



Upgrade Guide IBM Maximo Products V7.5 to V7.6.1

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Chapter 1. Upgrade overview

Upgrading from Maximo Asset Management 7.5 to version 7.6.1 products is a multistage process. You use the Maximo Asset Management version 7.6.1 installation program to install new files, and then use the Maximo Asset Management version 7.6.1 configuration program to update the configuration. The full upgrade process includes tasks that you perform before and after you run the installation and configuration programs.

The upgrade program supports multiple product configurations, including Maximo Asset Management and related components and products.

The upgrade process involves installing Maximo Asset Management version 7.6.1 in a separate location on the administrative workstation, and then configuring it to use the Maximo Asset Management version 7.5 database. The database is upgraded during the configuration process. You do not perform the upgrade from the Maximo Asset Management version 7.5 administrative workstation. Platforms that are supported for Maximo Asset Management version 7.5 administrative workstations are not supported in Maximo Asset Management version 7.6.1.

The guide describes all the steps necessary to upgrade Maximo Asset Management version 7.5 to version 7.6.1 products. The same steps are followed when you upgrade from Maximo Asset Management v7.6 or later to Maximo Asset Management v7.6.1. The only difference is when you decide to install Maximo Asset Management v7.6.1 in the same administrative workstation where Maximo Asset Management v7.6 was installed. In this case, you must choose a different folder to install the Maximo Asset Management v7.6.1 version. Depending on your middleware upgrade scenario, you use the Installation Manager to perform the installation. The steps to run the Installation Manager are described in the following section of the guide:

Task

- “Running the Maximo Asset Management 7.6.1 installation program” on page 37

All the remaining steps and recommendations that are described in the guide are the same.

Some sections of the guide apply only to specific products or configurations. If the specified product or configuration does not apply to your installation, skip that section and continue with the next one.

Upgrade resources

Be sure that you have the latest version of this upgrade guide. You can find the latest version of all available upgrade guide and additional information about upgrading, at the Maximo Upgrade Resources web page.

For minimum requirements for upgrading Maximo Asset Management, see the Maximo Upgrade Requirements Matrix at <https://www-304.ibm.com/support/docview.wss?uid=swg21440174>.

What the upgrade process supports

The Maximo Asset Management version 7.6.1 upgrade process supports upgrading the following elements of your Maximo Asset Management system:

- All data
- Any configurations that you performed with the Maximo configuration tools
- Data model
- User interface and presentation layer
- Workflow processes
- Data validations and default values
- Integration definitions
- Escalations

What the upgrade process does not support

The Maximo Asset Management version 7.6.1 installation and configuration programs do not automatically upgrade certain aspects of a Maximo Asset Management version 7.5 deployment. These items are not removed during the upgrade.

The following items are not automatically upgraded by the Maximo Asset Management version 7.6.1 installation and configuration programs:

- The upgrade process does not support upgrading directly from Maximo Asset Management version 7.1. You must upgrade Maximo Asset Management version 7.1 to Maximo Asset Management version 7.5 before you can then upgrade to Maximo Asset Management version 7.6.1.
- You cannot upgrade from Maximo Asset Management version 7.5 to Maximo Asset Management Multitenancy. Maximo Asset Management Multitenancy provides services to multiple clients from a single shared instance of the software. The database structure that is required for Maximo Asset Management Multitenancy is incompatible with Maximo Asset Management.
- All industry solutions, adapters, and add-ons must be reinstalled as part of the upgrade process. You install these products after you install Maximo Asset Management version 7.6.1, but before you configure it.
- Any changes to the Maximo Asset Management database schema or database objects that were not made with the Database Configuration application.
- Any database objects that you created that depend on Maximo Asset Management database objects.

The upgrade does not re-create such objects. You must reapply any custom triggers after the Maximo Asset Management version 7.6.1 upgrade process is complete.

- Custom extensions of Maximo Asset Management code, such as additions to Java code, Java applets, JavaScript, and HTML.
These customizations must be manually migrated to the Maximo Asset Management version 7.6.1.
- Upgrading from one database platform to another. For example, you cannot upgrade from a Maximo Asset Management version 7.5 deployment that uses an Oracle database to Maximo Asset Management version 7.6.1 that uses an IBM[®] DB2[®] database.

If you want to move from one database platform to another, you must install a new instance of Maximo Asset Management version 7.6.1.

The installation of additional Maximo product offerings can affect the Maximo Asset Management installation in several areas, including the installation source code, the database structure, database content, and license keys. For product offerings whose installation affects the database structure or content, see the Maximo Upgrade Resources web page at <https://www.ibm.com/support/docview.wss?uid=swg21266217> for information about which of those products are supported by the upgrade.

The Maximo Asset Management version 7.6.1 upgrade process does not grant security authorizations to new applications or to new options in existing applications. You must assign authorization by using Maximo Asset Management security applications after the upgrade is complete for new Maximo Asset Management 7.6.1 applications. Refer to the security application help information for details.

Important: If you did not use Maximo Asset Management applications or tools to modify the Maximo Asset Management version 7.5 database, those changes can produce errors during the upgrade.

You must remove those customizations before you begin the upgrade process. Any changes to the database schema or database objects must be done by using Maximo applications. You can use Maximo Asset Management applications to reapply these customizations after the upgrade to Maximo Asset Management version 7.6.1.

Failure to complete preupgrade tasks also can produce errors during the upgrade. Address errors that occur when you run the upgrade program so that you can complete the upgrade.

Rules and restrictions for Oracle WebLogic Server

Effective April 23, 2011, IBM no longer provides Oracle WebLogic Server installation images to existing and upgrading customers. If you deployed a previous version of Maximo Asset Management to Oracle WebLogic Server and are evaluating an upgrade to version 7.6.1, you can deploy it using WebSphere® Application Server Network Deployment version 9.0.0.7, which is provided at no additional cost.

Alternatively, you can obtain Oracle WebLogic Server installation media from Oracle or an approved Oracle software vendor. Versions of Oracle WebLogic Server that were provided with Maximo Asset Management version 5, version 6, or version 7.1 are not supported for use with Maximo Asset Management version 7.6.1. For more information, see the Maximo products upgrade resources page at <https://www.ibm.com/support/docview.wss?uid=swg21266217>.

Chapter 2. What's new in IBM Maximo Asset Management 7.6.1

New features and capabilities in Maximo® Asset Management 7.6 help your organization achieve greater efficiency in asset management through improvements in usability, integration, installation, and business intelligence.

New in Maximo Asset Management 7.6.1

New features and capabilities in Maximo Asset Management 7.6.1 include a new user interface skin, enhancements to the People application to manage person information, and a system property that controls authentication for Maximo Integration Framework.

New in installing and upgrading

If you are upgrading from a previous version of Maximo Asset Management, you must install Maximo Asset Management version 7.6.1 in a separate location on an administrative workstation that is running a UNIX or Windows operating system.

You need to install Maximo Asset Management version 7.6.1 in a separate location on the administrative workstation as the files that are included with Maximo Asset Management version 7.6.1 replace all existing core Maximo Asset Management files.

WAS Liberty support for Maximo Asset Management 7.6.1

Maximo Asset Management 7.6.1 has a new set of configuration and command line tools to create bundles from the Maximo Asset Management application that can be easily deployed into a WebSphere Application Server Liberty environment.

The previous Maximo Asset Management applications were built as a single maximo.ear file and deployed to the WebSphere Application Server. To deploy Maximo Asset Management to WebSphere Application Server Liberty, it is recommended that the workload is split into a set of bundles.

Learn more about using WebSphere Application Server Liberty with Maximo Asset Management <http://www.ibm.com/support/docview.wss?uid=swg22017219>

New user interface skin

Changes to the user interface make completing tasks easier.

Modernized user interface helps users be more efficient

A new skin, IoT18, is available that modernizes the user interface. This skin improves usability by increasing spacing in the user interface views and is responsive to the size of the screen. Labels for each field dynamically adjust position, moving from above the field to the left of the field as the interface increases in size.

Learn more about configuring the user interface.

Dynamic positioning of labels that is responsive to screen size

Label positioning is controlled by the `mxe.webclient.verticalLabels` system property and is set to 2 for dynamic positioning of field labels, which is used only with the new IoT18 skin. If you are updating from an existing skin, such as tivoli09 or tivoli13, to the IoT18 skin and you want to enable dynamic positioning of labels, you set the system property to 2.

Learn more about the `mxe.webclient.verticalLabels` system property.

New system property for Maximo Integration Framework authentication

A system property is now added to control authentication for Maximo Integration Framework.

Setting integration framework authentication without a server restart

The `mxe.int.allowdefaultlogin` system property controls authentication for Maximo Integration Framework. When you enable the property, you do not need to restart a server or redeploy the EAR file. This property can be configured at a server level so that you can set this property for a specific set of servers and have a different setup for other servers.

Learn more about the `mxe.int.allowdefaultlogin` system property.

This property also overrides the ALLOWDFLTLOGIN settings in the `ejb-jar.xml` file for the default integration user.

Learn more about integration framework authentication.

New management of personal information

Enhancements in the People application include the ability to remove personal information from people records.

Efficiently manage personal information in people records

If personal information that is contained in a person record, such as a phone number or an email address, is no longer required, you can remove that information by deleting or replacing the data. Before you remove the data, you specify the information that you want to remove and how that information is removed.

How you remove the information depends on the type of data that needs to be removed. You can randomize field values to replace the values with a random alphanumeric string or clear field values, or you can delete multiple values from a field.

Learn more about removing personal information

New in Work Supervision and Work Execution

Enhancements for work management include the addition of new features and usability improvements for the Work Supervision and Work Execution work centers.

New in Work Supervision

Enhancements for the Work Supervision Work Center include usability improvements and new features for responding to service requests, managing work orders, and supervising technicians.

The following enhancements are added to the Work Supervision Work Center.

Ability to review and respond to service requests

A new Review Service Requests page is added to Work Supervision.

On this page, supervisors can review requests and then create work orders for service, provide comments to the requestor, or close requests. The page provides search capability as well as the ability to filter and sort service requests.

Usability improvements for the Work Progress page

On the Work Progress page, supervisors can expand the Approve Work, Assign Owner, Monitor Work, and Close Work sections to full screen mode.

After expanding the sections, they can also toggle between a card format and a list format for work orders.

When work orders are in list format, supervisors can select multiple records and apply actions to them. For example, a supervisor can select 10 work orders and approve them in one action.

Enhancements for working with related records

A Related Records section is added to the Details page for work orders. The Related Records section displays the parent work order and, if applicable, the originating record, for example a service request.

Supervisors can now create follow-up work orders, which are displayed in the Work Orders table of the Related Records section.

To create follow-up work, select one of the following options:

- Select an existing work order for follow-up work.
- Select **Create follow-up work** to create a follow-up work order. When you select this option, the Details page for the new work order record is displayed. You can add details for the follow-up work and then use the back arrow to return to your original work order.

Ability to associate job plans with work orders

On the Job Plan tile on the Details page of a work order, supervisors can associate a job plan with a work order. On the Plans page, supervisors can add tasks and specify labor for the plan.

Improved ability to manage the work of your technicians

On the Reported Work page of a work order, supervisors can report time for their teams.

On the Reported Work page, supervisors can also approve outstanding labor transactions for their teams.

On the Reported Work page, supervisors can assign multiple labors using the assignment object.

Ability to view asset and location information for work orders

Supervisors can click the Asset tile on the Details page of a work order to view detailed information about the asset that is associated with the work order.

Supervisors can click the Location tile on the Details page to view information about the location that is associated with the work order.

New in Work Execution

The enhancements to the Work Execution Work Center give technicians new options for reporting their work.

Technicians can now perform the following tasks:

Create follow-up work orders

A Related Records section is added to the Details page for work orders. Technicians can now create follow-up work orders, which are displayed in the Work Orders table of the Related Records section. To create follow-up work, select one of the following options:

- Select an existing work order for follow-up work.
- Select **Create follow-up work** to create a follow-up work order. When you select this option, the Details page for the new work order record is displayed. You can add details for the follow-up work and then use the back arrow to return to your original work order.

Report failures and provide information about problems, causes, remedies

A Failures tile is added to the Details page for work orders. On this tile, technicians can report failures and problems.

A Failures tab is added to the Report My Work page. When reporting work, technicians can select a failure class, describe the failure, then include information about the problem, cause, and remedy.

Report downtime

A Downtime option is added to the Assets tile on the Details page for work orders. Technicians can toggle to specify whether an asset is down or up, then select a downtime code and provide the date and time that the asset went down. A work order cannot be completed or closed until the asset is up.

Enter meter readings

For work that requires meter readings, a meter readings section is added to the Details page of work orders. Technicians can enter details about meter readings for assets and for locations. Supervisors can view the readings that are entered by technicians in the Work Supervision Work Center.

Quickly report information about work

When reporting work, technicians can add time for multiple crafts and skill levels to work orders and quickly complete assignments.

Report rotating asset usage

When adding items on the Report My Work page, technicians can now also specify a rotating asset for the work order. If a technician specifies a rotating asset before selecting an item, the item that is associated with the rotating asset is automatically added to the work order. If a technician specifies an item before entering a rotating asset, the technician can select an asset from a list of the available rotating assets for the item that was selected.

View asset and location information for work orders

To view detailed information about the asset that is associated with the work order, technicians can click the Asset tile on the Details page of a work order.

To view information about the location that is associated with the work order, technicians can click the Location tile on the Details page.

New in service requests

Enhancements to the Service Requests work center streamline ticket creation and make it easier to classify service requests accurately.

Code scanning

You can designate a location for a new service request by scanning a QR code or bar code on your mobile device.

Updated Service Requests work center

With an updated work center, you can create service requests more efficiently with standardized work centers throughout the product.

Streamlined ticket creation

- You can display a list of locations that are near your current location by using the XY coordinates of your mobile device.
- You can define specific classification attributes for a service request from a predefined list.
- You can easily access asset and location hierarchy information.
- You can add instructions and details that are not included in the ticket template.

New in inspections

Enhancements to inspection tools include improvements in inspection forms and changes that facilitate work management.

Follow up work actions

When you complete an inspection form, you can view asset, location, work order, and inspection details associated with the work. Click **Take action** to select the information that you want to see.

Inspection form improvements

- You can associate an inspection form with an asset or location.
- You can create unscheduled inspections for multiple assets or locations at once.
- When you create an inspection form, you can add instructions that relate to specific inspection form questions.
- You can respond to inspection form questions with date and time information.
- You can associate reported inspection results to a parent work order.
- You can apply routes to multiple inspections.
- You can record multiple inspection results at once (as a batch) based on asset and location information.

Conduct inspections by using speech to text

You can conduct an inspection on your mobile device by using speech to text capabilities. After you answer all questions on the inspection form, review the recorded responses and complete the inspection.

Chapter 3. Upgrading to Maximo Asset Management version 7.6.1

You can upgrade from Maximo Asset Management version 7.5 to Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 installation and configuration programs..

At the conclusion of an upgrade, ensure that you perform postinstallation tasks.

Industry solution and add-on product version prerequisites

Most industry solutions and add-ons can be deployed with Maximo Asset Management version 7.6.1.

To confirm if your industry solution and add-ons are compatible with Maximo Asset Management version 7.6.1, check the upgrade requirement matrix: <http://www-01.ibm.com/support/docview.wss?uid=swg21440174>

Ensure that you install the most up-to-date interim fixes for industry solutions and add-ons when you deploy them.

