the check box indicates that this is an asset tracked by item number and individual asset number. The default is an empty check box.
Outside?	ITEM.OUTSIDE Yes/No check box indicating consignment goods. Select the check box if the item belongs to a contractor (or vendor) but is stored on site, and is an item for which you expect to be charged for its use. The default is unchecked.
Inspect on Receipt?	ITEM.INSPECTIONREQUIRED Yes/No check box indicating whether to hold items being received out of inventory until the purchase order receipt has been approved.
Add as Spare Part?	ITEM.SPAREPARTAUTOADD Yes/No check box indicating whether Maximo will add this item as an additional spare part for the asset on issue, if the item is not already a spare part. Selecting the check box indicates that this item is an additional spare part.
Attach to Parent Asset on Issue?	Yes/No check box indicating whether Maximo will attach this item to its parent asset when it is issued from the storeroom. Only rotating items can be attached to a parent asset on issue.

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Creating Item Records continued

Exercise Introduction

Items are created in an item set. An item set consists of an item set ID that groups the items. Item numbers are unique within an item set. Many organizations can use the same item set. However, some attributes need to be defined based on an organization; for example, hazard IDs and tax codes. After you create an item, you can assign it the attributes that are maintained at the organizational level using the Item/Org Details action.

In the following exercise we will create an item master record, then add the item to a storeroom. Maximo creates an inventory record when you add the items to a storeroom.

Example Scenario



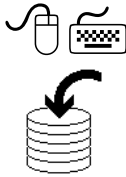
In the example scenario we are going to create items for the three types of condensers we classified earlier in the course. The first thing you will do, as the manager of the Central storeroom, is enter an item (master) record for a Trane 20-ton air-cooled condenser.

Note: Remember that if you are working in a single-database environment, an italicized *xx* might be appended to data entry items. Where applicable, substitute your student number for the *xx*.

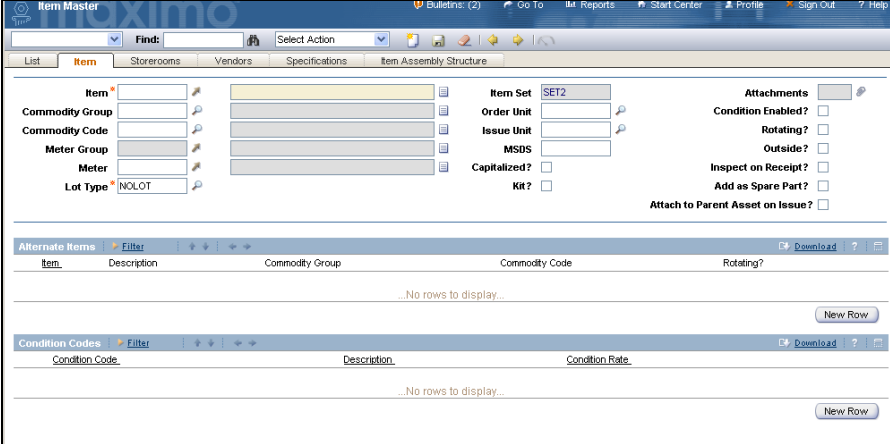
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Creating Item Records continued

Creating a New Item Record



Follow these steps to create a new item record:

Step	Action
1	<p>Click on the New Item button.</p>  <p>Result: The New Item screen opens. Note that the Item Set field for the current organization is automatically populated.</p>
2	<p>Enter the following data:</p> <p>Item TRCONDSR Description Trane 20 Ton Condenser Order Unit EACH Issue Unit EACH</p> <p>Note: It is important to use a consistent naming convention in the Description field. In addition, it is a best practice to customize the application to use automatic numbering for item records.</p>
3	<p>Save the record.</p>

Creating a Commodity Group

Introduction

There might be times when you need to manage items by their commodity codes. In addition, you might have the need to search for items by commodity and restrict purchases to specified commodities. Furthermore, commodity managers are sometimes tasked with reducing overall spending based on a commodity, and to analyze vendor utilization by a part category (commodity code).

For example, you might use a specific vendor primarily for buying electrical supplies. In addition, you want to determine exactly how much of various commodities are purchased so that your discounted catalog prices can be renegotiated for next year. Instead of having to look at an item-by-item report of everything purchased from this vendor (which would also include some non-electrical parts), in Maximo you can see a report of all purchases that were made where the commodity group = electric.

Organizations often give their purchasing managers goals to reduce spending in one or more commodities for which they are responsible. Maximo enables you to track what was spent during a given timeframe so that you can make changes to decrease the amount spent in those areas.

So that you can make better decisions on what kinds of items should be negotiated for contract pricing, Maximo allows you to see the total spent by commodity, as well as the number of and which vendors are supplying certain commodities.

Commodity Groups and Codes

A commodity group is a classification that will be used by purchasing managers, as opposed to the Classification (discussed in Chapter 4) that is used by maintenance managers. Maximo supports two levels of commodities:

- the commodity group, which is a broad classification of an item; and
- the commodity code, which is a second level of classification defined with the commodity group.

By allowing you to associate an item to a commodity group and commodity code you are able to analyze spending by transaction or by vendor based on the commodity group and code.

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Creating a Commodity Group continued

Introduction

If you want to associate your item to a commodity group and code that do not exist, you can create one from the Item Master application by using the **Add/Modify Commodities** action. For this exercise we will create a commodity group for condensers.

Creating a Commodity Group



Follow these steps to create a commodity group:

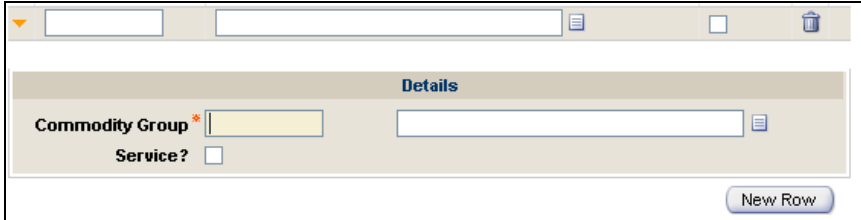
Step	Action
1	<p>From the Item Master application, select Add/Modify Commodity Codes from the Select Action menu.</p> <p>Result: The Add/Modify Commodity Codes screen opens.</p>

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Creating a Commodity Group continued

Creating a Commodity Group

continued

Step	Action
2	<p>Click New Row under the Commodity Groups section.</p> <p><u>Result:</u> The Details section opens.</p> 
3	<p>Enter the following information:</p> <p>Commodity Group CONDSRxx</p> <p>Description Condensers</p>
4	<p>Click New Row in the Commodity Codes section and enter the following information:</p> <p>Commodity Code EVAPxx</p> <p>Description Evaporative Condensers</p>
5	<p>Enter two more commodity codes by clicking New Row button and entering the following information:</p> <p>1. Commodity Code AIRCLDxx</p> <p> Description Air Cooled Condensers</p> <p>2. Commodity Code WATRxx</p> <p> Description Water Cooled Condensers</p>
6	<p>Click OK.</p> <p><u>Result:</u> The commodity groups and codes are saved to the database.</p>
7	<p>You can now enter the commodity group and code in the item that we just created.</p> <p>Enter CONDSRxx in the Commodity Group field.</p> <p>Enter AIRCLD in the Commodity Code field.</p>
8	<p>Click Save.</p>

Condition Codes

Introduction

Rather than having to break out items with various physical conditions as separate items, you can apply conditions to an item in Maximo.

There might be items that your company values based on the condition of the item. For example, if a new pump costs \$100, then a refurbished pump would be 75% of the cost and a repaired pump would be 50% of the cost. The Condition Codes application allows you to maintain the inventory balance of the items at the condition level. Every time the item is issued, transferred, or returned, the user would specify the condition of the item.

Condition codes are defined at the Item Set level.

You use the Condition Codes application to define the condition codes and their default cost percentages or flat costs. You check the Condition Enabled? check box on the Item tab in the Item Master application in order to apply a condition to the item.

Creating a Condition Code



In the following exercise we will create a condition code in the Condition Codes application. Then we will apply our newly created condition code to the items we created in the previous exercise.

Follow these steps to create a condition code:

Step	Action
1	<p>Access the Conditions Codes application in the Inventory module.</p> <p>Result: The Condition Codes screen opens.</p>
2	Click New Row .

continued on next page

Condition Codes continued

Creating a Condition Code



continued

Step	Action
3	Enter the following information: Condition Code NEWxx Description Not used Condition Rate 100%
4	Create two more condition codes using the following information: 1. Condition Code Partialxx Description Partially used Condition Rate 80% 2. Condition Code NonCrtclxx Description Only to be used for non-critical application Condition Rate 30%
5	Click Save . <u>Result:</u> The condition codes now exist in the database.

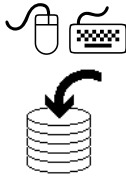
Applying a Condition Code

Applying a Condition Code to an Item

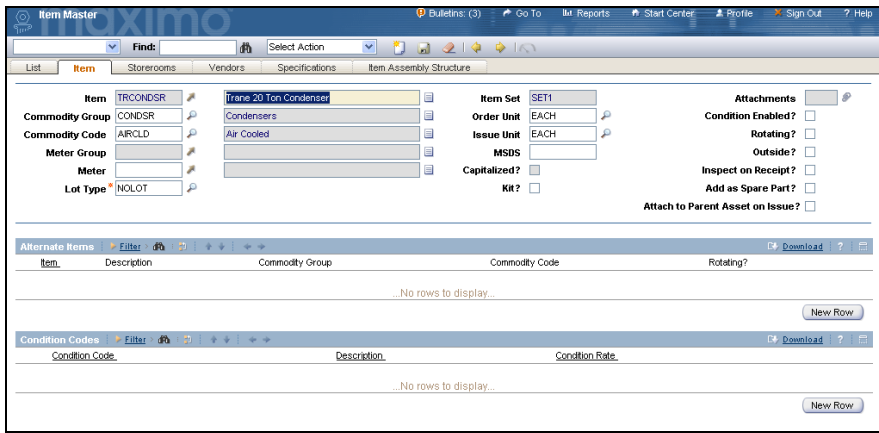
As mentioned before, you check the **Condition Enabled?** check box on the **Item** tab in the **Item Master** application in order to apply a condition to the item. After this is checked, you cannot save the record until you add at least one condition code.

Before saving a condition-enabled item, you must assign at least one condition code to the item. Additionally, one condition code for an item must be designated as a “full-value” condition with a rate of 100%. This condition code is used as the reference point to calculate condition values of other condition codes for this item. Users can assign as many condition codes to an item as they want, however, only one condition code can have a rate (CONDRATE) of 100%.

Applying a Condition Code to an Item



Follow these steps to apply a condition code to an item:


Step	Action
1	<p>In the Item Master application, search for and select the item we created earlier in this chapter: TRCONDSTRxx.</p> <p>Result: The item appears on the Item tab.</p> 
2	Click to select the Condition Enabled? check box.

continued on next page

Applying a Condition Code continued

Applying a Condition Code to an Item

continued

Step	Action
3	In the Condition Codes table window, click New Row .
4	<p>Enter NEWxx in the Condition Code field and press Tab. <u>Result:</u> The Description and Condition Rate fields are automatically populated.</p>  <p>The first condition code you add should be a full-value code with a rate of 100%. Maximo defaults the rate of the condition codes you add, but you can change them if needed. However, you must have one full-value condition code before saving the item.</p>
5	Add the other two condition codes you created in the previous exercise by clicking New Row and entering Partialxx for the first one and NonCrtclxx for the second.
6	<p>Save the record. <u>Result:</u> Maximo associates the condition codes to the item record.</p>

Unit of Measure and Conversion

Introduction

For some items, your next step in setting them up in inventory would be to associate them with a unit of measure and a conversion ratio. A *unit of measure* describes the increment in which you order, issue, or transfer an item or tool; for example, EACH, IN, or ROLL. A *conversion ratio* is a numeric value that relates one unit of measure to another.

If your new items require an order or issue unit that does not exist, you need to create a new unit of measure. If your order and your issue units are not the same, then you need to set up a conversion ratio.

In this section we will take a close look at units of measure and conversion and how they relate to the order and issue units for your items.

Overview

Before adding items to storerooms, you must define all types of units of measure first, and then define the conversion ratios for those units. When you add an item to a storeroom, you must supply a value for the issue unit using the units of measure that you have predefined. Conversion takes place only when you receive or transfer an item into a storeroom. For this reason, Maximo is always converting to the unit at which a storeroom receives and stores the items, which is the same as the storeroom's issue unit.

If the order and issue units do not match when you receive the item into a storeroom or when you transfer it between storerooms, Maximo looks for a conversion ratio to determine the stocking balance for the storeroom. For example, your unit of measure is a case, with a quantity received of 36. However, when you issue the item, you issue it one at a time. In this case, you can define a measure unit of CASE and another measure unit of EACH. You define a conversion ratio from CASE to EACH with a factor of 36. When you receive an order of the item into a storeroom, Maximo converts the received order unit of one CASE into the storeroom's issue unit of 36 EACH.

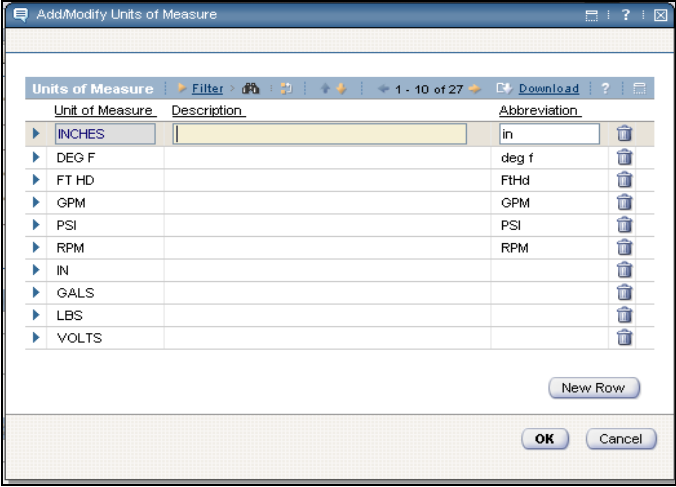
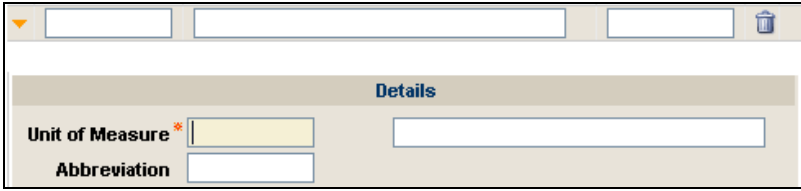
You can also associate a conversion to a specific item, if needed. For example, a CASE for one item can be 24 and for another item it might be 36. However, the numbers 24 and 36 represent the quantity within the case, and not the issue unit. If you receive a case of 24 gaskets, but you issue them in sets of four, then the conversion ratio for CASE in this example would be 6. You can assign the conversion of a CASE of 24 gaskets to be 6, and associate it to the item gaskets. If you receive 36 light bulbs to a case but decide to issue them in sets of two, then the conversion unit would be 18.

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Unit of Measure and Conversion continued

Adding a New Unit of Measure

Follow these steps to add a new unit of measure:

Step	Action
1	In the Item Master application, search for and select item 39882 .
2	<p>From the Select Action menu, highlight Unit of Measure and Conversion and click on Add/Modify Units of Measure.</p> <p><u>Result:</u> The Add/Modify Units of Measure dialog box opens.</p> 
3	<p>Click New Row.</p> <p><u>Result:</u> The Row Details section opens.</p> 
4	In the Unit of Measure field, enter CASE .
5	In the Abbreviation field, enter CASE .
6	<p>Click OK.</p> <p><u>Result:</u> Your order unit is added to the database.</p>

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Unit of Measure and Conversion continued

Conversions

If you insert a new line for a storeroom item in the Maximo purchasing applications (PR line, PO line, and so forth), Maximo uses the specified order unit along with the storeroom's issue unit and checks for an existing conversion. If Maximo finds a conversion for the two units, the conversion field is set to this value. If Maximo cannot find a match, it asks you to specify a conversion ratio. For all direct issue items, Maximo sets the Conversion field to 1 and the field becomes read-only, because you issue these items in the same unit in which you receive them. If the order unit and the issue unit are the same, Maximo also sets the Conversion Factor field to 1. Maximo always sets the conversion ratio to 1 on rotating items, and the field becomes read-only.

Conversions and Receiving

When you receive an item, Maximo takes the received order unit value along with the storeroom's issue unit and checks for an existing conversion. When all receipt lines pass validation, Maximo receives the items and adjusts the storeroom balances accordingly. If an item does not exist in the receiving storeroom, Maximo creates an inventory record for the item and sets the issue unit equal to the received unit.

Conversions and Transfers

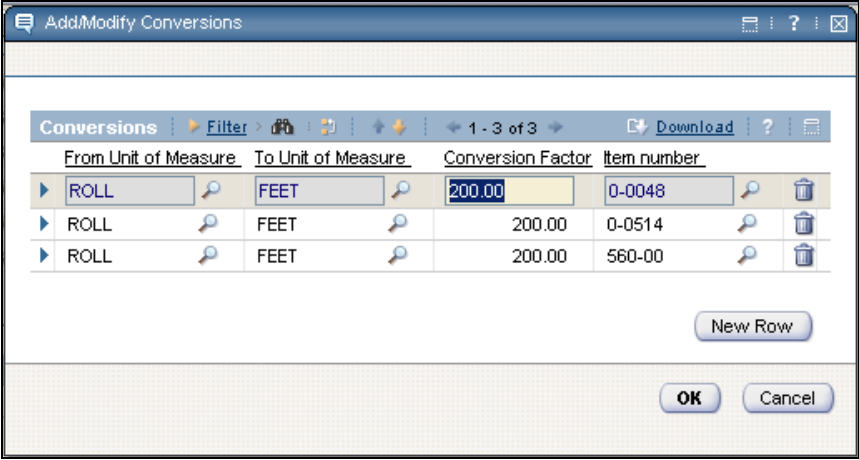
When you transfer an item from one storeroom to another, Maximo compares the transferred item's issue unit to the issue unit of the "transfer to" storeroom and checks for an existing conversion. When you save a transfer, Maximo verifies that all transfer lines with references to storerooms have a conversion value. If a line does not resolve to a predefined conversion value, you must specify one to complete the transaction.

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Unit of Measure and Conversion continued

Adding Conversions

From the Add/Modify Conversions dialog box, you can define or change the conversion ratio between measure units. You can also choose to associate a conversion with a specific item. To add a conversion, follow these steps:

Step	Action
1	<p>From the Select Action menu, highlight Unit of Measure and Conversion and click Add/Modify Conversions.</p> <p><u>Result:</u> The Add/Modify Units of Measure dialog box opens.</p> 
2	<p>Click New Row.</p> <p><u>Result:</u> The Row Details section opens.</p>
3	<p>Enter CASE in the From Unit of Measure field.</p>
4	<p>Enter EACH in the To Unit of Measure field.</p>
5	<p>Enter 24 in the Conversion Factor field. This is the ratio to use when converting from one unit of measure to the other.</p>
6	<p>Enter 39882 in the Item field to associate this conversion to this item.</p>
7	<p>Click OK.</p>

Alternate Items

Introduction

You designate alternate items when you want to use inventory items interchangeably; for example, two different brands of motor oil. If you want two items to be alternates for each other, you must assign each as an alternate for the other. You can add, view, modify, or delete alternate items.

For this exercise we will create a new item. Then we will designate it as an alternate item for the air-cooled condenser we previously created.

Creating an Alternate Item



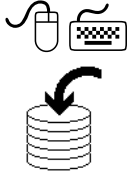
Follow these steps to create an alternate item:

Step	Action
1	<p>In the Item Master application, create a new item with the following specifications:</p> <p>Item CARCONDSRxx Commodity Group CONDSRxx Commodity Code AIRCLDxx Order Unit EACH Issue Unit EACH Condition Enabled? Yes Condition Codes NEWxx, PARTIALxx, NonCrtclxx</p>
2	Find and select the item we previously created: TRCONDSRxx.

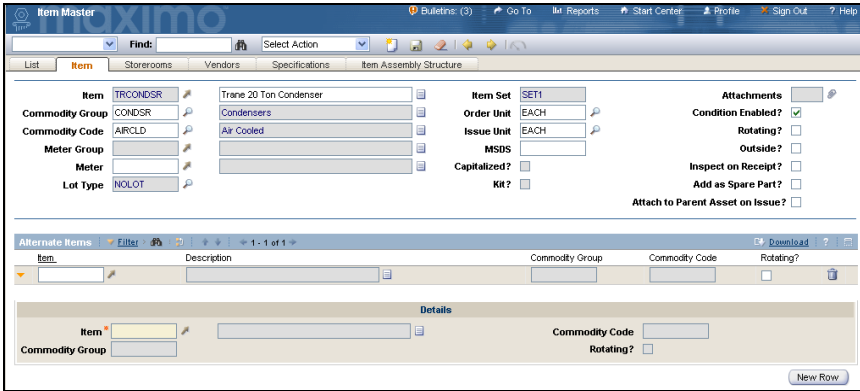
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Alternate Items continued

Creating an Alternate Item



continued

Step	Action
3	<p>From the Item tab in the Alternates table window, click on the New Row button to add an alternate item.</p> <p><u>Result:</u> The row Details section opens.</p> 
4	<p>Enter CARCONDSCRxx in the Item field.</p> <p><u>Result:</u> The other fields are automatically populated.</p>
5	<p>Save the record.</p> <p><u>Result:</u> Maximo adds the alternate items to the item record.</p>

Adding an Item to a Storeroom

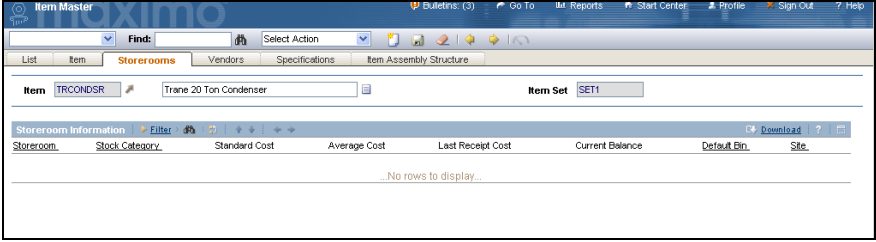
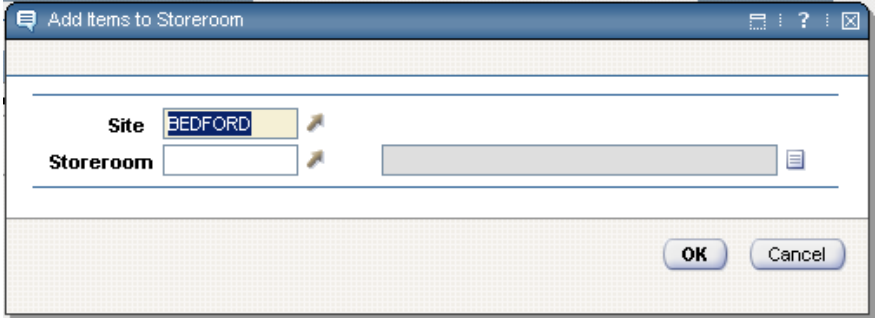
Introduction

In this exercise we will add the item we just created, TRCONDSRxx, to the Storeroom CNTRLXX we created in Chapter 3. While this action must be accomplished from the Item Master application, adding the storeroom information like Current Balance, Standard Cost, and so forth often happens in the Inventory application.

Adding an Item to a Storeroom



Follow these steps to add an item to a storeroom:

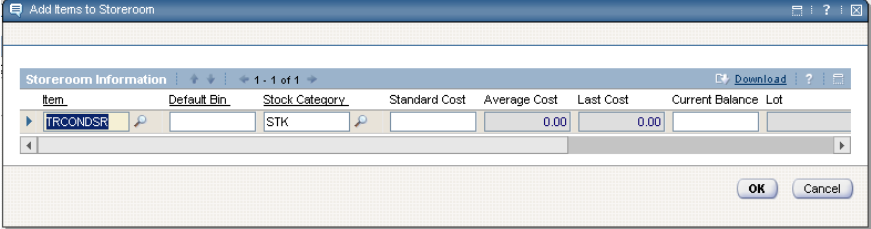
Step	Action
1	<p>With the item TRCONDSRxx open, click on the Storerooms tab.</p> <p><u>Result:</u> Maximo displays the storerooms that stock the item. However, this item is not currently stocked in any storerooms.</p> 
2	<p>From the Select Action menu, select Add Item to Storeroom.</p> <p><u>Result:</u> The Add Item to Storeroom dialog box opens.</p> 

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Adding an Item to a Storeroom continued

Adding an Item to a Storeroom

continued

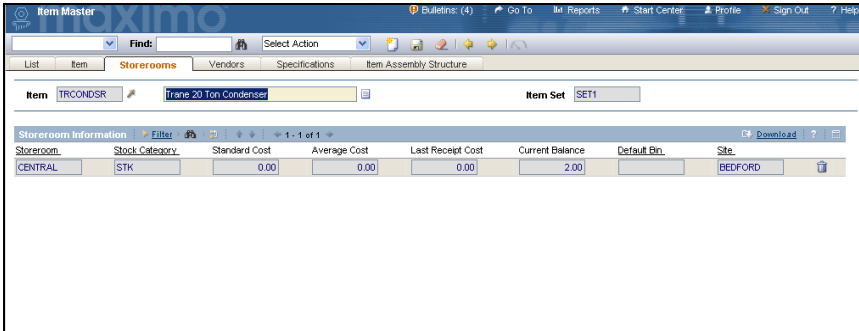
Step	Action
3	<p>Enter CNTRLXX in the Storeroom field, or select it from the Select Value menu.</p> <p><u>Result:</u> Maximo retrieves the storeroom and its description to the dialog box.</p> <p>If appropriate, you can change the site for the storeroom. Maximo defaults the site to your default insert site. If you change the site, Maximo clears the value in the Storeroom field, allowing you to select a storeroom for the site you entered.</p>
4	<p>Click OK.</p> <p><u>Result:</u> Maximo copies the storeroom location to the next Add Items to Storeroom dialog box.</p>  <p><u>Note:</u> If appropriate, you can enter a default bin, standard cost, order unit, and issue unit for the item by clicking on the View Details icon.</p>
5	<p>Enter 2 in the Current Balance field.</p>

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Adding an Item to a Storeroom continued

Adding an Item to a Storeroom

continued

Step	Action																
6	<p>Click OK.</p> <p><u>Result</u>: The Add Item to Storeroom dialog box closes and Maximo adds the item to the storeroom. Maximo displays the storeroom in the list on the Storerooms tab.</p>  <p>The screenshot shows the Maximo Item Master application. The 'Storerooms' tab is active. The item 'Trane 20 Ton Condenser' is selected. Below the item details, there is a table titled 'Storeroom Information' with the following data:</p> <table border="1"> <thead> <tr> <th>Storeroom</th> <th>Stock Category</th> <th>Standard Cost</th> <th>Average Cost</th> <th>Last Receipt Cost</th> <th>Current Balance</th> <th>Default Bin</th> <th>Site</th> </tr> </thead> <tbody> <tr> <td>CENTRAL</td> <td>STK</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>2.00</td> <td></td> <td>BEDFORD</td> </tr> </tbody> </table>	Storeroom	Stock Category	Standard Cost	Average Cost	Last Receipt Cost	Current Balance	Default Bin	Site	CENTRAL	STK	0.00	0.00	0.00	2.00		BEDFORD
Storeroom	Stock Category	Standard Cost	Average Cost	Last Receipt Cost	Current Balance	Default Bin	Site										
CENTRAL	STK	0.00	0.00	0.00	2.00		BEDFORD										

Assigning a Vendor to an Item

Introduction

You can assign vendors to an item record to manage a list of vendors that supply the item. You create vendors in the Companies application, and Maximo stores them at the organization level. Maximo filters the list of available vendors to show only those created for the organizations and company set to which you belong. You can create a list that includes vendors from which you have already ordered, as well as vendors you have not used. You can then use the historical vendor data to compare vendor prices and delivery information.

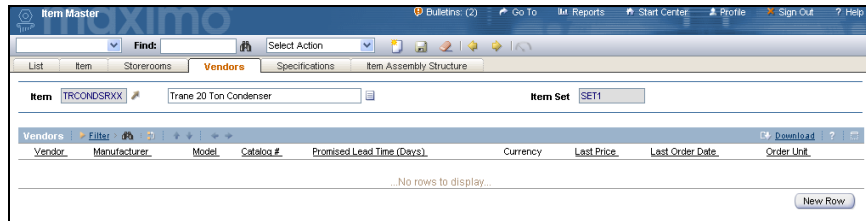
Assigning a Vendor to an Item



For the following exercise, we will associate a vendor with our Trane Air Cooled Condenser.

Follow these steps to associate an item to a vendor:

Step	Action
1	From the Item Master application, open the item TRCONDSRxx.
2	Click the Vendors tab. <u>Result:</u> Maximo displays the vendors that stock the item, if any. In this case, no vendors have been identified.

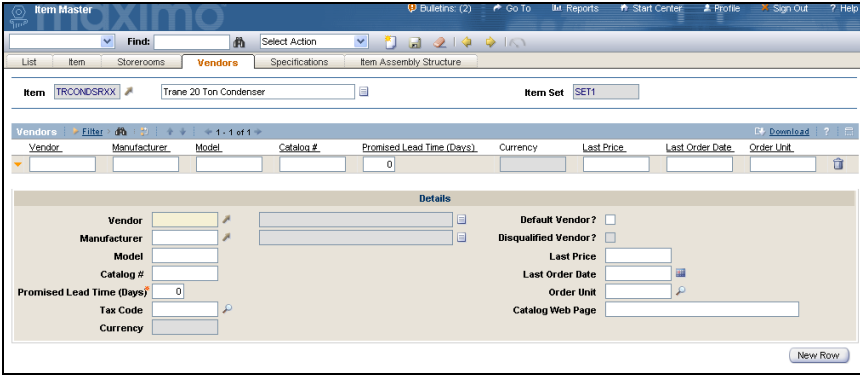
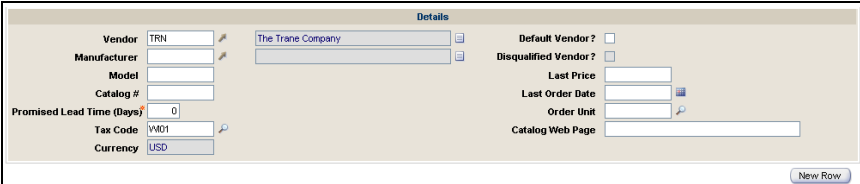


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Assigning a Vendor to an Item continued

Assigning a Vendor to an Item

continued

Step	Action
3	<p>In the Vendors table window, click New Row.</p> <p><u>Result:</u> The Row Details section opens.</p> 
4	<p>In the Vendor field, click on the Detail Menu button and select the Trane Company. (Search for TRN.)</p> <p><u>Result:</u> Maximo returns the vendor's name, description, and currency.</p> 
5	<p>In the Promised Lead Time (Days) field, enter 21 to signify the number of days it takes the vendor to supply the item.</p>
6	<p>You can fill in the other information, but for this exercise, we will leave it blank and click Save to save the record.</p> <p><u>Result:</u> The vendor is associated to the item record.</p>

Rotating Items

Rotating Items

A *rotating item* is an individual serialized asset that you define with a common item number, such as a pump or laptop. You designate an item as rotating when you create it, by checking the **Rotating?** check box.

You use rotating items to manage items that are maintained (i.e., they get repaired). These items typically are larger, more capital-intensive items that exist on the balance sheet. An item cannot be both a spare part and a rotating item, because rotating items are generally maintained, not consumed (or just used once). For example, you can keep gaskets available as spare parts for use on multiple pieces of equipment, but you cannot classify the gaskets themselves as rotating items because they are used once and then thrown away. When an item contains a check in the **Add as Spare Part?** field, and that item is issued to a work order that has an asset record associated to it, or is directly issued to the asset record, the item is added to that asset record's Spare Parts list. When you issue an item marked as Rotating, at the point of transaction, Maximo requires you to identify which specific asset is being issued, not just the item number. Therefore, it cannot automatically identify the rotating item as a spare part to the asset record.

You create a rotating item so that you can know where that specific item exists at all times. For example, you have 10 motor controlled valves of the same model that share the same attributes, and they all have the common item number MOTR-24. However, you want to be able to track each as an individual asset, so you flag the item as rotating when you create it.

After creating the item and adding it to a storeroom, you can either use the Assets application to create the asset records for an item you want to track, or create a purchase order for the rotating item and serialize it when you receive it. When you have associated an asset to a rotating item, Maximo can display and track balances for this item. Maximo tracks a rotating item both by its item number in inventory records and by its unique asset number in assets records.

