Chapter 1. Preparing for installation

These topics provide information about product media, preinstallation considerations, overview of the installation procedure, and instructions on using the Maximo® Asset Management launchpad.

Use the planning information to familiarize yourself with the overall process of a Maximo Asset Management deployment before you use this information to conduct the installation.

Software installation images

You access the IBM® Maximo Asset Management product software from IBM Passport Advantage.

The installation images that you download from Passport Advantage can comprise multiple downloadable files. Download all files in the package to a single directory and extract the files for execution.

For instructions and a full list of installation images, see the IBM Maximo Asset Management 7.6 Download Document (http://www.ibm.com/support/docview.wss?uid=swg24038431).

Before you begin

You must prepare your environment before you install Maximo Asset Management. In some cases, to perform steps for preparation, you must be logged in as a user with administrator privileges on Windows or as root on UNIX. Some processes, such as anti-virus programs, can negatively affect Maximo Asset Management installation on the system. You must temporarily shut down any noncritical processes before running the Maximo Asset Management installation program.

Make a copy of the image of the system, database, and application server on which you are planning to install the product.

Ensure that you have adequate disk space for the future on the systems being used for the Maximo Asset Management deployment. Filling up the disk space on a Maximo Asset Management deployment system can cause problems with Maximo Asset Management operations.

Fully qualified host names provided to the installation programs must resolve between systems involved in the product deployment. Ensure all IP addresses configured for systems targeted for the product deployment are reachable using the ping command from the administrative workstation.

Programmatically verifying prerequisites from the command-line.

You can use the prerequisite verification utility from the command-line to verify that installation program prerequisites are present on a system. Use this utility before you start the product installation programs.
**About this task**

When started from the command line, the prerequisite verification utility accepts various parameters. The prerequisite verification utility must be run on the system that hosts the prerequisite to check. You cannot use this utility to check prerequisites on a remote system.

**Table 1. System verification parameters**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>-component</td>
<td>Specifies the type of component to verify. At least one component must be used with the prerequisite verification utility.</td>
</tr>
<tr>
<td>j2eeserver</td>
<td>Use the <code>j2eeserver</code> parameter to have the prerequisite verification utility check for WebSphere® Application Server Network Deployment prerequisites.</td>
</tr>
<tr>
<td>pip</td>
<td>Use the <code>pip</code> parameter to have the prerequisite verification utility check for prerequisites that are required by Maximo Asset Management. Run the prerequisite verification utility with the <code>pip</code> parameter on the administrative workstation.</td>
</tr>
<tr>
<td>asset_mgt_upg</td>
<td>Use the <code>asset_mgt_upg</code> parameter to have the prerequisite verification utility check for prerequisites that are required to connect remotely during configuration.</td>
</tr>
<tr>
<td>rxa</td>
<td>Use the <code>rxa</code> parameter to have the prerequisite verification utility check for prerequisites that are required by Maximo Asset Management.</td>
</tr>
<tr>
<td>performance</td>
<td>Use the <code>performance</code> parameter to have the prerequisite verification utility check for prerequisites performance settings for Maximo Asset Management.</td>
</tr>
</tbody>
</table>

Syntax example:
```
tpae_req_check.bat -component pip
```

If you do not use the `-component` parameter, you are prompted to specify components when you use the utility.

Multiple components can be specified as comma-separated values.

<table>
<thead>
<tr>
<th>-input</th>
<th>The prerequisite verification utility can accept a property file as input. The utility verifies property values that are found in the file.</th>
</tr>
</thead>
</table>

The default input property file is `tpae.properties`, and is found on the middleware installation media in the `SystemRequirements` directory. Several sample property files are found in the `SystemRequirements\sample_property_files` directory. These sample property files contain custom values that are defined for particular operating systems. You can copy these property files to the system and modify them, or create your own, before you run the prerequisite verification utility.

Syntax example:
```
tpae_req_check.bat -component dbserver -input path to the property file
```

If you do not use the `input` parameter when you run the prerequisite verification utility, the utility is run in interactive mode. You are prompted for individual values to be verified.
Table 1. System verification parameters (continued)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mode</td>
<td>The prerequisite verification utility can be run in silent or interactive mode.</td>
</tr>
<tr>
<td></td>
<td><strong>interactive</strong></td>
</tr>
<tr>
<td></td>
<td>By default, the prerequisite verification utility is run in interactive mode. If you do not specify the <code>-mode</code> parameter, the utility defaults to running in interactive mode.</td>
</tr>
<tr>
<td></td>
<td><strong>silent</strong></td>
</tr>
<tr>
<td></td>
<td>If you use the <code>silent</code> qualifier, you can also use the <code>input</code> parameter and supply a property file. If an input file not provided, default property values are used. The output must also be directed to a file to view the results.</td>
</tr>
<tr>
<td></td>
<td>Syntax example:</td>
</tr>
<tr>
<td></td>
<td><code>tpae_req_check.bat</code></td>
</tr>
<tr>
<td></td>
<td><code>-component dbserver</code></td>
</tr>
<tr>
<td></td>
<td><code>-mode silent</code></td>
</tr>
<tr>
<td></td>
<td><code>-input path to the property file &gt; prereqresults.log</code></td>
</tr>
<tr>
<td>-trace</td>
<td>Parameter that is used to specify trace output statements while the utility is running.</td>
</tr>
<tr>
<td></td>
<td><strong>None</strong></td>
</tr>
<tr>
<td></td>
<td>Selecting this qualifier results in no trace information that is generated while the utility is running.</td>
</tr>
<tr>
<td></td>
<td><strong>Verbose</strong></td>
</tr>
<tr>
<td></td>
<td>Selecting this qualifier results in detailed trace information that is generated while the utility is running.</td>
</tr>
<tr>
<td></td>
<td><strong>Normal</strong></td>
</tr>
<tr>
<td></td>
<td>Selecting this qualifier results in default trace information that is generated while the utility is running.</td>
</tr>
<tr>
<td></td>
<td>Syntax example:</td>
</tr>
<tr>
<td></td>
<td><code>tpae_req_check.bat</code></td>
</tr>
<tr>
<td></td>
<td><code>-component dbserver</code></td>
</tr>
<tr>
<td></td>
<td><code>-trace None</code></td>
</tr>
</tbody>
</table>

**Procedure**

1. Log on to the system you are checking for prerequisites with a user ID that has permission to run scripts on the system. Ensure that the middleware installation media is mounted or otherwise available to the system.

2. Open a command-line window and change directory to the `SystemRequirements` directory of the middleware installation media.

3. Run the prerequisite verification utility. Specify the component to check and the property file to use.

   ```
   tpaе_req_check.bat
   -component dbserver
   -input d:\SystemRequirements\tpae.properties
   ```

   In this example, the `tpae.properties` file is in the same directory as the `tpae_req_check.bat` script.

**Results**

After the prerequisite verification utility successfully completes the verification task, results are printed to the screen.
The Tivoli Pre-requisite Scanner has been launched.

The Tivoli Pre-requisite Scanner exited with the return code 1.

IBM Prerequisite Scanner

Version: 1.0.34
Build: 20101109
OS Name: Microsoft Windows Server 2003, Enterprise Edition Service Pack 2
User Name: Administrator

Machine Info
Machine name: MYMACHINE
Serial Number: KKKKKK0
OS Serial: 66666-666-6666666-66666

PAE [not defined] [version 07500000]:

<table>
<thead>
<tr>
<th>Property</th>
<th>Result</th>
<th>Found</th>
<th>Exp...</th>
</tr>
</thead>
<tbody>
<tr>
<td>os.totalPhysicalMemory</td>
<td>PASS</td>
<td>2.00GB</td>
<td>1.90GB</td>
</tr>
<tr>
<td>network.hasFQDN</td>
<td>FAIL</td>
<td>False</td>
<td>True</td>
</tr>
<tr>
<td>Disk#1 (C:\ibm\tivoli\mwil\workspace)</td>
<td>PASS</td>
<td>27.99GB</td>
<td>300MB</td>
</tr>
<tr>
<td>Disk#2 (C:\Temp)</td>
<td>PASS</td>
<td>27.99GB</td>
<td>1000MB</td>
</tr>
<tr>
<td>Disk#3 (C:\Temp)</td>
<td>PASS</td>
<td>27.99GB</td>
<td>250MB</td>
</tr>
<tr>
<td>network.availablePorts.db2</td>
<td>PASS</td>
<td>135,445,1025,2967,3389,5800,5900,139</td>
<td>50000</td>
</tr>
<tr>
<td>network.availablePorts.ctginst</td>
<td>PASS</td>
<td>135,445,1025,2967,3389,5800,5900,139</td>
<td>50005</td>
</tr>
<tr>
<td>Disk#4 (C:\Program Files\IBM\SQLLIB)</td>
<td>PASS</td>
<td>27.99GB</td>
<td>1.40GB</td>
</tr>
</tbody>
</table>

ALL COMPONENTS:

<table>
<thead>
<tr>
<th>Property</th>
<th>Result</th>
<th>Found</th>
<th>Exp...</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:</td>
<td>PASS</td>
<td>27.99GB</td>
<td>2.91GB</td>
</tr>
</tbody>
</table>

Prereq Scanner Overall Result: FAIL
prereq_checker.bat 1

These values can also be redirected to a file when you start the command from the command line.

If any of the verification steps report a failure, resolve the issue and rerun the verification utility before you install Maximo Asset Management components.

The Table 2 table contains a list of the properties checked. Use this information to analyze prerequisite verification utility results.

Table 2: Prerequisite verification utility properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CpuArchitecture</td>
<td>Verifies that the machine architecture is supported.</td>
</tr>
<tr>
<td>network.availablePorts.*</td>
<td>Verifies that required ports are available.</td>
</tr>
<tr>
<td>network.dns</td>
<td>Verifies that there is a DNS entry for the system on the DNS server.</td>
</tr>
<tr>
<td>network.fqdn</td>
<td>Verifies that the system host name is fully qualified.</td>
</tr>
<tr>
<td>os.architecture</td>
<td>Verifies that the operating system architecture is supported.</td>
</tr>
<tr>
<td>os.dir.tmp/home</td>
<td>Verifies required permissions for the system directories</td>
</tr>
<tr>
<td>os.FreePagingSpace</td>
<td>Verifies that adequate free paging space is available on the system.</td>
</tr>
<tr>
<td>os.iodevicestatus</td>
<td>Verifies the I/O device status of the system.</td>
</tr>
<tr>
<td>os.kernelversion</td>
<td>Checks kernel version.</td>
</tr>
<tr>
<td>os.lib.*</td>
<td>Verifies that a prerequisite library is available on the system.</td>
</tr>
<tr>
<td>os.mountcheck</td>
<td>Checks for the existence of nosuid on the file system.</td>
</tr>
<tr>
<td>os.MozillaVersion</td>
<td>Checks browser version.</td>
</tr>
</tbody>
</table>
Table 2. Prerequisite verification utility properties (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>os.package.atk</td>
<td>Verifies a prerequisite library that is required for GTK on AIX® is available on the system.</td>
</tr>
<tr>
<td>os.package.cairo</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.expat</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.fontconfig</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.freetype2</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.gettext</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.glib2</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.gtk2</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.libjpeg</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.libpng</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.libtiff</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.pango</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.pixman</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.rpm</td>
<td>Verifies that prerequisite packages are available on the system.</td>
</tr>
<tr>
<td>os.package.xcursor</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.xft</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.xrender</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.package.zlib</td>
<td>Verifies a prerequisite library that is required for GTK on AIX is available on the system.</td>
</tr>
<tr>
<td>os.RAMSize</td>
<td>Reports system RAM available.</td>
</tr>
<tr>
<td>os.SeaMonkeyVersion</td>
<td>Checks browser version.</td>
</tr>
<tr>
<td>os.SELinux</td>
<td>Determines whether selinux is enabled.</td>
</tr>
<tr>
<td>os.ServicePack</td>
<td>Verifies that required service packs are installed on the system.</td>
</tr>
<tr>
<td>os.shell.default</td>
<td>Determines the default shell for users.</td>
</tr>
<tr>
<td>os.space.*</td>
<td>Determines disk space availability for various file systems.</td>
</tr>
<tr>
<td></td>
<td>The following example shows the check that is made for the middleware installation program workspace.</td>
</tr>
<tr>
<td></td>
<td>os.space.var=[dir:root=/var,unit:MB]512</td>
</tr>
<tr>
<td>os.totalPhysicalMemory</td>
<td>Reports physical RAM available to the operating system.</td>
</tr>
</tbody>
</table>
Checking port availability

Before you use the product installation programs, you must ensure that certain ports in your environment are available for use with the middleware that you are installing. You can either use the prerequisite verification utility to check for port availability or you can check manually.

About this task

Default port values are assigned for the middleware that you deploy.

Port 9060 or an alternative port must be made available for IBM WebSphere Application Server Network Deployment.

For a full list of port requirements, see the System requirements information on the Maximo Asset Management wiki.

Procedure

1. Check the available ports on the host system:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic</td>
<td>Run the <a href="http://www.ibm.com/systems/p/os/aix/linux/toolbox/download.html">prerequisite verification utility</a> The <code>network.availablePorts.*</code> parameter indicates the availability of the required ports.</td>
</tr>
<tr>
<td>Manual</td>
<td>Run the following command to see a list of active connections: <code>netstat -ao</code></td>
</tr>
</tbody>
</table>

2. If you find that a port is already assigned, specify the value of an open port when you are prompted to by the installation program.

AIX tar command requirements

Both the native UNIX `tar` command and the GNU version of the `tar` command are required by the installation and configuration programs. 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 have set a symbolic link to overwrite the native UNIX `tar` command with the GNU `tar` command an error occurs.
**AIX font requirements**

AIX requires specific fonts to produce reports.

*About this task*

When you produce reports from AIX systems, TrueType fonts must be available on the system.

*Procedure*

1. Install TrueType fonts on the AIX system.
2. Ensure the fonts-path environment variable refers to the location of the fonts.

**Verifying large page size support for AIX**

For Maximo Asset Management to function correctly, large page size support must be enabled on AIX servers that host WebSphere Application Server.

*About this task*

If you are deploying Maximo Asset Management on WebSphere Application Server hosted on an AIX system, that system must be configured to support large page sizes.

Large page usage is primarily intended to provide performance improvements to high performance computing applications. Typically this feature is enabled by default on AIX systems.

*Procedure*

1. Log on to the AIX system that hosts WebSphere Application Server and open a console window. You must have root authority to work with the AIX operating system commands.
2. Verify large page size support by running the following command:
   ```bash
   ps -Z
   ```

   Output from the command includes 4 K and 64 K page sizes that are listed for processes, for example:

   ```
   # ps -Z
   PID   TTY  TIME   DPGSZ  SPGSZ  TPGSZ  CMD
   311342 pts/4 0:00 4K  4K  4K    ksh
   397526 pts/4 0:00 4K  4K  4K    ps
   487558 pts/4 0:00 64K 64K 4K    sleep
   ```

**Checking for required libraries on Linux**

The Maximo Asset Management deployment requires certain Linux system libraries.

*Procedure*

1. Locate the libstdc++.so.5, libstdc++.so.6, and libaio.so.1 libraries in the /usr/lib64/ directory. If these libraries are not installed, the Maximo Asset Management installation program produces an error when run in graphical mode. If you cannot locate this library on your system, locate the Red Hat Package Manager package for your system that contains these libraries and install the packages.
2. Ensure that you have the `libstdc++33-32bit-3.3.3-11.9.x86_64.rpm` package that is installed before you run the product installation program. SUSE Linux Enterprise Server 10 64-bit systems that host manually configured middleware must host this package.

**Configuring the JRE in Linux**

In some cases, the Maximo Asset Management installation or configuration program fails on Red Hat Enterprise Linux systems, or other systems with Security-Enhanced Linux (SELinux) enabled.

**About this task**

In one scenario, the Maximo Asset Management installation or configuration program fails with an error that states that the Java™ Runtime Environment (JRE) cannot be found. In another scenario, the Maximo Asset Management installation or configuration program fails stating that it cannot find the VM.

**Procedure**

1. Temporarily disable SELinux by using the `setenforce 0` command.
2. Run the Maximo Asset Management installation or configuration program.
3. Re-enable SELinux by using the `setenforce 1` command.
4. Manually issue the `chcon` command.

```
    chcon -R -t textrel_shlib_t install_home/jvm/jre
```

**Results**

The Maximo Asset Management installation or configuration program is now able to locate the JRE. Alternatively, you can edit the `/etc/selinux/config` file and set `SELINUX` to either `permissive` or `disabled` for a more permanent fix. This solution, however, affects the level of security for the entire system.

**Setting the ulimit**

Set the ulimit in Linux. The ulimit setting is used to define user system and process resource limits.

**About this task**

For Linux systems, you must set the ulimit for the system before you use the Maximo Asset Management installation program.

If you set the ulimit in `.profile` for root, the ulimit setting applies to all processes.

**Procedure**

1. From a command line, type `ulimit -f unlimited`
2. From a command line, type `ulimit -n 8192`

**Setting the swap size**

Maximo Asset Management can be a resource-intensive application. Configure and tune your system for maximum performance. Set the size of the swap space that is used in Linux systems.
About this task

Typically, the swap size for Linux is set to twice the amount of physical RAM in the server. See the product documentation for your Linux distribution for more information.

More swap space can be made available to the system.

Procedure

- Increase the size of the existing swap partition.
- Create a new, extra swap partition.
- Create a swap file.

Setting shared memory

Set a minimum shared memory value in Linux.

About this task

For Linux systems, you must set a minimum shared memory value for the system before you use the Maximo Asset Management installation program.

Procedure

1. From a command line, type `sysctl kernel.shmmx` and determine whether the value is less than 268435456 bytes (256 Mb).
2. If you must increase the value, from a command line, type `sysctl -w kernel.shmmx=268435456`.
3. Update the value in `/etc/sysctl.conf`.

Remote configuration enablement

The Maximo Asset Management configuration program can automatically configure middleware. You must enable a remote access protocol for each system on which you intend to configure the middleware.

Use SSH for accessing remote Linux and UNIX systems. Use Windows SMB accessing remote Windows systems. Windows SMB is a Windows protocol. The IBM JRE on the Maximo Asset Management administrative workstation includes SSH.

Before you start the Maximo Asset Management configuration program, ensure that you can log on to any remote servers with the protocols that you intend to use. Use the credentials that you plan to supply to the Maximo Asset Management configuration program.

For remote Windows systems, ensure that the following requirements are met before you configure the software.

- The user name that you provide to the Maximo Asset Management configuration program must exist as a local account on the remote system. This user must be a member of the Windows Administrators group.
- The following Windows services must be started on the remote system before you begin a remote configuration:
  - `winmgmt` (Windows Management Instrumentation)
  - `RemoteRegistry` (Remote Registry)
The SMB protocol must be enabled and configured to send NetBIOS over TCP/IP, by choosing to use port 139. Alternatively, you can configure SMB to use TCP/IP as the transport protocol, without NetBIOS, by configuring it to use port 445.

Ensure that any ports that you use for remote protocols are not blocked by firewall software or security policies, including ports 137 and 139. Port 139 is used if SMB is configured to run on NetBIOS over TCP/IP. Port 445 is used if SMB is run directly on TCP/IP, without NetBIOS.

To disable simple file sharing, start Windows Explorer. Click Tools > Folder Options, and clear the Use Simple File Sharing check box.

The Windows administrative share (C$) and the interprocess communications (IPC$) folder must be shared.

For Microsoft Windows Server 2008 systems that support password-protected sharing, disable password-protection. Shares must be shared for the Guest or Everyone accounts.

For Windows systems that have User Account Control (UAC) enabled, it must be disabled before software can be remotely installed and configured.

If Cygwin is installed on the remote Windows system the SSH daemon (sshd) must be uninstalled or disabled.

For remote Linux or UNIX systems, ensure that the following requirements are met before you configure the software.

- For AIX systems, set the following SSH parameters in the /etc/ssh/sshd_config file.
  - ClientAliveInterval 900
  - ClientAliveCountMax 10

Stop the SSH daemon with the stopsrc -s sshd command and then restart it using the starts src -s sshd command.

- For AIX systems, set the TMOUT and TIMEOUT variables in the user profile script to 0. This setting prevents the user from idling out and being logged off the remote system during the configuration.

- The user name that you provide to the Maximo Asset Management configuration program must exist as a privileged account (for example, root) on the remote systems.

- Ensure that a current version of OpenSSH is installed and running. Do not use OpenSSH 4.7.0.5302.

- For Oracle Solaris systems, the remote access protocols require the use of internal shell scripts that must be run within the Korn (ksh) shell. The methods need ksh, even if the user ID that you use to log on to the remote system is configured to use a different shell. Oracle Solaris systems must have the ksh environment installed and properly configured.

- If you plan to remotely configure software on remote Linux or UNIX computers, ensure that SSH is installed.

Remote configuration does not support accessing network drives on the local or remote system.
Enabling SSL client authentication

The Maximo Asset Management configuration program produces an error if the client authentication feature of secure sockets layer (SSL) is enabled in the IBM HTTP Server. You can use a workaround to enable client authentication during configuration.

Before you begin

The Maximo Asset Management configuration programs use HTTP client requests for various configuration actions. The Maximo Asset Management configuration program does not configure WebSphere Application Server Network Deployment nor IBM HTTP Server to use SSL. However, they do function in environments where WebSphere Application Server Network Deployment and IBM HTTP Server are manually configured to use SSL. Maximo Asset Management configuration and standard deployment procedures do not work correctly when the client authentication feature of SSL is enabled in IBM HTTP Server. As a result, the validation of product administration credentials or the import of data with Maximo Enterprise Adapter fails. Client authentication is enabled in the IBM HTTP Server, by using the SSLClientAuth Required directive in the httpd.conf configuration file.

About this task

If client authentication must be enabled for the IBM HTTP Server, use the following workaround procedure to install the product.

Procedure

1. Remove the SSLClientAuth Required directive in the httpd.conf configuration file of the IBM HTTP Server.
2. Stop and restart the IBM HTTP Server.
3. Run the Maximo Asset Management configuration program.
4. Add the SSLClientAuth Required directive back to the httpd.conf configuration file of the IBM HTTP Server.
5. Stop and restart the IBM HTTP Server.

Microsoft SQL Server preparation

Microsoft SQL Server must be configured using specific options before you can use it with Maximo Asset Management.

Ensure you have the following options set for the Microsoft SQL Server database you intend to use with Maximo Asset Management. These settings must be configured before you use the Maximo Asset Management configuration program to configure Maximo Asset Management.

