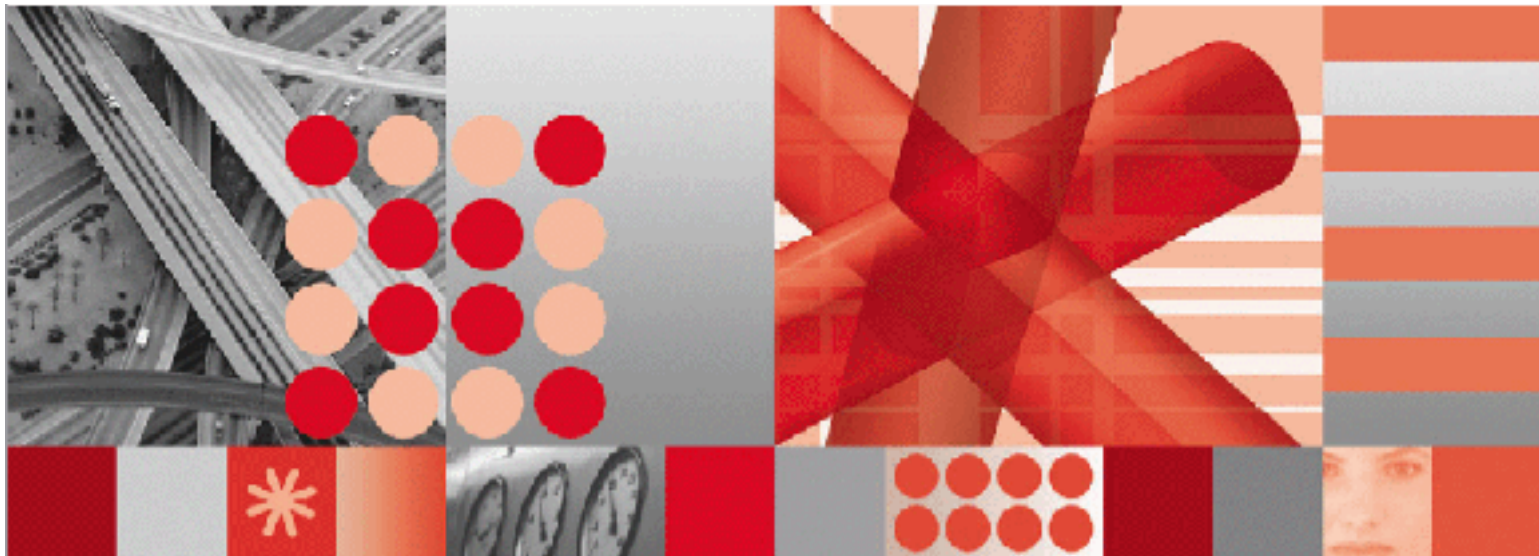




IBM Maximo Asset Management  
IBM Tivoli Asset Management for IT



Version 7.1



Product Reference Guide

**Note**

Before using this information and the product it supports, read the information in "Notices" on page 149.

This edition applies to version 7, release 1, modification 0 of IBM Maximo Asset Management, and IBM Tivoli Asset Management for IT, and to all subsequent releases and modifications until otherwise indicated in new editions.

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# About This Publication

This guide highlights the features of the system and defines the suite of applications that you can use to meet the asset management goals of your business.

## Intended audience

This guide is intended to help asset management professionals, system administrators, and end users understand the features of the product, including its application suite, the Maximo database, and graphical user interface. It also defines the security, workflow, reporting, integration, reconciliation, and configuration features of the system and directs you to related information for installing and configuring the system to optimize your enterprise asset management environment.

Some of the information in this guide might not pertain to your specific product.



## IBM Maximo Asset Management overview

IBM® Maximo® Asset Management is an integrated productivity tool and database that helps you manage all of your asset types on a single software platform. Built on a service-oriented architecture (SOA), Maximo Asset Management delivers you a comprehensive view of all asset types, their conditions and locations, and the work processes that support them, to provide you with optimal planning, control, audit, and compliance capability.

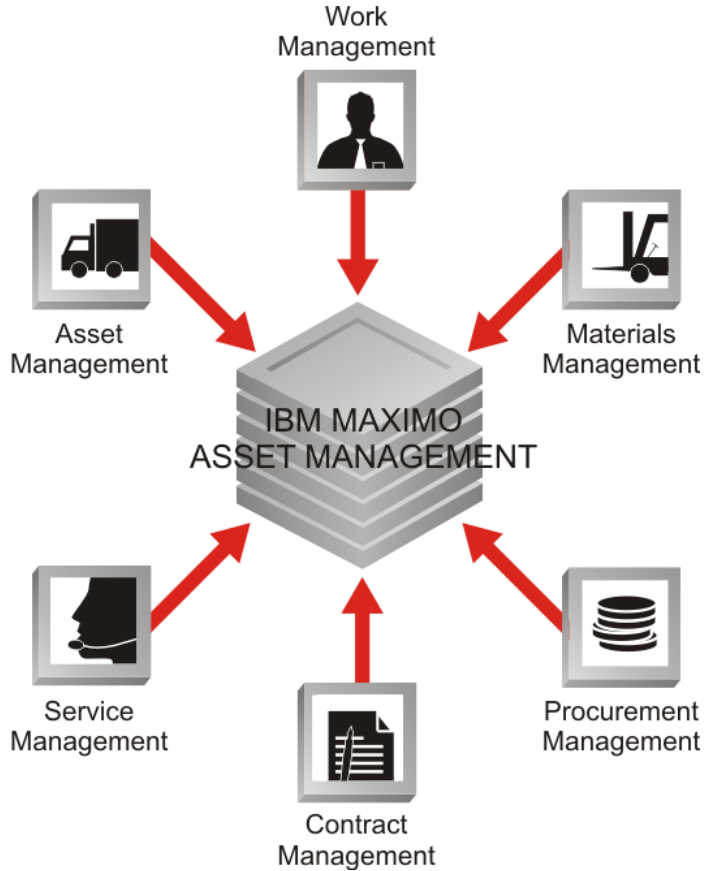
The Maximo database provides critical information about asset resources, including key attributes, their configuration, and their physical and logical relationships to other resources.

By using the Maximo Asset Management user interface, you can establish key performance indicators (KPIs) to monitor asset conditions and trigger automated action based on changes. You can create, assign, monitor, notify, and report on key process components such as work orders, service desk tickets, and purchase orders, including status, from start to finish. You can also include attachments, such as maps, pictures, and URLs to each record or task to further enhance communication and productivity.

Maximo Asset Management lets you manage end-to-end asset operations and business processes to deliver efficient and effective services aligned with your business goals. It provides a comprehensive and modular approach to integrated asset control and visibility by providing an enterprise platform for storing standardized data on asset histories to help integrate people, processes, information, and technology. Maximo Asset Management offerings include tools, best practices, and service offerings for incremental value. Managing assets through Maximo Asset Management gives your business a competitive advantage.

## Modularized asset management

The Maximo Asset Management solution provides a modularized management environment that helps you to capture and analyze your asset and work data, and to optimize maintenance and service initiatives throughout your enterprise.



The key management modules, shown in the illustration above, are packaged in an enhanced service-oriented architecture that helps simplify the creation of Web services and supports additional Web service standards such as WS-Security.

Built on a Java™ Platform, Enterprise Edition (Java EE) component-based Internet architecture, Maximo Asset Management fits in any modern enterprise technology infrastructure and integrates easily with your business systems. With a significant focus on configuration tooling, such as Application Designer for modifying the user interface and Database Configuration for adding features such as new tables and columns. Maximo Asset Management makes it easier to tailor the software to your needs without programming. Furthermore, you can upgrade your configurations using the Upgrade Utility, thus keeping you from being locked in from one application release to another.

### Asset management

You can achieve the control that you need to more efficiently track and manage asset and location data throughout the asset life cycle.

Use Maximo Asset Management to achieve these goals:

- ▼ Track asset details including location, work, cost and other attributes and their histories, over time, to help maximize productivity and extend asset life.
- ▼ Establish location and asset hierarchies to roll up costs across systems, subsystems, departments and locations, to get a better understanding of the true cost of assets (such as the initial cost, financial value, and cost to maintain).
- ▼ Monitor asset and location conditions to enable proactive (instead of reactive) maintenance that helps reduce unplanned downtime.
- ▼ Manage conventional assets and linear assets.

## Work management

You can manage planned and unplanned maintenance activities, from initial work request and work order generation through completion and recording of actuals. Work planners can match job tasks to available resources, estimate and obtain approval of costs, establish priorities, and initiate maintenance activities across the enterprise.

Work management supports your business goals by providing the following benefits:

- ▼ Tracking tools enable more detailed analysis of resources, inventory and equipment use and costs, helping decrease labor and materials costs.
- ▼ Multiple assets, locations and configuration items are allowed per work order or ticket. Work management also supports work order tracking, task sequencing, attaching documents at the task level and generating work orders from asset information.
- ▼ A graphical assignment manager helps optimize maintenance schedules and labor use by assigning the right person with the right skills to the right job.
- ▼ Preventive maintenance functionality that you can use to set preventive maintenance schedules with the right job steps and resource requirements, facilitating the planning and the work, to help reduce unplanned downtime and reactive maintenance.
- ▼ Work management tools enable job plan hierarchies, automated workflow processes, enhanced status control, and support for linear assets.
- ▼ Contract correlation links Service Level Agreements to vendor contracts so that you can identify unreliable vendors and low-quality products. You can also reference Service Level Agreement performance metrics when renegotiating vendor terms.
- ▼ A terms and conditions library that you can use to more consistently apply standardized policies across the organization.
- ▼ Automatic notifications and alerts help you meet vendor terms, avoid penalties, and get the most value out of every contract.

## Materials management

You can manage your materials by recording material movements and changes, implementing real-time inventory tracking, recording material movements and

adjustments, allowing for real-time inventory tracking, reporting, and auditing. This flexibility helps you to know the details at a glance regarding asset-related inventory and its usage including the asset type, quantity, date, location, and value. You can also include embedded images of an asset to appear in the catalog search.

Use the materials management features of Maximo Asset Management to achieve these goals:

- ▼ Track inventory transactions to help streamline parts and materials management.
- ▼ Decrease costs by eliminating excess or obsolete inventory.
- ▼ Optimize and plan inventory to more accurately meet maintenance demand, ensuring that the right parts are available at the location where they are needed. As a result, you can help to reduce the incidents of running out of stock or having insufficient inventory, and paying the costs of carrying too much inventory. You also can help to foster economies of scale by sharing resources.

## Procurement management

You can help to support the phases of enterprise-wide procurement, including direct purchasing and inventory replenishment. By providing buyers with more extensive requisition, quotation, vendor, purchase order, and contract capabilities, you help them to plan work in a proactive manner. Maximo Asset Management easily integrates with enterprise business systems from vendors such as Oracle and SAP, and also connects to online marketplaces, supplier systems and exchanges.

The procurement management features of Maximo Asset Management include:

- ▼ Vendor management and vendor performance analysis tools that can help reduce costly off-contract buying, and help verify the reliability of vendors and the quality of inventory and services.
- ▼ Automated interval-based, meter-based, or event-driven purchasing capabilities to help you order the right parts and services at the right time, which can improve purchasing efficiency.
- ▼ Global purchasing support that can enable group purchasing savings and efficiencies, and can help lower sourcing costs.
- ▼ Analysis tools and key performance indicators (KPIs), which measure procurement performance such as order processing times, invoice accuracy and order delivery times.

## Service management

Your users can submit new service requests, and track and update open service requests. You can apply additional service management best practices by using IBM Tivoli Service Desk and further align asset management priorities with overall business objectives.

Use the service management features of Maximo Asset Management to achieve these goals:

- ▼ Define service offerings to help improve organizational communication and verify that provided services are required to support the business.
- ▼ Establish service-level agreements (SLAs) to help increase communication between your organization and the business units, and help align service levels with business objectives.
- ▼ Proactively monitor service-level delivery and compare to metrics to avoid missing service-level commitments.
- ▼ Implement escalation procedures to better manage the resources that support service-level commitments.

## **Contract management**

You can gain more control over your vendor contracts with this integrated contract management system. It provides comprehensive contract management that includes support for purchase, lease, rental, warranty, labor rate, software, master, blanket, and user-defined contracts.

## **Migration to production**

To help extend your investment in Maximo software and decrease the total cost of ownership, Maximo Asset Management includes a migration management tool that helps you more efficiently manage Maximo software deployments to production. Maximo Migration Manager transfers product configurations and customizations from development to test to production environments. It provides support for standard roll-out environments and enables a repeatable roll-out process that facilitates monitoring as well as documentation and management of regulatory compliance efforts.

## **IBM Maximo e-Commerce Adapter**

Maximo Asset Management includes the Maximo e-Commerce Adapter, a tool that enables buyers to dynamically collaborate with their suppliers, partners, and electronic marketplaces.

Buyers can use this adapter to integrate Maximo with their comprehensive e-commerce infrastructure to browse multiple supplier catalogs, place orders on multiple marketplaces or directly with suppliers, check order status, and process supplier invoices electronically. Real-time product information, availability, and pricing help improve accuracy and planning.

With the Maximo e-Commerce Adapter, you can also use the Search Catalogs feature within Maximo Asset Management when managing Work Orders and Desktop Requisitions to 'punch out' to online hosted catalogs.

## **System components**

Maximo Asset Management comprises a collection of components and products that work together to form an asset lifecycle and workflow process management system.

A typical Maximo Asset Management environment consists of a database server and an application server. You can install each server on a separate computer (for best performance) or on the same computer.

The Maximo Asset Management installation programs and the middleware installation programs install and/or configure the IBM products that comprise the Maximo Asset Management architecture. Installing the components requires a valid and active connection to the Internet. For supported browsers, hardware and software requirements, planning, installation, and initial system and data configuration information, see the *Installation Guide*.

## System security

You can manage which users can log in to the Maximo Asset Management system and which sites, applications, and menu options each user can access. The process of logging into Maximo Asset Management is called *authentication*; the control of which users can use which applications and features is called *authorization*.

### Authentication

Authentication is the process of validating the identity of a user by providing proof that users are who they claim to be. There are different methods to authenticate users, and these methods share a common trait: authentication is always provided by a user ID and password. This process is distinct from authorization; authentication is not concerned with granting or denying access to system resources.

There are two types of authentication:

- ▼ Application server authentication, which can be used with an external authentication mechanism.
- ▼ Native authentication, which is provided to authenticate users and verify their identity and security authorizations.

### Application server authentication

Maximo Asset Management application server authentication comprises three components:

**Directory server** – Stores the user IDs, passwords, and security groups defined in your environment. The directory server is also called the LDAP server, because it implements the lightweight directory access protocol.

**Application server** – Provides an interface between the directory server and other Maximo Asset Management components. All interactions with the directory server flow through the application server, whose common interface masks the differences between directory servers, so that other components need not be configured to work with a particular directory server.

**Authentication service** – A client-server application on the application server that provides the single-sign-on capability for Maximo Asset Management. This authorization service enables you to launch one interface from another (for example, from the Maximo Asset Management interface to an IBM Tivoli<sup>®</sup> Application Dependency Discovery Manager (topology view) by using the credentials that are supplied when the user is authenticated, eliminating the need to provide credentials again.



For information about configuring these components and managing security groups, see the *System Administrator Guide*.

## Native authentication

You can use the native authentication provided with the system to authenticate users and verify their identity and security authorizations.

A user types a login ID and password in the Welcome page. The security functions validate whether the user ID and password exist in the database. The user is granted access to applications, actions, and data based on the security groups with which their user ID is associated.

## Authorization

Your access to the modules, applications, windows, and menu options is controlled by your security privileges (authorization). All security access to the system is based on security groups. Your user name is associated with one or more security groups (roles), each of which can have different levels of access to the system.

After you establish the user-to-group relationship, you can use the **Security Groups** application to change the attributes (applications, windows, and menu options) to which a group has access.

Your access to modules and applications also depend on the product options that your company has purchased and the product enablers that you have installed to activate them.

You use the Users application to specify user default values, such as insert site, storeroom, language, general ledger (GL), accounts for purchasing. You can also use it to view user security profiles.

## Maximo Asset Management applications summary

You use the Maximo Asset Management Start Center and applications to manage the total lifecycle of your business assets and related support services such as work order management, escalation, notification, delegation, and reporting.

You access the Maximo Asset Management applications from the Go To menu in the Navigation bar of the user interface, where they are grouped into modules. The applications in a module (or submodule) have similar purposes. For example, all of the applications related to resources are grouped together. Every application (and the Maximo Asset Management Start Center) has online help available to help you understand the business purpose it serves, and how to use it to complete specific tasks. (Click **Help** in the toolbar (or Alt +H) for assistance.)

There are basically three kinds of modules: those used by system administrators, power users (such as service desk agents), and self-service users. Users with system administrator authority have access to a different set of applications than other users. For more details on configuring and maintaining your system using the system administrator modules (including Administration, System Configuration, and Security), see the *System Administrator Guide*.

The following table lists the Maximo Asset Management modules and submodules in alphabetical order, and summarizes the applications within each module. The applications that are accessible in your environment might differ,

depending on the products that you have purchased, your role, and the security configuration of your application server.

For a detailed description of the applications, refer to Chapter 3, "Detailed Application Descriptions," on page 73.

Module	Application	Function
Administration		You use the applications in the Administration module for small system administration tasks, such as setting one parameter, and for tasks that you do often, such as creating user groups.
	Sets	Create a framework for sharing item and company (vendor) data across multiple organizations.
	Organizations	Set up the organizations and sites to use with the system. You must define at least one organization and one site.
	Calendars	Indicate working time for equipment, craft, and labor records for an organization and its associated sites.
	Bulletin Board	Create, post, and view messages as well as to broadcast information to system users.
	Communication Templates	Create and manage generic communication templates that users can use to standardize frequently used e-mail communications (also known as notifications).
	Conditional Expression Manager	Create and maintain a library of conditions that you, or other users, can select from when using applications, such as Application Designer and Security Groups, to set up conditional behavior.
	Classifications	Create classifications and establish classification hierarchies for many objects such as Items, Assets, Locations, and Work Orders. You use classifications and hierarchies to organize data and make it easier to find specific information.
	CI Types	Specify which configuration item types (CI types) you want to use when you import actual configuration items from the IBM Tivoli Application Dependency Discovery Manager product.
Work View	Query ticket and work order information and make the results available for display in the Results Set portlet of a user's Start Center.	
Assets		You use the applications in the Assets module to manage the assets owned or leased by your company from the beginning to the end of an asset's life cycle.
	Assets	Store asset numbers and corresponding information such as the parent, location, vendor, up or down status, and maintenance costs for each asset. You create asset records for any equipment, machinery, or technology that your company owns or leases that must be managed and maintained.
	Locations	Enter and track locations for assets and organize these locations into logical hierarchical systems or network systems.
Features	Define the physical features of the linear assets that you manage with the Maximo Linear Asset Manager product option. A feature is a physical object, such as a guard rail or mile marker, that you associate with one or more linear assets.	

Module	Application	Function
	Meters	Add or modify meter definitions including the names for the meters and the sets of attributes that describe the meters. You define the meters and use their readings to track the performance of an asset or a location.
	Meter Groups	Define a logical grouping of meters. Meter groups represent a collection of meters that are used together multiple times.
	Condition Monitoring	Define unlimited measurement points for assets, and specify alarm limits and associated work to be performed after reaching those limits. Create and view measurement-point records to define acceptable meter readings for a characteristic or gauge type of meter on an asset or location.
	Failure Codes	Build and display failure hierarchies which help you construct accurate histories of the failures that affect your assets and operating locations.
	Software License View	Use with the IBM Tivoli Asset Management for IT product to view information about the software licenses that are installed on computers that are deployed in your enterprise. The software license information is data that has been collected by an asset discovery tool.
<b>Change</b>		The Change module helps you manage tasks and activity-class work orders.
	Activities and Tasks	Plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of the work that is being performed.
<b>Contracts</b>		You use the applications in the Contracts module to manage contracts for labor rates, purchases, leases, warranties, and software.
	Purchase Contracts	Create, view, and modify purchase contracts with outside vendors.
	Lease/Rental Contracts	Define the overall terms and conditions of the lease or rental agreement between a vendor and a customer regarding one or more assets.
	Labor Rate Contracts	Manage outside labor and the corresponding rates by defining multiple labor rates for specific crafts and skills. Optionally, use to create labor records.
	Master Contracts	Associate many contract types for a particular vendor. A master contract defines the relationship with a vendor and contains the terms and conditions that apply to the contracts that are created and listed under it.
	Warranty Contracts	Maintain one or more assets for an outside service provider for a fixed fee or regularly scheduled payments over a time period, or to track warranty information for multiple assets or locations by time or meter.
	Software Contracts	Use this application with the IBM Tivoli Asset Management for IT product to create, view, and modify software contracts.

Module	Application	Function
	Terms and Conditions	Maintain a library of terms and conditions that can be added to a purchasing document or contract. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.
Deployed Assets		You use the applications in the Deployed Assets submodule (within the Administration module) to manage the assets that are deployed on your enterprise network.  This submodule is accessible only with IBM Tivoli Asset Management for IT or IBM Tivoli Service Request Manager.
	Adapter Conversion	Use to establish standard naming conventions for adapters, including media adapters, such as video and sound cards, and network adapters.
	Manufacturer Conversion	Use to define standard naming conventions for the manufacturers of deployed assets, including computers, printers, and network devices.
	Operating System Conversion	Use to establish standard naming conventions for the computer operating systems in deployed assets.
	Processor Conversion	Use to establish standard naming conventions for central processing units (CPUs) installed on computers in deployed assets.
	Software Conversion	Use to establish standard naming conventions for computer software applications.
	Software Suite Setup	Use to create software suite records and to view, edit, duplicate, and delete existing records. A software suite record defines which software applications belong to a software suite. A software suite is a group of software applications licensed as a single unit.
	Software Usage Setup	Use to create software usage records and to view, edit, duplicate, and delete existing software usage records. A software usage record defines how to display software usage frequency for a specific discovery tool.
Deployed Assets		You use the applications in the Deployed Assets submodule (within the Assets module) to view information about the computers, network devices, and network printers that are deployed on your enterprise network.  This submodule is accessible only with IBM Tivoli Asset Management for IT or IBM Tivoli Service Request Manager.
	Computers	Use to view information about the hardware and software that is installed on the computers that are deployed throughout your enterprise.
	Network Devices	Use to view information about deployed network devices such as routers, switches, and hubs. Data displayed in this application is data collected from network devices and their network device cards.
	Network Printers	Use to view information about the network printers that are deployed throughout your enterprise. Data displayed in this application is data that is collected from network printers.

Module	Application	Function
Desktop Requisitions		As a self-service user, you use the applications in the Desktop Requisitions submodule (within the Self Service module) to create and view purchase requisitions without the assistance of an administrator or service desk agent. You can create template requisitions for repeat orders; create a list of favorite items that you order frequently; view open, draft, and template requisitions; and check the status of your order.
	Create Requisition	Use this self-service application to create and submit a desktop requisition to purchase items from either an internal source, such as a company storeroom, or from an external vendor.
	View Requisition	Search for, view, and change the status of your existing purchase requisitions.
	View Templates	View a requisition that was saved as a template. A template requisition is a requisition that you save to use repeatedly in the future, and it typically contains your standard shipping and charge information and line item information.
	View Drafts	View a requisition that was previously saved as a draft during the create requisition process.
Financial		You use the applications in the Financial module to define and manage currency codes, exchange rates, general ledger accounts and resource codes.
	Currency Codes	Define currency codes and specify which codes can be used in the system. A currency code is a short, user-defined value that represents a currency, for example, CND for the Canadian dollar.
	Exchange Rates	Set up exchange rates that are used for converting currencies.
	Chart of Accounts	Establish general ledger account fields in Maximo with definitions that are equivalent to the definitions that are used in the rest of your financial data processing system.
	Cost Management	Generate project cost information to track the financial resources that are required to complete a project and manage budgets more effectively.
Integration		The Integration Framework module contains applications that help you integrate the system with your enterprise applications. You can create business flows between the system and your other enterprise applications.
	Object Structures	Create, view, modify, and manage the processing logic of an object structure. An object structure is the common data layer that the integration framework uses for all outbound and inbound application data processing. An object structure consists of one or more sub-records that develops XML content from a particular object.
	Publish Channels	Create and manage publish channel records that are used as the pipelines for exporting data from the integration framework to an external system.
	Invocation Channels	Create invocation channel records and, through Service Oriented Architecture (SOA), enable the use of external services for processing data from multiple data sources.

Module	Application	Function
	Enterprise Services	Create enterprise service records that are used as the pipelines for importing data from an external system to the integration framework.
	Web Services Library	Create and manage Web services that can be used by external applications to query or to send transactions to the integration framework. You can also generate schema and Web Service Description Language (WSDL) files for any Web service that you deploy.
	End Points	Create and manage end point records. An end point identifies a location and the processing logic of data publication and service invocations. By using the defined end point handler, you can identify how to route outbound data to a specific location. You can also define which data format that the integration framework or deployment manager component will use through the handler.
	External Systems	Create and manage external systems. Any business application that sends data to the system or receives data from the system is an external system. You can use External Systems to synchronize external data through an end point (location), and synchronize internal data through an external source.
	Logical Management Operations	Create and manage logical management operations. A logical management operation is the common data layer that defines an action that the system takes on an operational management product.
	Integration Modules	Create and manage integration modules. The Integration Modules application provides a mechanism for a process management product, such as a Change or Release, to call an external operational management product.
	Launch in Context	Create and manage launch entries that open, in the same or a different browser session, an application that is external to the system.
	Message Tracking	Track and view the processing history of queue-based inbound (Enterprise Services), and queue-based outbound (Publish Channels) messages. When you enable message tracking, the integration framework writes all processed messages to the Maximo database.
	Message Reprocessing	Manage and view integration transaction messages that are flagged with an error.
<b>Inventory</b>		You use the applications in the Inventory module to manage spare parts inventory.
	Item Master	Define items that you intend to stock in your storerooms. You group these items in an item set, which can then be shared by the organizations that use that item set.
	Service Items	Define and manage purchased services by creating service item records and maintaining a list of vendors that supply the service item.
	Tools	Manage information about the tools that are used to perform work. Tools are typically nonconsumable 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.

Module	Application	Function
	Stocked Tools	Manage existing tools in storerooms. To create new tool records, you use the Tools application.
	Inventory	Create and manage information about items in inventory (stocked, nonstocked, and special order) and to know when your stock falls below a specified level so that you can reorder.
	Issues and Transfers	Issue or transfer items from storerooms, or to return items to storerooms.
	Condition Codes	Create and maintain a master list of condition codes for an item set.
	Storerooms	Add and maintain information about storeroom locations, and view the items that are stocked in a storeroom. You also use this application to set the general ledger accounts to associate with each storeroom.
IT Infrastructure		You use the applications in the IT Infrastructure module to manage the configuration of your IT asset infrastructure.
	Configuration Items	Define, create, and manage relationships among configuration items according to relationship rules that you specify in the Relationships application. A configuration item is any component of an information technology infrastructure that is under the control of configuration management.
	Relationships	Create definitions and rules for relationships. A relationship describes the dependency or connectivity between configuration items using basic terms such as "runs on", "installed on", and "contained." You use these relationships in the Configuration Items application to associate configuration items with each other.  You can also define relationships between assets that you manage with the Maximo Linear Asset Manager product option.
	Collections	Group configuration items, assets, and locations so that they are easier to access and handle in other applications. Instead of selecting from a list of all configuration items, assets, or locations, you can specify a collection to get a list of records in the collection.
Migration		You use the applications in the Migration submodule (within the System Configuration module) to migrate Maximo Asset Management configuration content from one environment to another. You can also manage the processing logic of an object structure.
	Migration Manager	Define, create, distribute, and deploy packages. The packages are used to transfer and deploy the many configuration changes possible with Maximo's configuration tool set from one environment to another. For example, you can transfer product configurations and customizations from a development environment to a test environment, and then to a production environment.
	Migration Groups	Create groups of configuration objects and link related (dependent) groups to the objects that you create. You group configuration objects to ensure that all related configuration data is collected from source environments and distributed to target environments.