Item Assembly Structures

Item Assembly Structures

An *item assembly structure* (IAS) is a list of individual parts and/or subassemblies that you need to build a larger item or define the requirements of a location. You use IAS's primarily on rotating and kitted items.

You specify the IAS on an item record, and you use the parent item number associated with the IAS to identify it. You can apply an IAS to a rotating asset or location by specifying the parent item number in the **Item** field on the rotating asset or location record, and then from the **Select Action** menu, selecting **Apply Item Assembly Structure**. While you can use any item as the top level of an IAS, you can apply an IAS to an asset or operating location only if you mark the parent item as a rotating item.

For example, a five-horsepower motor and its constituent parts are used in 10 rotating asset subassembly structures in a plant. Rather than specifying the component parts on all 10 asset records, you can create the asset records and copy the five-horsepower motor IAS to each record. Maximo applies the entire IAS to the asset subassembly structure and/or spare part. Similarly, you could copy the same IAS to the 10 operating locations in the plant that require the motor and its parts.

When you create an IAS for an item, the following rules apply:

- If the parent item is a rotating item, you can add either rotating or non-rotating items to the IAS.
- If the parent item is not a rotating item, you can add only other non-rotating items (spare parts) to the IAS. Rotating items cannot be added to the IAS if the parent item is not a rotating item.
- If the IAS is for an item kit, you cannot include rotating or condition-enabled items.

Creating an Item Assembly Structure



Follow these steps to create an item assembly structure:

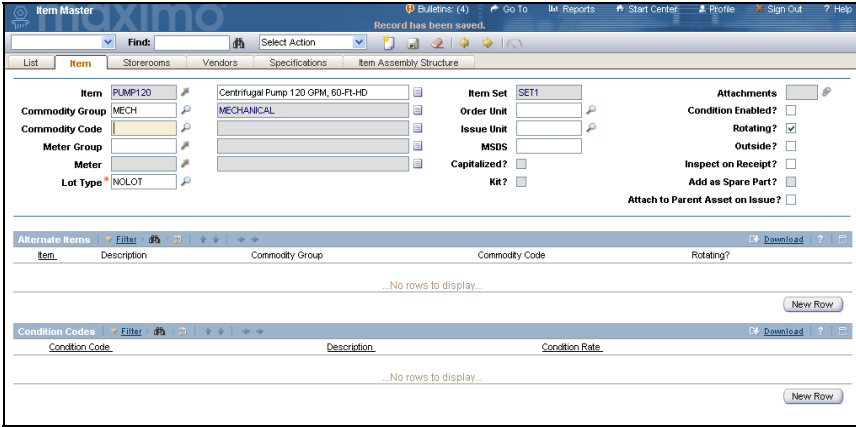
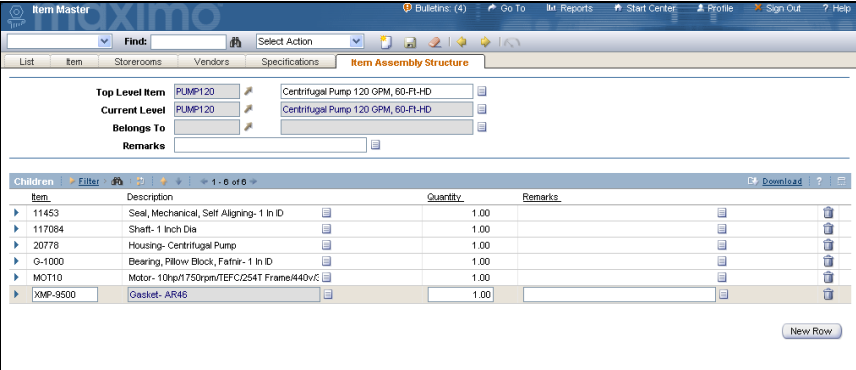
Step	Action
1	Open the Item Master application and insert a new record.
2	Enter the following information: Item: PUMP1xx Description: PUMP, CENTRIFUGAL, 120 GMP, 60 FT-HDXX Commodity Group: MECH Rotating?: [<i>checked</i>]

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Item Assembly Structures continued

Creating an Item Assembly Structure

continued

Step	Action
3	<p>Click Save.</p> <p><u>Result:</u> Your screen should look similar to this:</p> 
4	<p>Click on the Item Assembly Structure tab.</p>
5	<p>Add the following items to the IAS by clicking New Row and entering the following items in the Item field: Item: 11453, 117084, 20778, G-1000, MOT10, XMP-9500</p>
6	<p>Click Save after entering the last item.</p> <p><u>Result:</u> Your screen should look similar to this:</p> 

Meter Groups

Introduction

You can designate a meter group for an item. This attribute pertains to rotating items only. When you associate a meter to the item, it is the meter for which a reading is to be recorded when this item is issued to an asset. Only non-rotating items can be associated to a meter.

Meter Groups

You can create a meter in the Meters application and then use the Item Master application to associate it to an item. There are three types of meters:

- **Continuous** (gallons to date, running time)
- **Gauge** (a temperature reading)
- **Characteristic** (a color, a vibration level)

When you associate a continuous meter to an item and then issue the item to a work order, asset, or location, Maximo updates the associated asset or location record with the quantity that was issued and decreases the storeroom balance of that item. (This happens only when the meter on the item matches the meter on the asset or location.) For example, you might have FUEL defined as a meter and GASOLINE as an item. In Item Master, you can associate the meter FUEL to the item GASOLINE. When you issue fuel for an asset, such as a truck, Maximo decreases the balance of the fuel in the storeroom by the amount issued, and in the Assets application on the Meters tab, you can see that the amount of fuel issued to the truck increases by the issued amount. This allows you to track fuel consumption for that asset.

Creating Service Item Records

Introduction

Use the Service Items application in the Inventory module to insert and maintain services your company uses. These services can be used as part of job plans and work orders, and can be used in the purchasing applications when creating purchase requisitions, purchase orders, and so forth.

The Service Items Application

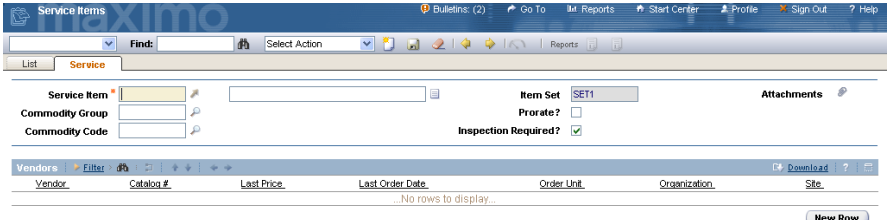
The Service Items application has two tabs. The **List** tab should contain the standard search functionality for the Service Items dataset. The **Service** tab consists of a two-part screen:

- The top section displays information related to the service: Service Item, Item Description, Item Set, Item Set Description, Prorate, Commodity Group, and Commodity Code.
- The bottom section is the Vendors table window. This table window consists of the vendor information associated with the service item.

Creating a Service Item Record



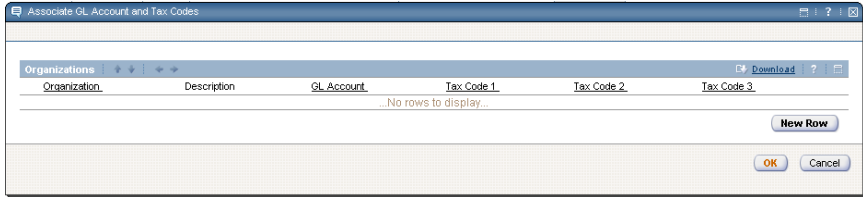
Follow these steps to create a service item:

Step	Action
1	Go to the Service Items application.
2	<p>Click on the New Service Item icon.</p> <p>Result: The Service Item screen opens.</p>  <p>Note: The Item Set is automatically populated. You can change this default to another item set if you have the proper permissions.</p>
3	<p>In the Service Item field, enter TRGxx; in the Description field, enter TRAININGxx.</p> <p>Although you can add a Commodity Group and Code, for this exercise, we will not. If the Prorate? check box is checked, then Maximo will always default the Prorate Service flag to True on PRs, RFQs, POs, and invoices for this service.</p>
4	Save the record.

Creating Service Item Records continued

Associating GL Account and Tax Codes with the Service Items

You can associate and maintain tax codes and GL accounts for a service item. To do this, complete the following steps:

Step	Action
1	<p>With the service item open, select Service Item/Organization Details from the Select Action menu.</p> <p><u>Result:</u> The Associate GL Account and Tax Codes dialog box opens.</p> 
2	<p>Enter a new row to insert a record associating a GL account and tax codes to the current item and item set in an organization.</p> <p>Use the following information:</p> <p>Organization EAGLENA GL Account 6200-300-300 Tax Code MA</p>
3	<p>Click OK to close the dialog box and update the record with the GL account information.</p>

Chapter Summary

Creating Items

You use the Item Master application to define items that are stocked in your storerooms. When you create an item, you can use the Item Master application to define the item's commodity codes, order and issue units, lot type, condition codes, and tax codes. In addition, you can identify the item as rotating and/or condition-enabled, define any alternate items that can be used in its place, define vendors, and create an item assembly structure.

After you have created the item, you use the Add Item to Storeroom action from the Select Action menu to add the item to one or more storerooms.

Commodity Groups and Codes

A *commodity group* is a broad classification of an item. A *commodity code* is a second level of classification defined with the commodity group. Commodity groups and codes can be used to track overall spending based on a commodity, and to analyze vendor utilization by a part category (commodity code).

Condition Codes

Maximo allows you to apply conditions to an item. By using the Condition Codes application, you can maintain the inventory balance of the items at the condition level. Every time the item is issued, transferred, or returned you can specify the condition of the item.

Condition codes are defined at the item set level.

Adding Items to a Storeroom

The Storerooms tab displays information about the item at the specified storeroom location. You can add an item to a storeroom by using the Add Item to Storeroom action.

Assigning a Vendor to an Item

With the Vendors tab, you can assign vendors to an item record to manage a list of vendors that supply the item. You can add vendors from which you have already ordered, as well as vendors you have not used. You can then use the historical vendor data to compare vendor prices and delivery information to make better purchasing decisions.

continued on next page

Chapter Summary continued

Rotating Items

A *rotating item* is an individual serialized asset that you define with a common item number. You create a rotating item so that you can know where that specific item exists at all times.

When you have associated an asset to a rotating item, Maximo can display and track balances for this item. A rotating item is tracked both by its item number in inventory records and by its unique asset number in assets records.

An item cannot be both a spare part and a rotating item.

Item Assembly Structures

An *item assembly structure (IAS)* is a list of individual parts and subassemblies that you need to build an item or define the requirements of a location. Item assembly structures are used primarily on rotating and kitted items.

Meter Groups

When you associate a meter with an item, it is the meter for which a reading is to be recorded when this item is issued to an asset. Only non-rotating items can be associated with a meter.

Service Item Records

You use the Service Items application to insert and maintain services that your company uses. Items are created at the item set level. The Service Items application is in the Inventory module.

Workshop

Exercises

In the following exercises you will practice some of the skills you learned in this chapter.

Objective

The objective of this workshop is to ensure that you are comfortable with creating new items and alternate items, adding items to a storeroom, assigning vendors to an item, applying an IAS, and creating a service item record.

Exercise 1: Items



In this exercise scenario, your company now stocks motor oil (Pennzoil). As the manager of the Central storeroom, you will enter an item (master) record for Pennzoil motor oil.

1. Create a new item. Enter the following data:

<u>Field</u>	<u>Value</u>
Item	MP-OIL-1 (or MP-OIL-1xx)
(Description)	Motor Oil, Pennzoil 10W-40 (xx)
Commodity Group	MOTOR
Order Unit	BOX
Issue Unit	EACH

Note: Remember that if you are working in a single database environment, an italicized *xx* may be appended to data entry items.

Where applicable, substitute your student number for the *xx*.

2. Add the item to storeroom **CENTRAL** in Bedford.
 3. Enter **1.29** as the Standard Cost.
 4. Enter **12** as the Current Balance.
-

Exercise 2: Items



Be sure to read *all* the steps before you begin this exercise.

1. Create a new item. Make it one that you would have in a storeroom at your organization.
 2. Add a new commodity group, then add it to your item.
 3. Create an alternate item for the new item.
 4. Add it to storeroom **CENTRAL** in Bedford.
 5. Assign a vendor to the item. (You can pick any vendor you want.)
 6. Create an item assembly structure for the item.
-

Review Questions

Review Questions

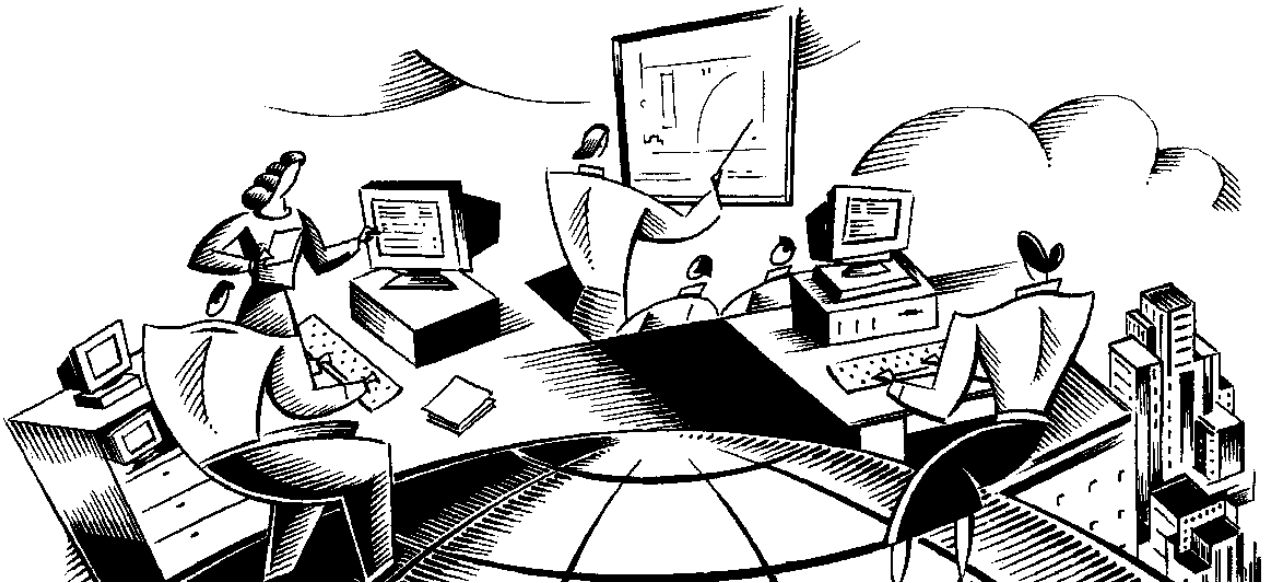


1. What is the difference between classifications (from the previous chapter) and commodity codes?
 2. How can you track individual items so that you know where they are at all times?
 3. Why can't you associate a rotating item with a meter?
-

NOTES:

Inventory Management Using MXES

Chapter 6: Tools



In This Chapter This chapter contains the following topics:

Topic	See Page
Chapter Overview	6-1
The Tools Application	6-2
The Tool Tab	6-4
Creating Tool Records	6-7
Adding a Tool to a Storeroom	6-8
Assigning a Vendor to a Tool	6-10
Creating an Asset Record for a Tool	6-12
Stocked Tools	6-13
Viewing Tool Availability	6-18
Chapter Summary	6-19
Workshop	6-20
Review Questions	6-21

Chapter Overview

Introduction

In Maximo, tools are managed similarly to inventory items. In this chapter we will use the Tools and the Stocked Tools applications to manage our tools.

Chapter Focus

In this chapter you will learn how to use the Tools and Stocked Tools applications.

Learning Objectives

This chapter is organized in such a way that you learn about the Inventory functionality of Maximo as you perform the following actions:

- Create new tool records
 - Add tools to a storeroom
 - Transfer a tool
 - View tool availability
-

The Tools Application

Introduction

The Tools application is used to create tools, and works much like the Item Master application. In the Tools application you can:

- define the main attributes of the tool (such as commodity codes, issue units, and whether the tool is lotted, capitalized, or rotating);
 - define any alternate tools that can be used in a tool's place;
 - add the tool to one or more storerooms;
 - define other information related to the tool, such as vendors that carry the tool, tool specifications, and MSDS number; and
 - attach documents outside of Maximo that relate to the tool.
-

Tabs and Functions

The Tools application has five tabs:

Use this tab...	To...
List	Search the database using any combination of available fields.
Tool	Enter, view, or modify tools, and specify alternate tools.
Storerooms	View a read-only list of information about storerooms that stock the tool.
Vendors	Enter or view information on one or more vendors for a tool, as well as associated information such as manufacturer, model, and catalog number.
Specifications	Enter, view, and modify specification templates containing detailed information specific to the tool.

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The Tools Application continued

Storerooms Tab

Tools can be kept in one or more storeroom locations. Each tool has its own bin(s), current balance, physical count, last physical count date, expiration date, and so forth. The **Storerooms** tab displays information about the item at the specified storeroom location.

Vendors Tab



Use the **Vendors** tab to enter or view information on one or more vendors for a tool, as well as associated information such as manufacturer, model, and catalog number. A tool can have one or more vendors.

Note: The list of vendors you can view is filtered based on your security profile. For example, if you have access to Site A and Site B in Org A, you would see all of the vendor rows for both Site A and Site B, and additionally any vendor rows that have Org A but the site is null.

Specifications Tab

Use the **Specifications** tab to associate specific tools with an asset specification template. You can also use this tab to view information about a tool. Maximo uses the current inventory number to locate any corresponding specification template for the tool.

The Tool Tab

Introduction

As with items, tools are established at the enterprise level in an item set. However, you can use the Tool/Organization Details action to assign the following tool attributes by organization:

- Tool Rate
- GL Account
- Control Account
- Tax Code 1-5

When you create a tool, you begin by entering information on the Tool tab. In this section, you will learn the important terms and fields on this tab.

Tool Tab Fields

The following table lists and describes the various fields of the Tool tab.

Field	Description
Tool	TOOLITEM.ITEMNUM The identifier for/name of the tool.
Commodity Group	TOOLITEM.COMMODITYGROUP The commodity group associated with the tool. By associating a tool to a commodity group, you can analyze spending by transaction or by vendor based on that commodity group.
Commodity Code	TOOLITEM.COMMODITYCODE The commodity code associated with the tool. Within the commodity group you can define a second level of classification: the commodity code. By associating a tool to a commodity code you can analyze spending by transaction or by vendor based on that commodity code.
Meter Group	TOOLITEM.GROUPNAME Meter group for the tool. This attribute pertains to rotating tools only.
Meter	TOOLITEM.METERNAME Meter associated with the tool.

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The Tool Tab continued

Tool Tab Fields continued

Field	Description
Item Set	<p>TOOLITEM.ITEMSETID</p> <p>When organizations are created, an item set is assigned to that organization to use. When you create a tool, by default the tool is cataloged into the item set associated with the organization to which your default insert site belongs.</p>
Lot Type	<p>TOOLITEM.LOTTYPE</p> <p>Specifies whether the tool is tracked by lot (LOT) or is not a lotted item (NOLOT). LOT is used for an item that is lotted, typically has an expiration date, and is able to be assigned lot numbers upon receipt. NOLOT means that the tool does not need to be tracked by lots. Click Select Value to choose from a list of valid lot types.</p>
Issue Unit	<p>TOOLITEM.ISSUEUNIT</p> <p>The unit used to issue the tool out from the storeroom as well as track the number of the tool in the storeroom. For example, you order the tool from the vendor by CASE, but you issue it out as EACH.</p>
MSDS	<p>TOOLITEM.MSDSNUM</p> <p>Material Safety Data Sheet (MSDS) number mandated by the Occupational Safety and Health Association (OSHA). The MSDS, which describes product dangers, must be available to purchasers and users of commercial quantities of all hazardous materials.</p>

continued on next page

The Tool Tab continued

Tool Tab Fields continued

Field	Description
Capitalized?	<p>TOOLITEM.CAPITALIZED</p> <p>Check box that indicates that the tool is to be financially accounted for as a capitalized cost. This check box is always checked and is never editable.</p>
Rotating?	<p>TOOLITEM.ROTATING</p> <p>Yes/No check box. A tool can be flagged as Rotating. This means that the tool exists as an individual serialized asset and operates under the same functionality as rotating inventory items.</p>
Outside?	<p>TOOLITEM.OUTSIDE</p> <p>Yes/No checkbox indicating that a tool is a consignment or vendor-managed tool. The consignment functionality dictates the usage of this flag.</p>
Inspect on Receipt?	<p>TOOLITEM.INSPECTIONREQUIRED</p> <p>Yes/No check box indicating whether to hold tools being received out of inventory until the purchase order receipt has been approved.</p>

Alternate Tools

The middle section of the Tool tab is used to define alternate tools. *Alternate tools* are other tools that can be used in place of the current tool record. The table window functions exactly the same as the “Alternate Items” table window in the Item Master application, except you can only insert rows for Items of Item Type = TOOL.

Qualifications

The bottom section of the Tool tab is used to define a list of the qualifications needed for someone to use the tool.

Creating Tool Records

Exercise Introduction

In the following exercise we will create a tool record and then we will assign the tool to a storeroom. We will also assign it a vendor that does not exist in the system, so you will learn how to create a new vendor.

Example Scenario



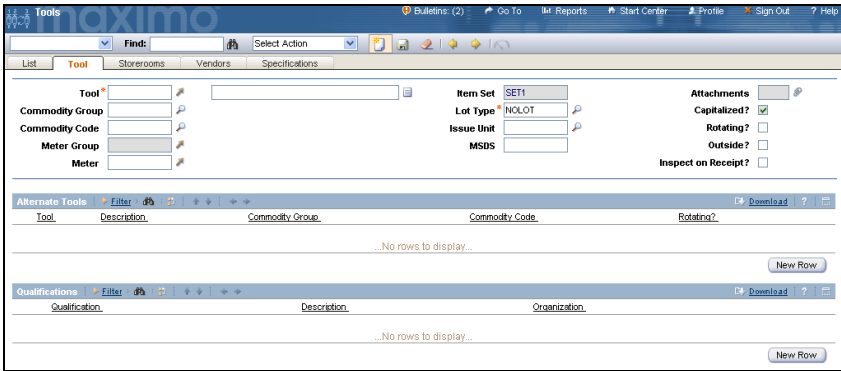
In the example scenario we are going to create a tool record for a 36-inch Jorgensen Master Bar Clamp.

Note: Remember that if your learning group is working in a single-database environment, an italicized *xx* may be appended to data entry items to maintain the unique tool code. Where applicable, substitute your student number for the *xx*.

Creating a New Tool Record



To create a new tool, follow these steps:

Step	Action
1	<p>Click New Tool.</p> <p><u>Result:</u> The New Tool screen opens. Note that the Item Set field for the current organization is automatically populated.</p> 
2	<p>Enter the following data:</p> <p>Tool JRMBC8036xx</p> <p>Description Clamp, Bar, 36 inch</p> <p>Issue Unit EACH</p>
3	<p>Save the record.</p>

Adding a Tool to a Storeroom

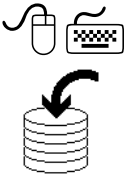
Introduction

You add tools to a storeroom in the following ways:

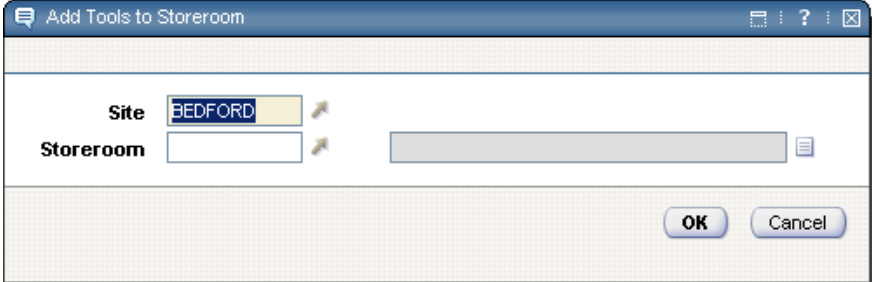
- In the Tools application via the Add Tools to Storeroom action
- By transferring a tool from one storeroom to another using the Stocked Tools or Issues and Transfers application
- By returning a tool
- By purchasing and receiving a tool via the Maximo purchasing and receiving processes

In this exercise we will add the tool we just created to the Storeroom CNTRLxx we created in Chapter 3. We will do this via the Add Tools to Storeroom action.

Adding a Tool to a Storeroom



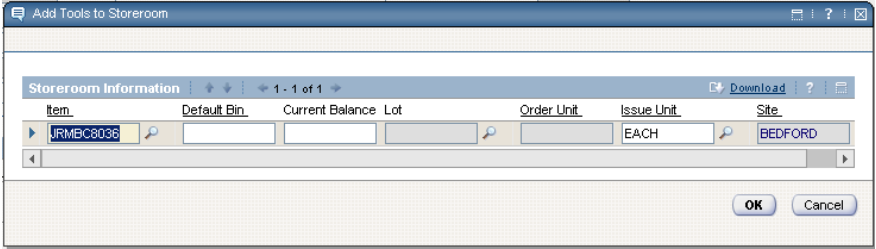

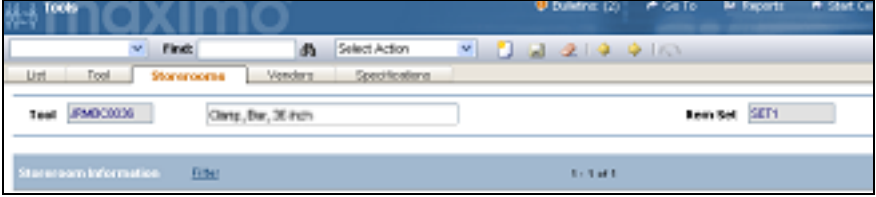
To add the tool to a storeroom:

Step	Action
1	<p>With the tool record open, select Add Tools to Storeroom from the Select Action menu.</p> <p><u>Result:</u> The Add Tools to Storeroom dialog box opens.</p> 
2	<p>Enter CNTRLxx in the Storeroom field, or select it from the Select Value menu.</p> <p><u>Result:</u> Maximo retrieves the storeroom and its description to the dialog box.</p>

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Adding a Tool to a Storeroom continued

Adding a Tool to a Storeroom continued

Step	Action
3	<p>Click OK.</p> <p><u>Result:</u> Maximo copies the storeroom location to the next Add Tools to Storeroom dialog box.</p> 
4	<p>Enter 3 in the Current Balance field.</p> <p> <u>Note:</u> You can also enter this information from the Stocked Tools application.</p>
5	<p>Click OK.</p> <p><u>Result:</u> The Add Tools to Storeroom dialog box closes and Maximo adds the item to the storeroom. The storeroom will now be displayed in the list on the Storerooms tab.</p> 

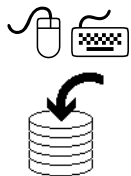
Assigning a Vendor to a Tool

Introduction

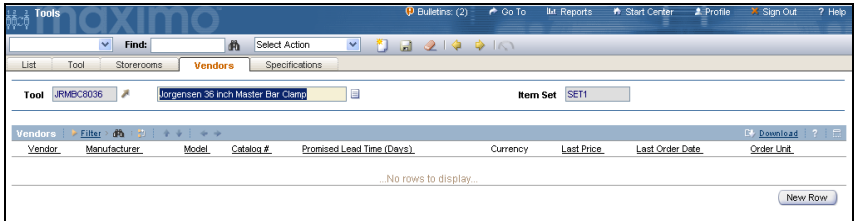
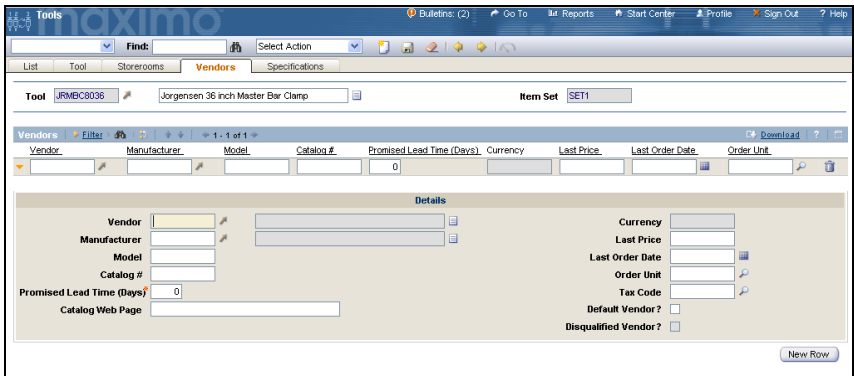
You can assign vendors to tools to manage a list of vendors that supply the tool. You create vendors in the Companies application. Maximo filters the list of available vendors to show only those created for the organizations and company set to which you belong.

In this exercise we will associate a vendor with the tool we just created.

Assigning a Vendor to a Tool



To assign a tool to a vendor, follow these steps:

Step	Action
1	<p>With the tool record open, click the Vendors tab.</p> <p>Result: Maximo displays the vendors that stock the tool, if any. In this case, no vendors have been identified.</p> 
2	<p>In the Vendors table window, click New Row.</p> <p>Result: The Row Details section opens.</p> 

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Assigning a Vendor to a Tool continued

Assigning a Vendor to an Item

continued

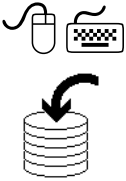
Step	Action
3	Select Select Value from the Vendor field's Detail Menu button. <u>Result:</u> The Select Value screen opens.
4	Search for and select Franklin Supply Corp.
5	In the Promised Lead Time (Days) field, enter 7 to signify the number of days it takes the vendor to supply the tool.
6	You can fill in the other information, but for this exercise, we will leave it blank. Click Save to save the record. <u>Result:</u> The vendor is associated to the tool record.

Creating an Asset Record for a Tool

Introduction

You create an asset record for a tool in the Assets application. In this exercise we will first create a rotating tool, then create an asset record for the tool.

Creating an Asset Record for a Tool



To create an asset record for a tool, complete the following steps:

Step	Action
1	Create a rotating tool. Name it HAM22xx and give it a description of Industrial Grade Phillips Hammer and an Issue Unit of EACH.
2	Check the Rotating? check box.
3	Add the tool to storeroom CENTRAL in Bedford.
4	Go to the Assets application.
5	Click on the Create New Asset icon.
6	Enter 14566xx, the number for the asset in the Asset field.
7	Enter HAM22xx in the Rotating Item field.
8	Enter a serial number in the Serial# field.
9	Save the record.

Stocked Tools

Introduction

Inventoried items are managed in the Inventory application. Similarly, tools require the functionality to be managed in a storeroom as inventoried tools. This is done in the Stocked Tools application.

Example: At XYZ Inc. all tools are stored and managed in a tool storeroom (tool crib). A technician requires a wrench to complete a work assignment, so the technician enters the tool and the storeroom from which the tool will be issued from on the work order's plan. Consequently, the tool crib manager issues this tool to the technician for use. The work order GL then gets charged for this tool cost (rate * usage). Finally, the tool can be returned to the storeroom after the work is completed.

The Stocked Tools Application

The Stocked Tools application allows you to do the following:

- View information about a stocked tool, including balance summaries, balance details, inventory transactions, and issue history
 - Add new bin location and balance information for a stocked tool
 - Associate vendors with a tool and analyze vendor data
 - View a list of all assets associated with a rotating tool
 - Add or modify where a rotating tool is used as a spare part (child tool) on a parent asset
 - View a tool's availability by location, lot, PR and PO, with alternates, and reserved
 - Issue, return, or transfer a stocked tool
 - Adjust a tool's physical count and current balance
-

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Stocked Tools continued

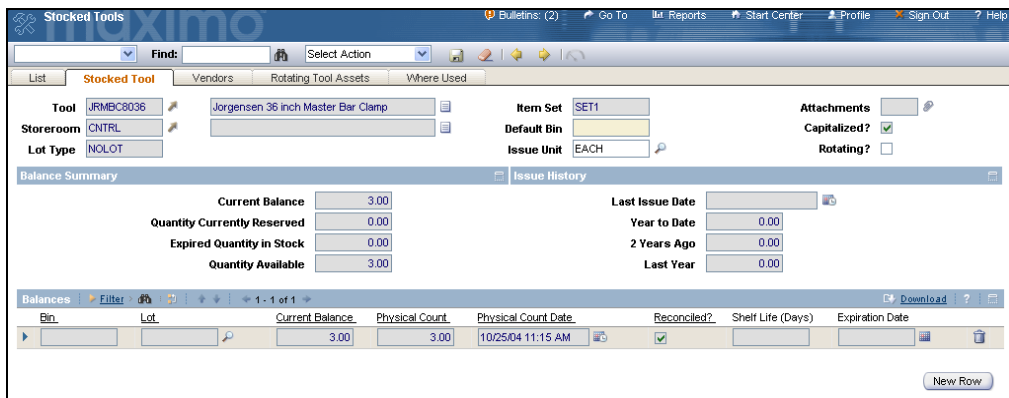
Stocked Tools Tabs

The Stocked Tools application has five tabs:

- **List:** View the list of stocked tools or search the database using any combination of available fields.
- **Stocked Tool:** View or modify the details of a stocked tool, including its balance information and issue history.
- **Vendors:** Add, modify, delete, or view information about vendors that carry the tool.
- **Rotating Tool Assets:** View the list of assets associated with a rotating tool.
- **Where Used:** View, add, or modify which parent assets the stocked tool is used on as a spare part.