• Use the SQL Server Configuration Manager to disable TCP/IP dynamic ports usage on the server.
• Verify that you enabled the Full-text Search setting during the installation of Microsoft SQL Server.
• Set Microsoft SQL Server Database Collation settings to the following options:
  – Dictionary order
  – Case-insensitive
  – For use with 1252 Character set
System password policy settings

Familiarize yourself with the password policies of systems you are using as part of a Maximo Asset Management deployment.

Your organization might have password policy regulations that are enforced on systems on your network. Before deploying Maximo Asset Management, be sure that you are familiar with the password policies of systems that are used in the deployment.

For example, Microsoft Windows Server 2008 systems have a stricter set of password requirements than previous versions configured by default. If you are not familiar with these stronger password requirements, you might experience an error during the installation of Maximo Asset Management. This error occurs when you create users on a Microsoft Windows Server 2008 system.

Password values that you provide during the Maximo Asset Management installation and configuration must be compliant with the password policies set for the target system. Passwords are not validated against the password policies of target systems at the time you enter them on the installation and configuration program panels. If your passwords do not conform to the password policies, errors occur when the installation or configuration program attempts to create these passwords.

Starting the launchpad

The IBM Maximo Asset Management launchpad serves as a centralized interface for starting the product installation and configuration programs. The launchpad also contains links to product information.

Before you begin

Before you start the launchpad, ensure that you meet the middleware prerequisites. Ensure that you have the correct service pack levels for your environments.

The launchpad program uses the system default browser to run. If the default browser on AIX is Firefox, it is likely that the launchpad program does not run properly due to the ksh shell interface. If you must use the launchpad with the Firefox browser, follow these steps to modify it.

1. Download and extract the launchpad images which is described in the download document.
2. Modify the /user_dir/launchpad/Firefox.sh file and remove the following lines
   
   ```
   typeset +r LOGNAME 2>/dev/null
   LOGNAME=lp_user_$$; export LOGNAME
   ```
3. Run the launchpad from /user_dir.

About this task

The launchpad generates messages that are captured in a hidden log frame while the launchpad is running. To show the log frame on the launchpad panels, hold the Ctrl key and simultaneously click the banner frame of the launchpad. Messages that are generated while the launchpad is running are not automatically saved on the hard disk drive. You can save the messages from a session by clicking Save at the bottom of the log frame.
Always use fully qualified domain names when you enter values for the installation and configuration programs.

**Procedure**
1. Log on to an account with system administration privileges on the system where you want to install Maximo Asset Management.
2. Start the launchpad from the root directory of the installation image.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>Start the launchpad by using the <code>launchpad64.exe</code> program.</td>
</tr>
<tr>
<td>AIX and Linux</td>
<td>Start the launchpad from the root directory by using the <code>launchpad.sh</code> program, for example, <code>./launchpad.sh</code></td>
</tr>
</tbody>
</table>

**Related information:**
- [Software Product Compatibility Reports](#)

**Installation program overview**

You use the Maximo Asset Management installation program to install Maximo Asset Management, IBM WebSphere Application Server, and IBM DB2.

Select packages to install from the [Figure 1 on page 14](#) user interface.
You must run the installation program on the target system to install the component. For example, to install IBM WebSphere Application Server, you start the installation program locally on the system that is designated as the IBM WebSphere Application Server server.

Use the **Check for Other Versions, Fixes, and Extensions** button to search for fixes, updates, and extensions for the packages listed. The installation program downloads the latest version of the packages listed from IBM Fix Central.

**Figure 1. Maximo Asset Management installation program**

---

**Configuration program overview**

You use the Maximo Asset Management configuration program to configure Maximo Asset Management and associated middleware.

The Maximo Asset Management configuration program is used to perform the following configuration tasks.

- Prepare IBM WebSphere Application Server for configuration of your product
- Configure a new Maximo Asset Management deployment
- Update database access credentials
- Change the Maximo Asset Management security model
- Change the database server host
- Update IBM WebSphere Application Server access credentials
- Change IBM WebSphere Application Server host
• Update database and build and deploy application EAR files
• Install product help information in another language
• Remove IBM WebSphere Application Server configuration
• Remove Maximo Asset Management configuration

The Maximo Asset Management configuration program records configuration choices that you make about your Maximo Asset Management deployment and then deploys Maximo Asset Management based on the information that you entered.

Information that you enter for the Maximo Asset Management configuration program is stored in the maximo.properties and install.properties files. Some of this information is also written to the Maximo database. These values are displayed in the panel fields of the Maximo Asset Management configuration program during an upgrade or fix pack application.

The Maximo Asset Management configuration program validates the values that you enter in configuration item fields. Some configuration item fields are validated as a pair, for example, user name and password fields.

In most cases, you can run the configuration program locally or remotely. You are required to run the configuration program locally on the IBM WebSphere Application Server server when you are preparing it for Maximo Asset Management configuration.

If you choose not to have the Maximo Asset Management configuration program automatically configure middleware, you must configure that piece of middleware manually before the configuration of Maximo Asset Management.
**Note:** If you are using a directory server to secure Maximo Asset Management, be aware of the product-specific syntax rules for using special characters in LDAP strings that you enter. In most cases, special characters must be preceded by an escape character to make them readable by the directory server.

Many directory server products consider a blank space to be a special character in an LDAP string. If you enter an LDAP string with an unescaped blank character at the end of a field value, you encounter Maximo Asset Management errors.

For more information about special character usage in LDAP strings, see the product documentation for your directory server.
Chapter 2. Automatically configuring middleware during deployment

Use the Maximo Asset Management installation and configuration programs to install and automatically configure a Maximo Asset Management deployment within your enterprise.

About this task

This information provides a high-level overview or road map of tasks you need to complete in order to deploy Maximo Asset Management with automatic middleware configuration.

In this scenario, you use the Maximo Asset Management installation and configuration programs to install and automatically configure new instances of the following components:

- WebSphere Application Server Network Deployment
- Maximo Asset Management

You use the Maximo Asset Management installation program to install Maximo Asset Management and the middleware you want to use in your deployment. You then use the Maximo Asset Management configuration program to configure both middleware and Maximo Asset Management.
Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment

Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment enables the Maximo Asset Management configuration program to automatically create users and groups in the directory. Users and groups must be created in the directory if you plan to use a directory server for Maximo Asset Management authentication and authorization. If you plan to use Maximo Asset Management application security for authentication and authorization, you do not need to configure SSL for a directory server.

About this task

To enable the configuration program to automatically create users and groups within Microsoft Active Directory, you must configure SSL communication between
Microsoft Active Directory and WebSphere Application Server Network Deployment. This procedure is only required if you choose to allow the configuration program to automatically configure WebSphere Application Server Network Deployment. You also want the configuration program to automatically create users in Microsoft Active Directory.

You must enable SSL for Microsoft Active Directory, generate a certificate, and then add that certificate to WebSphere Application Server Network Deployment.

Changing the name or domain of the certificate authority at any point invalidates certificates previously issued from that authority.

Ensure that you have host name resolution setup properly in your environment. Communication failures occur if the system hosting Microsoft Active Directory cannot resolve host names for systems that have been issued certificates.

### Installing WebSphere Application Server Network Deployment v8.5 using the Maximo Asset Management version 7.6 installation program

Use the Maximo Asset Management version 7.6 installation program to install WebSphere Application Server Network Deployment v8.5.

**Procedure**

1. Log in to the target system as a user with administrative authority. If you are running the IBM Maximo Asset Management version 7.6 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 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** panel, select **IBM WebSphere Application Server Network Deployment v8.5.5** and then click **Install IBM Maximo Asset Management components**. During the installation of WebSphere Application Server Network Deployment, install Java v7. When you install Java v7, the configuration program configures IBM Maximo Asset Management to use Java v7.

3. In the package selection panel, click **Next**.

4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this panel, resolve the issue and then click **Recheck Status** before continuing.

5. In the license agreement panel, review the license information for each package that is to be 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 panel, specify the 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, 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 panel, specify language support for WebSphere Application Server Network Deployment, and then click Next.

9. In the package features panel, leave all default options selected, and then click Next.

10. In the package configuration panel, specify configuration information for IBM HTTP Server, and then click Next.

11. In the package summary panel, review the information for the planned installation, and then click Install.

12. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click Finish.

What to do next

Use the Maximo Asset Management version 7.6 configuration program to prepare WebSphere Application Server Network Deployment for Maximo Asset Management version 7.6 configuration.

Preparing WebSphere Application Server Network Deployment v8.5 using the Maximo Asset Management configuration program

Use the Maximo Asset Management version 7.6 configuration program to prepare WebSphere Application Server Network Deployment v8.5 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 configuration operations page, click Prepare WebSphere Application Server Network Deployment for configuration.

3. In the Configure the Application for WebSphere panel, specify the installation location and configuration information for WebSphere Application Server Network Deployment and associated components. Select the option to automate the configuration of IBM HTTP Server.

4. In the Configure Application Server Profiles panel, specify information to use to create the WebSphere Application Server Network Deployment deployment manager and application server profiles.

5. Optional: In the Configure Application Server Advanced Options panel, specify additional configuration information, if required.
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 panel.

In the Apply Deployment Operations panel, select all deployment operation options, and then click Finish.

Results

WebSphere Application Server Network Deployment v8.5 is ready for Maximo Asset Management.

Running the Maximo Asset Management 7.6 installation program

Use the Maximo Asset Management version 7.6 installation program to install Maximo Asset Management version 7.6.

About this task

In order to install Maximo Asset Management version 7.6, run the Maximo Asset Management version 7.6 installation program on the Maximo Asset Management administrative system.

Procedure

1. Log in to the Maximo Asset Management administrative workstation. If you run the IBM Maximo Asset Management version 7.6 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Launch the IBM Maximo Asset Management version 7.6 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 session and click OK.
   c. In the launchpad navigation pane, click Install Product.
   d. From the Install Product panel, select IBM Maximo Asset Management v7.6 and then click Install IBM Maximo Asset Management components.
3. In the package selection panel, click Next.
4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click Next. If any errors are reported on this panel, resolve the issue and then click Recheck Status before continuing.
5. In the license agreement panel, review the license information for each package 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 panel, 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, select the IBM Tivoli’s process automation suite package group, specify the path information for the Maximo Asset Management version 7.6 installation directory, and then click Next.

8. In the package features panel, leave all default options checked, and then click Next.

9. In the package summary panel, review the information for the planned installation, and then click Install. If you install in a non-English environment, you might notice the environment summary is listed as English. You configure supported languages for Maximo Asset Management later with the Maximo Asset Management configuration program.

10. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click Finish. The Maximo Asset Management version 7.6 installation program exits and the Maximo Asset Management version 7.6 configuration program is started automatically.

What to do next

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

---

**Configuring Maximo Asset Management version 7.6 using the Maximo Asset Management version 7.6 configuration program**

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

**Procedure**

1. If the Maximo Asset Management version 7.6 configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click Configure Product, specify Maximo Asset Management installation location, 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 Deployment.

3. In the Define Deployment Environment panel, specify information about the your database and application server, in this example, DB2 and WebSphere Application Server Network Deployment servers that you installed and prepared. Select Create and configure the database to automatically configure WebSphere Application Server Network Deployment and DB2. After you define your deployment environment, click Finish.

4. In the Configure General Product Information panel, review summary details about the product components that you are installing. Specify the appearance and navigation features for your product, add an e-mail address to receive workflow messages, and choose whether or not to deploy sample data.

5. In the Configure the DB2 Instance panel, specify information about the DB2 instance to create for Maximo Asset Management.

6. In the Configure the DB2 Database panel, specify information about the DB2 database to create for Maximo Asset Management.

7. In the Configure the Application Server panel, specify information for the WebSphere Application Server Network Deployment server that you installed.
If you chose to persist messages, indicate whether you want to store JMS messages that originate from the integration adapter.

8. In the Configure Application Security panel, choose a security model for Maximo Asset Management. If you choose a security model that includes a directory server, specify information about the directory for the virtual member manager. Enter the user names and passwords for users that must be created for Maximo Asset Management. Do not use the user name as a password value.

9. Choose the base language and any additional languages you want to install.

10. In the Apply Deployment Operations panel, select all available deployment operations, and then click **Finish**.

**Results**

Maximo Asset Management version 7.6 is installed and configured to use WebSphere Application Server Network Deployment and DB2.
Chapter 3. Automatically configuring existing middleware during deployment

Use the Maximo Asset Management configuration program to automatically configure existing middleware within your enterprise for use with Maximo Asset Management.

About this task

This information provides a high-level overview or roadmap of tasks you must complete to deploy Maximo Asset Management automatically. You use middleware that is already established in your enterprise.

In this scenario, you use the Maximo Asset Management configuration program to automatically configure existing middleware resources.

Figure 4. Deploying Maximo Asset Management reusing existing middleware
Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment

Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment enables the Maximo Asset Management configuration program to automatically create users and groups in the directory. Users and groups must be created in the directory if you plan to use a directory server for Maximo Asset Management authentication and authorization. If you plan to use Maximo Asset Management application security for authentication and authorization, you do not need configure SSL for a directory server.

About this task

To enable the configuration program to automatically create users and groups within Microsoft Active Directory, you must configure SSL communication between Microsoft Active Directory and WebSphere Application Server Network Deployment. This procedure is only required if you choose to allow the configuration program to automatically configure WebSphere Application Server Network Deployment. You also want the configuration program to automatically create users in Microsoft Active Directory.

You must enable SSL for Microsoft Active Directory, generate a certificate, and then add that certificate to WebSphere Application Server Network Deployment.

Changing the name or domain of the certificate authority at any point invalidates certificates previously issued from that authority.

Ensure that you have host name resolution setup properly in your environment. Communication failures occur if the system hosting Microsoft Active Directory cannot resolve host names for systems that have been issued certificates.

Preparing WebSphere Application Server Network Deployment v8.5 using the Maximo Asset Management configuration program

Use the Maximo Asset Management version 7.6 configuration program to prepare WebSphere Application Server Network Deployment v8.5 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 configuration operations page, click Prepare WebSphere Application Server Network Deployment for configuration.

3. In the Configure the Application for WebSphere panel, specify the installation location and configuration information for WebSphere Application Server Network Deployment and associated components. Select the option to automate the configuration of IBM HTTP Server.

4. In the Configure Application Server Profiles panel, specify information to use to create the WebSphere Application Server Network Deployment deployment manager and application server profiles.
5. Optional: In the Configure Application Server Advanced Options panel, specify additional configuration information, if required.

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 panel.

7. In the Apply Deployment Operations panel, select all deployment operation options, and then click Finish.

Results

WebSphere Application Server Network Deployment v8.5 is ready for Maximo Asset Management.

Running the Maximo Asset Management 7.6 installation program

Use the Maximo Asset Management version 7.6 installation program to install Maximo Asset Management version 7.6.

About this task

In order to install Maximo Asset Management version 7.6, run the Maximo Asset Management version 7.6 installation program on the Maximo Asset Management administrative system.

Procedure

1. Log in to the Maximo Asset Management administrative workstation. If you run the IBM Maximo Asset Management version 7.6 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.

2. Launch the IBM Maximo Asset Management version 7.6 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 session and click OK.
   c. In the launchpad navigation pane, click Install Product.
   d. From the Install Product panel, select IBM Maximo Asset Management v7.6 and then click Install IBM Maximo Asset Management components.

3. In the package selection panel, click Next.

4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click Next. If any errors are reported on this panel, resolve the issue and then click Recheck Status before continuing.

5. In the license agreement panel, review the license information for each package 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 panel, 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, select the IBM Tivoli’s process automation suite package group, specify the path information for the Maximo Asset Management version 7.6 installation directory, and then click Next.

8. In the package features panel, leave all default options checked, and then click Next.

9. In the package summary panel, review the information for the planned installation, and then click Install. If you install in a non-English environment, you might notice the environment summary is listed as English. You configure supported languages for Maximo Asset Management later with the Maximo Asset Management configuration program.

10. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click Finish. The Maximo Asset Management version 7.6 installation program exits and the Maximo Asset Management version 7.6 configuration program is started automatically.

What to do next

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

Configuring Maximo Asset Management version 7.6 using the Maximo Asset Management version 7.6 configuration program

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

Procedure

1. If the Maximo Asset Management version 7.6 configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click Configure Product, specify Maximo Asset Management installation location, 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 Deployment.

3. In the Define Deployment Environment panel, specify information about the your database and application server, in this example, DB2 and WebSphere Application Server Network Deployment servers that you installed and prepared. Select Create and configure the database to automatically configure WebSphere Application Server Network Deployment and DB2. After you define your deployment environment, click Finish.

4. In the Configure General Product Information panel, review summary details about the product components that you are installing. Specify the appearance and navigation features for your product, add an e-mail address to receive workflow messages, and choose whether or not to deploy sample data.

5. In the Configure the DB2 Instance panel, specify information about the DB2 instance to create for Maximo Asset Management.

6. In the Configure the DB2 Database panel, specify information about the DB2 database to create for Maximo Asset Management.
7. In the Configure the Application Server panel, specify information for the WebSphere Application Server Network Deployment server that you installed. If you chose to persist messages, indicate whether you want to store JMS messages that originate from the integration adapter.

8. In the Configure Application Security panel, choose a security model for Maximo Asset Management. If you choose a security model that includes a directory server, specify information about the directory for the virtual member manager. Enter the user names and passwords for users that must be created for Maximo Asset Management. Do not use the user name as a password value.

9. Choose the base language and any additional languages you want to install.

10. In the Apply Deployment Operations panel, select all available deployment operations, and then click Finish.

Results

Maximo Asset Management version 7.6 is installed and configured to use WebSphere Application Server Network Deployment and DB2.
You can deploy Maximo Asset Management by reusing existing middleware servers and manually configuring them to work with Maximo Asset Management.

This information provides a high-level overview or road map of tasks you need to complete in order to deploy Maximo Asset Management automatically, using middleware already established in your enterprise.

In this scenario, you manually configure existing middleware resources before running the Maximo Asset Management configuration program.
Maximo Asset Management installation with manual middleware configuration

Manually configured installations involve configuring middleware components, the database server, the directory server, and the J2EE server, to work with Maximo Asset Management before you use the Maximo Asset Management installation and configuration programs.

Figure 5. Deploying Maximo Asset Management with manual middleware configuration
You can automatically configure one or more Maximo Asset Management middleware components with the Maximo Asset Management configuration program. Alternatively, you can manually configure middleware servers to work with Maximo Asset Management before you run the Maximo Asset Management installation and configuration programs.

Before you begin, ensure that the following prerequisite conditions are met:

- You designate a Windows or UNIX server to start the Maximo Asset Management configuration program.
- For WebSphere Application Server Network Deployment, ensure that the Cell and all related nodes are active.

You must complete the manual configuration of each middleware server before you use the Maximo Asset Management configuration program to configure Maximo Asset Management to work with the servers.

Ensure that the middleware you intend to use with Maximo Asset Management is supported.

**Manual configuration of the database**

You can manually configure the database server that is used with Maximo Asset Management. You must manually configure the database server before you use the Maximo Asset Management installation and configuration programs.

**Manually configuring Microsoft SQL Server 2012**

You can manually configure Microsoft SQL Server for use with Maximo Asset Management.

**Before you begin**

Because Microsoft SQL Server does not support UTF-8, Maximo Asset Management does not have multilingual support when deployed with Microsoft SQL Server.

Microsoft SQL Server Database Collation settings must be set to the following options:

- Dictionary order
- Case-insensitive
- For use with 1252 Character set

**About this task**

To configure an existing Microsoft SQL Server for use with Maximo Asset Management, complete the following steps before you start the Maximo Asset Management installation and configuration programs:

**Procedure**

1. Configure the listener port.
   
   If the default instance of the Microsoft SQL Server Database Engine listens on TCP port 1433. Named instances of the Microsoft SQL Server Database Engine and Microsoft SQL Server Compact Edition are configured for dynamic ports, which means they select any available port when the service starts. When you connect to a named instance across a firewall, configure the Database Engine to listen on a specific port, to open this port in the firewall.
1. Open Programs > Microsoft SQL Server 2012 > Configuration Tools > SQL Server Configuration Manager

b. From the Microsoft SQL Server Configuration Manager navigation pane, expand SQL Server Network Configuration > Protocols for <instance name>, and then double-click TCP/IP.

c. In the TCP/IP Properties dialog box, click the IP Addresses tab.

d. For each IP address listed, ensure that the TCP Dynamic Ports field is blank. If the TCP Dynamic Ports field contains a value of 0, that IP address is using dynamic ports. Since Maximo Asset Management requires Microsoft SQL Server to listen on a static port, this field must be blank.

e. For each IP address listed, enter 1433 for the TCP Port field.

f. Click OK.

g. From the SQL Server Configuration Manager navigation pane, click SQL Server Services.

h. Right-click SQL Server (<instance name>) and then click Restart, to stop, and restart Microsoft SQL Server.

i. Verify the Microsoft SQL Server instance is running, and then close SQL Server Configuration Manager.

2. Verify that you enabled the Full-text Search setting during the installation of Microsoft SQL Server 2012. To determine if Full-text Search is installed on your existing Microsoft SQL Server database, complete the following steps:

a. Open SQL Server Management Studio, select SQL Server Authentication as the authentication type, and enter the credentials for the sa user ID, and then click Connect.

b. Click New Query.

c. Type the following command and then click Execute:

```sql
select FULLTEXTSERVICEPROPERTY ( 'IsFulltextInstalled' )
```

If you did not install Full-text Search (the resulting value is zero), you must do so now. To install Full-text Search, insert the Microsoft SQL Server 2012 product media into the system and start the installation wizard. Navigate through the wizard and enable the Full-Text Search option that is on the Custom portion of the Setup Type dialog box. To finish the installation process, restart the server.

3. Create a Microsoft SQL Server database.

a. Open SQL Server Management Studio (Start > Programs > Microsoft SQL Server 2012 > SQL Server Management Studio)

b. Right-click the databases folder from the navigation tree, and select New Database.

c. In the database name entry field, specify a unique database name. For example, enter maxdb76

d. For the maxdb76 Logical Name, change the Initial Size (MB) attribute to 500 (MB), and also set the value of the Autogrowth / Maxsize field to By 1 MB, Unlimited.

e. If you prefer, modify the log settings to accommodate your production environment.

f. Click OK.

4. Create the Maximo User for Microsoft SQL Server.

a. Open Microsoft SQL Server Management Studio (Start > Programs > Microsoft SQL Server 2012 > SQL Server Management Studio)
b. From the SQL Server Configuration Manager navigation pane, click Databases.

c. Right-click the maxdb76 database and select New Query.

d. Enter the following script to create the Maximo database user MAXIMO with a password that adheres to the password policy of the system.

```
sp_addlogin MAXIMO,password
go
```

This value is case-sensitive.

e. Click Execute.

f. Enter the following script to change the database owner to maximo.

```
sp_changedbowner MAXIMO
go
```

g. Click Execute.