Module	Application	Function
	Object Structures	Create, view, modify, and manage the processing logic of an object structure. An object structure is the common data layer that the integration framework uses for all outbound and inbound application data processing. An object structure consists of one or more subrecords that develops XML content from a particular object.
Planning		You use the applications in the Planning module to create and manage plans that define how work should be performed.
	Job Plans	Create a detailed description of how a job is to be performed.
	Routes	List related work assets that are considered “stops” along an inspection or maintenance route.
Platform Configuration		You use the applications in the Platform Configuration submodule (within the System Configuration module) to configure many pieces needed in the system to build up something large. Also, use them for tasks typically done once, such as the initial configuration after an installation, or changing the layout of an HTML panel.
	System Properties	Manage system properties and their values used by various product components.
	Logging	Create and manage log settings and configure the log files that contain informational, warning, or error messages about the system.
	Domains	Define the values that appear in select value lists in some fields on the application pages and tabs of the user interface.
	Database Configuration	Create or modify the objects and attributes that are in the Maximo database and used by system applications.
	Application Designer	Create new applications (clones) and configure the pages of an existing system application.
	Communication Templates	Create and manage generic communication templates that system users can use to standardize frequently used e-mail communications (also known as notifications).
	Actions	Manage the administrative functions of creating actions and action groups in the workflow, escalation, and service level agreement processes. Actions are scheduled events that occur when a record leaves a Workflow node.
	Roles	Create and manage roles, which define a function or position in a business. A role can represent a job title, such as “department manager”, or an assigned duty, such as “watch officer” When a role is used as part of a communication template, escalation, service level agreement, or workflow process, it can determine the correct individuals to whom the process is routed.
	Escalations	Automatically monitor the critical processes in your enterprise. The primary goal of escalation management is to ensure that critical tasks, such as those defined in service level agreements, are completed on time. You can also use escalations for events such as contract expiration, a change in the status of a record, or a change in the owner of a record.
	Workflow Designer	Use this graphical application to create a series of decision paths for records to flow through, called a workflow process.



Module	Application	Function
	Workflow Administration	View and modify assignments within the workflow, escalation, and service level agreement processes.
	Cron Task Setup	Manage cron tasks, which are jobs that run (as background tasks) automatically and on a fixed schedule.
	E-mail Listeners	Receive and process incoming e-mail messages. This application can monitor multiple e-mail accounts to retrieve messages, and it supports embedded and normal message attachments.
	Object Structures	Create, view, modify, and manage the processing logic of an object structure. An object structure is the common data layer that the integration framework uses for all outbound and inbound application data processing. An object structure consists of one or more sub-records that develops XML content from a particular object.
	Web Services Library	Create and manage Web services that can be used by external applications to query or to send transactions to the integration framework. You can also generate schema and Web Service Description Language (WSDL) files for any Web service that you deploy.
	Launch in Context	Create and manage launch entries that open, in the same or a different browser session, an application that is external to the system.
<b>Preventive Maintenance</b>		You use applications in the Preventive Maintenance module to manage the work that is performed on a regular schedule to keep assets running efficiently. The applications in the Preventive Maintenance module can help you to plan and budget for regular maintenance work. You can plan the labor, material, service, and tool needs of your regularly scheduled maintenance and inspection work orders.
	Preventive Maintenance	Create and manage preventive maintenance (PM) plans for work assets. Preventive maintenance records are templates for work orders.
	Master PM	Create and modify master preventive maintenance records, which are templates for other preventive maintenance records.
<b>Purchasing</b>		You use the applications in the Purchasing module to manage the purchasing process, including obtaining requests for quotations (RFQs), purchasing materials and services, and then receiving and invoicing what you purchase. You can maintain information about the companies from which you purchase, and integrate legal terms and conditions into the purchasing process.
	Purchase Requisitions	Ask the purchasing department to order materials and services.
	Purchase Orders	Purchase materials and services from an internal supplier or an external vendor.
	Receiving	Receive materials into inventory and record the receipt of services.
	Invoices	Record invoices (and debit and credit notes) from vendors and match them to purchase orders and receipts for approval.

Module	Application	Function
	Request for Quotations	Request and manage vendor quotations. A request for quotation is a request that you send to one or more potential suppliers. Assessing and comparing quotations helps you to determine which vendor best meets your business needs.
	Companies	Manage data about vendors, manufacturers, and other companies with which you do business.
	Company Master	Create company master records that belong to a particular company set.
	Terms and Conditions	Create and maintain a library of terms and conditions that can be added to a purchasing document or contract. These terms can contain information such as liability concerns, shipping and handling details, and delivery time expectations.
<b>Reconciliation</b>		<p>You use the applications in the Reconciliation module to evaluate data about information technology devices and networks and view the results of the evaluation.</p> <p>You use these applications to configure a behind-the-scenes process that compares objects from one data set (Data Set 1) with objects in another data set (Data Set 2). The reconciliation process identifies successful matches as well as discrepancies and variances between the two sets of data.</p>
	Reconciliation Tasks	Use to create, view, modify, duplicate, and delete reconciliation task records. A reconciliation task combines the elements required for a reconciliation into a specific task that you schedule to run using the Cron Task Setup application.
	Task Filters	Create, view, modify, duplicate, and delete task filter records. A task filter record specifies a subset of objects that you want to evaluate when you execute a reconciliation task.
	Link Rules	Use to create, view, modify, duplicate, and delete link rules. A link rule is a required component of a reconciliation task. When the system processes a reconciliation task, a link rule establishes the basis for reconciliation by identifying a top-level object and attribute in one data set to link to a specific attribute of a top-level object in another data set.
	Comparison Rules	<p>Create new comparison rules; view, modify, or duplicate existing comparison rules; and delete comparison rules.</p> <p>A comparison rule is an optional component of a reconciliation task. It defines how to compare objects or attributes of a child or parent object in one data set with a child or parent object in another data set when the system executes a reconciliation task. For example, you can set up a comparison rule to compare software on computers in IT assets with software on computers in deployed assets. A task can include more than one comparison rule.</p>
	Asset Link Results	View and manage the results that are generated when the system executes a reconciliation task that compares two different sets of IT asset data.

Module	Application	Function
	Asset Reconciliation Results	View and manage the results that are generated when the system executes a reconciliation task that compares two different sets of IT asset data.
<b>Reporting</b>		You use the applications in the Reporting submodule (within the Administration module) to create key performance indicators to track critical performance variables over time, and to create reports.
	KPI Manager	Create key performance indicators that can be viewed either in the Start Center or directly with the KPI Manager. Key performance indicators provide you with a means to track critical performance variables over time. Key performance indicators can also be created with the Create KPI action, if you have authorization, from other applications.
	Report Administration	Create reports, generate and preview request pages, add parameters, display reports as toolbar icons, e-mail reports, and specify a schedule for running reports. Also, you can import report design files and libraries into the Maximo database and set or view report security at the group level.
<b>Resources</b>		You use the applications in the Resources submodule (within the Administration module) to create records about the individuals and groups in your workforce.
	Labor	Define and maintain labor records.
	Qualifications	Manage qualifications and the certification requirements for qualifications.
	People	Maintain records for people.
	Person Groups	Maintain person groups. A person group consists of people who might or might not be workers.
	Crafts	Define and maintain craft records.
<b>Safety</b>		You use the applications in the Safety submodule (within the Planning module) to inform workers of potential dangers in their work environment and to provide information to protect workers from those dangers.
	Hazards	Define hazards that exist in the workplace and related safety precautions.
	Precautions	Define safety precautions to prevent hazards in the workplace.
	Lock Out/Tag Out	Create a detailed description of how to take work assets out of service or how to place them back in service, to ensure a safe work environment.
	Safety Plans	Create a detailed plan of how to safely service assets or locations.
<b>Security</b>		You use the applications in the Security module to implement and manage security for users and groups.
	Security Groups	Grant access to sites, applications, and menu options by using security privileges. A user is assigned to one or more security groups to gain access to the system.
	Users	Add and manage system users.

Module	Application	Function
Self Service		Self-Service users with proper permissions can register themselves in the system, log in, and use the applications in the Self-Service submodules (Desktop Requisitions and Service Requests) to create records without the assistance of an administrator or service desk agent. See each submodule for a summary of its applications.
Service Desk		You use the applications in the Service Desk module to manage customer requests for help, information, and service.
	Activities and Tasks	Plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of the work that is being performed.
	Service Requests	Create, view, and resolve service requests from customers.
	Ticket Templates	Use to create and manage generic templates that Service Desk environments can use to standardize common or high-volume service request, incident, or problem tickets.
Service Requests		Self-service users can use the applications in the Service Requests module to create a service request for equipment repair or configuration, and view existing service request information.
		A self-service user is one who can self-register, log in, and use the system to create or view service requests without the assistance of a service desk agent.
	Create Service Request	As a self-service user, use to create service requests for a repair or a change to an asset.
	View Service Requests	As a self-service user, use to view the details about each service request that you have created, including the status of the request and all correspondence with the service desk.
System Configuration		The System Configuration module contains two submodules (Platform Configuration and Migration) that you use to manage your system and to migrate system configuration packages from one environment to another. See each submodule for a summary of its applications.
Task Management		The Task Management module helps you manage tasks and activity-class work orders.
	Activities and Tasks	Plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of the work that is being performed.
Work Orders		You use the applications in the Work Orders module to create and manage work orders, labor assignments, and labor hours.
	Work Order Tracking	Plan, create, review, and approve work orders for assets and locations.
	Labor Reporting	Report the type and total number of hours of work that were performed by external contractors or internal employees.

Module	Application	Function
	Quick Reporting	Report work on open work orders or small jobs. You can plan, review, and approve work orders for assets and locations. When you create a work order, you initiate the maintenance process and create a historical record of work that is being performed. You can capture this work using Quick Reporting.
	Activities and Tasks	Plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of the work that is being performed.
	Assignment Manager	Dispatch urgent work and schedule labor to planned work requirements.
	Service Requests	Create, view, and resolve service requests from customers.
<b>Start Center</b>		The Start Center is the page that opens when you log in to the Maximo Asset Management system. Use this dashboard-like starting point to view information about the system and your business environment, and to navigate to system features using the Navigation toolbar, menus, and special links. The Start Center provides links to applications that administrators can use to define and configure it to best suit your business needs. From the Start Center page, click Help (or press Alt +H) for assistance using the applications listed below.
	Layout and Configuration	Modify and configure the layout of portlets that are displayed on the Start Center.
	All Custom Applications	Access all user-created custom applications.
	Favorite Application Setup	Define and edit the list of applications that are displayed in a Favorite Application portlet.
	Forgotten Password	Use this action from the login window to e-mail current password information to a user.
	Inbox/Assignments Setup	Define which columns appear in the Workflow assignments inbox on the Start Center.
	KPI Graph Setup	Define a KPI Graph style portlet to display on the Start Center.
	KPI List Setup	Define a KPI List style portlet to display on the Start Center.
	Change Password	Change the system access password for a user.
	Quick Insert Setup	Define the list of applications that appear in the Quick Insert portlet.
	Result Set Setup	Define the query and columns that appear in a Result Set portlet on the Start Center.
	User Self Registration	New users use this application to register with a temporary password.

## Maximo database

When you enter information into an application, the information is stored as data in the Maximo database.

The Maximo Asset Management system supports IBM DB2<sup>®</sup> Universal Database, Oracle<sup>®</sup>, and Microsoft<sup>®</sup> SQL Server databases. The Maximo database contains more than 490 tables and over 11,000 columns.

Data in the Maximo database is organized by objects, which are collections of attributes, or fields, used to process data.

### Database components

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

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

Data in the Maximo database is organized by objects, which are collections of attributes, or fields, used to process data.

### Columns or fields

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

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

### Key fields

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

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

### Tables

A **table** is a grouping of data arranged in rows and columns. In general the different page areas, for example, tabs, subtabs, and table windows, each correlate to a different table in the database. Because Maximo Asset Management uses a relational database, data that you enter into one table can be shared with another related table, or used to calculate a value in yet another table.

## Structured query language

Maximo Asset Management uses Structured Query Language (SQL) to retrieve data from the Maximo database. Requests to find information in a database are called queries. You do not need to know SQL to use Maximo Asset Management applications. You can perform a query to the database from the application pages. However, you should know SQL if you plan to create reports.

## Maximo database structure

The Maximo database is a relational database. This section describes relational databases, hierarchies, and data sharing concepts.

### Relational databases

The records accessed by the system are stored in a *relational database*. In a relational database one table can be connected to another table if they both contain at least one common field. This relational structure lets you view the same data in many different ways, from many different applications.

### Hierarchies

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

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

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

### Data sharing between applications

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

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

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

You can find information about the table and column location of a field in the database by placing the cursor in a field in an application and pressing Alt +F1.

## Financial application integration

Maximo Asset Management applications support general ledger (GL) accounting practices. The financial data collection features in Maximo Asset Management cause GL account codes to default as a result of standard system processes, such as inserting records, using resources, receiving materials, and approving invoices. By integrating Maximo Asset Management with your external financial application, you can use your financial application to access and track Maximo Asset Management data and transactions. See the *Financial Manager Guide*, and the help for the Maximo Asset Management Financial module applications for more details.

For more information about establishing the account codes used in Maximo Asset Management, see the *System Administrator Guide*.

## WorkFlow development and implementation

With Maximo Asset Management you can record and reproduce your business and management processes. Automating these processes provides greater efficiency and accountability throughout your enterprise. An integrated part of the Maximo Asset Management software, Workflow includes the following capabilities:

- ▼ Consistently apply your business practices to Maximo Asset Management records.
- ▼ Manage the routing of a record through a process from start to finish, either automatically or manually.
- ▼ Route a record and the appropriate instructions to the appropriate individuals so that they can act on it.
- ▼ Provide notifications of assignments to assignees using their workflow inbox, or via e-mail, eliminating the need for users to search for their assignments.
- ▼ Allow assignees to link from their workflow inbox directly to the assigned record.
- ▼ Ensure that individuals act on records assigned to them in a timely manner and guide users through their interaction with a record.
- ▼ Escalate a record if the time limit for completing a task is exceeded by an assignee.
- ▼ When a process task requires a user decision, automatically assign the record to a role that resolves to a person group, person, or delegate at runtime.
- ▼ Allow workers or administrators to reassign workflow tasks.
- ▼ When a process requires user input, provide a menu of the context-appropriate options to select from.
- ▼ When a process requires user interaction, direct a user to the appropriate application, tab, or action.



- ▼ Automatically move a record through a step in a process when there is only one choice of actions.
- ▼ Generate e-mail notifications at specified points in a process.
- ▼ Allow workers or administrators to stop a process instance and remove a record from the control of the workflow.
- ▼ Ensure that an audit trail exists for each record and process.
- ▼ Run an executable program (batch file or .exe) that is stored on a local server in the Maximo directory at a specified time.
- ▼ Run a custom Java™ class.
- ▼ From one type of Service Desk record (for example, a service request), launch a process for another type of record (for example an incident).
- ▼ Support subprocesses, for example, for subcategories of records, or records from different sites.

You can create a workflow process for any Maximo business object. Because all Maximo applications are associated with Maximo business objects, you can build workflow processes for any application, including cloned and custom applications.

For more information about developing an implementing an automated workflow for your enterprise, see the *Workflow Implementation Guide*.

## Developing and running reports

Maximo Asset Management provides a variety of applications and tools for creating, customizing, and generating reports that reflect your business environment, including:

- ▼ Reporting module applications
- ▼ Report development capability using BIRT
- ▼ Run Reports option

### Reporting module applications

The Reporting module of the Administration module has two applications:

**KPI Manager** – Create KPIs that can be viewed either in the Start Center or directly with the KPI Manager. Key performance indicators provide a way to track critical performance variables over time. You can also create KPIs with the Create KPI action, if you have authorization, from other applications.

**Report Administration** – Import report-design files and libraries into the Maximo database, set or view report security at the group level, manage scheduled reports, and define report parameters.

## Report development capability using BIRT

Maximo Asset Management uses BIRT (Business Intelligence and Reporting Tools) for reporting functions. BIRT is an Eclipse-based open source reporting system for Web applications.

BIRT functionality provides a variety of standard reports that are related to an application. In addition, you can customize these reports, or develop new reports that are specific to your business needs. See the *Report Developer Guide* to learn how to develop new reports.

## Run reports option

Many applications provide a **Run Reports** option in the Select Action drop-down list in the toolbar. This feature lets you view and manage:

**On Demand Reports** – BIRT reports that come standard with the Maximo Asset Management system which are related to and available through specific applications. The reports available to you are based on your security groups. For a complete list of On Demand Reports, see the *Report Developer Guide*.

**Scheduling Status** – reports that are scheduled to run on a recurring basis or at a time in the future. You can view or edit report schedules.

For help running reports, click the Help icon in the top right corner of the Reports dialog box, which appears after you select **Run Reports** from the Select Action menu of the application.

## Integrating enterprise applications

Using the Maximo Asset Management Integration Framework, you can integrate and create business flows between the system and your framework applications. To configure and use the Integration Framework, see the *Integration Guide*. Also, see the help topics for the Integration module applications. The Integration Framework applications are also described in “Integration module” on page 101.

## Multisite support

Large businesses, government agencies, and other types of enterprises often have multiple facilities. Some customers install a separate instance of Maximo Asset Management and the Maximo database at each facility. However, these different facilities often have common business practices or share common data, and separate databases do not meet the needs of the business or public enterprise.

The Maximo Asset Management multisite functionality provides large enterprises a way to standardize and share certain kinds of data between facilities while keeping other kinds of data, such as work management data, unique to a particular site. The multisite capability also allows you to selectively give users access to data at different sites.

## What is multisite?

A multisite environment includes the following properties:

- ▼ Users access Maximo Asset Management via a Web browser—they can be at any site, not just where the Maximo Asset Management is installed.
- ▼ All sites use the same Maximo database.
- ▼ All sites use the same instance of Maximo Asset Management running on an application server.
- ▼ Different sites separate certain areas of their operations, according to the needs of their business practices and the constraints of the Maximo Asset Management architecture.

For more information, see the *Multisite Administrator Guide*.

## Reconciling IT-environment data

You can evaluate data about the information technology devices and networks in your environment, and view the results of the evaluation. Using the Reconciliation submodule applications (within the Administration module), you can configure a behind-the-scenes process that compares objects from one data set (Data Set 1) with objects in another data set (Data Set 2). The reconciliation process identifies successful matches as well as discrepancies and variances between the two sets of data.

For more information, see the *Reconciliation Module Guide*, and the Reconciliation module applications' online help topics. These applications are also described in the Reconciliation submodule on page 130.

## Maximo Asset Management configuration

You can configure many features of the Maximo Asset Management system, including its Start Center, applications, and the Maximo database.

### Start Center configuration

Start Center is a configurable page of the user interface that provides quick access to the tools and KPIs that you use most often, through portlets.

The first time that you log in to the system, you see a Start Center that is based on a template for the security group that you are assigned to. Start Centers are assigned to security groups. So, if you belong to more than one security group, you may see tabs at the top of the page, where each tab is a Start Center page for a different security group.

If your system administrator has granted you permission, you can configure the page. The next time you log into the system, you will see the Start Center the way that you configured it. The administrator controls which portlets you see and can configure.

The Start Center can contain the following portlets:

- ▼ Bulletin Board
- ▼ Favorite Applications
- ▼ Inbox/Assignments
- ▼ KPI Graph

- ▼ KPI List
- ▼ Quick Insert
- ▼ Result Set

Each of these applications is discussed in their individual help topics.

You can change the content and layout of the Start Center page by clicking the **Change Content/Layout** link.

To modify a portlet, click the **Edit Portlet** link for that portlet.

If you have Administrator's permission, you can modify an existing template by clicking the **Modify Existing Template** link.

A user can have multiple Start Center pages, and each page can have multiple instances of each portlet.

For more information about the user interface, see Chapter 2, "Getting Started with the User Interface" on page 31.

## Application configuration

The Application Designer is an application you can use to change applications to meet your specific business needs. This application provides a graphical interface for configuring applications without editing a line of code. With the application designer, you can easily do any of the following tasks:

- ▼ Move fields and sections
- ▼ Add new fields, tabs, and tables with columns and rows
- ▼ Create or duplicate applications
- ▼ Define signature options
- ▼ Edit the toolbar and the Select Action menu
- ▼ Create a new application or copy and change an existing application

You access the Application Designer from the Go To menu in the Start Center. For more information about using the Application Designer, see the *Application Developer Guide*, and see the online help for the Application Designer.

## Maximo Database configuration

You can create or modify the objects and attributes that are in the Maximo database and used by system applications. Database Configuration is the application you use to configure the Maximo database to suit your specific business needs. See the Database Configuration application on page 120 for a list of the configurable database objects and attributes.

## Maximo Asset Management product options

The following options extend the capabilities of Maximo Asset Management and can help you further reduce costs and foster operating efficiencies:

- ▼ IBM Maximo Change and Corrective Action Manager
- ▼ IBM Maximo Linear Asset Manager
- ▼ IBM Maximo Mobile
- ▼ IBM Maximo Asset Navigator
- ▼ IBM Maximo Adapter for Microsoft Project

- ▼ IBM Maximo Adapter for Primavera
- ▼ IBM Maximo Enterprise Adapter (for Oracle or SAP)
- ▼ IBM Maximo Online Commerce System
- ▼ IBM Maximo SLA Manager
- ▼ IBM Maximo Compliance Assistance Documentation

## IBM Maximo Change and Corrective Action Manager

Enable fully integrated, comprehensive change and release management for your assets, and gain new capabilities for taking corrective action. Policy administration, process management and planning capabilities can help increase the speed, efficiency and consistency of change implementations while helping minimize business risk. Advanced release management capabilities enable you to define the tasks, schedules and resources required to release authorized versions and asset configurations into the production environment.

## IBM Maximo Linear Asset Manager

Track, manage, and optimize performance levels of linear assets such as roads, railways, and pipelines. Virtually segment linear assets and view and modify attributes, features, and relationships, without impacting the underlying geometry (otherwise known as dynamic segmentation) and without losing critical work history. Relate linear assets using user-defined relationships instead of the classic parent/child hierarchy. Use multiple linear referencing methods to locate work using exact measures, or offsets based on one or more features or relationships.

The Linear Asset Manager uses a conditional user interface to integrate with the regular functionality in Maximo Asset Management applications such as Assets. When you create an asset, you specify whether it is linear. If an asset is linear, you see additional fields, tabs, and actions that enable you to address the special requirements of linear assets.

For a linear asset such as a highway, you can identify the positions of important features and attributes along the highway, such as intersections, exits, and signs. You then specify the lengths or segments over which those attributes and features apply, including features like speed limits, pavement types, and guard rails. Users can then assign work orders, schedule preventive maintenance, create service requests, and perform other critical management functions, just like with nonlinear assets, but with the new capability of specifying precise start and end points. You can also define positions to the right or left, and above or below the linear asset, for marking work areas or locating features such as signs, guard rails, and culverts. Linear assets such as railways and pipeline can be treated similarly.

## IBM Maximo Mobile

Remotely access Maximo Asset Management data whether you are offline or online. With mobile Maximo applications, mobile workers can complete more planned work, eliminate nonproductive activities, and reduce paperwork and data entry. In addition, having immediate data access onsite can lead to higher first-time fix rates. Mobile applications support remote-asset, workforce, and inventory management needs.

## IBM Maximo Mobile Work Manager

The mobile asset and work management solution enables maintenance and operations technicians to work with Maximo data and processes from the field. The technicians, with mobile devices, can use remote communication methods such as wireless, dial-up, or manual synchronization to access, enter, update, or act on information in the Maximo system.

## **IBM Maximo Asset Management overview**

### **IBM Maximo Mobile Inventory Manager**

The mobile inventory management solution helps storeroom managers and technicians manage, issue, receive and track inventory items from remote locations. Using mobile devices, your inventory management workforce can use remote communication methods such as wireless, dial-up, or manual synchronization to access, enter, update, or act on information in the Maximo system.

### **IBM Maximo Asset Navigator**

This Web-based graphical system provides instant access to detailed parts and equipment illustrations, diagrams, drawings and related documentation. A highly navigable association among locations, assets and parts easily guides you to the asset information you need, helping you to quickly identify and select the correct parts for your work and procurement processes. Maximo Asset Navigator can help you improve overall performance and accuracy and better manage your safety program.

### **IBM Maximo Adapter for Microsoft Project**

Implement bidirectional connectivity between Maximo Asset Management and Microsoft® Project to deliver comprehensive access to work and resource data for scheduling and planning. With this adapter, you can view, plan, and optimize Maximo Asset Management work and resources with Microsoft Project schedules to manage complex, enterprise-wide projects. The adapter automatically updates work, resources, and schedules in Maximo Asset Management.

### **IBM Maximo Adapter for Primavera**

This adapter implements bidirectional connectivity between IBM Maximo and Primavera solutions software. It combines the asset and work management capabilities of Maximo Asset Management with the scheduling capabilities of Primavera project management and resource planning solutions. Using this adapter, you can view, schedule, and work with Maximo data from within your Primavera solutions.

### **IBM Maximo Asset Configuration Manager**

This solution supports complex asset management and adds Maintenance, Repair and Overhaul (MRO) capabilities for highly regulated environments such as aviation, defense, and rail industries. Its active configuration repository tracks and maintains current and historical configurations of assets and their components. You can manage and maintain more accurate asset configuration states, component life accounting and equipment operational status.

### **IBM Maximo Enterprise Adapter (for Oracle or SAP)**

Integrate Maximo Asset Management with Oracle, SAP and other enterprise systems for a more holistic view of your asset information. Maximo enterprise adapters help simplify and speed deployment and support of ongoing, real-time data exchange between systems. A library of predefined integrations supports the integration scenarios typically found between Maximo Asset Management and enterprise business systems, while platform-level services definition and provisioning using Web services can help you achieve true SOA-based enterprise collaboration.

## **IBM Maximo Online Commerce System**

You can use this internet-based supply chain management solution to collaborate with suppliers, partners, and other electronic marketplaces. Powerful catalog search capabilities and real-time electronic updates with suppliers can help streamline and optimize the parts and services procurement process. Using these comprehensive supplier enablement capabilities, your suppliers can more easily participate in your electronic supply chain network.

## **IBM Maximo SLA Manager**

Define service offerings, establish service level agreements, implement escalation procedures to ensure that service levels are met, and use metrics to monitor service-level delivery.

## **IBM Compliance Assistance Documentation**

If you are involved with validation projects for an organization that works in an environment regulated by the United States Food and Drug Administration (FDA), you can use this series of test scripts. The scripts are designed specifically for the total Maximo Asset Management software product to use during the project-validation process.

## **For more information**

To learn more about IBM Maximo Asset Management, go to:

[ibm.com/tivoli](http://ibm.com/tivoli) or [maximo.com](http://maximo.com)





# Getting Started with the User Interface

# 2

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

## User interface requirements

The user interface requires the following components:

- ▼ A Web browser. See the *Installation Guide* for the latest information about browser support.
- ▼ A monitor with resolution of 1024 x 768 pixels per inch.
- ▼ A user name and a password.

## Launching the user interface

The Maximo Asset Management user interface and applications are Web based. You access Maximo using a Web browser by entering the Uniform Resource Locator (URL) that points to an application server that is running the system software.