The Stocked Tool Tab

You use the **Stocked Tool** tab to view information about a stocked tool, such as balance information and issue history. For the tool and storeroom you select, you can either add a new bin with a current balance and physical count, or manage existing bins for this tool by adjusting balances and physical counts, and reconciling balance data.



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Stocked Tools continued

The Vendors Tab

You use the **Vendors** tab to manage a list of vendors that supply the tool. The list can include vendors from which you have already ordered, as well as those you have not used. You can use the historical vendor data to compare vendor prices and delivery information.

The Vendors tab contains the tool name, tool description, and the item set. In the Vendors table window, you can associate a new vendor, modify certain fields for existing vendors, or view tool-specific information from each vendor.

Rotating Tool Assets Tab

You use the **Rotating Tool Assets** tab to view all instances of the rotating tool. An *instance* is a unique asset that is associated with the rotating tool. After you create a tool and mark it as rotating, you must add it to a storeroom and create at least one asset record before you can view its information on the Rotating Tool Assets tab.

The Rotating Tool Assets tab contains the tool name, tool description, and item set. In the Associated Assets table window, you can view information for each asset associated with the rotating tool.

Where Used Tab

You use the **Where Used** tab to indicate the assets on which a tool is used as a spare part (or child tool). If within the Assets application you use the Spare Parts tab to associate tools to the asset, you can view them on this tab in the Stocked Tools application.

For non-rotating tools, you can enter an asset on which the tool is used, and Maximo lists the tool on the Spare Parts tab for that asset. When you enter an asset number, Maximo displays the asset's description and allows you to edit the quantity or add remarks, if needed.

The Where Used tab contains the tool name, tool description, and item set. In the Where Used table window, you can view, add, modify, or delete the quantity and remarks for each asset on which the tool is used.

Note: You cannot use a rotating tool as a subassembly on an asset.



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Stocked Tools continued

Stocked Tools Actions

The Select Action menu of the Stocked Tools application contains the following actions:

Action Name	Function
Issue Current Tool	<p>Allows you to issue tools to work orders that have specified the tool on the job plan.</p> <p>You can also issue a stocked tool from a storeroom directly to a labor code so they can perform work.</p> <p>When you issue a tool from the Stocked Tools application, you must specify to whom you are issuing the tool. You can optionally specify the requisition, work order, asset, or location for which the tool is to be used.</p>
Transfer Current Tool	<p>Allows you to transfer stocked tools from one storeroom to another or between bins within the same storeroom, including cross-site transfers within an organization if you have access to those storerooms.</p> <p>You can only transfer non-rotating tools in the Stocked Tools application. Rotating tools must be transferred using the Issues and Transfers or the Assets applications.</p> <p>To transfer tools to a courier or labor location, use the Issues and Transfers application.</p>
View Tool Availability	<p>Allows you to view read-only information regarding how many stocked tools are available by location, by lot, that exist on purchasing requests and orders, or that are reserved.</p>

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Stocked Tools continued**Stocked Tools
Actions**

continued

Action Name	Function
View Vendor Analysis	Provides transactional information, such as promised date versus actual receipt date, based on purchasing and receiving data.
View Inventory Transactions	Allows you to view the inventory transactions related to the current inventory record.
Adjustment	Allows you to view Zero Year to Date Quantities and Reconcile Balances. Additionally, you can perform Physical Count and Current Balance Adjustments.
Unit of Measure and Conversions	Add/Modify Units of Measure and Add/Modify Conversions.
Attachment Library/Folder	Allows you to manage your library and folders.
Run Reports	Allows you to run relevant tool reports.

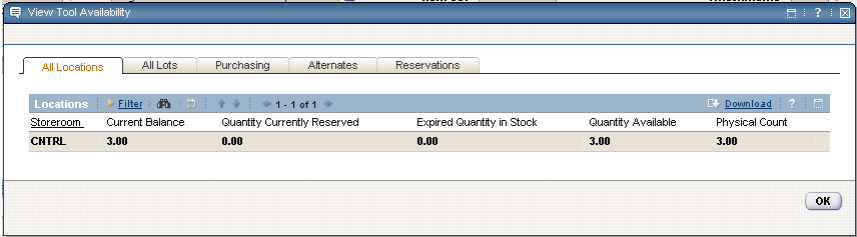
Viewing Tool Availability

Introduction

As mentioned earlier, you can view read-only information regarding how many stocked tools are available. You can also view the availability of any alternate tools that can be used in this tool's place. (You designate alternate tools in the Tools application.)

Viewing Tool Availability

To view tool availability, complete the following steps.

Step	Action
1	From the Stocked Tools application, display the tool record we created (JRMBC8036xx).
2	From the Select Action menu, select View Tool Availability . <u>Result:</u> The View Tool Availability dialog box opens. 
3	Click the All Locations tab to view how many tools are available in any storeroom.
4	Click the All Lots tab to view how many tools are available in each lot.
5	Click the Purchasing tab to view the quantity of tools on order from all outstanding approved and unapproved purchase requisitions (PRs) referenced in the purchase orders, as well as approved and unapproved purchase orders (POs).
6	Click the Alternates tab to view how many alternate tools are available for this tool.
7	Click the Reservations tab to view information about the tools that are currently reserved, if any.
8	When you are finished reviewing the availability data, click OK . <u>Result:</u> The View Tool Availability dialog box closes.

Chapter Summary

The Tools Application

The Tools application is used to define tools that are stocked in your storerooms. The Tools application operates in much the same way as the Item Master application, but is used for tools rather than items.

Creating Tools

When you create a tool, you can use the Tools application to define the tool's commodity codes, issue units, and lot type. In addition, you can identify the tool as rotating, define any alternate tools that can be used in its place, define vendors, and define the qualifications necessary to use the tool if necessary.

After you have created the tool, you use the Add Tool to Storeroom action from the Select Action menu to add the tool to one or more storerooms.

Adding Tools to a Storeroom

The Storerooms tab displays information about the tool at the specified storeroom location. You can add a tool to a storeroom by using the Add Tool to Storeroom action.

Assigning a Vendor to an Tool

With the Vendors tab you can assign vendors to a tool record to manage a list of vendors that supply the tool. You can add vendors from which you have already ordered, as well as vendors you have not used. You can then use the historical vendor data to compare vendor prices and delivery information to make better purchasing decisions.

The Stocked Tools Application

You use the Stocked Tools application to manage existing tools in storerooms. To create new tool records, you must use the Tools application.

Workshop

Exercises

In the following exercise you will practice some of the skills you learned in this chapter.

Objective

The objective of this workshop exercise is to ensure that you are comfortable with creating new tools and viewing tool availability.

**Exercise:
Tools**

In this exercise you will create three tools. Make them tools that would typically exist in your company's storeroom. Read through all of the steps before you start.

1. Create three tools:

Tool 1 Not rotating

Tool 2 Not rotating (this tool will be used as an alternate item for Tool 1)

Tool 3 Rotating

2. Add each tool to a storeroom.
 3. Assign each tool a vendor.
 4. Go to the Stocked Tools application and view one of the tools you created.
 5. View the tool's availability.
-

Review Questions

Review Questions

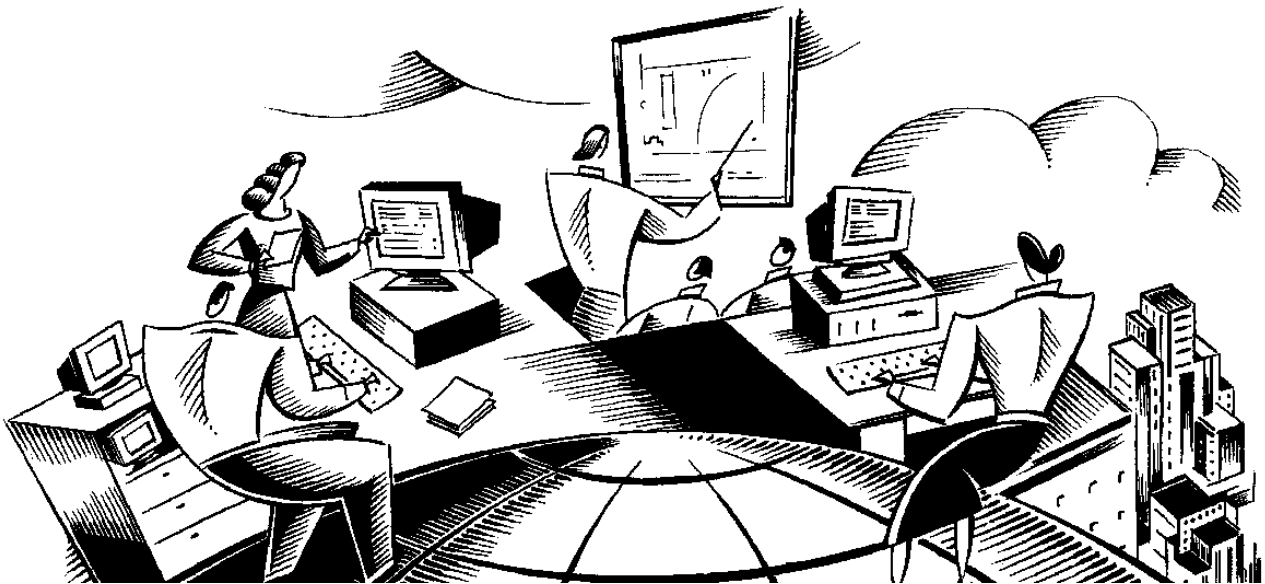


1. What are the differences between the Item Master and Tools applications?
 2. How can you track individual tools so that you know where they are at all times?
 3. Can you transfer a tool in the Stocked Tools application?
 4. How can you adjust a tool's physical count and current balance?
 5. How do you serialize individual tools that you want to track?
-

NOTES:

Inventory Management Using MXES

Unit 3: Transactions



In This Unit

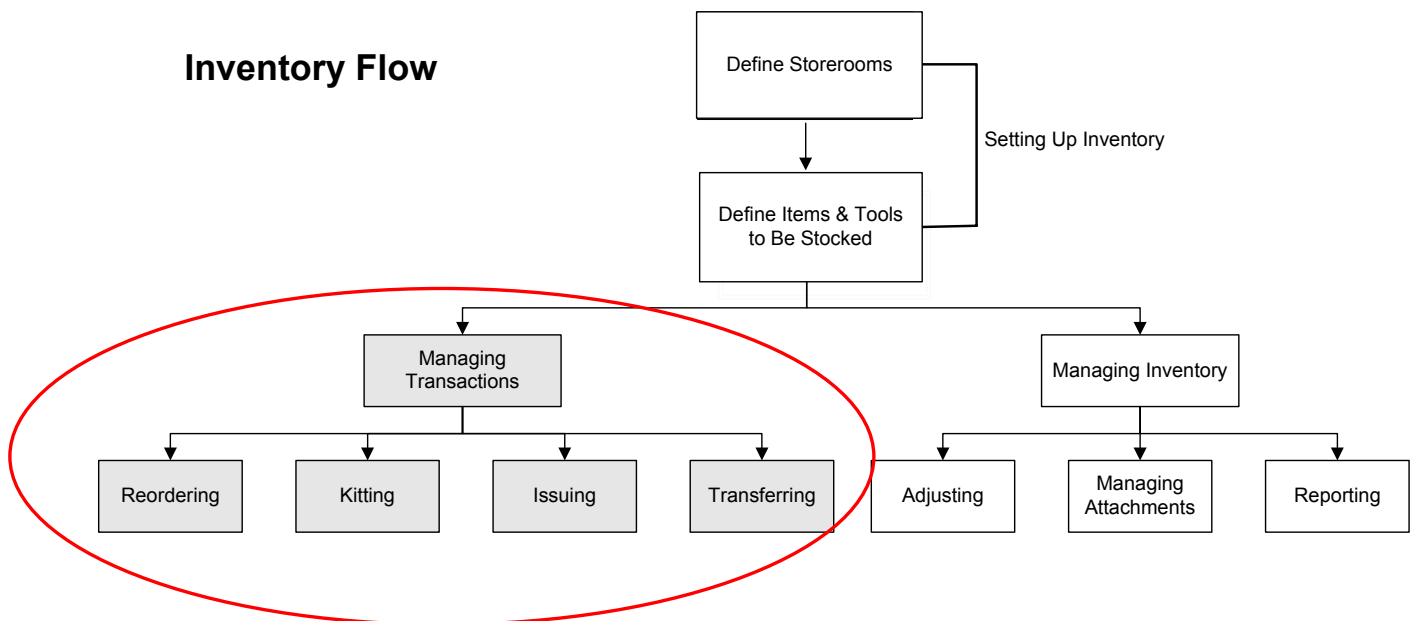
This unit contains the following chapters:

Chapter	Title
7	Reordering
8	Item Kits
9	Issues and Transfers

Unit Overview

Unit Purpose

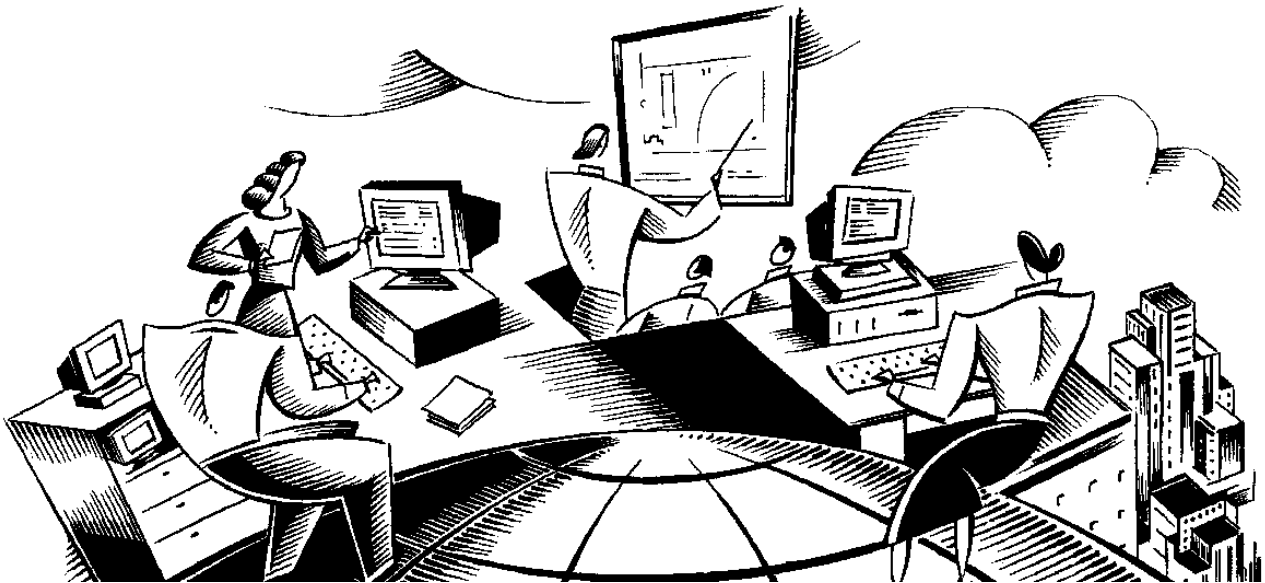
As you may remember from the previous unit, the following graphic illustrates the flow of the inventory process in a typical company. After setting up your inventory, you would then manage your transactions including reordering, setting up kits (or kitting), issuing items, and transferring items in and out of your storerooms.



This unit will focus on the shaded areas in the above graphic: Managing Transactions.

Inventory Management Using MXES

Chapter 7: Reordering



In This Chapter

This chapter contains the following topics:

Topic	See Page
Chapter Overview	7-1
Materials Management Process	7-2
Reorder Theory	7-3
The Inventory Reorder Function	7-6
Reorder Defaults	7-10
Reordering Selected Items	7-12
Reordering Direct-Issue Items	7-15
Clearing Reorder Locks	7-16
Chapter Summary	7-17
Workshop	7-18
Review Questions	7-19

Chapter Overview

Introduction

Maximo allows you to track item balances in the Inventory module. When balances for items fall below acceptable levels, those items need to be reordered.

Maximo also allows you to include non-stocked items from work order reservations and other materials and services requested via the Desktop Requisitions application, in the inventory reorder process.

Chapter Focus

This chapter focuses on the role of inventory personnel in the reorder process. It includes situations in which storerooms order from internal vendors that are usually other storerooms.

Learning Objectives

When you have completed this chapter, you should be able to:

- reorder items from inventory,
 - determine reorder points,
 - reorder direct issue items,
 - reorder items from internal and external vendors, and
 - clear reorder locks.
-

Materials Management Process

Introduction

The Inventory module tracks all items needed by your business for maintenance, operations, and support, and can be used to determine when items need to be reordered.

Tabs and Functions

When users plan and use materials on work orders in Maximo, it has a direct effect on the Inventory module, as follows:

- The list of planned materials on a work order is reserved in inventory when the work order is approved.
 - Material balances in inventory decrease when materials are issued to a work order.
-

Internal Vendors



Maximo allows you to use a storeroom as an internal vendor for other storerooms, as well as desktop requisitions. Although many companies simply transfer materials as needed from one storeroom to another, other companies prefer to use a formal purchasing process.

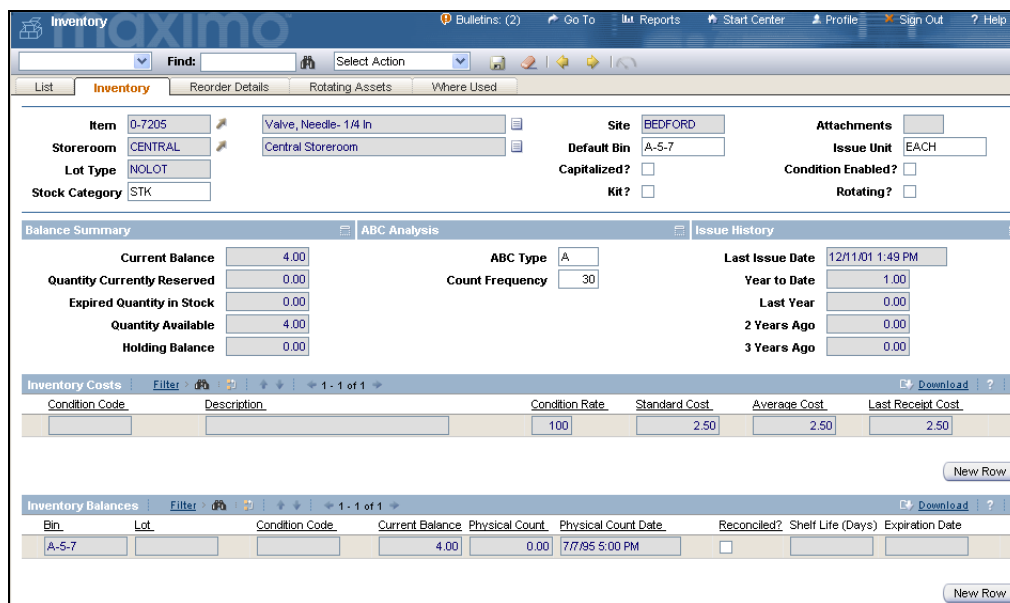
Reorder Theory

Introduction

Depending on your business and how you keep inventory, you might use the Maximo reorder routine regularly to reorder inventory items. First, take a look at the conditions under which a part needs to be reordered.

The Inventory Tab

The **Inventory** tab of the Inventory application contains information about item balances from the perspective of the storeroom. The reorder process uses the Quantity Available amount.



Balance Summary Information

Although the reorder process uses the Quantity Available field to determine when to reorder parts, Maximo uses the other three fields in the Balance Summary frame to calculate the Quantity Available, as described in the following table.

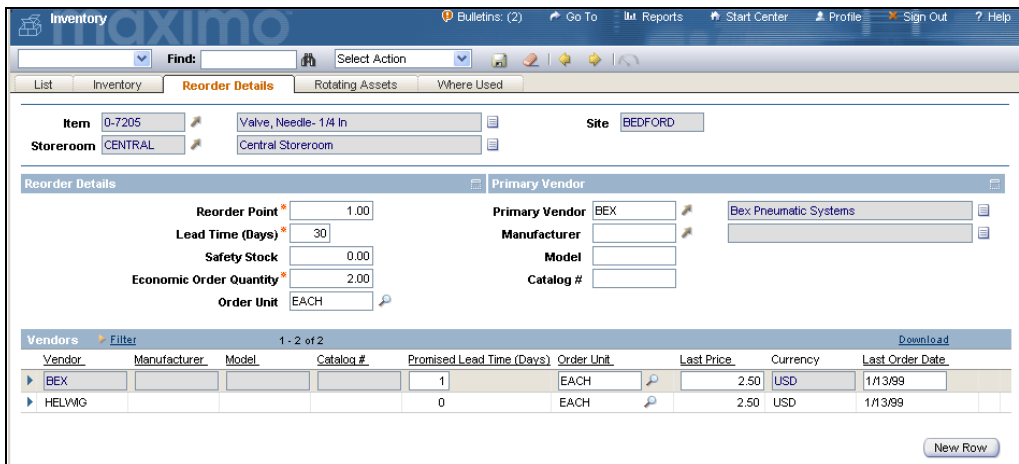
Field	Description
Current Balance	Quantity of the item currently in the storeroom
Quantity Currently Reserved	Quantity required for currently approved work orders
Expired Quantity in Stock	For lotted items, quantity past the expiration date
Quantity Available	Current balance minus the reserved/expired quantities

continued on next page

Reorder Theory continued

The Reorder Details Tab

The **Reorder Details** tab in the Inventory application displays the information defining when and how Maximo should reorder items, such as the reorder point, lead time, and issue units of an item. When the Quantity Available on the Inventory tab is less than or equal to the Reorder Point, Maximo will reorder the item. In addition, you can enter or view information about one or more vendors for an item, as well as information about multiple manufacturers or models for each vendor.



Other Reorder Variables

Maximo allows you to use a storeroom as an internal vendor for other storerooms, as well as desktop requisitions. Although many companies simply transfer materials as needed from one storeroom to another, other companies prefer to use a formal purchasing process.

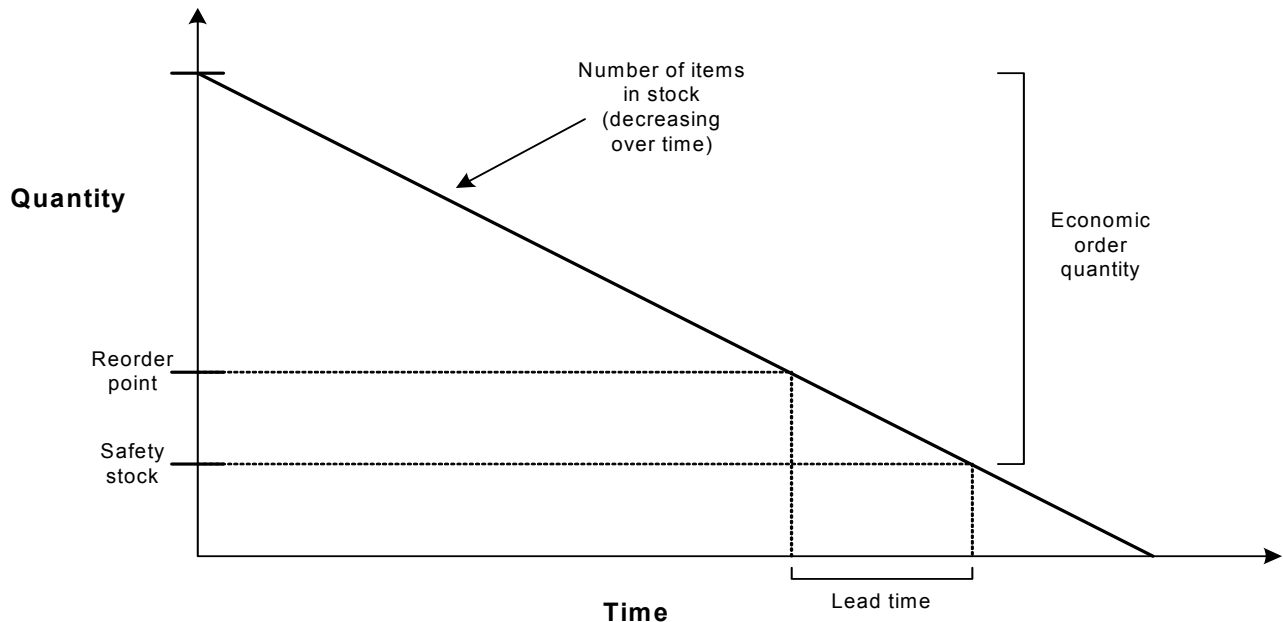
Variable	Description
Lead Time (Days)	The amount of time between ordering and delivery.
Safety Stock	The minimum number of items you must have on hand at all times. (In inventory management systems that use MIN/MAX levels, this is most closely related to the MIN level. Safety Stock is figured in multiples of the Issue Unit.)
Economic Order Quantity	The number of items that should be reordered at one time, usually based on a vendor's price for a particular quantity ordered. Economic Order Quantity is figured in multiples of the Order Unit.

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Reorder Theory continued

Determining the Reorder Point

The following graph shows how the reorder variables relate to one another in an ideal ordering situation.



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 purchasing and stock levels on upcoming work, rather than on past usage. Because parts and equipment 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 allowing you to set reorder quantities. Using the Preventive Maintenance application to plan upcoming maintenance and inspection work can also help to determine what items will be needed in the future.

The Reorder Point Report

Maximo comes with an interactive screen called the *Reorder Point* report. This report calculates appropriate reorder points for selected inventory items and allows you to change values on the fly.

The Inventory Reorder Function

Introduction

In the previous section you learned the conditions under which a part needs to be reordered when the quantity available is less than or equal to the reorder point. Now you will look at the details of the inventory reorder function.

Automated Reorder Process

The reorder process can also be set up to run automatically as an automated server process. You can find more information on this topic in the *System Administrator's Guide*.

Reorder Items Page

To initiate the reorder process from the Inventory application, select **Reorder/Reorder Items** from the **Select Action** menu.

The Reorder Items page opens.

Reorder Items

Reorder Range

Storeroom: PKG Packaging Dept. Storeroom

Site: BEDFORD

Additional Lead Time (Days): 0

Reorder Options

Ignore Reorder Point? Reorder Direct Issue Items and Services?

Consider Contracts When Creating PRs/POs? All Items in Storeroom?

Reorder Runtime Option

Run in Background Mode? E-mail Address Notification: m.wilson@helwig.com

Preview Run Reorder Cancel

continued on next page

The Inventory Reorder Function continued

The Reorder Items Page Fields

You can select from the following options to tell Maximo when and how to reorder each item:

Field	Description
Ignore Reorder Point?	Reorders items even if the available balance is above the reorder point. Maximo will order a quantity of 1 of the economic order quantity (EOQ).
Consider Contracts When Creating PRs/POs?	Maximo will analyze if a valid contract exists for the item being ordered. Maximo looks at existing Blanket or Price Agreements and creates release purchase orders from blanket purchase orders, or include the prices/details from the Price Agreements when creating PRs and POs.
Reorder Direct Issue Items and Services?	Reorders direct issue items and services on all work orders.
All Items in Storeroom?	Allows the user to consider reorder for all items in the selected storeroom or to choose a different storeroom from which to reorder. This typically happens only when a storeroom is being set up for the first time.
Run in Background Mode?	Checking this box indicates you want this reorder process is to be asynchronized, or run in the background.
E-mail Address Notification	The e-mail address of the person who receives the reorder notification.

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The Inventory Reorder Function continued

Reorder Computations



Let's look at an item from the CENTRAL storeroom (Brake Shoes) as we discuss the reorder computations.

Step	Action
1	Open the Inventory application and search for and select item 39224 from the CENTRAL storeroom.
2	Look at the Reorder Details frame (on the Reorder Details tab).

Field	Value	Explanation
Reorder Point	2	The number that triggers the reorder quantity computations.
Lead Time (Days)	20	Expected delivery time for the order (in days).
Safety Stock	0	The quantity that availability should never drop below.
Economic Order Quantity	2	The economic unit to reorder.

Reordering Considers Blanket POs and Agreements

For items that are not direct issue, you can set the reorder routine to automatically consider price agreement purchase orders before considering storeroom prices. It will also enter the appropriate information in the PR line to relate that line to the relevant blanket purchase order or the price agreement purchase order, if used.

Reordering Direct Issue Items

Your company's business process will dictate who handles the reordering of direct-issue items. Your company might have Inventory, Maintenance, or Purchasing personnel performing the reorder routine for direct-issue items. Maximo does not automatically include the direct-issue items in the reorder routine—you must specifically check the **Reorder Direct Issue Items and Services?** check box in the Reorder Items dialog box.

continued on next page

The Inventory Reorder Function continued

Preventive Maintenance and Reorders

The Preventive Maintenance application in the PM module has an impact on the reordering process in the Inventory module, because it includes an allowance for lead time on the Generate Work Order page. Personnel creating PMs need to allow sufficient lead time for the inventory department to order materials listed on the associated Job Plans.

PM Work Orders and Inventory Reorders

The appropriate personnel need to generate PM work orders and, if required, approve those work orders (consequently reserving the parts in Inventory) with enough lead time so that the next time the reorder routine is run, it will reorder items needed for those work orders. Your company's PM work order cycle and inventory reorder cycle need to be taken into consideration when determining the PM lead time.

Note: The default status for work orders created during PM generation is WSCH, which is the same as approved.

An Example of PMs and Reorders

One way to handle this issue is to allow a lead time of twice your PM work order cycle on the Generate Work Order page. So, if you generate PM work orders once a week, in the Generate WOs Due Today Plus Next ___ Days field, allow a lead time of 14 days. That way, the inventory reorder routine will be 1 week ahead of the work order.

Reorder Defaults

Maximo can be configured to create approved or unapproved PRs and POs when you run the reorder routine. This setting is configured in the Organizations application in the Administration module.

Reorder Defaults

Introduction

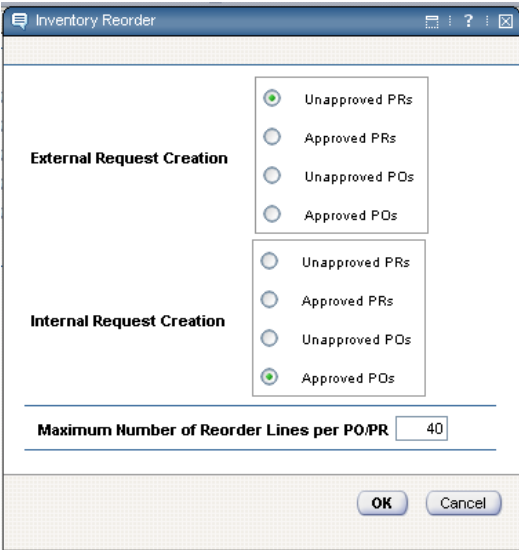
As mentioned, Maximo can be configured to create approved or unapproved PRs and POs when you run the reorder routine. This setting is configured in the Organizations application in the Administration module.

In this section we will briefly cover how to view the reorder defaults.

Viewing the Reorder Defaults



Follow these steps in the Organization application to view reorder defaults for the Inventory application.

Step	Action
1	Open the Organization application from the Administration module.
2	Search for and select Organization EAGLENA .
3	<p>Choose Inventory Options/Reorder from the Select Action menu. <u>Result:</u> The Inventory Reorder page displays with the current defaults.</p> 
4	After reviewing the defaults, click Cancel to close the page.

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Reorder Defaults continued

Internal vs. External Requests

The screenshot shows a dialog box titled "Inventory Reorder". It contains two sections: "External Request Creation" and "Internal Request Creation". Each section has four radio button options: "Unapproved PRs", "Approved PRs", "Unapproved POs", and "Approved POs". In the "External Request Creation" section, "Unapproved PRs" is selected. In the "Internal Request Creation" section, "Approved POs" is selected. Below these sections is a text box labeled "Maximum Number of Reorder Lines per PO/PR" with the value "40" entered. At the bottom right are "OK" and "Cancel" buttons.