What to do next

If you add logical names to the database and set their file group to a value other than PRIMARY, complete these steps after you set up the database and create the Maximo user:

1. Run the Maximo Asset Management installation program and choose the Do not run the configuration step now option.

2. Add the following property to the install_home\etc\install.properties file:

```
Database.SQL.DataFilegroupName=your_logical_name
```

3. Run the configuration tool to complete the deployment.

Complete these additional steps only if you added logical names to the database and set their file group to a value other than PRIMARY.

Manual configuration of the directory server

You can manually configure a directory server for Maximo Asset Management to manage authentication and authorization.

There are several methods to secure Maximo Asset Management. If you want to use a directory server to secure Maximo Asset Management, you must complete the manual configuration of the directory server before you use the Maximo Asset Management installation and configuration programs.

Note: The base dn, bind user, and other various node values that are listed are default values. These values are replaced with values applicable to existing LDAP hierarchies within your organization.

Important: When you enter LDAP values for Maximo Asset Management configuration panel fields, entries in LDIF files, or values you enter directly into a directory instance with directory server tools, be aware of the product-specific syntax rules for using special characters in an LDAP string. In most cases, special characters must be preceded by an escape character to make it readable by the directory server. Failing to escape special characters that are contained in an LDAP string that is used with Maximo Asset Management results in Maximo Asset Management errors.

Many directory server products consider a blank space as a special character that is part of the LDAP string. If you mistakenly enter an LDAP string that contains a
blank, at the end of a field value, for example, and you do not precede the blank character with an escape character, you encounter Maximo Asset Management errors that are difficult to troubleshoot.

For more information about special characters in LDAP strings, see the product documentation for your directory server.

**Manually configuring Microsoft Active Directory version 2012**

You can manually configure Microsoft Active Directory for use with Maximo Asset Management.

**Before you begin**

Manually configure Microsoft Active Directory for authorization and authentication within Maximo Asset Management. If you choose the option to configure WebSphere Application Server Network Deployment automatically with the Maximo Asset Management configuration program, then you can create these users and groups automatically. If you do not want the Maximo Asset Management configuration program to configure WebSphere Application Server Network Deployment, you must create users manually. Creating users automatically requires SSL communication between Microsoft Active Directory and WebSphere Application Server Network Deployment.

**Important:** The users and passwords you create in the following steps must match this exact configuration for the deployment to succeed. It is sometimes necessary to temporarily alter the Microsoft Active Directory security policy to create these accounts in the required format. After installation, you can change these default passwords to conform to a stricter security policy.

**About this task**

Before you start the Maximo Asset Management installation and configuration programs, configure Microsoft Active Directory. Complete the following steps.

**Procedure**

1. Add the Active Directory Domain Services role.
   a. Start the Server Manager.
   b. Click *Add roles and features*.
   c. From the Before You Begin page, click *Next*.
   d. For Installation Type, select *Role-based or feature-based installation*, and then click *Next*.
   e. Select the *Select a server from the server pool* option, and then choose your local server from the Server Pool list. Click *Next*.
   f. In the Roles list, select *Active Directory Domain Services*.
   g. Click *Add Features*.
   h. Click *Next*.
   i. From the Select Features page, accept the defaults and click *Next*.
   j. On the confirmation page, click *Install*.
   k. Click *Close* when the installation is complete and then restart the server.

2. Promote the server to a Domain Controller.
   a. Start the Server Manager.
   b. Click *AD DS* in the dashboard.
c. Click the **Configuration required for Active Directory Domain Services** warning indicator.

d. From the All Servers Task Details and Notifications page, click the **Promote this server to a domain controller** action.

  e. From the Deployment Configuration page, select **Add a new forest**. Specify the root domain name with a unique fully qualified domain name, for example, `qawin01ldap.swg.usma.ibm.com`, and then click **Next**.

  f. From the Domain Controller Options page, clear the **Domain Name System (DNS) server** option, and provide a password for Directory Services Restore Mode (DSRM). Click **Next**.

  g. Accept the default NetBIOS name and click **Next**.

  h. Accept the default paths for AD DS database, log files, and SYSVOL. Click **Next**.

  i. Review the summary, click **Next**, and then click **Install**.

  j. Restart the server

  When the system restarts, you must include the domain that you specified with your login credentials. In this example, a QAWIN01LDAP domain was created. Specify QAWIN01LDAP\Administrator as the user when you log in to the system.

3. Create containers, users, and groups for Maximo Asset Management.

  a. Select **Control Panel > Administrative Tools > Active Directory Users and Computers**.

  b. Select your server, right-click, and choose **New > Organizational Unit**.

  c. Specify a name for the organizational unit, for example, `SWG`, and then click **OK**.

  d. Select the new organizational unit that is located under your server, in this example, `SWG`, right-click, and choose **New > Organizational Unit**.

  e. Specify a name for the organizational unit, for example, `users`, and then click **OK**.

  f. Create another organizational unit under `SWG` and name it `groups`.

  g. Right-click the `users` organizational unit, and click **New > User**.

  h. Create a user who is called `maxadmin`. Specify `maxadmin` as the **First name** and **User logon name**. Click **Next**.

  i. Provide a password for `maxadmin`. Click **Next** and then **Finish**.

  j. Create two more users who are named `mxintadm` and `maxreg`.

  k. Right-click the `groups` organizational unit and select and choose **New > Group**

  l. Name the group `maxmousers` and click **OK**.

  m. Right-click the `maxmousers` group and select **Properties**.

  n. On the Members tab, click **Add**.

  o. Type `maxadmin` in the **Enter the object names to select** field, and then click **OK**. The `maxadmin` user is now a member of the `maxmousers` Members list.

  p. Add the `mxintadm` and `maxreg` users to the `maxmousers` group.

  q. Click **Apply**, then **OK**.

**What to do next**

Microsoft Active Directory configuration is finished and you are now ready to configure the J2EE server to use Microsoft Active Directory.
Manual configuration of the J2EE server

Manually configuring an existing J2EE server for use by Maximo Asset Management.

Manual configuration of the J2EE server is required if you choose to deploy Maximo Asset Management WebSphere Application Server Network Deployment and you choose to not have the Maximo Asset Management configuration program automatically configure it. You must complete the manual configuration before you use the Maximo Asset Management configuration program.

Maximo Asset Management requires Java 7. Java 7 must be installed and configured on the J2EE server you want to use with Maximo Asset Management.

Manually configuring WebSphere Application Server Network Deployment

This section contains instructions for manually configuring an existing WebSphere Application Server Network Deployment for use by Maximo Asset Management.

You must manually configure WebSphere Application Server Network Deployment before you use the Maximo Asset Management configuration program if you do not want the Maximo Asset Management configuration program to configure it automatically.

Creating WebSphere Application Server Network Deployment profiles:

When manually installing WebSphere Application Server Network Deployment, profiles must be created before starting the Maximo Asset Management installation. WebSphere Application Server Network Deployment includes the manageprofiles command-line tool which you use to create profiles.

Before you begin

Ensure that you are familiar with the character limitations for commands or the shell you are using. In some cases, you might have to enter commands in order to avoid exceeding these limitations. See WebSphere Application Server Network Deployment product documentation for more information about entering lengthy commands on more than one line.

About this task

The following commands can be useful for managing profiles:

<table>
<thead>
<tr>
<th>Table 3. Profile commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
</tr>
<tr>
<td>Delete a profile</td>
</tr>
<tr>
<td>Refresh the profile registry (for example, after deleting a profile)</td>
</tr>
<tr>
<td>List existing profiles</td>
</tr>
</tbody>
</table>

WAS_HOME is equal to where WebSphere Application Server Network Deployment is installed, for example, /opt/IBM/WebSphere/AppServer/ or C:\Program Files\IBM\WebSphere\AppServer\
To create WebSphere Application Server Network Deployment profiles, follow these steps:

**Procedure**

1. Source the `setupCmdLine.[sh|bat]` script in the `bin` directory of the `WAS_HOME` folder to set the WebSphere Application Server Network Deployment environment to the configuration instance. `WAS_HOME` is typically in `/opt/IBM/WebSphere/AppServer` or `C:\Program Files\IBM\WebSphere\AppServer`.

2. Create a profile ports file for the `ctgDmgr01` profile. This file is used with the `manageprofiles` command to set the ports used by this profile.

   **Note:** It is important that you ensure no spaces appear after any value in this file. This circumstance can sometimes occur when cutting and pasting an example. If there is an extra space trailing any of the values WebSphere uses that space as the last character of that value. For example, you specify the value `WC_adminhost=9060`, but an extra space is typed after 9060. The value is interpreted as `WC_adminhost=9060 &lt;sp>` (where `<sp>` represents a space character).

   a. Open a new text file named `_portdef_DMgr.props` and enter the following text:

      ```
      CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS=9403
      WC_adminhost=9060
      DCS_UNICAST_ADDRESS=9352
      BOOTSTRAP_ADDRESS=9809
      SAS_SSL_SERVERAUTH_LISTENER_ADDRESS=9401
      CELL_DISCOVERY_ADDRESS=7277
      SOAP_CONNECTOR_ADDRESS=8879
      ORB_LISTENER_ADDRESS=9100
      CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS=9402
      WC_adminhost_secure=9043
      ```

   b. Place the file in the `WAS_HOME` directory.

3. Create the `ctgDmgr01` profile using the `manageprofiles` command. Type the following command, all on one line, with a space between each entry:

   ```
   WAS_HOME/bin/manageprofiles.[sh|bat]
   -create
   -templatePath WAS_HOME/profileTemplates/dmgr
   -hostName yourfullyqualifiedhost
   -profileName ctgDmgr01
   -profilePath WAS_HOME/profiles/ctgDmgr01
   -portsFile WAS_HOME/_portdef_DMgr.props
   -cellName ctgCell01
   -nodeName ctgCellManager01
   -enableAdminSecurity "false"
   ```

4. Ensure the `ctgDmgr01` profile is configured to use Java 7.

   a. List available Java JDKs to ensure Java 7 is installed on the system.

      ```
      WAS_HOME/bin/managesdk.[sh|bat]
      -listAvailable
      -verbose
      ```

   b. List the version of Java associated with `ctgDmgr01`.

      ```
      WAS_HOME/bin/managesdk.[sh|bat]
      -listEnabledProfile
      -profileName ctgDmgr01
      -verbose
      ```

   c. If required, enable the `ctgDmgr01` profile to use Java 7.
5. Start the ctgDmgr01 server:

```
WAS_HOME/profiles/ctgDmgr01/bin/startManager.[sh|bat]
```

6. Create a profile ports file for the ctgAppSrv01 profile. This file is used by the `manageprofiles` command to set the ports that are used by this profile.

   a. Open a new text file named `_portdef_AppSvr.props` and enter the following text:

```
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS=9201
DCS_UNICAST_ADDRESS=9353
NODE_DISCOVERY_ADDRESS=7272
NODE_IPV6_MULTICAST_DISCOVERY_ADDRESS=5001
BOOTSTRAP_ADDRESS=2809
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS=9901
SOAP_CONNECTOR_ADDRESS=8878
NODE_MULTICAST_DISCOVERY_ADDRESS=5000
ORB_LISTENER_ADDRESS=9001
CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS=9202
```

   b. Place the file in the `WAS_HOME` directory.

7. Create the ctgAppSrv01 profile using the `manageprofiles` command:

```
WAS_HOME/bin/manageprofiles.[sh|bat]
  -create
  -templatePath WAS_HOME/profileTemplates/managed
  -hostName yourfullyqualifiedhost
  -profileName ctgAppSrv01
  -profilePath WAS_HOME/profiles/ctgAppSrv01
  -cellName ctgNodeCell01
  -nodeName ctgNode01
  -portsFile WAS_HOME/_portdef_AppSvr.props
  -dmgrHost yourfullyqualifiedhost
  -dmgrPort 8879
  -isDefault
```

8. Ensure the ctgAppSrv01 profile is configured to use Java 7.

   a. List available Java JDKs to ensure Java 7 is installed on the system.
   ```
   WAS_HOME/bin>managesdk.[sh|bat]
   -listAvailable
   -verbose
   ```

   b. List the version of Java associated with ctgAppSrv01.
   ```
   WAS_HOME/bin>managesdk.[sh|bat]
   -listEnabledProfile
   -profileName ctgAppSrv01
   -verbose
   ```

   c. If required, enable the ctgAppSrv01 profile to use Java 7.
   ```
   WAS_HOME/bin>managesdk.[sh|bat]
   -enableProfile
   -profileName ctgAppSrv01
   -sdkName 1.7_32
   -enableServers
   ```

9. Start the ctgAppSrv01 node.

```
WAS_HOME/profiles/ctgAppSrv01/bin/startNode.[sh|bat]
```

10. Restart servers.

```
WAS_HOME/profiles/ctgDmgr01/bin/stopManager.[sh|bat]
WAS_HOME/profiles/ctgDmgr01/bin/startManager.[sh|bat]
WAS_HOME/profiles/ctgAppSrv01/bin/stopNode.[sh|bat]
WAS_HOME/profiles/ctgAppSrv01/bin/startNode.[sh|bat]
```
11. Start firststeps.[sh|bat] and select the **Installation Verification** option to confirm that your server has been properly installed and started.

```
WAS_HOME/profiles/ctgDmgr01/firststeps/firststeps.[sh|bat]
```

Manually configuring Virtual Member Manager on WebSphere Application Server Network Deployment on page 59

Some deployment environments require the manual configuration of Virtual Member Manager to secure Maximo Asset Management.

### Manually creating a data source for the persistent store:

If you chose to manually configure WebSphere Application Server Network Deployment, you must create a data source in order to store JMS messages in a DB2 database.

**About this task**

You have the option of having WebSphere Application Server Network Deployment use a DB2 database to store JMS messages. For more information about WebSphere Application Server Network Deployment message storage, including the usage of products other than DB2, see [http://www-01.ibm.com/support/knowledgecenter/SSLKT6/sslk6_welcome.html](http://www-01.ibm.com/support/knowledgecenter/SSLKT6/sslk6_welcome.html).

To create a data source for the persistent store, complete the following steps:

**Procedure**

1. Create a system user and password on the server hosting the database server. For example, a user named **mxsibusr** with a password of **mxsibusr**.

2. Create and configure the database.
   a. Open DB2 Control Center.
   b. Browse to the Databases folder listed under your system.
   c. Right-click the Databases folder and select **Create Database > Standard**.
   d. Create a database named **maxsibdb** using default settings.
   e. After the database has been created, expand the **maxsibdb** database and select **User and Group objects**.
   f. Right-click **DB Users** and select **Add**.
   g. Select **mxsibusr** from the User menu.
   h. Grant all authorities to the **mxsibusr** except Security administrator authority.
   i. Click **Apply**.
   j. Verify that you can connect to the database using the **mxsibusr** user by right-clicking **maxsibdb** and selecting **Connect**.

3. Configure J2C authentication data and JDBC provider in WebSphere Application Server Network Deployment.
   a. Open and login to the WebSphere Application Server Network Deployment administrative console.
   b. Browse to **Security > Global Security**.
   c. Under the Authentication header, click **Java Authentication and Authorization Service > J2C authentication data**.
   d. Click **New**.
   e. Complete the following fields in the User identity form.
      
      **Alias**  maxJaasAlias
User ID
mxsibusr
Password
Password you created for mxsibusr.
Description
SIB database user alias.
f. Click Apply, and then click Save.
g. From the WebSphere Application Server administrative console, browse to Resources > JDBC > JDBC Providers.
h. Under Scope, click Show scope selection drop-down list with the all scopes option, select Cell=ctgCell01, and then, under Preferences, click Apply.
i. Click New.
j. Specify the following values, and then click Apply:
   Database type
   DB2
   Provider type
   DB2 Universal JDBC Driver Provider
   Implementation type
   XA data source
   Name maxJdbcProvider
k. Click Next.
l. Complete the WebSphere Application Server variable ${DB2UNIVERSAL_JDBC_DRIVER_PATH} field with a value of <WAS_HOME>/ctgMX/lib. For example, C:\Program Files\IBM\WebSphere\AppServer\ctgMX.lib.
m. Click Next.
n. Click Finish.
o. Click Save.
4. Open a command prompt and copy <DB2_HOME>/java/db2jcc.jar and <DB2_HOME>/java/db2jcc_license_cu.jar to the <WAS_HOME>/ctgMX/lib directory. Go back to Resources > JDBC > JDBC Providers > maxJdbcProvider, and correct the class path if required for both db2jcc.jar and db2jcc_license_cu.jar. Ensure that each jar file has the full path from ${DB2UNIVERSAL_JDBC_DRIVER_PATH}.
5. Configure WebSphere Application Server:
a. From the WebSphere Application Server Network Deployment administrative console, browse to Resources > JDBC > Data sources.
b. Under Scope, click Show scope selection drop-down list with the all scopes option, select Cell=ctgCell01, and then, under Preferences, click Apply.
c. Click New.
d. Specify the following values:
   Data source name
   intjmsds
   JNDI name
   jdbc/intjmsds
e. From the Component-managed authentication alias and XA recovery authentication alias menu, select `maxJaasAlias`

f. Click Next.

g. Choose Select an existing JDBC provider, and then select `maxJdbcProvider` from the menu.

h. Click Next.

i. Specify the following values:

   - **Database name**
     - `maxsibdb`

   - **Driver type**
     - `4`

   - **Server name**
     - Specify the DB2 server host name.

   - **Port number**
     - Specify the DB2 port number. For example, 50005.

j. Ensure the Use this data source in container managed persistence (CMP) option is selected, and then click Next.

k. Click Finish.

l. Click Save.

6. Verify the data source by selecting `intjmsds`, and then clicking Test Connection.

Performing WebSphere Application Server Network Deployment configuration tasks:

Use this procedure to perform WebSphere Application Server Network Deployment configuration tasks.

About this task

If you elect to manually configure Maximo Asset Management middleware for use with Maximo Asset Management, you have to manually configure the WebSphere Application Server Network Deployment.

Procedure

1. Manually copy the keystore file from the WebSphere Application Server Network Deployment deployment manager host to a temporary directory on the Maximo Asset Management administrative system where you are installing Maximo Asset Management: `WAS_HOME/profiles/ctgDmgr01/etc/trust.p12`

2. Open a browser and access the administrative console by typing in the browser address bar: `http://server_name:9060/admin`. This URL address depicts the default port number (9060) and context (admin) for the administrative console. Enter a user name to log in. The browser is redirected to a secure port (9043).

3. Create the MXServer application server.

   a. Expand Servers > Server Types > WebSphere application servers.
   
   b. Click New.
   
   c. Type `MXServer` and click Next.
   
   d. Accept all default settings and click Next.
e. Accept default settings and click Next.
f. Click Finish.
g. Click Preferences.
h. Select the Synchronize changes with Nodes check box, and then click Apply.
i. Click Save.
j. Click OK.

4. Edit JVM Memory Settings and JVM Arguments for the application server.
   a. Click MXServer in the main window.
   b. From the Server Infrastructure group, expand the Java and Process Management link.
   c. Click Process Definition.
   d. Click Java Virtual Machine.
   e. For Initial Heap Size and Maximum Heap Size, set these values to 4096.
   f. Enter the following values in the Generic JVM arguments field, using a space between each argument:
      
      -Dsun.rmi.dgc.ackTimeout=10000
      -Djava.net.preferIPv4Stack=true # for Windows
      -Xdisableexplicitgc
      -Xgcpolicy:gencon
      -Xmx1024m # Xmx1024m for 64-bit JVM
      -Xlp64k # AIX
5. Edit thread pool settings for the application server.
   a. Click MXServer from the WebSphere application servers panel.
   b. From the Additional Properties group, click Thread pools.
   c. Click Default. Set Minimum Size to 20. Set Maximum Size to 50. Set Thread inactivity timeout to 30000. Click OK.
   d. Click TCPChannel.DCS. Set Minimum Size to 5. Set Maximum Size to 20. Set Thread inactivity timeout to 5000. Click OK.
   e. Click WebContainer. Set Minimum Size to 50. Set Maximum Size to 50. Set Thread inactivity timeout to 30000. Click OK.

Figure 7. Manually create the application server
6. Edit JVM Memory Settings for the deployment manager.
   a. From System administration, click Deployment manager.
   b. From the Server Infrastructure group, expand the Java and Process Management link.
   c. Click Process Definition.
   d. Click Java Virtual Machine.
   e. Scroll down and type 1024 for Initial Heap Size and 1024 for Maximum Heap Size and click OK.
f. Click **Save** in the messages box.

7. Start the application server.
   a. From **Servers > Server Types > WebSphere application servers**, click **Application servers**.
   b. Select the check box for MXServer.
   c. Click **Start**.

8. Identify the HTTP Transfer Port Numbers.
   a. Expand **Servers > Server Types > WebSphere application servers**, and click **MXServer** from the main window.
   b. Open the Web Container Settings and click **Web container transport chains**.
   c. Note the default port number as it appears with WCInboundDefault (9080).
9. Create the virtual host.
   a. Expand Environment.
   b. Click Virtual Hosts.
   c. Click New.
   d. In the General Properties section, type maximo_host in the Name box.
   e. Click Apply.
   f. Click Save.
   g. Click OK.
   h. From the Virtual Hosts window, click maximo_host.
   i. Click the Host Aliases link.
   j. Click New.
   k. Type * (asterisk) for host name and type the HTTP port number (by default 80).
   l. Click OK.
   m. Click New.
   n. Type * (asterisk) for host name and type 9061 for the port number.
   o. Click OK.
   p. Click New.
   q. Type * (asterisk) for host name and type 9443 for the port number.
   r. Click OK.
   s. Click New.
   t. Type * (asterisk) for host name and type 9080 for the port number.
   u. Click OK.
   v. Click New.
   w. Type * (asterisk) for host name and type 9044 for the port number.
   x. Click OK and then click Save.
10. Enable automatic startup of the application server when the node agent is started.
   a. Expand **Servers > Server Types > WebSphere application servers.**
   b. Click **MXServer** in the main window.
   c. From the Server Infrastructure group, expand **Java and Process Management.**
   d. Click **Monitoring Policy.**
   e. Set Node restart state to **RUNNING** and click **OK.**
   f. Click **Save** in the messages box.