Your system administrator can provide you with the URL to use to connect to the system. You can create a shortcut to the Start Center URL on your desktop. To use the Start Menu shortcut in conjunction with Internet Explorer, ensure that you have added the Maximo Asset Management URL to the trusted sites Web content zone and disable the option of requiring server verification for all sites in the zone.

## Signing in to the system

While your system administrator can customize the Welcome pane (sign-in window), it should include fields to enter your **user name** and **password**.

### ***System sign In***

Your system administrator sets up the authentication for your system access and provides your login name and a temporary password which you should change immediately. When you change your password you can enter a password hint.

## Signing in to the system

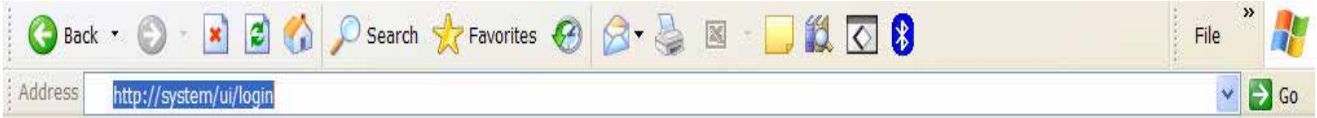
Your system administrator can require you to correctly answer the Password Hint Question before they will reset your password in the future.

Your user name and password are case sensitive.

## Browser menu and icons

The menu and toolbar icons at the very top of the page control your Web browser only, not the user interface.

### Browser toolbar



Do not use the browser **Forward** and **Back** buttons to navigate within the user interface. These buttons act on the browser, and are not part of the system software.

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

## User interface navigation bar









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

### Navigation bar



The Navigation Bar identifies the current application, displays messages, and displays links that let you maneuver among system applications. It contains the following sections:

- ▼ **Application icon and name** shown on the left to identify the current application. The application icon is also a link to the first editable field on the application page.
- ▼ **Message area** in the center. When appropriate, the system displays messages in this area. These messages are only informational, and need no response, for example, “Record has been saved.”
- ▼ **Navigation Links** in the right corner. The available links vary depending on which page you are currently using. Possible options include the following links:
  - **Bulletins** — Click to display the Bulletin Board and view broadcast messages. This link only appears when there are active Bulletin Board messages.

-  **Go To** — Click to display a menu of modules, letting you maneuver among modules and applications.
-  **Reports** — Click to display a menu of modules, letting you maneuver among modules and applications to select an application to run reports against.
-  **Start Center** — Click to return to your Start Center.
-  **Profile** — Click to manage the personal information (address, phone, e-mail, and so forth), defaults, and the password recorded on your person and user records.
-  **Sign Out** — Click to sign out of the system.
-  **Return** — Click to return to the previous application page without selecting a value. Available after you link to another application.
-  **Return with Value** — Click to return to the previous application page with selected value(s). Available after you link to another application.
-  **Help** — Click to display the help menu (when selected from application pages), or context sensitive help (when selected from dialog boxes). This link is always available.

## Signing out of the system

Do not exit an application by closing the browser. To ensure that the connection between your user name and the system server is severed, *always* use the Sign Out link in the Navigation Links to exit the system before closing the browser.

## Start Centers

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

To create multiple Start Centers, see the *System Administrator Guide*.

## Start Center components

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

- ▼ **Bulletin Board** — Displays Bulletin Board messages.
- ▼ **Favorite Applications** — Displays links that allow you to launch specific system applications.

- ▼ **Inbox/Assignments** — Displays your Workflow Inbox, which contains records that have been routed to you and that require some sort of action, for example, review and approval.
- ▼ **KPI Graph** — Displays one or more Key Performance Indicator (KPI) graphs.
- ▼ **KPI List** — Displays a list of links to one or more Key Performance Indicator (KPI) records in the KPI Manager application.
- ▼ **Quick Insert** — Displays a list of links that allow you to launch an application and add a new record into the database, for example create a New Work Order.
- ▼ **Result Set** — Displays the result set from a saved query. For more information about saved queries, see “Using saved queries to search” on page 37.

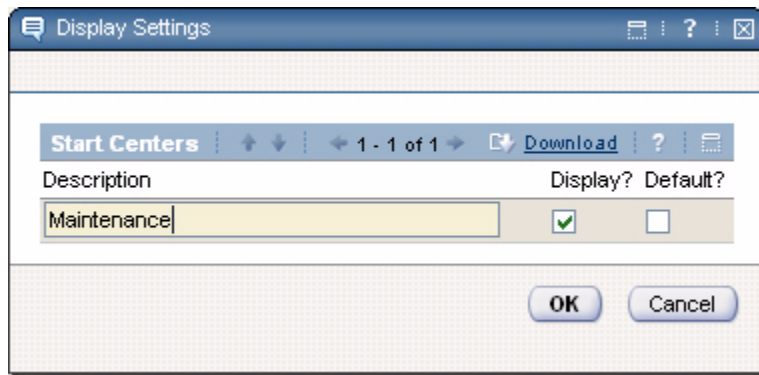
## Managing multiple Start Centers

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

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

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





### *Display settings dialog box*



## Personalizing portlets

Each portlet has an application that controls the content and configuration of the portlet. If your system administrator has granted you security permissions to a portlet’s application, then you can personalize how that portlet appears in your

Start Center. The buttons that you use to personalize a portlet appear in the portlet header.

Button	Action
	<b>Edit Portlet</b> — Click to open the setup application for the portlet.
	<b>Minimize Portlet Window</b> — Click to minimize the portlet.
	<b>Maximize Portlet Window</b> — Click to maximize a portlet that has been minimized.
	<b>Remove Portlet</b> — Click to remove a portlet from the Start Center.
	You require proper security permissions to restore a deleted portlet.

## Opening an application

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

- ▼ **Go To menu** — To open an application, click the Go To link in the Navigation bar, then select the module and application. For example, to open the Work Order Tracking application Select Go To > Work Orders > Work Order Tracking.
- ▼ **Favorite Applications** portlet — To open an application, click the application link in the Favorite applications portlet. For example click Work Order Tracking.
- ▼ **Inbox/Assignments** portlet — To open an application and view a record that has been assigned to you for action, click the record ID.
- ▼ **Quick Insert** portlet — To open an application and insert a new record, click the link in the Quick Insert portlet, for example New Work Order.
- ▼ **Result Set** portlet — To open an application and view a specific record, click the record ID in the Result Set portlet.

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

## Searching the Maximo database

The data that you enter in to the system is stored in the Maximo database. Requests to find information in the database are called **queries**. When you open an application, the system displays the List tab which displays the result of your

default saved query. If you do not have a default saved query, the system does not display a result set.

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

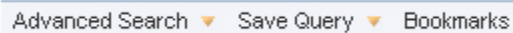
- ▼ execute a saved query from the **Query** menu.
- ▼ perform a key field search with the **Find** field.
- ▼ create a new record by clicking the **New <Record>** button on the toolbar, for example **New Work Order**.
- ▼ run reports
- ▼ perform any of the actions available via the Search Toolbar. For more information, see “Using the search toolbar” on page 36.
- ▼ click any tab to view the first record in the result set.
- ▼ select the **Select Records** check box, select one or more records, and select an action from the Select Action menu to perform on the record(s), for example to perform a status change on a group of records.

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

## Using the search toolbar

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

### **Search toolbar**



Advanced Search ▼ Save Query ▼ Bookmarks

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

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

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

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

## Basic searches

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

### Using saved queries to search

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

- ▼ All Records
- ▼ All Bookmarks

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

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

### Saving a query

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

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

To save a query, complete the following steps:

- 1 Use the List tab to create a query. For more information about constructing queries see "Searching the Maximo database" on page 35.

The system displays the query results.

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

The Save Current Query dialog box appears.

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

Each saved query must have a unique name.

- 4 Select the **Public?** check box to make the query available to other users.
- 5 Select the **Default?** check box to make the query your default.

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

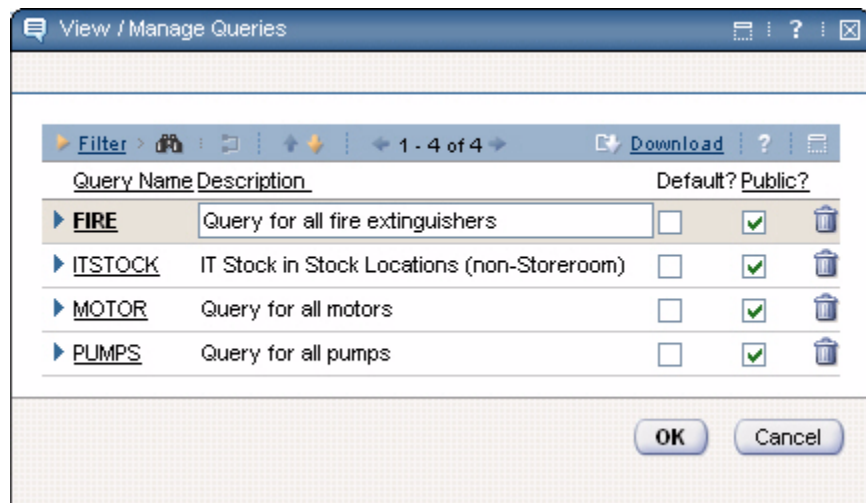
- 6 Click **OK**.

The system saves the query and adds it to the Query menu. If you selected the **Default?** check box, the next time you launch the application, the system executes the query.

## Managing saved queries

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

### View/Manage Saved Queries dialog box



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

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

## Using the find field to search

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

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

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



- 1 Enter a record ID in the **Find** field.
- 2 Click the **Quick Key Search** button (binoculars).

For more information about key fields, see “Key fields” on page 20.

## Using the table filter to refine search results

The List tab displays query results in a table window. For more information about table windows see “Table windows” on page 48. Table windows include a filter to help you locate specific rows in large tables by reducing the number of rows displayed.

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

### Table filter

Service Request	Summary	Reported By	Priority	Status	Owner	Owner Group
1001	Request for OS upgrade to Windows XP	LIBERI	4	QUEUED	CALDONE	
1002	Conference room is too hot	WINSTON	4	QUEUED		TIER1
1004	Keyboard Not Functioning - Desktop	LOU	1	RESOLVED		

To filter a table window, complete the following steps:

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

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

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

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

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

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

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






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

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

### Field buttons

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

**Field buttons**

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

**Special characters**

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

You can only use special characters in fields whose search type is TEXT, such as most Description fields. (Search types are set using the Database Configuration application.) Text searching only searches for words. To search for strings within words, you must use wildcards. You cannot search for words that are on the stop word list for the given language and database. Thus, you cannot search for words like: a, an, and, the, and is.

The following list defines the special characters that serve as operators, and some guidelines on how to use them when you are constructing queries.

- ▼ **ampersand (&)** — AND. You use the AND operator to search for records that contain at least one occurrence of all of your query terms. The operator must be placed between two query terms, otherwise the system displays an error message.
- ▼ **hyphen (-)** — MINUS. You use the MINUS operator to search for records that contain one query term, but you want the presence of your second query term to cause the document to be ranked lower in the result set. The operator must be placed between two query terms, otherwise the system displays an error message.
- ▼ **pipe (|)** — OR. You use the OR operator to search for records that contain at least one occurrence of any of your query terms. The operator must be placed between two query terms, otherwise the system displays an error message.
- ▼ **semicolon (;)** — You use a semicolon to indicate the end of a SQL command line. Using a semicolon as part of your query text may generate an error message.

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

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

## Using wildcard characters

If you do not know the exact value for a field that you want to use in a query, you can search using the partial value plus a wildcard character. A **wildcard character** is a special symbol that stands for one or more characters. A **character** is an individual letter or number.

## Wildcard characters

The system supports two wildcard characters:

- ▼ The underscore ( `_` ) - use to substitute for a *single* character.
- ▼ The percent sign ( `%` ) - use to substitute for a *string* of characters

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

## Placement of wildcard characters

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

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

## Searching for null values

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

You can search for a null value only in fields that are *not* text-search enabled. A null-value search cannot be used in the Description fields or other fields where the `searchtype='TEXT'`.

Because a null indicates a lack of data, searching for null values is different from searching for other values. When using the List tab or the Advanced Search/More

Search Fields dialog box to search for records containing null values you use the following syntax:

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

~null~

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

!~null~

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

## Advanced searches

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

### Using the advanced search option

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

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

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

### Using an SQL WHERE clause to search

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

The WHERE Clause dialog box displays the SQL WHERE clause for your current query in the **Current Query** field. You can use any of the search methods available

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

## Viewing search results

The List tab displays all records that match the current query in a table window. For more information about table windows, see “Table windows” on page 48. You can perform the following actions on the Results subtab:

- ▼ Use the **Filter** to filter the results displayed in the table window.
- ▼ Click the **Next Row** or **Previous Row** buttons to navigate the rows in your results set.
- ▼ Click the **Next Page** and **Previous Page** buttons to navigate the pages of your result set.
- ▼ Click the **Download** button to download the result set.
- ▼ Click an underlined column header to sort the column. For more information, see “Sorting columns” on page 51.
- ▼ Select the **Select Records** check box, then check the **Select Row** check boxes to select multiple records to perform batch actions from the Select Action menu.
- ▼ Click the **Add to Bookmarks** button for a record to include the record in your personal list of bookmarks for the application.


## Using bookmarks

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

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


## Adding a bookmark

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

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

## Managing bookmarks

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

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

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

## Application pages

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

- ▼ **Navigation Bar** — Identifies the application and provides navigation links. For more information, see “User interface navigation bar” on page 32.
- ▼ **Toolbar** — Contains search options, action menu, and buttons for frequently used actions.
- ▼ **Application Tabs** — Contains groupings of similar fields and actions within an application.
- ▼ **Record Heading** — Contains the key field, **Description**, and one or more additional fields that identify the current record. Heading fields appear at the top of every tab of the application.
- ▼ **Sections** — Contains groupings of fields that contain similar or related data within an application page.
- ▼ **Table Windows** — Displays multiple records from the database simultaneously.

## System toolbar

Immediately below the Navigation Bar is the system toolbar.

### *System toolbar of the Service Requests application*



The toolbar contains four sections:

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

## Query menu

The Query menu is described in “Using saved queries to search” on page 37.

## Find field

Using the **Find** field to perform a quick key search is described in “Using the find field to search” on page 38.

## Select action menu

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








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

## Toolbar buttons

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

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

### System toolbar buttons

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

Some applications include a subset of these toolbar buttons. And some applications include additional application-specific toolbar buttons.

## Tabs and subtabs

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

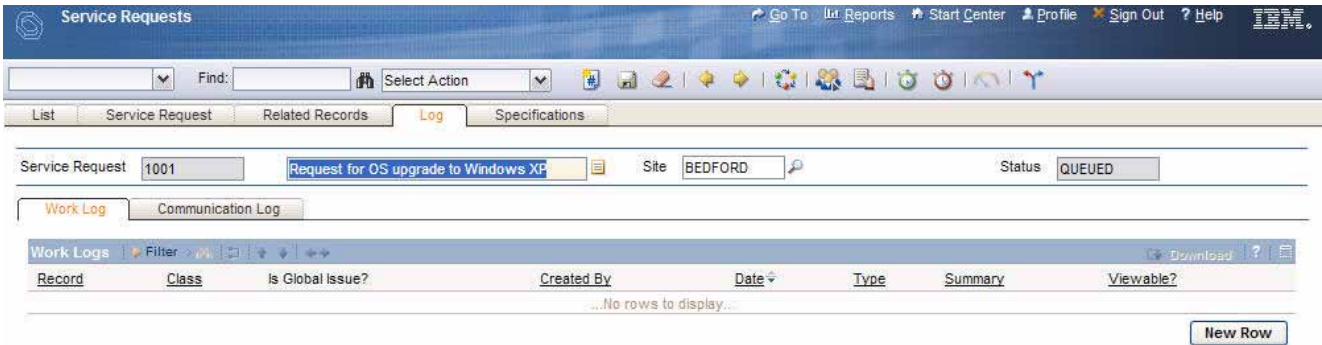
The List tab appears first for all applications. The second tab contains the main information for that application. Subsequent tabs contain secondary, related information. The selected tab appears as a lighter color than the inactive tabs.

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

Tabs in turn can have **subtabs** that display additional information. Subtabs contain data pertinent to their parent tab. For example, the Log tab of the Service Requests application contains two subtabs: Work Log and Communications Log.



## Service Requests application, showing tabs and subtabs



## Record heading

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

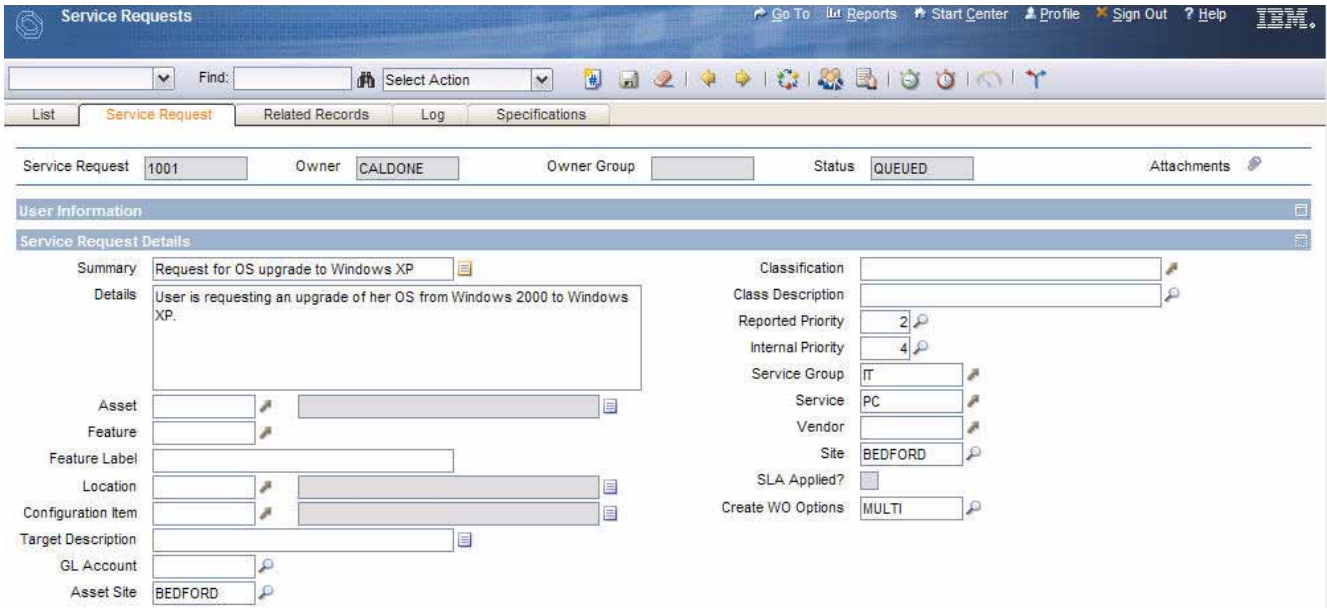
## Sections

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

Icon	Function
	Minimize
	Maximize

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

**Service Requests tab with minimized User Information section**



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

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

## Table windows

The user interface uses table windows to display multiple records from the database simultaneously. In some cases, for example on the List tab, a table window displays a result set. A **result set** is the set of records that matches the criteria specified in a query to the database. For more information about queries, see “Searching the Maximo database” on page 35.

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

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

## Service Requests application - Related Records tab showing three table windows

The screenshot shows the 'Service Requests' application interface. At the top, there is a navigation bar with 'Go To', 'Reports', 'Start Center', 'Profile', 'Sign Out', and 'Help' options. Below this is a search bar and a 'Select Action' dropdown. The main area is divided into tabs: 'List', 'Service Request', 'Related Records' (selected), 'Log', and 'Specifications'. The 'Related Records' tab displays three table windows:

- Service Request:** Shows details for request 1001, description 'Request for OS upgrade to Windows XP', site 'BEDFORD', and status 'QUEUED'.
- Related Tickets:** A table with columns: Ticket, Description, Class, Status, Relationship. It shows 'No rows to display...' and includes 'Select Ticket' and 'New Row' buttons.
- Related Work Orders:** A table with columns: Work Order, Description, Class, Status, Relationship. It shows one record: Work Order 1087, Description 'Request for OS upgrade to Windows XP', Class 'CHANGE', Status 'APPR', and Relationship 'FOLLOWUP'. It includes 'Select Work Order' and 'New Row' buttons.
- Solutions:** A table with columns: Solution, Description, Originator, Originating Class, Relationship. It shows 'No rows to display...'.

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

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

### Navigating table rows (records)

Several navigation aids appear on each table window. The colored heading of the table window contains a table filter which is described in “Using the table filter to refine search results” on page 39.

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

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

### Table row navigation buttons
















This close-up screenshot shows the navigation controls for the 'Related Tickets' table window. It includes a 'Filter' button, a 'Download' button, and a help icon. The table filter area is visible, showing the text 'No rows to display...'.


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

To learn about navigating table rows from the keyboard, see “Keyboard Shortcuts” on page 147.

## Table window buttons

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

Button	Name and Function
 <b>Filter</b>	<b>Table Filter</b> — Click to open the table filter. The table filter appears as a row of editable fields between the column headings and the first row in the table.
	<b>Find</b> — Click to filter the table contents based on the entries in the filter fields.
	<b>Clear</b> — Click to clear the filter fields and restore the original rows displayed in the table.
	<b>Previous Row</b> — Click to move the focus to the previous record in the table. Disabled (gray) if you are at the first row in the table or result set.
	<b>Next Row</b> — Click to move the focus to the next record in the table. Disabled (gray) if you are at the last row in the table or result set.
	<b>Previous Page</b> — Click to show the previous page of records. Disabled (gray) if you are at the first page of records, or if all records in the result set are currently displayed.
	<b>Next Page</b> — Click to show the next page of records. Disabled (gray) if you are at the last page of records, or if all the records in the result set are currently displayed.
	<b>Download</b> — Click to download the contents of the table.
	<b>Hide Table</b> — Click to minimize or hide the table.
	<b>Show Table</b> — Click to maximize or show a hidden table window.
	<b>Help icon</b> — Click to display table window help. Application Help is available via the Help link in the Navigation Bar.
	<b>View Details</b> — Click to open the Row Details, displaying all fields in a record so that you can enter, view, or modify data.
	<b>Close Details</b> — When the Row Details are open, the <b>View Details</b> button changes to the <b>Close Details</b> button. Click to close the Row Details.
	<b>Add to Bookmarks</b> — Marks a document or record for later viewing. You can access bookmarked records from the Bookmarks subtab of the List tab.
	<b>Mark Row for Delete</b> — Marks a record for deletion. The system does not delete the row until you click <b>Save</b> .

Button	Name and Function
	<b>Undo Delete</b> — Restores a row that you marked for deletion. This button indicates that you marked the row for deletion.
	<b>New Row</b> — Inserts a new row and opens the Row Details if it is not already open.

For information about keyboard shortcuts for these buttons, see Appendix A, "Keyboard Shortcuts," on page 147.

## Sorting columns

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

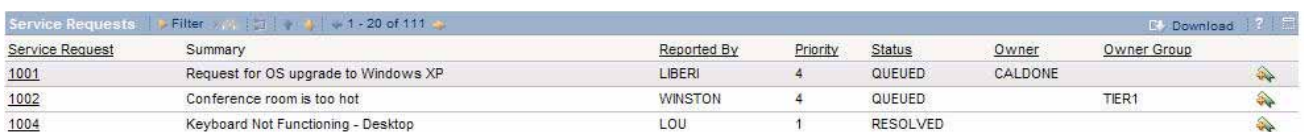
Click	Function
First	Sorts the column in ascending order. An arrow pointing up appears in the column header.
Second	Sorts the column in descending order. An arrow pointing down appears in the column header.
Third	Returns the column to the database sort default. No icon appears.

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

## Filtering table windows

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

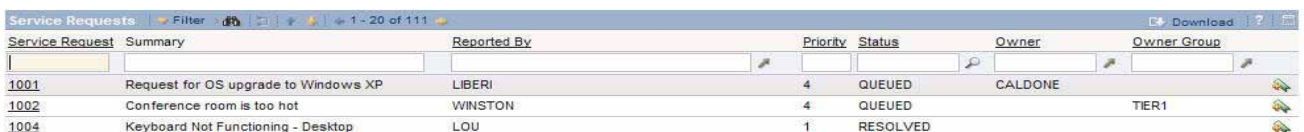
### Closed table filter



The screenshot shows a table window titled "Service Requests" with a "Filter" icon (a trash can) hidden. The table has columns: Service Request, Summary, Reported By, Priority, Status, Owner, and Owner Group. The data rows are:

Service Request	Summary	Reported By	Priority	Status	Owner	Owner Group
1001	Request for OS upgrade to Windows XP	LIBERI	4	QUEUED	CALDONE	
1002	Conference room is too hot	WINSTON	4	QUEUED		TIER1
1004	Keyboard Not Functioning - Desktop	LOU	1	RESOLVED		

### Open table filter



The screenshot shows the same table window as above, but with the "Filter" icon (a trash can) open. The filter row is visible between the column headers and the first data row, containing input fields for each column.

Service Request	Summary	Reported By	Priority	Status	Owner	Owner Group
1001	Request for OS upgrade to Windows XP	LIBERI	4	QUEUED	CALDONE	
1002	Conference room is too hot	WINSTON	4	QUEUED		TIER1
1004	Keyboard Not Functioning - Desktop	LOU	1	RESOLVED		

Use of the table filter is described in "Using the table filter to refine search results" on page 39.

## Using the row details

The number of columns that you can display in a table window is limited, and most records contain more fields than you can display on a page at one time. You

## Application pages

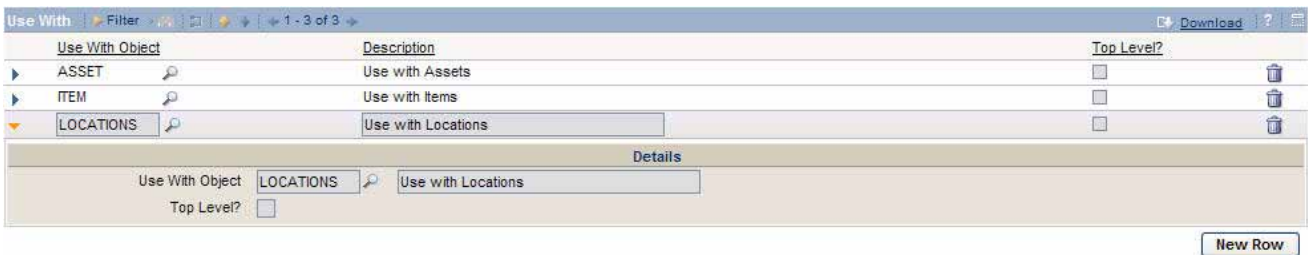
can access all fields in the record by using the ► **View Details** button for an existing record, or the **New Row** button if adding a record.

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

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

The following example shows the Classifications application’s “Use With” table window with an open Row Details. Note the ▼ **Close Detail** button to the left of the third row.

### Row details



## Default table data

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

Default table data for some table windows might contain system supplied values. For example, in the Receiving application, the **Received By** field might default to your user name, and **Received Date** might default to the system date. When you create a new row in the table window, the default values are copied to the appropriate fields, but remain editable, allowing you to modify them.

The system does not save entries in the default table section when you close an application.