Note: If Maximo Adapter for Primavera is installed with Maximo Asset Management version 7.5, you must remove its data before you upgrade the Maximo Asset Management database. Scripts are provided from the Maximo Upgrade Resources support page at <http://www.ibm.com/support/docview.wss?uid=swg21440174>. See “Uninstalling IBM Maximo Adapter for Primavera before you upgrade” on page 24.

For more information about industry solution and add-on product version upgrade prerequisites, see the Maximo Upgrade Requirements Matrix.

Upgrade concepts

The process for upgrading your current deployment from Maximo Asset Management version 7.5 to Maximo Asset Management version 7.6.1 has the following prerequisites.

Ensure that the following prerequisites are considered or completed before you start the upgrade process.

- Stop all application servers that are running the Maximo Asset Management application, for example, MXServer.
- Back up the existing Maximo Asset Management version 7.5 database, the contents of the Maximo Asset Management installation folder, and the deployment engine.

If a failure occurs during upgrade, you might be required to restore the Maximo Asset Management version 7.5 database. Some upgrade tasks cannot be rolled back after they are committed to the database. If you have a backup of the database, you can restore your environment.

For example, during upgrade, suppose that you choose to deploy optional content for process managers and you experience a failure. You decide to not

deploy optional content when you restart the upgrade process. In this case, you must restore the database from the backup before you start the upgrade process again.

Files are found under C:\ibm\smp by default. This practice can prove useful if you must rebuild Maximo Asset Management EAR files for example.

Back up the deployment engine registry as described in the Maximo Asset Management version 7.5 installation information.

- Stop all Maximo Asset Management version 7.5 application servers, for example MXServer, before you start the upgrade process. All other middleware services, such as the database server, must be active unless specified otherwise in the upgrade procedures.
- Ensure that you have access to the Maximo Asset Management administrative workstation.

Most upgrade tasks are performed either on or from this workstation.

- If you modified any applications, export them by using the Application Designer before you begin any upgrade process.
- Before the Maximo Asset Management version 7.6.1 upgrade, you must complete Maximo Asset Management version 7.5 postinstallation tasks as described in the Maximo Asset Management version 7.5 installation information.

Configuration changes must be committed to the Maximo Asset Management database at the conclusion of the original Maximo Asset Management deployment as a postinstallation task. This commitment is required before you initiate the upgrade process. Details can be found in the Maximo Asset Management version 7.5 installation guide in the topic titled "Applying changes to the database".

In order to confirm that all changes are committed, run the following SQL query against the Maximo database:

```
SELECT count(*) from maxobjectcfg where changed != 'N'  
SELECT count(*) from maxsysindexes where changed != 'N'
```

'N' indicates that a change is committed. For this query, if any positive row count values are returned, you must select **Apply Configuration Changes** or **Discard Configuration Changes** by using the appropriate menu option in the Database Configuration application. Alternatively, you can use the configdb.bat command to commit configuration changes, which is described in the following section. You can then proceed with the upgrade process.

In addition, tables that begin with XX are temporary tables that must be removed before you run the upgrade process. If these tables exist, they cause the Maximo Asset Management version 7.6.1 upgrade process to fail. Complete the following steps to remove these tables:

1. Verify that the temporary tables exist in the database:

Db2

```
select count(*) from sysibm.systables where name like 'XX%' and  
creator = 'MAXIMO'
```

Microsoft SQL Server

```
SELECT count(*) FROM sysobjects WHERE xtype = 'U' AND name like 'XX%'
```

Oracle

```
SELECT count(*) from all_tables where table_name like 'XX%'
```

2. If running, stop all Application Servers running the Maximo Asset Management application, for example, MXServer.
3. Open a command prompt on the Maximo Asset Management administrative workstation and issue the following commands:


```
cd install_home\maximo\tools\maximo
configdb.bat
restorefrombackup.bat
dropbackup.bat
```

Running the configdb.bat and restorefrombackup.bat commands performs the same function as choosing the **Apply Configuration Changes** menu option from the Database Configuration application in Maximo Asset Management. The configdb.bat and restorefrombackup.bat commands require all application servers that are serving the Maximo application to be stopped. The dropbackup.bat command does not require application servers to be stopped.

You can now continue preparing for the upgrade process.

Upgrade scenario roadmaps

Deployment scenario roadmaps are summaries that consist of product deployment tasks.

The upgrade information that is provided with Maximo Asset Management version 7.6.1 describes several upgrade scenarios.

Scenario 1 focuses on using the Maximo Asset Management installation program to install a new instance of WebSphere Application Server Network Deployment v9.0.0.7 on a different system than the instance of WebSphere Application Server Network Deployment v7 that is used in your Maximo Asset Management version 7.5 deployment. You then use the Maximo Asset Management version 7.6.1 configuration program to automatically configure WebSphere Application Server Network Deployment v9.0.0.7 and its subsequent versions.

Scenario 2 describes installing a new instance of WebSphere Application Server Network Deployment v9.0.0.7 - You migrate configuration information from WebSphere Application Server Network Deployment v7 to WebSphere Application Server Network Deployment v9.0.0.7 and its subsequent versions.

Scenario 3 describes upgrading to Maximo Asset Management version 7.6.1 on Oracle WebLogic Server.

The following series of roadmaps provide procedural summaries of Maximo Asset Management deployment scenarios. The steps that are contained in each deployment scenario roadmap briefly describe the overall task and then provide links to more detailed information about that task.

The deployment scenarios that are provided include the following situations:

Upgrading by installing and configuring WebSphere Application Server Network Deployment v9.0.0.7 on a new server

You must install WebSphere Application Server Network Deployment v9.0.0.7 on a new system to preserve your existing WebSphere Application Server Network Deployment v7 environment. You intend to use Maximo Asset Management version 7.6.1 tools to install and automatically configure a new installation of WebSphere Application Server Network Deployment v9.0.0.7.

This scenario is useful if you want to preserve your Maximo Asset Management version 7.5 deployment when you upgrade to Maximo Asset Management 7.6.1. In this scenario, you are installing and configuring a new instance of WebSphere Application Server Network Deployment

v9.0.0.7. None of the WebSphere Application Server Network Deployment v7 configuration information from your existing Maximo Asset Management version 7.5 deployment is reused. You are establishing WebSphere Application Server Network Deployment v9.0.0.7 in your environment in the same way that you do for a new Maximo Asset Management version 7.6.1 installation.

Upgrading by migrating WebSphere Application Server Network Deployment v7.x configuration information to WebSphere Application Server Network Deployment v9.0.0.7

You want to install WebSphere Application Server Network Deployment v9.0.0.7 on the same server as WebSphere Application Server Network Deployment v7 and migrate configuration information from WebSphere Application Server Network Deployment v7 to WebSphere Application Server Network Deployment v9.0.0.7.

This scenario applies when you want to move existing WebSphere Application Server Network Deployment v7 configuration data from your Maximo Asset Management version 7.5 deployment to Maximo Asset Management version 7.6.1. For this scenario, you install WebSphere Application Server Network Deployment v9.0.0.7 on the same system that is hosting WebSphere Application Server Network Deployment v7. You then use the WebSphere Application Server Network Deployment v9.0.0.7 migration tool to move configuration data from WebSphere Application Server Network Deployment v7 to WebSphere Application Server Network Deployment v9.0.0.7.

Note: When you migrate configuration information from WebSphere Application Server Network Deployment v7 to WebSphere Application Server Network Deployment v9.0.0.7, the configuration information is no longer hosted on WebSphere Application Server Network Deployment v7.

Upgrading on Oracle WebLogic Server (Scenario 3)

You want to upgrade Maximo Asset Management on Oracle WebLogic Server.

This scenario focuses on upgrading in Oracle WebLogic Server environments. You must consult Oracle WebLogic Server documentation for application server migration information.

Upgrading Building Information Models applications (BIM) to Maximo Asset Management 7.6.0.6

Two applications from the IBM Maximo Asset Management extension for Building Information Models (BIM) in the ISM Library are now available in Maximo Asset Management 7.6.0.6.

Information on upgrading your current deployment of the Building Information Models (BIM) applications for IBM Maximo Asset Management 7.5.0.5 to IBM Maximo Asset Management 7.6.0.6 is available at <http://www.ibm.com/support/docview.wss?uid=swg21992813>.

Chapter 4. Planning your Maximo Asset Management version 7.6.1 upgrade process

Because all Maximo Asset Management implementations are unique, the upgrade process is different for every deployment. However, some considerations in the process are common to every upgrade.

Maximo Asset Management version 7.6.1 planning information

Refer to the Maximo Asset Management version 7.6.1 planning for deployment information before you begin the upgrade process. The planning content includes important information about changes in the 7.6.1 release that can prepare you for otherwise unexpected differences. For example, the default skin for Maximo Asset Management version 7.6.1 was updated which might lead to unanticipated changes in the appearance of application views.

Planning information can be found in the Maximo Asset Management knowledge center at http://www-01.ibm.com/support/knowledgecenter/SSLK6_7.6.1/com.ibm.mam.doc/mam_install/c_ctr_plan_install.html.

Planning your upgrade schedule

When you plan your upgrade schedule, you need to plan adequate time to complete each phase of the upgrade process:

- Determining when you can upgrade
- Planning the upgrade
- Performing pre-upgrade tasks
- Upgrading in a test environment
- Troubleshooting your test upgrade
- Upgrading your production environment

Plan time into your schedule to perform the upgrade in a test environment. You can performing a test upgrade to test and troubleshoot your upgrade to avoid extra downtime in your production environment.

You can also schedule sufficient time to train Maximo Asset Management administrators and users to use the new software. Team members need to understand the capabilities of Maximo Asset Management 7.6.1 to participate in the upgrade planning process.

Note: IBM offers extra services to help evaluate or upgrade new software.

Review current database settings

To ensure a successful upgrade, compare the configuration settings of your existing database with the default configuration settings that are used by the current installation program. This information can be found in the Maximo Asset Management version 7.6.1 installation information in the manual configuration instructions for your database type. If your current values are insufficient, it might cause problems during the upgrade process. Set configuration parameters that are equal to or greater than those parameters that are defined in the Maximo Asset

Upgrade process performance

The speed of your network and the physical location of Maximo Asset Management servers can affect the amount of time it takes to complete the upgrade.

During the upgrade process, scripts that are run from the Maximo Asset Management administrative workstation are used to process individual SQL commands against the database by using JDBC. If the Maximo Asset Management administrative workstation and the database server are not on the same physical local network, upgrade performance is affected negatively. Excessive network latency between the two host systems can also affect performance of the upgrade process.

Ensure that you have a fast and reliable connection with minimal network latency between the Maximo Asset Management administrative workstation and the database server.

Planning for Maximo Asset Management version 7.6.1

Before you upgrade to Maximo Asset Management version 7.6.1, evaluate your current operations and business processes, and the new features available Maximo Asset Management version 7.6.1 described in the guide.

Your upgrade provides you an opportunity to change your Maximo Asset Management software, and your Maximo Asset Management implementation.

Training for Maximo Asset Management administrators

As an administrator for Maximo Asset Management version 7.6.1, you must have the following skills, knowledge, or ability to perform the following tasks:

- Install and configure software.
- Understand Maximo tasks, such as creating and modifying records.
- Understand relational database concepts, such as views and joins.
- Understand the Maximo database and data relationships.
- Construct structured query language (SQL) statements.
- Understand the SQL syntax that is required by your database.
- Set Maximo properties for proper configuration.
- Define security privileges for users and groups.

Training your Users

Include training for all of your Maximo users as a part of your Maximo Asset Management version 7.6.1 implementation process, because they need to know how existing applications are modified. In addition, if you are making improvements or changes to your business processes, you need to provide training for your employees about your new processes.

Planning to upgrade your workflow

Changes were made to several Maximo Asset Management version 7.6.1 applications. These changes can affect your workflow implementation.

In Maximo Asset Management version 7.6.1, you can create workflow processes for any application. Applications can have multiple active workflow processes. After a successful upgrade, you can evaluate your business processes to determine whether you want to create new workflow processes. You might decide that you want to use a phased approach to introducing new workflow processes. You might upgrade your existing workflow processes, and then gradually introduce new processes after your users are comfortable using Maximo Asset Management version 7.6.1.

After the upgrade is complete, refer to the help files for the workflow applications.

Planning to upgrade your hardware and software

You may be required to update several of your hardware and software components when you upgrade to Maximo Asset Management version 7.6.1.

Refer to the Maximo wiki page at <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management> to view the current hardware and software requirements for version 7.6.1.

WebSphere Application Server Network Deployment v8.5.0.11 requirement

If Maximo Asset Management version 7.5 was deployed on WebSphere Application Server Network Deployment, the Maximo Asset Management version 7.6.1 upgrade requires WebSphere Application Server Network Deployment v8.5.0.11 and the Java™ Development Kit 1.8.

Instructions for establishing WebSphere Application Server Network Deployment v9.0.0.7 in your environment for use by Maximo Asset Management version 7.6.1 are included in the upgrade scenarios that are provided in the guide.

Oracle WebLogic Server 12c R2 requirement

If Maximo Asset Management version 7.5 was deployed on Oracle WebLogic Server, the Maximo Asset Management version 7.6.1 upgrade requires Oracle WebLogic Server 12c R2.

Information about establishing Oracle WebLogic Server 12c R2 in your environment for use by Maximo Asset Management version 7.6.1 are included in the upgrade scenarios that are provided in the guide.

Reporting options

Maximo Asset Management version 7.6.1 changes your reporting options. Existing users of Actuate Reporting and Business Objects Crystal Reports can evaluate their reporting options in Maximo Asset Management version 7.6.1 release.

For more information, see Maximo Asset Management Reporting

Maximo Integration Framework upgrade

The Maximo Integration Framework allows the synchronization and integration of data and applications between Maximo Asset Management and external systems.

Web services

You can run Maximo Asset Management version 7.5 web services in Maximo Asset Management version 7.6.1 with no impact to existing SOAP clients.

Previous versions of Maximo Asset Management support both the AXIS2 and JAX-WS Java web services APIs. Maximo Asset Management version 7.6.1 supports the JAX-WS API only. When you upgrade to Maximo Asset Management version 7.6.1, your existing web services are converted to use JAX-WS-based deployment.

Web service deployment containers

Deployment of web services to the product container is a deployment where the web service is immediately available after the service is deployed from the Web Services Library application. The product container now uses JAX-WS only for deployment. Functionally, the service is still available upon deployment. This web service deployment option requires WebSphere Application Server version 8.5.5.11 or later.

During the upgrade, registration of web services that are deployed to the product container are updated with a new JAX-WS implementation class file and the Axis implementation class is removed.

In a new installation of Maximo Asset Management version 7.6.1, the default value for the **mxe.int.containerdeploy** system property is set to a value of 0. This value indicates that the product container uses the default deployment model.

Web service error propagation

When an external client starts a Maximo Asset Management web service and encounters a business logic error, such as Invalid Site, the client receives an exception but the exception, does not include the details of the error. If you want to send the Maximo Asset Management error text in the web service response, you must add the **webservices.unify.faults** property to the WebSphere Application Server Admin Console.