---

Figure 11. Create the virtual host

Figure 12. Enable automatic startup of the application server when the node agent is started
Creating a Windows service for the node agent:

You can create a Windows service for starting the WebSphere Application Server Network Deployment node agent.

About this task

Although not required, you can optionally start the node agent as a Windows service.

If you used the middleware installation program to install WebSphere Application Server Network Deployment v7, this step has already been performed by the middleware installation program.

Procedure

1. Open a command prompt.
2. Change directory to `<WAS_HOME>in`.
3. Type the following command with no line breaks (case-sensitive).

   ```
   WASService -add NodeAgent -serverName nodeagent -profilePath "C:\IBM\WebSphere\AppServer\profiles\ctgAppSrv01" -wasHome "C:\IBM\WebSphere\AppServer" -logRoot "C:\IBM\WebSphere\AppServer\profiles\ctgAppSrv01\logs\nodeagent" -logfile "C:\IBM\WebSphere\AppServer\profiles\ctgAppSrv01\logs\nodeagent\startServer.log" -restart true
   ```
4. Close the Command Prompt.

Manually configuring JMS queues:

This procedure provides details on steps to configure JMS queues, which must be completed before using the product installation program.

About this task

During the installation process, the Maximo Asset Management installation program provides you with the option of automatically configuring Maximo Asset Management middleware. If you elect to have the Maximo Asset Management installation program automatically configure Maximo Asset Management middleware, it creates and configures JMS message queues for you. If you elect to manually configure Maximo Asset Management middleware for use with Maximo Asset Management, you must manually configure these message queues.

To configure the JMS queues, complete the following steps:

Procedure

1. Start the WebSphere Application Server Network Deployment application server.
2. Start Internet Explorer and open the WebSphere Application Server Network Deployment administrative console by typing the following URL:

   ```
   http://<server_name>:<port_number>/ibm/console
   ```

   For example, enter a URL like the following sample URL:

   ```
   http://localhost:9060/ibm/console
   ```
3. At the login screen, enter your user ID, then click Log in. This action opens the Welcome screen for the WebSphere Application Server Network Deployment administrative console.

4. Click Service Integration > Buses to open the Buses dialog. A bus is a group of interconnected servers and clusters that have been added as members of the bus.

5. Click New to open the Create a new Service Integration Bus panel where you can add a new service integration bus.

6. Enter intjmsbus as the name of the new bus in the Name field.

7. Clear the Bus security check box. If you leave this box checked, intjmsbus inherits the Global Security setting of the cell.

8. Click Next.

9. Click Finish.

10. Click Save. This step propagates the JMS bus setup to the cluster configuration.

Adding a server to the service integration bus:

A server must be defined for the service integration bus.

About this task

Complete the following steps to add a server to the service integration bus:

Procedure

1. From the WebSphere Application Server Network Deployment administrative console, click Service Integration > Buses to open the Buses dialog box.

2. Click intjmsbus to open the Buses > intjmsbus dialog box.


4. In the Buses > intjmsbus > Bus members dialog box, click Add to open the Add a new bus member dialog box.

5. Select the Server option, and select the server name ctgNode01:MXServer to add to the bus, and then click Next.

6. Check that the File store radio button is selected, and then click Next.

7. From the Configure file store panel, click Next.

8. From the Tune application server for messaging performance panel, click Next.

9. Click Finish.

10. Click Save.

11. Select intjmsbus.

12. Change the value of the Default messaging engine high message threshold field to a minimum value of 500,000 messages, and then click Apply.

If the number of messages awaiting processing exceeds the High Message Threshold you set, the application server limits the addition of new messages in the processing queues.

Depending on your message requirements, you can enter a higher message threshold value. You can determine an optimal message threshold setting by monitoring the messaging in/out queues and the impact of the message threshold setting on system performance. You might, for example, lower the threshold value if a higher value is degrading system performance.
If you decide to change the High message threshold setting after the initial configuration, you must open the Additional Properties menu in the administrative console and change the threshold value for each child configuration.

13. Click Save.

Creating the service integration bus destination for the continuous inbound (CQINBD) queue:

You must create a service integration bus destination for the continuous inbound (CQINBD) queue.

About this task

To add a logical address for the continuous inbound bus destination queue (CQINBD) within the JMS bus, complete the following steps:

Procedure

1. From the WebSphere Application Server Network Deployment Administrative Console, click Service Integration > Buses to open the Buses dialog box.
2. Click intjmsbus to open the Buses > intjmsbus dialog box.
3. Click Destinations under Destination resources to open the Buses > intjmsbus > Destinations dialog box.

A bus destination, for example CQINBD, is a virtual place within a service integration bus where applications can attach and exchange messages.
4. Click New to open the Create new destination dialog box.
5. Leave Queue checked as the destination type, and click Next to open the Create new queue dialog box.
6. Type CQINBD in the Identifier field and Continuous Queue Inbound in the Description field, then click Next to open the Create a new queue for point-to-point messaging dialog box.
7. Select the Bus Member pull-down and choose Node=ctgNode01:Server=MXServer as the bus member that will store and process messages for the CQINBD bus destination queue.
8. Click Next to open the Confirm queue creation dialog box.
9. Review your selections, then click Finish to complete the creation of the CQINBD bus destination queue.
10. Navigate the path Buses > intjmsbus > Destinations, then click CQINBD to open the configuration dialog box.
11. Click None as the Exception destination value.
12. Verify Keep count of failed deliveries per message is enabled.
13. Click Apply.
14. Click Save.

Creating the service integration bus destination for the sequential inbound (SQINBD) queue:

You must create the service integration bus destination for the sequential inbound (SQINBD) queue.
About this task

To add a logical address for the sequential inbound bus destination queue (SQINBD) within the service integration bus, complete the following steps:

Procedure
1. From the WebSphere Application Server Network Deployment Administrative Console, click Service Integration > Buses to open the Buses dialog box.
2. Click intjmsbus to open the Buses > intjmsbus dialog box.
3. Click Destinations under Destination resources to open the Buses > intjmsbus > Destinations dialog box. A bus destination is a virtual place within a service integration bus where applications can attach and exchange messages.
4. Click New to open the Create new destination dialog box.
5. Leave Queue checked as the destination type, and click Next to open the Create new queue dialog box.
6. Enter SQINBD in the Identifier field and Sequential Queue Inbound in the Description field, then click Next to open the Create a new queue for point-to-point messaging dialog box. Note that you must use this value and it must contain only uppercase letters.
7. Select the Bus Member pull-down and choose Node=ctgNode01:Server=MXServer
8. Click Next to open the Confirm queue creation dialog box.
9. Review your selections, then click Finish to complete the creation of the SQINBD bus destination queue.
10. Navigate the path Buses > intjmsbus > Destinations, then click SQINBD to open the configuration dialog box.
11. Click None as the Exception destination value.
12. Verify Keep count of failed deliveries per message is enabled.
13. Click Apply.
14. Click Save.

Creating the service integration bus destination for the sequential outbound (SQOUTBD) queue:

You must create the service integration bus destination for the sequential outbound (SQOUTBD) queue.

About this task

To add a logical address for the sequential outbound bus destination queue (SQOUTBD) within the service integration bus, complete the following steps:

Procedure
1. From the WebSphere Application Server Network Deployment administrative console, click Service Integration > Buses to open the Buses dialog box.
2. Click intjmsbus to open the Buses > intjmsbus dialog box.
3. Click Destinations under Destination resources to open the Buses > intjmsbus > Destinations dialog box. A bus destination, for example SQOUTBD, is a virtual place within a service integration bus where applications can attach and exchange messages.
4. Click New to open the Create new destination dialog box.
5. Leave **Queue** checked as the destination type, and click **Next** to open the Create new queue dialog box.

6. Enter SQOUTBD in the Identifier field and Sequential Queue Outbound in the Description field, then click **Next** to open the Create a new queue for point-to-point messaging dialog box. You must use this value and it must contain only uppercase letters.

7. Select the Bus Member menu and choose **Node=ctgNode01:Server=MXServer** as the bus member that stores and processes messages for the SQOUTBD bus destination queue.

8. Click **Next** to open the Confirm queue creation dialog box.

9. Review your selections, then click **Finish** to complete the creation of the queue.

10. Navigate the path **Buses > intjmsbus > Destinations**, then click SQOUTBD to open the configuration dialog box where you must make the following changes:

11. Click **None** as the Exception destination value.

12. Verify **Keep count of failed deliveries per message** is enabled.

13. Click **Apply**.

14. Click **Save**.

---

**Creating the JMS connection factory:**

Add a connection factory for creating connections to the associated JMS provider of point-to-point messaging queues.

**About this task**

To create the JMS connection factory, complete the following steps:

**Procedure**

1. From the WebSphere Application Server Network Deployment administrative console, click **Resources > JMS > Connection factories**.

2. From the **Scope** drop-down list, select **Cell=ctgCell01**.

3. Click **New**.

4. Verify that the Default Messaging Provider is selected and click **OK**.

5. Enter the following information:
   - **Name** Enter intjmsconfact.
   - **JNDI name** Enter jms/maximo/int/cf/intcf.
   - **Bus name** Select intjmsbus.

6. Click **Apply**.

7. Click **Save**.

---

**Creating the continuous inbound (CQIN) JMS queue:**

You must create a JMS queue (CQIN) as the destination for continuous inbound point-to-point messages.
About this task

To create the CQIN JMS queue, complete the following steps:

Procedure
1. From the WebSphere Application Server Network Deployment administrative console, click **Resources > JMS > Queues**.
2. From the Scope drop-down list, select **Cell=ctgCell01**.
3. Click **New**.
4. Verify that the Default Messaging Provider is selected and click **OK**.
5. Enter the following information, and click **OK**.
   - **Name**: Enter CQIN. This value must contain only uppercase letters.
   - **JNDI name**: Enter jms/maximo/int/queues/cqin
   - **Bus name**: Select intjmsbus.
   - **Queue name**: Select CQINBD.
6. Click **OK**.
7. Click **Save**.

Creating the sequential inbound (SQIN) JMS queue:

You must create a JMS queue (SQIN) as the destination for sequential inbound point-to-point messages.

About this task

To create the SQIN JMS queue, complete the following steps:

Procedure
1. From the WebSphere Application Server Network Deployment administrative console, click **Resources > JMS > Queues**.
2. From the Scope drop-down list, select **Cell=ctgCell01**.
3. Click **New**.
4. Verify that the Default Messaging Provider is selected and click **OK**.
5. Enter the following information, and click **OK**.
   - **Name**: Enter SQIN. This value must contain only uppercase letters.
   - **JNDI name**: Enter jms/maximo/int/queues/sqin
   - **Bus name**: Select intjmsbus.
   - **Queue name**: Select SQINBD.
6. Click **OK**.
7. Click **Save**.
Creating the sequential outbound (SQOUT) JMS queue:

You must create a JMS queue (SQOUT) as the destination for sequential outbound point-to-point messages.

About this task

To create the SQOUT JMS queue, complete the following steps:

Procedure
1. From the WebSphere Application Server Network Deployment administrative console, click Resources > JMS > Queues.
2. From the Scope drop-down list, select Cell=ctgCell01.
3. Click New.
4. Verify that the Default Messaging Provider is selected and click OK.
5. Enter the following information, and click OK.
   - Name: Enter SQOUT. This value must contain only uppercase letters.
   - JNDI name: Enter jms/maximo/int/queues/sqout
   - Bus name: Select intjmsbus.
   - Queue name: Select SQOUTBD.
6. Click OK.
7. Click Save.

Creating JMS activation specification for the continuous inbound queue (CQIN):

You must activate the continuous inbound queue (CQIN) before it can receive messages.

About this task

Complete the following steps to activate the CQIN queue:

Procedure
1. From the WebSphere Application Server Network Deployment administrative console, click Resources > JMS > Activation Specifications.
2. From the Scope drop-down list, select Cell=ctgCell01.
3. Click New.
4. Select Default messaging provider and then click OK.
5. Enter the following information, and then click OK.
   - Name: intjmsact
     This value is case-sensitive. This value must be lowercase.
   - JNDI name: intjmsact
   - Destination type: Queue
**Destination JNDI name**

jms/maximo/int/queues/cqin

**Bus name**

intjmsbus

**Maximum concurrent MDB invocations per endpoint**

10

6. Click **OK**, and then click **Save**.

**Error queues:**

You must create an error queue that receives redirected messages from the continuous queue (CQIN).

When the messages go in error, the error queue receives redirected messages from the continuous queue (CQIN).

**Creating the service integration bus destination for the inbound error queue (CQINERRBD) queue:**

You must add a logical address for the inbound error queue (CQINERRBD) queue within the JMS bus.

**About this task**

Perform the following steps:

**Procedure**

1. From the WebSphere Application Server Network Deployment administrative console, click **Service Integration > Buses** to open the Buses dialog box.
2. Click **intjmsbus** to open the **Buses > intjmsbus** dialog box.
3. Click **Destinations** under Destination resources to open the **Buses > intjmsbus > Destinations** dialog box. A bus destination is a virtual place within a service integration bus where applications can attach and exchange messages.
4. Click **New** to open the Create new destination dialog box.
5. Leave **Queue** checked as the destination type, and click **Next** to open the Create new queue dialog box.
6. Enter CQINERRBD in the Identifier field and Error Queue Inbound in the Description field, then click **Next** to open the Create a new queue for point-to-point messaging dialog box. You must use this value and it must contain only uppercase letters.
7. From the Bus Member menu, select **Node=ctgNode01:Server=MXServer**
8. Click **Next** to open the Confirm queue creation dialog box.
9. Review your selections, then click **Finish** to create the CQINERRBD bus destination queue.
10. Select **Buses > intjmsbus > Destinations**, then click **CQINERRBD** to open the configuration dialog box where you must make the following changes:
    a. Select the **Specify** option and enter CQINERRBD as the exception destination value.
    b. Change the Maximum failed deliveries value to 5.
This option is the maximum number of times you want the system to process a failed messaging attempt before forwarding the message to the exception destination.

c. Verify **Keep count of failed deliveries per message** is enabled.

11. Click **Apply**.
12. Click **Save**.
13. From the WebSphere Application Server Network Deployment administrative console, click **Service Integration > Buses** to open the Buses dialog box.
14. Click **intjmsbus** to open the **Buses > intjmsbus** dialog box.
15. Click **Destinations** under Destination resources to open the **Buses > intjmsbus > Destinations** dialog box.
16. Select **CQINBD**.
17. Specify **CQINERRBD** as the exception destination. Set the Maximum failed deliveries value to **5**.
18. Click **OK**.
19. Click **Save**.

Creating the error (CQINERR) JMS queue:

After creating the Error Queue Bus Destination, you create the Error queue.

**About this task**

To create the Error queue, complete the following steps.

**Procedure**

1. From the WebSphere Application Server Network Deployment administrative console, click **Resources > JMS > Queues**.
2. From the Scope drop-down list, select **Cell=ctgCell01**.
3. Click **New**.
4. Verify that the Default Messaging Provider is selected and click **OK**.
5. Enter the following information, and click **OK**.
   - **Name** Enter **CQINERR**.
     - This value must contain only uppercase letters.
   - **JNDI name**
     - Enter **jms/maximo/int/queues/cqinerr**
   - **Bus name**
     - Select **intjmsbus**.
   - **Queue name**
     - Select **CQINERRBD**.
6. Click **OK**.
7. Click **Save**.

Creating JMS activation specification for the inbound error queue (CQINERR):

You must activate the continuous inbound queue (CQINERR) before it can receive messages.
About this task

Complete the following steps to activate the CQINERR queue:

Procedure

1. From the WebSphere Application Server Network Deployment administrative console, click **Resources > JMS > Activation Specifications**.
2. From the Scope menu, select **Cell=ctgCell01**, and then click **Apply**.
3. Click **New** to complete the General Properties section for the new JMS activation specification.
4. Click **OK**.
5. Enter the following information, and click **OK**.
   - **Name**: Enter `intjmsacterr`.
     - This value must only contain lowercase letters.
   - **JNDI name**: Enter `intjmsacterr`.
     - This value must be the same as the one used for the **Name** field.
   - **Destination type**: Enter `Queue`.
   - **Destination JNDI name**: `jms/maximo/int/queues/cqinerr`
   - **Bus name**: `intjmsbus`
   - **Maximum concurrent MDB invocations per endpoint**: `10`
6. Click **OK**.
7. Click **Save**.
8. Ensure that you stop all IBM-related processes and daemons.
9. You must now restart these processes for the update to take effect.
10. Start the bus member for the `ctgNode MXServer intjmsbus` if it is not started.
    If you cannot start `ctgNode MXServer intjmsbus`, restart `MXServer` under **Servers > Application servers**.

Manually configuring Virtual Member Manager on WebSphere Application Server Network Deployment:

Some deployment environments require the manual configuration of Virtual Member Manager to secure Maximo Asset Management.

Before you begin

For a review of Maximo Asset Management security options, see the security planning information.

Important: Before you begin this procedure, ensure that you have a wasadmin user ID created in your LDAP repository.

If you intend to configure Virtual Member Manager to use SSL with a federated LDAP repository, it must be done only after a successful Maximo Asset Management installation and configuration. If Virtual Member Manager is
configured to use SSL with a federated LDAP repository before completing the
Maximo Asset Management configuration, the configuration fails. Do not configure
a Virtual Member Manager LDAP federated repository to use SSL with an LDAP
directory before configuration Maximo Asset Management. Configure SSL after the
Maximo Asset Management configuration program has completed successfully.

About this task

During the configuration process, the Maximo Asset Management configuration
program provided you with the option of automatically configuring Maximo Asset
Management middleware. If you elected to have the Maximo Asset Management
configuration program automatically configure Maximo Asset Management
middleware, then it will, among other tasks, perform Virtual Member Manager
configuration for you. If you elected to manually configure Maximo Asset
Management middleware for use with Maximo Asset Management, you must
manually configure Virtual Member Manager.

Virtual Member Manager provides you with the ability to access and maintain user
data in multiple repositories, and federate that data into a single virtual repository.
The federated repository consists of a single named realm, which is a set of
independent user repositories. Each repository can be an entire external repository
or, in the case of LDAP, a subtree within that repository. The root of each
repository is mapped to a base entry within the federated repository. The root is a
starting point within the hierarchical namespace of the virtual realm.

To add an LDAP directory to the Virtual Member Manager virtual repository, you
must first add the LDAP directory to the list of repositories available for
configuration for the federated repository. You must then add the root of
baseEntries to a search base within the LDAP directory. Multiple base entries can
be added with different search bases for a single LDAP directory.

The values provided here are example purposes only. If you are using IBM Tivoli®
Directory Server, enter the values used during the installation and configuration of
IBM Tivoli Directory Server. If you are configuring Virtual Member Manager to use
Microsoft Active Directory, substitute values where appropriate in this procedure.
You must modify the VMMCPRONTASK accordingly.

To add the IBM Tivoli Directory Server or Microsoft Active Directory to VMM,
complete the following steps:

Procedure

1. Start the WebSphere Application Server Network Deployment application
   server.
2. Start Internet Explorer and open the WebSphere Application Server Network
   Deployment administrative console by typing the following URL:
   http://<server_name>:<port_number>/admin
   For example, enter a URL like the following sample URL:
   http://localhost:9060/admin
3. At the login screen, enter your user ID, then click Log in. This action opens
   the Welcome screen for the WebSphere Application Server Network
   Deployment administrative console.
5. Locate the User account repository area and pick Federated repositories from
   the Available realm definitions field, and then click Configure.
6. Click Add repositories located under Repositories in the realm.
7. Click New repository LDAP repository to create new repository definition under the current default realm.
8. Enter the following values, click Apply, and then click Save.

Repository identifier
   For Microsoft Active Directory, enter ISMMSAD.

Directory type
   For Microsoft Active Directory, select Microsoft Windows Server 2012 Active Directory.

Primary host name
   Enter the fully qualified host name or IP address of the directory server.

Port
   Enter 389.

Support referrals to other LDAP servers
   Set this value to ignore.

Bind distinguished name
   For Microsoft Active Directory, enter CN=Administrator,CN=Users,DC=ism76,DC=com.

Bind password
   Enter the password for the bind distinguished name.

Certificate mapping
   Select EXACT_DN

9. Enter the following values, click Apply, and then click Save.

Repository
   For Microsoft Active Directory, select ISMMSAD.
Unique distinguished name of the base entry (or parent) entry in federated repositories
For Microsoft Active Directory, enter DC=ism76,DC=com.

Distinguished name in the repository is different
This value is optional. You need to provide this value if it differs from the base entry in the repository you are adding.
For Microsoft Active Directory, enter DC=ism76,DC=com.

10. From the Federated repositories configuration area, enter the following values, click Apply, and then click Save:

Realm name
Enter ISMRealm.

Primary administrative user name
Enter wasadmin. This value must be a valid user from the configured LDAP repository.

Server user identity
Select Automatically generated server identity.

Ignore case for authorization
Select this check box.

11. Click Supported entity types, and then click PersonAccount.

12. From the PersonAccount configuration area, enter the following values:

Entity type
Verify that the value is PersonAccount.

Base entry for the default parent
For Microsoft Active Directory, enter CN=Users,DC=ism76,DC=com.

Relative Distinguished Name properties
Enter uid.

13. Click OK and then click Save.

14. Click Supported entity types, and then click Group.

15. From the Group configuration area, enter the following values:

Entity type
Verify that the value is Group.

Base entry for the default parent
For Microsoft Active Directory, enter cn=groups,CN=Groups,DC=ism76,DC=com.

Relative Distinguished Name properties
Enter cn.

16. Click OK and then click Save.

17. Click Supported entity types, and then click OrgContainer.

18. From the OrgContainer configuration area, enter or verify the following values:

Entity type
Verify that the value is OrgContainer.

Base entry for the default parent
For Microsoft Active Directory, enter DC=ism76,DC=com.

Relative Distinguished Name properties
Enter o;ou;dc;cn.
19. Click **OK** and then click **Save**.
20. Browse to **Security > Global security**.
21. From the Global security configuration page, complete the following:
   a. Enable **Enable administrative security**.
   b. Enable **Enable application security**.
   c. Clear the option for **Use Java 2 security to restrict application access to local resources**.
   d. From Available realm definition, select **Federated repositories**.
   e. Click **Set as current**.
22. Click **Apply**, and then click **Save**.
23. Restart WebSphere Application Server Network Deployment and the managed nodes by running the following commands:
   a. `<WAS_HOME>/profiles/ctgDmgr01/bin/stopManager.bat`
   b. `<WAS_HOME>/profiles/ctgAppSrv01/bin/stopNode.bat`
   c. `<WAS_HOME>/profiles/ctgDmgr01/bin/startManager.bat`
   d. `<WAS_HOME>/profiles/ctgAppSrv01/bin/startNode.bat`

   **Note:** Substitute UNIX path and file extension values where appropriate.

Running the Maximo Asset Management 7.6 installation program

Use the Maximo Asset Management version 7.6 installation program to install Maximo Asset Management version 7.6.