## Editable table windows

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

## Inventory reorder details showing an editable table window

Ticket	Description	Class	Status	Relationship
1082	Need a new mouse	SR	QUEUED	RELATED
1028	Finance application is down.	SR	QUEUED	RELATED
1075	<input type="text" value="Personal folder in Outlook."/>	<input type="text" value="SR"/>	<input type="text" value="QUEUED"/>	<input type="text" value="RELATED"/>
1067	VPN connection is failing.	SR	NEW	RELATED

Clicking anywhere in a row in an editable table will highlight it and put the row into "edit mode." When in edit mode, each editable column appears as an editable field. If a column is read-only, the column cannot be edited while in edit mode. For more information about the buttons that appear next to a field, see "Field buttons" on page 39. When a table window is in edit mode existing rows may be edited.

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

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

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

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

You must click **Save** to save changes made in table windows.

## Creating new rows

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

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

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

The system opens the Row Details if it is not already open. Some fields may display default values.

- 2 Fill in additional fields as needed. An asterisk (\*) indicates a required field.
- 3 If appropriate, click **New Row** to enter another new row.

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

- 4 If appropriate, click **Close Details** to close the Row Details.
- 5 Click **Save**.

You *must* click **Save** to save changes made in table windows.

## Application fields

### Paired table windows

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

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

#### Paired table windows in the Failure Codes application

The screenshot displays the Failure Codes application interface. At the top, there is a navigation bar with options like 'Bullets: (1)', 'Go To', 'Reports', 'Start Center', 'Profile', 'Sign Out', and 'Help'. Below this is a search and action bar with a 'Find:' field and a 'Select Action' dropdown. The main content area is divided into three sections, each with a table of failure codes and a 'New Row' button.

**Section 1: Problems**

Failure Code	Description
REMOTEAC	Remote Access Issues

**Section 2: Causes for DATEDVER**

Failure Code	Description
DATEDVER	Dated Software Version
ROUTER	Router Issue
FIREWALL	Firewall Issue

**Section 3: Remedies for UPDATVER**

Failure Code	Description
UPDATVER	Update Software Version
REINSTSW	Reinstall Software

## Application fields

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

### Field characteristics

Each application field has at least three characteristics:

- 1 A field is either read/write or read-only.
  - ▼ **Read/Write** — Data entry fields that allow you to enter, view, modify, and delete data.



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

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

- ▼ **Required** — Fields where you must enter data before the system can save the record to the database. The key field is always a required field. An application can have one or more required fields in addition to the key field. These fields are indicated by an asterisk (\*). If a required field is not filled in when you attempt to save a record the system displays an error message.

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

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

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

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

Fields can have additional characteristics, including:

- ▼ **calculated values** — Some fields contain a numeric value that is calculated based on data stored in the system, for example **Total Cost**. These values are read-only. You cannot modify them.
- ▼ **default values** — Your system administrator can configure the system so that some fields already have values entered when new records are created. For example, the **Reported By** field might default to your user name, and **Date**

fields might default to the current system date and time. You might be unable to modify default values.

- ▼ **long description field** — A field may be paired with a long description field to accept and display additional data that cannot be displayed in the on-screen field due to field size limits.

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

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

## Field help

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

# Creating records

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

## Types of records

The process for creating a new record varies depending on which type of application you are using:

- ▼ **Simple applications** — New records are created using the **New Row** button at the bottom of the table window to insert a new row into the table window. For more information about creating this type of record, see “Creating new rows” on page 53.
- ▼ **Standard applications** — New records are created using the **New <record>** button in the UI toolbar. For more information about creating this type of record, see “Creating a record” on page 57.



## Automatic numbering of records

When you create a new record, the record needs to have a unique value in the key field to identify it. (For more information about key fields, see “Key fields” on page 20.) Record identifiers can be a combination of letters and numbers.

Your system administrator can configure the system to automatically generate a new record ID for applications that generate large numbers of records, for example the Work Order Tracking and Purchase Requisitions applications, to

ensure that each new record has a unique ID and to streamline the record creation process.

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

Icon	
	The system automatically creates the record ID for new records.
	You must create a unique record ID for new records. The system displays a message if the record ID you choose has already been used.

## Default field values

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

When you are creating new rows in a table window, some applications allow you to enter default table data to be copied to each new row. For more information about default table data, see “Default table data” on page 52.

## Creating a record

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

To create a record, complete the following steps:

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

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

The system displays a new record.

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

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

- 6 You can edit default values that are not read-only.
- 7 Click **Save**.

## Entering values in fields

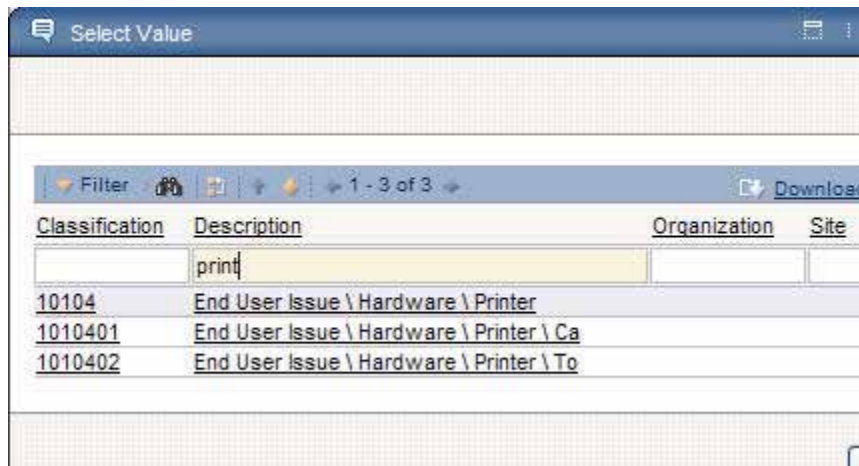
Applications are linked, which means that you select values from lists of existing records when you fill in fields in other applications. For example, when you fill in the **Classification** field on a Service Request, you can select from the list of classifications that are defined in the Classifications application.

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

### Entering partial field values

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

#### *Partial value entered in a description field*



### Entering dates

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

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

Function	Keyboard Shortcut
Insert today's date	Ctrl + =

Function	Keyboard Shortcut
Move back one day	Ctrl + Minus Sign
Move forward one day	Ctrl + Plus Sign

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





To select a date, complete the following steps:

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

The Select Date dialog box appears.

- 2 If necessary, navigate to the correct date.

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

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

- 3 Click a date to select it.

The system returns the value to the field.

## Using the select value button

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

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

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

The Select Value dialog box appears.

- 2 If there is a lengthy list of values, use the table filter to locate a record.

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

The system returns the value to the field.

## Using the detail menu button

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

- ▼ **Open Drilldown** — For more information about the Drilldown, see “Using the drilldown” on page 60.
- ▼ **Classification** — For more information about Classifications, see “Using classifications” on page 62.
- ▼ **Go To <Application Name>** — Allows you to go to another application and create a new record or retrieve an existing record as a value for the field.
- ▼ **Move To** — Allows you to navigate up a record hierarchy by moving to the parent record.

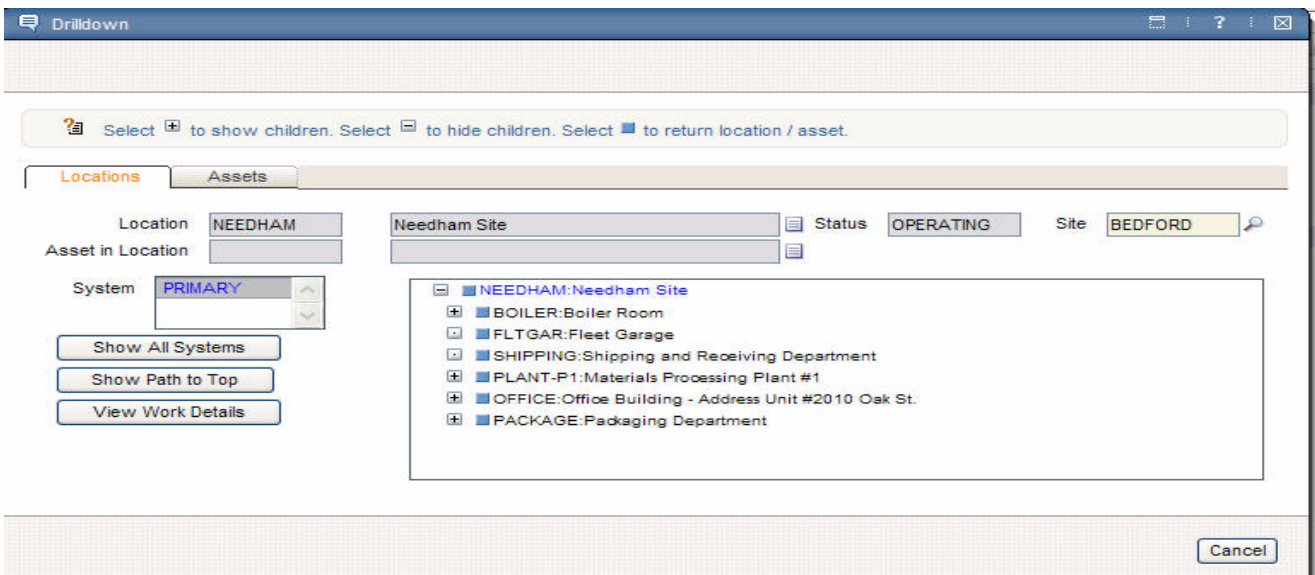
In addition, Detail Menus can contain context specific options that will vary by field. For example many **Asset** and **Location** fields will include the option to View Work Orders and PMs.

## Using the drilldown

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

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

### Drilldown



## Understanding the detail display

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

### *Locations tab details fields*

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

### *Assets tab details fields*


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

## Navigating the hierarchy

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

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

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

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

## Actions available from the drilldown

The Locations tab of the Drilldown contains the following button:

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

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

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

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

- ▼ **View Work Orders & PMs** — Click to display all work orders, PMs, routes, and service contracts for an asset or location.
- ▼ **Select Record** — Click the **Select Record** icon to select a location or asset and return the value to the application page. If the Drilldown is called from an application that contains both **Location** and **Asset** fields you can call the Drilldown from either field, select either a location or an asset, and the value will be returned to the appropriate field, regardless of which field the Drilldown was launched from. If permitted by the business rules of the application, *both* the location and asset values are returned to the application.

## Using classifications

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

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

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



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

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

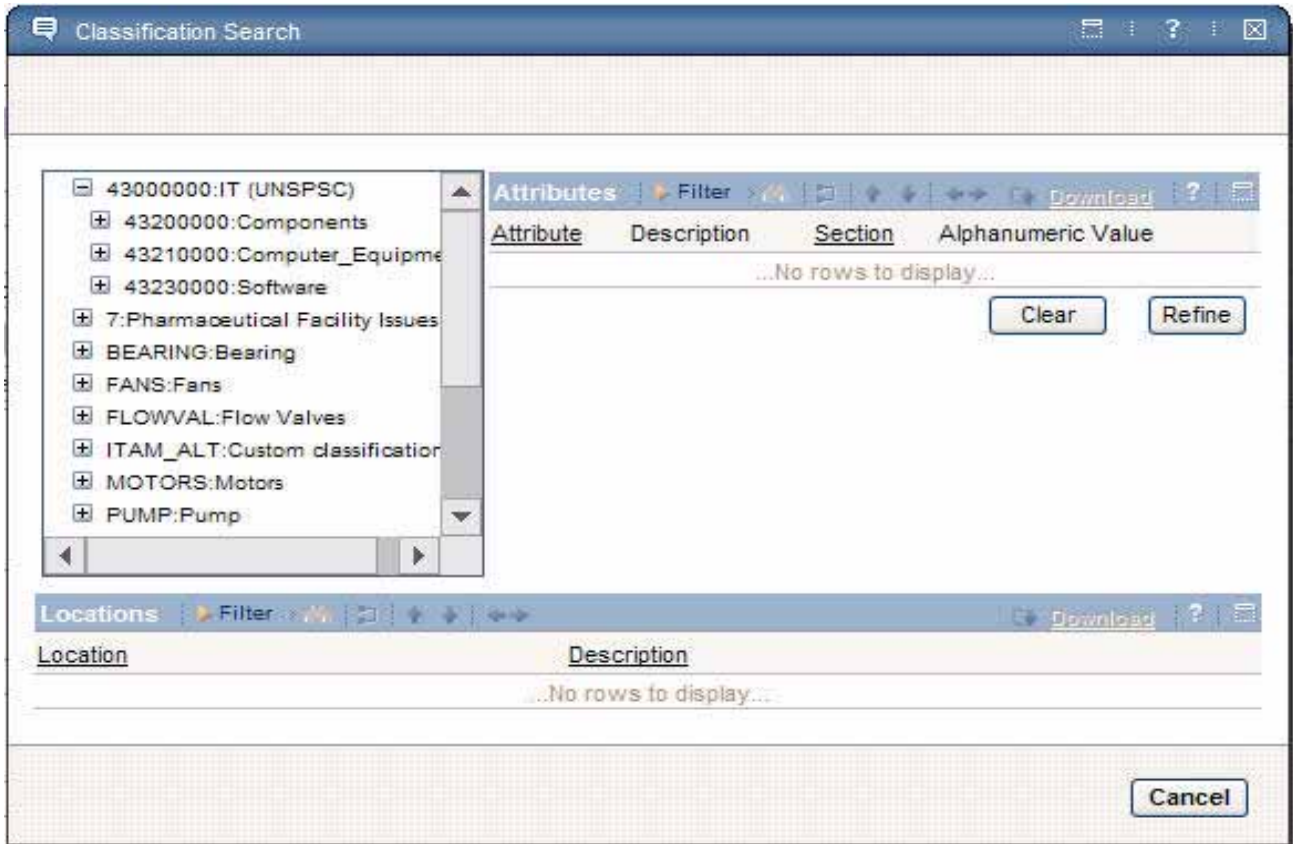
### Searching classifications

You can use Classifications to locate values when you are creating records. For example, when you are creating a service request record if your company has created Classifications for reported by (name), affected by (name), assets, locations, service groups, and service, you can use Classifications to enter values in the **Name**, **Asset**, **Location**, **Service Groups**, and **Service** fields on the service request.

Similar to the Drilldown, the Classification Search dialog box allows you to use a graphical tree to navigate classification hierarchies. For more information about how to navigate the hierarchy see “Navigating the hierarchy” on page 61.

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

#### Classification search - locations



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

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

The Classification Search dialog box appears.

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

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

- 3 If appropriate, open additional levels of the classification until you find the record you are searching for.
- 4 Click a record ID in the table window below the Classification tree to return a value to the field.

## Classifying a record

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

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

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

To classify a record, complete the following steps:

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

The Classify dialog box appears.

- 2 Click a Classification category.

The next level of the hierarchy opens.

- 3 If appropriate, open additional levels of the classification until you find the classification you are searching for.
- 4 Click the blue **Select Record** button for the classification to return a value to the **Classification** field.

## Understanding general ledger account codes

Your company creates general ledger (GL) accounts to track expenses. Your company's accounting department can create GL accounts for various entities

within a company (locations, assets, tools, and so on). Numeric or alphanumeric GL account codes can be used to identify GL accounts.

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

GL account codes are typically used only when the system interacts with a separate accounting system. If your company uses a separate financial system, your system administrator may have configured the system to enter default values for **GL Account** fields or if you have security authorization to do so, you may enter account codes manually using the Select Value dialog box for the GL Account field. For more information about entering GL account codes, see "Selecting general ledger account codes" on page 68.

## General ledger account codes

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

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

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

## General ledger account components

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

Your system administrator can create GL account components using the Chart of Accounts application, as described in the *System Administrator Guide*, or the components may be imported into the Maximo database from an external financial system using the IBM Integration Framework. See the "Integration module," on page 101 for more details.

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

## Mandatory and optional components

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

- ▼ A **mandatory component** requires a value to define the account fully. When you display an account, any unknown mandatory components contain the placeholder character set by the system administrator, for example a question mark (?).
- ▼ An **optional component** does not require a value in order to define the account fully. When you display an account, no unknown optional components appear. For example, in the Maximo DEMO database, the fourth component is optional so there are many account codes in the DEMO database consisting of just the first three components.

## Valid account definitions

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

- ▼ A **fully defined account** has no unknown characters in mandatory components. A fully defined GL account exactly matches an entry in the Chart of Accounts table. For example, the account 6100-200-450 in the DEMO database is considered fully defined as the fourth component is optional.
- ▼ A **partially defined account** can contain an undefined mandatory component, that is a mandatory component that consists of placeholder characters. For example, the account 6100-???-450 in the DEMO database is considered partially defined because while the second component is mandatory, placeholder characters are acceptable.

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

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

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

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

## Component sequences

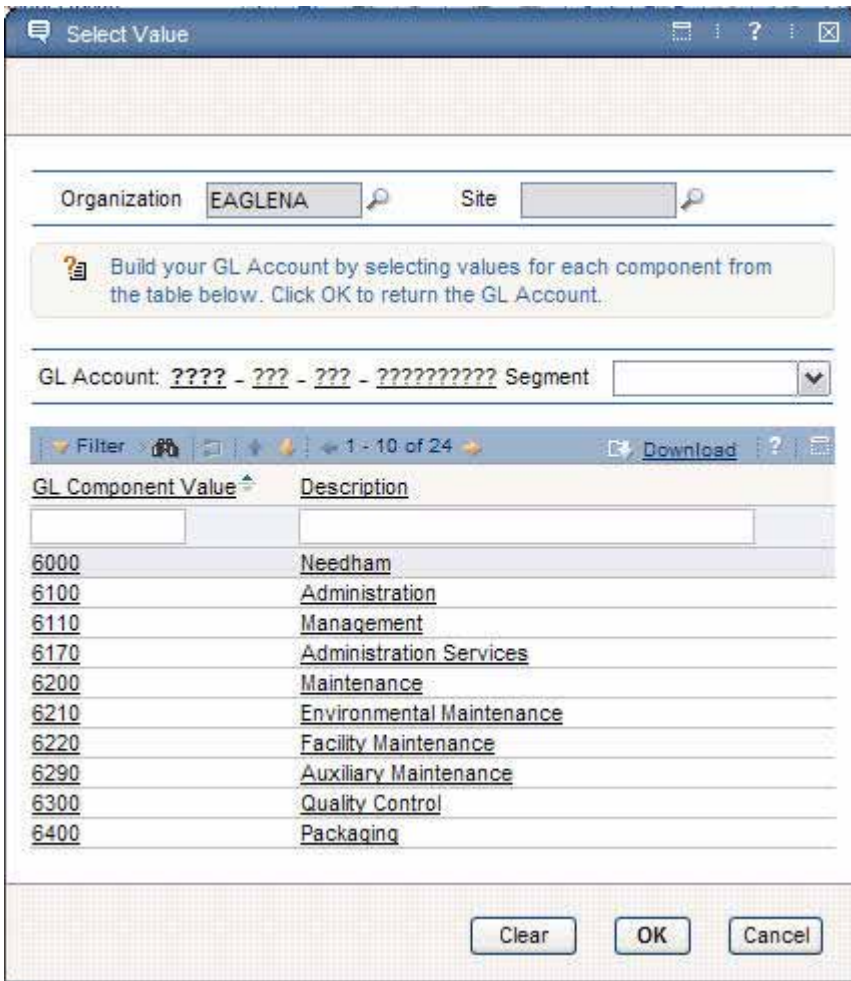
The various components of a GL account code appear in a set order or sequence, with the highest level component appearing first in the sequence. For example,

the Maximo DEMO database has four component or segment levels defined for GL account codes:

Segment 1 Cost Center	Segment 2 Activity	Segment 3 Resource	Segment 4 Element
<b>6200</b>	<b>229</b>	<b>SAF</b>	

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

**Select value dialog box for GL account**



**Entering general ledger account codes**

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

## Selecting general ledger account codes

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

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

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

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

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

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

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

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

## Editing general ledger account codes

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

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

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

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

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

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

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

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

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

## Using attached documents

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

The Attached Documents feature allows you to:

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

## Types of attachments

The Attached Documents feature includes two kinds of attachments:

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

## Attached documents administrative actions

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

You might need security authorization to perform these actions.

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

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

## Attaching documents

You can attach documents to records (and to task rows within a record) using either of the following methods:

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

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

For more information about creating and using attachments, see the *System Administrator Guide*, and the “Use Attached Documents” online help topic for an application.

## Managing records

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

## Editing an existing record

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

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



## Understanding record statuses

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

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

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

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

## Making a record inactive

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

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

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

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

## Deleting records

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

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

## Managing records

before you can delete the record. Also, you cannot delete a record that has been submitted to Workflow.

You might need security authorization to delete records.

# Detailed Application Descriptions

# 3

The IBM Maximo Asset Management applications (except for the Start Center applications) are grouped into modules and submodules in the Go To menu in the Navigation toolbar of the user interface.

All of the modules and submodules are presented alphabetically in this chapter, as follows:

- ▼ Administration
- ▼ Assets
- ▼ Change
- ▼ Contracts
- ▼ Desktop Requisitions (within the Self Service module)
- ▼ Deployed Assets (within the Administration module)
- ▼ Deployed Assets (within the Assets module)
- ▼ Financial
- ▼ Integration
- ▼ Inventory
- ▼ IT Infrastructure
- ▼ Migration (within the System Configuration module)
- ▼ Planning
- ▼ Platform Configuration (within the System Configuration module)
- ▼ Preventive Maintenance
- ▼ Purchasing
- ▼ Reconciliation (within the Administration module)
- ▼ Reporting (within the Administration module)
- ▼ Resources (within the Administration module)
- ▼ Safety (within the Planning module)
- ▼ Security
- ▼ Self Service
- ▼ Service Desk
- ▼ Service Requests (within the Self Service module)
- ▼ System Configuration
- ▼ Task Management
- ▼ Work Orders

The modules, and a detailed description of the applications that each one contains, are described in detail below. See chapter 1 for a summary of this information.

For help completing a task using an application, first select the application from the Go To menu of the user interface. When the application opens, click **Help** in the top right corner of the navigation toolbar, and then select **Help** from menu that appears. You also can press **Alt +H** to invoke the help menu from anywhere in an application.

# Administration module

You use the applications in the Administration module for small system administration tasks, such as setting one parameter, and for tasks that you do often, such as creating user groups.

The Administration module comprises the following applications and submodules:

- ▼ Sets
- ▼ Organizations
- ▼ Calendars
- ▼ Resources (submodule)
- ▼ Bulletin Board
- ▼ Communication Templates
- ▼ Reporting (submodule)
- ▼ Deployed Assets (submodule)
- ▼ Reconciliation (submodule)
- ▼ Conditional Expression Manager
- ▼ Classifications
- ▼ CI Types
- ▼ Work View

## Sets application

Use to create a framework for sharing item and company (vendor) data across multiple organizations. The system stores both item and company master records in sets. These sets exist above the organization level so that organizations can share the same data.

Grouping items into sets allows users to transfer items among sites within different organizations.

Grouping companies into sets ensures that all sites and organizations use consistent names for vendor companies and that accurate consolidated vendor reporting can be performed.

The following relationships apply to sets and organizations:

- ▼ You can create as many item and company sets as your business practices require.
- ▼ You must associate each organization with one, and only one, company set.
- ▼ You must associate each organization with one, and only one, item set.
- ▼ The same item or company set can be used by multiple organizations.

You must create at least one item set and one company set before you can create any organization.

## Organizations application

Use to set up the organizations and sites to use with the system. You must define at least one organization and one site.

For each organization that you create, you can specify a number of properties including the following:

- ▼ Base currency
- ▼ Item and company sets
- ▼ GL clearing account
- ▼ Address codes for organizational units, including sites, that you can use on records

By configuring the system with multiple organizations and sites, your company can run the system in multiple facilities all from the same database. Each site can access its own site-specific data and use data that is common across sites. Rather than installing multiple instances of the system, each with its own database, a company can install the system once, with different sites all accessing the same database via a Web browser.

The system's architecture enables different organizations and sites to keep some parts of their operations separate, while sharing others. For example, different facilities can share purchase agreements and vendors, and share and transfer items, while keeping work order and job plan data separate.

## Organizations and Sites

Organizations and sites are logical divisions of a company determined by what types of operations are performed at different locations, and what data can be shared among them.

An organization is a major division of a company that contains one or more sites. Sites belonging to the same organization must use the same currency and share the same options for work orders, assets, labor, and certain other types of data.

A site is a subdivision of an organization that can track inventory and other data separately from other sites. Certain types of information are unique to a site and not visible to other sites within the organization.

For more information on the relationships between applications and organizations and sites, see the Application Levels and Data Storage help topic in the Organization application.

## Calendars application

Use to indicate working time for equipment, craft, and labor records for an organization and its associated sites.

Calendars can help you define data such as holidays, shifts, and work periods, which is used for scheduling in other areas within the system.

You can associate calendar data with the following types of records.

- ▼ Organizations
- ▼ People
- ▼ Labor
- ▼ Assets
- ▼ Locations
- ▼ Work Orders

- ▼ PMs
- ▼ Tools
- ▼ Service Level Agreements (SLAs)

A single calendar can be referenced by any number of person, asset, or other records.

A calendar record is defined by a start date and end date, and by the shift definitions and nonworking time you apply to it. Nonworking time includes holidays and any other type of nonworking time you want to define. Applying shifts and nonworking time to a calendar generates the work periods for the calendar.

Calendars is an organization-level application. You create calendars for organizations. If you want site-specific calendars, you can create them with names that refer to the site, and have the site agree to just use those calendars. You can define shifts with complex repeating patterns using the Define Pattern dialog box in the Calendars application.

You can create multiple types of calendar definitions, including:

- ▼ Corporate Calendar – includes standard shifts and holidays
- ▼ Asset Calendar – working time calendar for asset uptime

## Bulletin Board application

Use this application (within the Administration module) to create, post, and view messages and to broadcast information to system users.

Users with correct permissions can use this electronic message board to send out or view general, informative news or announcements, or critical system messages — for example, a problem or incident that affects a large user population.

You can route messages to all users, or just selected Organizations, Sites, or person groups. If you do not specify an audience, then any user who logs into the system can view the Bulletin Board messages.

You can specify the date and time that you want the message to appear on the Bulletin Board. You can also define a date and time when you want the message to be removed from the Bulletin Board.

Creating and posting messages on the Bulletin Board minimizes the creation and duplication of tickets. For example, before entering a service request, you can check the bulletin board to see if there are any messages relevant to your problem. A bulletin board message that the telephone system is down for repairs would mean that you probably do not need to log a service request for your telephone because the problem has already been reported.

## Communication Templates application

Use to create and manage generic communication templates that users can use to standardize frequently used e-mail communications (also known as notifications). You can use these standardized e-mail notifications to increase productivity and efficiency in the Workflow and Escalation processes.

Communication templates are available in any application that has the Create Communication action.

For example, service desk agents can create and send e-mail from the Service Requests, Incidents, and Problems applications, using standardized information from predefined communication templates. Recipients can respond, and agents can view the two-way dialog from the Communication Log.

## Conditional Expression Manager application

Use to create and maintain a library of conditions that you, or other users, can select from when using applications, such as Application Designer and Security Groups, to set up conditional behavior.

A condition is a clause or class that can be evaluated to true or false to determine the behavior of an application. A clause is an expression that is like SQL expressions, however, it supports substitution variables.

Conditions can be defined either as expressions or as custom class files. One condition can be used in multiple applications.

When the expression evaluates to true, conditions let you configure access to fields, tabs, and other user interface controls within applications. For example, you can set the following types of conditional access:

- ▼ Give read-only access to information displayed in a field
- ▼ Give read-write access to information displayed in a field
- ▼ Give a user group read-only access to a specific field or action in an application
- ▼ Give all members of a user group read-write access to a specific application
- ▼ Do not display a field or tab in an application to certain users

You can also set access to application options, controls, or data elements. Examples include:

- ▼ Grant access to application options in the Select Action menu for a security group
- ▼ Configure any property in a control for a group, such as making a control hidden, masked, read-only, or required
- ▼ Configure other properties, such as color, label, and application link, to differ according to group and different conditions
- ▼ Show or hide a data attribute globally or for a security group

The Conditional Expression Manager application contains one table window, which displays the list of conditions. You use the table window to add, view, modify, or delete conditions.