1. Log in to the WebSphere Application Server Admin Console and navigate to **Servers > Server Types > Websphere application servers**.
2. Select the server name.
3. From the server infrastructure section, select **Java and Process Management**.
4. Select **Process definition**.
5. Within the Additional properties section, select **Java virtual machine** and then **Custom properties**.
6. Create the **webservices.unify.faults** property.
 - a. Click **New**.
 - b. Set the name to `webservices.unify.faults`.
 - c. Set the value to `false`. This value enables the sending of the error text from the error condition that the integration encountered.
7. Save your changes.

Web service endpoint handlers

In the End-Point application, predefined web service endpoints are not provided. However, two predefined endpoint handlers, WEBSERVICE and

WEBSERVICE-JAXWS, are provided. The WEBSERVICE handler now uses JAX-WS rather than AXIS. This change does not affect the use of these handlers in existing deployments.

For Maximo Asset Management version 7.6.1 and later, use the WEBSERVICE-JAXWS handler. The WEBSERVICE handler continues to be supported for existing deployments and integration implementations, but will not be enhanced in the future.

A new property, HTTPHEADERS, was added to the WEBSERVICE-JAXWS handler. This optional property supports the addition of HTTP HEADERS into an integration transaction. Values for the header can be provided in a comma-separated list, for example, Headername1:Headervalue1, Headername2:Headervalue2. If no value is provided, only the header name is provided in the property. A custom invocation channel can inject values into the transaction context.

SOAP version

For Maximo Asset Management version 7.6.1, service deployment supports either SOAP 1.1 or 1.2. All services are deployed by using a single version. You can configure the SOAP version by using the system property `mxe.int.soapversion`. Valid values are SOAP11 or SOAP12.

JMS queues

WebSphere Application Server includes a new property to use for message persistence.

WebSphere Application Server includes a flag to persist the redelivery condition for error messages. Therefore, restarting the application server does not reset this flag, and error messages are not reprocessed when the server is restarted.

Enable the **Keep count of failed deliveries per message** option in the WebSphere Application Server Admin Console for all integration bus destinations. Log in to the WebSphere Application Server Admin Console, and go to **Service Integration > Buses > intjmsbus > Destinations > Bus Destination** to set this option.

Interface table endpoint processing

Support for interface tables relies on the creation of the table based on the configuration of the objects and columns that are included and excluded in the related object structure.

If you add a new persistent attribute to an object that is part of an object structure, if the object structure is associated with an interface table, you must re-create the interface table to reflect the updates. When a new column is added by a customization or by the installation of an industry solution, the related interface table must be re-created. You must re-create the interface table if the new column is not intended for integration with other applications.

You can use the `mxe.int.usedbinforifaceta` system property to process the interface table. The `mxe.int.usedbinforifaceta` property does not require an exact match between the object structure and the interface table to complete processing of the interface table. When the system property is set to 1, the interface process refers to the existing table to determine what to insert into the table rather

than the object structure definition. This process avoids invalid column name errors when the endpoint is writing to the interface table.

To support any newly added attribute in an interface table, the table must be regenerated to align with the object structure definition.

You can check an interface table and its related object structure to identify out of sync conditions by using the Interface Table Utility, which is available on the Maximo Asset Management wiki. This utility can also update the object structure to exclude columns when those columns do not exist in the interface. For more information, see the following link: <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management/page/Maximo%207.5%20Interface%20Table%20Utility>.

Publish channel processing for objects that are views

In the Publish Channel application, a new option, **Skip Different Object Types**, was added to support the processing of channel messages that are based on views.

For example, the WOACTIVITY object is a view of the WORKORDER table. Currently, when an event is started for a publish channel that uses WOACTIVITY in its object structure, the object of the event is either the WOACTIVITY or WORKORDER. This ambiguity can cause errors in processing rules or custom class files that are based on the WOACTIVITY object that is passed to the channel.

By enabling the **Skip Different Object Types**, only the events for the object that is the root object of the object structure is passed to the publish channel. In the previous example, the events for WORKORDER are not be pushed to the channel that uses WOACTIVITY.

Working with the file system and global directory

In Maximo Asset Management version 7.6.1, the use of the file system to support the integration framework is reduced. In previous releases, the common directory location that is specified in the **mxo.int.globaldir** system property supports the storing of files that are related to integration processing. When this property is not configured, the application uses the default folder location of the application server.

Depending on your use of the integration components, your deployment might no longer require a common folder for integration-related files. You must maintain the common directory location during the upgrade process and confirm the use of the file system by your integration implementation.

The change in the use of the file system affects several areas.

Schema and WSDL files

Schema and WSDL files are no longer created on the file system. Schema and WSDL files are accessible by using the following URLs:

WSDL

`http://hostname:port/meaweb/wsdl/Web Service Name?wsdl`

Schema for Enterprise Web Service and Object Structure Web Service

http://hostname: port/meaweb/schema/service/Object Structure NameService.xsd

Schema for Standard Web Service

http://hostname: port/meaweb/schema/service/ss/Web Service NameService.xsd

Schema for Object Structure

http://hostname: port/meaweb/schema/service/Object Structure Name

The `mxe.int.dynamicsdlandschema` property is no longer used and is removed during the upgrade process.

Temporary files

Temporary files are created by several processes and remain on the file system until the process completes, at which time the file is deleted. The following processes generate temporary files:

- Application-based exporting
- Data Export
- File-based Error extracts
- View Queue or Delete Queue feature

Although these processes use the file system, they do not require a common folder directory that supports all Maximo Asset Management servers.

File-based error management

The option to download and extract a previously created file is no longer available. If the extracted file was not deleted from the Message Reprocessing application, then the download file can be re-created and redownloaded as needed. If necessary, save old versions of extracted files as needed.

File-based endpoints: XML and flat

For file-based endpoints, processing can vary based on how the endpoint parameters are configured and how the publish or invocation channels are initiated. Processing uses the file location that is specified by the endpoint parameter to write the file. When the endpoint parameter is not populated, it uses the default directory `mxe.int.globaldir` located under the configured global directory. The server that is processing the message must have access to the directory where the file is being created.

For a publish channel message, the server that is processing the message is the server that the outbound JMS CRON task is running on. Depending on your implementation configuration, that CRON task can run on different servers at different times.

For invocation channels that are configured with a file-based endpoint, the processing occurs on the server where the invocation was initiated.

You can use a common global directory to ensure that all files are created in a single location. Without a common global directory, files can be created on multiple servers.

Web service deployment to the application server container

Deployment of web services to the application server container involves the creation of a .dar file that is saved in a folder that is named jaxws under the global directory. If the global directory is not configured, it is located under the default directory of the application servers where you performed the deployment step.

XSL files for customization

If you use XSL for integration customization and you deploy those files by using the file system rather than the Maximo Asset Management EAR file, the files must be located in a common folder where all servers that are processing channels and services can access those files.

XML and flat file import CRON tasks

The XML and flat file import CRON tasks require access to the location of the files to be imported. This location is defined in the SOURCEDIRECTORY parameter. If your CRON tasks are not configured to always run on a specific server, then you can use a common folder directory.

MXCOGNOS endpoint

The value of the MXCOGNOS endpoint parameter, proj_base_dir, is required and used to identify the directory location of the file that you want to generate.

Message reprocessing - queue-based error messages

Queue-based error messages are saved in the database instead of on the file system. Functionally, the management of error messages remains the same. However, the format of the message is changed. The External Record <ER>, and the Internal Record <IR> sections of an error message are viewed separately in the Message Reprocessing application. An administrator can still correct the <ER> data and reprocess the message.

Message tracking - messages persisted

You can configure Message Tracking to persist the message to the file system in addition to the metadata that tracks the flow of a message into and out of an integration queue.

In Maximo Asset Management version 7.6.1, when the Message Tracking option is configured, the message is stored in the database table along with the related metadata of the transaction.

Message upgrade - message reprocessing and message tracking

When you install Maximo Asset Management version 7.6.1, you must upgrade all message reprocessing and message tracking messages that are currently on the file system. The upgrade process moves data in the files into the appropriate row in the database tables that support message reprocessing and message tracking. The upgrade process leaves files on the file system that are no longer used by the integration process.

If you maintain a large volume of error messages on the file system, you can clean up and remove messages that you do not need to reprocess. You can use the Message Reprocessing application before you upgrade.

When you install Maximo Asset Management 7.6.1, you are prompted to upgrade messages. The Maximo Asset Management version 7.6.1 administrative workstation must have access to the global directory during the upgrade. If you choose to not upgrade messages during the installation process, you can start the upgrade manually after the installation is complete. You must upgrade messages that are related to Message Reprocessing. If you do not upgrade Message Reprocessing messages, you cannot reprocess or delete those messages by using the Message Reprocessing application.

As part of your database size configuration, you can consider that a large volume of Message Tracking messages might be moved to the database. If you upgrade messages manually after you install Maximo Asset Management version 7.6.1, you can choose not to upgrade Message Tracking messages. You can archive or delete Message Tracking data on an ongoing basis with the Message Tracking Archiving utility that is available on IBM Developer Works. For more information, see <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management/page/Maximo%207.6%20-%20Message%20Tracking%20Archiving>

Manually upgrading messages

A manual upgrade provides the option to not upgrade messages for Message Tracking.

About this task

If you decide to not upgrade your Message Tracking messages, you cannot view those messages in the Message Tracking application.

Before you upgrade, you can delete a subset of files and upgrade specific selected messages. For example, you might want to upgrade files that are less than 6 months old. In this case, you can manually delete the older files before you run the upgrade utility. Message tracking files are found in the `c:\temp\txndata` folder, where `c:\temp` is your configured global directory.

To upgrade file-based messages into the database after you install Maximo Asset Management version 7.6.1, complete the following steps.

Procedure

1. Log on to the Maximo Asset Management administrative workstation.
2. Edit the `maximo.properties` file.
3. For Message Tracking, set the `mxe.int.convmsgdir` property to `c:\\temp`.
4. For Message Reprocessing, set the `mxe.int.convmsgtrkdir` property to `c:\\temp`.
5. Change directory to `MAXIMO_HOME/tools/maximo/internal`.
6. Run the script for Message Tracking.
`runscriptfile -cmif -fv7600_12` for message tracking
7. Run the script for Message Reprocessing.
`runscriptfile -cmif -fv7600_11` for message re-processing

Uninstalling IBM Maximo Adapter for Primavera before you upgrade

The IBM Maximo Adapter for Primavera adapter is not compatible with Maximo Asset Management version 7.6.1. If your current Maximo Asset Management version 7.5 deployment includes the IBM Maximo Adapter for Primavera adapter, you must remove its data from the database before you can upgrade to Maximo Asset Management version 7.6.1.

Before you begin

Before you begin, shutdown the Maximo Asset Management version 7.5 application server. Ensure that no database configuration changes are pending, and then create a backup of your database. Create a backup of the Maximo Asset Management installation directory on your administrative workstation.

About this task

You can automatically remove IBM Maximo Adapter for Primavera adapter information from the Maximo Asset Management version 7.5 database by using scripts that are developed by IBM that are provided on the Fix Central website.

You can edit the script before you run it to remove additional components. For example, if you would also like to remove Maximo Asset Management applications that contain Primavera data, such as Work Order Tracking (PV) and Job Plans (PV), you can uncomment the removal statements in the script. When you run the script, all statements that are not commented out are executed.

Procedure

1. Log in to your Maximo Asset Management version 7.5 administrative workstation and download the IBM Maximo Adapter for Primavera adapter removal script, `UNINSTALL_PrimaveraAdapter_7X.zip`, from Fix Central.
2. Extract the contents of the `UNINSTALL_PrimaveraAdapter_7X.zip` file into the `install_home/maximo` folder, and make sure that you select the **Overwrite existing files** and the **Use folder names** options.
3. Delete the `primavera.xml` file from `install_home\maximo\applications\maximo\properties\product` folder.
4. Optional: Edit the `UNIST_PA_7X.dbc` script before you run it to remove additional components.
5. Change directory to `install_home\maximo\tools\maximo\internal` and run the `UNIST_PA_7X.dbc` script by using the **runscriptfile** utility.
`runscriptfile -cprimavera -fUNIST_PA_7X`
6. Change directory to `install_home\maximo\tools\maximo` and run the **updatedb** command.
`updatedb`
7. Change directory to `install_home\bin` and run the **solutioninstaller** command to view a list of all running applications.
`solutioninstaller.bat -action showinstalled -type all`
8. Note the Unique Identifier value that is shown for the IBM Maximo Adapter for Primavera.
9. Change directory to `install_home\CTG_DE\acsi\bin\` and run the **deleteRootIU** command.
`deleteRootIU.cmd Primavera_Unique_identifier PSI`

10. Change directory to *install_home*\bin and rerun the **solutioninstaller** command to ensure that IBM Maximo Adapter for Primavera was removed.
`solutioninstaller.bat -action showinstalled -type all`

Multi-language and SQL Server

Because Microsoft SQL Server does not support UTF-8, multi-lingual support is limited.

You can support multiple languages on one database instance only if they share the same character set. For example, a database instance might support English, French, and Portuguese because they use the same character set. A database instance might not support both Portuguese and Chinese because they have different character sets.

For more information on collation and character set support, see Microsoft SQL Server documentation.

Changes in supported middleware

Be aware that there might be changes in the behavior of middleware software or platform operating systems that are supported by Maximo Asset Management version 7.6.1.

For example, if you upgrade SQL Server 2008 to SQL Server 2012, the default port that is used by Maximo Asset Management, port 1433, remains open if it was available and in use for your Maximo Asset Management version 7.5 deployment. However, if you install a new instance of SQL Server 2012, port 1433 is closed by default.

Chapter 5. Pre-upgrade tasks

To install the latest release of Maximo Asset Management products, refer to the installation guides for the respective products. Ensure that your version 7.5 product has the required updates, but note the following item updates, order of installation, and database name:

- If you are upgrading a Maximo industry solution, install the Maximo base services fix pack. Install the 7.5 version industry solution, and apply the latest Maximo fix pack followed by the latest fix pack for your industry solution.
- If you are upgrading a Maximo Enterprise Adapter product, either for Oracle or SAP, install and update Maximo Asset Management to the latest fix pack or release, apply the latest fix packs, install your specific adapter, and then install the latest fix pack for your adapter. Verify that all fix packs and test fixes are compatible with the Maximo Asset Management base services fix pack that is installed.

Creating a test copy of your Maximo database

You first perform the upgrade process on a test copy of your Maximo Asset Management database. During the test upgrade, you make notes of any special steps or database modifications that you need to make. It is a good idea to perform a test upgrade more than once, each time by using a copy of the most current production database. The upgrade process can take two days or more, depending on the size of your database.

After you successfully upgrade one or more test copies, you repeat the process with a copy of your current production database. This upgraded database becomes your new production database.

Consult the documentation that is supplied with your database for details about creating database backups.

Disabling custom triggers

Disable all custom triggers that exist on any table in your existing Maximo Asset Management database.

Maximo Asset Management version 7.6.1 does not support any database objects that you created, such as stored procedures, triggers, views, and synonyms, that depend on Maximo Asset Management database objects. The upgrade does not re-create such objects, but does not remove them. You must reapply any custom triggers after the Maximo Asset Management version 7.6.1 upgrade is complete.

Backing up your database

Regardless of your starting point, back up your newly prepared Maximo Asset Management database.