In this graphic, notice that there are two frames—each corresponding to one of two types of requests:

- *External* requests are requests to vendors who are not a part of your company, such as a phone service provider. Orders to external vendors generally require a more complete approval process. Therefore, the default is to automatically create unapproved PRs.
- *Internal* requests are requests to vendors internal to your company, such as a storeroom. Orders to internal vendors generally require a more abbreviated purchasing routine than orders to external vendors. The default is to automatically create approved POs.

Maximum Number of Reorder Lines per PO/PR. During the reorder process, Maximo groups items to be ordered (PO/PR Lines) by the company listed in the Item's Primary Vendor field (per storeroom). The setting for Maximum Number of Reorder Lines per PO/PR is used to limit the number of rows per PR/PO to the number that can typically fit on one page of the PR Details and PO Details reports created during the reorder process. If the number of items grouped for a particular vendor exceeds the value placed in the Maximum Number of Reorder Lines Per PO/PR, Maximo will create a separate PO or PR for the additional lines.

Reordering Selected Items

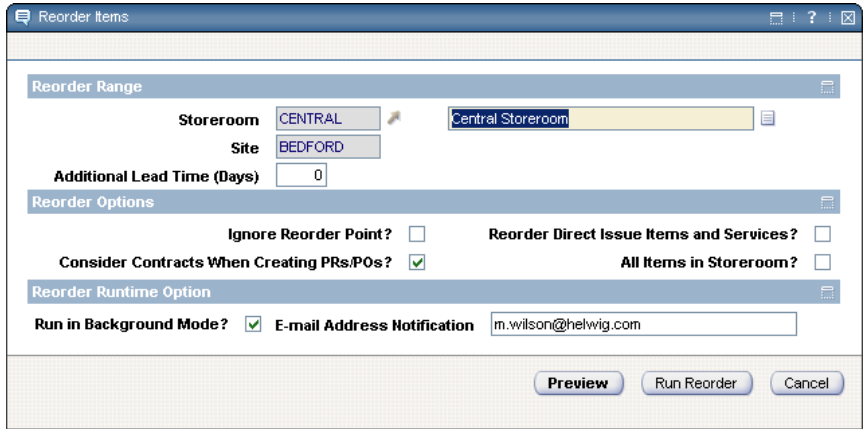
Introduction

You can choose to reorder as many items as you want at the same time. However, all items selected must be from the same storeroom location.

Reordering Selected Items



To reorder selected items, follow these steps:



Step	Action
1	From the List tab of the Inventory application, generate a results set for the storeroom Central .
2	Click in the select record's (or records') check box.
3	Click in the Select Row check box to select the item(s) you want to reorder. Your instructor will assign each participant 3 records, with a current balance of 0, to select. <u>Note:</u> You can also click the Select All check box (the check box at the top of the list next to Item) to select all the items listed.
4	From the Select Action menu, choose Reorder/Reorder Items . Result: The Reorder Items dialog box opens. 

continued on next page

Reordering Selected Items continued

Reordering Selected Items

continued

Step	Action
5 	Enter the number 3 in the Additional Lead Time in Days field. <u>Note:</u> The value you set in the Additional Lead Time in Days field is added to the Lead Time field from the Item record as it exists in the Storeroom.
6 	Uncheck the Run in Background Mode? option (because the appropriate property file has not been set). <u>Note:</u> Running in background mode allows you to return to normal Maximo activity while the reorder process runs. When the reorder process is complete, Maximo will send a message to the e-mail address noted in the E-mail Address Notification field. The e-mail will include a list of PRs and POs created during the reorder process.
7	Click on the Preview Order button. <u>Result:</u> The Preview Order screen opens. This screen allows you to view and edit what Maximo suggests and then run the reorder based on the new settings.
8	Click Run Reorder . <u>Result:</u> The Reorder Results screen opens.
9	Click OK to close the screen.

continued on next page

Reordering Selected Items continued

The Reorder Items Page

Let's take another look at the Reorder Items page from the last exercise.

Below is a description of each of the fields.

Field	Description
Ignore Reorder Point?	The item is ordered even if the available balance is above the reorder quantity.
Reorder Direct Issue Items and Services?	Include direct issue items on approved work orders and Desktop Requisitions in reordering calculations.
Consider Agreement Purchase Orders?	Release purchase orders are created from existing blanket purchase orders. Prices and details from the Price Agreements are included when PRs and POs are created.
All Items in Storeroom?	Overrides any item selections and makes the Storeroom field editable.
Run in background mode?	Runs the reorder process in background mode allowing the user to return to normal Maximo operation and sends notification via e-mail when complete.

Reordering Direct-Issue Items

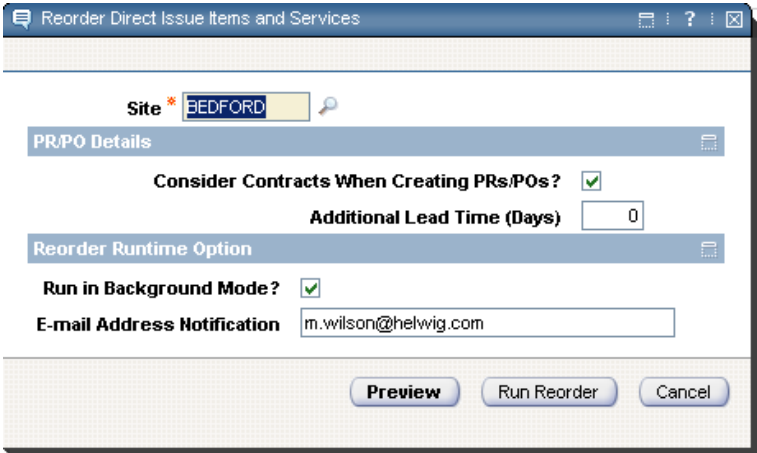

Introduction

Maximo allows you to reorder items that are listed on approved work orders and desktop requisitions and are issued without being received into Inventory. In this section we will reorder direct-issue items.

Reordering Selected Items



To reorder selected items, follow these steps:

Step	Action
1	From the List tab of the Inventory application, select an item as assigned by your instructor.
2	<p>From the Select Action menu, select Reorder/Reorder Direct Issue Items/Services.</p> <p><u>Result:</u> The Reorder Direct Issue Items and Services page opens.</p> 
	<p> <u>Note:</u> If Consider Contracts when Creating PRs/POs? is checked, Maximo looks at existing contracts on the item/service and creates purchase orders from those contracts.</p>
3	Clear the Run in Background Mode? option (because the appropriate property file has not been set).
4	<p>Click Run Reorder.</p> <p><u>Result:</u> The Reorder Results screen opens.</p>
5	Click OK to close the screen.

Clearing Reorder Locks

Introduction

When a user runs the Maximo reorder process (even in 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 reorder even though they are no longer using the process, preventing themselves and others from running reorder against a certain storeroom. These reorder locks can be created under any of the following circumstances:

- The Maximo server times out while the reorder process is running or at the preview results screen.
 - In the preview results screen, if the user times out the session, by leaving the screen for the timeout duration.
 - In the preview results screen, if the user clicks the Back button on the browser, or any other browser navigation button.
-

Clearing Reorder Locks

There are three ways to clear the reorder locks. The following list includes each option in the order of preference:

- Let Maximo automatically clear the locks, based on the setting specified in the `MXE.REORDER.PREVIEWTIMEOUT` property in the `MXSERVER.PROPERTIES` file. The default time for this property is 30 minutes, but this setting is configurable. The time when a lock is created is recorded by the database. If a reorder lock was created at 5.00 and the setting specified in the `MXE.REORDER.PREVIEWTIMEOUT` property is 30 minutes, Maximo automatically clears the lock at 5.30, i.e., 30 minutes from the time when the lock was created.
 - Use the Clear Reorder Locks option on the Select Action menu. This option clears only Preview Mode reorder locks, created by the currently signed-in user. Users running the full reorder process will not be affected.
 - Restart the Maximo server. Maximo automatically clears all reorder locks when the server is restarted.
-

Chapter Summary

Reorder Theory	Use the Maximo reorder routine regularly to reorder inventory items that have fallen below their reorder point. You can choose to order the currently displayed item or all of the items in the selected storeroom.
Reorder Defaults	Reorder defaults are set in the Organization application in the Administration module. You can choose to create approved or unapproved PRs or POs for internal or external vendors.
Business Rules	Remember to learn your company's business process so that you can coordinate the reorder of direct issue items and the lead time allowed for reorders in the PM work orders process.
Reordering Selected Items	You can choose selected inventory items to reorder. However, all items selected must be from the same storeroom location.
Reordering Direct Issue Items	You use the Reorder Direct Issue Items/Services from the Select Action menu to reorder items or services that are listed on approved work orders and are issued without being received into Inventory.

Workshop

Exercises

In the following exercise you will practice some of the skills you learned in this chapter.

Objective

The objective of this workshop exercise is to ensure that you are comfortable with reordering items and the reorder functionality in Maximo.

Exercise: Tools

In this exercise you will reorder an item as assigned by your instructor. Be sure to clear the **Run in Background Mode?** check box.



Review Questions

Review Questions

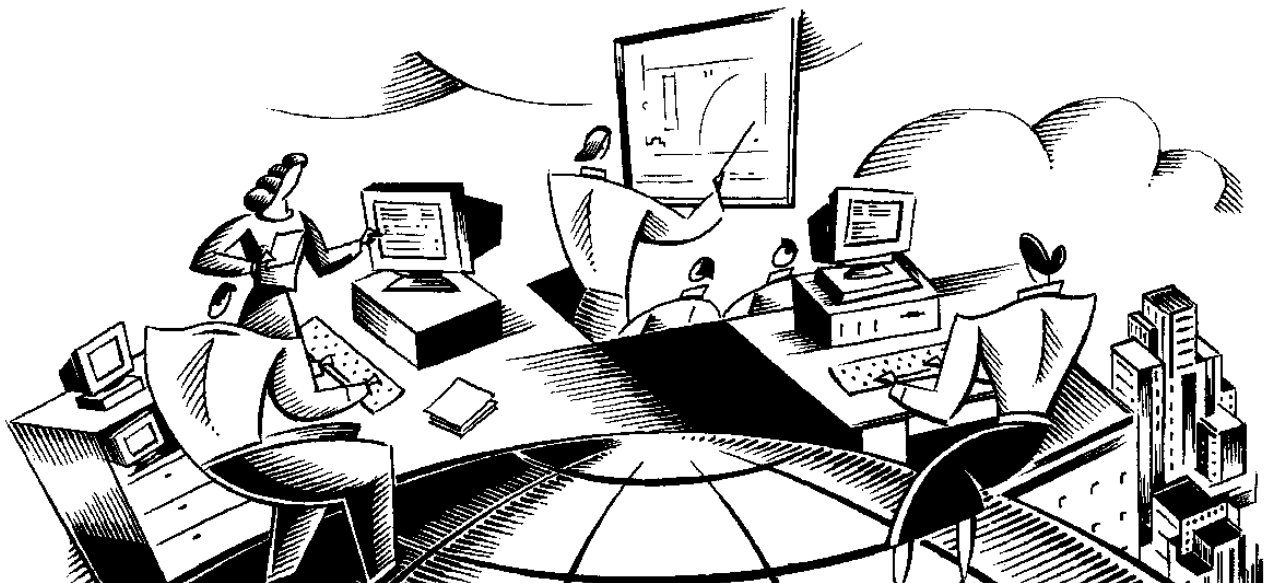


1. What queries will you find useful when you are reordering items?
 2. What other field in what other application must also be specified to have Maximo include direct-issue items on work orders in the reorder routine?
-

NOTES:

Inventory Management Using MXES

Chapter 8: Item Kits



In This Chapter

This chapter contains the following topics:

Topic	See Page
Chapter Overview	8-1
Overview of Kits	8-2
Defining an Item Kit	8-4
Assembling an Item Kit	8-6
Disassembling an Item Kit	8-7
Chapter Summary	8-8
Workshop	8-9
Review Questions	8-10

Chapter Overview

Introduction

Maximo allows you to create item kits. A *kit* is a collection of items that can be issued out as a single unit.

Chapter Focus

This chapter focuses on the role of kits in inventory, as well as assembling and disassembling kits.

Learning Objectives

When you have completed this chapter, you should be able to:

- reorder items from inventory,
 - describe the use of kits,
 - assemble a kit, and
 - disassemble a kit
-

Overview of Kits

Introduction

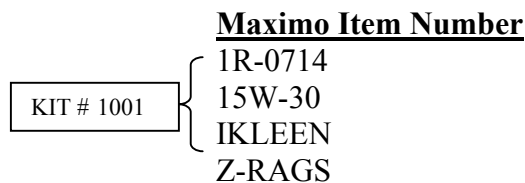
As mentioned previously, kits are a collection of items that can be issued as a single unit. These kits can be preassembled and then issued to work orders as one package of items with all necessary costing and balance information updated on the kit record.

When Are Kits Useful?

Consider this example: A company writes several thousand work orders per year to perform oil changes on their trucks. Most of these work orders are similar in that they require the same type of labor, craft, materials, and tools. In this example, the maintenance work orders always require the same items:

<u>Item</u>	<u>Maximo Item Number</u>
OIL FILTER	1R-0714
ENGINE OIL	15W-30
HAND CLEANER	IKLEEN
RAGS	Z-RAGS

From an inventory planning perspective, the easiest way to identify these items is to insert an ITEM record that is flagged as a "KIT." For example:



This kit (# 1001 in this example) would contain references to the set of records above. These kits could be preassembled and then issued to work orders as one package of items, and all necessary costing and balance information would be updated on the kit record.

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Overview of Kits continued

More on Kits

- Kits are ITEM records and are managed in Inventory.
 - Identifying an item as a kit creates a parent/child relationship between a kit and other ITEM records, including other kits.
 - Costing of a kit includes the costs of the individual components and any extraneous costs associated with making or breaking kits.
 - When adding a kit to a storeroom, if the component items do not already exist in the storeroom, Maximo creates inventory records for these items.
 - You cannot create item kits containing condition-enabled, rotating, or lotted items.
 - You cannot assemble or disassemble item kits across storerooms. You must gather or return items to a single storeroom location.
 - You cannot assemble more kits than there are individual parts in the storeroom.
-

Kits and Item Balances

When you add an item kit to a storeroom, you optionally can specify balance information to indicate that some of the item kits are already assembled in the storeroom.

To assemble item kits and add balances, you use the **Assemble Kit** action in the Inventory application. When you assemble a kit, Maximo increases the balance of the item kit record, and decreases the current available balance of the components used to construct the item kit.

You use the **Disassemble Kit** action to break an item kit within Inventory back into its respective components. This decreases the balance of the item kit record and increases the balance of the individual kit components in the storeroom.

Defining the Kit Structure

After creating a kit record, you define the structure of the kit. In other words, you specify the other Maximo items that make up the kit, as well as the quantities of those items. You will define the kit structure from the Item Assembly Structure tab. Maximo will not allow you to enter condition-enabled, rotating, or lotted items in a kit structure.

Defining an Item Kit

Introduction

You use Item Assembly Structures to define an item kit. You can preassemble item kits and then issue them to work orders. Maximo updates all cost and balance information on the kit inventory record. Note that when you build the components of the kit, you cannot use items that are flagged as rotating, condition-enabled, or lotted. In addition, you cannot make more kits than you have respective parts.

For the following exercise, we will use the oil change example mentioned earlier to create a kit and assign it to a storeroom.

Exercise: Defining an Item Kit

Follow these steps to define a kit:



Step	Action										
1	Go to the Item Master application.										
2	Create the following items: OF Description: OIL FILTER EO Description: ENGINE OIL HC Description: HAND CLEANER RGS Description: RAGS Make the Order Unit = BOX and the Issue Unit for each item = EACH . Make sure that none of these are flagged as rotating, condition-enabled, or lotted. Leave the Kit? check box unchecked. Remember, if you are in a single-database environment, you need to use your initials xx at the end of each item.										
3	Add each of the items to storeroom CENTRAL . Give each a current balance of 3 .										
4	Create another new item using the following specifications. <table data-bbox="472 1535 997 1717"> <tr> <td>Item</td> <td>OILKIT</td> </tr> <tr> <td>Description</td> <td>Truck Oil Change Kit</td> </tr> <tr> <td>Kit?</td> <td>[<i>Checked</i>]</td> </tr> <tr> <td>Order Unit</td> <td>EACH</td> </tr> <tr> <td>Issue Unit</td> <td>EACH</td> </tr> </table> Remember, if you are in a single-database environment, use your initials xx at the end of each item.	Item	OILKIT	Description	Truck Oil Change Kit	Kit?	[<i>Checked</i>]	Order Unit	EACH	Issue Unit	EACH
Item	OILKIT										
Description	Truck Oil Change Kit										
Kit?	[<i>Checked</i>]										
Order Unit	EACH										
Issue Unit	EACH										

continued on next page

Defining an Item Kit continued

Exercise: continued
Defining an Item Kit

Step	Action
5	Save the record.
6	With the item OILKIT open, click on the Item Assembly Structure tab.
7	Using the New Row button, add all the items you created in step 1 in the Children section of the screen (i.e., items in the kit). <u>Result:</u> Your screen should look similar to the one below. <div data-bbox="506 772 1369 1087" data-label="Image"> </div>
8	Select the Add Items to Storeroom option from the Select Action menu.
9	Enter CENTRAL in the Storeroom field.
10	Click OK . <u>Result:</u> The Add Items to Storeroom screen opens.
11	Click OK to close the screen. <u>Result:</u> The kit is added to the storeroom. <u>Note:</u> If the items in the kit are not currently in the storeroom, Maximo will display the following screen. If the items do not already exist, Maximo creates inventory records for those items at no cost and zero balance in the same bin as the kit. <div data-bbox="600 1566 1276 1797" data-label="Image"> </div>

Assembling an Item Kit

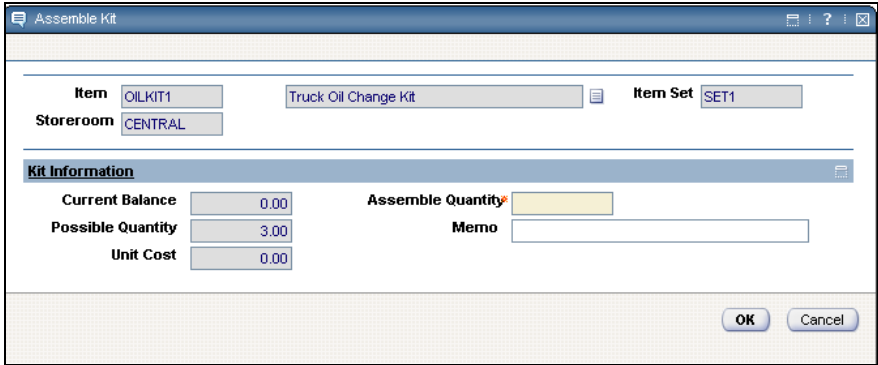
Introduction

After you have defined the item kit, you can assemble it in a few simple steps. When you assemble or disassemble a kit from the Inventory application, Maximo maintains and adjusts the cost and balance information for those kit components as you use the items in the kit.

Exercise: Assembling Kits

Follow these steps to assemble an item kit:



Step	Action
1	Go to the Inventory application.
2	Locate and select the kit we created in the previous exercise (OILKIT).
3	<p>Select the Assemble Kit option from the Select Action pull-down menu.</p> <p><u>Result:</u> The Assemble Kit dialog box opens.</p> 
4	In the Assemble Quantity field, enter 3.
5	<p>Click OK.</p> <p><u>Result:</u> Three item kits are now assembled and the cost and balance information for the kit components is adjusted appropriately.</p>

Disassembling an Item Kit

Introduction

If you no longer need the kit, or if a specific component of the item kit—but not necessarily the whole kit—is necessary to complete a task, you can disassemble a kit. When you disassemble a kit, the balance of the kit record is reduced and the balance of the respective items in the kit is increased. When you assemble or disassemble a kit from the Inventory application, Maximo maintains and adjusts the cost and balance information for those kit components as you use the items in the kit.

Disassembling Kits

Follow these steps to disassemble a kit:

Step	Action
1	Search for and select the kit we created in the previous exercise (OILKIT).
2	Choose Disassemble Kit from the Select Actions menu. <u>Result:</u> The Disassemble Kit page opens.
3	Review the information and click OK . <u>Result:</u> The balance of a kit record is reduced and the balance of the respective items within the kit is increased.

Disassemble Kit Costs

Average costing

If the storeroom uses average costing, the current average cost of each component will be used when disassembling a kit.

Standard costing

If the storeroom uses standard costing, the unit cost of the item within the kit will be used.

Chapter Summary

Item Kits

Use the Maximo reorder routine regularly to reorder inventory items that have fallen below their reorder point. You can choose to order the currently displayed item or all of the items in the selected storeroom.

Assembling an Item Kit

To create a kit, you create an item record and select the **Kit?** check box. On the Item Assembly Structure tab, you list the collection of items and the quantities of each you need for the kit, which can then be used to perform a specific task, such as routine maintenance. You can preassemble item kits and then issue them to work orders; Maximo updates all cost and balance information on the kit inventory record. However, when you build the components of the kit, you cannot use items that are flagged as rotating, condition-enabled, or lotted.

Disassembling an Item Kit

When you disassemble a kit, the balance of the kit record is reduced and the balance of the respective items in the kit are increased. If the storeroom uses *average* costing, the current average cost of each component will be used when disassembling a kit. If the storeroom uses *standard* costing, the unit cost of the item within the kit will be used.

Workshop

Exercises

In the following exercise you will practice some of the skills you learned in this chapter.

Objective

The objective of this workshop exercise is to ensure that you are comfortable assembling and disassembling kits.

Exercise: Kits



In this exercise you will create a kit and then disassemble it. Read through all of the steps before you start.

1. Create 3 items for your kit. Make the Order Unit and Issue Unit for each item = EACH. Make sure that none of these are flagged as rotating, condition-enabled, or lotted. In addition, Leave the **Kit?** check box unchecked.
 2. Add these items to Storeroom CENTRAL and give each a balance of 2.
 3. Create another item. This item will be your kit, so be sure to check the **Kit?** check box.
 4. Add the items you created in step 1 to the kit.
 5. Save the record.
 6. Now, go through the steps for disassembling the kit that one of your classmates just created. If you have the Maximo database locally, then disassemble your own kit.
-

Review Questions

Review Questions



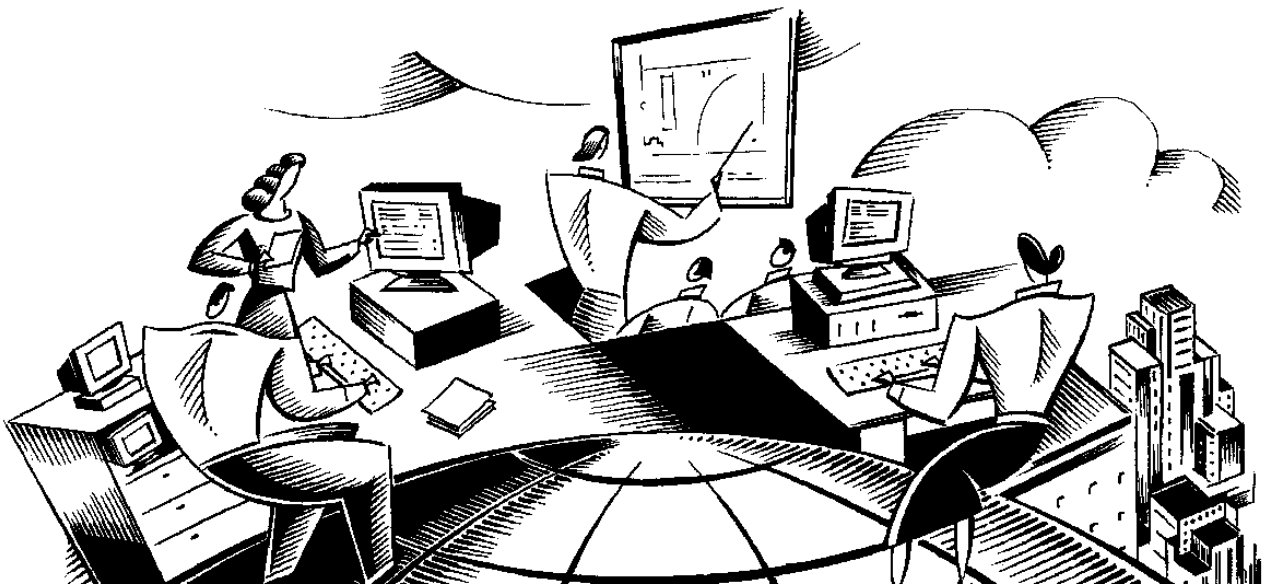
1. What types of items cannot be kits?
 2. What happens to the item balances when you assemble and disassemble a kit?
-

NOTES:

NOTES:

Inventory Management Using MXES

Chapter 9: Issues and Transfers



In This Chapter This chapter contains the following topics:

Topic	See Page
Chapter Overview	9-1
Issues and Transfers Application Overview	9-2
Issuing a Reserved Item	9-5
Issuing an Unreserved Item	9-10
Issuing Metered Materials	9-14
Transferring Items	9-18
Transferring Out	9-19
Using the Select PO Items Option	9-21
Transferring Items Across Sites and Organizations	9-24
Location Types	9-25
Transferring an Item In	9-28
Negative Availability	9-30
Returning Items	9-31
Issuing and Transferring Items from Inventory	9-32
Transferring Items from Inventory	9-36
Viewing Inventory Transactions	9-37
Splitting Lots	9-40
Chapter Summary	9-43
Workshop	9-45
Review Questions	9-46

Chapter Overview

Introduction

One of the primary responsibilities of Inventory personnel is the movement of inventory stock to and from inventory storerooms.

Chapter Focus

Maximo provides two ways to issue and transfer items from within the Inventory module:

- the Issues and Transfers application
- the Inventory application

In this chapter the focus will be on using the Issues and Transfers application to issue and return items and to transfer items into and out of storerooms. We will first issue items using the Issue tab and then transfer items using the Transfer In and Transfer Out tabs.

Learning Objectives

When you have completed this chapter, you should be able to:

- issue a reserved item,
 - issue an unreserved item,
 - issue a rotating item,
 - issue metered materials,
 - transfer items from storeroom to storeroom,
 - transfer items to a storeroom,
 - transfer items to fill internal purchase orders, and
 - transfer tools.
-

Key Definitions

Throughout this chapter we use three key terms:

- The *issue* of an item is its removal from a storeroom location to a work order, location, asset, or GL account. The balance in the issuing storeroom is affected.
 - The *transferring in* of an item is its entrance to a storeroom location from another storeroom location or from within the same storeroom between bins. Balances for the item in both storerooms and bins are affected.
 - The *transferring out* of an item is its removal from a storeroom location for the purpose of entering another storeroom location or from within the same storeroom between bins. Balances for the item in both storerooms and bins are affected.
-

Issues and Transfers Application Overview

Introduction

The **Issues and Transfers** application is used to issue or transfer items from existing locations or storerooms. You can issue directly to a work order, location, or asset against a general ledger account code, either within a site or across sites within an organization. You can also issue items across sites as long as they belong to the same item set. In addition, you can transfer stock from one storeroom location to another, either within a site, across sites within an organization, or across organizations. Balances are adjusted accordingly. You also can trace the transfer of stock from one storeroom to another by transferring to and from “transit” locations (for example, COURIER or LABOR). When you issue a condition-enabled item, you must select a condition code for it.

The Issues and Transfers Application Tabs

There are four tabs in the Issues and Transfers application: **List**, **Issue**, **Transfer Out**, and **Transfer In**.

The screenshot shows the 'Issues and Transfers' application window. The 'List' tab is selected. The interface includes a search bar, navigation buttons, and a table of storerooms. The table has columns for Location, Description, and Site. The 'CENTRAL' site is highlighted, and the 'BEDFORD' site is selected in the dropdown menu. The table lists various storerooms such as GARAGE, HARDWARE, HMMCLEAN, KIMS, MACHSHOP, PKG, SOFTWARE, and TESTSTORE, all associated with the BEDFORD site.

Location	Description	Site
CENTRAL	Central Storeroom	BEDFORD
GARAGE	Garage Storeroom	BEDFORD
HARDWARE	IT hardware components	BEDFORD
HMMCLEAN		BEDFORD
KIMS		BEDFORD
MACHSHOP	Machine Shop Storeroom	BEDFORD
PKG	Packaging Dept. Storeroom	BEDFORD
SOFTWARE	Software License Pool	BEDFORD
TESTSTORE		BEDFORD

continued on next page

Issues and Transfers Application Overview continued

The Tabs

The following table describes each tab's functionality.

Use this tab...	To...
List	Search the database using any combination of available fields.
Issue	Issue items directly to a work order, asset, or location, or against a general ledger account. Also, use for returning items to a storeroom that have previously been issued out.
Transfer Out	Transfer items out of a storeroom to another storeroom, courier, or labor location. The Select PO Items button calls up Internal POs created by all sites/organizations.
Transfer In	Transfer items in from another storeroom to a storeroom, courier, or labor location. Transfer In cannot be used for cross-organization transfers. This is because it is against generally accepted accounting principles (GAAP) for an organization to write a financial posting in another organization. However, Transfer In can be used for cross-site transfers.

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Issues and Transfers Application Overview continued

Best Practice Considerations

Consider the following points when setting up your business processes for issuing items:

- Are the items in your storerooms assigned a stock code?
 - Is each item assigned to a bin or shelf number?
 - Does the bin (or item) have a method of identifying item specific information?
 - Does each item have an assigned barcode?
 - Does your storeroom clerk first check the Maximo balance before “issuing out the item”? (The item might have a negative balance—even though there are a number of items in the bin, they might be reserved.) Maximo will tell you if there is a negative balance at the time the transaction is made. However, if you want, after entering the item number into the row, you can use the Detail menu and select **View Item Availability** to determine which bins contain the item and how many each bin should contain.
-

Issuing a Reserved Item

Introduction

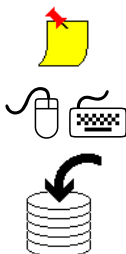
As part of the case study, we will issue items reserved by a work order using the Issues and Transfers application. Issuing a reserved item to a work order is a common task required of inventory personnel. However, you can also issue items to a PO, a person, a location, equipment, or a desktop requisition.

Best Practice Considerations

Consider the following best practices for issuing reserved items:

- When “customers” appear at the window, if there is a long line, you might set up two lines. One line is for issuing to those who require reserved items, and the other is for those who do not require reserved items.
 - Through the use of a pre-published weekly schedule and the Inventory Pick List report, you should be able to pre-pick and set aside scheduled/required (reserved) items, tagged to their work order. These might also even be delivered to the appropriate maintenance office.
-

Exercise: For Single-Database Training Environment Only



Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then you will need to follow these steps before proceeding with the next exercise to issue a reserved item. If you are using a local database, you might only need to approve the work order.

Your instructor will inform you if you need to perform these steps.


Step	Action
1	In the Work Order Tracking application, search for and select WO 1029, Crane Quarterly Inspection and Certification .
2	From the Select Action menu, choose Duplicate Work Order .
3	Select Duplicate Work Order with its Tasks and click OK . Write your WO number here: _____. <u>Note:</u> Throughout this section, the graphics display the original work order, WO 1029.

continued on next page

Issuing a Reserved Item continued

Exercise: For Single-Database Training Environment Only

continued

Step	Action
4	Click the Change Status icon:  <u>Result:</u> The Change Status window opens.
5	In the Change Status window, choose Approved (APPR) from the New Status field drop-down list.
6	Click OK . <u>Note:</u> When you change the status of a record, you do not then have to save it. Changing the status also saves the record.
7	Close the Work Order Tracking application.

Issuing a Reserved Item



In this exercise we will assume the role of a stores person for the Central storeroom. We have just been notified that a specific work order needs to be completed immediately. Therefore, we need to issue the items needed for this approved work order.