## Classifications application

Use to create classifications and establish classification hierarchies for many objects such as Items, Assets, Locations, and Work Orders. Classifications and hierarchies help you organize your data and make it easier to find specific information.

Classification structures are like directory structures. You build a classification structure the same way that you build a directory structure: from the top down in parent-child relationships. First, you create a parent (a classification), and then you add its children (each child is also a classification), which belong to the parent. Each child then can become a parent and have its own children. This pattern can continue indefinitely. The structure from the top-level parent to the child that you are working with is the Classification Path.

## CI Types application

CI types are classes of configuration items that IBM Tivoli Application Dependency Discovery Manager uses in the discovery process. You use the CI Types application to specify the CI types that you want to use when you import actual configuration items from IBM Tivoli Application Dependency Discovery Manager.

You specify which CI types to use by changing their status to ACTIVE. The import procedure imports only those actual configuration items that are associated with active CI types.

The CI Types application lists the CI types that you import from TADDM, using the Integration Composer. For information about importing CI types, see the Integration Composer documentation.

The data in the CI Types application is read-only except for the Status field. You cannot create new CI types.

## Work View application

Use to make queries available for display in the Results Set portlet of a user's Start Center.

This one-page application lets you query against the combined ticket and work order tables. Users can display the results of the query in the Result Set portlet of their Start Center. For example, users can view a list of all tickets and work orders that they own or are assigned to their group.

The Work View application contains one default query, WORKVIEW. This query includes all non-historical tickets and work orders owned by the user or their group, listed by priority. You can choose to use the default query or create your own. The application refreshes the query results in real time to reflect the current status and information in the Maximo database.

An administrator assigns the Result Set portlet to Start Center templates as needed. When you create a query and mark it as public, users having access to both the application and the Result Set portlet can use the query in their Start Center.



# Assets module

The Assets module contains applications designed to manage the assets that are owned or leased by your company from purchase to salvage — from the beginning to the end of an asset's life cycle.

IBM Tivoli Asset Management for IT and IBM Tivoli Service Request Manager maintain information technology (IT) asset data in two different modules: the Assets module and the Deployed Assets submodule.

- ▼ Assets - Asset records for purchased or leased IT assets are maintained in the Assets application. You create these records in the Assets application or when you use the Receive Rotating Items action in the Receiving application. An IT asset is an asset that has a class structure identifier that belongs to the top-level IT classification used in your enterprise.
- ▼ Deployed Assets - In addition to asset information in the Assets applications, the Deployed Assets applications maintain data collected directly from assets actually installed in your enterprise. To gather this data, discovery tools (such as IBM Tivoli Configuration Manager or Microsoft SMS) scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected data into the database. You view this data in the Deployed Assets module applications.

In this guide, the term IT asset refers to information technology assets maintained in the Assets application. The term deployed asset refers to asset data maintained in the Deployed Assets module applications.

The Assets module comprises these applications and submodule:

- ▼ Assets
- ▼ Locations
- ▼ Features
- ▼ Meters
- ▼ Meter Groups
- ▼ Condition Monitoring
- ▼ Failure Codes
- ▼ Deployed Assets (submodule)
- ▼ Software License View

## Assets application

Use to store asset numbers and corresponding information such as the parent, location, vendor, up/down status, and maintenance costs for each asset.

You create asset records for any equipment, machinery, or technology that your company owns or leases that must be managed and maintained.

Use this application also to build the asset hierarchy — an arrangement of buildings, departments, assets, and subassemblies. The asset hierarchy provides a convenient way to roll up maintenance costs so that you can check accumulated costs at any level, at any time. It also makes it easy to find a particular asset number.

Assets can be either rotating, non-rotating, or deployed.

**Rotating asset** – has subassemblies that can be removed from one asset and reused in another. For example, a motor, a pump, or a PC monitor.

Rotating assets have a unique asset number and an inventory item number. The item number lets you track assets as a group as they are moved in and out of inventory and other types of locations, while the asset number is useful to track individual instances of the asset as it is moved from one location to another and from one site to another.

For example, a company might have four identical (same make, same model) centrifugal pumps, so all four pumps would have the same item number. To track the use, repair, and locations of each individual pump, each pump would have its own, unique asset number. Before you can create a record for a rotating asset in the Asset application, the rotating item record must first be created in the Item Master application.

**Non-rotating asset** – has moving parts or circuitry that needs to be maintained. This type of asset does 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.

**Deployed asset** – is an information technology (IT) asset, such as a computer, network device, and network printer, that is discovered on a network by an asset discovery tool, such as IBM Tivoli Application Dependency Discovery Manager. You manage deployed assets using the applications in the Deployed Assets submodules, which are accessible with the IBM Tivoli Asset Management for IT product and the IBM Tivoli Service Request Manager products.

## Locations application

Use to enter and track locations for assets and organize these locations into logical hierarchical systems or network systems.

You can track assets at a temporary location, or even in transit between locations. A **location** is generally defined as a place where assets are operated, stored, or repaired. You can define locations as a means of tracking assets, but if your company does not use asset records to track equipment, you can define a location as any facility (or portion of a facility) for which you want to create a maintenance record.

Using systems of locations and specifying the location for assets on asset records provides the groundwork for gathering and tracking valuable information on the history of assets, including asset performance at specific sites, and as an asset is moved from location to location. When you organize your locations into systems, you can quickly find a location and then identify the assets at a specific location.

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

## Understanding locations terms

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

- ▼ **Hierarchy** — Any system of places ranked one above another. Each parent location can have many child locations, but each child location can have only one parent location.
- ▼ **Location** — Locations are typically the places where assets operate, but include any building, place, or position that contains assets, or where maintenance work might need to be performed.
- ▼ **Network** — Any system of interconnected locations. Unlike hierarchies, in a network each location can have multiple parents and children.
- ▼ **Operating location** — The places where equipment operates.
- ▼ **Primary system** — The default hierarchy of locations. Each Site may have only one primary system. Your primary system must be hierarchical, that is there must be a single top-level location that is the parent of all other locations in the system. If assets in different locations are part of an asset hierarchy, their locations must exist in the primary system.
- ▼ **Site** — Term used to define a work location, such as a plant or facility. A Site belongs to a single Organization.
- ▼ **System** — A grouping of locations, organized into either hierarchical or network relationships. A hierarchical system could define location relationships of a plant, having a plant site as a parent to plant buildings, which are parents of sublocations within the building areas. A network system could define the location relationships of a system of pipes or ducts, where there are some locations that feed back into others.

## Preparing to create locations

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

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

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

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

## Understanding location systems

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

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

into floors, and the floors into offices. In this example, an office might belong to the primary system, the heating system, and the electrical system.

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

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

Plan carefully before creating systems.

## Planning location hierarchies

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

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

When planning the shape of your location hierarchies, consider how your locations can be subdivided and categorized. For example, a large building could be divided into floors. A floor containing a large number of offices could be divided into wings, or quartered into North, South, East, and West quadrants. And consider how future growth will be accommodated, for example if a large space were to be partitioned to create several new offices.

## Creating hierarchical systems

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

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

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

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

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

## Building a location hierarchy from an item assembly structure

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

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

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

## Managing locations

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

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

You can delete a system only when it is not associated with any locations, and only if it has not been submitted to Workflow.

### Location statuses

A location record can have one of the following statuses:

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

Select DECOMMISSIONED as the new status only if you intend that status change to be permanent.

### Decommissioning a location record

If a location is going to be permanently retired from service, you can change its status to DECOMMISSIONED. Decommissioned locations do not appear in select value lists, but are displayed in the drilldown and are still maintained in the Maximo database as historical records and can be accessed from the Location application. Before you decommission a location record, ensure that the following is true:

- ▼ The location is not referenced on any open work order.
- ▼ The location is not referenced on any open desktop requisition, purchase requisition, request for quotation, or purchase order.
- ▼ The location is not referenced on any job plan or route.
- ▼ The location is not referenced on any preventive maintenance record.

After you change the status of a location record to DECOMMISSIONED, you cannot perform any of the following actions on it:

- ▼ add children to the location
- ▼ associate systems with the location
- ▼ update meter readings
- ▼ modify the **Rotating Item** value or apply an item assembly structure
- ▼ associate specifications or specification values
- ▼ reference the location on any new desktop requisitions, purchase requisitions, requests for quotation or purchase order lines.
- ▼ issue items that will be charged to the location
- ▼ create work orders for the location
- ▼ add the location to job plans or preventive maintenance records.

## Features application

Define the physical features of the linear assets that you manage with the IBM Maximo Linear Asset Manager product option. For example, a road is a linear asset. Its features can include guard rails, mile posts, signs, traffic lights, pavement, culverts, and intersections.

A feature is a physical object, such as a guard rail or mile marker, that you associate with one or more linear assets, but which you do not track with a unique ID. You apply costs associated with a feature to the linear asset, which does have a unique ID.

You use features with linear assets in the following way:

- ▼ In the Features application, you create and define features.
- ▼ In the Assets application, you associate the features with linear assets.

## Meters application

Use to add or modify meter definitions including the names for the meters and the sets of attributes that describe the meters. You define the meters whose readings you can use to track the performance of an asset or a location. An asset or location can have multiple meters associated with it.

You can define the following three types of meters:

- ▼ **Continuous meters** are cumulative and tend to measure consumption or accumulation. They include meters that track such things as miles, hours, engine starts, pieces produced, or fuel consumed.
- ▼ **Gauge meters** show a range of values such as fuel levels, temperature, pressure, noise level or, oil level. Gauge meters can be used to perform condition monitoring on Assets or Locations.
- ▼ **Characteristic meters** are observational in nature and have a list of possible values. They are used to track things such as noise level, vibration level, clarity, or color. Characteristic meters can be used to perform condition monitoring on Assets or Locations.

These meter definitions are used in the Meter Groups, Assets, Locations, Preventive Maintenance, Job Plans, Items, and Condition Monitoring applications. You can specify names and characteristics for each meter.

While there may be cases (that is, assets or location with multiple pressure gauges) where the same meter is used more than once on the same asset or location, meters in the Meter Groups, Assets, Locations, Preventive Maintenance, Job Plans, Items, and Condition Monitoring applications reflect logical, not physical, meters. This means that the meters are used to track meter readings, not the meters themselves. In the case referred to above, each gauge is identified individually (for example, inlet, outlet), and can then be so identified as a measurement point via condition monitoring.

## Meter Groups application

Use to define a logical grouping of meters. Meter groups represent a collection of meters that are used together multiple times. For example, to add multiple meters to an asset, location, or rotating asset, at the same time.

Once meters groups are defined, you can add meters to and remove meters from a group. Meter Groups can be applied to assets, locations, and to rotating items in the Inventory application to designate the meters commonly associated with a rotating item. Meter Group information is copied to a record when these conditions are true:

- ▼ an item assembly structure containing rotating items that have Meter Groups is applied to an asset or location record.
- ▼ the asset or location record includes a rotating item number that has a Meter Group.
- ▼ a non-rotating asset or location record is created and a Meter Group is specified on the Asset tab of the Asset application.

## Condition Monitoring application

Use to define unlimited measurement points for assets, and to specify alarm limits and associated work to be performed after reaching those limits. You can also create and view measurement-point records to define acceptable meter readings for a “characteristic” or “gauge” type of meter on an asset or location.

When the meter reading of an asset or location is outside acceptable limits, you can generate preventive maintenance work orders or a work order with a specific job plan to address the problem.

Each measurement point is unique. You can compare similar measurement points on different assets or locations using meter readings. For example, suppose you use a similar type of compressor in multiple locations. The compressors were purchased from different vendors. If you have a pressure gauge on each of those compressors, you can generate reports that compare the pressure readings on those compressors. These reports can help you determine if the compressors from one vendor are more efficient than the compressors from another vendor.

## Failure Codes application

Use to build and display failure hierarchies, which help you construct accurate histories of the failures that affect your assets and operating locations.

A failure code is an element of a failure hierarchy. A failure hierarchy consists of Problems, Causes, and Remedies. This hierarchy helps you construct accurate histories of the failures that affect your assets and operating locations. You can also use failure hierarchies to record the different solutions to failures. An individual failure code can be used at more than one level of a failure hierarchy. For example "high temperature" could appear in one failure hierarchy as a Problem, and in another as a Cause.

After reporting and analyzing failure trends, you can take preventive measures. The identifier of a failure hierarchy is the failure class. You can enter this code on Asset and Location records when you want to report the work done to address the failure, and then analyze failure trends.

A failure hierarchy is identified on other records by a Failure Class name. Failure classes can be associated with assets, locations, and work orders.

### Understanding the failure code hierarchy

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

- ▼ The PROBLEM is the symptom. What seems broken?
- ▼ The CAUSE creates the problem. Why did the problem occur?
- ▼ The REMEDY is the correction. What will fix the problem?

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

Your company might choose to use a different structure for its failure hierarchies.

### Failure codes and assets/locations

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

### Failure codes and work orders

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

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



## Software License View application

Accessible with the IBM Tivoli Asset Management for IT product, you use this application to view information about the software licenses that are installed on computers that are deployed in your enterprise. The software license information is data that has been collected by an asset discovery tool.

You also can use Software License View to delete software license records and to view the contracts with which a software license is associated. If you delete a software license, you also delete the software license from any contracts with which it is associated.

## Change module

The Change module contains the Activities and Tasks application, which you use to plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of work being performed. See the application's online help topics for more information.

## Contracts module

You use the applications in the Contracts module to manage contracts for labor rates, purchases, leases, warranties, and software.

You can create different types of contracts and define the rules that govern each type of contracts. You can adjust prices and payment schedules, associate service level agreements with contracts, and view the history of contracts and contract revisions. You also can create master contracts to associate multiple contracts for the same vendor. When you create a contract, you specify the properties, terms and conditions, and assets, people, or licenses associated with it.

The default Maximo installation contains the following types of contracts:

- ▼ **Blanket (volume) contract** — an agreement that specifies a vendor, a total dollar amount, and valid dates for the agreement. Typically a blanket is used to purchase services and/or materials at an agreed upon price and terms. You can create release purchase orders in the Purchase Orders application that reference the blanket contract. Blanket contracts are created in the Purchase Contracts application.
- ▼ **Labor contract** — a way to define the rates that will be paid for craft and skill combinations, and also rates to be paid to specific contract laborers. You can set up a labor rate contract to create invoices for all approved labor transactions within a specified time period, for example every month. Labor contracts are created in the Labor Rate Contracts application.
- ▼ **Lease contract** — an agreement to lease one or more assets from a vendor. Lease contracts specify lease period, payment schedules, and other conditions of the contract. Maximo can generate invoices based on the payment schedule intervals. This type of agreement may involve more

than two parties, as one vendor may sell the assets and another may hold the lease. Lease contracts are created in the Lease/Rental Contracts application.

- ▼ **Pricing contract** — A price agreement contract specifies the prices to be paid for specific items purchased from a specific vendor. Typically a price agreement is used to purchase services and/or materials at agreed upon prices and terms. Pricing contracts are created in the Purchase Contracts application.
- ▼ **Purchase contract** — specifies the terms and conditions for a purchase. Purchase contracts are created in the Purchase Contracts application.
- ▼ **Rental contract** — is similar to a lease contract. Rental contracts specify the time period for the rental, payment schedules, and other conditions of the contract. Unlike a lease, a rental contract can be terminated at will, and does not include a buy-out option in the terms of the contract. Rental contracts are created in the Lease/Rental Contracts application.
- ▼ **Service contract** — is similar to a warranty except that some of the items are billed on a per-incident basis. This contract will contain the details of the services to be provided, and if a payment schedule is associated with the contract. Service contracts are created in the Warranty Contracts application.
- ▼ **Master contract** — a way to associate many contract types together for the same vendor and define terms and conditions for the relationship with the vendor. A master contract lists all contracts that you have with a particular vendor. For example, a master contract might list rental contracts for tools or equipment, purchase contracts for materials, a labor rate contract, and a warranty on parts and labor. Master contracts are created in the Master Contracts application.
- ▼ **Warranty contract** — is created in conjunction with the purchase of an asset and generally has no cost associated with it. This contract will contain the details of what is covered by the warranty. If a warranty contract is purchased, this is considered an extended warranty by Maximo. Warranty contracts are created in the Warranty Contracts application.
- ▼ **Software contract** — an agreement in which you can specify the items or services provided, costs, shipping and handling, expected delivery times, financial terms, and vendor information for the software licenses that you have purchased.

Your system administrator can define an unlimited number of contract types using the Organizations application.

The Contracts module comprises the following applications:

- ▼ Purchase Contracts
- ▼ Lease/Rental Contracts
- ▼ Labor Rate Contracts
- ▼ Master Contracts
- ▼ Warranty Contracts
- ▼ Software Contracts
- ▼ Terms and Conditions

## Purchase Contracts application

Use to create, view, and modify purchase contracts with outside vendors. On the contracts, you can specify items or services provided, their costs, shipping and handling, expected delivery times, financial terms, and vendor information.

When you use a standard purchase contract, the system requires a purchase order, but it does not specify a maximum amount that you can spend. Before you can approve a purchase contract you must have at least one authorized site.

The Purchase Contracts application supports the following contract types:

- ▼ price contracts
- ▼ blanket (volume) contracts
- ▼ purchase contracts
- ▼ software contracts

## Lease/Rental Contracts application

Use to define the overall terms and conditions of an agreement between a vendor and a customer regarding one or more rotating assets. A rotating asset is an asset that is interchangeable, such as a motor, pump, or laptop computer.

Rotating assets have both an asset number and an inventory item number. The two numbers let you track the asset as it moves from an operating location to a storeroom and back to an operating location.

The system does not provide the details of the individual costs per asset until the assets are received by the customer. Payment schedule details are generally consolidated and provided on a monthly or quarterly basis. The details can include the total payment amount, total number of payments, lease rate factor and periodic payment amount. There also may be detailed information about the costs associated with each individual asset that was delivered during the specified time period.

When you receive a new payment schedule, you can either create a new lease contract under the master agreement, add a new payment to an existing lease contract, or create a new lease contract under the existing master with one line of payment schedule details.

## Labor Rate Contracts application

Use to manage outside labor and the corresponding rates by defining multiple labor rates for specific crafts and skills. Optionally, use to create labor records.

When you reference craft or skill records on a labor rate contract, you reference records created and maintained in the Crafts application, but you can apply individual rates in a labor rate contract. You also can associate individual labor records with a labor rate contract.

## Master Contracts application

Use to associate many contract types for a particular vendor. A master contract defines the relationship with a vendor and contains the terms and conditions that apply to the contracts created and listed under it.

You can also view or modify the properties, or attributes, of the contract. Your system administrator may have set default values and editing rules for some or all of the properties. These values are set in the Organizations application.

## Warranty Contracts application

Use to maintain one or more assets for an outside service provider for a fixed fee, or regularly scheduled payments over a time period; or to track warranty information for multiple assets or locations by time or meter.

You also use a warranty contract to create a service contract. A service contract indicates that an outside service provider maintains one or more assets. Payment for service can be made with a single fee or scheduled payments.

## Software Contracts application

Use this application with the IBM Tivoli Asset Management for IT product to create, view, and modify software contracts.

On the contract, you can specify items or services provided, costs, shipping and handling, expected delivery times, financial terms, and vendor information. You can associate contract line items with a software license. You can also associate people or specific assets with a software contract.

When you use a standard software contract, the system requires a purchase order, but does not specify a maximum amount that you can spend. Before you can approve a software contract, you must specify a vendor, and you must have at least one authorized site.

## Terms and Conditions application

Use to maintain a library of terms and conditions that can be added to a purchasing document or contract. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.

The terms and conditions in the library can be added to a purchasing document or a contract from the Terms and Conditions tab of individual Purchasing or Contract applications. Additional terms applicable to only that purchasing or contract record can also be added and saved to that record, but not to the library.

You can modify an existing term in the Terms and Conditions application at any time and this action will not update existing contracts or purchasing documents that reference the term.

You can delete a term from the library at any time and this action will not remove the term from any contracts or purchasing documents.

## Deployed Assets submodule

You use the applications in the Deployed Assets submodule (within the Administration module) to manage information about the assets that are deployed on your enterprise network.

Using the applications in this submodule, you can control how the Deployed Assets submodule applications in the Assets module display the data that is collected by a discovery tool.

The Deployed Assets administration submodule includes five conversion applications you use to translate inconsistent names used by discovery tools to standard naming conventions. It also includes a Software Suite Setup application that you use to assemble software applications into software application suites, and a Software Usage Setup application that you use to control how to display data about software usage frequency.

The Deployed Assets administration submodule comprises the following applications:

- ▼ Adapter Conversion
- ▼ Manufacturer Conversion
- ▼ Operating System Conversion
- ▼ Processor Conversion
- ▼ Software Conversion
- ▼ Software Suite Setup
- ▼ Software Usage Setup

## Adapter Conversion application

Use to establish standard naming conventions for adapters, including media adapters, such as video and sound cards, and network adapters.

The Adapter Conversion application determines how to display imported adapter data in some applications (such as Computers, Network Printers, and Network Devices) and in reports. To gather this data, discovery tools scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected information into the database.

Adapter conversions are necessary because the discovery tools that collect adapter data do not use consistent naming conventions, and the data collected can include various names assigned to the same kind of adapter. For example, discovery tools often include variations such as Baryon 250 Network Adapter and Baryon 250B Network Adapter for the adapter name. Your enterprise might want to use only the name Baryon Adapter. You can use the Adapter Conversion application to control how to display the imported data. The Adapter Conversion application lets you standardize adapter names and aggregate different adapter names, which reduces the number of adapter names displayed.

Each adapter conversion record specifies a target adapter name and a variant or a set of variants. The variants are variations of the name that the system translates to the target name when it displays adapter data for deployed assets.

## Manufacturer Conversion application

Use to define standard naming conventions for the manufacturers of deployed assets, including computers, printers, and network devices.

The Manufacturer Conversion application determines how to display imported manufacturer data in the Computers, Network Printers, and Network Devices applications and in reports. To gather this data, discovery tools scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected information into the database.

Manufacturer conversions are necessary because the discovery tools that collect manufacturer data do not use consistent naming conventions, and the data collected can include various names assigned to the same manufacturer. For example, discovery tools often include variations such as IBM Corporation and IBM Corp. in the manufacturer name. Your enterprise might want to use only the name IBM. The Manufacturer Conversion application lets you standardize manufacturer naming conventions and aggregate different manufacturer names, which reduces the number of manufacturers displayed.

Each manufacturer conversion record specifies a target manufacturer name and a variant or a set of variants. The variants are variations of the name that the system translates to the target name when it displays manufacturer data for various deployed assets, including computers, network printers, and network devices.

## Operating System Conversion application

Use to establish standard naming conventions for the computer operating systems in deployed assets.

The Operating System Conversion application determines how to display operating system data in reports and on the Software tab in the Computers application in the Deployed Assets module. To gather this data, discovery tools scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected information into the database.

Operating system conversions are necessary because the discovery tools that collect operating system data do not use consistent hardware and software naming conventions, and the data collected can include various names assigned to the same operating system. For example, you might have Fermion 2000 Operating System and Fermion OS 2000. In addition, operating system names collected by discovery tools often contain detailed information about version, release, service pack levels, and so on. Your enterprise may want to use only the basic operating system name (for example, Fermion 2000) without tracking the version and release numbers. You can use the Operating System Conversion application to control how to display the imported data. The conversion

application lets you standardize operating system names and aggregate different names, which reduces the number of operating system names displayed.

Each operating system conversion record specifies a target operating system name and a variant or a set of variants. The variants are variations of the name that the system translates to the target name when it displays operating system data for deployed assets.

## Processor Conversion application

Use to establish standard naming conventions for central processing units (CPUs) installed on computers in deployed assets.

The Processor Conversion application determines how to display processor data in the Computers application in the Deployed Assets module and in reports. To gather this data, discovery tools scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected information into the database.

Processor conversions are necessary because the discovery tools that collect data do not use consistent naming conventions, and the data collected can include various names assigned to the same processor. For example, discovery tools often include variations such as Meson 490 Processor and Meson 490 CPU for a processor name. Your enterprise might want to use only the name Meson Processor. The Processor Conversion application lets you standardize processor names and aggregate different names, which reduces the number of processor names displayed.

Each processor conversion record specifies a target processor name and a variant or a set of variants. The variants are variations of the name that the system translates to the target name when it displays processor data for deployed assets.

## Software Conversion application

Use to establish standard naming conventions for computer software applications.

The Software Conversion application determines how to display software application data in reports and in the Computers application in the Deployed Assets module.

To gather this data, discovery tools scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected information into the database.

Software conversions are necessary because the discovery tools that collect software data do not use consistent hardware and software naming conventions, and the data collected can include various names assigned to the same software application. For example, when describing software applications, discovery tools often include version and release numbers in the software application name, such as IBM Tivoli Configuration Manager 4.2 or IBM Tivoli Configuration Manager 4.2.3. Your enterprise might want to track only instances of IBM Tivoli Configuration Manager without specifying a version number. The Software

Conversion application lets you standardize software names and aggregate different software names, which reduces the number of software application names displayed.

Each software conversion record specifies a target software name and a variant or a set of variants. The variants are variations of the name that are translated to the target name when software data for deployed assets is displayed.

You can also use the Software Conversion application to specify whether a software application is authorized or prohibited in your enterprise. The Compliance Setting field on a software conversion record indicates whether the software application is authorized or prohibited. The system uses this information to generate software compliance reports.

### **Software conversions and software suites**

Software conversions apply only to individual software applications, not application suites. You define software suites using the Software Suite Setup application. The Software Conversion application and the Software Suite Setup application are interrelated. You cannot add software as a component of a software suite unless that software exists as a software conversion record. Because the target software name in a software conversion record is also the software name used when that software is a component in a software suite, changes made in the Software Conversion application might affect the Software Suites Setup application. If you change a software conversion record that is associated with a software suite setup record, the system lets you apply the name change to both applications in one procedure performed from the Software Conversion application.

## **Software Suite Setup application**

Use to create software suite records and to view, edit, duplicate, and delete existing records. A software suite record defines which software applications belong to a software suite. A software suite is a group of software applications licensed as a single unit. For example, an office suite might include a spreadsheet application, a word processing application, and a presentation application.

Data about the software applications that are deployed in your enterprise is displayed in the Deployed Assets module. A discovery tool, such as IBM Tivoli Configuration Manager, collects the software application data. An integration tool, such as IBM Tivoli Integration Composer, imports the collected data into the Maximo database. The discovery tools that collect data about deployed software applications typically collect information only about individual software applications, not software suites. Consequently, you must define what constitutes a software suite. Use the Software Suite Setup application to specify which software applications belong to a software suite. This definition determines which software suites the system displays on the Suites subtab of the Software tab in the Computers application.

Although you define software suites in the Software Suite Setup application, software suite identification is a background process, and you must set up a cron task in the Cron Task Setup application to schedule the software suite identification process.

When you create a software suite, you specify a suite name, suite version (optional), and the component applications that belong to the suite.



The Software Suite Setup application lets you specify that one or more applications in the suite are required components. If a component application is required, the system identifies a suite only if the required software application or applications exist in deployed assets.