Preserving attributes for custom portlets

After you upgrade to Maximo Asset Management version 7.6.1, you might discover a difference in the number of attributes that are available for a portlet that you defined in Maximo Asset Management version 7.5.

If you created a portlet in Maximo Asset Management version 7.5, and you excluded attributes from a report you developed for the portlet after you upgrade to Maximo Asset Management version 7.6.1, the attributes are no longer available for the portlet.

If you want to preserve all attributes for a portlet, you must unmark any attributes that were excluded in Maximo Asset Management version 7.5 before you upgrade.

AIX® tar command requirements

Both the native UNIX **tar** command and the GNU version of the **tar** command are required by the middleware installation program. Because the native utility does not support long file names, ensure that GNU **tar** version 1.14 or higher is installed. GNU **tar** version 1.14 ensures that installation files can be extracted.

Verify that the system path variable contains both native UNIX **tar** and GNU **tar** paths. The GNU **tar** path must be defined before the native UNIX tar path. For example, the native **tar** utility is installed in `/usr/bin` and the GNU tar utility is installed in `/opt/freeware/bin/tar`.

If you set a symbolic link to overwrite the native UNIX **tar** command with the GNU **tar** command, an error occurs.

Internet Explorer compatibility mode

Maximo Asset Management does not support Microsoft Internet Explorer browsers that have compatibility mode enabled.

Browsers that have compatibility mode that is enabled can experience errors and performance issues. Turn off compatibility mode in your browser if it is enabled.

Administrative user permissions

Maximo Asset Management requires that you log in to a system as an administrator to install and configure activities.

These administrative users must be primary members of either the root or Administrators group for Linux or Windows. Do not start the Maximo Asset Management installation or configuration program with a user ID that belongs to a secondary group that is associated with the administrative group. The administrative user must be a direct member of the root or Administrators groups.

In addition, you must perform the installation and configuration activities as an actual administrator. You cannot run the installation and configuration programs on Windows by right-clicking and selecting the **Run as administrator** option.

Chapter 6. Upgrading by installing WebSphere Application Server Network Deployment v9.0.0.7 on a new server (Scenario 1)

You can use product installation programs and tools to install and automatically configure WebSphere Application Server Network Deployment v9.0.0.7 for Maximo Asset Management 7.6.1.

Before you begin

Any custom configuration that you configured on the WebSphere Application Server Network Deployment v7 server for Maximo Asset Management 7.5 must be performed again for WebSphere Application Server Network Deployment v9.0.0.7.

Perform pre-upgrade tasks:

Concepts

Chapter 5, “Pre-upgrade tasks,” on page 27

Tasks

- “Backing up your database” on page 27
- “Creating a test copy of your Maximo database” on page 27
- “Disabling custom triggers” on page 27

About this task

This information provides a high-level overview or roadmap of tasks you need to complete to upgrade to Maximo Asset Management version 7.6.1 with automatic installation and configuration of WebSphere Application Server Network Deployment v9.0.0.7. Use the information that is provided in the Concepts list to familiarize yourself with the ideas behind each step, and then refer to the Tasks list and perform the tasks that are listed in order to complete the step.

In this scenario, you use the Maximo Asset Management version 7.6.1 installation program to install WebSphere Application Server Network Deployment v9.0.0.7 and then use the Maximo Asset Management version 7.6.1 configuration program to automatically configure it. None of the WebSphere Application Server Network Deployment v7 configuration information from your existing Maximo Asset Management version 7.5 deployment is reused. You are establishing WebSphere Application Server Network Deployment v9.0.0.7 in your environment as a new Maximo Asset Management version 7.6.1 installation. WebSphere Application Server Network Deployment v9.0.0.7 must be installed on a system that is different from the server that is hosting WebSphere Application Server Network Deployment v7 for your Maximo Asset Management version 7.5 deployment.

The benefit of using this upgrade scenario is that it provides automated installation and configuration of WebSphere Application Server Network Deployment v9.0.0.7 while it maintains the existing WebSphere Application Server Network Deployment v7 configuration where Maximo Asset Management 7.5 was deployed. During the upgrade process, the database is upgraded from version 7.5 to version 7.6.1. The upgraded database cannot continue to be used by Maximo Asset Management version 7.5. If you want to retain the Maximo Asset Management

version 7.5 environment, the Maximo Asset Management version 7.6.1 upgrade must be performed on a separate instance of the Maximo Asset Management version 7.5 database.

The upgrade process involves installing Maximo Asset Management version 7.6.1 and then configuring it to use the Maximo Asset Management version 7.5 database. The database is upgraded during the configuration process. You do not perform the upgrade from the Maximo Asset Management version 7.5 administrative workstation. The operating system types and versions that are supported for Maximo Asset Management version 7.5 administrative workstations are not supported in Maximo Asset Management version 7.6.1.

The following image shows the steps that are needed to upgrade Maximo Asset Management:

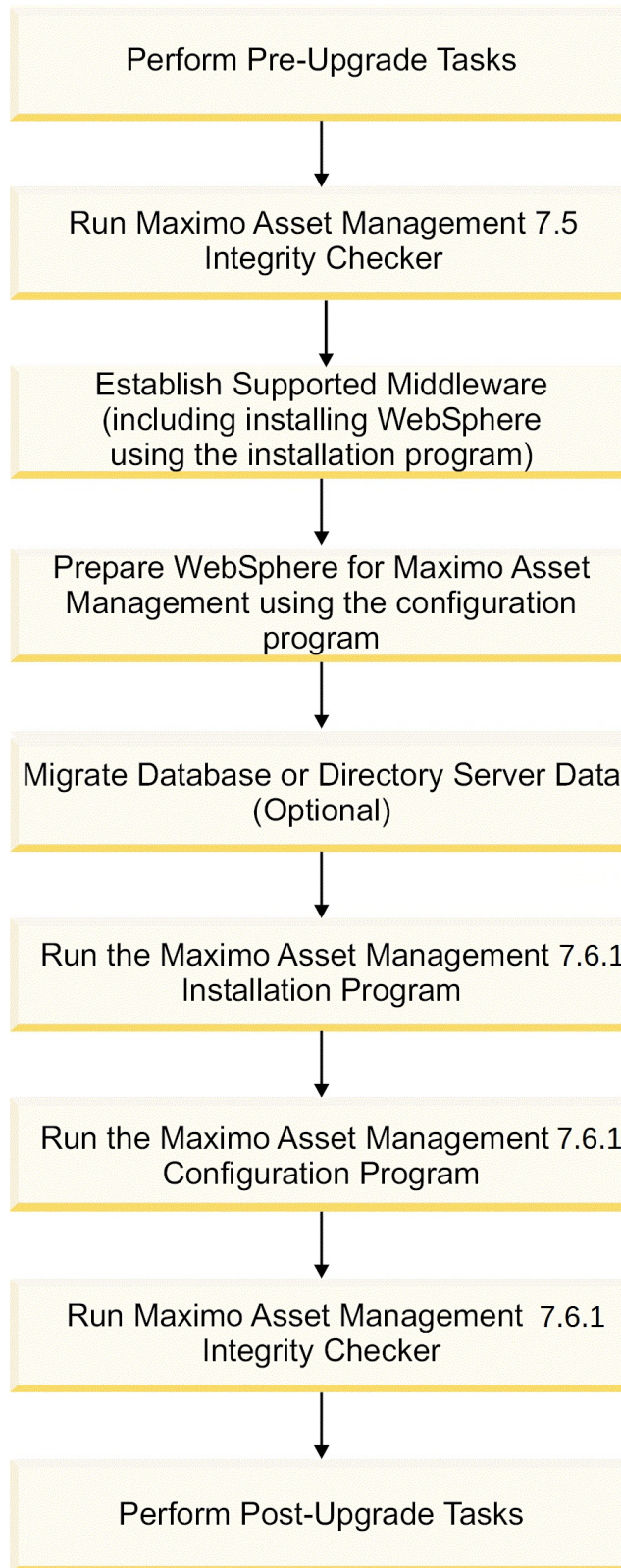


Figure 1. Upgrading Maximo Asset Management by using automatic WebSphere Application Server Network Deployment configuration

Procedure

1. Run the Maximo Asset Management 7.5 Integrity Checker. Run the Integrity Checker tool in Report mode. If the Integrity Checker reports an error, you must resolve it before you use the product installation program to attempt an upgrade.

Tasks “Running Integrity Checker 7.5” on page 33

2. Establish supported middleware:
 - a. Use the installation program to install WebSphere Application Server Network Deployment v9.0.0.7. After installation is complete, use the Maximo Asset Management version 7.6.1 configuration program to prepare WebSphere Application Server Network Deployment v9.0.0.7 for Maximo Asset Management.
 - b. If necessary, upgrade database software to a version supported by Maximo Asset Management version 7.6.1 by using the installation program for that software. Maximo Asset Management version 7.6.1 requires Db2 version 10.5 at a minimum.
 - c. If necessary, upgrade directory server software to a version supported by Maximo Asset Management 7.6.1 by using the installation program for that software. For more information, see the upgrade information documentation that is provided with your product.

Concepts

- “Establishing supported middleware” on page 34
- “Migrating database or directory server data” on page 36

Tasks

- “Installing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management version 7.6.1 installation program” on page 34
 - “Preparing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management configuration program” on page 35
3. Run the Maximo Asset Management version 7.6.1 installation program.
To Install Maximo Asset Management version 7.6.1 on the administrative workstation.
Tasks “Running the Maximo Asset Management 7.6.1 installation program” on page 37
 4. Optional: Install industry solutions and add-ons.
 5. Run the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1. Changes are written to the database and if you chose to do so, application EAR files are deployed to WebSphere Application Server Network Deployment.
Tasks “Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program” on page 39
 6. Run Maximo Asset Management 7.6.1 Integrity Checker in Report mode. If the Integrity Checker reports an error, you must resolve it.
Tasks “Running Integrity Checker 7.6.1” on page 40

What to do next

Perform post-upgrade tasks.

Concepts

Chapter 9, “Post-upgrade tasks,” on page 69

Tasks

- “Reviewing your upgraded screens” on page 69
- “Reviewing table domains and crossover domains” on page 69
- “Updating BIRT reports” on page 69
- “Updating statistics” on page 69

Running Integrity Checker 7.5

Run the Maximo Asset Management version 7.5 Integrity Checker tool.

About this task

This tool is used with the Maximo Asset Management version 7.5 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. On the administrative workstation where Maximo Asset Management version 7.5 is installed, open a command prompt and change directory to the tools directory, for example, *install_home\maximo\tools\maximo*
2. Start the Integrity Checker tool.
`integrityui.bat`
3. Select the **Check Integrity** tab.
4. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.

5. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.
 - c. Change directory to *install_home\maximo\tools\maximo* and then run the **configdb** command.

Results

Although the Integrity Checker can repair many issues, you might need to resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Establishing supported middleware

The first step in a Maximo Asset Management version 7.6.1 upgrade is to establish middleware in your environment that is supported by Maximo Asset Management version 7.6.1. In some cases, the middleware that you used in the Maximo Asset Management version 7.5 deployment, such as, database or directory server software, can be reused for the Maximo Asset Management version 7.6.1 upgrade. In other cases, you might have to use new middleware servers that were not part of the original Maximo Asset Management version 7.5 deployment.

The Maximo Asset Management version 7.6.1 installation program is used to install WebSphere Application Server Network Deployment v8.5.5 and is prepared for Maximo Asset Management version 7.6.1 by the Maximo Asset Management version 7.6.1 configuration program.

If necessary, upgrade database software to a version that is supported by Maximo Asset Management version 7.6.1. Upgrading the existing database software that is used with Maximo Asset Management version 7.5 is the preferred method of establishing a Maximo Asset Management version 7.6.1 supported database. You can reuse existing elements of your Maximo Asset Management version 7.5 deployment, such as user IDs and database instances, by using this method. In some cases, you might be required to install a new instance of the database software.

For example, the Maximo Asset Management version 7.5 deployment might include a database server that is established on a platform, such as a 32-bit platform, that is no longer supported in Maximo Asset Management version 7.6.1. In this scenario, you need to install a new instance of the database software that is compatible with Maximo Asset Management version 7.6.1. For Db2, you might install this software by using the Maximo Asset Management version 7.6.1 installation program. If you install new instances of database software outside of the Maximo Asset Management version 7.6.1 installation program, you must perform additional manual configuration tasks that are described in the Maximo Asset Management 7.6.1 installation information. You also must migrate the database from the old server to the new server.

If necessary, upgrade directory server software to a version supported by Maximo Asset Management version 7.6.1. For more upgrade information, see the documentation that is provided with your directory server product.

Installing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management version 7.6.1 installation program

You install WebSphere Application Server Network Deployment v9.0.0.7 on a single system by using the Maximo Asset Management version 7.6.1 installation program.

Procedure

1. Log in to the target system as a user with administrative authority. If you are running the Maximo Asset Management version 7.6.1 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Start the IBM Maximo Asset Management version 7.6.1 installation program from the launchpad.

- a. Start the launchpad.

Windows

From the downloaded installation image, browse to the root directory and run the following command: **1launchpad64.exe**.

Linux and UNIX

From the downloaded installation image, browse to the root directory and run the following command: **1launchpad.sh**.

- b. Select a language for the installation and click **OK**.
- c. In the Launchpad Navigation pane, click **Install Product**.
- d. From the **Install Product** pane, select **IBM WebSphere Application Server Network Deployment v9.0.0.7** and then click **Install IBM Maximo Asset Management components**.
3. In the Package Selection pane, click **Next**.
4. In the Package Prerequisite Validation pane, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this pane, resolve the issue and then click **Recheck Status** before you continue.
5. In the License Agreement pane, review the license information for each package that is being installed, select **I accept the terms in the license agreements** if you agree with the terms, and then click **Next**.
6. In the Installation Manager installation location pane, specify path information for the shared resources directory and the Installation Manager installation directory, and then click **Next**. Installation Manager is the installation framework that is used to install Maximo Asset Management version 7.6.1 components. The shared resources directory is a common workspace directory that is used by the Installation Manager when you install packages.
7. In the package installation location pane, select a package group, specify path information for its installation directory, and then click **Next**. Repeat this process for each package group that is listed.
8. In the Package Translations pane, specify language support for WebSphere Application Server Network Deployment, and then click **Next**.
9. In the Package Features pane, ensure that default options are selected, and then click **Next**.
10. In the Package Configuration pane, specify configuration information for IBM HTTP Server, and then click **Next**.
11. In the Package Summary pane, review the information for the planned installation, and then click **Install**.
12. After the installation is complete, click **Finish**.

Preparing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management configuration program

You use the Maximo Asset Management version 7.6.1 configuration program to prepare WebSphere Application Server Network Deployment v9.0.0.7 for Maximo Asset Management configuration.

Procedure

1. If the Maximo Asset Management configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click **Configure Product** and then click **Launch the Tivoli's Process Automation Suite configuration program**.

2. In the IBM Maximo Asset Management version 7.6.1 configuration operations page, click **Prepare WebSphere Application Server Network Deployment for configuration**.
3. In the Configure the Application for WebSphere pane, specify installation location and configuration information for WebSphere Application Server Network Deployment and associated components.
4. In the Configure Application Server Profiles pane, specify information to use to create the WebSphere Application Server Network Deployment deployment manager and application server profiles.
5. If required, specify additional configuration information in the Configure Application Server Advanced Options pane.
6. If you chose to use a directory server for WebSphere Application Server Network Deployment administrative security, specify information about the directory server host, credentials, and directory structure from the Configure Administrative Security pane.
7. In the Apply Deployment Operations pane, select all deployment operation options, and then click **Finish**.