About this task

In order to install Maximo Asset Management version 7.6, run the Maximo Asset Management version 7.6 installation program on the Maximo Asset Management administrative system.

Procedure

1. Log in to the Maximo Asset Management administrative workstation. If you run the IBM Maximo Asset Management version 7.6 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.
2. Launch the IBM Maximo Asset Management version 7.6 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 session and click OK.

c. In the launchpad navigation pane, click Install Product.

d. From the Install Product panel, select IBM Maximo Asset Management v7.6 and then click Install IBM Maximo Asset Management components.

3. In the package selection panel, click Next.

4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click Next. If any errors are reported on this panel, resolve the issue and then click Recheck Status before continuing.

5. In the license agreement panel, review the license information for each package 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 panel, 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, select the IBM Tivoli’s process automation suite package group, specify the path information for the Maximo Asset Management version 7.6 installation directory, and then click Next.

8. In the package features panel, leave all default options checked, and then click Next.

9. In the package summary panel, review the information for the planned installation, and then click Install. If you install in a non-English environment, you might notice the environment summary is listed as English. You configure supported languages for Maximo Asset Management later with the Maximo Asset Management configuration program.

10. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click Finish. The Maximo Asset Management version 7.6 installation program exits and the Maximo Asset Management version 7.6 configuration program is started automatically.

What to do next

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

Configuring Maximo Asset Management version 7.6 with manually configured middleware

This procedure explains how to use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

Procedure

1. If the Maximo Asset Management version 7.6 configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click Configure Product, specify Maximo Asset Management installation location, 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 Deployment.
3. In the Define Deployment Environment panel, specify information about DB2 and WebSphere Application Server Network Deployment servers you installed and prepared. Select the **WebSphere is already configured** option. After you define your deployment environment, click **Finish**.

4. In the Configure General Product Information panel, review summary details about the product components you are installing. Specify the appearance and navigation features for your product, add an e-mail address to receive workflow messages, and choose whether or not to deploy sample data.

5. In the Configure the DB2 Instance panel, specify information about the DB2 instance for Maximo Asset Management.

6. In the Configure the DB2 Database panel, specify information about the DB2 database for Maximo Asset Management.

7. In the Configure the Application Server panel, specify information for the WebSphere Application Server Network Deployment server you installed. Indicate whether you want to store JMS messages originating from the integration adapter.

8. In the Configure Application Security panel, choose a security model for Maximo Asset Management. If you choose a security model that includes a directory server, specify information about the directory for the virtual member manager. Enter the user names and passwords for users that must be created for Maximo Asset Management.

9. Choose the base language and any additional languages you want to install.

10. In the Apply Deployment Operations panel, specify user interface preferences, select all available deployment operations, and then click **Finish**.

**Results**

Maximo Asset Management version 7.6 is installed and configured to use WebSphere Application Server Network Deployment and DB2.
Chapter 5. Deploying in a cluster environment

Use the Maximo Asset Management installation and configuration programs to install and automatically configure Maximo Asset Management in a WebSphere Application Server Network Deployment cluster configuration.

About this task

In this scenario, you use the Maximo Asset Management installation and configuration programs to install and automatically configure new instances of the following components in a cluster configuration:

- WebSphere Application Server Network Deployment
- Maximo Asset Management

You use the Maximo Asset Management installation program to install Maximo Asset Management and the middleware you want to use in your deployment. You then use the Maximo Asset Management configuration program to configure both middleware and Maximo Asset Management.

You can use the roadmap of tasks to automatically configure middleware and deploy Maximo Asset Management in a cluster environment.
Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment

Configuring SSL between Microsoft Active Directory and WebSphere Application Server Network Deployment enables the Maximo Asset Management configuration program to automatically create users and groups in the directory. Users and groups must be created in the directory if you plan to use a directory server for...
Maximo Asset Management authentication and authorization. If you plan to use Maximo Asset Management application security for authentication and authorization, you do not need configure SSL for a directory server.

**About this task**

To enable the configuration program to automatically create users and groups within Microsoft Active Directory, you must configure SSL communication between Microsoft Active Directory and WebSphere Application Server Network Deployment. This procedure is only required if you choose to allow the configuration program to automatically configure WebSphere Application Server Network Deployment. You also want the configuration program to automatically create users in Microsoft Active Directory.

You must enable SSL for Microsoft Active Directory, generate a certificate, and then add that certificate to WebSphere Application Server Network Deployment.

Changing the name or domain of the certificate authority at any point invalidates certificates previously issued from that authority.

Ensure that you have host name resolution setup properly in your environment. Communication failures occur if the system hosting Microsoft Active Directory cannot resolve host names for systems that have been issued certificates.

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**Installing DB2 v10.5 using the Maximo Asset Management version 7.6 installation program**

Use the Maximo Asset Management version 7.6 installation program to install DB2 v10.5.

**Procedure**

1. Log in to the target system as a user with administrative authority. If you are running the IBM Maximo Asset Management version 7.6 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 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 panel, select **IBM DB2 v10.5** and then click Install IBM Maximo Asset Management components.

3. In the package selection panel, click Next.

4. In the package prerequisite validation panel, review the results of the prerequisite check and then click Next. If any errors are reported on this panel, resolve the issue and then click Recheck Status before continuing.
5. In the license agreement panel, review the license information for each package 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 panel, 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, select a package group, specify the path information for its installation directory, and then click **Next**. Repeat this process for each package group listed.

8. In the package translations panel, specify language support for DB2, and then click **Next**.

9. In the package features panel, leave all default options checked, and then click **Next**.

10. In the package configuration panel, specify configuration information for DB2 v10.5, and then click **Next**.

11. In the package summary panel, review the information for the planned installation, and then click **Install**.

---

**Installing WebSphere Application Server Network Deployment v8.5 using the Maximo Asset Management version 7.6 installation program**

Use the Maximo Asset Management version 7.6 installation program to install WebSphere Application Server Network Deployment v8.5.

**Procedure**

1. Log in to the target system as a user with administrative authority. If you are running the IBM Maximo Asset Management version 7.6 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 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** panel, select **IBM WebSphere Application Server Network Deployment v8.5.5** and then click **Install IBM Maximo Asset Management components**. During the installation of WebSphere Application Server Network Deployment, install Java v7. When you install Java v7, the configuration program configures IBM Maximo Asset Management to use Java v7.

3. In the package selection panel, click **Next**.
4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click Next. If any errors are reported on this panel, resolve the issue and then click Recheck Status before continuing.

5. In the license agreement panel, review the license information for each package that is to be 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 panel, specify the 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, 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 panel, specify language support for WebSphere Application Server Network Deployment, and then click Next.

9. In the package features panel, leave all default options selected, and then click Next.

10. In the package configuration panel, specify configuration information for IBM HTTP Server, and then click Next.

11. In the package summary panel, review the information for the planned installation, and then click Install.

12. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click Finish.

What to do next

Use the Maximo Asset Management version 7.6 configuration program to prepare WebSphere Application Server Network Deployment for Maximo Asset Management version 7.6 configuration.

Preparing WebSphere Application Server Network Deployment and configuring application server cluster profiles using the Maximo Asset Management configuration program

You can use the Maximo Asset Management version 7.6 configuration program to prepare WebSphere Application Server Network Deployment v8.5 for Maximo Asset Management configuration and configure application server cluster profiles.

About this task

When you configure Maximo Asset Management for a cluster environment, you must first prepare the WebSphere Application Server Network Deployment server and configure application server cluster profiles. You then configure Maximo Asset Management to work with the defined clusters.

You must define and configure clusters on the WebSphere Application Server Network Deployment deployment manager. If you want the cluster configuration to include members on other WebSphere Application Server Network Deployment nodes, you must log onto the server and run the Maximo Asset Management configuration program to configure a WebSphere Application Server Network Deployment profile and node to host those cluster members.
For performance reasons, you are encouraged to define a minimum of four clusters, each of which hosts a single product function. You can create additional clusters based on your needs. Refer to the Best Practices for System Performance guide for detailed performance information.

**Procedure**

1. Log on to the system hosting the WebSphere Application Server Network Deployment deployment manager server.

2. Start the Maximo Asset Management configuration program 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**.

3. In the IBM Maximo Asset Management version 7.6 configuration operations page, click **Prepare WebSphere Application Server for configuration**.

4. In the Configure WebSphere Application Server panel, specify the installation location and configuration information for WebSphere Application Server Network Deployment and associated components. Select the options to configure the system for clusters and to automate the configuration of IBM HTTP Server.

5. In the **Configure Application Server Cluster Profiles** panel, specify information to use to create WebSphere Application Server Network Deployment deployment manager and application server profiles.
   a. Select **Configure a new Deployment Manager at this server**.
   b. Specify the profile name, node name, cell name, and SOAP port for the deployment manager profile.
   c. Optional: Click **Advanced** to access the **Deployment Manager Profile Advanced Options** page where you can assign custom port values used by the deployment manager profile.
   d. Specify the WebSphere Application Server Network Deployment administrator user credentials.
   e. Click **New cluster** to create a new cluster. Specify a name and assign a single product function to the cluster.
   f. Click **New Managed Node** to create a managed node. Specify a node name and a name for the profile that contains information about the new managed node. You can create more than one managed node, but you must have at least one managed node defined.
   g. Select the managed node and click **New Server**.
   h. From the **WebSphere Managed Node Server Definition** page, select **Web server**, and specify a name for the web server the managed node will use. Only one web server can be defined for a managed node.
   i. Click **New Server**. From the **WebSphere Managed Node Server Definition** page, select **Application server cluster member**. Specify a name for the cluster member and select the cluster to associate with the cluster member. You can create as many cluster members as you need, but you must create at least one.
   j. Repeat the process to create four clusters in total, and assign each a unique product function.

6. Specify additional configuration information in the Configure Application Server Advanced Options panel, if required.
7. 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 panel.

8. In the Apply Deployment Operations panel select all deployment operation options, and then click Finish.

Results

WebSphere Application Server Network Deployment v8.5 is ready for Maximo Asset Management.

Related information:


Configuring cluster members on additional WebSphere Application Server Network Deployment nodes

You can use the Maximo Asset Management version 7.6 configuration program to configure cluster members on additional WebSphere nodes.

About this task

After you have defined clusters on the WebSphere Application Server Network Deployment deployment manager, you can configure cluster members on additional WebSphere Application Server Network Deployment nodes.

Procedure

1. Log on to the system serving as the WebSphere Application Server Network Deployment nodes.

2. Start the Maximo Asset Management configuration program 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.

3. In the IBM Maximo Asset Management version 7.6 configuration operations page, click Configure WebSphere Application Server Network Deployment for a new deployment.

4. In the Configure WebSphere Application Server panel, specify the installation location and configuration information for WebSphere Application Server Network Deployment and associated components. Select the options to configure the system for clusters and to automate the configuration of IBM HTTP Server.

5. In the Configure Application Server Cluster Profiles panel, specify information to use to create additional cluster members on this nodes.
   a. Select Use an existing Deployment Manager.
   b. Specify connection information for the remote WebSphere Application Server Network Deployment deployment manager system.
   c. Specify the WebSphere Application Server Network Deployment administrator user credentials.
   d. Click Load clusters to load cluster information from the remote WebSphere Application Server Network Deployment deployment manager.
e. Click **New Managed Node** to create a managed node. Specify a node name and a name for the profile that contains information about the new managed node. You can create more than one managed node, but you must have at least one managed node defined.

f. Select the managed node and click **New Server**.

g. From the **WebSphere Managed Node Server Definition** page, select **Application server cluster member**. Specify a name for the cluster member and select the cluster to associate with the cluster member. You can create as many cluster members as you need, but you must create at least one. You cannot create a new web server for the cluster because it was defined when the cluster was created on the remote WebSphere Application Server Network Deployment deployment manager.

h. Repeat the process to create new cluster members and assign them to clusters defined on the remote WebSphere Application Server Network Deployment deployment manager.

6. Specify additional configuration information in the Configure Application Server Advanced Options panel, if required.

7. In the Apply Deployment Operations panel select all deployment operation options, and then click **Finish**.

---

**Running the Maximo Asset Management 7.6 installation program**

Use the Maximo Asset Management version 7.6 installation program to install Maximo Asset Management version 7.6.

**About this task**

In order to install Maximo Asset Management version 7.6, run the Maximo Asset Management version 7.6 installation program on the Maximo Asset Management administrative system.

**Procedure**

1. Log in to the Maximo Asset Management administrative workstation. If you run the IBM Maximo Asset Management version 7.6 installation program from a Linux or UNIX terminal window, you must be logged in as the root user.

2. Launch the IBM Maximo Asset Management version 7.6 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 session and click OK.

   c. In the launchpad navigation pane, click **Install Product**.

   d. From the **Install Product** panel, select **IBM Maximo Asset Management v7.6** and then click **Install IBM Maximo Asset Management components**.

3. In the package selection panel, click **Next**.

4. In the package prerequisite validation panel, review the results of the prerequisite check, and then click **Next**. If any errors are reported on this panel, resolve the issue and then click **Recheck Status** before continuing.
5. In the license agreement panel, review the license information for each package 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 panel, 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 components. The shared resources directory is a common workspace directory used by Installation Manager when installing packages.

7. In the package installation location panel, select the IBM Tivoli's process automation suite package group, specify the path information for the Maximo Asset Management version 7.6 installation directory, and then click **Next**.

8. In the package features panel, leave all default options checked, and then click **Next**.

9. In the package summary panel, review the information for the planned installation, and then click **Install**. If you install in a non-English environment, you might notice the environment summary is listed as English. You configure supported languages for Maximo Asset Management later with the Maximo Asset Management configuration program.

10. After the installation is complete, select the option to start the Maximo Asset Management version 7.6 configuration program, and then click **Finish**. The Maximo Asset Management version 7.6 installation program exits and the Maximo Asset Management version 7.6 configuration program is started automatically.

**What to do next**

Use the Maximo Asset Management version 7.6 configuration program to configure Maximo Asset Management version 7.6.

---

### Configuring Maximo Asset Management in a cluster environment using the Maximo Asset Management configuration program

You can use the Maximo Asset Management configuration program to configure Maximo Asset Management in a cluster environment after WebSphere Application Server Network Deployment has been configured for clustering.

**Procedure**

1. If the Maximo Asset Management version 7.6 configuration program is not open, start it from the Maximo Asset Management launchpad. In the launchpad navigation pane, click **Configure Product**, specify Maximo Asset Management installation location, 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 Deployment**.

3. In the Define Deployment Environment panel, specify information about DB2 and WebSphere Application Server Network Deployment servers you installed and prepared. Select the **Create and configure the database**, the **Complete configuration of WebSphere for your product**, and the **Deploy the product into a clustered environment** options to automatically configure WebSphere Application Server Network Deployment and DB2. After you define your deployment environment, click **Finish**.
4. In the Configure General Product Information panel, review summary details about the product components you are installing. Specify the appearance and navigation features for your product, add an e-mail address to receive workflow messages, and choose whether or not to deploy sample data.

5. In the Configure the DB2 Instance panel, specify information about the DB2 instance to create for Maximo Asset Management.

6. In the Configure the DB2 Database panel, specify information about the DB2 database to create for Maximo Asset Management.

7. In the Configure the Application Server panel, specify information for the WebSphere Application Server Network Deployment domain manager where the clusters were defined, and then click **Load cluster information**.

8. Create an application for a function managed by a cluster, configure JMS for the application, and configure the Maximo Asset Management help application. You must create at least one application for each function in a cluster.
   a. Click **Add application**.
   b. Specify a name for the application and select the cluster name and web server associated with the function.
   c. Optional: Change the function associated with the selected cluster.
   d. Enable and configure JMS message handling for the application. The Maximo Integration Framework function requires JMS. The Reporting function does not support JMS. If you do not choose to use DB2 to store JMS data, a derby database is created to store the information.

9. Configure the Maximo Asset Management help application by supplying a name for the help application, selecting a cluster to assign it to, and selecting the web server to use for the application.

10. In the Configure Application Security panel, choose a security model for Maximo Asset Management. If you choose a security model that includes a directory server, specify information about the directory for the virtual member manager. Enter the user names and passwords for users that must be created for Maximo Asset Management. Do not use the user name as a password value.

11. Select languages.

12. In the Apply Deployment Operations panel, specify user interface preferences, select all available deployment operations, and then click **Finish**.
Chapter 6. Silent installation

The Maximo Asset Management silent installation option interacts with the Maximo Asset Management installation program by using a command prompt and a response file.

You must install the Installation Manager software before you can silently install the Maximo Asset Management or related middleware packages

Creating silent response files for installation

A response file records selections that you make and values that you provide when using the Maximo Asset Management installation program. The Maximo Asset Management installation program can then be run silently using the response file for input.

Before you begin

You can create a silent installation response file by setting the `record` environment variable, and then starting the installation program through the Maximo Asset Management launchpad. The response file is generated in the home directory of the user that started the program. You can determine the home directory of the current user the command appropriate for your operating system by using the following commands.

Windows

```bash
set HOMEPATH
```

UNIX

```bash
echo $HOME
```

The name of the file is `tpaeInstallerRsp_date_and_time_stamp.xml`, for example, `tpaeInstallerRsp20130716105258.xml`

### Procedure

1. Open a command prompt and set the `record` environment variable.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>set record=true</code></td>
</tr>
<tr>
<td>Linux or UNIX</td>
<td><code>export record=true</code></td>
</tr>
</tbody>
</table>

2. Start the Maximo Asset Management launchpad.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>launchpad64.exe</code></td>
</tr>
<tr>
<td>Linux or UNIX</td>
<td><code>./launchpad.sh</code></td>
</tr>
</tbody>
</table>

3. Click **Install Product**.

4. Select the components that you want to install, and then click **Install** to start the Maximo Asset Management installation program.
5. Select the packages you want to install silently, and specifying the shared resources and installation directories. When you are satisfied with your installation choices, click **Install** to install the packages.

6. Click **Finish** to exit the Maximo Asset Management installation program.

**Sample silent installation response files**

Instead of using the `tpaeInstallerRsupdate_and_time_stamp.xml` file, you can use a sample response file and modify it according to your needs.

**Sample files**

Sample response files are provided in the directory where you extracted the IBM Maximo Asset Management 7.6 launchpad. If you update the values that are used in the sample response files, limit your updates to parameters such as installation locations, host names, port numbers, and user names. If you need to update non-environmental values, such as the main product name or the Installation Manager repository, create your own silent response file with the Installation Manager software.

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Unix\ResponseFile_MAM_Install_Unix.xml</code></td>
<td>Install Maximo Asset Management on Linux and UNIX.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Unix\ResponseFile_MAM_Uninstall_Unix.xml</code></td>
<td>Uninstall Maximo Asset Management on Linux and UNIX.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Windows\ResponseFile_MAM_Install_Windows.xml</code></td>
<td>Install Maximo Asset Management on Windows.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Windows\ResponseFile_MAM_Uninstall_Windows.xml</code></td>
<td>Uninstall Maximo Asset Management on Windows.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Unix\ResponseFile_DB2_Install_Unix.xml</code></td>
<td>Install IBM DB2 on Linux and UNIX.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Windows\ResponseFile_DB2_Install_Windows.xml</code></td>
<td>Install IBM DB2 on Windows.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Unix\ResponseFile_DB2_Uninstall_Unix.xml</code></td>
<td>Uninstall IBM DB2 on Linux and UNIX.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Windows\ResponseFile_DB2_Uninstall_Windows.xml</code></td>
<td>Uninstall IBM DB2 on Windows.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Unix\ResponseFile_TPAE_WAS_Install_Unix.xml</code></td>
<td>Install base components of WebSphere Application Server on Linux and UNIX.</td>
</tr>
<tr>
<td><code>launchpad_directory\SilentResponseFiles\Installer\Windows\ResponseFile_TPAE_WAS_Install_Windows.xml</code></td>
<td>Install base components of WebSphere Application Server on Windows.</td>
</tr>
</tbody>
</table>
Table 4. Samples of silent response files (continued)

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>launchpad_directory\SilentResponseFiles\Installer\Unix\</td>
<td>Uninstall base components of WebSphere Application Server on Linux and UNIX.</td>
</tr>
<tr>
<td>ResponseFile_TPAE_WAS_Uninstall_Unix.xml</td>
<td></td>
</tr>
<tr>
<td>launchpad_directory\SilentResponseFiles\Installer\Windows\</td>
<td>Uninstall base components of WebSphere Application Server on Windows.</td>
</tr>
<tr>
<td>ResponseFile_TPAE_WAS_Uninstall_Windows.xml</td>
<td></td>
</tr>
</tbody>
</table>

**Updating password values in silent response files**

The Maximo Asset Management installation program requires the encryption of password values that are in the response files. If you need to update encrypted password values in a response file, use the Installation Manager string encryption utility.

**About this task**

The Installation Manager string encryption utility accepts a plain text password value and produces an encrypted version of that password. You must then copy and paste the encrypted value into the password field of the response file.

**Procedure**

1. Start the Installation Manager string encryption utility from the command line.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>c:\Program Files\IBM\InstallationManager\eclipse\tools\imutilsc newpasswordvalue</td>
</tr>
<tr>
<td>AIX or Linux</td>
<td>/opt/IBM/InstallationManager/eclipse/tools/imutilsc encryptString newpasswordvalue</td>
</tr>
</tbody>
</table>

Replace `newpasswordvalue` with your new plain text password value.

2. Copy the string in the **Encrypted version of the string** field.

3. Open the response file in a text editor, replace the password value with the copied encrypted password, and then save the file.

**Silently installing the Installation Manager software**

In order to install Maximo Asset Management and related middleware silently, the Installation Manager software must first be installed.

**Procedure**

1. Open a command prompt on the system and change to the directory where you unzipped the launchpad files.

2. Change directory to the folder that contains the installation manager program for your operating system, for example, \Install\IM\installer.win64.

3. Optional: Open the `silent-install.ini` file in a text editor and update default values.

4. Start the Installation Manager silent installation process.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>installc –acceptLicense</code></td>
</tr>
<tr>
<td>Other operating systems</td>
<td><code>./installc –acceptLicense</code></td>
</tr>
</tbody>
</table>

**Results**

The Installation Manager software is successfully installed on the system. You can now proceed with silently installing Maximo Asset Management.