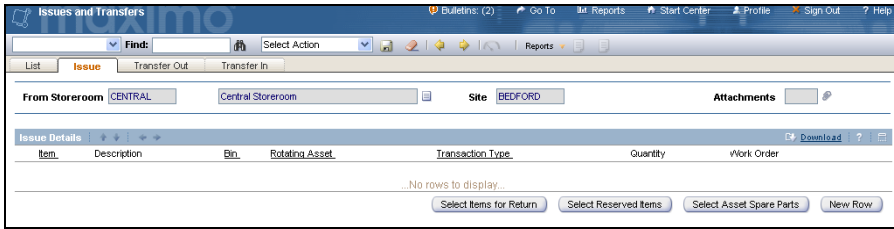
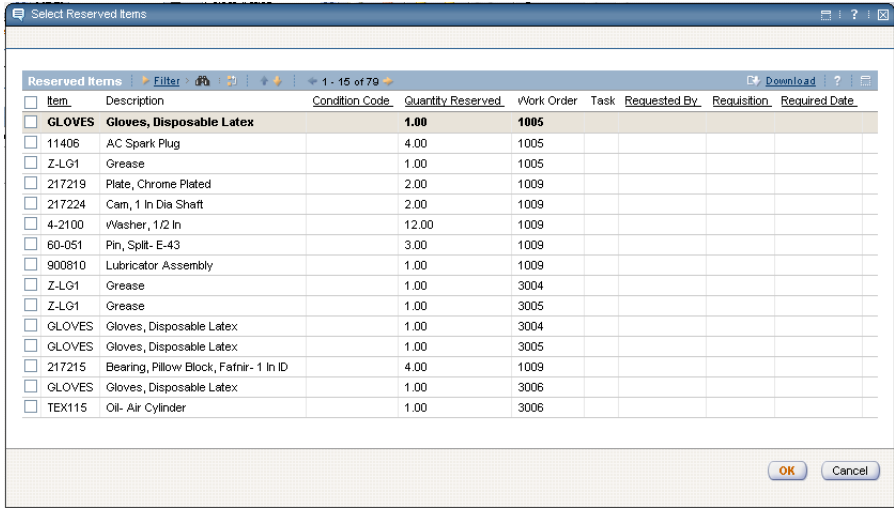
Note: When issuing condition-enabled items, you must specify the condition of the item by assigning a condition code. Maximo displays the condition codes only for items that have a balance in the storeroom.

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Issuing a Reserved Item continued

Issuing a Reserved Item

continued




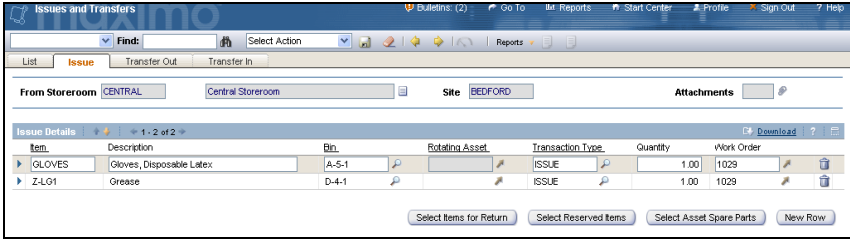
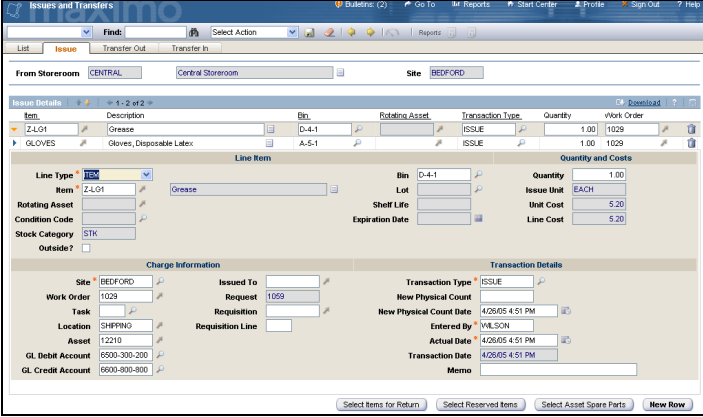
Step	Action
1	From the Inventory module, open the Issues and Transfers application.
2	<p>Search for and select Location CENTRAL.</p> <p><u>Result:</u> CENTRAL appears in the From Storeroom field on the Issue tab.</p> 
3	<p>Click Select Reserved Items.</p> <p><u>Result:</u> The Select Reserved Items page displays with a Filter.</p> 

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Issuing a Reserved Item continued

Issuing a Reserved Item

continued

Step	Action
<p>4</p> 	<p>Select the items corresponding to your work order to copy these items to the Issue tab, by clicking in the Select Row check box for each item.</p> <p><u>Note:</u> If you are working in a single-database environment, use the work order number you wrote down in the previous exercise. If you are not working in a single-database environment, use work order number 1029. The examples displayed in this exercise reflect work order number 1029.</p>
<p>5</p>  	<p>Click OK.</p> <p><u>Result:</u> The items populate rows on the Issue tab.</p>  <p><u>Note:</u> The Quantity field is populated by the number reserved for this work order. If you have issued a quantity different from the amount reserved, make the change prior to saving.</p> <p><u>Note:</u> Clicking on the View Details button next to an item expands the view and allows you to view the item availability, bin, and current balance information prior to saving.</p> 

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Issuing a Reserved Item continued

Issuing a Reserved Item

continued

Step	Action
6	Save the record. <u>Result:</u> The issue is recorded in the database. Your display removes the issued items because the default specifies that no past issues be displayed.
7	To make sure that these items were issued to your work order, open the Quick Reporting application from the Work Orders module, then search for and select your work order. Click on the Materials subtab. <u>Result:</u> The issued parts display on the Materials subtab.
8	Close the Quick Reporting application.

Issuing an Unreserved Item

Introduction

In addition to issuing those items already reserved in inventory for work orders, inventory personnel also routinely issue items that have not been reserved by an approved work order.

Issuing Unreserved Items

To issue items from the Issues and Transfers application, you must specify a storeroom and be authorized to issue items from that storeroom. If you issue items across sites within an organization, you must also have access to both sites. To issue an unreserved item, you must specify one of the following items:

- Work order
 - Location
 - Assets
 - Labor record
 - GL account (if Maximo is set up to use GL accounting, then all transactions require both a debit and a credit GL account)
-

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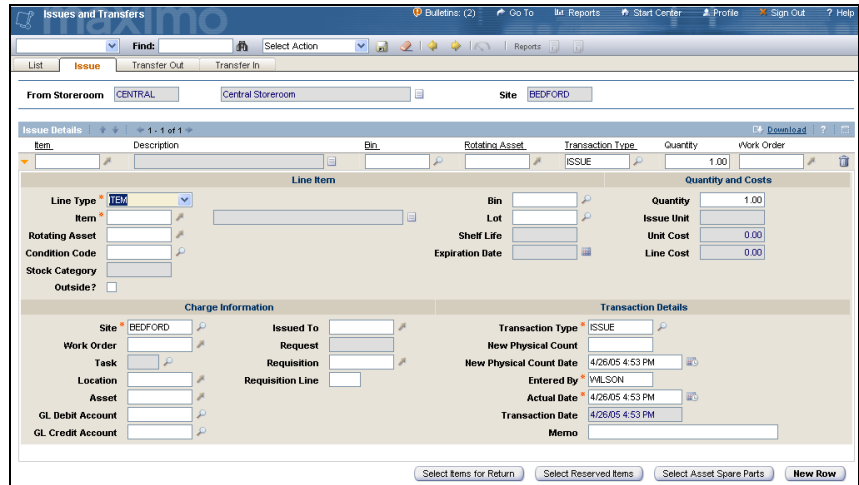
Issuing an Unreserved Item continued

Issuing Items to a Work Order



Our case study continues with this exercise, where we will issue an unreserved item (Z-Rags) to an asset, 12300, and identify the issue to labor code.

Step	Action
1	Open the Issues and Transfers application, then search for and select the CENTRAL storeroom.
2	From the Issue tab, click New Row . <u>Result:</u> The table window opens and is ready for you to enter data into the new row.




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Issuing an Unreserved Item continued

Issuing Items to a Work Order

continued

Step	Action																												
3	In the Line Type field, select Item .																												
4	In the Item field, click Detail Menu and choose Select Value .																												
5	Search for and select Z-Rags .																												
6	In the Issued To field, click Select Value . <u>Result:</u> The Select Labor Code Search results page opens.																												
7	<p>Search for and select Roland Smith.</p> <p> <u>Note:</u> If you are working in a single-database environment, instead of selecting Roland Smith, use the following list and select a Labor Code based on your participant number <i>xx</i>:</p> <table border="1"> <thead> <tr> <th><u>Participant Number xx</u></th> <th><u>Labor Code</u></th> </tr> </thead> <tbody> <tr><td>00 (Instructor)</td><td>Bill Lewis</td></tr> <tr><td>01</td><td>Mike Wilson</td></tr> <tr><td>02</td><td>Leonard Schafer</td></tr> <tr><td>03</td><td>Diane Liberi</td></tr> <tr><td>04</td><td>Roland Smith</td></tr> <tr><td>05</td><td>John Keller</td></tr> <tr><td>06</td><td>Todd Winston</td></tr> <tr><td>07</td><td>Fred Rogers</td></tr> <tr><td>08</td><td>Mike Lee</td></tr> <tr><td>09</td><td>Howard Kelly</td></tr> <tr><td>10</td><td>Jim Gormley</td></tr> <tr><td>11</td><td>Allan Ball</td></tr> <tr><td>12</td><td>Mike Pedrick</td></tr> </tbody> </table>	<u>Participant Number xx</u>	<u>Labor Code</u>	00 (Instructor)	Bill Lewis	01	Mike Wilson	02	Leonard Schafer	03	Diane Liberi	04	Roland Smith	05	John Keller	06	Todd Winston	07	Fred Rogers	08	Mike Lee	09	Howard Kelly	10	Jim Gormley	11	Allan Ball	12	Mike Pedrick
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07	Fred Rogers																												
08	Mike Lee																												
09	Howard Kelly																												
10	Jim Gormley																												
11	Allan Ball																												
12	Mike Pedrick																												
8	In the Quantity field, enter 3 .																												

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Issuing an Unreserved Item continued

Issuing Items to a Work Order continued

Step	Action
9	<p>Notice that the GL Debit Account field is only partially filled. In the Asset field, enter 12300 and press the Tab key.</p> <p><u>Result:</u> Now the GL Debit Account field is filled in properly.</p>
10	<p>Save the record.</p> <p><u>Result:</u> The issue is recorded in the database.</p> <p><u>Note:</u> If the system administrator configures Maximo to disallow negative current or available balances, and the quantity you are trying to issue causes the balance or availability to drop below zero, Maximo displays a message stating that the inventory quantity becomes negative as a result of this transaction. Click OK and adjust the quantity accordingly.</p>

Issuing Metered Materials

Introduction

Maximo allows you to issue metered materials and record meter readings as you issue the material. By “metered,” we mean that we can include a meter reading from the asset at the time of issue. One example of this kind of transaction is issuing fuel to a truck and recording the reading on the truck’s odometer each time it is refueled.

Exercise

Our case study continues with the following exercise, which has two parts, divided into each of two roles:

- a maintenance employee who sets up the meter fields in an asset record, and
 - an inventory employee who issues grease to an asset record with a meter, in this case a centrifugal pump.
-

For Single-Database Training Environment Only



Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then you will not be able to proceed with the following exercise because only one person can perform it.

Your instructor will inform you if you will be able to perform this exercise, and your instructor will determine how this is best accomplished.

Your instructor may opt to walk the class through this exercise.

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Issuing Metered Materials continued

Setting Up the Meter Fields

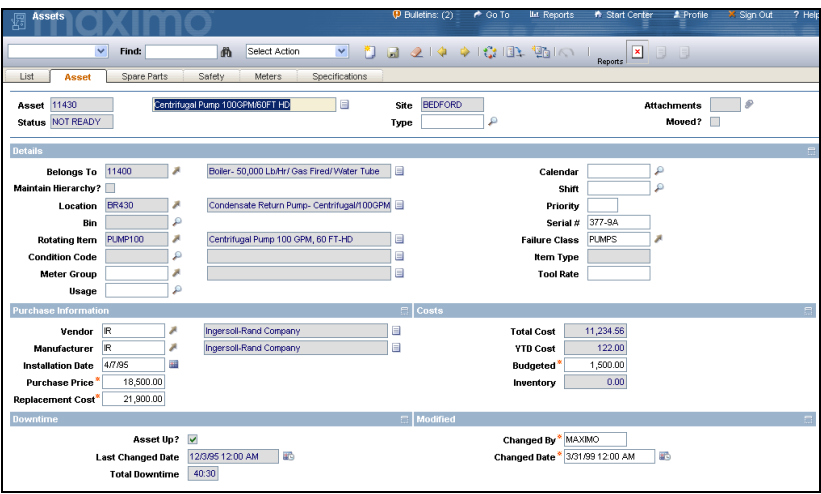


In the first part of this exercise, you are a maintenance employee setting up the meter fields for an asset.

Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then you will not be able to proceed with the following exercise because only one person can perform it.

Your instructor will inform you if you will be able to perform this exercise, and your instructor will determine how this is best accomplished.

Your instructor may opt to walk the class through this exercise.

Step	Action
1	<p>In the Assets application, search for and select asset 11430.</p> <p><u>Result:</u> The Asset tab should look like this:</p> 

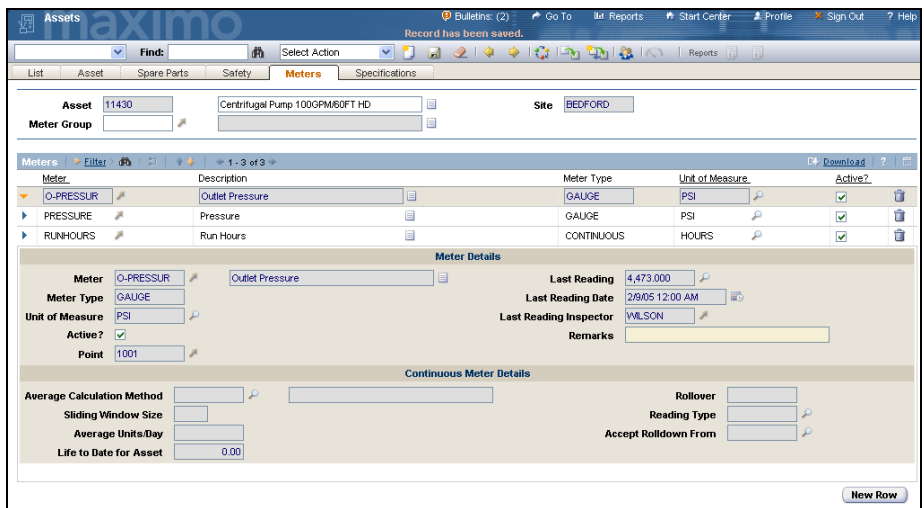
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Issuing Metered Materials continued

Setting Up the Meter Fields

continued

Step	Action
2	Click on the Meters tab. Then, click New Row in the Meter Details frame.
3	Click on the Select Value icon next to the Meter field and select Pressure . <u>Result:</u> The Meter Type and Unit of Measure fields are automatically populated.
4	In the Meter Readings frame, in the Last Reading field, enter 100.
5	Save the record. <u>Result:</u> The display should look similar to this:



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Issuing Metered Materials continued

Issuing Metered Materials



In this part of the exercise, our case study continues as we perform the role as the manager of the Central storeroom. We will issue grease to Centrifugal Pump 11430.

Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then each participant will be issuing grease to the same asset. Although this situation is unrealistic, it allows each participant to perform this exercise.

Remember that (only) if you are working in a single-database environment, an italicized *xx* might be appended to data entry items. Where applicable, substitute your student number for the *xx*.

Step	Action						
1	Open the Issues and Transfers application, then search for and select the CENTRAL storeroom.						
2	Click New Row .						
3	In the Item field, enter the item number for grease, Z-LG1.						
4	Enter the following information: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th><u>Field</u></th> <th><u>Value</u></th> </tr> </thead> <tbody> <tr> <td>Quantity</td> <td>1</td> </tr> <tr> <td>Asset</td> <td>11430</td> </tr> </tbody> </table> <p>Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then the following steps will have to be accomplished in sequential order.</p> <p><i>Your instructor will determine how this is best accomplished.</i></p>	<u>Field</u>	<u>Value</u>	Quantity	1	Asset	11430
<u>Field</u>	<u>Value</u>						
Quantity	1						
Asset	11430						
5	Click Save .						

Transferring Items

Introduction

In this section we will learn how to use Maximo to transfer items out of and into a storeroom using the Transfer Out and Transfer In tabs. We will first learn how to transfer items within the same site and organization. Then we will discuss how to transfer items across sites and organizations.

Should You Use Transfer Out or Transfer In for Transfers Within a Site?

The Transfer Out tab and the Transfer In tab create the same record—one that has a “from” and a “to” location (including bins). Use each tab when it is most convenient. For example, if you are the manager of the Garage storeroom, it is probably more convenient to transfer items *in* from a variety of locations. If you are the manager of the Central storeroom, it is probably more convenient to transfer many items *out* in a single session.

In many cases you should use the Transfer Out *and* Transfer In tabs to best handle the complete scenario of transferring an item. Consider a transfer between two storerooms 300 miles apart. In this case, a transfer between these two storerooms is not instantaneous and involves shipping time. For this reason a user generally creates a “transfer out” record consisting of a From Location of Storeroom A and a To Location of a Courier (for example, FedEx). At the point when the courier reaches Storeroom B, the user can perform a Transfer In with a From Location of the Courier and a To Location of Storeroom B. This same scenario can be repeated with a Labor location instead of a Courier location.

Transferring Out

Introduction

In our case study, there is a requirement for some items needed by the Packaging storeroom. As the Central storeroom clerk, we will use Maximo to record the transfer. Through this exercise you will transfer items out of one storeroom and into another inventory location; however, you can also use this method to transfer items out to a labor or courier location.

Using the Transfer Out Action



Follow these steps to use the Select Items for Transfer action to transfer copper tubing out of the Central storeroom and into the Packaging storeroom.

Step	Action
1	Open the Issues and Transfers application, then search for and select the CENTRAL storeroom.
2	Click on the Transfer Out tab.
3	Click Select Items for Transfer . <u>Result:</u> The Select Items for Transfer page opens.

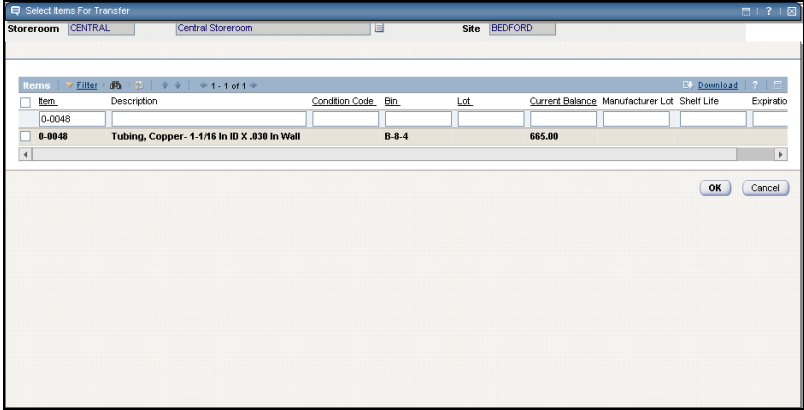
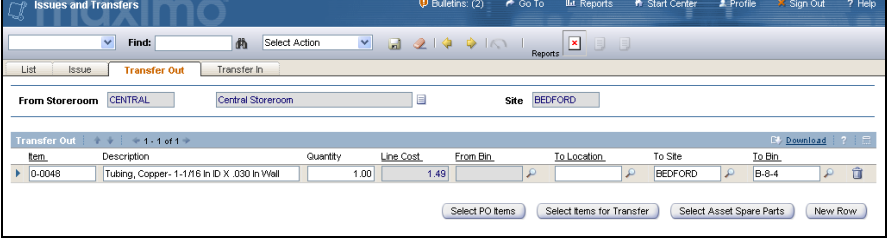
Item	Description	Condition Code	Bin	Lot	Current Balance	Manufacturer Lot	Shelf Life	Expiration Date
<input type="checkbox"/> 386-12	Pipe Gaskets				20.00			
<input type="checkbox"/> 217215	Bearing, Pillow Block, Fatmir- 1 In ID		D-6-1		5.00			
<input type="checkbox"/> 39224	Brake Shoes				0.00			
<input type="checkbox"/> 11453	Seal, Mechanical, Self Aligning- 1 In ID		G-5-3	A-431	1.00	21633	730	1/1/06
<input type="checkbox"/> 29331	Building Thermostat		A-4-8		2.00			
<input type="checkbox"/> FIRE-100	Fire Extinguisher				0.00			
<input type="checkbox"/> P-896	Rotary PD Pump, 100 GPM, Asceptic		2-A		0.00			
<input type="checkbox"/> 61503	Brake Shoe Kit				6.00			
<input type="checkbox"/> VS-48	Valve Stem				2.00			
<input type="checkbox"/> 28149	Stem Packing				0.00			
<input type="checkbox"/> S-546	Stem Coupling				0.00			
<input type="checkbox"/> 53-143	V-Belt- 1/2 In, 30 In Circumference		B-7-3		0.00			
<input type="checkbox"/> MOT110	Motor- 10hp/1750rpm/TEFC/254T Frame/440v/3ph/60hz		F-4-1		0.00			
<input type="checkbox"/> 1002	5 ft. X 6 ft. window pane				0.00			
<input type="checkbox"/> 117041	Connecting Link - Repair		A-5-2		6.00			

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Transferring Out continued

Using the Transfer Out Action

continued

Step	Action
4	<p>In the Filter's Item field, search for Copper Tubing, Item 0-0048.</p> <p><u>Result:</u> Your result should look similar to this:</p> 
5	<p><input type="checkbox"/> 0-0048</p> <p>Click in the check box to select Item 0-0048 and then click OK.</p> <p><u>Result:</u> The item is copied to the Transfer Out tab.</p> 
6	<p>Enter PKG in the To Location field.</p>
7	<p>Enter 10 in the Quantity field.</p>
8	<p>Save the record.</p> <p><u>Result:</u> The record will no longer display because the item has been issued to the Package storeroom.</p>

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Using the Select PO Items Option

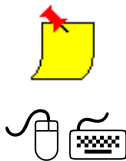
Introduction

You use the Transfer Out tab of the Issues and Transfers application to transfer items that are listed on purchase orders (PO). To transfer items out from one site to another site within the same organization, you must be authorized to access both sites and to the storerooms at those sites. To transfer items out across organizations, you must have a PO.

For this exercise you will learn how to receive material on internal purchase orders by transferring items using the Issues and Transfers application.

In the next exercise you will use the Issues and Transfers application to fill an internal purchase order for item 560-00 for the Central storeroom.


For Single-Database Training Environment Only



Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then you will need to accomplish the following steps before proceeding with the next exercise to fill an internal PO for item 560-00.

Your instructor will inform you if you need to perform these steps.

To complete the exercise that describes how to receive materials on an internal purchase order, we will first duplicate an existing PO and approve it.

Step	Action
1	In the Purchase Orders application, search for and select the PO (<i>Request for Tubing</i>) for item 560-00 (PO 1015 in this example, although your value might differ).
2	From the Select Action menu, choose Duplicate Purchase Order . Write your PO number here: _____
3	Click the Change Status icon  . <u>Result:</u> The Change Status window opens.
4	In the Change Status window, select Approved (APPR) from the New Status field drop-down list.
5	Click OK .
6	Save the record.

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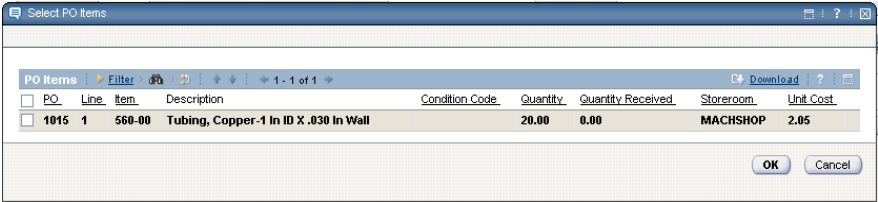
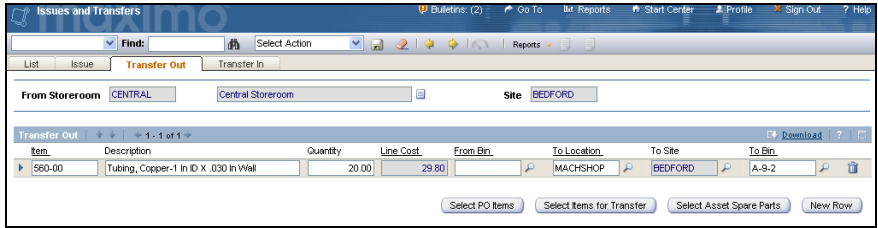
Using the Select PO Items Option continued

Using the Select PO Items Option



An internal purchase order can be created in the Purchase Orders application or as a result of the inventory reorder routine. In this next exercise you will use the Issues and Transfers application to fill an internal purchase order for item 560-00 for the Central storeroom.


If you are in a multiple-database environment, go to the **Purchase Orders** application and approve **PO 1015** before proceeding with the exercise.

Step	Action
1	In the Issues and Transfers application, search for and select the CENTRAL storeroom.
2	Click on the Transfer Out tab.
3	<p>Click Select PO Items.</p> <p><u>Result:</u> The Select PO Items page opens.</p> 
4	<p><input type="checkbox"/> PO</p> <p><input checked="" type="checkbox"/> 1015</p> <p>Click to select your PO (or duplicated PO) for item 560-00, and then click OK.</p> <p><u>Result:</u> You are returned to the Transfer Out tab, with the item selected for transfer.</p> 

continued on next page

Using the Select PO Items Option continued

Using the Select PO Items Option continued

Step	Action
5	Verify MACHSHOP in the To Location field.
6	Verify 20 in the Quantity field.
7	<p>Save the record.</p> <p><u>Result:</u> No records are displayed, because the item has been transferred to the Machine Shop storeroom.</p> 

Transferring Items Across Sites and Organizations

Cross-Site and Cross- Organization Transfers

When transferring items across sites and organizations, keep in mind the following points:

- To transfer items out from one site to another site within the same organization, you must be authorized to access both sites and to the storerooms at those sites. To transfer items out across organizations, you must have a PO.
 - Items can be transferred only between those organizations that share the same item set.
 - Each organization has a clearing account associated with it. This account is used whenever there is a cross-organization transaction and is set up in the Chart of Accounts application.
 - There is a check box in the Storeroom application that indicates that a storeroom can be used for internal PR/PO.
 - When creating a PO, you will specify the site and storeroom in order to create an internal PO.
 - Transfer In cannot be used for cross-organization transfers. This is because it is against generally accepted accounting principles (GAAP) for an organization to write a financial posting in another organization. However, Transfer In can be used for cross-site transfers.
 - While processing cross-organization transfer requests, the To Location field can be blank. This is because the two organizations may not share the same vendor master and therefore the Labor/Courier location specified here will be irrelevant to the receiving organization.
 - Cross-organization Transfer Out transactions will credit the supplying storeroom's control account and debit the supplying organization's clearing account.
-

Location Types

Introduction

So far you have only used storerooms as locations from which you transfer items. However, in Maximo you can include five other types of locations:

- Equipment
 - Locations
 - Courier (is also a Location)
 - Storeroom Bins
 - Labor
-

To a Courier or Labor Location

You can use the **Transfer Out** tab to transfer items to another storeroom, between bins in the same storeroom, from a storeroom to equipment, or to a courier or labor location. In a sense, courier and labor locations function as mobile storerooms.

From a Courier or Labor Location

Maximo allows you to move items from a courier or labor location in one of two ways, depending on the destination of the items.

- To a *storeroom*. Use the **Transfer In** tab to move items from a courier or labor location to a storeroom.
 - To a *work order* or *asset*. The appropriate applications allow you to issue items from courier and labor locations directly to work orders or assets.
-

Creating Courier and Location Types

All Inventory locations except storerooms are originally entered into Maximo as vendor records. All of the storerooms—Central, Garage, and so forth—are also vendors and can be displayed in the Companies application.

When you create and save a new vendor record, you designate a vendor's location type as courier, storeroom, or vendor and save it as an inventory location record.

Transferring vs. Issuing



Note: This course includes a discussion of transferring items from a courier or labor location to a storeroom. This course does not address the process of issuing items from a courier or labor location to a work order or asset; however, the process is similar.

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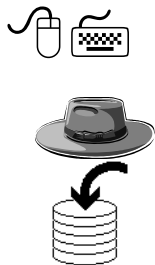
Transferring an Item to a Courier Location

When to Use the Courier Location Type

Some items or equipment must be tracked “cradle to grave.” In other words, you as the asset manager need to know where that specific piece of equipment has been from the time your company purchased it to the time it is retired from service, who might have handled it in between, where it’s been, and its complete repair history.

Use the Courier location type when you are using a service, such as FedEx or UPS, as an intermediary in the transfer of an item. Consider an example in which you use UPS to transport an item from a storeroom in one city to a storeroom in another city. To track the item while it is in transit, you transfer it out of the first storeroom to UPS. At the other end, you transfer the item out of UPS and into the second storeroom.

Transferring an Item to a Courier Location



In our case study, the Garage storeroom needs some material; however, the Garage storeroom is located in a nearby town. As the storeroom clerk, we decide to use a courier (UPS) to transfer material to the Garage storeroom.

In the following exercise you will transfer copper tubing (560-00) from the Central storeroom to UPS, a courier location. UPS will deliver this item to the Packaging storeroom.

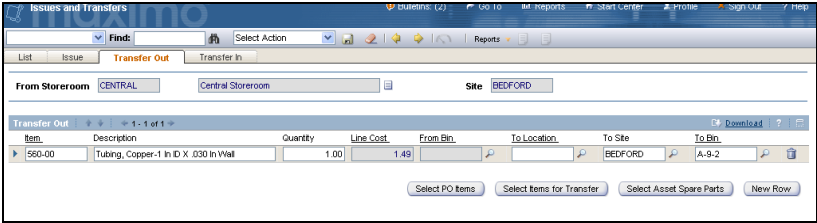
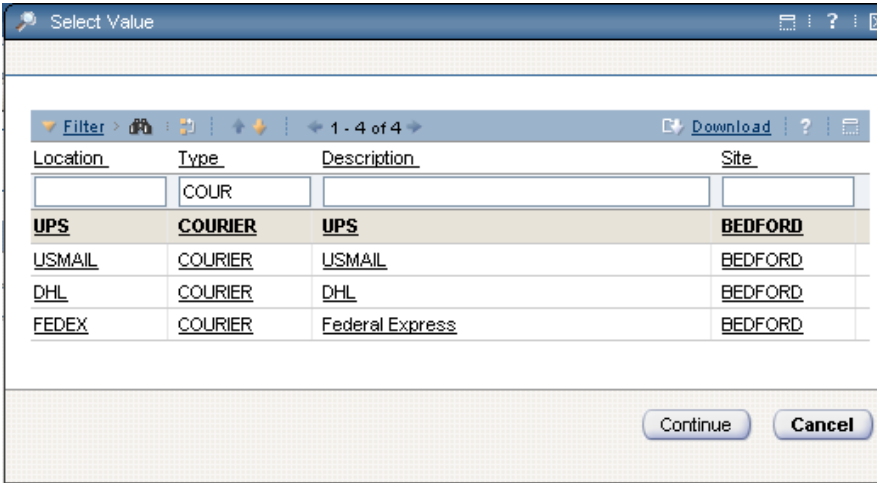
Step	Action
1	In the Issues and Transfers application, search for and select the CENTRAL storeroom.
2	Click the Transfer Out tab.
3	Click the Select Items for Transfer button.
4	Click on Filter and, in the Filter’s Item field, enter 560-00 and click the Filter Table icon. <u>Result:</u> The item appears.

continued on next page

Location Types continued

Transferring an Item to a Courier Location

continued

Step	Action
5	<p>Select item 560-00 and click OK. <u>Result:</u> Item 560-00 is selected for transfer.</p> 
6	<p>In the Quantity field, enter 10.</p>
7	<p>In the To Location field, click Select Value. <u>Result:</u> The Search Results page opens.</p>
8	<p>In the Filter's Type field, enter COUR and click the Filter Table icon. <u>Result:</u> Maximo displays all COURIER Type locations.</p> 
9	<p>Click to select UPS. <u>Result:</u> UPS populates the To Location field.</p>
10	<p>Save the record.</p>

Transferring an Item In

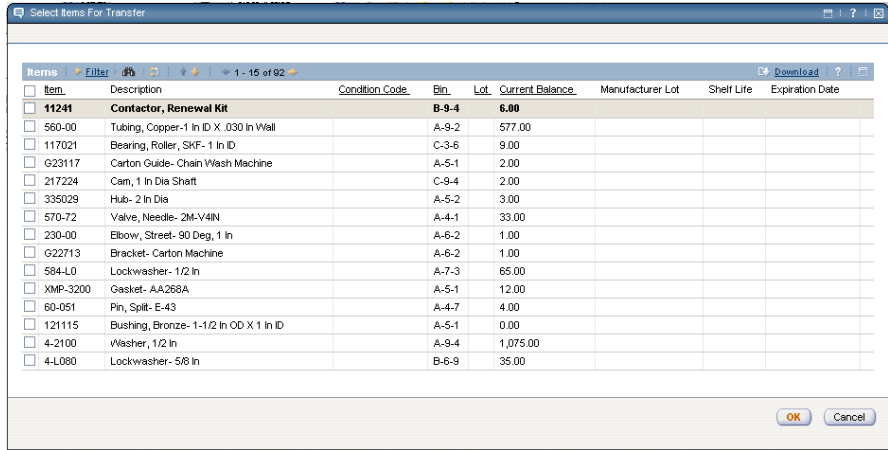
Introduction

Like transferring out, the process of transferring in is not very different whether you transfer an item in from a storeroom, courier, or labor location.