Results

WebSphere Application Server Network Deployment v9.0.0.7 is ready for Maximo Asset Management.

Migrating database or directory server data

Depending on your environment, you need to migrate database or directory server data from Maximo Asset Management version 7.5 middleware servers to Maximo Asset Management version 7.6.1 middleware servers.

In cases where the middleware you used to deploy Maximo Asset Management version 7.5 is incompatible with Maximo Asset Management version 7.6.1, you can migrate Maximo Asset Management version 7.5 information to a server that is supported by Maximo Asset Management version 7.6.1.

If your Maximo Asset Management version 7.5 database software is compatible with Maximo Asset Management version 7.6.1, you can use the existing database. If the existing database is not compatible, refer to the documentation that is provided with your software for instructions on migrating database objects. For Db2, this information can be found at <http://publib.boulder.ibm.com/infocenter/db2luw/v10r5/topic/com.ibm.db2.luw.qb.upgrade.doc/doc/c0011933.html>. If you performed an upgrade of your database software, you are only required to migrate the Maximo Asset Management version 7.5 database instance and database. If you installed a new instance of the database software, you must complete the additional configuration tasks that are described in the Maximo Asset Management version 7.6.1 installation information.

If you chose to use a directory server for security in your Maximo Asset Management version 7.5 deployment and you are required to migrate directory server information to comply with Maximo Asset Management version 7.6.1 prerequisites, consult the documentation that is provided with your software for instructions on migrating. If you used IBM Security Directory Server for the Maximo Asset Management version 7.5 deployment, no migration is required because the same version of IBM Security Directory Server is supported in both products.

Running the Maximo Asset Management 7.6.1 installation program

You run the Maximo Asset Management version 7.6.1 installation program on the system you designate as the Maximo Asset Management version 7.6.1 administrative workstation.

About this task

Do not perform the upgrade from the Maximo Asset Management version 7.5 administrative workstation. Platforms that are supported for Maximo Asset Management version 7.5 administrative workstations, for example, Windows 2008, are not supported in Maximo Asset Management version 7.6.1. The upgrade process involves installing Maximo Asset Management version 7.6.1 and then configuring it to use the Maximo Asset Management version 7.5 database.

Procedure

1. Log in to the system that you designate as the Maximo Asset Management version 7.6.1 administrative workstation. If you run the IBM Maximo Asset Management version 7.6.1 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Start the IBM Maximo Asset Management version 7.6.1 installation program from the launchpad.
 - a. Start the launchpad.

Windows

From the downloaded installation image, browse to the root directory and run the following command: **launchpad64.exe**.

Linux and UNIX

From the downloaded installation image, browse to the root directory and run the following command: **launchpad.sh**.

- b. Select a language for the installation and click **OK**.
 - c. In the launchpad navigation pane, click **Install Product**.
 - d. From the Install Product pane, select **IBM Maximo Asset Management v7.6** and then click **Install IBM Maximo Asset Management components**.
3. In the package selection pane, click **Next**.
 4. In the package prerequisite validation pane, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this pane, resolve the issue and then click **Recheck Status** before you continue.
 5. In the license agreement pane, review the license information for each package, select **I accept the terms in the license agreements** if you agree with the terms, and then click **Next**.
 6. If you are prompted to do so, in the Installation Manager installation location pane, specify path information for the shared resources directory and the Installation Manager installation directory, and then click **Next**. Installation Manager is the installation framework that is used to install Maximo Asset Management version 7.6.1 components. The shared resources directory is a common workspace directory that is used by Installation Manager when you install packages.
 7. In the package installation location pane, choose **Create a new package group**, select the IBM Tivoli's process automation suite package group, and then click **Next**.
 8. In the package features pane, ensure that all default options are checked, and then click **Next**.

9. In the package summary pane, review the information for the planned installation, and then click **Install**.
10. After the installation is complete, if you do not have any industry solutions and add-ons to install, you can select the option to start the Maximo Asset Management version 7.6.1 configuration program, and then click **Finish**. The Maximo Asset Management version 7.6.1 installation program exits and the Maximo Asset Management version 7.6.1 configuration program is started automatically. If you need to install industry solutions and add-ons, exit the Maximo Asset Management version 7.6.1 configuration program and install them before you continue.

What to do next

Ensure that you download the latest version and fixes that are available for the industry solution or add-on before you install it. Refer to the Maximo Upgrade Requirements Matrix (<http://www-01.ibm.com/support/docview.wss?uid=swg21440174>) for the latest information about industry solution and add-on requirements.

After the installation is completed, use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Installing industry solutions

You can install version 7.6 industry solutions for Maximo Asset Management version 7.6.1 by using Installation Manager. Refer to the installation documentation that is provided with your product for detailed installation information.

If you have existing industry solutions that are installed with Maximo Asset Management 7.5, you must install a compatible version of those products when you upgrade to Maximo Asset Management 7.6.1.

All industry solutions must be installed before you continue with the Maximo Asset Management 7.6.1 configuration process.

When the installation is complete, you can start the Maximo Asset Management version 7.6.1 configuration tool to configure the industry solution, or you can exit the installation program and configure it later. You might choose to not start the Maximo Asset Management 7.6.1 configuration tool yet because you have more industry solutions to install or if you have a fix pack that must be installed before you configure Maximo Asset Management.

Migrating customizations

Migrate any customizations that you made in your Maximo Asset Management version 7.5 deployment over to the Maximo Asset Management version 7.6.1 administrative workstation.

Procedure

1. Compile custom Java code by using the Java™ Development Kit 1.8 compiler. Custom Java classes that were created for the Maximo Asset Management version 7.5 deployment were likely compiled by using Java™ Development Kit 1.5, which was provided with Maximo Asset Management version 7.5. Custom Java code must be recompiled by using the Java™ Development Kit 1.8 compiler.

- a. Copy custom Java source files from the Maximo Asset Management 7.5 administrative workstation to the Maximo Asset Management version 7.6.1 administrative workstation.
 - b. Compile source into Java class files by using Java™ Development Kit 1.8.
 - c. Move recompiled class files into the appropriate Maximo Asset Management version 7.6.1 directory. Typically this directory is the same directory under Maximo Asset Management version 7.6.1 as found in Maximo Asset Management version 7.5.
2. Identify customizations that were made to default Maximo Asset Management version 7.5 JSP, XML, HTML, CSS, or XSLT files. These customizations of default files must be re-created in the Maximo Asset Management version 7.6.1 versions of these files. You cannot overwrite Maximo Asset Management version 7.6.1 files with modified versions of Maximo Asset Management 7.5 default files from the Maximo Asset Management 7.5 administrative workstation. Customizations must be reapplied to the Maximo Asset Management version 7.6.1 versions of these default files.
 3. Copy or move any custom JSP, XML, HTML, CSS, or XSLT files you created to work with Maximo Asset Management version 7.5.
 4. For any changes made to Applet extensions, move the compiled code into the appropriate folders on the Maximo Asset Management version 7.6.1 installation directory. Ensure that you build the Applet Jars from the Maximo Asset Management version 7.6.1 folders.
 5. Copy or move any customized Maximo Asset Management version 7.5 report files to the appropriate Maximo Asset Management version 7.6.1 folder. These report files need to be imported into the database after the upgrade process is complete, which is described in the post-upgrade information.
 6. Move any custom configuration files, `.properties` and `.xml`, that contain extensions that are defined for Maximo Asset Management version 7.6.1. Product XML files can be found in the `\maximo\applications\maximo\properties\product` folder. If customizations were made to default Maximo Asset Management version 7.5 configuration files, you must replicate those changes in the Maximo Asset Management version 7.6.1 versions of those files.
 7. Copy or move the `webclient.properties` file to the `\maximo\applications\maximo\properties\product` folder of the Maximo Asset Management version 7.6.1 installation.
 8. Copy or move any third-party libraries that are used with the previous release to the appropriate Maximo Asset Management version 7.6.1 folder. Consult the information that is provided with your third-party libraries to ensure that no further configuration tasks are required.

Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program

You use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Before you begin

You must uninstall any industry solutions and add-ons that are not supported in Maximo Asset Management version 7.6.1 before you configure it. For more information, see the Maximo Upgrade Resources support page. Scripts to uninstall unsupported industry solutions and add-ons are provided for download from the Fix Central support site.

Procedure

1. If the Maximo Asset Management version 7.6.1 configuration program is not open, start it from the Maximo Asset Management launchpad. In the Launchpad Navigation pane, click **Configure Product**, specify the installation location for Maximo Asset Management, and then click **Launch the Tivoli's Process Automation Suite configuration program**.
2. In the IBM Maximo Asset Management Configuration Operations page, click **Configure the existing 7.5 environment for upgrade**.
3. In the Define Deployment Environment pane, specify information about the Maximo Asset Management version 7.5 Db2 host. Select the **Complete configuration of WebSphere for your product** option. After you define your deployment environment, click **Finish**.
4. In the Configure the Db2 Instance pane, specify information about the Maximo Asset Management version 7.5 Db2 instance.
5. In the Configure the Application Server pane, specify information for the WebSphere Application Server Network Deployment server that you installed. Indicate whether you want to store JMS messages that originate from the integration adapter.
6. In the Apply Deployment Operations pane, ensure **Apply application server configuration settings** is selected, and then click **Finish**.
7. In the IBM Maximo Asset Management configuration operations page, select one of the update database operations to update the database and deploy application EAR files.
8. In the Apply Deployment Operations pane, select all available deployment operations, and then click **Finish**. When you select **Apply the changes to the database**, the **updatedb** program writes information to the database. If you want to update the database by using the optional UpdateDB Lite feature, you must first run the UpdateDB Lite pre-processing task. After completion, you must stop the Maximo application and then update the database by using UpdateDB Lite.

Results

Maximo Asset Management version 7.6.1 is now installed and configured to use WebSphere Application Server Network Deployment v9.0.0.7. Changes are written to the database and if you chose to do so, application EAR files were deployed to WebSphere Application Server Network Deployment.

Related information:



<http://www-01.ibm.com/support/docview.wss?uid=swg21266217>

Running Integrity Checker 7.6.1

Run the Maximo Asset Management version 7.6.1 integrity checker utility.

About this task

This tool is used with the Maximo Asset Management version 7.5 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. Stop the application server. For example, MXServer.
2. On the administrative workstation where Maximo Asset Management version 7.5 is installed, open a command prompt and change directory to the tools directory, for example, *install_home\maximo\tools\maximo*.
3. Start the Integrity Checker tool.
integrityui.bat
4. Select the **Check Integrity** tab.
5. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.
6. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results

Although the Integrity Checker can repair many issues, you can resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Chapter 7. Upgrading by migrating WebSphere Application Server information to WebSphere Application Server v9.0.0.7 (Scenario 2)

Use this information to migrate configuration information from your existing WebSphere Application Server v7.x installation to a new installation of WebSphere Application Server Network Deployment v9.0.0.7.

Before you begin

Perform pre-upgrade tasks:

Concepts

Chapter 5, “Pre-upgrade tasks,” on page 27

Tasks

- “Backing up your database” on page 27
- “Creating a test copy of your Maximo database” on page 27
- “Disabling custom triggers” on page 27

About this task

This information provides a high-level overview or roadmap of tasks you need to complete to upgrade to Maximo Asset Management version 7.6.1 by migrating the configuration of WebSphere Application Server Network Deployment v7.x that is used with Maximo Asset Management version 7.5 to WebSphere Application Server Network Deployment v9.0.0.7. Use the information that is provided in the Concepts list to familiarize yourself with the ideas behind each step, and then refer to the Tasks list and perform the tasks to complete the step.

In this scenario, you use the WebSphere Application Server Network Deployment v9.0.0.7 migration wizard to transfer existing Maximo Asset Management version 7.5 configuration information from WebSphere Application Server Network Deployment v7.x to WebSphere Application Server Network Deployment v9.0.0.7.

The benefit of using this upgrade scenario is that you do not have to configure WebSphere Application Server Network Deployment v9.0.0.7. You reuse the configuration that you performed for WebSphere Application Server Network Deployment v7.x.

The following image shows the steps that are needed to upgrade Maximo Asset Management:

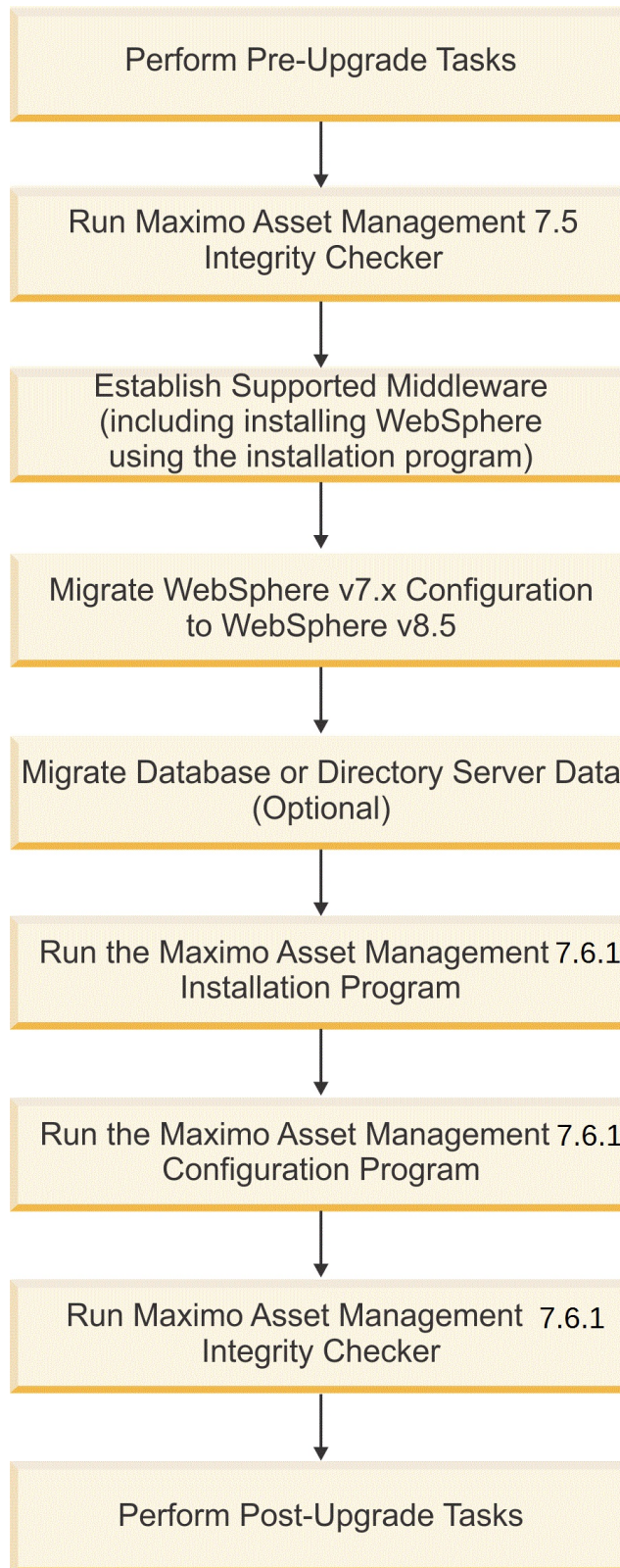


Figure 2. Upgrading Maximo Asset Management by migrating WebSphere Application Server Network Deployment configuration data

Procedure

1. Run the Maximo Asset Management 7.5 Integrity Checker. Run the Integrity Checker tool in Report mode. If the Integrity Checker reports an error, you must resolve it before using the product installation program to attempt an upgrade.