### Rules for defining software suite records

When you create a software suite record, you specify a suite name, suite version (optional), and the component applications that belong to the suite. The following rules apply to software suite setup records:

- ▼ A software suite must have at least one component application.
- ▼ A software application name can exist as a suite component only once in a specific software suite. However, the same application name can exist in multiple software suites.
- ▼ You cannot add an application as a component to a software suite record unless the software application exists as a software conversion record. If necessary, you can define software conversion records in the Software Conversion application.
- ▼ When defining a software suite, you can specify a version number for the suite; a suite version is optional. However, you must specify both a high and a low version parameter for each application that is a component of the suite. The Required Version Low field specifies the lowest acceptable version number for the application, and the Required Version High field specifies the highest acceptable version number for the application. Any version number that falls within the range specified by these two fields is a component of the suite. The value in the Required Version Low field must be less than or equal to the value in the Required Version High field.

## Software Usage Setup application

Use to create software usage records and to view, edit, duplicate, and delete existing software usage records. A software usage record defines how to display software usage frequency for a specific discovery tool.

When discovery tools, such as IBM Tivoli Configuration Manager, scan computers, network devices, and network printers deployed in your enterprise for information about installed software applications, they collect data about how often the applications are used (usage counts). For example, some discovery tools collect data maintained by the Microsoft® Windows® Add/Remove Programs feature, which determines usage counts based on the number of times you used a software application during the last 30-day period. After the discovery tool collects the data, an integration tool, such as Integration Composer, aggregates the collected data and imports it into the database.

The Software Usage Setup application lets you define how to display software usage frequency information collected by a discovery tool. For each discovery tool, you can specify a range of usage counts and assign to that range a user-friendly, textual description to display on the Software tab in the Computers application. For example, you can use the word DAILY to describe software used between 15 and 30 times or MONTHLY to describe software used between 1 and 2 times. You specify a low end of the range (Range From) and a high end of the range (Range To). The values you enter in the range fields depend on the values

that your discovery tool uses for frequency counts. For more information about the values used by a discovery tool, refer to the documentation provided for that tool.

# Deployed Assets submodule

You use the applications in the Deployed Assets submodule (within the Assets module) to view information about the computers, network devices, and network printers that are deployed on your enterprise network.

IBM Tivoli Asset Management for IT and IBM Tivoli Service Request Manager maintain information technology (IT) asset data in two different modules: the Assets module and the Deployed Assets submodule.

- ▼ Assets - Asset records for purchased or leased IT assets are maintained in the Assets application. You create these records in the Assets application or when you use the Receive Rotating Items action in the Receiving application. An IT asset is an asset that has a class structure identifier that belongs to the top-level IT classification used in your enterprise.
- ▼ Deployed Assets - In addition to asset information in the Assets applications, the Deployed Assets applications maintain data collected directly from assets actually installed in your enterprise. To gather this data, discovery tools (such as IBM Tivoli Configuration Manager or Microsoft SMS) scan computers, network devices, and network printers deployed in your enterprise and record information about the hardware and software installed on those assets. An integration tool, such as Integration Composer, imports the collected data into the database. You view this data in the Deployed Assets module applications.

In this guide, the term IT asset refers to information technology assets maintained in the Assets application. The term deployed asset refers to asset data maintained in the Deployed Assets module applications.

The Deployed Assets submodule comprises the following applications:

- ▼ Computers
- ▼ Network Devices
- ▼ Network Printers

## Computers application

Use to view information about the hardware and software that is installed on the computers that are deployed throughout your enterprise.

Data displayed in the Computers application includes tabs with specific information about the computer itself, and the computer's software, storage devices, processors, media adapters (such as sound and video cards), communication devices (such as modems and network adapters), network settings for TCP/IP and IPX, image devices (such as printers and scanners), displays, and users.

You can use this application to view information about deployed computers, but you cannot use it to create computer records. Computer records displayed in the

Computers application are read-only; you cannot edit them. You can use this application to delete computer records from the database, but you cannot delete a component, such as a processor, from a computer record.

Data displayed in this application varies depending on the discovery tool used to collect the data. Some data fields in the Computers application might be empty. An empty field indicates that the discovery tool did not collect the data or that administrators did not map the data for import into the database. Data displayed in some fields in the Computers application is affected by parameters that your administrator defines in administrative applications. Administrative applications affect how the system displays manufacturer, media adapter, operating system, processor, and software names as well as software suites and usage frequency data for software applications.

## Network Devices application

Use to view information about deployed network devices such as routers, switches, and hubs. Data displayed in this application is data collected from network devices and their network device cards.

You can use this application to view information about deployed network devices, but you cannot use it to create network device records. Records displayed in the Network Devices application are read-only; you cannot edit them. You can use this application to delete network device records from the database, but you cannot delete a component, such as a device card, from a network device record.

Data displayed in this application varies depending on the discovery tool used to collect the data. Some data fields in the Network Devices application might be empty. An empty field indicates that the discovery tool did not collect the data or that administrators did not map the data for import into the database. Data displayed in some fields in the Network Devices application is affected by parameters that your administrator defines in administrative applications. Administrative applications affect how the system displays manufacturer and adapter names.

## Network Printers application

Use to view information about the network printers that are deployed throughout your enterprise. Data displayed in this application is data that is collected from network printers.

You can use this application to view information about deployed network printers, but you cannot use it to create network printer records. Records displayed in the Network Printers application are read-only; you cannot edit them. You can use this application to delete network printer records from the database.

Only network-based printers are included in this application; for information about printers installed locally on specific computers, refer to the Computers application. On the Image Devices tab in the Computers application, you can view information about locally-installed printers.

Data displayed in this application varies depending on the discovery tool used to collect the data. Some data fields in the Network Printers application might be

empty. An empty field indicates that the discovery tool did not collect the data or that administrators did not map the data for import into the database. Parameters that your administrator defines in administrative applications determine how to display the names of printer manufacturers.

## Desktop Requisitions submodule

As a self-service user, you use the applications in the Desktop Requisitions submodule (within the Self Service module) to create and view purchase requisitions. You also can use the applications to create template requisitions for repeat orders, create a list of favorite items that you order frequently; view open, draft, and template requisitions, and check the status of your order.

The Desktop Requisitions submodule comprises the following applications:

- ▼ Create Requisitions
- ▼ View Requisitions
- ▼ View Templates
- ▼ View Drafts

### Create Requisitions application

Use this self-service application to create and submit a desktop requisition to purchase the items from either an internal source, such as a company storeroom, or from an external vendor.

You can purchase the following items:

- ▼ Materials
- ▼ Services
- ▼ Standard Service
- ▼ Tools

A desktop requisition contains the following information:

- ▼ Requisition Description
- ▼ Shipping Info
- ▼ Charge Info
- ▼ Requisition Lines

You can complete a desktop requisition using a three-step process, or you can save a requisition as a draft and finish it later. You can also save a requisition as a template, and use it later for creating additional requisitions with similar information.

### View Requisitions application

Use to search for, view, and change the status of your existing purchase requisitions.

You can view requisition details, history, and workflow information using the subtabs available in the application. You can also create a template of the

requisition that you can use to simplify the process of creating multiple new requisitions.

## View Templates application

Use to view a requisition that was saved as a template. A template requisition is a requisition that you save to use repeatedly in the future, and it typically contains standard shipping and charge information plus line item information. You can edit the requisition template and use it to create new requisitions.

You can create requisition templates in both the View Requisitions and View Drafts applications.

## View Drafts application

Use to view a requisition that was previously saved as a draft during the create requisition process.

When you edit a draft, the system redirects you to the Create Requisition application, where you can make the necessary changes, and then submit the requisition, or save it again as a draft.

You can also create a requisition template in the View Drafts application.

# Financial module

You use the applications in the Financial module to define and manage currency codes, exchange rates, general ledger accounts and resource codes, and to track project management costs.

The Financial module comprises the following applications:

- ▼ Currency Codes
- ▼ Exchange Rates
- ▼ Chart of Accounts
- ▼ Cost Management

See the *Finance Manager Guide* for information about the data collection features of the system, and to learn how GL account codes default as a result of standard processes, such as inserting records, using resources, receiving materials, and approving invoices.

To use the applications, see the applications' online help topics.

## Currency Codes application

Use to define currency codes and to specify which codes can be used in the system. A currency code is a short, user-defined value that you create to represent a currency, for example, CND for the Canadian dollar.

The Currency Codes application contains a single table window containing all the currency codes used by the system. Currency codes are stored at the system level. All organizations can view and use the defined currency codes and add new ones as needed.

After you establish an active currency code, you can use that currency code wherever a Currency field appears, such as in the Purchase Requisitions, Purchase Orders, Invoices, and Companies applications.

Though you use the Currency Codes application to define currencies, you use the following applications to manage other aspects of currency administration:

- ▼ Organizations: to specify the base currency for an organization.
- ▼ Exchange Rates: to specify exchange rates between currencies for defined periods.

## Exchange Rates application

Use to set up exchange rates used for converting currencies.

When a user enters an amount in a foreign currency, for example on a purchase requisition, purchase order, or invoice, the application finds the active exchange rate for that currency to calculate the cost in the organization's base currency. If the application does not find the exchange rate between two currencies explicitly defined, it will use specific rules and logic to calculate the exchange rate from other exchange rates, if they exist.

The application stores exchange rates at the organization level. Therefore, each organization defines and maintains its own exchange rates.

## Chart of Accounts application

Use to establish general ledger account fields in the product that are equivalent to the definitions that are used in the rest of your financial data processing system.

Specifically, you use the Chart of Accounts application for these tasks:

- ▼ Create, view, and modify general ledger account codes and components.
- ▼ Set up financial periods.
- ▼ Set up a number of default GL accounts, including an organization account, company-related accounts, external labor control accounts.
- ▼ Define resource codes.
- ▼ Specify GL validation options.

The application stores GL accounts at the organization level. Therefore, each organization must have its own chart of accounts system, and GL accounts cannot be shared across organizations.

For more information about GL account codes, see the Chart of Accounts chapter in the *System Administrator Guide*.

## Cost Management application

Use to generate project cost information to track the financial resources required to complete a project and manage budgets more effectively. Use this application in conjunction with an external project costing system.

After you create a project in the Cost Management application, you can assign work orders to that project or to the project's task in the Work Order Tracking application. Once you assign work orders to a project or task, the application keeps track of costs incurred to complete the project.

After you assign the work order to a project or task, the project name can appear in other applications but it will be in read-only format. To change the project or task under which the work order belongs, you must use the Work Order Tracking application.

## Integration module

The Integration Framework module contains a set of applications that help you to integrate the system with your enterprise applications. You also can create business flows between the system and your other enterprise applications.

The key features of the Integration Framework include:

- ▼ Pre-defined content to assist in implementing integration requirements in a timely manner. This content is a comprehensive set of outbound (channels) and inbound (services) integration interfaces that are available to use immediately.
- ▼ Applications to configure, pre-define, and to create new integration definitions.
- ▼ Applications to facilitate the customization of pre-defined content using a processing rule engine, Java and Extensible Stylesheet Language Transformations (XSLT).
- ▼ Support for multiple communication modes, including:
  - ▼ Web Services
  - ▼ HTTP
  - ▼ Java Message Service (JMS) messaging
  - ▼ Database interface tables
  - ▼ XML/Flat files
- ▼ Event-based, batch, program-initiated, and user-initiated processing of outbound and inbound messages.
- ▼ Load and performance scalability using JMS queues.

- ▼ Support for clustered environments that reduce system downtime, increase system availability, and improve system performance.
- ▼ Support for UI-based integration, including context-based launching of external applications.
- ▼ Support for integration to Operational Management Products (OMPs).
- ▼ Support for bulk export of data using user-defined SQL query.
- ▼ Support for bulk importing of XML or flat files.
- ▼ Dynamic XML schema generation for all integration artifacts (channels and services).
- ▼ Dynamic generation of Web Services Interoperability (WS-I) compliant Web Services, including Web Service Definition Language (WSDL).
- ▼ Provides the concept of an adapter that is used to group related integration artifacts. You can configure and deploy adapters for enterprise connectivity with various systems. Each adapter can have its own interface and delivery mode. Pre-configured adapters for Oracle and SAP are available as add-ons.

The Integration Framework Module comprises the following applications:

- ▼ Object Structures
- ▼ Publish Channels
- ▼ Invocation Channels
- ▼ Enterprise Services
- ▼ Web Services Library
- ▼ End Points
- ▼ External Systems
- ▼ Logical Management Operations
- ▼ Integration modules
- ▼ Launch in Context
- ▼ Message Tracking
- ▼ Message Reprocessing

## Object Structures application

Use to create, view, modify, and manage the processing logic of an Object Structure (OS). An OS is the common data layer that the integration framework uses for all outbound and inbound application data processing. An OS consists of one or more sub-records that develops XML content from a particular object.

An OS can have the same object more than once in its definition. However, the objects must have a valid parent/child relationship and you cannot reference it more than once in the same hierarchical structure.

You can use the Object Structures application to define the processing sequence of an object. You also can use the Outbound Definition Class and Inbound Processing Class fields to filter non-relevant data from any OS instance.

The OS is the building block of the Integration Framework that lets integration applications perform the following functions:



- ▼ Publish and query application data
- ▼ Add, update, and delete application data
- ▼ Import and export application data
- ▼ You can configure the OS record to integrate with the following applications:
- ▼ Integration Framework
- ▼ Deployment Manager

## Publish Channels application

Create and manage publish channel records that are used as the pipelines for exporting data from the integration framework to an external system. Publish channel processing can be triggered by the following system events (event-driven) or user actions (user driven):

- ▼ Object events
- ▼ User initiated queries
- ▼ Workflow routing
- ▼ Data export

The content of a publish channel data structure is based on the content of the associated object structure. When you trigger publish channel processing, the system moves the integration framework transaction data into the outbound queue. The transaction data is then transmitted to the external system through its associated end point transport mechanism.

If necessary, you can use the object structure processing rules to define conditions under which the integration framework can skip or stop a transaction. Through the processing rules, you also can change data in the publish channel, before the creation of the objects. You can achieve this task without having to use Java class files.

You also can alter the logic of predefined outbound channel mapping, and event filtering through the use of Java class files. These alterations are specific to the publish channel record and overwrite any predefined processing logic you define at the object structure level.

## Invocation Channels application

Create and manage invocation channel records, and, through Service Oriented Architecture (SOA), enable the use of external services for processing data from multiple sources.

Invocation channels support generic SOA capability by enabling the integration framework to perform two main functions:

- ▼ Call external applications
- ▼ Call external applications and process their responses

The initiation of an invocation channel is implemented via an action class which calls an invocation channel. You can implement an action through the following means:

- ▼ A user interface control (within an application)
- ▼ Workflow routing
- ▼ Escalation

The content of an invocation channel request is based on the content of a referenced object structure. The associated end point determines the data transport mechanism of an invocation channel. The request data is converted into the external service input type through the invocation channel request processing class layer.

If necessary, you can use an object structure to define the data content of the invocation channel transaction response. You can map the response message of the external service to the response object structure of the invocation channel. Mapping a service to the response object structure allows the system to pass transaction responses back to the caller of the external service. The transaction data is then converted into the system input type through the invocation channel response processing class.

You can configure the invocation record to integrate with the Integration module application.

## Enterprise Services application

Use to create and manage enterprise service records that are used as the pipelines for importing data from an external system to the integration framework.

An enterprise service is the pipeline for importing data to the integration framework from an external system. Enterprise services processing can be triggered by the following system events (event driven) or user actions (user driven):

- ▼ Scheduled cron tasks
- ▼ User initiated queries
- ▼ Data Import

The content of an enterprise service data structure is based on the content of the associated object structure. When you trigger enterprise service processing, the system moves the integration framework transaction data into the inbound queue.

If necessary, you can use the object structure processing rules to define conditions under which the integration framework can skip or stop a transaction. Through the processing rules, you also can change data in the enterprise service, before the creation of the objects. You can achieve this task without having to use Java class files.

You also can alter the logic of predefined inbound processing, inbound channel mapping, and event filtering through the use of Java class files. These alterations are specific to the enterprise service record and overwrite any predefined processing logic you define at the object structure level.

## Web Services Library application

Use to create and modify Web services that can be used by external applications to query or to send transactions to the integration framework. You also can generate schema and Web Service Description Language (WSDL) files for any web service that you deploy.

External applications can use web services to query or to send transactions to the integration framework. You can deploy a web service for the following Integration Framework services:

**Object Structure Web Service** - Consist of and rely upon the definitions in object structures. Object structure web services do not use exit processing available to enterprise services. An object structure web service supports five operations through its WSDL:

- ▼ Create
- ▼ Delete
- ▼ Query
- ▼ Sync
- ▼ Update

**Enterprise Web Service** - Consist of the definitions in enterprise services. Enterprise services provide exit processing and optional Java Message Service (JMS) support. The integration framework creates individual enterprise web services for the operation defined in an enterprise service (one operation per service). The operations supported in an object structure service are also supported in enterprise web service. You can deploy an enterprise web service to use a JMS queue (asynchronous process) or to bypass the JMS queue (synchronous process).

**Standard Web Service** - Consist of methods defined in application services. The methods annotated in the application services are the methods available for web service implementation. The integration framework links input and output parameters of the methods to the WSDL operations.

## End Points application

Use to create and manage end point records.

An end point identifies a location and the processing logic of data publication and service invocations. Through the defined end point handler, you can identify how to route outbound data to a specific location. You also can define which data format the integration framework, or deployment manager component will use through the handler.

This application has following predefined end points:

End Point	Description
MXFLATFILE	Writes a flat file to a prespecified location
MXIFACETAB	Writes data to interface tables in the system database
MXXMLFILE	Writes an XML file to a prespecified location

You can associate end points with the following integration applications:

- ▼ External Systems
- ▼ Publish Channels
- ▼ Invocation Channels
- ▼ Integration modules
- ▼ Logical Management Operations

Only the Integration Framework or the Deployment Manager component can use an end point record.

## External Systems application

Use to create and manage external systems.

Any business application that sends data to the system or receives data from the system is an external system. You can use External Systems to synchronize external data through an end point (location), and internal data through an external source.

You can also use the External Systems application to perform the following functions:

- ▼ Name the external applications or systems that exchange data with the integration framework
- ▼ Specify how the integration framework exchanges data with the defined systems
- ▼ Identify the specific publish channels and enterprise services process between the integration framework and each system

To create an external system, you specify an end point, queues, and integration control values in the external system record.

## Logical Management Operations application

Use to create and manage logical management operations (LMOs).

A LMO is the common data layer that defines an action the system takes on operational management product (OMP). You can specify whether the OMP processing is synchronous or asynchronous. A LMO consists of a data source, target, and specific object field attributes the source and target use during a process invocation.

You use a process management product (PMP) to automate management tasks. Using the LMO, you can define an interface that the PMP uses to invoke an action on an OMP.

Integration modules (IMs) provide a bridge between the LMO and the OMP. IMs implement LMOs. PMPs call IMs, which in turn communicate with the OMP to perform an operation. Through the IM end point handler, you can identify how the integration framework communicates with an OMP. The system then maps a response to the defined response object in the LMO.

Before any data processing begins, define a LMO relationship to the following integration components using the Integration module application:

- ▼ Operational management products (OMPs)
- ▼ Integration modules (IMs)

## Integration modules application

Use to create and manage integration modules. This application provides a mechanism for a process manager (PMP), such as Change or Release, to call an external operational management product (OMP).

The Integration Modules application is a component of the integration framework. An IM has the ability to communicate with the external OMP for specific logical management operation (LMO) tasks. The IM provides an interface that PMPs can call to perform tasks on OMPs. The IM is the integration component that resides between the PMP and the OMP. It receives and passes on a request for data from the PMP. It also returns the OMP response data, if any, to the PMP.

Before a PMP can call an IM to perform an LMO on an OMP, you define and possibly configure the following integration components:

- ▼ LMOs
- ▼ IMs
- ▼ OMPs
- ▼ Invocation Channels
- ▼ Object Structures
- ▼ End Points

An LMO defines an action, such as deploy software, which a PMP can execute by calling an IM. Integration modules provide a method for calling an OMP to execute an LMO. There are two types of IMs: external and internal. You can implement an internal IM as a Java class or an Invocation Channel. Both implementations, either Java class or Invocation Channel, can access data stored in the database.

## Launch in Context application

Use to create and manage launch entries that open, in the same or a different browser session, an application that is external to the system.

Launch in Context lets you open an external application or Web site in the same or a different browser window inside an application. Use the Application Designer to link launch entry records to one of the following types of menus or controls:

- ▼ Select Action menu
- ▼ Hyperlink
- ▼ Pushbutton

After you create a user interface control, you tie the control to a signature option and a launch entry record. Also, you authorize the signature option and launch entry record combination for a security group and application. Users within the specified security group have access to the launch entry within an application. Use conditional filtering to further restrict who has access to and when the launch

entry appears in an application. Conditional filtering uses the application Maximo Business Objects (MBOs) classification attribute. Additionally, you can restrict access to a launch entry when you link the record to the main MBO for an application in the application Designer. The MBO you define for the launch entry record and main MBO for the application must be the same.

The Launch in Context application lets you open IBM Tivoli Operational Management Products (OMPs) independently or as part of an application integration scenario. IBM Tivoli Application Dependency Discovery Manager (TADDM), IBM Tivoli Provisioning Manager (TPM), and IBM Tivoli Configuration Manager (TCM) are examples of OMPs. In addition to OMPs, you can use a launch entry to open any application outside the system. You cannot, however, use a launch entry to open other applications within the system.

## Message Tracking application

Use to track and view the processing history of queue-based inbound (Enterprise Services), and queue-based outbound (Publish Channels) messages.

When you enable message tracking, the integration framework writes all processed messages to the system database. The system assigns a status to each message which represents the message position in the integration framework queue-based processing cycle.

The Message Tracking application works in tandem with the Message Reprocessing application. Through the Message tracking application you can determine which messages are flagged with an errors. You then can select a specific failed message and get redirected to the Message Reprocessing application to take appropriate action to correct erroneous data.

## Message Reprocessing application

You use the Message Reprocessing application to manage and view integration transaction messages that have been flagged with an error. You can manage messages in the following ways:

- ▼ Change the message statuses to halt or retry message processing
- ▼ View, edit, reprocess, or save the error Extensible Markup Language (XML) file
- ▼ Delete the message from the database

Through the Message Reprocessing application, you can view the error XML without needing to gain access the integration server error files. You can determine the source of the error and make corrections in the message details. When you complete your corrections, you can process, save, or cancel the XML changes.

The Message Reprocessing application works in tandem with the Message Tracking application. The Message Reprocessing application displays queue-based messages that failed any system validation during its processing by the system. You can determine which messages are flagged with an error, and take appropriate action in the Message Reprocessing application.

You can display a specific error transaction by querying any of the following fields:

- ▼ External system
- ▼ Java queue name
- ▼ Message ID
- ▼ Error message

## Inventory module

You use the applications in the Inventory module to manage spare parts inventory.

The Inventory module works to balance two opposing objectives:

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

The goal is to find a balance of inventory stock that lets maintenance work be performed with minimum delays due to unavailable materials, without keeping unnecessary or seldom used items in stock.

Spare-parts management tasks include:

- ▼ tracking the items that you have in stock
- ▼ identifying when stock falls below user-defined reorder points
- ▼ creating purchase requisitions and purchase orders to restock items
- ▼ reporting on items received
- ▼ define items that will be stocked in your storeroom
- ▼ insert and maintain services that your company requisitions
- ▼ manage information about the tools used to perform work
- ▼ manage existing tools in storerooms
- ▼ keep track of items (stocked, nonstocked, and special order items) and receive indications when stock falls below a specified reorder point so that you know when to reorder
- ▼ perform issues, returns and transfers
- ▼ build a master list of condition codes for a particular item set
- ▼ add and maintain information about storeroom locations, and view the items stocked within a storeroom

The Inventory module comprises the following applications:

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

## Item Master application

Use to define items that will be stocked your storerooms. You group these items in an item set, which can then be shared by the organizations using that item set.

When you create an item record, you define the main attributes of the item (such as commodity codes, order and issue units, whether the item is lotted, rotating, or condition-enabled), along with any alternate items that you can use in its place and a list of the condition codes you want applied to the item.

You also can use this application to perform the following tasks for each 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, which are collections of items that you issue as a single unit.
- ▼ add the item to one or more storerooms.
- ▼ define other information related to the item, such as vendors that carry the item, specifications for the item, and other parts needed to build the item (item assembly structure).
- ▼ attach documents outside of the system that relate to the item.

## Service Items application

Use to define and manage purchased services by creating service item records and maintaining a list of vendors that supply the service item.

Item sets let multiple organizations within a company view 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. You identify an item set with a unique name or number, and each item that belongs to the item set has a unique item number.

When you create an organization, you associate an item set to it. When you create an item, by default the item is placed into the item set associated with the organization for your default insert site.

## Tools application

Use to manage information about the tools used to perform work. Tools are 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. You can add these tools to storerooms, and use them on job plans and work orders. When you use a tool on a work order, Maximo can reserve the tool in the specified storeroom. You also can issue, receive, and transfer tools from storerooms.

When you create a tool record you are defining the main attributes of the tool (such as commodity codes, issue unit, whether the tool is lotted, or rotating), along with any alternate tools that can be used in its place and a list of the qualifications necessary for a person to use the tool. All tools are marked as capitalized.

For each tool, you can also:

- ▼ add the tool to one or more storerooms



- ▼ specify the tool rate, GL accounts, associated vendor, and tax codes that vary by organization
- ▼ add a list of vendors that carry the tool
- ▼ list the specifications for the tool
- ▼ duplicate or delete a tool
- ▼ attach documents outside of Maximo that relate to the tool

## Stocked Tools application

Use to manage existing tools in storerooms. (To create new tool records, you must use the Tools application.)

You can add tools to a storeroom in the following ways:

- ▼ within 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 purchasing process

In the Stocked Tools application you can:

- ▼ view information about a stocked tool, including balance summaries, balance details, 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
- ▼ issue, return, or transfer a stocked tool
- ▼ view a tool's inventory transactions
- ▼ adjust a tool's physical count and current balance

## Inventory application

Create and manage information about items in inventory (stocked, non-stocked, and special order) and to know when your stock falls below a specified level so that you can reorder. You can track item balances, and vendors who supply an item, down to the bin and lot level for each storeroom.

You also can track the movement of items into and out of inventory with the Issues and Transfers application, the Work Order Tracking application in the Work Order module, and the Receiving application in the Purchasing module.

## Issues and Transfers application

Use to issue or transfer items from storerooms, or to return items to storerooms.

### Issuing and returning Items

You can issue items or tools directly to a work order, location, asset, or against a general ledger account either within a site or across sites within an organization.

You can also use the Issues and Transfers application to return an item or tool to a storeroom within a site. You cannot return an item or tool across sites or across organizations.

You can also issue or return an item from the Inventory application using the Issue Current Item action.

## Transferring items

You can use the Issues and Transfers application to transfer items or tools from one storeroom to another—either within a site, across sites within an organization, or across organizations. In addition, you can use a courier and view when an item is currently in transit. When you transfer items or tools from one storeroom to another between sites and organizations, the system adjusts balances accordingly.

## Considerations for transferring items or tools

If you are transferring an item or tool between storerooms within a site or across sites within one organization, you can do so with or without an internal purchase order.

If you are transferring an item or tool across organizations, you must have an internal purchase order and the organizations must share the same item set.

You can also transfer an item from the Inventory application using the Transfer Current Item action.

## Condition Codes application

Use to create and maintain a master list of condition codes for a particular item set.

A condition code allows you to manage your inventory by allowing you to track the balance and value of each item. The balance of the items is maintained at condition levels corresponding to condition codes. Each time the item is issued, transferred, or returned you specify the condition of the item based on codes you set up. You set up the condition code master list in the Condition Code application. You set up condition-enabled items in the Item Master application. You manage condition balances in the Inventory application.

## Storerooms application

Use to add and maintain information about storeroom locations, view items that are stocked in a storeroom, and define the GL account codes to be associated with a storeroom.