**Silently installing Maximo Asset Management and related middleware**

You can deploy Maximo Asset Management and associated middleware silently to perform an unattended installation based on predefined settings.

**Before you begin**

You must complete a successful installation to produce a response file that can be used to silently install Maximo Asset Management and related middleware. Alternatively, you can use one of the sample response files that are provided on the product media and modify the sample file.

If the response file was created on a different system, ensure that all values that are recorded in the response file are valid for the target system. Ensure that the path values that were defined when the response file was created are still valid for the target system. For example, you might need to update the `repository location` parameter values to indicate the correct path for product and middleware installation images.

If you are installing the product in a directory different from the path used during creation of the response file, update the `installLocation` parameter value. If you update the value for the `installLocation` parameter, you must also provide a new value for the `profile id` parameter.

**Procedure**

1. Copy the response file that you generated earlier and the Maximo Asset Management files to the target system.
2. Open a command prompt and change directory to the location of the Installation Manager program that is appropriate for your operating system, for example, `cd /opt/IBM/InstallationManager/eclipse/tools/`.
3. Silently start the Installation Manager program.
   ```
   imcl -input responsefilename
   -log logfilename-acceptLicense
   ```
   The `-input` parameter determines the response file to use, for example, `/SI/tpaeInstallerRsp20130716105258.xml`. The `-log` parameter determines where log files are written, for example, `/tmp/linuxDB2WASMAM_Log.xml`. You must include the full path when you specify the response and log files.

**Results**

The installation proceeds silently with the values that you provided in the response file. Using different response files as input, you can silently install middleware on separate systems. You can then use another response file to silently install Maximo Asset Management.
Asset Management on the system that is designated as the administrative
workstation.

Silently uninstalling Maximo Asset Management and related
middleware

You can silently uninstall Maximo Asset Management and associated middleware
based on settings that were used during the installation.

Procedure

1. Open a command prompt and change to the launchpad_home\SilentResponseFiles\Installer directory, which contains the sample
uninstallation response file.
2. Update the sample uninstallation response file with values that are used in
your environment.
3. Silently start the Maximo Asset Management uninstallation program.

   `imcl -input responsefilename
    -log logfilename-acceptLicense`

   The default home directory for the `imcl` command is `c:\Program
Files\IBM\Installation Manager\eclipse\tools\` on Windows systems and
`/opt/IBM/InstallationManager/eclipse/` on Linux and UNIX systems.

   The `-input` parameter determines the response file to use, for example,
   `C:\tmp\install_response.xml`.

   The `-log` parameter determines where log files are written, for example,
   `C:\tmp\silent.log`.

   You must include the full path when you specify the response and log files.

   The `-acceptLicense` parameter is used to accept the license automatically.

4. You can remove the Installation Manager software from the system using the
uninstall program.

`uninstallc`

Table 5. Location of uninstallc command

<table>
<thead>
<tr>
<th>Windows</th>
<th>Other operating systems</th>
</tr>
</thead>
</table>
| Admin 64-bit   | Admin
C:\ProgramData\IBM\Installation Manager\uninstall | var/ibm/InstallationManager/uninstall |
| User 64-bit    | User
C:\Users\User ID\AppData\Roaming\IBM\Installation Manager\uninstall | User Home/var/ibm/InstallationManager/ uninstall |
Chapter 7. Silent configuration

The silent configuration option allows you to interact with the Maximo Asset Management configuration program by using a command prompt and a response file.

The following tasks are required for silent configuration:
1. "Creating silent response files for middleware configuration"
2. "Creating a response file for silent Maximo Asset Management configuration" on page 84
3. "Silently configuring middleware" on page 85
4. "Silently configuring Maximo Asset Management" on page 85

Creating silent response files for middleware configuration

You create a response file by modifying one of the sample response files that is provided. The configuration program can then be run silently using the response file for input.

Procedure
1. Create a copy of the sample file, for example, my-cfg-silent-win.properties. Sample response files are in launchpad_home\SilentResponseFiles\ConfigTool.
2. Open the response file in a text editor, update values as required, and save the file.

   Ensure that all values listed in the response file are valid for the target system, particularly path values. For example, you might need to update the WAS.InstallLocation parameter value to indicate the correct path for WebSphere Application Server Network Deployment relative to the target system.

   If there are any Maximo Asset Management components you do not want to automatically configure, set the appropriate property value to false. For example, if you do not want to configure WebSphere Application Server Network Deployment on the system, set the WAS.ND.AutomateConfig value to false.

What to do next

After you have completed silent middleware configuration, you can proceed with silently configuring Maximo Asset Management.

Related tasks:
"Silently configuring middleware" on page 85
Middleware used with Maximo Asset Management can be configured silently by using a configuration response file.

Sample silent middleware configuration response files

Several sample response files are provided on the IBM Maximo Asset Management7.6 product image. You can use a sample response file and modify it according to your needs.

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Sample files

Silent response files are in the `launchpad_home\SilentResponseFiles\ConfigTool` directory of the product image.

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>cfg-silent-aix.properties</code></td>
<td>Configure Maximo Asset Management middleware on AIX.</td>
</tr>
<tr>
<td><code>cfg-silent-linux.properties</code></td>
<td>Configure Maximo Asset Management middleware on Linux.</td>
</tr>
</tbody>
</table>

Creating a response file for silent Maximo Asset Management configuration

You create a response file by modifying one of the sample response files provided according to your needs. The configuration program can then be run silently using the response file for input.

Before you begin

There are several sample response files provided on the IBM Maximo Asset Management product image. The files are in the directory where you uncompressed the product image under the `\SilentResponseFile\ConfigTool` directory.

About this task

When you run the configuration program in silent mode, it uses the data in the response file to configure the product.

Procedure

1. Create a copy of the sample file and name it something appropriate, for example, `my-maximocfg-silent-win.properties`.
2. Open the response file in a text editor, update values as required, and save the file.

   Ensure that all values listed in the response file are valid for the target system, particularly path values. For example, you might need to update the `WAS.InstallLocation` parameter value to indicate the correct path for WebSphere Application Server Network Deployment relative to the target system.

   If there are any Maximo Asset Management components you do not want to automatically configure, set the appropriate property value to `false`. For example, if you do not want to configure WebSphere Application Server Network Deployment virtual member manager on the system, set the `WAS.VmmFullyAutomatedConfig` value to `false`.

Related tasks:

“Silently configuring Maximo Asset Management” on page 85

Maximo Asset Management can be configured silently by using a configuration response file.
Silently configuring middleware

Middleware used with Maximo Asset Management can be configured silently by using a configuration response file.

Procedure
1. Copy the response file you created earlier to the target system.
2. Open a command prompt and start the configuration program silently.
   ```
   reconfigurePae
   -action deployMiddlewareConfiguration
   -inputFile responsefilename
   ```
   The `responsefilename` parameter determines the response file to use, for example, `C:\tmp\my-cfg-silent.properties`. You must include the full path when you specify the response and log files.

Results
The configuration proceeds silently with the values that you provided in the response file.

What to do next
You can modify the silent configuration response file, copy it to another server, and perform further configuration. For example, you can use the configuration program to silently configure WebSphere Application Server Network Deployment on one server, and then modify the response file to configure IBM Tivoli Directory Server on another server.

Silently configuring Maximo Asset Management

Maximo Asset Management can be configured silently by using an configuration response file.

Procedure
1. Copy the response file you created earlier to the target system.
2. Open a command prompt and start the Maximo Asset Management configuration program silently.
   ```
   reconfigurePae
   -action deployConfiguration
   -inputFile responsefilename middlewarecomponents
   ```
   The `responsefilename` parameter determines the response file to use, for example, `C:\tmp\my-cfg-silent.properties`. The `middlewarecomponents` parameter indicates which middleware component to configure, for example, `-dbvendor DB2` or `-j2eevendor WebSphere`. In most cases, you configure middleware components together. You must include the full path when you specify the response files.

Results
The configuration proceeds silently with the values that you provided in the response file.
What to do next

You can modify the silent configuration response file, copy it to another server, and perform further configuration. For example, you can use the configuration program to silently configure WebSphere Application Server Network Deployment on one server, and then modify the response file to configure IBM Tivoli Directory Server on another server.

Silently remove middleware configuration

You can use the same file you used to silently configure middleware to remove the configuration information.

About this task

Maximo Asset Management middleware configuration can be removed silently using the same configuration response file that was used to configure the product previously. You must edit the configuration response file that was used to configure the product previously before it can be used to remove configuration information from the product.

Procedure

1. Change to the directory containing the response file used to silently configure previously.
2. Make a copy of the response file and rename it. For example, rename the file to my-uncfg-silent.properties.
3. Open the file in a text editor and change the MW.Operation property value to unconfigure, and then save the file.
4. Open a command prompt and start the Maximo Asset Management unconfiguration program silently.
   
   reconfigurePae
   -action deployMiddlewareConfiguration
   -inputFile responsefilename

   The responsefilename parameter determines the response file to use, for example, C:\tmp\my-uncfg-silent.properties. You must include the full path when you specify the response file.

Remove product configuration silently

You can use the removeConfiguration action of the reconfigurePae command to remove Maximo Asset Management configuration information.

About this task

The removeConfiguration action is used to remove Maximo Asset Management configuration from the database and application server that was performed by the configuration tool. This action is equivalent to running the removeJ2EEConfiguration and removeDatabaseConfiguration actions together.

Procedure

1. Log on to the Maximo Asset Management administrative workstation.
2. Open a command prompt and change directory to Install_Home\ConfigTool\scripts.
3. Start the Maximo Asset Management configuration program silently.

   reconfigurePae -action removeConfiguration
   -dbuser userid
   -dbpwd password
   -wasuser userid
   -waspwd password

   The -dbuser and -dbpwd parameters are the user ID and password used to
   configure the database. The -wasuser and -waspwd parameters are the user ID
   and password used to configure IBM WebSphere Application Server Network
   Deployment.
Chapter 8. Programatically verifying that the installation was successful

After you have exited the Maximo Asset Management installation program without encountering any errors, you can verify that the installation completed successfully. The installation is programatically verified through the use of post installation validation utilities.

Before you begin

The JAVA_HOME environment variable must be set on the system before you can use the verification utilities.

About this task

During installation, the Maximo Asset Management installation program performs a simple health check. This health check consists of logging in to the application to verify availability. This health check might not be sufficient to verify a successful installation in all deployment scenarios. For example, if, during installation, you select the option to deploy the application EAR file at a later date, this health check cannot verify the installation. This simple health check is also insufficient for verifying an upgrade.

Post installation validation utilities are available after the product has been deployed.

The installValidation utility is used to validate the product installation. These command-line utilities are used to verify the installation and configuration of the product in a more complete manner. These utilities can also be used to verify an existing deployment after changes in the environment, such as changes to host names, user IDs, and passwords.

Results of the installValidation utility are logged in installValidationTrace00.log. This log is found in the \smp\configtools\logs directory on the administrative workstation.

Procedure

1. Log in to the server using the user ID that was used to run the installation program. If you intend to use the installValidation utility, log in to the administrative workstation.
2. Ensure the JAVA_HOME environment variable is set properly to the location of a JRE 1.7 installation.
3. To verify product installation, from the administrative workstation, change directory to ibm\smp\configtool\scripts and run the installValidation.[sh|bat] command. For either command, use the parameters in Table 1.
Table 7. Verification utilities parameters

<table>
<thead>
<tr>
<th>Program</th>
<th>Syntax parameters</th>
<th>Input</th>
</tr>
</thead>
</table>
| installValidation.bat | -action           | Use **-action validate** to start the validation of the product installation.  
The **-action** parameter is the only mandatory parameter when using the installValidation utility. |
|                       | -trace            | Verification progress information is written to the screen during the verification process. You can modify the output using the **-tracing** parameter.  

- **minimal**  
Progress information is limited to error information.

- **normal**  
Information includes individual test progress, individual test results, and overall progress of the entire verification process.  
This is the default mode of tracing.

- **verbose**  
In addition to providing **normal** progress information, **verbose** tracing includes the test class name, test method name, and corrective action information. |
|                       | -confirm          | You are prompted before each test is started. You must confirm each test to be performed. There is no input for this parameter. |
|                       | -component        | You can provide a comma-delimited list of directories containing the test objects to limit testing to a specific set of tests.  
These test objects must be located in the `\ibm\smp\HealthValidation\` directory. For the product installation program, only the CTGIN folder is provided. |
|                       | -dbuser           | Provide the user ID used to access the database. |
|                       | -dbpwd            | Provide the password of the user ID used to access the database. |
|                       | -wasuser          | Provide the WebSphere Application Server Network Deployment user. |
|                       | -waspwd           | Provide the password for the WebSphere Application Server Network Deployment user. |
|                       | -maxuser          | Provide the Maximo Asset Management administrator user ID. For example, maxadmin. |
Table 7. Verification utilities parameters (continued)

<table>
<thead>
<tr>
<th>Program</th>
<th>Syntax parameters</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-maxpwd</td>
<td>Provide the password for the Maximo Asset Management administrator user ID.</td>
</tr>
</tbody>
</table>

For example,

`installValidation.bat -action validate`

**Results**

The `installValidation.bat` validation utility results are logged in `ctginstallvalidationtrace00.log`. This log is found in the `\smp\configtools\logs` directory on the administrative workstation.
Chapter 9. Verifying the installation manually

After you exit the Maximo Asset Management installation program without errors, you can further verify that the installation completed successfully. The installation is manually verified by locating key artifacts and performing a few simple tasks.

Before you begin

The product installation program performs installation verification, or a health check, by logging on to the product before exiting the installation. The product installation program returns a success message if all installation steps, including the product log in task, are successful. If the health check task is unsuccessful, a HealthCheckFailed error is thrown for the getUrlContentString function. This error is in the install_home\configtools\logs\CTGConfigurationXX.log file.

About this task

To further verify that the Maximo Asset Management installation was completed successfully, perform the following verification procedures:

Procedure

1. Examine the CTGConfigurationXX.log files for success messages.

   The following success messages are found in the CTGConfigurationTraceXX.log file and can be used to verify which phases of the installation were successful:
   - CTGIN2114I: The database was created successfully
   - CTGIN2135I: Tablespace maxdata created successfully
   - CTGIN2135I: Tablespace maxtemp created successfully
   - CTGIN2079I: process automation engine database configuration completed successfully (This message indicates that maxinst finished successfully.)
   - CTGIN2222I: WebSphere Application Server creation successful
   - CTGIN2188I: Creation and configuration of service integration bus successfully completed
   - CTGIN2184I: Creation and configuration of JMS resources successfully completed
   - CTGIN2310I: Application server security was successfully enabled for process automation engine
   - CTGIN2253I: buildmaximoear.cmd completed successfully
   - CTGIN2224I: Deployment of application MAXIMO was successful
   - CTGIN2253I: buildhelpear.cmd completed successfully
   - CTGIN2224I: Deployment of application MAXIMOIEHS was successful
   - CTGIN2208I: runConfigurationStep completed successfully
   - CTGIN2370I: The installation finished successfully

   If you automatically configured WebSphere Application Server Network Deployment certain messages indicate success. The following messages, found in CTGConfigurationTraceXX.log, indicate that the configuration was successful:
Search the CTGConfigurationTrace.log file for the following message, which indicates that the maxinst task completed successfully:

CTGIN2079I, maxinst.*completed

2. Compare the packages chosen for installation with the packages that were installed. The Package Summary panel of the Maximo Asset Management installation program provides a summary of all the packages to be installed. You can compare the contents of that panel with a listing of what was installed on the system by using the configuration tool and selecting the update database task. The resulting list matches the packages listed in the Package Summary panel.

3. Log in to the product and verify that applications are present. Being able to log in to the product manually is a good indicator that the installation was successful. Once you have logged in, navigate through the GoTo menu to verify that it has been populated with the applications you expect. If you experience access problems with the product, clear the cache of your browser and try again.
Chapter 10. Configuring the HTTPOnly attribute

If applications do not start from the user interface in IBM WebSphere Application Server Network Deployment 8 environments, the problem can often be attributed to a security setting within IBM WebSphere Application Server Network Deployment. In particular, if the **HTTPOnly** attribute is set for session cookies, the applications are not accessible.

**Procedure**

1. Log on to the administrative console for IBM WebSphere Application Server Network Deployment.
2. From the navigation pane, browse to **Servers > Server Types > WebSphere application servers**.
3. Click the application server created for the product you want to update, for example, MXServer.
4. From the Configuration panel, under Container Settings, click **Session management**.
5. Under General properties, click **Enable cookies**. Do not clear this option. Click the label only.
6. Clear the **Set session cookies to HTTPOnly** check box to help prevent cross-site scripting attacks.
7. Click **OK**, save the changes, and then click **OK**.
8. Click **Save** and then click **OK**.
9. Navigate back to the Application servers table, and select the application server required.
10. Click **Restart** to restart the application server in order to apply the changes made.
Chapter 11. Installation and configuration programs log information

Log files generated by the Maximo Asset Management and configuration programs can provide details on completed and configuration tasks and any errors that might occur.

Maximo Asset Management installation and configuration programs log locations

Maximo Asset Management and associated middleware is installed through Installation Manager. The log files of Installation Manager are common to any installation, regardless of which components you choose to install. Log files for the Maximo Asset Management installation program are found on the system where it is run.

Table 8. Log file directories

<table>
<thead>
<tr>
<th>Log file directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:\ProgramData\IBM\Installation Manager\logs</td>
</tr>
<tr>
<td>/var.ibm/InstallationManager/logs</td>
</tr>
<tr>
<td>C:\IBM\SMP\ConfigTool\logs</td>
</tr>
<tr>
<td>opt/IBM/SMP/ConfigTool/logs</td>
</tr>
</tbody>
</table>

In addition, if you receive an error credited to the J2EE server, examine the logs in the log directories for the deployment manager, node agent, and WebSphere Application Server application server.

When engaging IBM product support services, be prepared to provide these log files in an archive file. The LogZipper utility provided in the install_home\configtool\scripts directory can be used for this task. If you use the LogZipper utility, all relevant log files are archived in install_home/configtool/debug/YYYYMMDD_hhmmss.zip.
Chapter 12. Post installation tasks

There are several post installation tasks required in order to complete the Maximo Asset Management deployment.

Accessing product documentation

Accessing the Maximo Asset Management Knowledge Center documentation and product online help.

**Important:** The WebSphere Application Server deployment manager must be restarted after the installation of Maximo Asset Management. Restarting enables the full function of the Knowledge Center and online help.

In order to be able to access the product documentation system with the product, complete the following steps after you install Maximo Asset Management.

1. Stop the deployment manager by running the following command:
   ```
c:\Program Files\IBM\WebSphere\AppServer\profiles\<dmgr profile>\bin\stopManager
   -username wasadmin -password <password>
   ```

2. Start the deployment manager by running the following command:
   ```
c:\Program Files\IBM\WebSphere\AppServer\profiles\<dmgr profile>\bin\startManager
   ```

If you manually configured the application server after you ran the product installation program, you must set the property for the product documentation server. For more information, see [https://www.ibm.com/support/docview.wss?uid=swg21508594](https://www.ibm.com/support/docview.wss?uid=swg21508594).

**Important:** The deployment manager (a component of WebSphere Application Server Network Deployment) allows for remote management and deployment operations. While the deployment manager is stopped, all management and deployment operations, including outside of Maximo Asset Management, are affected (stopped).

Installing help information in a new language

Help information is available in multiple languages. If you need to support multiple languages for Maximo Asset Management, you optionally install the help information for other languages. Before you can use multi-language help information in Maximo Asset Management, you must first install it using the configuration program.

**About this task**

Multi-language help information for Maximo Asset Management is available on Fix Central as a fix pack that includes multiple language plug-ins. The fix pack must be downloaded from Fix Central and then applied with the Maximo Asset Management configuration program.

**Procedure**

1. Download the fix pack that contains the multi-language Maximo Asset Management documentation from the Fix Central support site to a temporary location on the administrative workstation.
2. Start the Maximo Asset Management launchpad.
3. Click **Configure Product**.
4. Select the location of the Maximo Asset Management installation you want to configure, and then click **Launch the Tivoli’s Process Automation Suite configuration program**.
5. From the Configuration Actions page, click **Add Additional Help Plug-ins**.
6. Click **Browse** to locate the fix pack file that you downloaded.
7. Optional: Select **Deploy the product help EAR to the application server** to install the updated help information to Maximo Asset Management now. If you do not select this option, the Maximo Asset Management help information EAR file is rebuilt, but not deployed to the application server.
8. Click **Finish** to rebuild the Maximo Asset Management help information EAR file. If you selected the **Deploy the product help EAR to the application server** option, the help information EAR file is deployed to the application server.

---

### Configuring initial data

After you successfully install and configure Maximo Asset Management components, you must complete several data configuration tasks before you use Maximo Asset Management.

#### Before you begin

- Create security groups and add users to the security groups.
- If you are using a directory server as part of your deployment, ensure that the user names are created in your LDAP repository.
- To ensure that you have the accounting information that you need, consult the Financial department of your organization.