Tasks “Running Integrity Checker 7.5” on page 46

2. Establish supported middleware:
 - a. Install WebSphere Application Server Network Deployment v9.0.0.7 and migrate configuration information. You intend to migrate existing WebSphere Application Server Network Deployment v7.x profile information that is created for Maximo Asset Management version 7.5 to WebSphere Application Server Network Deployment v9.0.0.7.
 - b. If necessary, upgrade database software to a version that is supported by Maximo Asset Management 7.6.1 by using the installation program for that software. Maximo Asset Management version 7.6.1 requires Db2 version 10.5 at a minimum.
 - c. If necessary, upgrade directory server software to a version that is supported by Maximo Asset Management 7.6.1 by using the installation program for that software. Refer to the documentation that is provided with your product for upgrade information.

Concepts

- “Establishing supported middleware” on page 46
- “Migrating database or directory server data” on page 36

Tasks

- “Installing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management version 7.6.1 installation program” on page 34
 - “Migrating IBM WebSphere Application Server Network Deployment configuration information” on page 48
3. Run the Maximo Asset Management version 7.6.1 installation program to install Maximo Asset Management version 7.6.1 onto the administrative workstation.

Tasks “Running the Maximo Asset Management 7.6.1 installation program” on page 51

4. Optional: Install industry solutions and add-ons.
5. Run the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1. Changes are written to the database and if you chose to do so, application EAR files are deployed to WebSphere Application Server Network Deployment.

Tasks “Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program” on page 54

6. Run Maximo Asset Management version 7.6.1 Integrity Checker in Report mode. If the Integrity Checker reports an error, you must resolve it.

Tasks “Running Integrity Checker 7.6.1” on page 55

7. Perform postinstallation tasks.

Concepts

Chapter 9, “Post-upgrade tasks,” on page 69

Tasks

- “Reviewing your upgraded screens” on page 69
- “Reviewing table domains and crossover domains” on page 69
- “Updating BIRT reports” on page 69
- “Updating statistics” on page 69

Running Integrity Checker 7.5

Run the Maximo Asset Management version 7.5 integrity checker utility.

About this task

This tool is used with the Maximo Asset Management version 7.5 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. On the administrative workstation where Maximo Asset Management version 7.5 is installed, open a command prompt and change directory to the tools directory, for example, *install_home\maximo\tools\maximo*
2. Start the Integrity Checker tool.
`integrityui.bat`
3. Select the **Check Integrity** tab.
4. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.

5. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results

Although the Integrity Checker can repair many issues, you can resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Establishing supported middleware

The first step in a Maximo Asset Management version 7.6.1 upgrade is to establish middleware in your environment that is supported by Maximo Asset Management version 7.6.1. In some cases, the middleware that you used in the Maximo Asset Management version 7.5 deployment, such as, database or directory server software, can be reused for the Maximo Asset Management version 7.6.1 upgrade.

In other cases, you might have to use new middleware servers that were not part of the original Maximo Asset Management version 7.5 deployment.

The Maximo Asset Management version 7.6.1 installation program is used to install WebSphere Application Server Network Deployment v9.0.0.7. The WebSphere Application Server Network Deployment v9.0.0.7 migration tools are used to migrate WebSphere Application Server Network Deployment profile information.

If necessary, upgrade database software to a version that is supported by Maximo Asset Management version 7.6.1. Upgrading the existing database software that is used with Maximo Asset Management version 7.5 is the preferred method of establishing a Maximo Asset Management version 7.6.1 supported database. You can reuse existing elements of your Maximo Asset Management version 7.5 deployment, such as user IDs and database instances, by using this method. In some cases, you might be required to install a new instance of the database software.

For example, the Maximo Asset Management version 7.5 deployment might include a database server that is established on a platform, such as a 32-bit platform, that is no longer supported in Maximo Asset Management version 7.6.1. In this scenario, you need to install a new instance of the database software that is compatible with Maximo Asset Management version 7.6.1. For Db2, you might install this software by using the Maximo Asset Management version 7.6.1 installation program. If you install new instances of database software outside of the Maximo Asset Management version 7.6.1 installation program, you must perform additional manual configuration tasks that are described in the Maximo Asset Management 7.6.1 installation information. You also must migrate the database from the old server to the new server.

If necessary, upgrade directory server software to a version that is supported by Maximo Asset Management version 7.6.1. For more upgrade information, see the documentation that is provided with your directory server product.

Installing WebSphere Application Server Network Deployment v9.0.0.7 by using the Maximo Asset Management version 7.6.1 installation program

You install WebSphere Application Server Network Deployment v9.0.0.7 on a single system by using the Maximo Asset Management version 7.6.1 installation program.

Procedure

1. Log in to the target system as a user with administrative authority. If you are running the Maximo Asset Management version 7.6.1 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Start the IBM Maximo Asset Management version 7.6.1 installation program from the launchpad.
 - a. Start the launchpad.

Windows

From the downloaded installation image, browse to the root directory and run the following command: **launchpad64.exe**.

Linux and UNIX

From the downloaded installation image, browse to the root directory and run the following command: **launchpad.sh**.

- b. Select a language for the installation and click **OK**.
 - c. In the Launchpad Navigation pane, click **Install Product**.
 - d. From the **Install Product** pane, select **IBM WebSphere Application Server Network Deployment v9.0.0.7** and then click **Install IBM Maximo Asset Management components**.
3. In the Package Selection pane, click **Next**.
 4. In the Package Prerequisite Validation pane, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this pane, resolve the issue and then click **Recheck Status** before you continue.
 5. In the License Agreement pane, review the license information for each package that is being installed, select **I accept the terms in the license agreements** if you agree with the terms, and then click **Next**.
 6. In the Installation Manager installation location pane, specify path information for the shared resources directory and the Installation Manager installation directory, and then click **Next**. Installation Manager is the installation framework that is used to install Maximo Asset Management version 7.6.1 components. The shared resources directory is a common workspace directory that is used by the Installation Manager when you install packages.
 7. In the package installation location pane, select a package group, specify path information for its installation directory, and then click **Next**. Repeat this process for each package group that is listed.
 8. In the Package Translations pane, specify language support for WebSphere Application Server Network Deployment, and then click **Next**.
 9. In the Package Features pane, ensure that default options are selected, and then click **Next**.
 10. In the Package Configuration pane, specify configuration information for IBM HTTP Server, and then click **Next**.
 11. In the Package Summary pane, review the information for the planned installation, and then click **Install**.
 12. After the installation is complete, click **Finish**.

Migrating IBM WebSphere Application Server Network Deployment configuration information

You can use the IBM WebSphere Application Server Network Deployment v9.0.0.7 migration wizard to migrate profiles from IBM WebSphere Application Server Network Deployment v7.x to IBM WebSphere Application Server Network Deployment v9.0.0.7.

About this task

You can transfer existing profile information that is used with Maximo Asset Management version 7.5 instead of creating new profiles for Maximo Asset Management version 7.6.1.

Migrating profiles that are used with Maximo Asset Management version 7.5 disables your Maximo Asset Management version 7.5 deployment. After the migration, you are no longer able to access or use Maximo Asset Management version 7.5. Do not migrate profile information as described here unless you no longer need access Maximo Asset Management version 7.5.

Refer to https://www.ibm.com/support/knowledgecenter/SSAW57_9.0.0/com.ibm.websphere.migration.nd.doc/ae/tmig_profiles_gui.html for additional details on the IBM WebSphere Application Server Network Deployment migration process.

Procedure

1. Create a Deployment Manager (Dmgr) profile, for example, ctgDmgr02.
 - a. Log on to the system that is hosting WebSphere Application Server v9.0.0.7.
 - b. Start the WebSphere Application Server Profile Management Tool.

Windows

Start > IBM WebSphere Application Server v9.0 > Profile Management Tool

UNIX or Linux

`WAS_HOME/bin/ProfileManagement/pmt.sh`

- c. Click **Create**, select **Custom Profile** and then click **Next**.
 - d. Select **Advanced profile creation** and click **Next**.
 - e. Enter a value for the new profile, for example ctgDmgr02, and then click **Next**. The new Deployment Manager profile name cannot be the same as the profile name for the WebSphere Application Server v7.0 profile.
 - f. Verify the host name and then enter a value for the new node, for example, ctgNode02. Click **Next**. The new node name cannot be the same as the WebSphere Application Server v7.0 node.
 - g. Select the option for **Federate this node later** and then click **Next**.
 - h. Accept the default values for security certificates, and click **Next**.
 - i. Enter and confirm the default keystore password, and then click **Next**.
 - j. On the summary screen, click **Next**. Clear the **Launch the First steps** console check box and close the Profile Management Tool and the WebSphere Customization Toolbox v9.0.
2. Stop WebSphere Application Server v7.x services, if they are running.
 - a. Log on to the system that is hosting WebSphere Application Server v7.x.
 - b. Stop IBM HTTP Server and IBM HTTP Administration.
 - c. Stop WebSphere Application Server deployment manager.
 - d. Stop node.
 - e. Stop all Maximo application servers, for example, MXServer.
 3. Migrate the deployment manager profile.
 - a. Log on to the system that is hosting WebSphere Application Server v9.0.0.7.
 - b. Start the WebSphere Application Server Migration Wizard.

Windows

Start > IBM WebSphere Application Server v9.0 > Configuration Migration Tool

UNIX or Linux

`app_server_root/bin/migration.sh`

- c. Define a migration source. On the Migration Sources pane, click **New**.
- d. Select the installations that you want to migrate. Specify the WebSphere Application Server v7.x installation. Click **Next**.
- e. Select ctgDmgr01 as the source profile. Choose the option to create a backup of the profile. Click **Next**.

- f. If administrative security is enabled for the profile, enter the WebSphere Application Server administrative user ID and password. Click **Next**.
 - g. Ensure that the option for disabling the source deployment manager is selected and click **Next**.
 - h. Specify the location for the migration output and log files. Click **Next**. When you accept the default values, the new WebSphere Application Server v9.0.0.7 Deployment Manager has the same name as the WebSphere Application Server v7.0 Deployment Manager. The new Deployment Manager profile that was created earlier is required to run the migration tool, but is not used in the final product.
 - i. Ensure that **Migrate to a New Profile** is selected and click **Next**. You can migrate to an existing profile, but it must be created earlier. When you created ctgDmgr02, you did not federate it by pairing it with an application server.
 - j. Verify the host, name the profile ctgDmgr01, and then click **Next**.
 - k. Ensure that the default options are selected for the application installation information. Click **Next**.
 - l. Ensure that the default options are selected for the port value information. Click **Next**.
 - m. Ensure that the default options are selected for additional migration information. Click **Next**.
 - n. Review the migration summary data. Click **Migrate**. The migration process consists of several subprocesses, depending on the choices you made in previous steps. If the process requires user input, you are automatically moved to the appropriate tab.
 - o. Review the results page. To return to the list of migration sources, click **Finish**.
4. Migrate the application server profile.
- a. Start the deployment manager. The new deployment manager is located in `WAS_HOME\AppServer\profiles\ctgDmgr01\bin`.
 - b. Start the WebSphere Application Server Migration Wizard.

Windows

Start > IBM WebSphere Application Server v9.0 > Configuration Migration Tool

UNIX or Linux

`app_server_root/bin/migration.sh`

- c. Enter the WebSphere Application Server administrative user name, wasadmin, and password, and then click **Test Connection to Deployment Manager**. Click **Next**.
- d. From the Profile Migration Output page, click **Next**.
- e. From the Target Profile page, click **Next**.
- f. From the Profile Creation Parameters page, enter ctgAppSrv01 as the profile name, and then click **Next**.
- g. Enter port value information and then click **Next**. If you plan to deactivate WebSphere Application Server v7.0, use the port values that are assigned to the source profile.
- h. Review the migration summary data. Click **Migrate**. The migration process consists of several subprocesses, depending on the choices you made in previous steps. If the process requires user input, you are automatically moved to the appropriate tab.

- i. Review the results page. To return to the list of migration sources, click **Finish**.

Migrating database or directory server data

Depending on your environment, you need to migrate database or directory server data from Maximo Asset Management version 7.5 middleware servers to Maximo Asset Management version 7.6.1 middleware servers.

In cases where the middleware you used to deploy Maximo Asset Management version 7.5 is incompatible with Maximo Asset Management version 7.6.1, you can migrate Maximo Asset Management version 7.5 information to a server that is supported by Maximo Asset Management version 7.6.1.

If your Maximo Asset Management version 7.5 database software is compatible with Maximo Asset Management version 7.6.1, you can use the existing database. If the existing database is not compatible, refer to the documentation that is provided with your software for instructions on migrating database objects. For Db2, this information can be found at <http://publib.boulder.ibm.com/infocenter/db2luw/v10r5/topic/com.ibm.db2.luw.qb.upgrade.doc/doc/c0011933.html>. If you performed an upgrade of your database software, you are only required to migrate the Maximo Asset Management version 7.5 database instance and database. If you installed a new instance of the database software, you must complete the additional configuration tasks that are described in the Maximo Asset Management version 7.6.1 installation information.

If you chose to use a directory server for security in your Maximo Asset Management version 7.5 deployment and you are required to migrate directory server information to comply with Maximo Asset Management version 7.6.1 prerequisites, consult the documentation that is provided with your software for instructions on migrating. If you used IBM Security Directory Server for the Maximo Asset Management version 7.5 deployment, no migration is required because the same version of IBM Security Directory Server is supported in both products.

Running the Maximo Asset Management 7.6.1 installation program

You run the Maximo Asset Management version 7.6.1 installation program on the system you designate as the Maximo Asset Management version 7.6.1 administrative workstation.

About this task

Do not perform the upgrade on the Maximo Asset Management version 7.5 administrative workstation. Platforms that are supported for Maximo Asset Management version 7.5 administrative workstations, for example, Windows 2008, are not supported in Maximo Asset Management version 7.6.1. The upgrade process involves installing Maximo Asset Management version 7.6.1 and then configuring it to use the Maximo Asset Management version 7.5 database.

Procedure

1. Log in to the system that you designate as the Maximo Asset Management version 7.6.1 administrative workstation. If you run the IBM Maximo Asset Management version 7.6.1 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.

2. Start the IBM Maximo Asset Management version 7.6.1 installation program from the launchpad.
 - a. Start the launchpad.

Windows

From the downloaded installation image, browse to the root directory and run the following command: **launchpad64.exe**.

Linux and UNIX

From the downloaded installation image, browse to the root directory and run the following command: **launchpad.sh**.