Transferring an Item in from a Courier Location



As part of our case study, in the previous exercise we transferred 10 units of item 560-00 copper tubing to UPS, a courier location, instead of to a storeroom. In this exercise, we, as the Garage storeroom manager, will transfer in the item from UPS to the Garage storeroom.

Step	Action
1	In the Issues and Transfers application, search for and select the GARAGE storeroom.
2	Click on the Transfer In tab.
3	<p>Click Select Items for Transfer.</p> <p><u>Result:</u> The Search page displays items available for transferring in.</p> 
4	<p>Select item 560-00 and click OK.</p> <p><u>Result:</u> You are returned to the Transfer In tab with item 560-00.</p>

continued on next page

Transferring an Item In continued

Transferring an Item In from a Courier Location

continued

Step	Action
5	In the From Location field, click Select Value .
6	Select the UPS COUR record. <u>Result:</u> You are returned to the Transfer In tab with the From Location field filled in with UPS.
7	In the Quantity field, enter 10.
8	Save the transaction. <u>Result:</u> No records are displayed, because the item has been transferred from UPS into the GARAGE storeroom.

Negative Availability

Introduction

Maximo offers you flexibility when you encounter negative availability and provides you with meaningful information about the frequency and significance of those occasions.

Definition

Negative availability occurs when the quantity of an item that you want to issue or transfer exceeds that item's available balance.

Quantity Available

Negative availability considers the quantity available, which is the current balance minus reservations and expired lots.

When Requests Exceed Availability

When the quantity you have requested exceeds the quantity available (*not* the current balance), Maximo prevents you from issuing the item.

Returning Items

Introduction

Maximo allows you to return items using the Issues and Transfers application.


The Select Items for Return Dialog Box

The **Select Items for Return** button on the **Issue** tab acts as verification that any items you return have actually been issued. That is, you cannot return something that has not actually been issued. The Select Items for Return page limits you to returning only those items that have previously been issued.

Returning Items



For our case study, suppose you learned that 20 feet of item 560-00 issued to you (Wilson) earlier is damaged. You (as Wilson) need to return it to the storeroom.

Step	Action
1	In the Issues and Transfers application, search for and select the CENTRAL storeroom.
2	Click Select Items for Return .
3	In the Filter's Item field, enter 560-00 and click the Filter Table icon. <u>Result:</u> Maximo displays a list of the results.
4	Select item 560-00 issued to WILSON and click OK . <u>Result:</u> You are returned to the Issue tab.
5	 <u>Note:</u> Perform this step only if you are in a training environment in which each participant is accessing the same database. Your instructor will inform you if you will need to perform this step. Change the value in the Quantity field to 1 (from 20).
6	Save the record. <u>Result:</u> The message "No rows to display" appears because the item has been returned to the CENTRAL storeroom.

Issuing and Transferring Items from Inventory

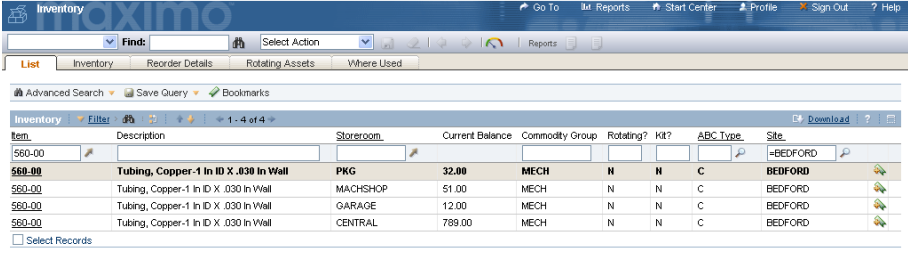
Introduction

Usually you will want to issue and transfer items with the Issues and Transfers application. On occasion, though, you might find it more convenient to issue or transfer an item directly from the Inventory application. This section covers issues and transfers from the Inventory application, including an example of how to split a lotted item.

Issuing Items



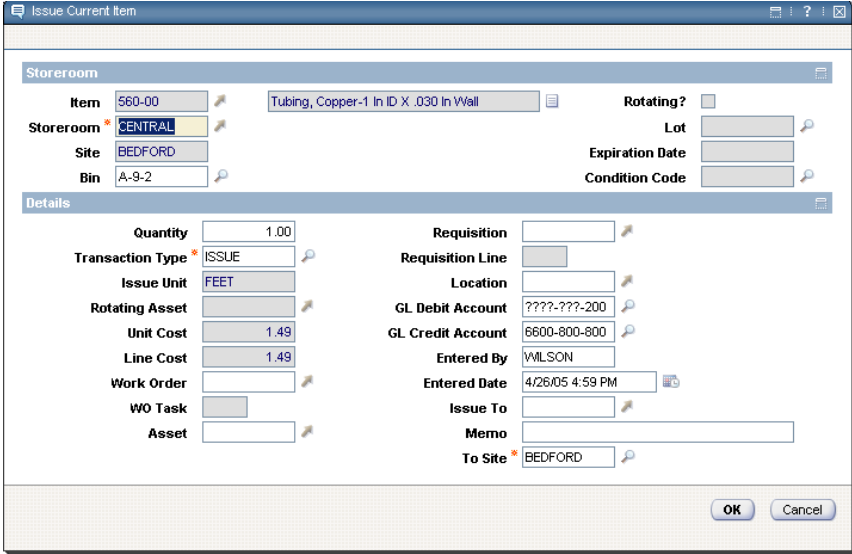

In our case study we will issue item 560-00, the copper tubing, to work order 1005 using the Inventory Control application.

Step	Action				
1	<p>Open the Inventory application and query for item 560-00. <u>Result:</u> A list of the records for item 560-00 displays.</p>  <p><u>Note:</u> Depending on your training environment, your values might differ.</p>				
2	<p>Click to select item 560-00 from the CENTRAL storeroom. <u>Result:</u> You are returned to the Inventory tab.</p>				
3	<p>Record your balances here:</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><u>Current Balance</u></td> <td style="text-align: center; width: 50%;"><u>Physical Count</u></td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> </table>	<u>Current Balance</u>	<u>Physical Count</u>	_____	_____
<u>Current Balance</u>	<u>Physical Count</u>				
_____	_____				

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Issuing and Transferring Items from Inventory continued

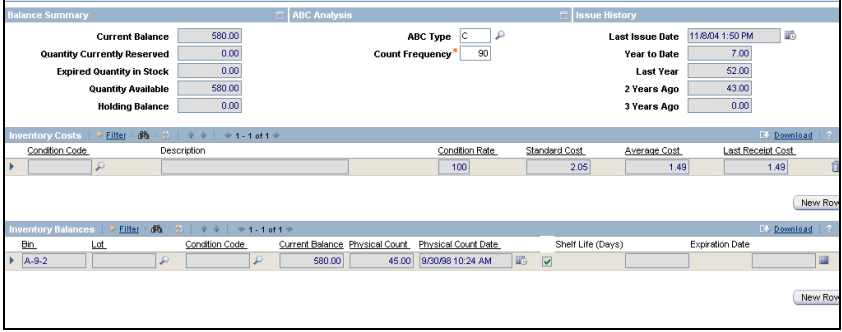
Issuing Items continued

Step	Action						
4	<p>From the Select Action menu, choose Issue Current Item.</p> <p><u>Result:</u> The Issue Current Item page opens.</p> 						
5a	<p> <u>Note:</u> Perform this step <i>only</i> if you are in a training environment in which each participant is accessing the same database. Otherwise, skip to the next step (5b). Your instructor will inform you if you need to perform this step. Enter the following information:</p> <table border="1" data-bbox="553 1381 919 1507"> <thead> <tr> <th><u>Field</u></th> <th><u>Value</u></th> </tr> </thead> <tbody> <tr> <td>Quantity</td> <td>2</td> </tr> <tr> <td>Work Order</td> <td>1005</td> </tr> </tbody> </table> <p><u>Note:</u> You must issue an item to a work order, asset, location, or GL debit account.</p>	<u>Field</u>	<u>Value</u>	Quantity	2	Work Order	1005
<u>Field</u>	<u>Value</u>						
Quantity	2						
Work Order	1005						

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Issuing and Transferring Items from Inventory continued

Issuing Items continued

Step	Action																														
5b	<p>Note: If you performed the previous step (5a), then <i>skip</i> this step. Otherwise, enter the following information:</p> <table border="0"> <tr> <td><u>Field</u></td> <td><u>Value</u></td> </tr> <tr> <td>Quantity</td> <td>7</td> </tr> <tr> <td>Work Order</td> <td>1005</td> </tr> </table> <p>Note: You must issue an item to a work order, asset, location, or GL debit account.</p>	<u>Field</u>	<u>Value</u>	Quantity	7	Work Order	1005																								
<u>Field</u>	<u>Value</u>																														
Quantity	7																														
Work Order	1005																														
6	<p>Click OK.</p> <p><u>Result</u>: The balances are adjusted.</p>  <p>The screenshot displays the 'Balance Summary' window with the following data:</p> <table border="1"> <tr> <td>Current Balance</td> <td>580.00</td> <td>ABC Type</td> <td>C</td> <td>Last Issue Date</td> <td>11/8/04 1:50 PM</td> </tr> <tr> <td>Quantity Currently Reserved</td> <td>0.00</td> <td>Count Frequency</td> <td>90</td> <td>Year to Date</td> <td>7.00</td> </tr> <tr> <td>Expired Quantity in Stock</td> <td>0.00</td> <td></td> <td></td> <td>Last Year</td> <td>52.00</td> </tr> <tr> <td>Quantity Available</td> <td>580.00</td> <td></td> <td></td> <td>2 Years Ago</td> <td>43.00</td> </tr> <tr> <td>Holding Balance</td> <td>0.00</td> <td></td> <td></td> <td>3 Years Ago</td> <td>0.00</td> </tr> </table> <p>Below this, the 'Inventory Costs' table shows a single row with Condition Code 100, Standard Cost 2.05, and Average Cost 1.49. The 'Inventory Balances' table shows a row for lot A-9-2 with a Current Balance of 580.00 and Physical Count of 45.00.</p>	Current Balance	580.00	ABC Type	C	Last Issue Date	11/8/04 1:50 PM	Quantity Currently Reserved	0.00	Count Frequency	90	Year to Date	7.00	Expired Quantity in Stock	0.00			Last Year	52.00	Quantity Available	580.00			2 Years Ago	43.00	Holding Balance	0.00			3 Years Ago	0.00
Current Balance	580.00	ABC Type	C	Last Issue Date	11/8/04 1:50 PM																										
Quantity Currently Reserved	0.00	Count Frequency	90	Year to Date	7.00																										
Expired Quantity in Stock	0.00			Last Year	52.00																										
Quantity Available	580.00			2 Years Ago	43.00																										
Holding Balance	0.00			3 Years Ago	0.00																										
7	<p>Save the record.</p> <p>Record the revised Current Balance: _____</p>																														

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Issuing and Transferring Items from Inventory continued

Returning Items in Inventory Control



You can also use the **Issue Current Item** option from the Select Action menu to return an item. When the Issue Current Item page opens, in the Transaction Type field, click **Select Value** and choose **RETURN**.

Use the following steps to return items.

Step	Action
1	In the Inventory application, query for and select item 560-00 from the CENTRAL storeroom.
2	From the Select Action menu, choose Issue Current Item . <u>Result</u> : The Issue Current Item page opens.
3	In the Transaction Type field, enter RETURN .
4	In the Quantity field, enter 2 .
5	In the Work Order field, enter 1005 .
6	Click OK . <u>Result</u> : You are returned to the Inventory tab.
7	Save the record. <u>Result</u> : Your item is returned. Record the updated Current Balance: _____

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Transferring Items from Inventory

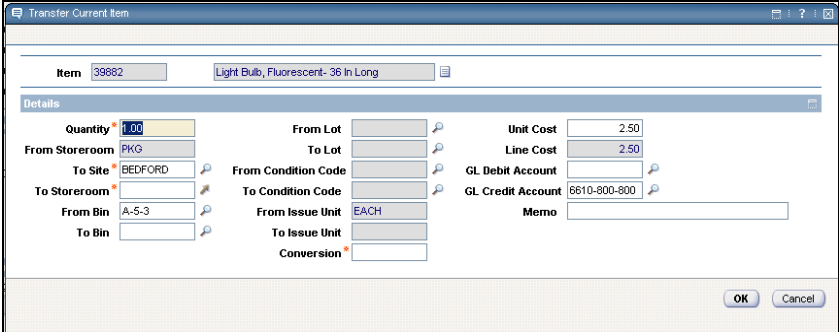
Introduction

In addition to issuing and returning items using the Inventory application, you can also transfer an item to another storeroom, a bin in the same storeroom, a courier location, or a labor location

Transferring Items



In our case study we will use the Inventory application to transfer item 39882 to the Machine Shop storeroom.

Step	Action						
1	In the Inventory application, search for and select item 39882 from the PKG storeroom. Record the Current Balance: _____						
2	From the Select Action menu, choose Transfer Current Item . <u>Result:</u> The Transfer Current Item page opens. 						
3	Enter the following information: <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Field</u></th> <th style="text-align: left;"><u>Value</u></th> </tr> </thead> <tbody> <tr> <td>Quantity</td> <td>1</td> </tr> <tr> <td>To Storeroom</td> <td>MACHSHOP</td> </tr> </tbody> </table>	<u>Field</u>	<u>Value</u>	Quantity	1	To Storeroom	MACHSHOP
<u>Field</u>	<u>Value</u>						
Quantity	1						
To Storeroom	MACHSHOP						
4	Click OK . <u>Result:</u> You are returned to the Inventory tab.						
5	Save the record. Record the updated Current Balance: _____						

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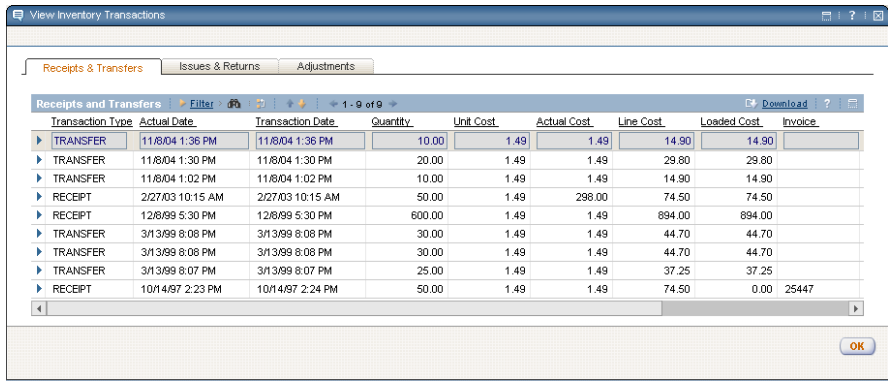
Viewing Inventory Transactions

Introduction

Inventory transactions, including those made in the Issues and Transfers application, can be viewed either from the Inventory application or through the Inventory Transactions Report.

View Inventory Transactions Through the Inventory Application

To view the recent transactions for item 560-00, follow these steps.

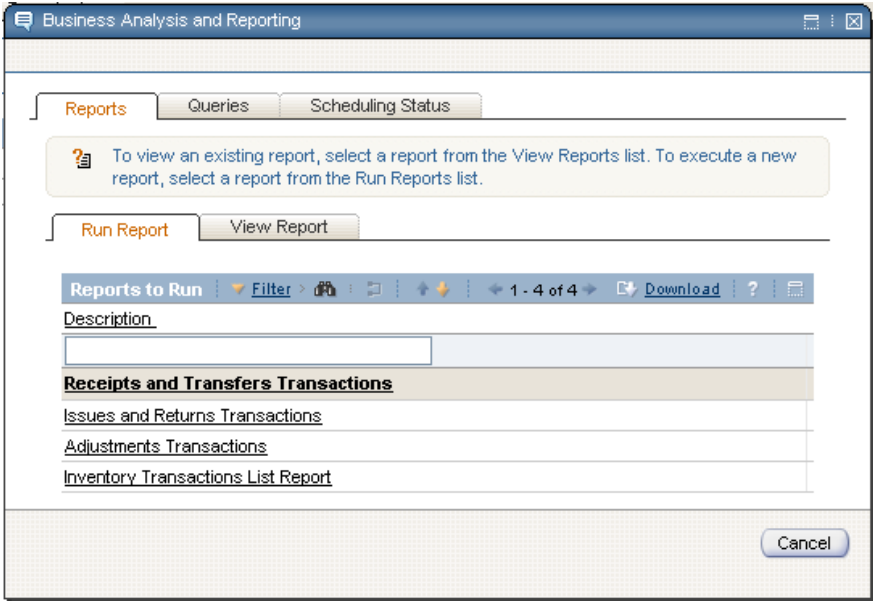
Step	Action
1	In the Inventory application, search for and select item 560-00 from the CENTRAL storeroom.
2	<p>From the Select Action menu, select View Inventory Transactions.</p> <p><u>Result:</u> The View Inventory Transactions page opens.</p> 
3	When you are done viewing the Inventory transactions, click OK .

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Viewing Inventory Transactions continued

Inventory Transactions Report

Use the following steps to open the Inventory Transactions Report.

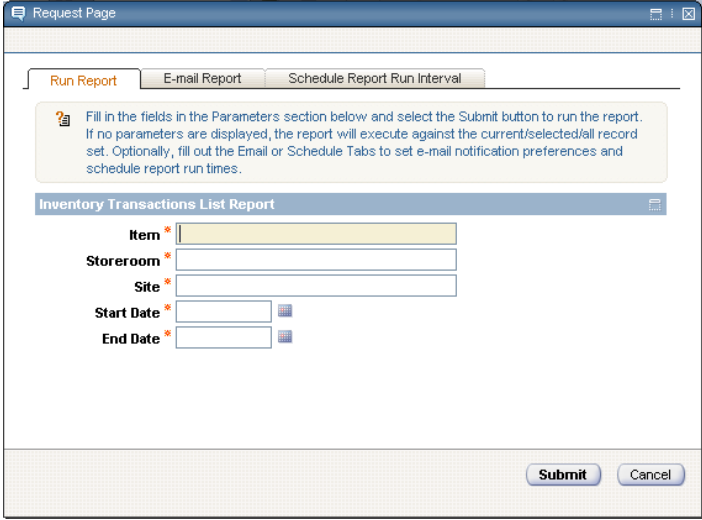
Step	Action
1	From the Issues and Transfers application, search for and select the CENTRAL storeroom in Bedford.
2	<p>From the Select Action menu, select Run Reports.</p> <p><u>Result:</u> The Business Analysis and Reporting page shows the reports available for the current (Issues and Transfers) application.</p>  <p>The screenshot shows a web application window titled "Business Analysis and Reporting". It has three tabs: "Reports" (selected), "Queries", and "Scheduling Status". Below the tabs is a help message: "To view an existing report, select a report from the View Reports list. To execute a new report, select a report from the Run Reports list." There are two buttons: "Run Report" and "View Report". Below these is a "Reports to Run" section with a "Filter" dropdown, a search icon, and a "Download" button. A list of reports is shown with "Receipts and Transfers Transactions" highlighted in a light blue row. Other reports listed are "Issues and Returns Transactions", "Adjustments Transactions", and "Inventory Transactions List Report". A "Cancel" button is at the bottom right.</p>

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Viewing Inventory Transactions continued

Inventory Transactions Report

continued

Step	Action												
3	<p>Click to select the Inventory Transactions List Report.</p> <p><u>Result</u>: The Inventory Transactions Request page opens.</p> 												
4	<p>Enter the following information:</p> <table border="1" data-bbox="553 1234 1024 1497"> <thead> <tr> <th><u>Field</u></th> <th><u>Value</u></th> </tr> </thead> <tbody> <tr> <td>Item</td> <td>560-00</td> </tr> <tr> <td>Storeroom</td> <td>CENTRAL</td> </tr> <tr> <td>Site</td> <td>BEDFORD</td> </tr> <tr> <td>Select a Start Date</td> <td><i>yesterday</i></td> </tr> <tr> <td>Select an End Date</td> <td><i>today</i></td> </tr> </tbody> </table>	<u>Field</u>	<u>Value</u>	Item	560-00	Storeroom	CENTRAL	Site	BEDFORD	Select a Start Date	<i>yesterday</i>	Select an End Date	<i>today</i>
<u>Field</u>	<u>Value</u>												
Item	560-00												
Storeroom	CENTRAL												
Site	BEDFORD												
Select a Start Date	<i>yesterday</i>												
Select an End Date	<i>today</i>												
5	<p>Click Submit.</p> <p><u>Result</u>: Maximo displays the Inventory Transactions Details report. (In our example, for item 560-00 showing a quantity of 7 issued to work order 1005.)</p>												
6	<p>When you are done viewing your report, try running the report with different parameters.</p>												
7	<p>When you are finished, close the reporting application.</p>												

Splitting Lots

Introduction

When attributes of lotted items change, you need to separate these items from their original lots. Maximo enables you to use the Issues and Transfers or the Inventory application to split lots.

Splitting Lots



In this exercise, a package has been opened; this requires you to change the expiration date, which in turn requires you to move the items from their original lot into a new lot.

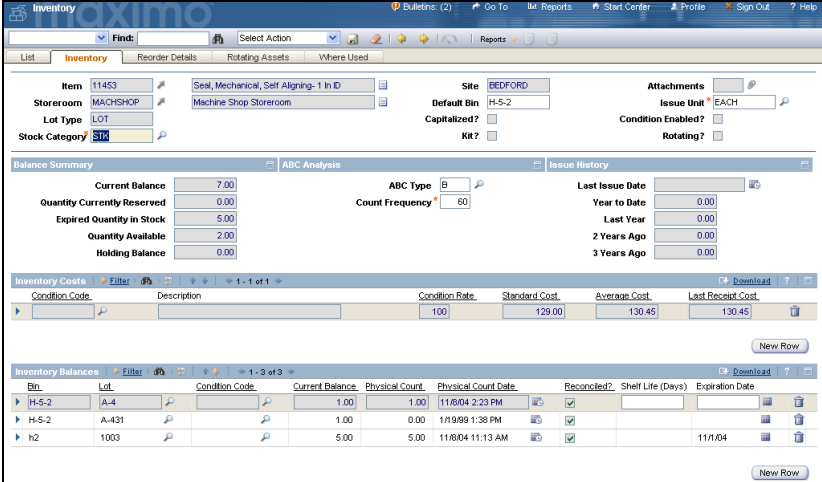
Note: Remember that if you are working in a single-database environment, an italicized *xx* may be appended to data entry items. Where applicable, substitute your student number for the *xx*.

Step	Action
1	In the Issues and Transfers application, search for and select the CENTRAL storeroom.
2	Click on the Transfer Out tab.
3	Click Select Items for Transfer . <u>Result:</u> The Select Items for Transfer page opens.
4	Click on Filter and, in the Filter's Item field, enter 11453 and click the Filter Table icon. <u>Result:</u> The Select Items for Transfer page displays the results.
5	Click in the check box to select item 11453 from bin A-4-9 (lot A-431) and click OK . <u>Result:</u> You are returned to the Transfer Out tab.
6	Click View Details to view all the information.
7	In the To Location field, enter MACHSHOP .

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Splitting Lots continued

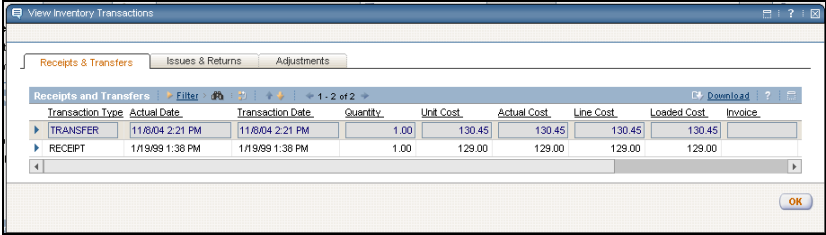
Splitting Lots continued

Step	Action
8	In the To Lot field, enter A-4 (or A-4-xx).
9	In the To Bin field, verify H-5-2 (or H-5-xx).
10	Save the record. <u>Result:</u> No records are displayed, because the item has been transferred to the Machine Shop.
11	To view your results, open the Inventory application.
12	<p>Search for and select item 11453 in the MACHSHOP storeroom.</p> <p><u>Result:</u> The Inventory tab should display your results, similar to the following:</p>  <p>Notice that (for each participant) a quantity of one has been transferred to lot A-4 (or A-4-xx) into bin H-5 (or H-5-xx).</p>

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Splitting Lots continued

Splitting Lots continued

Step	Action
13	<p>From the Select Action menu, select View Inventory Transactions.</p> <p><u>Result:</u> The View Inventory Transactions page opens.</p> 
14	Click View Details to review the details of your recent transaction to split the lot and transfer one to the Machine Shop.
15	When you are done viewing the Inventory transactions, click OK .

Chapter Summary

Issuing and Transferring in Maximo

Maximo provides two ways to issue and transfer items from within the Inventory module:

- The Issues and Transfers application
 - The Inventory application
-

Issues and Transfers Tabs

The Issues and Transfers application consists of four tabs:

Tab	Function
Search	Searches the database
Issue	Issues or returns items
Transfer Out	Transfers items out of a storeroom
Transfer In	Transfers items into a storeroom

The Issue Tab

You can use the Issue tab to:

- issue reserved items to the appropriate work order;
 - issue non-reserved items to a work order;
 - issue rotating assets;
 - process the return of issued items;
 - define your filter to view the items that have been issued; and
 - issue metered materials.
-

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Chapter Summary continued

The Transfer Out Tab Use the Transfer Out tab to transfer items from one storeroom to another and to transfer items to courier and labor locations.

The Transfer In Tab Use the Transfer In tab to transfer items from one storeroom to another storeroom and to transfer items from a courier or labor location into a storeroom.

Inventory Application In the Inventory application, you can:

- issue or return a selected item;
- transfer a selected item;
- run a report to view transactions for a selected item; and
- split lots by transferring a portion of a lotted item to a new lot.

Workshop

Exercises

In the following exercises you will manage the Central storeroom, transferring and issuing items as the need arises.

Objective

The objective of these workshop exercises is to familiarize you with Maximo and its ability to issue and transfer so that you will be able to enter and obtain information easily.

Exercise 1: Reviewing Transactions

Review all of the items that you have issued in the current year.



Exercise 2: Returning Items

Return two of item 560-00.



Exercise 3: Transferring Items

Transfer any one item out of the Central storeroom to DHL.
Then, transfer the item from DHL to the Machine Shop storeroom.



Review Questions

Review Questions



1. When would you issue an item from the Inventory application rather than from the Issues and Transfers application?

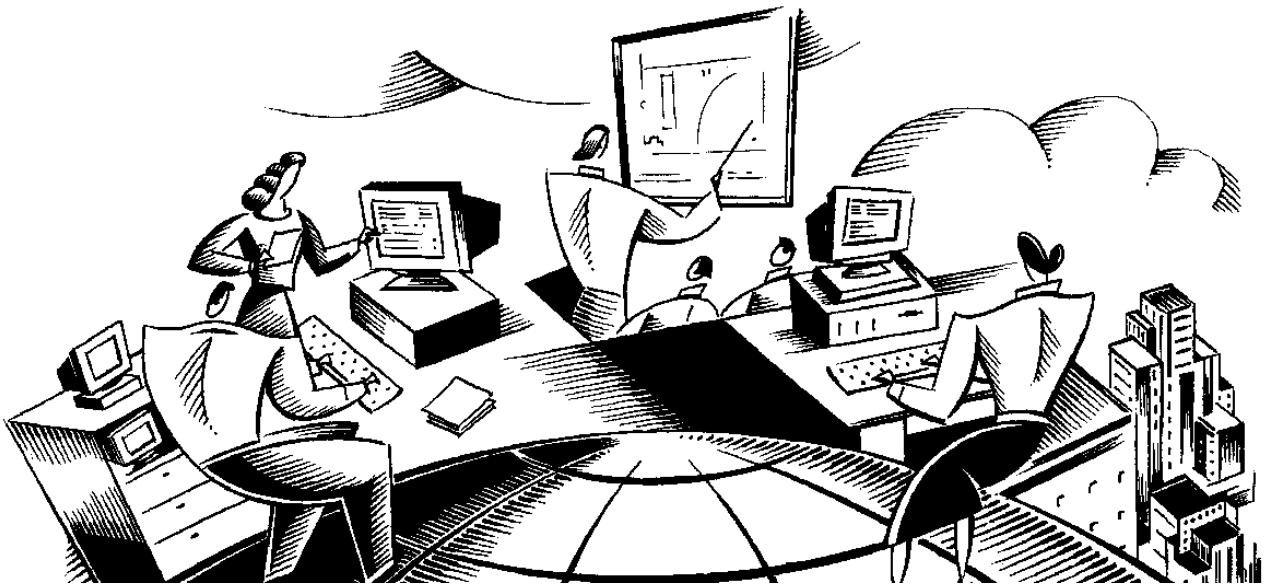
 2. When would you use the Transfer In tab as opposed to the Transfer Out tab?
-

NOTES:

NOTES:

Inventory Management Using MXES

Unit 4: Managing Inventory



In This Unit

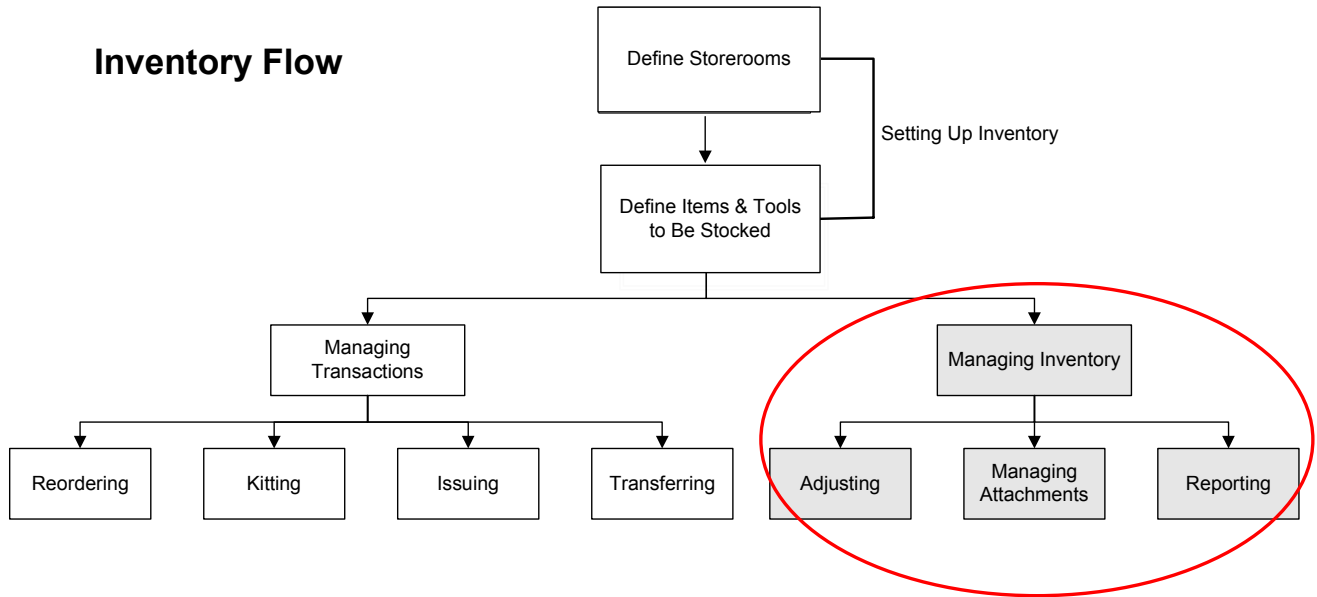
This unit contains the following chapter:

Chapter	Title
10	Inventory Adjustments

Unit Overview

Unit Purpose

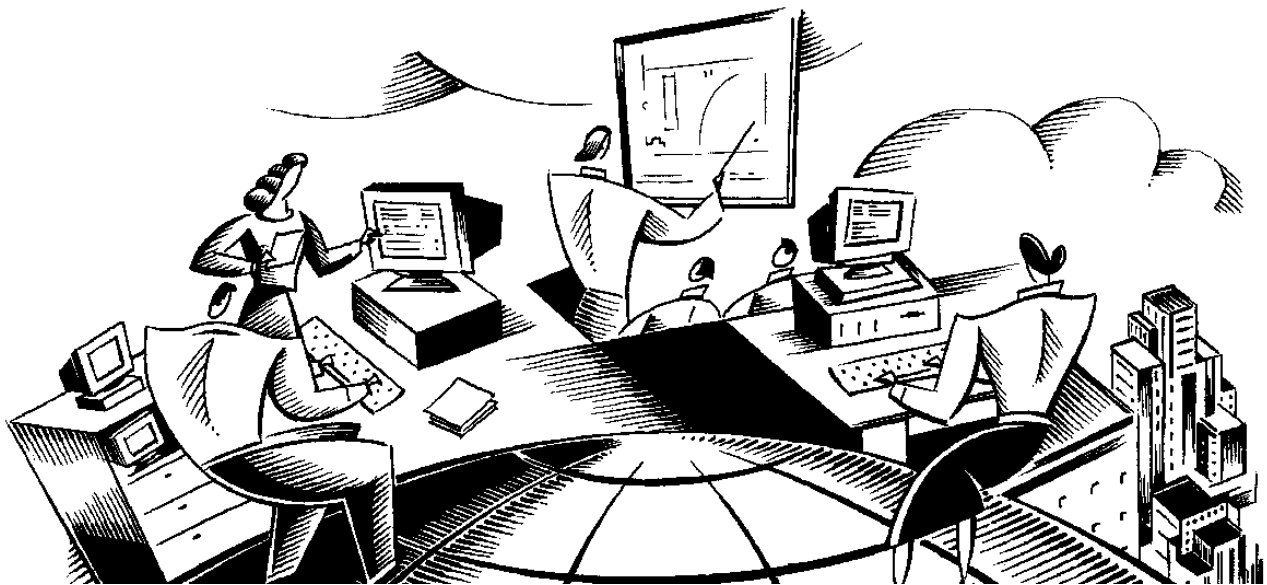
Looking once again at our graphic illustrating the flow of the inventory process, you can see that we are now ready to manage our inventory. Although there is only one chapter in this unit, “Inventory Adjustments,” we will cover attachments and reporting within this context.