#### Procedure

1. Log in to Maximo Asset Management by entering the user name `maxadmin` and the password that you specified during the installation.
2. If you didn't set the SMTP server by using the Configuration tool, configure the SMTP server to send users email notifications of system events. To learn about the range of system properties in Maximo Asset Management, see the System properties information.
   a. From the Go To menu, select **System Configuration > Platform Configuration > System Properties**.
   b. In the Global Properties table window, use the filter feature to search for and expand the `mail.smtp.host` property.
   c. In the **Global Value** field, specify the SMTP host name.
   d. Select the `mail.smtp.host` check box.
   e. From the Common Actions menu, click **Live Refresh**.
   f. In the Live Refresh window, click **OK**.
   g. In the Global Properties table window, use the filter feature to search for the `mxe.adminEmail` property.
   h. Expand the `mxe.adminEmail` property and in the **Global Value** field, specify your email address.
   i. Select the `mxe.adminEmail` record check box.
   j. From the Common Actions menu, click **Live Refresh**.
   k. In the Live Refresh window, click **OK**.
3. Define a currency code.
   a. From the Go To menu, select Financial > Currency Codes
   b. Click New Row and specify a currency code and a description. For example, enter USD for United States of America Dollar.
   c. Click Save Currency.
4. Define item sets and company sets.
   a. From the Go To menu, select Administration > Sets.
   b. Click New Row.
   c. Specify an item set name. For example, enter IT Items.
   d. In the Type field, specify ITEM.
   e. Click New Row.
   f. Specify a company set name. For example, enter IT Comps.
   g. In the Type field, specify COMPANY.
   h. Click Save Sets.
5. Create an organization.
   a. From the Go To menu, select Administration > Organizations.
   b. From the toolbar, click New Organization.
   c. Specify an organization name. For example, enter EAGLENA, and enter a long description.
   d. Specify the base currency that you defined in step 3.
   e. Specify the item set and the company set that you defined in step 4.
   f. In the Default Item Status field, set the status to PENDING.
   g. Click the Sites tab and select New Row under the Sites table window.
   h. Specify a site name. For example, enter Factory01 and enter a long description.
   i. Click Save Organization.
6. Create a general ledger account component.
   a. From the Go To menu, select System Configuration > Platform Configuration > Database Configuration.
   b. From the More Actions menu, select GL Account Configuration.
   c. Click New Row.
   d. Specify a component name. For example, enter MYCOMPONENT.
   e. Specify a length for the component. For example, enter 5.
   f. Specify a type for the component. For example, select Alphanumeric.
   g. Click OK.
7. Apply changes to the database.
   a. From the More Actions menu, select Manage Admin Mode.
   b. Select Turn Admin Mode ON and click OK. This task takes several minutes to complete. You can click Refresh Status to view the progress.
   c. From the More Actions menu, select Apply Configuration Changes. Ensure that the status To Be Changed does not appear in the status column of the listed objects.
   d. From the More Actions menu, select Manage Admin Mode.
   e. Select Turn Admin Mode OFF and click OK. If you do not turn off Admin Mode, cron tasks fail.
8. Create a general ledger account.
a. From the Go To menu, select Financial > Chart of Accounts.
b. In the Organizations table window, select your organization.
c. From the More Actions menu, select GL Component Maintenance.
d. In the Components table window, select the component that you entered in step 6 and click New Row.
e. Specify a GL Component value and a description, and then click OK.
f. In the GL Accounts table window, click New Row.
g. Specify a General Ledger Account and click Save GL Account.
h. From the Go To menu, select Administration > Organizations.
i. Find your organization and select the record.
j. In the Clearing Account field, specify the general ledger account that you created.
k. Select Active.
l. Click Save Organization.

9. Authorize a security group to modify a general ledger component type.
a. From the Go To menu, select Security > Security Groups.
b. Select the group that provides authorization. For example, select FINANCE.
c. Click the GL Components tab.
d. For each GL Component that is listed, select the Authorized check box. As a shortcut, you can select Authorize Group to Change All GL Component Types.
e. Click Save Group.

10. Update the company-related accounts.
a. From the Go To menu, select Financials > Chart of Accounts.
b. Select your organization and from the More Actions menu, select Company-Related Accounts.
c. Click New Row and specify the company type Courier.
d. Enter an account number in the RBNI Account, AP Suspense Account, and AP Control Account fields. You can specify the same account number in each field.
e. Click OK.
f. From the More Actions menu, select Update Database and click OK.

11. Create a default insert site.
a. From the Go To menu, select Security > Users.
b. Find maxadmin and select the record.
c. In the Default Insert Site field, specify the site name that you created in step 5.
d. In the Storeroom Site for Self-Service Requisitions field, specify the same site name.
e. Click Save User.

12. Define work types. Work types denote the importance of the work task.
a. From the Go To menu, select Administration > Organizations.
b. Find your organization and select the record.
c. From the More Actions menu, select Work Order Options > Work Type.
d. Click New Row.
e. In the Work Order Class field, select WORKORDER.
f. Specify a Work Type. For example, enter MAJOR.
g. Set the Start Status to In Progress.
h. Set the Complete Status to Completed.
i. Click New Row and repeat steps f-i to create another work order class with a different work type. For example, enter MINOR.
j. Click New Row and repeat steps f-i to create a CHANGE work order class with a different work type. For example, enter SIG to represent a significant change.
k. Click OK and click Save Organization.

Related information:
- Integrating data with external applications
- System properties

---

### Synchronizing users and groups

When you select application server security, the scheduled synchronization of users and groups that occurs between LDAP repositories and Maximo Asset Management is governed by the federated repositories.

#### Before you begin

View the cron task configuration information in the Administering section of the Knowledge Center.

#### About this task

LDAP repositories managed by IBM WebSphere Application Server Network Deployment through Virtual Member Manager are synchronized through the VMMSYNC cron task.

To configure the synchronization schedule between LDAP repositories and Maximo Asset Management, complete the following steps:

#### Procedure

1. Open a web browser and point to http://host name:port/maximo.
2. Log in to Maximo Asset Management using the maxadmin user ID.
3. From the Maximo Asset Management interface, navigate to Go To > System Configuration > Platform Configuration > Cron Task Setup.
4. Search for the appropriate cron task in the Cron Task field and configure it.
5. Set the task to active.

#### What to do next

By default, the cron task performs its task every 5 minutes. Change the Schedule field of the cron task if you want to change the interval.

---

### Adding sample data to the Maximo Asset Management database post configuration

Using the maxinst command, you can add sample data to the Maximo Asset Management database after the initial installation and configuration of Maximo Asset Management.
Before you begin

The `maxinst` command does not provide default values for table space parameters. You must specify the data table space name and the index table space name that you specified during the installation. The `maxinst` command replaces the current database schema and data. Do not add sample data to the Maximo Asset Management database if you want to preserve records currently stored in the database.

About this task

If you created a database either automatically or manually during the installation, you can use the `maxinst` command to create a sample data in that database instance.

Procedure

1. Back up the existing database.
2. Unzip the `install_home\IBM\SMP\Maximo\tools\maximo\en\maxdemo.dbtype.zip` file. Replace the `dbtype` variable with the extension that is appropriate for the type of database you used for the Maximo Asset Management deployment. Available options are `ora`, `sqs`, or `db2`.
3. Change the `install_home\IBM\SMP\Maximo\tools\maximo\en\maxdemo.dbtype` file to the name of the Maximo Asset Management database you configured during the initial deployment. For example, rename the file to `max76db.db2`.
4. Open a command prompt and change to the `install_home\IBM\SMP\Maximo\tools\maximo` directory.
5. Populate the database with sample data. You must specify the table space name parameters when you run the `maxinst` command.
   
   `maxinst -stablespacename -itablespacename -imax76db` For example, for Oracle Database or for DB2, enter `maxinst -sMAXDATA -tMAXDATA -imax76db`. For SQL Server, enter `maxinst -tPRIMARY -sPRIMARY -imax76db`. The system reads the `maximo.properties` file for database connectivity information. The `maximo.properties` file is in the `install_home\IBM\SMP\Maximo\Applications\Maximo\Properties` directory.
6. Populate the database by running commands with specific parameter values. Use the following `maxinst` database parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-a</code></td>
<td>Database alias. If not specified, the alias <code>mxe.db.url.property</code> is used.</td>
</tr>
<tr>
<td><code>-d</code></td>
<td>Log file directory. If you are using the <code>-l</code> parameter, the log file is sent to the specified directory. Otherwise, the log file is sent to the log directory, for example <code>install_home\IBM\SMP\Maximo\tools\maximo\logs</code>.</td>
</tr>
<tr>
<td><code>-e</code></td>
<td>Runs the SQL. This parameter is required and already present in the <code>maxinst.bat</code> file.</td>
</tr>
<tr>
<td><code>-f</code></td>
<td>File name for the properties file. If not specified, <code>maximo.properties</code> is used.</td>
</tr>
<tr>
<td><code>-i</code></td>
<td>File name of the input file (without path or extension). If not specified, the default file name <code>Unlcvt</code> is used.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>-k</td>
<td>Directory of the properties file.</td>
</tr>
<tr>
<td>-l</td>
<td>Creates a detailed log file. This parameter is already present in the maxinst.bat file.</td>
</tr>
<tr>
<td>-m2</td>
<td>Optional value for SQL Server: Multiplies the column width for strings by 2. This value is required for double-byte character sets.</td>
</tr>
<tr>
<td>-o</td>
<td>If you are using the -l parameter, the -o parameter specifies the file name for the log file.</td>
</tr>
<tr>
<td>-p</td>
<td>Password for the database connection. If not specified, the mxe.db.password property or MAXIMO is used. If MAXIMO is used, it must be entered in uppercase letters.</td>
</tr>
<tr>
<td>-s</td>
<td>Required value: Table space for index storage.</td>
</tr>
<tr>
<td>-t</td>
<td>Required value: Table space for table storage.</td>
</tr>
<tr>
<td>-u</td>
<td>User name for database connection. If not specified, the mxe.db.user property or MAXIMO is used. If MAXIMO is used, it must be entered in uppercase letters.</td>
</tr>
<tr>
<td>-x</td>
<td>Required value for UNIX: Fixes the doclink file separators in UNIX environments. Note: If a UNIX environment is deployed without using this parameter, the attached documents do not function properly.</td>
</tr>
<tr>
<td>-y</td>
<td>Multiplies the column width for strings by 2. This value is required for double-byte character sets.</td>
</tr>
</tbody>
</table>

7. From the `install_home\IBM\SMP\ETC` directory, open the `install.properties` file and specify the installation-related properties. You can add these properties to the database from the System Properties application.

**Results**

The Maximo Asset Management database is populated with sample data.

If an error occurs when you run the `maxinst` command, check the log file in the `install_home\IBM\SMP\Maximo\tools\maximo\logs` directory. If the `maxinst` command fails, you must correct the error and rerun the `maxinst` command to complete the Maximo database schema deployment before you can start the application.
Chapter 13. Installing Version 7.5 industry solutions

Version 7.5 of industry solutions can be installed on Maximo Asset Management 7.6.

Version 7.5 of industry solutions can be installed on Maximo Asset Management 7.6 using several methods. The industry solution can be installed from the launchpad if one is included with the industry solution package. The industry solution can also be installed from the command-line. Silent installation is also supported.

Ensure that you download the latest version and fixes available for the industry solution or add-on before you install it. Refer to the Maximo Upgrade Resources support page for the latest information about industry solution and add-on requirements.


Installing version 7.5 industry solutions from the launchpad

If a launchpad is included with an industry solution package, you can use it to install the industry solution on Maximo Asset Management 7.6.

**Procedure**

1. Log on to the administrative workstation.
2. Create a backup image of your Maximo Asset Management 7.6 administrative workstation. When you install version 7.5 industry solutions in Maximo Asset Management 7.6, you do not have an automated uninstallation method that returns the system to its previous state.
3. Open the archive for your industry solution package, and start the launchpad.
4. Click Install from the menu of options.
5. Follow the steps in the installation program.
6. When the installation is complete, click Done. After the industry solution installation program exits, the Maximo Asset Management 7.6 configuration tool starts.
7. From the Deployment Operations panel, select the options for applying changes to the database, and building and deploying application EAR files to complete the deployment.

Installing version 7.5 industry solutions from the command line

Version 7.5 industry solutions can be installed in Maximo Asset Management 7.6 from the command line.

**Procedure**

1. Log on to the administrative workstation.
2. Create a backup image of your Maximo Asset Management 7.6 administrative workstation. When you install version 7.5 industry solutions in Maximo Asset Management 7.6, you do not have an automated uninstallation method that returns the system to its previous state.
3. Start the process solution installation program by changing to the install_home\bin directory of your Maximo Asset Management 7.6 installation and use the solutionInstaller command.

   solutioninstaller.bat -pkgpath path_to_industry_solution_package
   -license accept

The -pkgpath option specifies the path to the industry solution package. Replace path_to_industry_solution_package with the path to the industry solution package file you are installing. The -license option is used to accept license terms. For example,

   solutioninstaller.bat -pkgpath C:\TEMP\Spatial75_launchpad\Install\SPATIAL\Spatial75.zip
   -license accept

4. Follow the steps in the installation program.

5. When the installation is complete, click Done. After the industry solution installation program exits, the Maximo Asset Management 7.6 configuration tool starts.

6. From the Deployment Operations panel, select the options for applying changes to the database, and building and deploying application EAR files to complete the deployment.

---

### Installing version 7.5 industry solutions silently

Version 7.5 industry solutions can be installed in Maximo Asset Management 7.6 silently from the command line.

**Procedure**

1. Log on to the administrative workstation.
2. Create a backup image of your Maximo Asset Management 7.6 administrative workstation. When you install version 7.5 industry solutions in Maximo Asset Management 7.6, you do not have an automated uninstallation method that returns the system to its previous state.
3. Start the process solution installation program by changing to the install_home\bin directory of your Maximo Asset Management 7.6 installation and use the solutionInstallerGUI command.

   solutioninstallerGUI.bat -pkgpath path_to_industry_solution_package -nl locale
   -S -license accept

   The -pkgpath option specifies the path to the industry solution package. Replace path_to_industry_solution_package with the path to the industry solution package file you are installing. The -nl option specifies the language that is used during the installation. Replace locale with the abbreviation for the language to use. The -S option indicates that the installation is processed silently. The -license option is used to accept license terms. For example,

   solutioninstallerGUI.bat -pkgpath C:\TEMP\Spatial75_launchpad\Install\SPATIAL\Spatial75.zip
   -nl es -S -license accept

4. Follow the steps in the installation program.

5. When the installation is complete, click Done. After the industry solution installation program exits, configure it with the Maximo Asset Management 7.6 configuration tool.
6. From the Deployment Operations panel, select the options for applying changes to the database, and building and deploying application EAR files to complete the deployment.
Chapter 14. Maintaining EAR files

This section contains information about maintaining Maximo Asset Management EAR files.

The following instructions are used to manually build or uninstall the Maximo Asset Management maximo.ear and maximoiehs.ear files on WebSphere Application Server Network Deployment.

Although the Maximo Asset Management installation program deploys these EAR files when you install, there might be a few instances where it would be desirable to rebuild these EAR files manually:

- If you modify any database connection parameters in the maximo.properties file after the initial installation, you must rebuild the maximo.ear file, and then redeploy it in WebSphere Application Server Network Deployment. In this scenario, you would likely only rebuild and redeploy the maximo.ear file. You would not be required to rebuild and redeploy the maximoiehs.ear file.

- Maximo Asset Management must be installed into a WebSphere Application Server Network Deployment application server. However, Maximo Asset Management can be run within the framework of a WebSphere Application Server Network Deployment cluster. If you want to deploy Maximo Asset Management in a cluster, you can either redeploy the Maximo Asset Management EAR files into a cluster, or, create a cluster from the application server used during the install. If you have already installed Maximo Asset Management into an application server but would like to redeploy into a cluster, then you must either uninstall the MAXIMO application, or provide a new name for the application when installing the MAXIMO application into a cluster. If you have installed Maximo Asset Management into a development environment, you might at some point like to migrate the deployment into a test or production environment. In this scenario, you must deploy both the maximo and maximo help applications into the new environment. The steps outlined in “Manually installing applications in WebSphere Application Server Network Deployment” on page 112 should be performed for both applications.

Building EAR files

You can manually build Maximo Asset Management EAR files if, for example, you modify a database connection parameter in the maximo.properties file after the initial installation.

About this task

To manually build Maximo Asset Management EAR files, complete the following steps:

Procedure

1. Build the maximo EAR file:
Manually uninstalling applications from WebSphere Application Server Network Deployment

This section contains information about uninstalling Maximo Asset Management applications from WebSphere Application Server Network Deployment.

**Procedure**

1. Log in to the WebSphere Application Server Network Deployment administrative console, select **Servers > Server Types > WebSphere application servers**, select MXServer and click **Stop**.
2. Click the Applications link.
3. Select the check box next to the application you are uninstalling. By default, the Maximo Asset Management applications are named maximo and maximoiehs.
4. Click **Uninstall**.

Manually installing applications in WebSphere Application Server Network Deployment

Maximo Asset Management applications can be added to WebSphere Application Server Network Deployment.

**Procedure**

1. Log on to the WebSphere Application Server Network Deployment administrative console.
2. Browse to **Applications > New Application > New Enterprise Application**.
3. From the Specify the EAR, WAR, JAR, or SAR module to upload and install page, select **Local file system**.
4. Browse to the location on your system of the *maximo.ear* file and click **Next**.
5. Select **Detailed** and then click **Next**.
6. From the Application Security Warnings panel, click **Continue**.
7. Click **Step 2: Map modules to servers**.
8. Highlight all entries listed in the Clusters and servers field, check all check boxes for Modules listed in the table, and click **Apply**.
9. Click **Step 11: Map virtual hosts for Web modules**.
10. Check all check boxes for web modules listed in the table.
11. Expand **Apply Multiple Mappings**.
12. Select a virtual host, for example, *maximo_host*, from the Virtual Host menu, and click **Apply**.
13. Click **Step 15: Map security roles to users or groups**.

14. Select the check box for `maximouser` in the Role table, and then select `Everyone` from the Map Special Subjects menu.

15. Click **Step 17: Summary**, review the summary information, and click **Finish**.
Chapter 15. Command line configuration

Maximo Asset Management includes a configuration program that is accessed from the command line. This command line configuration program performs the same duties as the Maximo Asset Management configuration program user interface. Command line configuration is used to quickly update configuration values when you choose to not use the configuration tool user interface.

When you install a fix pack or upgrade Maximo Asset Management, the configuration program uses values that are recorded from the previous deployment. These values are stored on the administrative system in the install.properties and maximo.properties files that are located under the install_home\etc and install_home\maximo\applications\maximo\properties directories.

If you make any environmental changes to any of the systems that are used for the original deployment, they must be recorded in the install.properties and maximo.properties files. Typically, these types of changes would include changing a host name or updating a password, for example.

You can update these values manually, or you can use the configuration command line interface tool to update configuration values for your existing deployment when they change. Properties that are specified for the configuration command line interface tool, either as parameters, or in an input properties file, replace existing properties in the maximo.properties and install.properties files. Properties are encrypted when they are saved.

You can complete the following tasks with the configuration command line interface tool:

• Change the security model for the original deployment. For example, you can migrate from Maximo Asset Management-based security to WebSphere Application Server security. This option is not available for Oracle WebLogic Server.
• Confirm that updated property values conform to required input domains. Validate credentials, host names, and available ports.
• Update database or application server configuration settings without the server available. These values cannot be validated in this scenario.
• Clone an existing environment and use the configuration command line interface tool to reconfigure the administrative workstation to use the new servers. The cloned environment must use the same directory structure as the original.
• Create an environment (non-cloned) and use the configuration command line interface tool to create all required artifacts database, table spaces, and application server objects, for example.
• Remove configuration from a previously configured database.

Configuration parameter validation

Use the Maximo Asset Management command line configuration program to validate input in the same way the Maximo Asset Management configuration program validates input in the user interface.
You can validate the following items with the Maximo Asset Management command line configuration program.

- Host names or IP addresses are correctly formatted and are reachable.
- User IDs and passwords meet length and character set criteria.
- Specified credentials are used to authenticate to WebSphere Application Server.
- Specified port values are listening on the corresponding host. Port values contain numbers only and are within a valid range.
- Middleware installation directories that are supplied exist.
- Preconfigured middleware can authenticate to the product database.
- Required objects such as JMS queues, SIB destinations, databases, and table spaces exist.
- Required WebSphere Application Server virtual member manager users exist.
- Sufficient authority is available to create WebSphere Application Server virtual member manager users.
- Remote login credentials are valid.
- There is enough space in the supplied directories to create database objects.

### Input properties files

You can use property files as input for the Maximo Asset Management command-line configuration program.

The following sample input property files are provided with the Maximo Asset Management command-line configuration program.

- DB2_Sample_input.properties
- Oracle_Sample_input.properties
- SQLServer_Sample_input.properties
- WebSphere_App_Server_Sample_input.properties

These sample files are in the `ibm\smp\configtools\samples` directory. Each of these sample files contains properties that are associated with a specific database or application server type. They contain comments and properties you can update with values from your environment. You can then use the updated file as input for the configuration command line interface tool with the `–input` parameter.

All input properties, introduced from either the command line or in the input properties file, are validated before they are used. After validation is successful, the `maximo.properties` and `install.properties` files are updated with the values you provided.
Command line interface parameters

The following parameters can be used with the configuration command line program to configure your environment.