- b. Select a language for the installation and click **OK**.
 - c. In the launchpad navigation pane, click **Install Product**.
 - d. From the Install Product pane, select **IBM Maximo Asset Management v7.6.1** and then click **Install IBM Maximo Asset Management components**.
3. In the package selection pane, click **Next**.
4. In the package prerequisite validation pane, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this pane, resolve the issue and then click **Recheck Status** before you continue.
5. In the license agreement pane, review the license information for each package, select **I accept the terms in the license agreements** if you agree with the terms, and then click **Next**.
6. If you are prompted to do so, in the Installation Manager installation location pane, specify path information for the shared resources directory and the Installation Manager installation directory, and then click **Next**. Installation Manager is the installation framework that is used to install Maximo Asset Management version 7.6.1 components. The shared resources directory is a common workspace directory that is used by Installation Manager when you install packages.
7. In the package installation location pane, choose **Create a new package group**, select the IBM Tivoli's process automation suite package group, and then click **Next**.
8. In the package features pane, ensure that all default options are checked, and then click **Next**.
9. In the package summary pane, review the information for the planned installation, and then click **Install**.
10. After the installation is complete, if you do not have any industry solutions and add-ons to install, you can select the option to start the Maximo Asset Management version 7.6.1 configuration program, and then click **Finish**. The Maximo Asset Management version 7.6.1 installation program exits and the Maximo Asset Management version 7.6.1 configuration program is started automatically. If you need to install industry solutions and add-ons, exit the Maximo Asset Management version 7.6.1 configuration program and install them before you continue.

What to do next

Ensure that you download the latest version and fixes that are available for the industry solution or add-on before you install it. Refer to the Maximo Upgrade Requirements Matrix (<http://www-01.ibm.com/support/docview.wss?uid=swg21440174>) for the latest information about industry solution and add-on requirements.

After the installation is completed, use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Installing industry solutions

You can install version 7.6 industry solutions for Maximo Asset Management version 7.6.1 by using Installation Manager. Refer to the installation documentation that is provided with your product for detailed installation information.

If you have existing industry solutions that are installed with Maximo Asset Management 7.5, you must install a compatible version of those products when you upgrade to Maximo Asset Management 7.6.1.

All industry solutions must be installed before you continue with the Maximo Asset Management 7.6.1 configuration process.

When the installation is complete, you can start the Maximo Asset Management version 7.6.1 configuration tool to configure the industry solution, or you can exit the installation program and configure it later. You might choose to not start the Maximo Asset Management 7.6.1 configuration tool yet because you have more industry solutions to install or if you have a fix pack that must be installed before you configure Maximo Asset Management.

Migrating customizations

Migrate any customizations that you made in your Maximo Asset Management version 7.5 deployment over to the Maximo Asset Management version 7.6.1 administrative workstation.

Procedure

1. Compile custom Java code by using the Java™ Development Kit 1.8 compiler. Custom Java classes that were created for the Maximo Asset Management version 7.5 deployment were likely compiled by using Java™ Development Kit 1.5, which was provided with Maximo Asset Management version 7.5. Custom Java code must be recompiled by using the Java™ Development Kit 1.8 compiler.
 - a. Copy custom Java source files from the Maximo Asset Management 7.5 administrative workstation to the Maximo Asset Management version 7.6.1 administrative workstation.
 - b. Compile source into Java class files by using Java™ Development Kit 1.8.
 - c. Move recompiled class files into the appropriate Maximo Asset Management version 7.6.1 directory. Typically this directory is the same directory under Maximo Asset Management version 7.6.1 as found in Maximo Asset Management version 7.5.
2. Identify customizations that were made to default Maximo Asset Management version 7.5 JSP, XML, HTML, CSS, or XSLT files. These customizations of default files must be re-created in the Maximo Asset Management version 7.6.1 versions of these files. You cannot overwrite Maximo Asset Management version 7.6.1 files with modified versions of Maximo Asset Management 7.5 default files from the Maximo Asset Management 7.5 administrative workstation. Customizations must be reapplied to the Maximo Asset Management version 7.6.1 versions of these default files.
3. Copy or move any custom JSP, XML, HTML, CSS, or XSLT files you created to work with Maximo Asset Management version 7.5.

4. For any changes made to Applet extensions, move the compiled code into the appropriate folders on the Maximo Asset Management version 7.6.1 installation directory. Ensure that you build the Applet Jars from the Maximo Asset Management version 7.6.1 folders.
5. Copy or move any customized Maximo Asset Management version 7.5 report files to the appropriate Maximo Asset Management version 7.6.1 folder. These report files need to be imported into the database after the upgrade process is complete, as describe in the post-upgrade information.
6. Move any custom configuration files, .properties and .xml, that contain extensions that are defined for Maximo Asset Management version 7.6.1. Product XML files can be found in the \maximo\applications\maximo\properties\product folder. If customizations were made to default Maximo Asset Management version 7.5 configuration files, you must replicate those changes in the Maximo Asset Management version 7.6.1 versions of those files.
7. Copy or move the webclient.properties file to the \maximo\applications\maximo\properties\product folder of the Maximo Asset Management version 7.6.1 installation.
8. Copy or move any third-party libraries that are used with the previous release to the appropriate Maximo Asset Management version 7.6.1 folder. Consult the information that is provided with your third-party libraries to ensure that no further configuration tasks are required.

Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program

You use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Before you begin

You must uninstall any industry solutions and add-ons that are not supported in Maximo Asset Management version 7.6.1 before you configure it. For more information, see the Maximo Upgrade Resources support page. Scripts to uninstall unsupported industry solutions and add-ons are provided for download from the Fix Central support site.

Procedure

1. If the Maximo Asset Management version 7.6.1 configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click **Configure Product**, specify the installation location for Maximo Asset Management, and then click **Launch the Tivoli's Process Automation Suite configuration program**.
2. In the IBM Maximo Asset Management configuration operations page, click **Configure the existing 7.5 environment for upgrade**.
3. In the Define Deployment Environment pane, specify information about the Maximo Asset Management version 7.5 Db2 host. Select the **Complete configuration of WebSphere for your product** option. After you define your deployment environment, click **Finish**.
4. In the Configure the Db2 Instance pane, specify information about the Maximo Asset Management version 7.5 Db2 instance.

5. In the Configure the Application Server pane, specify information for the WebSphere Application Server Network Deployment server that you installed. Indicate whether you want to store JMS messages that originate from the integration adapter.
6. In the Apply Deployment Operations pane, ensure **Apply application server configuration settings** is selected, and then click **Finish**.
7. In the IBM Maximo Asset Management configuration operations page, select one of the update database operations to update the database and deploy application EAR files.
8. In the Apply Deployment Operations pane, select all available deployment operations, and then click **Finish**. When you select **Apply the changes to the database**, the **updatedb** program writes information to the database. If you want to update the database by using the optional UpdateDB Lite feature, you must first run the UpdateDB Lite pre-processing task. After completion, you must stop the Maximo application and then update the database by using UpdateDB Lite.

Results

Maximo Asset Management version 7.6.1 is now installed and configured to use WebSphere Application Server Network Deployment v9.0.0.7. Changes are written to the database and if you chose to do so, application EAR files were deployed to WebSphere Application Server Network Deployment.

Related information:



<http://www-01.ibm.com/support/docview.wss?uid=swg21266217>

Running Integrity Checker 7.6.1

Run the Maximo Asset Management version 7.6.1 integrity checker tool.

About this task

This tool is used with the Maximo Asset Management version 7.6.1 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. Stop the application server. For example, MXServer.
2. On the administrative workstation of the existing deployment, open a command prompt and change directory to the Maximo tools directory. For example, *install_home\maximo\tools\maximo*
3. Start the Integrity Checker tool.
integrityui.bat
4. Select the **Check Integrity** tab.
5. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.

6. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results

While the Integrity Checker can repair many issues, you might resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Chapter 8. Upgrading on Oracle WebLogic Server (Scenario 3)

In this scenario, you upgrade an existing Maximo Asset Management 7.5 in a Oracle WebLogic Server environment.

Before you begin

Perform pre-upgrade tasks:

Concepts

Chapter 5, “Pre-upgrade tasks,” on page 27

Tasks

- “Backing up your database” on page 27
- “Creating a test copy of your Maximo database” on page 27
- “Disabling custom triggers” on page 27
-

About this task

This information provides a high-level overview or roadmap of tasks you need to complete to upgrade to Maximo Asset Management version 7.6.1 in a Oracle WebLogic Server environment. Use the information that is provided in the Concepts list to familiarize yourself with the ideas behind each step, and then refer to the Tasks list and perform the tasks that are listed in order to complete the step.

The following image shows the steps that are needed to upgrade Maximo Asset Management:

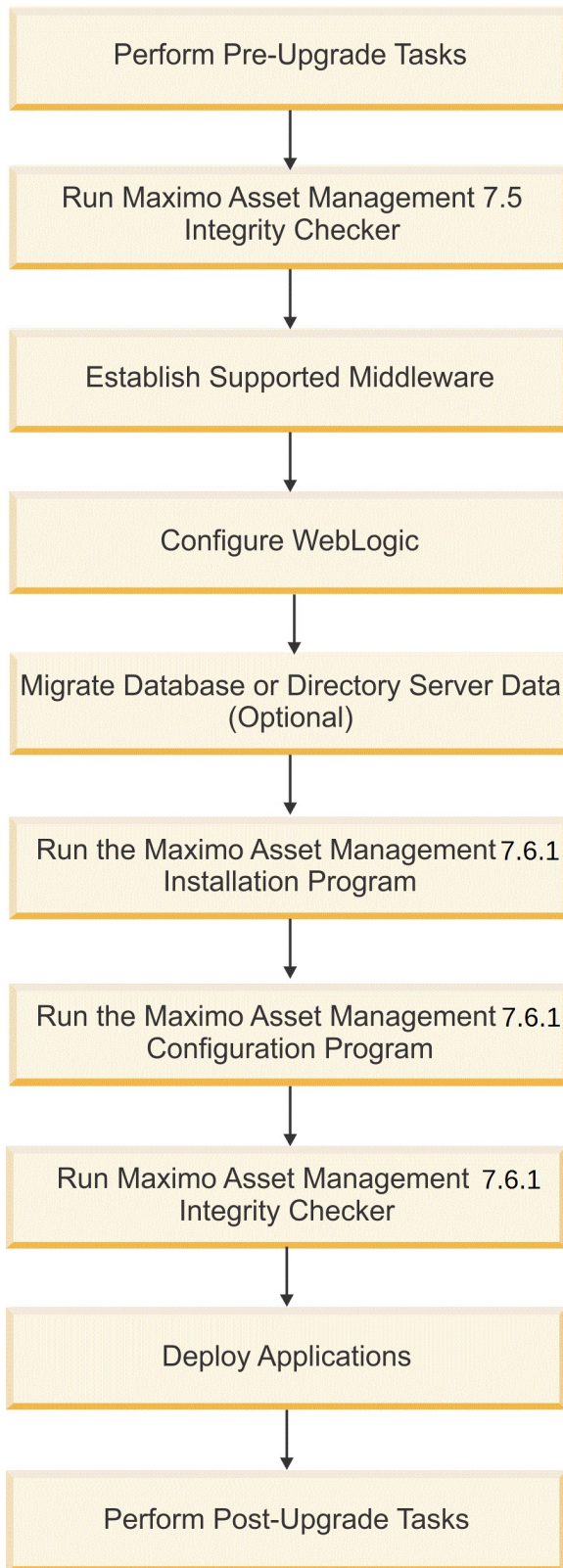


Figure 3. Upgrading Maximo Asset Management in a Oracle WebLogic Server environment

Procedure

1. Run the Maximo Asset Management version 7.5 Integrity Checker. Run the Integrity Checker tool in Report mode. If the Integrity Checker reports an error, you must resolve it before you use the product installation program to attempt an upgrade.

Tasks “Running Integrity Checker 7.5” on page 60

2. Establish supported middleware.
 - a. In your environment, you must establish in your environment a version of Oracle WebLogic Server that is supported by Maximo Asset Management version 7.6.1. The versions of Oracle WebLogic Server that were supported by Maximo Asset Management version 7.5 are not compatible with Maximo Asset Management version 7.6.1.
 - b. If necessary, upgrade the database software to a version that is supported by Maximo Asset Management version 7.6.1 by using the installation program for that software. Maximo Asset Management version 7.6.1 requires Db2 version 10.5 at a minimum.
 - c. If necessary, upgrade the directory server software to a version that is supported by Maximo Asset Management version 7.6.1 by using the installation program for that software. For more information, see the documentation that is provided with your product.

Concepts

“Establishing supported middleware” on page 61

3. Manually configure Oracle WebLogic Server. Oracle WebLogic Server configuration tasks are described in the Maximo Asset Management version 7.6.1 installation information.

Concepts

“Configuring WebLogic” on page 61

4. Optional: Migrate the database or directory server data, if necessary.

Concepts

“Migrating database or directory server data (optional)” on page 61

5. Run the Maximo Asset Management version 7.6.1 installation program to install Maximo Asset Management version 7.6.1 onto the administrative workstation.

Tasks “Running the Maximo Asset Management 7.6.1 installation program” on page 62

6. Optional: Install industry solutions and add-ons.
7. Run the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Tasks “Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program” on page 65

8. Run Maximo Asset Management version 7.6.1 Integrity Checker in Report mode. If the Integrity Checker reports an error, you must resolve it.

Tasks “Running Integrity Checker 7.6.1” on page 66

9. Deploy applications manually.

Tasks “Deploying application files to Oracle WebLogic Server” on page 67

What to do next

Perform post-upgrade tasks:

Concepts

Chapter 9, “Post-upgrade tasks,” on page 69

Tasks

- “Reviewing your upgraded screens” on page 69
- “Reviewing table domains and crossover domains” on page 69
- “Updating BIRT reports” on page 69
- “Updating statistics” on page 69

Running Integrity Checker 7.5

Run the Maximo Asset Management version 7.5 Integrity Checker tool.

About this task

This tool is used with the Maximo Asset Management version 7.5 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. On the administrative workstation of the existing deployment, open a command prompt and change directory to the Maximo tools directory. For example, *install_home\maximo\tools\maximo* For example,
c:*install_home\maximo\tools\maximo*
2. Start the Integrity Checker tool.
`integrityui.bat`
3. Select the **Check Integrity** tab.
4. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.

5. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results

While the Integrity Checker can repair many issues, you might resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Establishing supported middleware

Establish middleware in your environment that is compatible with Maximo Asset Management 7.6.1.

The first step in a Maximo Asset Management 7.6.1 upgrade is to establish in your environment middleware that is supported by Maximo Asset Management 7.6.1. In some cases, the middleware you used in the Maximo Asset Management 7.5 deployment can be reused for the Maximo Asset Management 7.6.1 upgrade. In other cases, you might need to use new middleware servers that were not part of the original Maximo Asset Management 7.5 deployment.

You need to install or otherwise establish a supported version of Oracle WebLogic Server. Versions of Oracle WebLogic Server that were supported in Maximo Asset Management 7.5 are not supported in Maximo Asset Management 7.6.1. Refer to the documentation provided with Oracle WebLogic Server for installation and upgrade information.

If necessary, upgrade database software to a version that is supported by Maximo Asset Management 7.6.1. Upgrading the existing database software that is used with Maximo Asset Management 7.5 is the preferred method of establishing a Maximo Asset Management 7.6.1 supported database. Select this method to reuse existing elements of your Maximo Asset Management 7.5 deployment, such as user ID's and database instances. In some cases, you might be required to install a new instance of the database software.