This unit will focus on the shaded and circled areas in the above graphic: Managing Inventory.

Inventory Management Using MXES

Chapter 10: Inventory Adjustments



In This Chapter

This chapter contains the following topics:

Topic	See Page
Chapter Overview	10-1
Viewing Item Information	10-2
Adjusting Inventory Balances	10-6
Physical Count and Balance Reconciliation	10-8
Standard Cost Adjustment	10-14
Average Cost Adjustment	10-15
ABC Analysis	10-16
Inventory Reports	10-20
Attachments	10-21
Chapter Summary	10-23
Workshop	10-24

Chapter Overview

Introduction

The Inventory application is used to enter, display, and update information on each inventory item.

Chapter Focus

In this chapter we will focus on making inventory adjustments.

Learning Objectives

When you have completed this chapter, you should be able to:

- view item information;
 - make inventory adjustments (new functionality);
 - reconcile balances;
 - perform cost adjustments; and
 - perform an ABC analysis
-

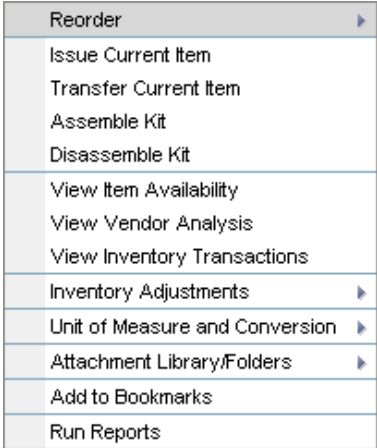
Viewing Item Information

Introduction

As you work in the Inventory application, you can view information associated with the items you are displaying.

Viewing Information

The following actions are available from the Select Action menu.

	Action	Description
	Reorder	Has three sub-actions: Reorder Items, Reorder Direct Issue Items/Services, and Clear Reorder Locks.
	Issue Current Item	Use to issue the current item directly to a work order or against an asset, a location, or a general ledger account.
	Transfer Current Item	Use to transfer items from one storeroom location to another and/or from one bin or lot to another. You can use this page only to transfer non-rotating items.
	Assemble Kit	Use to assemble kits based on the definition you created in the item master. This action can be used only on items that were defined as kits when created.
	Disassemble Kit	Use to break up existing kits into their respective components. This action can be used only on items that were defined as kits when created.
	View Item Availability	Use to view items available in specific inventory areas, including All Locations, All Lots, Purchasing, Alternates, and Reservations.
	View Vendor Analysis	Use this action to view pertinent information regarding all the vendors associated with the current item.

continued on next page

Viewing Item Information continued

Viewing Information continued

	Action	Description
<ul style="list-style-type: none"> Reorder ▶ Issue Current Item Transfer Current Item Assemble Kit Disassemble Kit View Item Availability View Vendor Analysis View Inventory Transactions Inventory Adjustments ▶ Unit of Measure and Conversion ▶ Attachment Library/Folders ▶ Add to Bookmarks Run Reports 	View Inventory Transactions	Use this action to view the inventory transactions that are generated when you make changes in the balance or cost of the inventory.
	Inventory Adjustments	Has six sub-actions: Reconcile Balances, Zero Year to Date Quantities, Current Balance, Physical Count, Standard Cost, and Average Cost.
	Unit of Measure and Conversion	Has two sub-actions: Add/Modify Units of Measure and Add/Modify Conversions
	Attachment Library Folders	Has three sub-actions: Manage Libraries, Manage Folders, and Associate Folders.
	Add to Bookmarks	Use this action to bookmark a record to quickly access it later via the My Bookmarks dialog box.
	Run Reports	Use this action to run and view reports and queries.

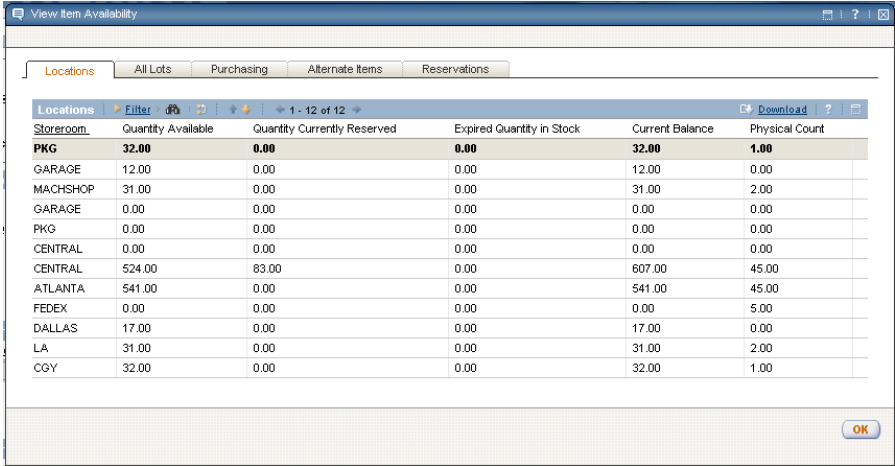
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Viewing Information continued

Viewing Work Order Reservations



In the following examples you will look at two types of information: work order reservations and purchasing information. Follow these steps to view work order reservations and purchase order information for item 560-00.

Step	Action
1	In the Inventory application, search for and select Item 560-00 in the CENTRAL storeroom.
2	<p>From the Select Action menu, choose View Item Availability. <u>Result:</u> The View Item Availability page displays reservation information. The information displayed is read-only.</p>  <p><u>Note:</u> This kind of information can be useful if, for example, you have an emergency and need permission to use the reserved items because you do not have enough available stock.</p>

continued on next page

Viewing Information continued

Viewing Work Order Reservations

continued

Step	Action
3	<p>Use the View Item Availability page to view all of the storerooms that stock a particular item. Browse through each of the following tabs on the View Item Availability page:</p> <ul style="list-style-type: none">• All Lots: Use this tab to view the total balances for each lot location that has the item.• Purchasing: Use this tab to view the quantity of items on order from all outstanding approved and unapproved purchase requisitions (PRs), approved and unapproved purchase orders (POs), and blanket purchase contracts.• Alternate Items: Use this tab to view the balance of alternate items associated with an item.• Reservations: Use this tab to view the quantity of the item that has been reserved.
4	<p>When you are done viewing the Item Availability information, click OK to close the page.</p>

Adjusting Inventory Balances

Introduction

Using Maximo, you can adjust the balances for each of the items in inventory 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

Inventory Transactions

Each of the options described above generates an inventory transaction; therefore, it is associated with debit and credit GL accounts.

You can view the transactions associated with each item from the Inventory application by selecting View Inventory Transactions from the Select Actions menu.

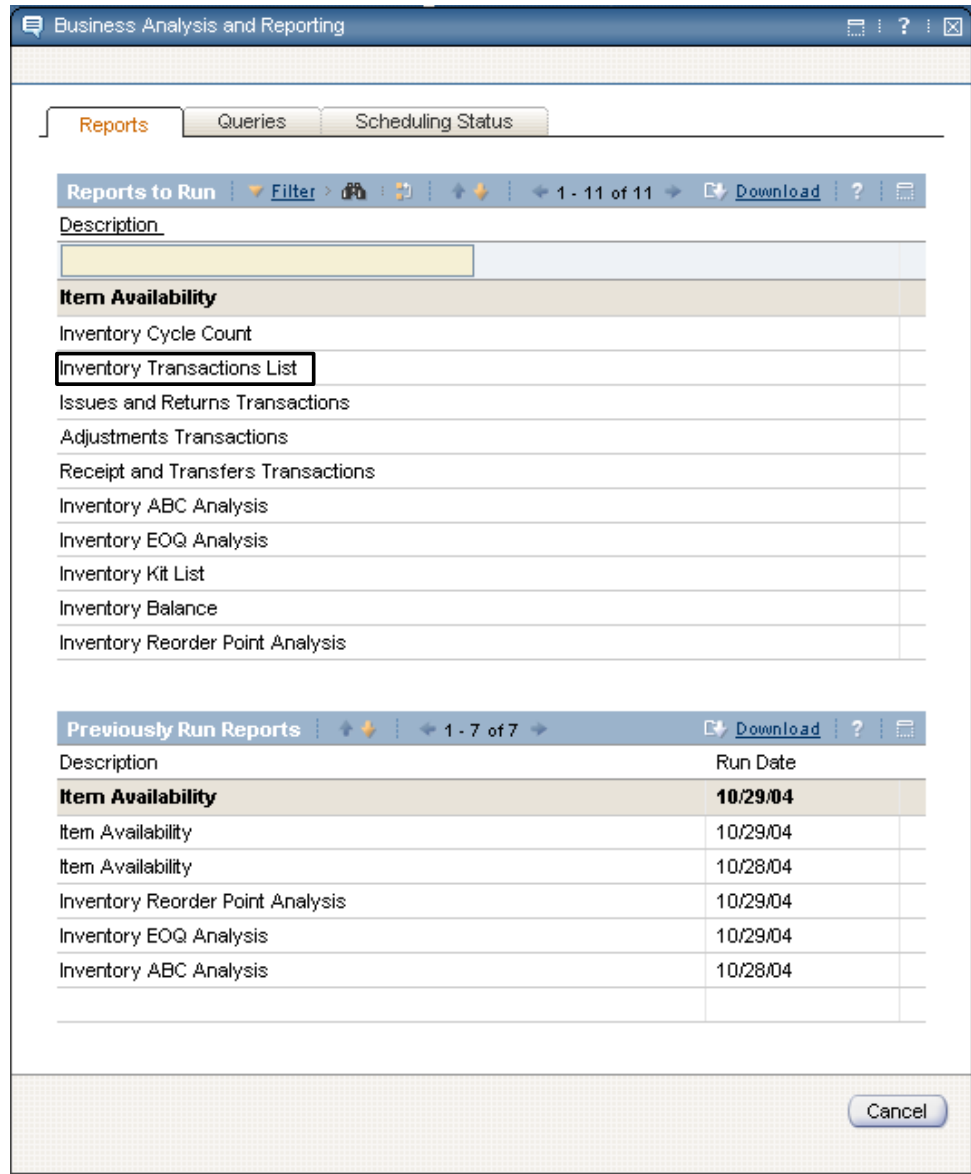
Transaction Type	Actual Date	Transaction Date	Quantity	Unit Cost	Actual Cost	Line Cost	Loaded Cost	Invoice
RECEIPT	4/25/00 1:43 PM	4/25/00 1:43 PM	2.00	2.50	2.50	5.00	5.00	

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Adjusting Inventory Balances continued

Inventory Transactions Report

You can also view the transactions associated with each item by using the Run Report action to run the Inventory Transactions Report.



Inventory Adjustment Options

Adjustments can be made to inventory balances in the Inventory application with the Select Action menu. The first adjustment we will look at is taking a physical count and reconciling balances.

Physical Count and Balance Reconciliation

Introduction

Ideally, the process of taking a physical count and reconciling balances should not interfere with the operation of a storeroom. Maximo makes this possible by accounting for the transactions that occur between the physical count and the reconciliation. Maximo allows you to record the results of your physical count and then reconcile the current balance to the physical count.

Maximo Calculates an “Expected Balance”

When you perform a reconciliation, Maximo calculates an “expected balance” consisting of the physical count plus any transactions that have taken place between the date of the count and the date of the reconciliation. Maximo uses this expected balance to set the new current balance. The calculation is shown here:

$$\begin{aligned} \text{Current Balance} &= \text{physical count} \\ &- \text{issues} \\ &- \text{transfers out} \\ &+ \text{receipts} \\ &+ \text{returns} \\ &+ \text{transfers in} \end{aligned}$$

Note: All changes to the physical count are for transactions that occur after the physical count.

Use the Adjust Physical Count Dialog Box

You can enter the date of the physical count and the quantity counted for all bins on the Physical Count Adjustment dialog box, accessed from the Inventory application, by choosing Inventory Adjustments, then Physical Count from the Select Action menu.

Item	Storeroom	Bin	Site	Condition Code	Lot	Physical Count	New Count	Count Date
G-1000	PKG	A-5-1	BEDFORD			0.00		4/27/05 6:13 AM

continued on next page

Physical Count and Balance Reconciliation continued

Reconcile Balances

Enter the Control account and the Shrinkage account in the Reconcile Balances page accessed by choosing Inventory Adjustments, then Reconcile Balances from the Select Action menu.

Reconciled? Column on Storeroom Tab

Reconciled?
<input checked="" type="checkbox"/>

Notice the **Reconciled?** column of the Inventory Balances frame on the Inventory tab of the Inventory application.

The Reconciled? column is a checked (= Yes) or unchecked (= No) field, and it functions as follows.

- When a new physical count is entered, Maximo automatically sets this field to “N.”
- When reconciliation is performed, Maximo automatically changes this field to “Y.”
- When a new item is entered in a storeroom, Maximo assumes that the balance is reconciled and automatically sets this field to “Y.”

Balances for which Reconciled? is “Y” are not further affected by the reconciliation process.

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Physical Count and Balance Reconciliation continued

Reconciliation Transaction Type

Maximo uses a transaction type called *reconciliation* to distinguish reconciliation adjustments from manual balance adjustments. Reconciliation adjustments appear in the Transaction Type column as RECBALADJ (on the Inventory Transaction report).

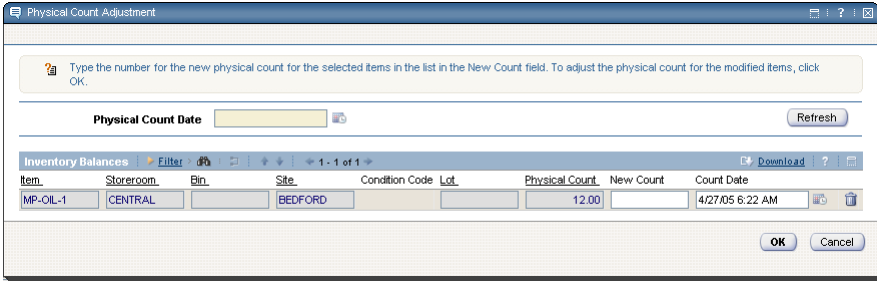
Using Maximo to Record Your Physical Count and Balance Reconciliation



In continuing our scenario, you are the manager of the Central storeroom. A quarterly physical inventory has shown that you have three cases (12 to a case, or 36) of Pennzoil motor oil in the Central storeroom, which is 24 more than the current balance indicates in Maximo. You need to account for this change in your inventory. In the exercise that follows, you will:

- record the physical count for the motor oil you previously entered into Maximo;
- reconcile the physical count to the current balance; and
- view all the transactions for this item.

Note: Remember that if you are working in a single-database environment, an italicized *xx* may be appended to data entry items. Where applicable, substitute your student number for the *xx*.

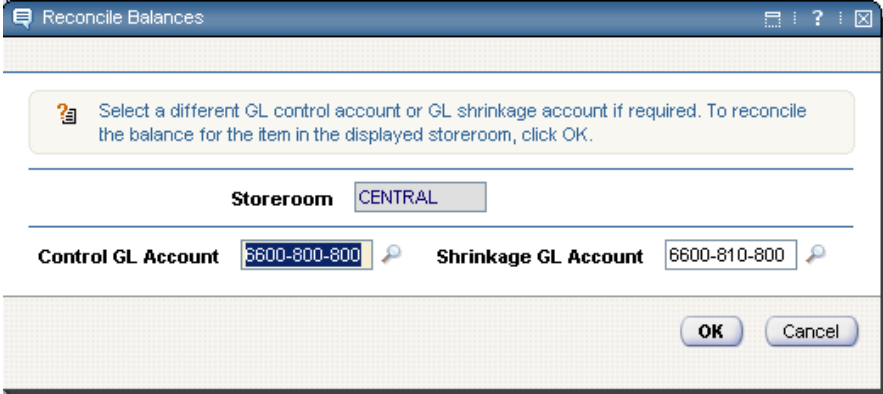
Step	Action
1	In the Inventory application, search for and select your record for the Pennzoil motor oil created in your review exercise in Chapter 5, MP-OIL-1 (or MP-OIL-1 <i>xx</i>).
2	<p>From the Select Action menu, highlight Inventory Adjustments and select Physical Count.</p> <p><u>Result:</u> The Physical Count Adjustment dialog box opens.</p> 

continued on next page

Physical Count and Balance Reconciliation continued

Using Maximo to Record Your Physical Count and Balance Reconciliation

continued

Step	Action
3	<p>In the New Count field, enter 36, then click OK.</p> <p><u>Result:</u> Notice that the Physical Count has been adjusted to 36, while the Current Balance field remains at 12.</p>
4	<p>To reconcile the current balance with the physical count, from the Select Action menu, highlight Inventory Adjustments and choose Reconcile Balances.</p> <p><u>Result:</u> The Reconcile Balances dialog box opens.</p> 
5	<p>Ensure that the read-only Storeroom field is set to CENTRAL, then click OK.</p> <p><u>Result:</u> The Current Balance field in the Inventory Balances frame is now reconciled with the Physical Count, and the Reconciled? box is checked for this item in the CENTRAL storeroom.</p>
6	<p>Save the record.</p>

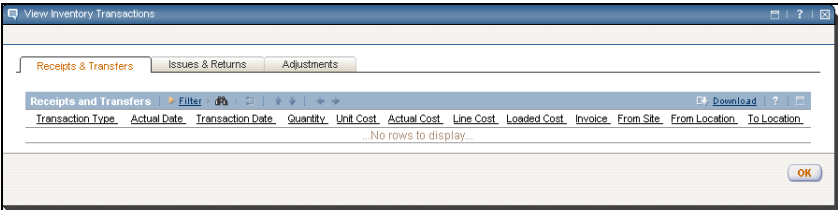
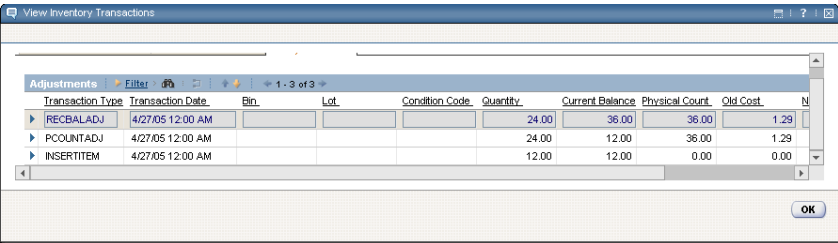
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Physical Count and Balance Reconciliation continued

How to View Your Transactions



Follow these steps to review your transactions:

Step	Action
1	From the Inventory application, search for and select your record for the Pennzoil motor oil, MP-OIL-1 (or MP-OIL-1xx).
2	<p>From the Select Action menu, choose View Inventory Transactions.</p> <p><u>Result:</u> The View Inventory Transactions dialog box opens.</p> 
3	<p>Click on the Adjustments tab.</p> <p><u>Result:</u> The Adjustments tab shows three lines (in our example):</p> <ul style="list-style-type: none"> • when we first created (INSERTITEM) the inventory record; • when we recently adjusted the physical count (PCOUNTADJ); and • when we just now reconciled the balances (RECBALADJ). 
4	When you are done reviewing the Adjustments transactions, click OK to close the View Inventory Transactions dialog box.

continued on next page

Physical Count and Balance Reconciliation continued

Using the Inventory Transactions Report



Use the following steps to review your transactions using the Inventory Transactions report.

Step	Action												
1	To view all the transactions for your motor oil record, choose Run Reports from the Select Action menu. <u>Result:</u> The Actuate report server displays a list of available reports associated with the Inventory application.												
2	Click to select and run the Adjustments Transactions report.												
3	Enter the following data on the Inventory Transactions Request page: <table border="0"> <thead> <tr> <th><u>Field</u></th> <th><u>Value</u></th> </tr> </thead> <tbody> <tr> <td>Select a Storeroom:</td> <td>CENTRAL</td> </tr> <tr> <td>Select an Item</td> <td>MP-OIL-1(xx)</td> </tr> <tr> <td>Select a Transaction Type:</td> <td>ADJUSTMENTS</td> </tr> <tr> <td>Select a Start Date:</td> <td>[Yesterday]</td> </tr> <tr> <td>Select an End Date:</td> <td>[Today]</td> </tr> </tbody> </table> <p>In the Schedule Report Run Time frame, ensure that Right Now is selected.</p>	<u>Field</u>	<u>Value</u>	Select a Storeroom:	CENTRAL	Select an Item	MP-OIL-1(xx)	Select a Transaction Type:	ADJUSTMENTS	Select a Start Date:	[Yesterday]	Select an End Date:	[Today]
<u>Field</u>	<u>Value</u>												
Select a Storeroom:	CENTRAL												
Select an Item	MP-OIL-1(xx)												
Select a Transaction Type:	ADJUSTMENTS												
Select a Start Date:	[Yesterday]												
Select an End Date:	[Today]												
4	Click Run Report . <u>Result:</u> The Adjustments Transactions Report displays the results.												
5	When you are done viewing the Adjustments Transactions report, close it and click Cancel .												

Standard Cost Adjustment

Introduction

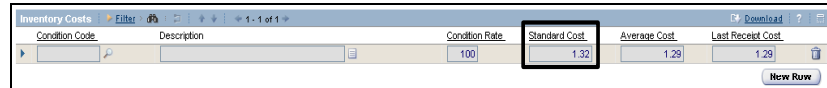
The Standard Cost field on the Inventory tab is read-only, so you must use the Adjust Standard Cost action to make any changes to the standard cost. In the next exercise we will add a new standard cost to the Pennzoil motor oil.

Adjusting Standard Costs



To make an adjustment to the standard cost, complete the following steps:

Step	Action
1	From the Inventory application, search for and select your record for the Pennzoil motor oil, MP-OIL-1 (or MP-OIL-1xx).
2	Click on the Inventory tab.
3	From the Select Action menu, highlight Inventory Adjustments and select Standard Cost .
4	Enter 1.32 in the New Standard Cost field. You can also update the GL account information if necessary.
5	Click OK . <u>Result:</u> The standard cost value is shown in the Standard Cost field.



Average Cost Adjustment

Introduction


The Average Cost field on the Inventory tab is read-only, so you must use the Adjust Average Cost action to make any changes to the standard cost.

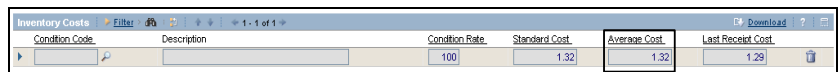
In the next exercise we will add a new average cost to the Pennzoil motor oil.

Average Cost Adjustment



To make an adjustment to the average cost, complete the following steps:

Step	Action
1	With our record for the Pennzoil motor oil, MP-OIL-1 (or MP-OIL-1xx) open, click on the Inventory tab.
2	From the Select Action menu, highlight Inventory Adjustments and select Average Cost .
3	<p>Enter 1.32 in the New Average Cost field.</p> <p> <u>Note:</u> You can enter a new value for the average cost directly, or you can specify a percentage increase by which to adjust the average cost in the Percentage Increase field. If you enter a figure in the Percentage Increase field, Maximo updates the New Average Cost field accordingly. If you edit the New Average Cost field, Maximo clears the Percentage Increase field. You must enter whole numbers in the Percentage Increase field; for example, a 10% increase = 10, not 0.10.</p> <p>You can also update the GL Account information if necessary.</p>
4	<p>Click OK.</p> <p><u>Result:</u> The standard cost value is shown in the Average Cost field.</p>



ABC Analysis

Introduction

Maximo allows you to perform an *ABC analysis*, which is a grouping of items based on cost and turnover rate. Your company policy will indicate whether you need to perform this type of inventory analysis.

Uses and Benefits

ABC analysis in inventory lets you quickly identify which inventory items represent your company's greatest monetary investment in terms of dollar value and rate of turnover.

ABC analysis is also used to decide how often to do a physical count of items. This helps ensure that crucial inventory doesn't fall below minimum levels and helps keep the current balance figure for an item reconciled with the actual count.

ABC Analysis

ABC analysis is a method of dividing the items in inventory into three categories: A, B, and C. The ABC Type value for an item is determined by running an ABC Analysis report, which multiplies the current YTD issued quantity by the last cost of the item. The items are then sorted in descending order of the dollar value reached by this calculation.

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ABC Analysis continued

ABC Analysis in Maximo

Maximo sets the type to A, B, or C based on a percentage that the system administrator sets in the Multisite application. You can set the ABC type to N (for “not applicable”) to exclude this item from the ABC analysis.

For example, the parameters can be set like this:

Type A breakpoint 30%

Type B breakpoint 30%

Type C breakpoint 40%

Using the above values, the top 30% of items (by cost) would be type A, the next 30% of items would be type B, and the last 40% would be type C.

The ABC Analysis report also changes the cycle count frequency for the item, based on the ABC type and the count frequency. If the ABC type is set to N, the cycle count frequency will not be changed.

Count frequency should be set (in the Multisite application) to the number of days for each ABC type.

For example, the count frequencies can be set like this:

Type A count frequency 30 days

Type B count frequency 60 days

Type C count frequency 90 days

You can run the Inventory Cycle Count report to show each item that is due for a cycle count in the next month, along with its ABC type.

continued on next page

ABC Analysis continued

ABC Analysis Fields

The Inventory tab in the Inventory application includes an ABC Analysis frame with an ABC Type field and a Count Frequency field, which are the fields that determine the ABC analysis.

The screenshot shows a window titled "ABC Analysis". Inside the window, there are two input fields. The first is labeled "ABC Type" and has a search icon to its right. The second is labeled "Count Frequency*" and has the value "0" entered in the text box.

Field	Description
ABC Type	The value of this field indicates the relative cost and turnover of the item. Values for the ABC Type field include A, B, C, and N (for “not applicable”). You can set this value or allow the ABC Analysis report to set it for you. Setting the value to N excludes that item from the ABC analysis.
Count Frequency	The Count Frequency field indicates how often the item is physically counted. You can set this value or allow the ABC Analysis report to set it for you. The report will not affect the values of any items with ABC Type set to N.

continued on next page

ABC Analysis continued

How to Conduct an ABC Analysis

Run the ABC Analysis report to conduct an ABC analysis. In this report, the YTD issued value (for the current year) is multiplied by the last cost of the item, and the items are sorted in descending order of the dollar value reached by this calculation. Maximo sets the ABC Type field to A, B, or C, based on a percentage that is set by your Maximo administrator.

maximo Site ID: BEDFORD								
Inventory ABC Analysis Report Location: CENTRAL								
Item	Description	ABC Type		CCF (Days)		YTD Issued	Last Cost	YTD Issued Cost
		Before	After	Before	After			
29331	Building Thermostat		A	0	30	0	0.00	0.00
386-12	Pipe Gaskets		A	0	30	0	13.00	0.00
39224	Brake Shoes	B	A	60	30	0	45.00	0.00
4-0030	Grommet- Chain Wash Machine	C	C	90	90	2	2.50	5.00
43992	Tire, Forklift- TR-70	B	A	60	30	0	170.00	0.00
53-143	V-Belt- 1/2 In, 30 In Circumference	A	C	30	90	2	35.00	70.00

Inventory Reports

Introduction

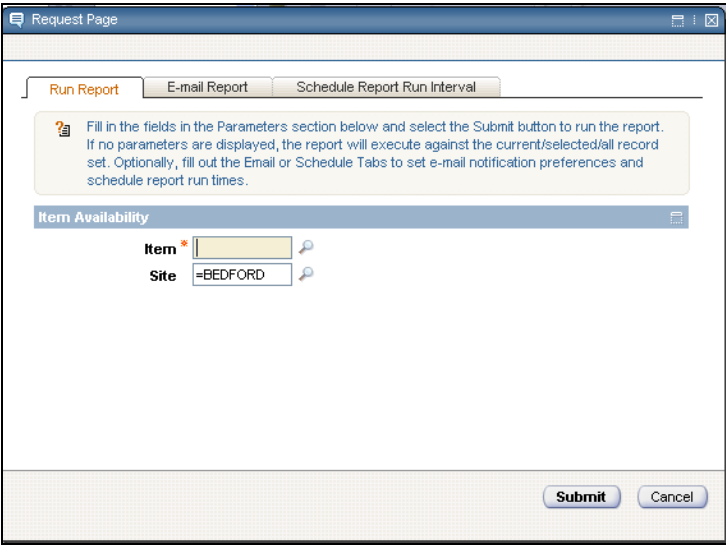
The Inventory application provides a number of reports that you will want to use often when you manage your inventory.

Running a Report: Procedure



To generate an inventory report, follow the standard report procedure reviewed below.

In this example, we will run an Item Availability report against all locations for item 560-00, copper tubing.

Step	Action
1	Open the Inventory application.
2	From the Select Action menu, choose Run Reports . <u>Result:</u> The Inventory Reports page opens.
3	Click to select the Item Availability report. <u>Result:</u> The Item Availability Request Page opens. 
4	Enter 560-00 in the Item field.
5	Click Submit . <u>Result:</u> Maximo displays the Item Availability Analysis report.

Attachments

Introduction

Most of the applications in the Inventory module contain Attachments Library/Folders actions that enable you to create and maintain attachments between Maximo application records and documents. Attachments point to one or more documents that reside in an electronic library.

Attached Documents functions allow you to attach many types of information to a Maximo record, including images, spreadsheets, and Web pages. You can place documents in your document management system, on a network file server, or on a Web server.

There are two main types of attachments:

- *Direct* attachments are documents that are attached directly to an application record. For example, in the Item Master application, documents attached to an item 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 are documents that are attached to another application's records that are associated with the current record. For example, an item master record might also display the document collection for the company/vendor associated with the item. You can view and print documents that are referential attachments, but you cannot add or modify attachments to related document collections. Changes to referential attachments must be made from the application where the document was originally attached.

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Attachments continued

Attachment Library/Folders Actions

There are three attachment-related actions:

- *Manage Library* allows you to add documents to an electronic library. After a document has been added, the document is available to be attached to Maximo records.
 - *Manage Folders* allows you to define document folders globally. After they are defined here, they are available to associate with Maximo applications. Examples of document folders are attachments, diagrams, and images. Maximo automatically associates a new document folder with the application in which it is created.
 - *Associate Folders* allows you to select the folders of documents to be included in an application's document collection. You must associate document folders with an application before you can attach documents in those folders from within that application. You can modify only folders in the current application's document collection.
-

Chapter Summary

Viewing Information

As you are working in the Inventory application, you can view information associated with the items you are displaying by using the Select Action menu.