A storeroom is a location that contains inventory items. Storerooms have general ledger account codes associated with them to help track inventory costs.

Inventory stock can be issued to a courier or labor location, but these "inventory type" locations are not considered storerooms.

# IT Infrastructure module

The IT Infrastructure module (configuration process manager) applications enable management of the configuration items in your IT environment. They provide a logical model of the IT infrastructure by helping you to identify, control, maintain, and verify the versions of all configuration items in the environment and their attributes and relationships.

The IT Infrastructure module comprises the following applications:

- ▼ Configuration Items
- ▼ Relationships
- ▼ Collections

A related application, CI Types, which also helps to manage CIs, resides in the Administration module. See "CI Types application," on page 78 for more details.

## Configuration Items application

Use to define, create, and manage relationships among configuration items according to relationship rules that you specify in the Relationships application. A configuration item is any component of an information technology infrastructure that is under the control of configuration management and change control.

CIs vary greatly in complexity according to how you define them. A CI can be a complete service, including all hardware, software, documentation, and so forth. The smallest unit for a CI is typically the smallest component that you change independently of other CIs, such as a minor hardware component. In practice, most configuration items that you deal with are at a higher level, including assets, services, items, and locations.

You can use discovery tools such as IBM Tivoli Application Dependency Discovery Manager to locate and characterize some CIs. Discovered CIs are called "actual CIs."

For more details and help using the Configuration Items application, see the application's online help topic in the user interface.

## Relationships application

Create definitions and rules for relationships. A relationship describes the dependency or connectivity between configuration items using basic terms such as "runs on", "installed on", and "contained." You use these relationships in the Configuration Items application to associate configuration items with each other.

You can also define relationships between assets that you manage with the Maximo Linear Asset Manager product option.

You define and work with relationships in the following ways:

- ▼ In the Relationships application, you create the formal definitions and accompanying rules for relationships.

- ▼ In the Configuration Items application, you associate configuration items with each other using the relationships you define in the Relationships application.

When you use the Integration Composer to import actual configuration items, it creates a set of Relationships records based on the Common Data Model. You can use those relationships to associate configuration items. You can also add more relationships.

Relationships have properties and rules. For example, relationships can be unidirectional, such as "installed on", or bidirectional, such as "interfaces with." The directionality of a relationship affects what the system finds when a user searches for CIs based on relationships.

Relationships can be complementary in that one relationship implies another. For example, operating system A "installed on" computer B implies that computer B is "installed with" operating system A. "Installed on" and "installed with" are therefore complementary relationships.

Relationships specify whether you can have multiple CIs as the source and target. For example, a computer system can be "installed with" many operating systems, a "one to many" relationship. A computer "runs" one operating system, a "one to one" relationship. You can also have "many to one" and "many to many" relationships.

See the help topics in the Relationships application for information about Unidirectional and Bidirectional Relationships, and Relationship Cardinality.

## Collections application

Use to group configuration items (CIs), assets, and locations so that they are easier to access and handle in other applications. Instead of selecting from a list of all CIs, assets, or locations, a user specifies a collection and obtains the list of records in the collection.

For example, an IT employee wants to update a software product on some of the computers in a customer service department. The department is in multiple locations around the world. The IT employee accesses the Customer Service Department collection and selects computers from a list specific to that department.

By creating collections based on the appropriate details (for example, locations or departments), you can streamline the process of deploying software, managing change requests, responding to incidents, and many other tasks.

You can also use collections to provide users limited access to CIs. In the Security Groups application you can assign user groups to specific collections. Users in such groups can see only the CIs that are part of the specified collections.

## Migration submodule

You use the applications in the Migration submodule (within the System Configuration module) to migrate configuration content from one environment to another.

The Migration submodule comprises these applications:

- ▼ Migration Manager
- ▼ Migration Groups
- ▼ Object Structures

## Migration Manager application

Use to define, create, distribute, and deploy packages. The packages are used to transfer and deploy the many configuration changes possible with Maximo's configuration tool set from one environment to another. For example, you can transfer product configurations and customizations from a development environment to a test environment, and then to a production environment.

Migration Manager supports standard roll-out environments and enables a repeatable roll-out process that facilitates the monitoring, documentation, and management of regulatory compliance efforts.

You can group configuration objects to ensure that all related configuration data is collected from source environments and distributed to target environments. Missing configuration data can leave a target environment with incomplete or invalid product configurations, rendering that environment unusable.

With the Migration Groups application, you can work with group-level aggregations of configuration objects, rather than individual objects. This approach accelerates the definition and creation of packages in a source environment.

## Migration Groups application

Use to create groups of configuration objects and link related (dependent) groups to the objects that you create.

You group configuration objects to ensure that all related configuration data is collected from source environments and distributed to target environments. Missing configuration data can leave a target environment with incomplete or invalid product configurations, rendering that environment unusable.

The Migration Groups application lets you work with group-level aggregations of configuration objects, rather than individual objects. This approach accelerates the definition and creation of packages in a source environment.

## Object Structures application

Use to create, view, modify, and manage the processing logic of an object structure. An object structure is the common data layer that the integration framework uses for all outbound and inbound application data processing. An object structure consists of one or more sub-records that develops their XML content from a particular object.

An object structure can have the same object more than once in its definition. However, the objects must have a valid parent/child relationship and you cannot reference it more than once in the same hierarchical structure.

You can use the Object Structures application to define the processing sequence of an object. The object structure is the building block of the Integration Framework that lets integration applications perform the following functions:

- ▼ Publish and query application data
- ▼ Add, update, and delete application data
- ▼ Import and export application data

You can configure the object structure record to integrate with the following applications:

- ▼ Integration Framework
- ▼ Deployment Manager

# Planning module

You use the applications in the Planning module to plan how work should be performed. The Planning module comprises the following applications and submodule:

- ▼ Job Plans
- ▼ Routes
- ▼ Safety (submodule)

## Job Plans application

Use to create a detailed description of how a job is to be performed.

You create job plans using a different template for each type of job, including: preventive maintenance, repairs, inspections, and other tasks. The job plan description can include:

- ▼ the steps that must be performed to complete the work
- ▼ the number of workers needed to complete the work and the job skills they must have
- ▼ the supplies and parts that will be needed
- ▼ the services required to complete the work
- ▼ the tools that must be available to complete the work

After a job plan is created, it can be used to plan worker schedules, inventory stocks, and budgets. A job plan can be applied to an unlimited number of work records. After you apply a job plan to a work record, its resource estimates and tasks are copied to the work record.

## Job plans and work orders

A job plan can be applied to an unlimited number of work orders. After you apply a job plan to a work order, its resource estimates and tasks are copied into a work plan for the work order. You then can modify a work plan so that the

procedures, labor, materials, services, and tools are more specific to the work order, without affecting the original job plan template.

A job plan that does not have an Organization or Site specified for it may be used on any work order. If the job plan has an Organization and/or Site specified, then it can only be used for work orders for that Organization or Site.

## Routes application

Use to list related work assets that are considered “stops” along an inspection or maintenance route.

You can apply a route to a work order to create child work orders for each location or asset identifier listed on the route. You can also associate a route with a PM record. When you generate a work order for the PM, you also generate child work orders for each location or asset identifier listed on the route.

You can associate a job plan with each asset and location stop in the route. The job plan is copied to the child work orders that have been generated for each work asset. If a default safety plan is associated with the job plan when used on the selected work asset, that information is also copied to the work order.

## Platform Configuration submodule

You use the applications in the Platform Configuration submodule (within the System Configuration module) to configure many pieces needed in the system to build up something large. Also, use them for tasks typically done once, such as the initial configuration after an installation, or changing the layout of an HTML panel.

The Platform Configuration submodule comprises the following applications:

- ▼ System Properties
- ▼ Logging
- ▼ Domains
- ▼ Database Configuration
- ▼ Application Designer
- ▼ Communication Templates
- ▼ Actions
- ▼ Roles
- ▼ Escalations
- ▼ Workflow Designer
- ▼ Workflow Administration
- ▼ Cron Task Setup
- ▼ E-mail Listeners
- ▼ Object Structures
- ▼ Web Services Library
- ▼ Launch in Context

## System Properties application

Use to manage system properties and their values which are used by various product components.

A system property is defined as a key-value pair used by the product at a system level. For example: the key `mxe.int.globaldir` is a system property used by the product's integration component to manage integration related files. The value for the property is a directory on the hard disk that resides on the server machine (not the client workstation) where the integration component creates or accesses integration data files.

There are two types of system properties:

- ▼ Global Properties
- ▼ Instance Properties

## Global properties

A global property exists only at a system-wide level. This means that the property is applicable to all the product server instances (for example: the system application server) working with a common database. For example, the system property `mxe.logging.rootfolder` is a global property whose value is a directory on the hard disk of the server machine where the product's log files reside.

The key characteristics of global properties are:

**Online Changes Allowed** – This characteristic determines whether the user is allowed to change the value of a property using the System Properties application. Majority of the properties by default allow online changes through the application. Some properties such as `mxe.db.user` do not allow online changes. You must edit the corresponding properties file, re-build, and re-deploy the product's enterprise archive (EAR) files for the changes to take effect.

**Live Refresh** – This characteristic determines whether a new value for a system property can be applied and take effect immediately throughout the product. Majority of the properties by default allow Live Refresh. Live Refresh is an action item available from the Action menu or the application tool bar. Run this action for any property changes to take effect.

**Encryption of Property Values** – This characteristic determines whether the value of the property should be encrypted. The value is encrypted using the product's standard encryption functionality.

**Security Level** – This characteristic determines whether this property can be retrieved before establishing an authenticated connection to the product. There are three levels of security:

- **PUBLIC**: the property and its value can be accessed by unauthenticated client sessions.
- **SECURE**: the property and its value can be accessed by authenticated client sessions.
- **PRIVATE**: the property and its value can be accessed only within the product business object framework.

## Instance Properties

An Instance property is defined and associated with a specific product server instance. You can configure the system property `mxe.crontask.donotrun` to be an instance-specific property. You do this by associating the `mxe.crontask.donotrun` system property with a specific server (for example: `MXServer1`) and a value applicable only to that server (for example, a value of `BBCron`). As a result of this



configuration, the Bulletin Board crontask (BBCron) will not be executed on MXServer1, yet it can execute in another product instance, such as MXServer2.

## Logging application

Use to create and manage log settings and configure the log files that contain informational, warning, or error messages about the system.

Logging has three main components:

- ▼ **Loggers:** Loggers are components in the product that prepare log statements to be written to console or log file. Loggers are named entities or keys, for example: `log4j.logger.maximo.sql`. Loggers form a hierarchy. A logger is defined as an ancestor of another logger if its name followed by a dot is a prefix of the descendant logger name. A logger becomes the parent of a child logger if there are no ancestors between itself and the descendant logger. For example, `log4j.logger.maximo.sql` is the parent of `log4j.logger.maximo.sql.WORKORDER`. You can assign the following levels to Loggers: DEBUG, INFO, WARN, ERROR, and FATAL. A level indicates a type of event that the system logs.
- ▼ **Appenders:** You can send logging requests to multiple destinations. An output destination is called an appender. Appenders can exist for consoles or files. You can associate one or more loggers with a given appender. Alternatively, you can associate a single logger with multiple appenders.
- ▼ **Layouts:** A layout determines the output format of a log statement. A layout is always associated with an appender. For example, a Conversion Pattern such as `%d{dd MMM yyyy HH:mm:ss:SSS} [%-2p] %m%n`, results in the following log statement: `2007-05-07 14:07:41,508 [main] INFO MyApp - Entering application`

The Logging application supports two types of loggers: root and child. One or more child loggers always inherit from one root logger. In the Logging application, a root logger is termed 'Root Logger' while a child logger is termed 'Logger'.

The Logging application lets you perform the following tasks:

- ▼ create loggers that are components in the product that prepare log statements to be written to console or log file.
- ▼ associate the appropriate log level with each logger
- ▼ de-activate loggers except root loggers.
- ▼ configure appenders that represent a console or log files to which log statements are written.
- ▼ specify an appropriate file name for an appender.
- ▼ specify a log file size for an appender.
- ▼ associate a logger with multiple appenders.
- ▼ associate an appender with multiple loggers.

## Domains application

Use to define the values that appear in select value lists in some fields on the application pages and tabs of the user interface.

Users can click a select-value list and choose from a preset list of valid choices to populate the field. The defined lists of values are known as domains. The system uses many domains in its applications. As an administrator, you use the Domains application to add new domains or modify existing ones to fit with your business practices.

The system uses the following six kinds of domains:

- ▼ SYNONYM - These are special, reserved domains. You cannot add new SYNONYM domains or delete existing ones. You can add new synonym values.
- ▼ ALN - A simple list of values using one of the alphanumeric data types.
- ▼ NUMERIC - A simple list of values using one of the numeric data types.
- ▼ NUMERIC RANGE - A list of numeric values you define by specifying a range.
- ▼ TABLE - A dynamic set of values based on the values of another system object.
- ▼ CROSSOVER - A special type of table domain in which the system brings back another value (or values) from the specified record.

For more information about these domains, see the online help topics accessible from the Domains application.

## Database Configuration application

Use to create or modify the objects and attributes that are in the Maximo database and used by system applications.

Maximo database configuration is based on objects. There is a one-to-one correlation between an object and a table in the database. Behind the scenes, the business object fetches the columns of the corresponding table and presents them to you as attributes of the object.

You can perform the following tasks using Database Configuration:

- ▼ Change attribute definitions
- ▼ Attach domains to attributes
- ▼ Create user-defined objects
- ▼ Add attributes to existing objects
- ▼ Create and drop indexes
- ▼ Create views to look at data from a single, or multiple, objects
- ▼ Specify GL account formats
- ▼ Set the field length and format for certain fields
- ▼ Update statistics on indexes to improve database performance
- ▼ Configure the system with multiple languages
- ▼ Set up electronic signatures and electronic audit records

See the *System Administrator Guide* for more details on Database Configuration.

## Application Designer application

Use to create new applications (clones and custom applications) and tailor the pages of an existing system application.

Technical and non-technical users can use the drag and drop feature in the Application Designer's graphical interface to configure applications without editing a line of code.

Common design changes include moving fields and sections, and creating new fields, tables, and tabs. You can also create and copy applications, define signature options, and edit the toolbar and the Select Action menu.

The Workspace tab of the Application Designer is the work area for configuring applications. The Select Action menu on this tab provides actions to configure the following objects:

- ▼ Toolbar buttons
- ▼ Signature options
- ▼ Search menu
- ▼ Menu items in the Select Action menu for an application

You can also view and hide some application controls. Some controls do not appear in the application, such as the Default Value control. Use the Toggle Show All Controls menu item to either show or hide these controls while you view an application in the Workspace tab.

You can drag and drop controls (such as fields, check boxes, and sections) within the application and from the Controls Palette.

For more details on configuring applications, see the *Application Developer Guide*, and the help topics in the Application Designer application.

## Communication Templates application

Use to create and manage generic communication templates that users can use to standardize frequently used e-mail communications (also known as notifications).

For example, service desk agents can manually create and send e-mail communications from the Ticket applications (Service Requests, Incidents, and Problems), using standardized information from predefined communication templates. The recipients of these communications can respond, and agents can view the two-way dialog from the Communication Log in the Ticket applications. You can also use communication templates to create e-mail notifications for use with the automated workflow and escalation processes.

You can associate specific file attachments to a communication template, and you can also associate document folders to the template, which the system will search when a service desk user applied the template to a ticket. When a communication is actually sent, the system attaches to the communication any files that exist in the associated document folders along with those hard coded in the template itself.

## Actions application

Use to manage the administrative functions of creating actions and action groups within the workflow, escalation, and service level agreement processes. Actions are scheduled events that occur when a record leaves a Workflow node.

You can create actions to perform the following tasks:

- ▼ Initiate an application action
- ▼ Change the status of a record
- ▼ Execute a custom class or a specified executable program
- ▼ Set the value of a field on a record

For more information, see the online help topics available in the Actions application.

## Roles application

Use to create and manage roles, which define a function or position in a business. A role can represent a job title, such as a “department manager,” or an assigned duty, such as a watch officer. When a role is used as part of a communication template, escalation, service level agreement, or workflow process, it can determine the correct individuals to whom the process is routed.

You also can use a role to represent a specific person or a group of people.

When you create role records, you specify a role type to help the system determine how to resolve the role when it is encountered in a process.

You can create the following types of roles:

- ▼ PERSON – Used to route a record to a specific individual. You use the People application to create person records.
- ▼ PERSONGROUP – Used to route a record to one or all members of a person group. You use the Person Groups application to create person groups.
- ▼ USERDATA – Used to route a record based on a specific field within the person record or a field on a related or child record.
- ▼ DATASET – Used to route a record based on a specific field on a record, or a field on a related record or child record. You must specify a value in the Object field when creating a DATASET type role. The system routes the record to one or more persons based on the field that you specify in the Value field. Examples of fields that can be used with a DATASET type role include Affected User, Reported By, Supervisor, or Work Group.
- ▼ CUSTOM – Used when you want to use a custom class that resolves to one or more people. Custom classes are Java programs written to perform specific data management process within the system. The system routes the record to one or more persons based on the data returned by the custom class. The custom class must implement the interface `psdi.common.role.CustomRoleInterface` and be available from the `MXServer`'s classpath.

- ▼ **EMAILADDRESS** – Used when you want to notify one or more e-mail addresses. Because e-mail addresses might or might not represent individuals who have a person records created for them in the system, these addresses can be used for notifications, but not assignments.

## Escalations application

Use to automatically monitor the critical processes in your enterprise. The primary goal of escalation management is to ensure that critical tasks, such as those defined in service level agreements, are completed on time. You can also use escalations for events such contract expiration, a change in the status of a record (such as for invoices or contracts), or a change in the owner of a record (such as for service requests, incidents, or problems).

You can use escalations with any application. However, you are most likely to use them with the Service Desk applications, IT Asset Management applications, and workflow processes. For example:

- ▼ **Service Desk Management.** Service level agreements are contracts defined between a service provider and the recipient of the services. You can use escalations to determine how incidents, problems, and service requests are handled, and work to ensure that you remain compliant with any SLAs by solving problems in a timely manner.
- ▼ **IT Asset Management.** You can use escalations to monitor IT contracts, procurement, and inventory. By defining an escalation to alert managers 30 days in advance of a lease contract expiring, the managers can effectively manage leases and avoid penalties or costly lease extensions.
- ▼ **Workflow Processes.** You can use escalations to escalate assignments before they time out in a recipient's Inbox. When you assign specific steps in a workflow process to employees, those assignments display in their Inbox. If the assignments are not completed promptly, they time-out in the recipients' Inboxes. When this happens, you can use escalations to assign the tasks to other people. This helps tasks get completed on time and helps to prevent work backlogs.

You can create escalations at the site, organization, or system level. If you specify an organization or site, the escalation is restricted to that site or organization. If you leave both the Organization and Site fields empty, the escalation is available to all sites and organizations (system-wide).

The system provides you with numerous predefined escalations. You can tailor them to suit your business needs, or create new ones. You can also build and validate escalations incrementally while they are inactive, and activate them after validation.

Ideally, before using the Escalations application, you should be familiar with objects, SQL, and the object attributes that can be included in SQL statements, and understand the Actions and Communication Templates applications.

## Workflow Designer application

Use this graphical application to create a series of decision paths for records to flow through, called a workflow process.

You can view and modify assignments within workflow, escalation, and service level agreement processes. An active workflow process revision defines the different paths that a record can take as it moves through the business process. A workflow also defines the different actions and notifications that should occur at specific points in the process.

Automating repetitive business processes and record management processes affects greater efficiency and accountability throughout your enterprise.

You can use Workflow Designer for the following tasks:

- ▼ Consistently apply your business practices to records.
- ▼ Manage the movement of a record through a process from start to finish.
- ▼ Route a record and appropriate instructions to the appropriate individuals so that they can act on it.
- ▼ Ensure that individuals act on records assigned to them in a timely manner.
- ▼ Guide users through their interaction with a record.
- ▼ Ensure that an audit trail exists for each record and process.

Using the Workflow Designer requires a solid understanding of the following terms and technologies:

- ▼ nodes and node types
- ▼ connection lines
- ▼ notifications
- ▼ actions
- ▼ Workflow tools palette
- ▼ condition expression builder

To learn about these topics, and to design a workflow, see the [Workflow Implementation Guide](#), and the help topics in the Workflow Designer application.

## Workflow Administration application

Use to view and modify assignments within workflow, escalation, or service level agreement process.

Each active instance of a workflow appears as a row in a table in the Processes section of the application, where you can view, change, and stop active process instances. A single record can appear multiple times in the table if it is controlled by multiple workflow instances. You can see which version of a revised process was used to create each instance, the ID of the person who routed each record into workflow, and the date and time that the process was initiated. You also can see the record key (such as the work order number or purchase order number) and the Site ID. When a record leaves the control of Workflow, the record is automatically removed from the table.

Use Workflow Administration for the following tasks:

- ▼ View Workflow assignments
- ▼ Reassign Workflow assignments
- ▼ Delete Workflow assignments
- ▼ Stop active processes, removing the record from the control of the processes

## Cron Task Setup application

Manage cron tasks, which are jobs that run (as background tasks) automatically and on a fixed schedule.

The system contains a set of default cron tasks, but you can also create custom cron tasks to fit your business needs. Cron tasks include activities like generating preventive maintenance work orders and reordering inventory items on a schedule. For more information on creating custom cron tasks, see your software developer kit.

Using the Cron Task Setup application, you can add cron tasks, manage cron task instances, remove cron tasks or their instances, and modify cron task parameters. You can also change the “Active?” status of a cron task or adjust its schedule. Cron tasks can be rescheduled and parameter values can be changed without stopping and restarting the server.

## E-mail Listeners application

Use to receive and process incoming e-mail messages. This application can monitor multiple e-mail accounts to retrieve messages, and it supports embedded and normal message attachments.

An example of an e-mail account used for this purpose is `customer_service@company.com`. The application supports multiple attachments for each message, either inline attachments (for example, a screen capture within the body of the message) or standard attachments. The application supports POP3, and IMAP e-mail protocols. These protocols are the standard mail access protocols that a client program uses when it retrieves e-mail messages from a mail server.

E-mail Listeners checks each account at periodic intervals which you establish. Based on the subject line of the e-mail message, E-mail Listeners can determine whether the e-mail is a new request for help or is a follow-up to an existing service request (SR), which is a type of ticket. You create tickets as a way to track communications from a user, capture information from the sender and determine what, if any, further action is needed.

E-Mail Listeners submits the contents of the e-mail message to a predefined workflow process. This workflow process creates and updates service requests. You can customize this workflow process or create new ones to suit your needs. The system captures all communications from the originators of the e-mail messages in the Service Desk communication log. For more information about communication logs, see the online help for Service Requests.

To setup the JMS queue that E-mail Listeners requires on the application server, see the *Installation Guide*. To configure E-mail Listeners to support your business processes, see the *System Administrator Guide*. To use the feature, see the online help topics available in the E-mail Listeners application.

## Object Structures application

The Object Structures application is accessible from several different modules. For a description, see the “Object Structures application,” on page 102.

## Web Services Library application

Use to create, modify, and delete Web services which are used by external applications to query or to send transactions to the integration framework. You also can generate schema and Web Service Description Language (WSDL) files for any Web service that you deploy.

You can deploy a Web service for the following Integration Framework services:

**Object Structure Web Service** - Consist of and rely upon the definitions in object structures. Object structure web services do not use exit processing available to enterprise services. An object structure web service supports five operations through its WSDL:

- ▼ Create
- ▼ Delete
- ▼ Query
- ▼ Sync
- ▼ Update

**Enterprise Web Service** - Consist of the definitions in enterprise services. Enterprise services provide exit processing and optional Java Message Service (JMS) support. The integration framework creates individual enterprise web services for the operation defined in an enterprise service (one operation per service). The operations supported in an object structure service are also supported in enterprise web service. You can deploy an enterprise web service to use a JMS queue (asynchronous process) or to bypass the JMS queue (synchronous process).

**Standard Web Service** - Consist of methods defined in application services. The methods annotated in the application services are the methods available for web service implementation. The integration framework links input and output parameters of the methods to the WSDL operations.

## Launch in Context application

The Launch in Context application is accessible from several different modules. For a description, see the “Launch in Context application,” on page 107.

## Preventive Maintenance module

You use the applications in the Preventive Maintenance module to manage the work performed on a regular schedule in order to keep assets running efficiently. The applications in the Preventive Maintenance module can help you to plan and budget for regular maintenance work by planning the labor, material, service, and tool needs of your regularly scheduled maintenance and inspection work orders.

The Preventive Maintenance module comprises the following applications:

- ▼ Preventive Maintenance
- ▼ Master PM



## Preventive Maintenance application

Use to create and modify master PMs, which are templates for other PM records.

On a PM record, you schedule job plans to be performed for preventive maintenance work, and then the system generates work orders from the PM.

You can also group PMs into hierarchies that model your asset hierarchies and generate sequenced work order hierarchies.

## Master PM application

Use to create and modify master PMs, which are templates for other PM (Preventive Maintenance) records.

A master PM does not generate work orders like other PMs. Instead, it is used as a template from which to generate other PMs, called associated PMs. Associated PMs are managed in the Preventive Maintenance application.

You can create associated PM records from master PM records, or make associations between existing PM records and a master PM. You can use the scheduling information on a master PM record to update its associated PM records.

## Purchasing module

You use the applications in the Purchasing module to manage the purchasing process, including obtaining requests for quotations (RFQs), purchasing the materials and services, and then receiving and invoicing them. The applications also help you to maintain information about the companies from which you purchase, and to integrate legal terms and conditions into the purchasing process.

The Purchasing module comprises the following applications:

- ▼ Purchase Requisitions
- ▼ Purchase Orders
- ▼ Receiving
- ▼ Invoices
- ▼ Request for Quotations
- ▼ Companies
- ▼ Company Master
- ▼ Terms and Conditions

## Purchase Requisitions application

Use to ask the purchasing department to order materials and services. A purchase requisition (PR) is a written request issued internally to a purchasing department to order items or services.

You can create two types of PRs:

- ▼ Internal PRs: requesting the transfer of materials from another company storeroom
- ▼ External PRs: requesting the purchase of the necessary materials from an outside vendor. You can specify the vendor, if known

Purchase requisitions created automatically via the inventory reorder process are also visible in the Purchase Requisitions application. Purchase requisitions can also be created via Workflow from material requisitions (MRs) created in the Desktop Requisitions application described in “Desktop Requisitions submodule,” on page 98.

Depending on your business processes, Maximo may automatically create purchase orders (POs) from PRs, or a purchasing agent may need to review and approve the PR before creating a PO. Large purchases may require the creation of a request for quotation (RFQ). You use the Request for Quotations application to create RFQs, record the vendors that the RFQ is sent to and the quotations received, and to award the quotation lines to one or more vendors. Once you have awarded quotation lines, you can create purchase contracts and POs from an RFQ.

## Purchase Orders application

Use to purchase materials and services from an external supplier or an external vendor.

You can create POs in three ways:

- ▼ Directly from the Purchase Orders application
- ▼ From purchase requisitions (PRs)
- ▼ From requests for quotations (RFQs)

You also use this application to create change orders.

Purchase orders created automatically via the inventory reorder process are also visible in the Purchase Orders application.

## Receiving application

Use to receive materials into inventory and record the receipt of services.

When you receive items, the system increases balances in the Inventory application or issues direct issue items directly to an asset, location, or work order. You can use the Receive Rotating Items action to create records in the Assets application for rotating assets.

## Invoices application

Use to record invoices (and debit and credit notes) from vendors and match them against purchase orders and receipts for approval. An invoice is a bill from a vendor for delivered products or services. You can also create invoices for which there are no receipts. Approved invoices can be routed to Accounts Payable.