For example, the Maximo Asset Management 7.5 deployment might include a database server that is established on a 32-bit platform that is no longer supported in Maximo Asset Management 7.6.1. In this scenario, you install a fresh instance of the database software that is compatible with Maximo Asset Management 7.6.1. For Db2, you might install this software by using the Maximo Asset Management 7.6.1 middleware installation program. If you install new instances of database software outside of the middleware installation program, you must perform more manual configuration tasks that are described in the Maximo Asset Management 7.6.1 installation information. You also must migrate the database from the old server to the new server.

If necessary, upgrade directory server software to a version supported by Maximo Asset Management 7.6.1. For more information, see the upgrade documentation that is provided with your product.

Configuring WebLogic

You must configure a supported version of Oracle WebLogic Server for Maximo Asset Management version 7.6.1.

Oracle WebLogic Server configuration tasks are described in the Maximo Asset Management version 7.6.1 installation information. Complete the Oracle WebLogic Server configuration tasks that are described for Maximo Asset Management version 7.6.1.

Migrating database or directory server data (optional)

Depending on your environment, you need to migrate database or directory server data from Maximo Asset Management version 7.5 middleware servers to Maximo Asset Management version 7.6.1 middleware servers.

In cases where the middleware you used to deploy Maximo Asset Management version 7.5 is incompatible with Maximo Asset Management version 7.6.1, you can migrate Maximo Asset Management version 7.5 information to a server that is supported by Maximo Asset Management version 7.6.1.

If your Maximo Asset Management version 7.5 database software is compatible with Maximo Asset Management version 7.6.1, you can use the existing database. If the existing database is not compatible, refer to the documentation that is provided with your software for instructions on migrating database objects. For Db2, this information can be found at <http://publib.boulder.ibm.com/infocenter/db2luw/v10r5/topic/com.ibm.db2.luw.qb.upgrade.doc/doc/c0011933.html>. If you performed an upgrade of your database software, you are only required to migrate the Maximo Asset Management version 7.5 database instance and database. If you installed a new instance of the database software, you must complete the additional configuration tasks that are described in the Maximo Asset Management version 7.6.1 installation information.

If you chose to use a directory server for security in your Maximo Asset Management version 7.5 deployment and you are required to migrate directory server information to comply with Maximo Asset Management version 7.6.1 prerequisites, consult the documentation that is provided with your software for instructions on migrating. If you used IBM Security Directory Server for the Maximo Asset Management version 7.5 deployment, no migration is required because the same version of IBM Security Directory Server is supported in both products.

Running the Maximo Asset Management 7.6.1 installation program

You run the Maximo Asset Management version 7.6.1 installation program on the system you designate as the Maximo Asset Management version 7.6.1 administrative workstation.

About this task

Do not perform the upgrade from the Maximo Asset Management version 7.5 administrative workstation. Platforms that are supported for Maximo Asset Management version 7.5 administrative workstations, for example, Windows 2008, are not supported in Maximo Asset Management version 7.6.1. The upgrade process involves installing Maximo Asset Management version 7.6.1 and then configuring it to use the Maximo Asset Management version 7.5 database.

Procedure

1. Log in to the system that you designate as the Maximo Asset Management version 7.6.1 administrative workstation. If you run the IBM Maximo Asset Management version 7.6.1 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Start the IBM Maximo Asset Management version 7.6.1 installation program from the launchpad.
 - a. Start the launchpad.

Windows

From the downloaded installation image, browse to the root directory and run the following command: **launchpad64.exe**.

Linux and UNIX

From the downloaded installation image, browse to the root directory and run the following command: **launchpad.sh**.

- b. Select a language for the installation and click **OK**.
 - c. In the launchpad navigation pane, click **Install Product**.
 - d. From the Install Product pane, select **IBM Maximo Asset Management v7.6.1** and then click **Install IBM Maximo Asset Management components**.
3. In the package selection pane, click **Next**.
 4. In the package prerequisite validation pane, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this pane, resolve the issue and then click **Recheck Status** before you continue.
 5. In the license agreement pane, review the license information for each package, select **I accept the terms in the license agreements** if you agree with the terms, and then click **Next**.
 6. If you are prompted to do so, in the Installation Manager installation location pane, specify path information for the shared resources directory and the Installation Manager installation directory, and then click **Next**. Installation Manager is the installation framework that is used to install Maximo Asset Management version 7.6.1 components. The shared resources directory is a common workspace directory that is used by Installation Manager when you install packages.
 7. In the package installation location pane, choose **Create a new package group**, select the IBM Tivoli's process automation suite package group, and then click **Next**.
 8. In the package features pane, ensure that all default options are checked, and then click **Next**.
 9. In the package summary pane, review the information for the planned installation, and then click **Install**.
 10. After the installation is complete, if you do not have any industry solutions and add-ons to install, you can select the option to start the Maximo Asset Management version 7.6.1 configuration program, and then click **Finish**. The Maximo Asset Management version 7.6.1 installation program exits and the Maximo Asset Management version 7.6.1 configuration program is started automatically. If you need to install industry solutions and add-ons, exit the Maximo Asset Management version 7.6.1 configuration program and install them before you continue.

What to do next

Ensure that you download the latest version and fixes that are available for the industry solution or add-on before you install it. Refer to the Maximo Upgrade Requirements Matrix (<http://www-01.ibm.com/support/docview.wss?uid=swg21440174>) for the latest information about industry solution and add-on requirements.

After the installation is completed, use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Installing industry solutions

You can install version 7.6 industry solutions for Maximo Asset Management version 7.6.1 by using Installation Manager. Refer to the installation documentation that is provided with your product for detailed installation information.

If you have existing industry solutions that are installed with Maximo Asset Management 7.5, you must install a compatible version of those products when you upgrade to Maximo Asset Management 7.6.1.

All industry solutions must be installed before you continue with the Maximo Asset Management 7.6.1 configuration process.

When the installation is complete, you can start the Maximo Asset Management version 7.6.1 configuration tool to configure the industry solution, or you can exit the installation program and configure it later. You might choose to not start the Maximo Asset Management 7.6.1 configuration tool yet because you have more industry solutions to install or if you have a fix pack that must be installed before you configure Maximo Asset Management.

Migrating customizations

Migrate any customizations that you made in your Maximo Asset Management version 7.5 deployment over to the Maximo Asset Management version 7.6.1 administrative workstation.

Procedure

1. Compile custom Java code by using the Java™ Development Kit 1.8 compiler. Custom Java classes that were created for the Maximo Asset Management version 7.5 deployment were likely compiled by using Java™ Development Kit 1.5, which was provided with Maximo Asset Management version 7.5. Custom Java code must be recompiled by using the Java™ Development Kit 1.8 compiler.
 - a. Copy custom Java source files from the Maximo Asset Management 7.5 administrative workstation to the Maximo Asset Management version 7.6.1 administrative workstation.
 - b. Compile source into Java class files by using Java™ Development Kit 1.8.
 - c. Move recompiled class files into the appropriate Maximo Asset Management version 7.6.1 directory. Typically this directory is the same directory under Maximo Asset Management version 7.6.1 as found in Maximo Asset Management version 7.5.
2. Identify customizations that were made to default Maximo Asset Management version 7.5 JSP, XML, HTML, CSS, or XSLT files. These customizations of default files must be re-created in the Maximo Asset Management version 7.6.1 versions of these files. You cannot overwrite Maximo Asset Management version 7.6.1 files with modified versions of Maximo Asset Management 7.5 default files from the Maximo Asset Management 7.5 administrative workstation. Customizations must be reapplied to the Maximo Asset Management version 7.6.1 versions of these default files.
3. Copy or move any custom JSP, XML, HTML, CSS, or XSLT files you created to work with Maximo Asset Management version 7.5.

4. For any changes made to Applet extensions, move the compiled code into the appropriate folders on the Maximo Asset Management version 7.6.1 installation directory. Ensure that you build the Applet Jars from the Maximo Asset Management version 7.6.1 folders.
5. Copy or move any customized Maximo Asset Management version 7.5 report files to the appropriate Maximo Asset Management version 7.6.1 folder. These report files need to be imported into the database after the upgrade process is complete, which is described in the post-upgrade information.
6. Move any custom configuration files, `.properties` and `.xml`, that contain extensions that are defined for Maximo Asset Management version 7.6.1. Product XML files can be found in the `\maximo\applications\maximo\properties\product` folder. If customizations were made to default Maximo Asset Management version 7.5 configuration files, you must replicate those changes in the Maximo Asset Management version 7.6.1 versions of those files.
7. Copy or move the `webclient.properties` file to the `\maximo\applications\maximo\properties\product` folder of the Maximo Asset Management version 7.6.1 installation.
8. Copy or move any third-party libraries that are used with the previous release to the appropriate Maximo Asset Management version 7.6.1 folder. Consult the information that is provided with your third-party libraries to ensure that no further configuration tasks are required.

Configuring Maximo Asset Management version 7.6.1 by using the Maximo Asset Management version 7.6.1 configuration program

You use the Maximo Asset Management version 7.6.1 configuration program to configure Maximo Asset Management version 7.6.1.

Before you begin

This procedure refers to Db2 as the database to configure for Maximo Asset Management version 7.6.1. References to Db2 are for example only. Information that is required for Oracle or SQL Server is similar.

Procedure

1. If the Maximo Asset Management version 7.6.1 configuration program is not open, start it from the Maximo Asset Management launchpad. In the Launchpad Navigation pane, click **Configure Product**, specify the installation location for Maximo Asset Management, and then click **Launch the Tivoli's Process Automation Suite configuration program**.
2. In the IBM Maximo Asset Management Configuration Operations page, click **Configure a new Administrative Workstation to point to an existing Asset Management deployment**.
3. In the Define Deployment Environment pane, specify information about the Maximo Asset Management version 7.5 Db2 host. Select the **WebLogic** option. After you define your deployment environment, click **Finish**.
4. In the Configure the Db2 Instance pane, specify information about the Maximo Asset Management version 7.5 Db2 instance.
5. In the Apply Deployment Operations pane, ensure **Apply application server configuration settings** is selected, and then click **Finish**.
6. In the IBM Maximo Asset Management Configuration Operations pane, select one of the update database operations to update the database.

7. In the Apply Deployment Operations pane, select all available deployment operations, and then click **Finish**. When you select **Apply the changes to the database**, the **updatedb** program writes information to the database. If you want to update the database by using the optional UpdateDB Lite feature, you must first run the UpdateDB Lite pre-processing task. On completion, you must stop the Maximo application and then update the database by using UpdateDB Lite.

Results

Maximo Asset Management version 7.6.1 is now installed. The changes are written to the database and the application EAR files are built.

What to do next

Manually deploy the application EAR files on the Oracle WebLogic Server server.

Running Integrity Checker 7.6.1

Run the Maximo Asset Management version 7.6.1 integrity checker utility.

About this task

This tool is used with the Maximo Asset Management version 7.6.1 database to ensure it is ready for the upgrade. When run in Report mode, the Integrity Checker tool checks the current database and reports errors. If the Integrity Checker reports an error, you must resolve it by running the Integrity Checker in Repair mode.

Procedure

1. Stop the application server. For example, MXServer.
2. On the administrative workstation of the existing deployment, open a command prompt and change directory to the Maximo tools directory. For example, *install_home\maximo\tools\maximo*
3. Start the Integrity Checker tool.
`integrityui.bat`
4. Select the **Check Integrity** tab.
5. Run the Integrity Checker in Report mode.
 - a. Ensure that the **Repair Mode?** check box is cleared, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results are found in the *install_home\maximo\tools\maximo\log* directory in the file that is defined in the **Log File Name** field of the Check Integrity pane.

6. Optional: If any errors are reported, run the Integrity Checker in Repair mode.
 - a. Select the **Repair Mode?** check box, and then click **Run Integrity Checker**.
 - b. When the report dialog box appears, click **OK**.

Results

While the Integrity Checker can repair many issues, you must resolve some errors manually by consulting the log files.

What to do next

Check the log file to ensure that all reported items are repaired. If further manual intervention is required, you must resolve the errors and then rerun the Integrity Checker in Report mode. Repeat the process until no more errors are reported.

Deploying application files to Oracle WebLogic Server

When you deploy Maximo Asset Management version 7.6.1 on Oracle WebLogic Server, you must deploy the application EAR files manually.

Procedure

1. Start the Oracle WebLogic Server Administration Console.
2. Log in to the administrative console with the administrative user name and password.
3. In the left pane, click **Lock&Edit** in the **Change Center** section to set the server to edit mode.
4. In the left pane, click the **Deployments** link in the **Domain Structure** section.
5. In the Summary of Deployments section, click **Install**. The Install Application Assistant opens.
6. Click the **upload your file(s)** link.
7. Click **Browse** next to the **Deployment Archive** field. Browse to where the `maximo.ear` file is installed, select the file, and click **Open**.
8. Click **Next** to upload the file to the Oracle WebLogic Server.
9. Click the radio button next to the `maximo.ear` file, and click **Next** to continue the deployment.
10. Accept the default value **Install this deployment as an application** and click **Next** to continue the deployment.
11. Accept all other default values and click **Finish** to start the deployment process.
12. When the deployment process is complete, click **Activate Changes** in the Change Center. The following message displays: All changes have been activated. No restarts are necessary.
13. Click the **upload your file(s)** link.
14. Click **Browse** next to the **Deployment Archive** field. Browse to where the `maximoiehs.ear` file is installed, select the file, and click **Open**.
15. Click **Next** to upload the file to the Oracle WebLogic Server.
16. Click the radio button next to the `maximoiehs.ear` file, and click **Next** to continue the deployment.
17. Accept the default value **Install this deployment as an application** and click **Next** to continue the deployment.
18. Accept all other default values and click **Finish** to start the deployment process.
19. When the deployment process is complete, click **Activate Changes** in the Change Center. The following message is shown: All changes have been activated. No restarts are necessary.
20. Click the check boxes next to the applications that you just installed.
21. Click the arrow of the **Start** button and select **Servicing all requests**. The Start Application Assistant opens.
22. Click **Yes** to start the system.

Chapter 9. Post-upgrade tasks

After you upgrade Maximo Asset Management, complete post-upgrade tasks to conclude the upgrade.

Reviewing your upgraded screens

If you customized any screens in Maximo Asset Management, those customizations were not retained during the upgrade process.

Log in to Maximo Asset Management version 7.6.1 and review the screens you previously customized in Maximo Asset Management version 7.5. You might decide to keep the default Maximo Asset Management version 7.6.1 screens, or you might want to reapply your customizations. Use the Application Designer application in Maximo Asset Management version 7.6.1 to make additions or adjustments to the upgraded screens.

Reviewing table domains and crossover domains

If you added or modified any crossover domains or table domains, review their WHERE clauses. Ensure that the WHERE clauses use the version 7.6.1 and column names.

If necessary, use the Database Configuration application to respecify the table and column information. You must edit any custom domains that name any of the tables that were referenced in version 7.5, but do not exist in version 7.6.1. Ensure that you examine all custom crossover and table domains.

Updating BIRT reports

After you upgrade, you must go to the Report Administration application and regenerate the request pages for all of your reports.

Updating statistics

In Oracle, system administration tasks include analyzing table commands. Analyze all tables to ensure that the Oracle Cost-Based Optimizer has up-to-date statistics.

1. Log on to Maximo Asset Management.
2. Open the Database Configuration application.
3. From the **Select Action** menu, select **Update Statistics**, and then click **OK** to continue.

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