Adjusting Inventory Balances

From the Select Action menu, you can select Inventory Adjustments/Current Balance or Physical Count, which allows you to adjust the balances associated with an inventory item.

Physical Count and Balance Reconciliation

When you perform a reconciliation, Maximo accounts for any transactions that occur between the date of your physical inventory count and the date of the balance reconciliation.

ABC Analysis

Maximo enables you to perform an ABC analysis of your inventory items and to adjust the count frequency based on the results of that analysis. After your Maximo administrator has set up the breakpoints, you can run an ABC Analysis report to help you evaluate the cost and turnover of your inventory.

Inventory Reports

The Inventory application provides a number of reports that you can use to help you manage your inventory.

Workshop

Objective

The objective of this workshop is to familiarize you with how to use Maximo to perform some of your inventory maintenance tasks.

Exercise



In this example, you are the manager of the Central storeroom. Your job includes managing the inventory in subsidiary storerooms in your plant (like the Packaging and Machine Shop storerooms). You are expecting your maintenance personnel to need some mechanical seals (item 11453) for their work, and you decide to evaluate the status of these seals.

Answer the following questions:

1. How many seals (item 11453) do you have in stock, and where are they located?

2. Evaluate the various bins and lots in which this item is stored
 - a) How many different lots are you using for this item?

 - b) How many different bins are you using for this item?

 - c) Describe any differences among the various bins and lots.

continued on next page

Workshop continued

Exercise continued

3. Evaluate the reservations for this item.
 - a) Explain whether the reservations seem valid.

 - b) How and why did you come to this conclusion?

 - c) What do you advise doing about the reservations situation?



Note: If this training is occurring in an environment with only one database that is accessed by all of the participants, then only one person can perform the following task.

Your instructor will determine how this is best accomplished.

4. Assume that you have just taken a physical inventory, and you counted three of item 11453 in the Central storeroom and three in the Machine Shop storeroom.
 - a) Use Maximo to record your physical inventory counts.
 - b) Use Maximo to reconcile the current balances for the item to the physical counts you just recorded.
 - c) View the results of the reconciliation in the Inventory Transactions report.
-

NOTES:

Inventory Management Using MXES

Appendix A: Companies



In This Chapter

This chapter contains the following topics:

Topic	See Page
Overview	A-1
The Company Master Application	A-2
The Companies Application	A-4
The Role of the Companies Application	A-9
Using the Companies Application	A-10
Entering Company Records	A-13
Summary	A-19
Workshop	A-20

Overview

Introduction

The **Company Master** application is used to define companies that belong to a company set. Company sets are similar to item sets in that they allow companies to be shared across organizations. You define the company set in the Sets application. In order to use a company record in an organization, you must add the company master record to the organization. This adds the company master record to the Companies table. Company master records contain information like vendor currency, contacts, and so forth, and they are copied to the Company record as a default data when the company master record is added to organizations.

The **Companies** application, in the Purchasing module, holds information about the companies with which you do business. Other modules, particularly the Inventory module, use this information.

Chapter Focus

This chapter focuses on setting up a company in the Company Master application, as well as the Companies application and its relationship with the Inventory module.

Learning Objectives

When you have completed this chapter, you should be able to:

- explain the purpose of the Company Master application;
 - navigate the Company Master application;
 - locate and enter information about vendors, manufacturers, and couriers in the Companies application;
 - locate and enter currency and tax information in the Companies application; and
 - identify information that originates in the Companies application when it appears in other modules.
-

The Company Master Application

Introduction

As stated previously, you can define the company master records that belong to a company set by using the Company Master application.

If you need to change the default information in a company record, then you can use the Companies application to modify the record.

The Company Master Application

The Company Master application has four tabs. The Company Master tab is where you enter the majority of the information about the company.

The screenshot displays the 'Company Master' application window. The interface includes a search bar, navigation tabs (List, Company Master, Contacts, Addresses), and several sections of data entry fields:

- Company Information:** Company (KENNEDY), Txn Server Marketplace, Company Set (COMPSET1), Customer #, Home Page, Company Type, and Update Related Companies? checkbox.
- Purchasing Details:** Currency (USD), Freight Terms, Tax Exempt Code, Tax Exempt Number, Disqualified Vendor?, FOB Point, Ship Via, Registration #, and Inspection on Receipt? checkbox.
- Payment Details:** Bank, Bank Reference #, DUNS # (178192480-X-T), Pay To, and Payment Terms.
- E-Commerce Details:** E-commerce Enabled? (checked), Punchout Enabled? (checked), E-commerce Supplier (100000941), Catalog (KENNEDY), E-commerce Supplier Location, Automatically Approve Receipt on ASN? (checked), Vendor Sends Order Status? (checked), Send Vendor Transaction on PO Cancel? (checked), Vendor Sends ASN? (checked), Vendor Sends Invoice? (checked), Automatically Approve Invoice? (checked), and Default Warehouse.

Most of the fields are fairly self-explanatory. The **Update Related Companies?** check box, when checked, indicates that a change in the company master record should extend to the corresponding records in the Companies table. This field is not stored in the database and therefore should be explicitly checked when you update the company master record. If the check box is cleared, modifying the company master record will not affect the corresponding record in the Companies table.

Only the Currency field is required.

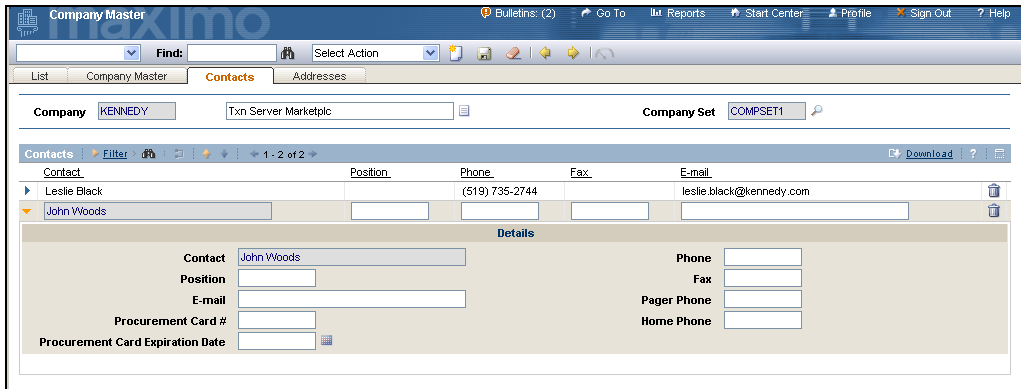
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The Company Master Application continued

The Company Master Application

continued

The Contacts tab contains contact information for people in the company. It provides you with a place to add the phone, e-mail, fax, and other information for the contacts that were created on the Addresses tab.



Add Company Master to Organization Action

The Add Company Master to Organization action displays a table window with all the organizations that use the company set and are accessible by the current user. You can select all or a few organizations and Maximo will add the company master record to the selected organizations. If one or more of the selected list of organizations already have the company master record, Maximo ignores those organizations and proceeds with the other organizations.

The Companies Application

Introduction

The Companies application maintains detailed information on vendors, manufacturers, and other companies.

Companies Tabs

The Companies application has five tabs: **List**, **Company**, **Contacts**, **Addresses**, and **Branches**.

The screenshot displays the 'Companies' application interface. At the top, there is a navigation bar with 'List', 'Company', 'Contacts', 'Addresses', and 'Branches' tabs. The 'Company' tab is active, showing details for 'ALMAR'. The 'Parent' field is set to 'Almar Petroleum'. Other fields include 'Customer #' (3390214) and 'Home Page' (www.almar.com). The 'Attachments' section shows 'Company Type' (M) and 'Organization' (EAGLENA). Below this, there are three main sections: 'Purchasing Details', 'Payment Details', and 'E-Commerce Details'. 'Purchasing Details' includes 'Currency' (USD), 'Tax Code' (NJ), 'Freight Terms', 'FOB Point' (PRINCETON, NJ), and 'Ship Via' (UPS-GR). 'Payment Details' includes 'Bank', 'Bank Reference #', 'DUNS #', 'Pay To', 'Payment Terms' (NET 30), 'AP Control Account' (6800-910-610), 'RBNI Account' (6800-930-610), 'Suspense Account' (6800-920-610), and 'Tool Control Account'. 'E-Commerce Details' includes 'E-commerce Enabled?', 'Punchout Enabled?', 'E-commerce Supplier', 'Catalog', 'E-commerce Supplier Location', 'Automatically Approve Receipt on ASN?', 'Vendor Sends Order Status?', 'Send Vendor Transaction on PO Cancel?', 'Vendor Sends ASN?', 'Vendor Sends Invoice?', 'Automatically Approve Invoice?', and 'Default Warehouse'.

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The Companies Application continued

Companies Actions

The following actions are available from the Companies Select Action menu:

Use this action...	To...
Associate Commodities	Associate commodity groups and codes with a company record.
Add/Modify Commodity Codes	Add, modify, or delete commodity groups and commodity codes to be used by a company record.
View Contracts	View a read-only list of contracts that are associated with a company record.
Attachment Library/Folders	Create and maintain attachments between Maximo application records and documents. Attachments point to one or more documents that reside in an electronic library.
Duplicate Company	Create a copy of the current record with the same settings or values, which can then be modified and saved as a new record.
Delete Company	Delete the current record from the Maximo database.
Add to Bookmarks	Add the current record to your personal bookmark list.

continued on next page

The Companies Application continued

Company Fields The Company tab includes basic company information, as well as purchasing, tax, and currency data. This information is important to the purchasing and inventory process. The following table lists and describes some of these fields.

Field Name/Description	TABLE.COLUMN
Company	COMPANIES.COMPANY Identifier of the company.
Parent	COMPANIES.PARENTCOMPANY Identifier of the parent company.
Customer #	COMPANIES.CUSTOMERNUM The number used by an outside company to identify your own company.
Company Type	COMPANIES.TYPE The type of company. Click Select Value to select a value. The list provides three default types: C (courier), M (manufacturer), and V (vendor).
Use Parent Remit To?	COMPANIES.USEPARENTREMITTO Check box. When checked, indicates the parent's Remit To information should be used. The default value is N. If you change this field value to Y, the payment information from the parent record displays on invoices created against the child company.
Currency	COMPANIES.CURRENCYCODE The currency that the company uses. This value is used for currency conversion when necessary. Click Select Value to open the Select Currency list and choose a value.
Tax Exempt Code	COMPANIES.TAXEXEMPTCODE Indicates if the company is exempt from paying taxes (e.g., 1=exempt, 2=not exempt, 3=exempt resale, etc.). Click Select Value to choose a code.

continued on next page

The Companies Application continued

Company Fields continued

Field Name/Description	TABLE.COLUMN
Disqualified Vendor?	COMPANIES.DISABLED Check box. When checked, indicates that the company is disqualified from being used on new PRs, POs, RFQs, Invoices, or any other application that references vendors.
Freight Terms	COMPANIES.FREIGHTTERMS A description of what is being shipped; any riders to the shipping agreement should be included here. For example, you might specify "Fresh fruit. Perishable. Keep refrigerated. Must meet delivery dates."
FOB Points	COMPANIES.FOB Free on board point is the point where responsibility and liability are transferred. The FOB point is usually the destination or the shipping point.
DUNS #	COMPANIES.DUNSNUM Data Universal Numbering System number, used to uniquely identify a company and its location.
Expiration Date of Insurance	COMPANIES.INSUREXPDATE. Indicates the expiration date of insurance for that vendor. This is insurance to cover liability when outside labor does work on the customer's site.
AP Control Account	COMPANIES.APCONTROLACC The credit account used when the invoice is paid. Click Select Value to open the GL Account Navigator and select a value.

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The Companies Application continued

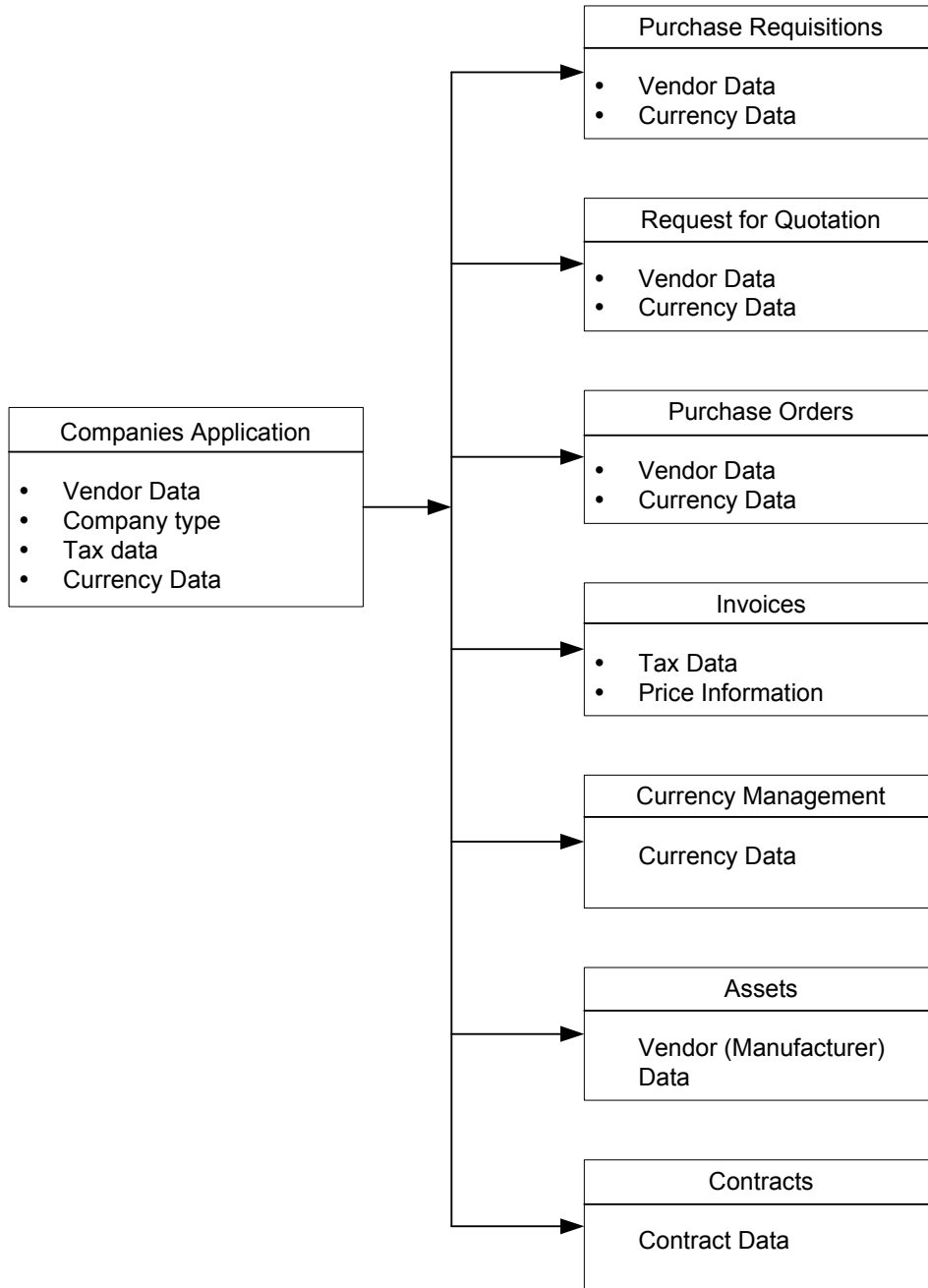
Company Fields continued

Field/Name Description	TABLE.COLUMN
RBNI Account	COMPANIES.RBNIACC The account for receipts that have not been invoiced. Click Select Value to open the Select GL Account page and choose a value.
Suspense Account	COMPANIES.APSUSPENSEACC The credit account used when the invoice is approved. Click Select Value to open the Select GL Account page and choose a value.

The Role of the Companies Application

Companies Application Data

The chart below illustrates the company data that is used by other Maximo applications, along with some examples:



Using the Companies Application

Introduction

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.

Company Types

You can group companies by type for reporting purposes. Maximo uses three default company types:

- Courier—transit company
- Manufacturer—manufacturer of items or assets
- Vendor—vendor of items or assets

Your system administrator might have customized company types specific to your business.



Note: The Customer # field in the Companies application is used to store the number used by the vendor/company to identify your company in *their* database.

Using Company Branches

Your company has determined that a product or service is purchased through a national vendor with local offices. Your different operating locations in different cities will each make their purchases from the local branch of the vendor. Maximo allows you to create branch records for a vendor company and track purchasing at the branch level or with the vendor as a whole.

You can use branches to track expenditures for each plant location, as well as the total expenditures for all plant locations for each vendor. However, 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.

Use the **Branches** tab to create and remove associations between child and parent records. You can also manually enter a company record or use the Detail button to look up companies. The Select Company page includes only companies that are not already parent or child records.

continued on next page

Using the Companies Application continued

Adding Branches to Companies

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.

To add a branch:

1	Open a company record in the Companies application.
2	Select the Branches tab.
3	Click New Row . The Row Details section opens.
4	<p>Add a company branch:</p> <ol style="list-style-type: none"> Click the Detail button next to the Company field. Select a record by clicking the Select button to the left of the record. Enter a Description and/or a Long Description. (Optional) Change the Use Parent Remit To? option. No (unchecked)—The default. The payment information from the branch record is used on invoices created against the branch. Yes (checked)—The payment information from the parent record is used on invoices created against the branch.
5	<p>Choose one of the following options:</p> <ul style="list-style-type: none"> Click New Row to add another row. Click Delete to delete the row.
6	Save the record.

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Using the Companies Application continued

Disqualifying a Vendor

If your company decides to stop using a vendor, you can mark the record to indicate that the vendor is disqualified from doing business with your company.

When checked, the **Disqualified Vendor?** check box on the Company tab disqualifies this company as a vendor, which means that you are not able to create *new* RFQs, PRs, POs, or invoices using this company as a vendor. The default is No—the box is not checked.

Disqualifying a vendor has no effect on existing transactions (i.e., 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

Company records cannot be deleted if there are branch records associated with them. To delete a parent company record with associated child (branch) records, you must first sever all child relationships by deleting all the branches listed in the Branches table window.

You can delete a company record by selecting Delete Company from the Select Action menu.

However, you cannot delete a company record if it is associated with other records (such as PRs, POs, or invoices). The reason for this is to preserve the relationship between a purchasing document and a vendor record. If you want to remove a vendor record while a relationship with another record exists, you should consider disqualifying the vendor record instead.

Companies Reports

The following reports are available for the Companies application:

- **Companies List Report**—Lists company name and descriptions for selected records.
-

Entering Company Records

Introduction

The database includes the name and the address of the various types of companies with which your organization does business.

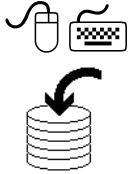
Company records are an integral part of the Maximo database. They can become part of other records, such as the following:

- Asset
- Operating Location
- Item
- Labor
- Crafts
- Purchase Orders
- Purchase Requisitions
- Invoices
- Contracts
- Service Level Agreements

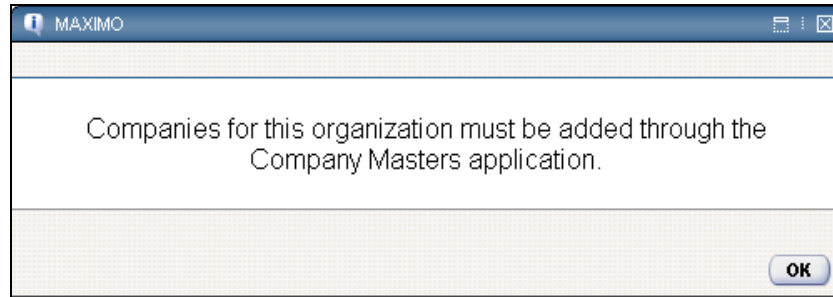
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Entering Company Records continued


Adding a Company Record

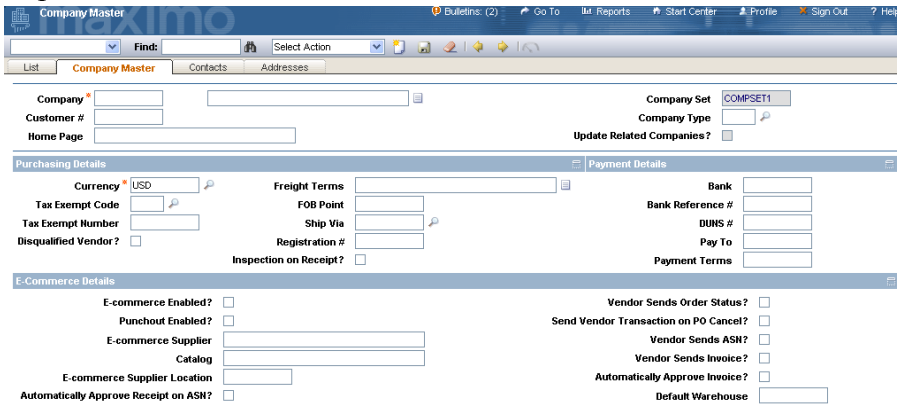


For this exercise we will assume that you must enter company records from the Company Master application. If you try to add a new company from the Companies application, you will get the following error message:



To add a company record using the Company Master application, follow these steps:

Step	Action
1	Go to the Company Master application. <u>Result:</u> The Company Master application opens.
2	Click the New Company  icon. <u>Result:</u> The Company tab is displayed with fields ready for data input.



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Entering Company Records continued

Adding a Company Record

continued

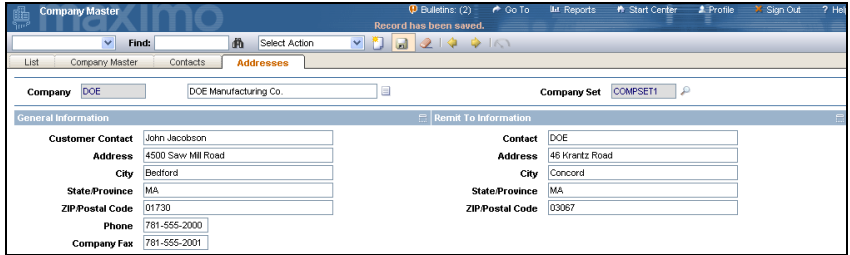
Step	Action																
3	Enter the following information on the Company Master tab: <table border="0"> <thead> <tr> <th data-bbox="521 600 594 632"><u>Field</u></th> <th data-bbox="808 600 881 632"><u>Value</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="521 646 656 678">Company</td> <td data-bbox="808 646 1057 678">[Your Last Name]</td> </tr> <tr> <td data-bbox="521 693 703 724">(Description)</td> <td data-bbox="808 693 1325 724">[Your Last Name] Manufacturing Co.</td> </tr> <tr> <td data-bbox="521 739 735 770">Company Type</td> <td data-bbox="808 739 1198 770">V (Note: V stands for Vendor)</td> </tr> <tr> <td data-bbox="521 785 656 816">Currency</td> <td data-bbox="808 785 992 816">USD (default)</td> </tr> </tbody> </table>	<u>Field</u>	<u>Value</u>	Company	[Your Last Name]	(Description)	[Your Last Name] Manufacturing Co.	Company Type	V (Note: V stands for Vendor)	Currency	USD (default)						
<u>Field</u>	<u>Value</u>																
Company	[Your Last Name]																
(Description)	[Your Last Name] Manufacturing Co.																
Company Type	V (Note: V stands for Vendor)																
Currency	USD (default)																
4	Click on the Addresses tab and enter the following information: <table border="0"> <thead> <tr> <th data-bbox="521 886 594 917"><u>Field</u></th> <th data-bbox="808 886 881 917"><u>Value</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="521 932 776 963">Customer Contact</td> <td data-bbox="808 932 1024 963">John Jacobson</td> </tr> <tr> <td data-bbox="521 978 638 1010">Address</td> <td data-bbox="808 978 1089 1010">4500 Saw Mill Road</td> </tr> <tr> <td data-bbox="521 1024 581 1056">City</td> <td data-bbox="808 1024 922 1056">Bedford</td> </tr> <tr> <td data-bbox="521 1071 724 1102">State/Province</td> <td data-bbox="808 1071 857 1102">MA</td> </tr> <tr> <td data-bbox="521 1117 743 1148">Zip/Postal Code</td> <td data-bbox="808 1117 898 1148">01730</td> </tr> <tr> <td data-bbox="521 1163 610 1194">Phone</td> <td data-bbox="808 1163 1008 1194">781-555-2000</td> </tr> <tr> <td data-bbox="521 1209 716 1241">Company Fax</td> <td data-bbox="808 1209 1008 1241">781-555-2001</td> </tr> </tbody> </table>	<u>Field</u>	<u>Value</u>	Customer Contact	John Jacobson	Address	4500 Saw Mill Road	City	Bedford	State/Province	MA	Zip/Postal Code	01730	Phone	781-555-2000	Company Fax	781-555-2001
<u>Field</u>	<u>Value</u>																
Customer Contact	John Jacobson																
Address	4500 Saw Mill Road																
City	Bedford																
State/Province	MA																
Zip/Postal Code	01730																
Phone	781-555-2000																
Company Fax	781-555-2001																

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Entering Company Records continued

Adding a Company Record

continued

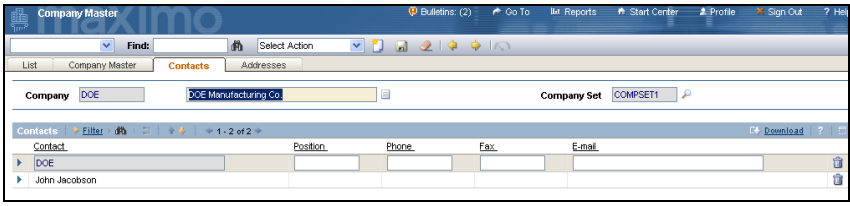

Step	Action												
5	Enter the company's Remit To information: <table border="0"> <tr> <td><u>Field</u></td> <td><u>Value</u></td> </tr> <tr> <td>Contact:</td> <td>[Your Name]</td> </tr> <tr> <td>Street:</td> <td>46 Krantz Road</td> </tr> <tr> <td>City:</td> <td>Concord</td> </tr> <tr> <td>State/Province:</td> <td>MA</td> </tr> <tr> <td>Zip/Mail Code:</td> <td>03067</td> </tr> </table>	<u>Field</u>	<u>Value</u>	Contact:	[Your Name]	Street:	46 Krantz Road	City:	Concord	State/Province:	MA	Zip/Mail Code:	03067
<u>Field</u>	<u>Value</u>												
Contact:	[Your Name]												
Street:	46 Krantz Road												
City:	Concord												
State/Province:	MA												
Zip/Mail Code:	03067												
6	Save the record. <u>Result:</u> Your Addresses tab should look similar to this: 												

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Entering Company Records continued

Adding a Company Record

continued

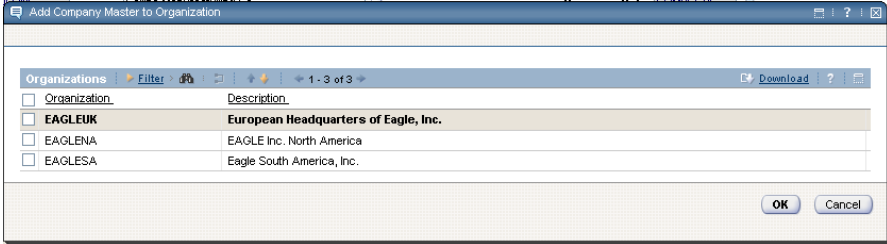
Step	Action																		
7	<p>Click the Contacts tab.</p> <p><u>Result:</u> The Contacts tab opens:</p> 																		
8	<p>Click the View Details button to the left of the first contact record.</p>																		
9	<p>Enter the detail information for your first company contact, as follows:</p> <table border="0"> <thead> <tr> <th data-bbox="503 955 576 997"><u>Field</u></th> <th data-bbox="828 955 917 997"><u>Value</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="503 997 625 1039">Position:</td> <td data-bbox="828 997 966 1039">Manager</td> </tr> <tr> <td data-bbox="503 1039 609 1081">Phone:</td> <td data-bbox="828 1039 1047 1081">(781) 555-7590</td> </tr> <tr> <td data-bbox="503 1081 576 1123">Fax:</td> <td data-bbox="828 1081 1047 1123">(781) 555-7591</td> </tr> <tr> <td data-bbox="503 1123 609 1165">Email:</td> <td data-bbox="828 1123 1144 1165">[Your e-mail address]</td> </tr> <tr> <td data-bbox="503 1165 690 1207">Pager Phone:</td> <td data-bbox="828 1165 1047 1207">(781) 555-7599</td> </tr> <tr> <td data-bbox="503 1207 690 1249">Home Phone:</td> <td data-bbox="828 1207 1047 1249">(781) 555-2856</td> </tr> <tr> <td data-bbox="503 1249 803 1291">Procurement Card #:</td> <td data-bbox="828 1249 933 1291">90078</td> </tr> <tr> <td data-bbox="503 1291 755 1333">P-Card Exp Date:</td> <td data-bbox="828 1291 1242 1333">[One year from today's date]</td> </tr> </tbody> </table> <p><u>Hint:</u> Use the Calendar  icon:</p>	<u>Field</u>	<u>Value</u>	Position:	Manager	Phone:	(781) 555-7590	Fax:	(781) 555-7591	Email:	[Your e-mail address]	Pager Phone:	(781) 555-7599	Home Phone:	(781) 555-2856	Procurement Card #:	90078	P-Card Exp Date:	[One year from today's date]
<u>Field</u>	<u>Value</u>																		
Position:	Manager																		
Phone:	(781) 555-7590																		
Fax:	(781) 555-7591																		
Email:	[Your e-mail address]																		
Pager Phone:	(781) 555-7599																		
Home Phone:	(781) 555-2856																		
Procurement Card #:	90078																		
P-Card Exp Date:	[One year from today's date]																		
10	<p>Save the company record.</p> <p><u>Result:</u> Your new company record is included in the Maximo database.</p>																		

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Entering Company Records continued

Adding a Company Record

continued

Step	Action
11	<p>From the Select Action menu, choose Add Company Master to Organization.</p> <p><u>Result:</u> The Add Company Master to Organization dialog box opens.</p> 
12	<p>Choose one of the organizations by clicking in the check box next to your choice.</p>
13	<p>Click OK.</p> <p><u>Result:</u> The company master is now added to the organization you chose.</p>
14	<p>Click OK to close the confirmation message.</p>

Summary

Overview

You use the Company Master application to create company master records that belong to a particular company set.

The Companies application holds information about the companies with which you do business. The Inventory, Purchasing, and Assets modules use this information.

Role of the Company Master Application

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.

You can also use the Company Master application to associate a company master record with an organization. All company master records in Maximo 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.

Role of the Companies Application

The information held by the Companies application, which is used throughout Maximo, includes:

- tax and currency information,
 - tax codes,
 - information about associated general ledger accounts,
 - addresses, and
 - contacts.
-

Workshop

Exercise



You are now going to put your new knowledge to work and enter a new company record into the database. Use the following data to create a new record in the Company Master application.

Field	Description
Company	MULTI (or MULTlxx, where xx is your student number)
Description	Management Utility Linking Technology, Inc.
Company Type	V
Currency	USD
Tax Exempt Code	2
Customer Contact	[Your Name]
Address	2342 Pembroke Way
City	Lowell
State/Province	MA
Zip/Mail Code	00113
Phone	978-555-5200
Fax	978-555-5283

Add Company Master to Organization



Add the newly created company to EAGLENA.

Checking Your Work



After you have entered all of the data, do the following:

1. Go to the Companies application and search for the company you just created.
 2. View the information on the various tabs.
-

Name: _____
Class: _____

Instructor: _____
Date: _____

	Excel- lent	Very Good	Good	Fair	Poor	Very Poor
1. The course structure and style was:						
2. The course content was:						
3. The workshops as a whole were:						
4. The length of the course was :						
5. Course organization was:						
6. Relevance and usefulness of course content was:						
7. Opportunity for practicing what was learned was:						
8. Amount you learned in the class was:						
9. The instructor's effectiveness in teaching the subject matter was:						
10. Use of class time was:						
11. Instructor's use of examples and illustrations was:						
12. Instructor's ability to answer student questions was:						
13. Instructor's ability to present alternative explanations when needed was:						
14. Tailoring of instruction to varying student skill levels was:						
15. Instructor demonstrations were:						
16. Instructor's ability to solve unexpected problems was:						

17. Which aspects of this course were most effective? _____

18. Which aspects of this course detracted from your learning? _____

19. What suggestions do you have for improving this course? _____