The invoice you create can represent one of these invoice types:

- ▼ An invoice related to a single purchase order—you enter information such as the invoice number, corresponding PO number, any receipts recorded for the PO, and information specific to the invoice.
- ▼ An invoice related to many purchase orders for a single vendor—you enter general invoice data on the Invoice tab, including the vendor, then list the related POs on the Invoice Lines tab.
- ▼ An invoice without a related purchase order—typically, such an invoice represents a bill for which there is no purchase requisition or purchase order. You just enter invoice-specific information. This could be appropriate if, for example, you receive an invoice for rent or a phone bill.

## Request for Quotations application

Use to request and manage vendor quotations. A request for quotation (RFQ) is a request for a price quote that you send out to one or more potential suppliers. Assessing collected quotations helps you to determine which vendor best meets your needs.

To list a vendor on the RFQ, the vendor must have a record in the Companies application. In the RFQ application, you can specify line items, required delivery dates, and other conditions you want the vendor to meet for the delivery of an item or service.

You can create an RFQ for any of the following circumstances:

- ▼ The stock count of a stocked item drops below a certain level and you must place another bulk order.
- ▼ A requisition is received for an item or service that requires a quotation each time due to item price or other requirements.
- ▼ Someone at your site requests a quote for an item or service. It can be for a normally stocked item or for an item not normally ordered, such as a special order or non-stocked item.
- ▼ You need to do commodity bulk buying for a certain period of time. This is typically for many items with common commodity codes. The quotation might not be copied to a PO immediately, but the pricing is set.
- ▼ When you receive the quotations from the vendors, you enter them into the Request for Quotations application one at a time. At the end of the process, you review the quotations and award one quotation for each RFQ line. The quotations are then converted to one or more purchase orders or contracts, depending on the procurement flow within your organization.

## Companies application

Use to manage data about vendors, manufacturers, and other companies with whom you do business.

Vendors can have parent companies or multiple vendor locations for a single company. Using reports, you can determine total year-to-date expenditures with a single organization, regardless of its location.

Company information must be entered in the Companies application before other modules, such as Inventory and Purchasing, can access it.

## Company Master application

Use to create company master records that belong to a particular company set.

Company master records contain information pertaining to companies such as the default contact person, 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 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.

## Terms and Conditions application

Use to create and maintain a library of terms and conditions that can be added to a purchasing document or contract. These terms can contain information such as liability concerns, shipping and handling details, or delivery time expectations.

The terms entered in the Terms and Conditions application are available from the Terms and Conditions tabs in Purchasing and Contracts applications. From the tabs, you can select a term from the library to associate with that purchasing or contract record.

## Reconciliation submodule

You use the applications in the Reconciliation submodule (within the Administration module) to evaluate data about information technology devices and networks and view the results of the evaluation.

You use these applications to configure a behind-the-scenes process that compares objects from one data set (Data Set 1) with objects in another data set (Data Set 2). The reconciliation process identifies successful matches as well as discrepancies and variances between the two sets of data.

Typically Data Set 1 contains information about authorized objects: that is, data that you recorded about what you have acquired and installed. This data represents your authorized inventory, how things should be and what you have planned. Data Set 2 typically contains information that a discovery tool collects about objects actually deployed in your enterprise.

To define the parameters for a reconciliation, you create a reconciliation task that combines the elements required for a reconciliation into a specific task that you schedule for execution using the Cron Task Setup application. A reconciliation task consists of three possible components: a task filter (optional), one or more link rules (required), and one or more comparison rules (optional). The Reconciliation module contains applications that let you create these components.

After the system executes a reconciliation task, you can view the results of the reconciliation in either a link results or a reconciliation results application.

This section describes the Reconciliation module applications. For more details on using them to reconcile the data in your environment, refer to the *Reconciliation Module Guide*.

The Reconciliation submodule comprises these applications:

- ▼ Reconciliation Tasks
- ▼ Task Filters
- ▼ Link Rules
- ▼ Comparison Rules
- ▼ Asset Link Results
- ▼ Asset Reconciliation Results

## Reconciliation Tasks application

Use to create, view, modify, duplicate, and delete reconciliation task records. A reconciliation task combines the elements required for a reconciliation into a specific task that you schedule to run using the Cron Task Setup application.

A reconciliation task consists of three possible components:

- ▼ a task filter (optional)
- ▼ one or more link rules (required)
- ▼ one or more comparison rules (optional)

When you schedule a reconciliation task in the Cron Task Setup application, you must use the name specified in the Reconciliation Task field in the Reconciliation Tasks application to set up the cron task. You can schedule cron task instances for multiple reconciliation tasks. You cannot delete reconciliation task records that are associated with a cron task.

After the system processes a reconciliation task, you can view the results of the reconciliation. If you use Tivoli Asset Management for IT, your installation includes Asset Link Results and Asset Reconciliation Results applications. If you use Change and Configuration Management Database (CCMDB), your installation includes CI Link Results and CI Reconciliation Results applications.

## Task Filters application

Use to create, view, modify, duplicate, and delete task filter records. A task filter record specifies a subset of objects that you want to evaluate when you execute a reconciliation task. A task filter is an optional component of a reconciliation task that you can use to limit the scope of a reconciliation task.

Once you create a task filter, you use the Reconciliation Tasks application to associate the filter with a specific reconciliation task, and the system applies the task filter each time the reconciliation task is run. Creating a task filter for a reconciliation task is optional.

## Link Rules application

Use to create, view, modify, duplicate, and delete link rules. A link rule is a required component of a reconciliation task. When the system processes a reconciliation task, a link rule establishes the basis for reconciliation by identifying a top-level object and attribute in one data set to link to a specific attribute of a top-level object in another data set.

Link rules are often based on unique identifiers. The attribute most commonly used to link assets and deployed assets is a serial number or asset tag.

After you create a link rule, you use the Reconciliation Tasks application to associate the rule with a specific reconciliation task, and the system includes the link rule each time it executes the reconciliation task. When the system executes the reconciliation task, it evaluates each link rule and attempts to match the object and attribute in the first data set with the object and attribute in the second data set.

## Comparison Rules application

Use to create new comparison rules; view, modify, or duplicate existing comparison rules; and delete comparison rules.

A comparison rule is an optional component of a reconciliation task. It defines how to compare objects or attributes of a child or parent object in one data set with a child or parent object in another data set when the system executes a reconciliation task. For example, you can set up a comparison rule to compare software on computers in IT assets with software on computers in deployed assets. A task can include more than one comparison rule.

## Asset Link Results application

Use to view and manage the results that are generated when the system executes a reconciliation task that compares two different sets of IT asset data.

Each reconciliation task contains one or more link rules that establish the basis of a reconciliation by identifying a top-level object and attribute in Data Set 1 (typically authorized asset data) to match with a specific attribute of a top-level object in Data Set 2 (typically deployed asset data). If the system processes a link rule and finds a one-to-one link between a top-level authorized asset and a deployed asset, it creates a link result record that you can view in the Asset Link Results application.

However, if the system finds no link or finds multiple links between a top-level authorized asset and a deployed asset, it creates a link failure result record that you can view in the Asset Reconciliation Results application

## Asset Reconciliation Results application

Use to view and manage the results that are generated when the system executes a reconciliation task that compares two different sets of IT asset data.

The Asset Reconciliation Results application displays the following results:

### Link rule failure results

When the system processes a link rule in a reconciliation task and finds no link or finds multiple links between an object in the first data set (typically a top-level authorized asset) and an object in the second data set (typically a deployed asset), it creates a link failure result record that you can view in the Asset Reconciliation Results application.

To view successful link results, use the Asset Link Results application.

### Comparison rule results

If the system finds a successful link between an object in the first data set and an object in the second data set, it processes any comparison rules in the reconciliation task and creates comparison rule result records that you can view in the Asset Reconciliation Results application.

When you define a reconciliation task in the Reconciliation Tasks application, you specify the type of comparison results that you want to display in the Asset Reconciliation Results application. You can select from the following options:

- ▼ all results, both successful and failed matches
- ▼ instances where the object and attribute of the authorized asset failed to match the deployed asset
- ▼ instances where the object and attribute of the authorized asset successfully matched the deployed asset

If you want to view only link rule failure or comparison rule results, you can use the advanced search features to display only link results or comparison results.

You can also use the Asset Reconciliation Results application to record information about how you resolve discrepancies between authorized asset and deployed asset data. If you evaluate a discrepancy and resolve it, you can mark a result record as resolved. You can also enter information about how you resolved the issue or an explanation about why the discrepancy exists in the Comments field on the Asset Reconciliation Result tab.

You use the Asset Reconciliation Results application to perform the following actions:

- ▼ View asset reconciliation results.
- ▼ Mark asset reconciliation results as resolved.
- ▼ Delete asset reconciliation results.

## Reporting submodule

You use the applications in the Reporting submodule (within the Administration module) to create and view key performance indicators (KPIs), manage reports for users, and to set and view report-based security.

The Reporting submodule comprises two applications:

- ▼ KPI Manager

- ▼ Report Administration

## KPI Manager application

Use to create key performance indicators (KPIs) to track critical performance variables over time.

KPIs can be viewed either in the Start Center or directly with the KPI Manager. KPIs can also be created with the Create KPI action, if you have authorization, from within other applications.

## Report Administration application

Use to create reports, generate and preview request pages, add report parameters, display reports as toolbar icons, e-mail reports, and specify a schedule for running reports. Also, use to import report design files and libraries into the Maximo Database, and set or view report security at the group level.

As the Report Administrator, you can specify the following settings:

- ▼ record limits, which define the maximum number of records against which end users can execute reports
- ▼ the availability of reports and how they appear on the applications' toolbars
- ▼ report security

For information about how to use this application, see the *Report Developer Guide*, and the Report Administration application's online help topics.

## Resources submodule

You use the applications in the Resources submodule (within the Administration module) to create records about the people in your workforce. The people whom you document can include internal and external workers, and other people whose names or IDs might be listed on other records.

The Resources submodule comprises five applications:

- ▼ Labor
- ▼ Qualifications
- ▼ People
- ▼ Person Groups
- ▼ Crafts

## Labor application

Use to define and maintain labor records. You can provide personal and work related information about laborers, who could be employees or a contractors.



Additional information can include type of work, location of work, procurement card information, and overtime refused by the laborer.

In addition, you can also specify crafts, skill levels, qualifications, and certifications associated with labor.

## Qualifications application

Use to manage the qualifications of the laborers in your workforce, and the certification requirements for each qualification. Using a laborer's record, you can associate each laborer with a qualification. You can also view the qualifications associated with a particular labor record and renew and change the status of their qualifications.

A qualification is often, but not necessarily, indicated by a license or certificate, signifying proficiency in a particular skill or skills. A governing board can award a certificate. Some certificates have expiration dates and individuals who hold the certificates must renew them periodically.

## People application

Use to create and maintain records about people. This application stores personal and official information about individuals, such as users, laborers, asset owners, supervisors, and individuals who receive Workflow notifications.

You create person records for any individual who could appear somewhere on another record. For example:

- ▼ in a Reported By or Affected Person fields on a service request.
- ▼ as a Supervisor on a labor record.
- ▼ as the value in a Ship To or Bill To Attention field on a purchasing record.

The person record serves as the central record for personal information about individuals. For example users, laborers, asset owners, supervisors, and individuals who receive Workflow notifications via e-mail.

A person record:

- ▼ Must exist for every individual before you can create other records. When you create a user or labor record, you choose a person record to associate with it.
- ▼ Contains personal, employee, and workplace information about an individual, including:
  - Name, employee status, and address
  - Job title, code, department, supervisor, and e-mail address
  - Person, work Site, location, time zone, ship and bill to address, and language
  - Workflow, work order, significant dates, and procurement card information.

Some companies may choose to create person records for all of their employees as a way to manage employee information (name, address, hire date and so forth). Others may choose to just create person records for laborers and other workers who will be using the system as part of their jobs.

## Person Groups application

Use to create and maintain person groups. A person group consists of people who might or might not be workers. Once you have created these groups, you can designate a person group as any of the following options:

- ▼ a work group
- ▼ an owner group on a work order
- ▼ an owner group on a ticket

A person group can also be the recipient of a document routed by a Workflow process. If a document is routed to a person group, everyone in the group receives it unless you configure the process to send it only to the individual whose calendar indicates that they are available.

## Crafts application

Use to define and maintain craft records. The craft code usually reflects the type of work done by employees and contractors.

The Crafts application is also used to define skill levels, standard rates, and premium pay codes for crafts.

Multiple skill levels can be specified for each craft. For example, to make a distinction between a junior electrician and a senior electrician, you do not create two separate craft records. You can create a single craft record of ELECTRICIAN and setup skill levels of APPRENTICE and MASTER within the ELECTRICIAN craft. Each skill level within the ELECTRICIAN craft can have different standard rates.

The Crafts application also lets you associate labor records with crafts and skill levels.

## Safety submodule

You use the applications in the Safety submodule (within the Planning module) to inform workers of potential dangers in their work environment and to provide information to protect workers from those dangers. The hazards, precautions, and procedures that you define in these applications can apply to assets, work locations, or both. You associate the records that you create in these applications with Asset, Location, PM (Preventive Maintenance), and Work Order records.

The Safety submodule comprises these applications:

- ▼ Hazards
- ▼ Precautions
- ▼ Lockout/Tagout
- ▼ Safety Plans

## Hazards application

Use to define hazards that exist in the workplace and related safety precautions.

By defining a hazard you ensure that employees working with work assets are informed of the potential dangers associated with the hazard. When you associate a precaution or tag out procedures with a hazard, you enable the employee to reduce or eliminate the risks involved with the asset. Use the Attached Documents tab to associate the hazard with more information in the form of a word processing file, spreadsheet, or Web page.

The safety hazards that you define in this application can be associated with work assets in the Equipment application or the Locations application. Then, in the Safety Plans application, you can define a set of safety information necessary to follow a given job plan on a given piece of equipment or at a particular location. Finally, in the Job Plans application, you can associate defined safety plans with specific job plans.

## Precautions application

Use to define safety precautions to prevent hazards in the workplace. You can associate these safety precautions with workplace hazards in the Hazards application.

When you define precautions and associate them with workplace hazards, you enable employees to reduce or eliminate hazards involved with workplace tasks. Using the Attached Documents tab, you can also associate a precaution with more information in the form of a word processor file, spreadsheet, or Web page.

## Lockout/Tagout application

Use to create a detailed description of how to take work assets out of service or how to place them back in service, to ensure a safe work environment.

You create a tag out procedure to eliminate a defined hazard on a specific asset or at a specific location. To create a tag out procedure, you describe the lock out tasks needed to accomplish the tag out.

Lock out tasks are steps in a tag out procedure. A lock out task can apply to any of the following:

- ▼ Assets listed in the Asset application
- ▼ Location listed in the Locations application
- ▼ Description of a locking device not in either the Asset or the Locations application
- ▼ Description of an action to be taken, not referring to any device or asset

## Safety Plans application

Use to create a detailed plan of how to safely service assets or locations. Safety procedures can be either generic safety plans for use on all work assets or locations, or specific to a particular work asset or location.

In the Job Plans application, you develop step-by-step procedures to do a particular type of work. Then, you associate safety plans with specific job plans in the Job Plans application. Associated safety plans can still be used with other assets with which they are not associated.

## Security module

You use the applications in the Security module to implement and manage security for users and groups.

The Security module comprises the following applications:

- ▼ Security Groups
- ▼ Users

## The Security Groups application

Grant access to sites, applications, and menu options by using security privileges. You set up security privileges by group. You use the Security Groups application to create groups. Then you can specify group privileges and restrictions for applications and options, as well as other settings.

You grant users security rights by assigning them membership in one or multiple groups. You can assign users to groups from both the Security Groups and Users applications:

- ▼ In the Security Groups application, you assign users to groups.
- ▼ In the Users application, you assign groups to users.

The combination of groups to which a user belongs determines an individual user's security privileges. You must create additional groups, with different sets of rights, to be able to assign users different sets of privileges. You can view a user's security privileges graphically on the Security Profile tab in the Users application.

Using LDAP (Lightweight Directory Access Protocol) with the system entails special consideration. Consult the System Administrator Guide for information on integrating the system with LDAP.

## Users application

Use to add users to the system and manage user privileges.

You can perform these tasks in the Users application:

- ▼ Manage user status
- ▼ Manage user sessions
- ▼ View user security profile
- ▼ Specify various user defaults, such as default insert site, storeroom, language, and general ledger accounts for purchasing (the default purchasing account is the general ledger account that will be used for desktop requisitions, but not for all purchasing.)
- ▼ Grant users the right to access inactive sites
- ▼ Specify which users can access a screen reader to assist in interacting with the system
- ▼ Set system-wide security controls and new user default groups
- ▼ Change passwords (if you are using an external directory, this functionality is not available)
- ▼ Create database users (if you are using an external directory, this functionality is not available)

The Users application and the Security Groups application work together. You use the Security Groups application to define security groups, then assign users to one or more groups to create security profiles which control authorizations. It is important to plan your security strategy carefully before you create security groups.

For more information about security groups, see the Security Groups Help.

In addition to granting rights to individual users, you can add, delete, and replace group privileges for multiple users at one time.

## Self Service module

Self-Service users (with proper permissions) can register themselves in the system and use the applications in the Self-Service submodules (Desktop Requisitions and Service Requests) to create records without the assistance of an administrator or a service desk agent. See each submodule for a description of its applications.

## Service Requests submodule

As a self-service user, you use the applications in the Service Requests submodule (within the Self Service module) to create and view a service request for equipment repair or configuration, and to request, and search for information.

You can choose a template to best suit your specific request type, and you can view existing requests and drafts. The resulting requests (tickets) can be

viewed and processed by a service desk agent using the Service Request application in the Service Desk module.

The Service Requests submodule comprises these applications:

- ▼ Create Service Request
- ▼ View Service Request

## Create Service Request application

Use to create new service requests for a repair or a change to an asset. You can request the service for yourself or on behalf of another party. You can attach documents or Web pages to the request. When a service desk agent receives the automatically-routed service request, the agent takes appropriate action and can communicate ongoing activities or a resolution to you.

## View Service Request application

Use to view existing service requests.

You can view and print details for a service request and add or view attachments, such as documents or Web pages. You can also view and update the Service Request log, which contains communications to and from the service desk agent who is handling this request.

# Service Desk module

You use the applications in the Service Desk module to manage customer requests for help, information, and services. Specifically, you can create and manage service requests (a type of ticket), manage activities (a class of work order) and tasks to describe general work that needs to be done on a ticket record, and to create a ticket template (standard model) to hasten ticket data-entry time.

The Service Desk module comprises the following applications:

- ▼ Activities and Tasks
- ▼ Service Requests
- ▼ Ticket Templates

## Activities and Tasks application

Use to plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of the work being performed.

An activity describes the high level work that is added directly to a ticket during the ticket management process. You do not create activity records in the Activities and Tasks application. Activity work orders are defined as child work orders and cannot exist without a parent record.

You can manage activity work orders created in other applications, and you can manage tasks on ticket records. Non-service-desk workers or technicians can use the Activities and Tasks application to report the completion of work that was assigned to them by service desk agents.

A service desk agent can assign each activity to a different owner or owner group, if needed. For example, hiring a new employee might generate a service request that includes the following activities:

- ▼ Issue security badge — assigned to the Security group
- ▼ Issue computer — assigned to the Information Technology group
- ▼ Assign telephone number — assigned to the Telecommunications group

## Service Requests application

Use to create, view, and resolve service requests from customers.

The purpose of a service request can be to resolve an issue, obtain new service, obtain information, or change a current service. Either a service desk agent or a customer can create a service request.

An agent creates a service request record to track a customer's request, capture request details, and determine what, if any, further action is needed.

A customer can approach a service desk agent in person, or ask for service using e-mail, phone, or another form of communication. A customer also can create a self-service request using the **Create Service Request** action that is available from any ticket or work order application, or the **Create Service Request** (self-service) application in the Service Requests module. The agent views these requests in the Service Requests application and either resolves them or delegates them to another party for resolution.

Service request records are a type of ticket. Other ticket types are incidents and problems. The ticket applications are closely related and share many features, including the ability to define relationships between tickets, link them together for information purposes, and view the linkages and details in the appropriate applications.

Depending on how your company chooses to implement the Service Desk module, a service request may lead to the creation of additional ticket or work order records.

If your company has created templates for common service desk calls, you can apply a template to a new service request record by selecting the **Apply Service Request Template** action from the Select Action menu. The system copies data from the ticket template, which you can then edit as needed.

Depending on the nature of the request, service requests may be managed and closed in the Service Requests application, or they may require the creation of additional ticket or work order records to fulfill the request.

## Ticket Templates application

Use to create and manage generic templates that Service Desk environments can use to standardize common or high-volume service request, incident, or problem tickets.

A **ticket template** is a model for a standardized ticket. When you apply a ticket template to a ticket record, information from the template is copied to the ticket, saving data entry time.

## Service Requests submodule

Self-service users can use the applications in the Service Requests submodule (within the Self Service module) to create service request for equipment repair or configuration, and view existing service request information.

A self-service user is one who can self-register, log in, and use the system to create or view service requests without the assistance of a service desk agent.

The Service Requests submodule comprises these applications:

- ▼ Create Service Request
- ▼ View Service Requests

## Create Service Request application

As a self-service user, use to create service requests for a repair or a change to an asset.

You can request the service for yourself or on behalf of another person. You can attach documents or Web pages to the request. After creating the service request, you can review the details or submit another service request. The system routes each service request to a service desk agent. The agent takes appropriate action and can communicate ongoing activities or a resolution to you.

The Create Service Request application works in combination with the View Service Requests. With a single login, you can easily create a service request and view the details, including all correspondence with the service desk, about each request that you have made.

## View Service Requests application

As a self-service user, use to view the details about each service request that you have created, including the status of the request and all correspondence with the service desk.

You can view and print details for a service request. You can add or view attachments, such as documents or Web pages, view the attributes associated with the service request, and view solutions applied to the service request. You can also view and update the Service Request log, which contains communications to and from the service desk agent who is handling this request.



# System Configuration module

The System Configuration module contains two submodules:

- ▼ Platform Configuration
- ▼ Migration

See each submodule for a description of its applications.

## Task Management module

The Task Management module contains the Activities and Tasks application, which you use to plan, review, and manage activities and tasks. When you create an activity, you initiate the work process and create a historical record of work being performed. See the application's online help topics for more information.

## Work Orders module

A work order is a request for work to be performed. You use work orders to track the work that has been performed in the past, and future work that is being planned. The information that is contained on a work order includes the tasks that were performed; the labor hours, services, materials, and tools required to do the work, the assets worked on, and the locations where the work was performed.

The Work Orders module comprises the following applications:

- ▼ Work Order Tracking
- ▼ Labor Reporting
- ▼ Quick reporting
- ▼ Activities and Tasks
- ▼ Assignment Manager
- ▼ Service Requests

## Work Order Tracking application

Use to create, review, approve, and manage work orders for work on assets and locations. A work order is a request for work to be performed.

Using the Work Order Tracking application, you can specify the tasks that need to be accomplished, and the labor, materials, services, and tools needed to complete the work.

Managing a work order often involves additional work orders, for example follow-up work, or managing a project that involves multiple work orders. Managing work orders also involves recording costs, communications, and other data about the work.

## Labor Reporting application

Use to report the type and total number of hours of work that were performed by external contractors or internal employees. You can enter labor information by work order, labor ("timecard" reporting), ticket, or contract/vendor.

## Quick Reporting application

Report work on open work orders or small jobs. You can plan, review, and approve work orders (created in other applications) for assets and locations. When you create a work order, you initiate the maintenance process and create a historical record of the work that is being performed. You can capture this work using Quick Reporting.

## Activities and Tasks application

The Activities and Tasks application is accessible from several different modules. For a description, see the "Activities and Tasks application," on page 140.

## Assignment Manager application

Use to dispatch urgent work and schedule labor to planned work requirements.

You can view work order assignments and their craft, skill level, vendor, contract, and organization requirements; dispatch labor according to work priority, or view labor and schedule work according to labor availability.

You can use Assignment Manager's "Filter Labor to Match Work" and "Filter Work to Match Labor" actions to dynamically link the Work List and Labor List, which facilitates assigning work to laborers.

## Service Requests application

Use to create, view, and resolve service requests from customers.

The purpose of a service request can be to resolve an issue, obtain new service, obtain information, or change a current service. Either a service desk agent or a customer can create a service request.

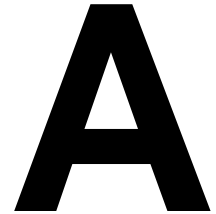
An agent creates a service request record to track a customer's request, capture request details, and determine what, if any, further action is needed.

A customer can approach a service desk agent in person, or ask for service using e-mail, phone, or another form of communication. A customer also can create a self-service request using the **Create Service Request** action that is available from any ticket or work order application, or the **Create Service Request** (self-service) application in the Service Requests module. The agent views these requests in the Service Requests application and either resolves them or delegates them to another party for resolution.










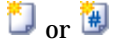




Service request records are a type of ticket. Other ticket types are incidents and problems. The ticket applications are closely related and share many features, including the ability to define relationships between tickets, link them together for information purposes, and view the linkages and details in the appropriate applications.






















# Keyboard Shortcuts



You can use the following keyboard shortcuts to navigate the application pages.

Button	Button Name or Action	Keyboard Shortcut
<b>General Navigation</b>		
	Move from one interface element to the next.	Tab key
	Select buttons, links, and menu options.	Enter key
	Select or clear a check box.	Spacebar
	Display field help for field in focus	Alt + F1
	Expand the Help menu	Alt + l (lower case "L")
<b>Global Navigation Links</b>		
NOTE: The shortcut highlights the link, you must click the Enter key to activate it.		
	Bulletins	Alt + B
	Go To	Alt + G
	Reports	Alt + R
	Start Center	Alt + C
	Profile	Alt + P
	Sign Out	Alt + S
	Help	Alt + H
	Return	Alt + R
	Return with Value	Alt + W
<b>Toolbar Buttons</b>		
 or 	Insert New Record	Ctrl + Alt + I
	Save Record	Ctrl + Alt + S
	Clear changes	Ctrl + Alt + C
	Previous Record	Ctrl + Alt + P

Button	Button Name or Action	Keyboard Shortcut
	Next Record	Ctrl + Alt + N
	Change Status	Ctrl + Alt + A
	Create KPI	Ctrl + Alt + K
<b>Application Specific Toolbar Buttons</b>		
	Assign Labor (Assignment Manager)	Ctrl + Alt + L
	Finish Assignment (Assignment Manager)	Ctrl + Alt + F
	Interrupt Assignment (Assignment Manager)	Ctrl + Alt + U
	Select Work Date (Assignment Manager)	Ctrl + Alt + W
	Start Assignment (Assignment Manager)	Ctrl + Alt + T
	Start Timer (Activities, Changes, Incidents, Problems, Releases, Service Requests)	Ctrl + Alt + B
	Stop Timer (Activities, Changes, Incidents, Problems, Releases, Service Requests)	Ctrl + Alt + E
<b>Table Windows</b>		
	Next Row	Ctrl + ↓
	Previous Row	Ctrl + ↑
	Open/Close table window Filter	Ctrl + Z
	Previous Page	Ctrl + <
	Next Page	Ctrl + >
<b>Date Fields</b>		
	Insert today's date	Ctrl + =
	Move back one day	Ctrl + Minus Sign
	Move forward one day	Ctrl + Plus Sign
<b>Select Date Dialog Box</b>		
	Next Month	Ctrl + →
	Previous Month	Ctrl + ←
	Next Year	Ctrl + ↑
	Previous Year	Ctrl + ↓

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