Table 9. Maximo Asset Management command line configuration program parameters

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-action</td>
<td>Configuration action.</td>
</tr>
<tr>
<td>addLanguages</td>
<td>Adds additional languages to a current deployment.</td>
</tr>
<tr>
<td>configureProducts</td>
<td>Configures more products after an initial installation and configuration. This action can configure multiple products after they are installed and can also be used in an upgrade scenario.</td>
</tr>
<tr>
<td>deployConfiguration</td>
<td>Configures initial installation. This action can configure multiple products after they are installed. This action is used for new installations only.</td>
</tr>
<tr>
<td>deployDatabaseConfiguration</td>
<td>Validates command input and defines configuration property values for a new database for the current product.</td>
</tr>
<tr>
<td>deployJ2eeConfiguration</td>
<td>Validates command input and defines configuration property values for a new application server for the current product.</td>
</tr>
<tr>
<td>deployMiddlewareConfiguration</td>
<td>Configures initial middleware installation.</td>
</tr>
<tr>
<td>disableAppSecurity</td>
<td>Disables application security for the application. Security is handled entirely through Maximo Asset Management. This action sets the <code>mxe.useAppServerSecurity</code> property to a value of 0. This value is written to the database when updated.</td>
</tr>
<tr>
<td>disableDB2TextSearch</td>
<td>Enable the full text search feature on a DB2 database.</td>
</tr>
<tr>
<td>enableAppSecurity</td>
<td>Enables application security for the application. This action sets the <code>mxe.useAppServerSecurity</code> property to a value of 1, and updates the <code>mxe.lapUserManagement</code> flag. This value is written to the database when the database is updated.</td>
</tr>
<tr>
<td>enableDB2TextSearch</td>
<td>Enables the full text search feature on a DB2 database.</td>
</tr>
<tr>
<td>reapplyAppServerTuning</td>
<td>Reapplies tuning configuration to an application server.</td>
</tr>
<tr>
<td>removeDatabaseConfiguration</td>
<td>Removes product configuration information from a previously configured database.</td>
</tr>
<tr>
<td>removeJ2EEConfiguration</td>
<td>Removes application server configuration that was added by the configuration tool.</td>
</tr>
<tr>
<td>updateApplication</td>
<td>Updates the Maximo Asset Management application by updating the database and redeploying application EAR files.</td>
</tr>
<tr>
<td>Parameter name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>• <strong>updateDatabaseConfiguration</strong> – Updates existing database configuration values.</td>
</tr>
<tr>
<td></td>
<td>• <strong>updateJ2eeConfiguration</strong> - Updates existing application server configuration values.</td>
</tr>
<tr>
<td></td>
<td>• <strong>validateAndUpdateDatabaseConfiguration</strong> – Validates reconfiguration command line interface tool input and then updates existing database configuration property values.</td>
</tr>
<tr>
<td></td>
<td>• <strong>validateAndUpdateJ2eeConfiguration</strong> - Validates reconfiguration command line interface tool input and then updates existing database configuration property values.</td>
</tr>
<tr>
<td></td>
<td>• <strong>validateDatabaseConfiguration</strong> - Validates database configuration values specified as input for the reconfiguration command line interface tool.</td>
</tr>
<tr>
<td></td>
<td>• <strong>validateJ2eeConfiguration</strong> - Validates application server configuration values that are specified as input for the reconfiguration command line interface tool.</td>
</tr>
<tr>
<td></td>
<td>• <strong>removeConfiguration</strong> - Removes database and application configuration performed by the configuration tool.</td>
</tr>
<tr>
<td></td>
<td>The actions that modify the security setting for Maximo Asset Management also updates Maximo Asset Management web.xml files.</td>
</tr>
<tr>
<td><strong>-additionallangs</strong></td>
<td>Adds one or more additional languages to the deployment.</td>
</tr>
<tr>
<td></td>
<td>This parameter requires one or more locale abbreviations for input. For example, ES for Spanish.</td>
</tr>
<tr>
<td><strong>-allowUpdateDB</strong></td>
<td>The database update task is run to add the languages that are specified to the database.</td>
</tr>
<tr>
<td><strong>-applicationServerName</strong></td>
<td>Name of the application server.</td>
</tr>
<tr>
<td><strong>-applicationServerNode</strong></td>
<td>Name of the application server node.</td>
</tr>
<tr>
<td><strong>-automatedbconfig</strong></td>
<td>Automates the configuration of the database. Use this parameter to create the database instance, database users, the database, table spaces, and creates database schema.</td>
</tr>
<tr>
<td><strong>-automatej2eeconfig</strong></td>
<td>Automates the configuration of WebSphere Application Server. Using this parameter creates, for example, JMS queues and profiles.</td>
</tr>
<tr>
<td><strong>-buildAndDeployEAR</strong></td>
<td>Rebuilds and deploys application EAR files. Application EAR files must be rebuilt and redeployed for configuration changes to take effect in the application.</td>
</tr>
<tr>
<td><strong>-buildears</strong></td>
<td>Rebuilds application EAR files.</td>
</tr>
</tbody>
</table>
Table 9. Maximo Asset Management command line configuration program parameters (continued)

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-bypassJ2eeValidation</td>
<td>Skips the validation and configuration of the application server. If you use this parameter, then you must manually configure the application server before you can deploy Maximo Asset Management. Validation of a manually configured application server requires logging in to the application server with application server administrative credentials. If you do not want to provide those credentials to the configuration program, you can skip the validation task. If you use the bypassJ2eeValidation parameter, you cannot also use the following parameters:</td>
</tr>
<tr>
<td></td>
<td>• applicationServerName</td>
</tr>
<tr>
<td></td>
<td>• applicationServerNode</td>
</tr>
<tr>
<td></td>
<td>• automateJ2eeconfig</td>
</tr>
<tr>
<td></td>
<td>• buildAndDeployEAR</td>
</tr>
<tr>
<td></td>
<td>• createResourcesIfMissing</td>
</tr>
<tr>
<td></td>
<td>• deployhelper</td>
</tr>
<tr>
<td></td>
<td>• deploymaximoear</td>
</tr>
<tr>
<td></td>
<td>• enableappsecurity</td>
</tr>
<tr>
<td></td>
<td>• enableEnhancedNavigation</td>
</tr>
<tr>
<td></td>
<td>• enableSkin</td>
</tr>
<tr>
<td></td>
<td>• inputfile</td>
</tr>
<tr>
<td></td>
<td>• j2eeserverport</td>
</tr>
<tr>
<td></td>
<td>• usermanagement</td>
</tr>
<tr>
<td></td>
<td>• wasuser</td>
</tr>
<tr>
<td></td>
<td>• waspwd</td>
</tr>
<tr>
<td>-bypassUpdateDB</td>
<td>Specifies that the database update task is not run and the installation program does not update the database. Languages files for the locales that are specified are built into the application EAR file. Use this parameter if you have run the database update task and included the language files in the database through another method.</td>
</tr>
<tr>
<td>-createResourcesIfMissing</td>
<td>Creates any resources that are not found during configuration.</td>
</tr>
<tr>
<td>-db2_english_only</td>
<td>Specifies that alphanumeric data is stored as a varchar data type. Using this parameter limits you to using English in the user interface. If you do not use this parameter, alphanumeric data is stored as a vargraphic data type.</td>
</tr>
<tr>
<td>-db2textsearchport</td>
<td>Port that is used by the DB2 server for full text search.</td>
</tr>
<tr>
<td>-dbname</td>
<td>Name of the database.</td>
</tr>
<tr>
<td>-dbpwd</td>
<td>Password for the user ID that accesses the database.</td>
</tr>
<tr>
<td>-dbrapwd</td>
<td>Password for the user ID used to access a remote middleware server.</td>
</tr>
<tr>
<td>-dbrxauser</td>
<td>User ID used to access a remote middleware server.</td>
</tr>
<tr>
<td>Parameter name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>-dbserverhost</td>
<td>Host name of the database server.</td>
</tr>
<tr>
<td>-dbserverport</td>
<td>Port name of the database server.</td>
</tr>
<tr>
<td>-dbuser</td>
<td>User ID that accesses the database.</td>
</tr>
<tr>
<td>-dbvendor</td>
<td>Database software name.</td>
</tr>
<tr>
<td>-deleteInstanceUsersAndGroups</td>
<td>Removes the instance owner and database user IDs and associated groups from</td>
</tr>
<tr>
<td></td>
<td>the DB2 server. This parameter has cannot be used with and Microsoft SQL</td>
</tr>
<tr>
<td></td>
<td>Server. The -deleteInstanceUsersAndGroups parameter requires the</td>
</tr>
<tr>
<td></td>
<td>dbrxauser and dbrxapwd and the dbuser and dbpwd parameters.</td>
</tr>
<tr>
<td>-deleteWASprofiles</td>
<td>Deletes the WebSphere Application Server profiles that are created for the</td>
</tr>
<tr>
<td></td>
<td>application.</td>
</tr>
<tr>
<td>-deployDemoData</td>
<td>Includes sample data.</td>
</tr>
<tr>
<td>-deployhelpear</td>
<td>Deploys Maximo help application EAR file.</td>
</tr>
<tr>
<td>-deploymaximoear</td>
<td>Deploys Maximo application EAR file.</td>
</tr>
<tr>
<td>-enableappsecurity</td>
<td>Enables application security for the application. This parameter works the</td>
</tr>
<tr>
<td></td>
<td>same as the enableAppSecurity action.</td>
</tr>
<tr>
<td></td>
<td>This action sets the mxe.useAppServerSecurity property to a value of 1, and</td>
</tr>
<tr>
<td></td>
<td>updates the mxe.IdapUserManagement flag. This value is written to the</td>
</tr>
<tr>
<td></td>
<td>database when updated.</td>
</tr>
<tr>
<td>-enableEnhancedNavigation</td>
<td>Enables enhanced navigational elements in the user interface, including</td>
</tr>
<tr>
<td></td>
<td>enhancements for switching between applications and viewing record lists.</td>
</tr>
<tr>
<td></td>
<td>The enableEnhancedNavigation parameter must be used with the enableSkin</td>
</tr>
<tr>
<td></td>
<td>parameter.</td>
</tr>
<tr>
<td></td>
<td>If you enable enhanced navigation, and then you enable a different user</td>
</tr>
<tr>
<td></td>
<td>interface skin with the -enableSkin parameter, you must re-enable enhanced</td>
</tr>
<tr>
<td></td>
<td>navigation.</td>
</tr>
<tr>
<td>-enableMultiTenancy</td>
<td>Enables the multitenancy feature.</td>
</tr>
<tr>
<td></td>
<td>Multitenancy refers to software or services that can be configured to serve</td>
</tr>
<tr>
<td></td>
<td>multiple groups of clients referred to as tenants. Each group of tenants is</td>
</tr>
<tr>
<td></td>
<td>served by an instance of the software that uses data that only they can</td>
</tr>
<tr>
<td></td>
<td>access.</td>
</tr>
<tr>
<td>Parameter name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| -enableRestrictivePasswordPolicy     | Enables a more restrictive password policy for Maximo Asset Management users.  
  • Login attempts  
    Standard policy allows 10 login attempts before the account is locked.  
    Restrictive policy allows 3 login attempts before the account is locked.  
  • Number of times that the forgotten password link can be used  
    Standard policy allows 5 uses of the forgotten password link before locking the account.  
    Restrictive policy allows 3 uses of the forgotten password link before locking the account.  
  • Password duration (days)  
    Standard policy passwords never expire.  
    Restrictive policy passwords expire after 90 days.  
  • Password expiration warning (days)  
    Standard policy does not warn the user that the account password is about to expire.  
    Restrictive policy warns the user that the account password is about to expire seven days before it expires.  
  • Password threshold  
    Standard policy does not enforce a password threshold.  
    Restrictive policy enforces a password threshold of 270 characters.  

  • Password minimum character length  
    Standard policy passwords must be at least six characters.  
    Restrictive policy passwords must be at least eight characters.  
  • Limit of allowed consecutive characters  
    Standard policy has no restrictions to the amount of times a character can be repeated consecutively in a password.  
    Restrictive policy allows a character to be repeated two times consecutively in a password value.  
  • Password can be same value as user name  
    Standard policy allows you to use the same value for the user name and password.  
    Restrictive policy does not allow you to use the same value for the user name and password.  
  • Number of numeric characters required in the password  
    Standard policy does not require numeric characters in a password value.  
    Restrictive policy requires one or more numeric characters in a password value.  
  • Number of alphabetic characters required in the password  
    Standard policy does not require alphabetic characters in a password value.  
    Restrictive policy requires one or more alphabetic characters in a password value. |
Table 9. Maximo Asset Management command line configuration program parameters (continued)

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
</tr>
</thead>
</table>
| -enableSkin      | Change the appearance of the user interface.  
|                  |  
|                  | • Classic  
|                  | • tivoli09  
|                  | • tivoli13  
|                  |  
|                  |  
|                  |  
|                  | -force      
|                  | Indicates that an input property file updates the properties file and  
|                  | skips the validation of parameters input to the command line tool  
|                  | through an input properties file.  
|                  | When you use this parameter, you are not prompted for  
|                  | confirmation of the property update task.  
|                  | -inputfile  
|                  | Fully qualified path to the properties file that is used to set  
|                  | properties in an environment.  
|                  | Values that are specified as command line parameters for the  
|                  | configuration command line interface tool supersede values from  
|                  | the input file.  
|                  | -j2eeserverhost | Host name of the domain manager of the application server.  
|                  | If deployment manager host name or server port is specified the  
|                  | thinwsadmin scripts are updated accordingly.  
|                  | -j2eeserverport | Port name of the application server domain manager server.  
|                  | If deployment manager host name or server port is specified the  
|                  | thinwsadmin scripts are updated accordingly.  
|                  | -j2eevendor    | Application server software.  
|                  | • WebSphere    |  
|                  | • WebLogic     |  
|                  | -mtadminpwd    | Password for the user ID of the multitenancy configuration  
|                  | manager.      |  

122 IBM Maximo Asset Management: Installation Guide (WebSphere Application Server, SQL Server, Active Directory)
<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mtadminuser</td>
<td>User ID of the multitenancy configuration manager.</td>
</tr>
<tr>
<td>-mdatbpwd</td>
<td>Password for the user ID of the multitenancy configuration manager that is used to connect to the database.</td>
</tr>
<tr>
<td>-mtdbuser</td>
<td>User ID of the multitenancy configuration manager that is used to connect to the database.</td>
</tr>
<tr>
<td>-removeCreatedArtifacts</td>
<td>Removes any artifacts that are created by the configuration tool. Examples include directories that are created by the configuration program, JMS objects, and the application server.</td>
</tr>
<tr>
<td>-removeInstance</td>
<td>Removes the database instance for DB2 and Oracle. This parameter cannot be used with Microsoft SQL Server.</td>
</tr>
<tr>
<td></td>
<td>The <strong>removeInstance</strong> parameter requires the <strong>dbxrauser</strong> and <strong>dbxrapwd</strong>, and the <strong>dbuser</strong> and <strong>dbpwd</strong> parameters.</td>
</tr>
<tr>
<td>-setjdbcurl</td>
<td>Sets the JDBC connection URL string.</td>
</tr>
<tr>
<td>-stopAppServer</td>
<td>The application server must be stopped when you add languages. If you do not use the <strong>stopAppServer</strong> parameter with the <strong>addLanguages</strong> action, you must stop the application server manually before you use the <strong>addLanguages</strong> action. This parameter is used for WebSphere Application Server only.</td>
</tr>
<tr>
<td>-unsetjdbcurl</td>
<td>Removes the currently used JDBC connection URL string.</td>
</tr>
<tr>
<td>-updatedb</td>
<td>Runs the <strong>updatedb</strong> configuration task.</td>
</tr>
<tr>
<td>-usermanagement</td>
<td>Changes the security configuration of the existing Maximo deployment.</td>
</tr>
<tr>
<td></td>
<td>• <strong>j2ee</strong></td>
</tr>
<tr>
<td></td>
<td>Change the security setting in Maximo so that both Maximo users and Maximo groups are managed through application server security mechanisms.</td>
</tr>
<tr>
<td></td>
<td>• <strong>mixed</strong></td>
</tr>
<tr>
<td></td>
<td>Manage users through application server security mechanisms, and manage groups using Maximo.</td>
</tr>
<tr>
<td>-validateForNewDeploy</td>
<td>Validate middleware configuration.</td>
</tr>
<tr>
<td></td>
<td>When this parameter is specified, validation is performed as if the tool was configuring the middleware. Additional configuration details are checked, including disk space availability and remote access credentials.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is not specified, validation is performed in the context of a component that is already established in the environment.</td>
</tr>
<tr>
<td>-validateUsers</td>
<td>Used with the <strong>enableAppSecurity</strong> action to validate users exist in the LDAP repository.</td>
</tr>
<tr>
<td></td>
<td>If the users do not exist, the existing security model is not modified.</td>
</tr>
<tr>
<td>-waspwd</td>
<td>WebSphere Application Server administrator user ID password.</td>
</tr>
<tr>
<td>-wasrxapwd</td>
<td>Password for user ID to access remote WebSphere Application Server server host.</td>
</tr>
</tbody>
</table>
### Table 9. Maximo Asset Management command line configuration program parameters (continued)

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-wasrxauser</code></td>
<td>Operating system user ID used to access remote WebSphere Application Server host. Typically this user ID is defined either as Administrator or root.</td>
</tr>
<tr>
<td><code>-wasuser</code></td>
<td>WebSphere Application Server administrator user ID. This is the user ID that is used to log in to the WebSphere Application Server administrative client application. Typically, this user ID is defined as wasadmin.</td>
</tr>
</tbody>
</table>

### Command line configuration program actions

Use the command line configuration program to configure new or existing deployments of Maximo Asset Management.

**action updateDatabaseConfiguration**

The `updateDatabaseConfiguration` action is used to update existing database configuration values.

```
-action updateDatabaseConfiguration [-force] [-buildAndDeployEAR]
[-dbserverhost hostname] [-dbserverport port number]
[-dbname database name] [-duser userid]
[-dbpw password] [-drxuser userid]
[-drxapwd password] [-setjdbcurl jdbcurl]
[-unsetjdbcurl] [-inputfile path to input properties file]
```

**action validateDatabaseConfiguration**

Use the `validateDatabaseConfiguration` action to validate current database configuration properties. This action can be used to verify database properties before they are updated, or following an update action.

```
-action validateDatabaseConfiguration [-validateForNewDeploy]
[-dbserverhost hostname]
[-dbserverport port number]
[-dbname database name]
[-duser userid] [-dbpw password]
[-drxuser userid]
[-drxapwd password] [-setjdbcurl jdbcurl]
[-unsetjdbcurl] [-enableMultiTenancy]
[-mtadminuser userid] [-mtadmindbpw password]
[-mtduser userid] [-mtdpw password]
[-inputfile path to input properties file]
```

The following properties are required if the `-validateForNewDeploy` parameter is used.

- `Database.DB2.InstanceAdminGroup`
- `Database.DB2.InstanceAdminUserName` (Windows only)
- `Database.DB2.InstanceAdminPassword` (Windows only)
- `Database.DB2.FencedUser`
- `Database.DB2.FencedUserPassword`
- `Database.DB2.FencedGroupName`
- `Database.DB2.FenceUserPassword`

These properties must be added manually to the `install.properties` file.
**action validateAndUpdateDatabaseConfiguration**

The `validateAndUpdateDatabaseConfiguration` action is used to both validate reconfiguration command-line interface tool input and then update existing database configuration property values.


The following properties are required if the `-validateForNewDeploy` parameter is used.

- `Database.DB2.InstanceAdminGroup`
- `Database.DB2.InstanceAdminUserName` (Windows only)
- `Database.DB2.InstanceAdminPassword` (Windows only)
- `Database.DB2.FencedUser`
- `Database.DB2.FencedUserPassword`
- `Database.DB2.FencedGroupName`
- `Database.DB2.InstanceUserPassword`

These properties that must be added manually to the `install.properties` file.

The `-enableMultiTenancy` parameter must be used with the `-validateForNewDeploy` parameter.

**action deployDatabaseConfiguration**

The `deployDatabaseConfiguration` action is used to validate command-line configuration program input and define configuration property values for a new database for the currently deployed product. This action can be run after a successful `deployConfiguration` action.


The following properties are required if the `-createResourcesIfMissing` parameter is used.

- `Database.DB2.InstanceAdminGroup`
- `Database.DB2.InstanceAdminUserName` (Windows only)
- `Database.DB2.InstanceAdminPassword` (Windows only)
- `Database.DB2.FencedUser`
- `Database.DB2.FencedUserPassword`
- `Database.DB2.FencedGroupName`
- `Database.DB2.InstanceUserPassword`

These properties that must be added manually to the `install.properties` file.
**action removeDatabaseConfiguration**

The **removeDatabaseConfiguration** action is used to remove configuration settings from a previously configured database.

```
-action removeDatabaseConfiguration [-removeInstance] [-dbrxauser userid]
[-dbrxpwd password] [-dbruser userid]
[-dbpwd password] [-deleteInstanceUsersAndGroups]
```

**action enableDB2TextSearch**

The **enableDB2TextSearch** action is used to enable the full text search feature for a DB2 database.

```
-action enableDB2TextSearch [-db2textsearchport port number]
```

**action updateJ2eeConfiguration**

The **updateJ2eeConfiguration** action is used to update existing application server configuration values.

```
-action updateJ2eeConfiguration [-force] [-buildAndDeployEAR]
[-j2eeserverhost hostname] [-j2eeserverport port number]
[-wasuser userid] [-waspwd password]
[-applicationServerNode node_Name] [-applicationServerName appServerName]
[-inputfile path to input properties file]
```

**action validateJ2eeConfiguration**

The **validateJ2eeConfiguration** action is used to validate application server configuration values specified as input for the reconfiguration command-line interface tool.

```
-action validateJ2eeConfiguration [-validateForNewDeploy] [-j2eeserverhost hostname]
[-j2eeserverport port number] [-wasuser userid]
[-waspwd password] [-applicationServerNode node_Name]
[-applicationServerName appServerName] [-inputfile path to input properties file]
```

The following properties are required if the **-validateForNewDeploy** parameter is used and the **WAS.SibPersistMessages** property is set to true.

- Database.DB2.FencedUser
- Database.DB2.FencedUserPassword
- Database.DB2.InstanceUserPassword

These properties that must be added manually to the install.properties file.

**action validateAndUpdateJ2eeConfiguration**

The **validateAndUpdateJ2eeConfiguration** action is used to both validate reconfiguration command-line interface tool input and then update existing application server configuration property values.

```
-action validateAndUpdateJ2eeConfiguration [-force] [-validateForNewDeploy]
[-buildAndDeployEAR] [-j2eeserverhost hostname]
[-j2eeserverport port number] [-wasuser userid]
[-waspwd password] [-applicationServerNode node_Name]
[-applicationServerName appServerName]
[-inputfile path to input properties file]
```

The following properties are required if the **-validateForNewDeploy** parameter is used and the **WAS.SibPersistMessages** property is set to true.

- Database.DB2.FencedUser
- Database.DB2.FencedUserPassword
action deployJ2eeConfiguration

The deployJ2eeConfiguration action is used to validate command line configuration program input and define configuration property values for a new application server for the currently deployed product. This action can be run after a successful deployConfiguration action.

```
-action deployJ2eeConfiguration [-bypassJ2eeValidation] [-buildAndDeployEAR]
[-createResourcesIfMissing] [-j2eeserverhost hostname]
[-j2eeserverport port number] [-wasuser userid]
[-waspwd password] [-applicationServerNode nodeName]
[-applicationServerName appServerName]
[-inputfile path to input properties file]
[-enableSkin Classic|tivoli09|tivoli13] [-enableEnhancedNavigation]
```

The following properties are required if the -validateForNewDeploy parameter is used and the WAS.SibPersistMessages property is set to true.

- Database.DB2.FencedUser
- Database.DB2.FencedUserPassword
- Database.DB2.InstanceUserPassword

These properties that must be added manually to the install.properties file.

action removeJ2EEConfiguration

The removeJ2EEConfiguration action is used to remove configuration settings from a previously configured application server. Items removed include domain manager and application server profiles, and JMS objects.

```
-action removeJ2EEConfiguration [-wasuser userid] [waspwd password]
[-wasrxauser userid] [-wasrwapwd password]
[-removeCreatedArtifacts] [-deleteWasProfiles]
```

action deployConfiguration

Use the deployConfiguration action to configure the initial installation. This action is used for new Maximo Asset Management installation scenarios only. This action can configure multiple middleware products after they are installed. The deployConfiguration action requires the inputfile parameter and an input properties file populated with the configuration values you want to use.

```
-action deployConfiguration [-inputfile path to input properties file]
[-dbvendor Oracle|DB2|SQLServer] [-j2eevendor WebSphere|WebLogic]
[-bypassJ2eeValidation] [-automatedconfig] [-automateJ2eeconfig]
[-usermanagement j2ee|mixed] [-buildears] [-deploymaximoear] [-deployhelper]
[-enableappsecurity] [-deployDemoData] [-enableMultiTenancy] [-db2_english_only]
[-enableSkin Classic|tivoli09|tivoli13] [-enableEnhancedNavigation]
[-enableRestrictivePasswordPolicy]
```

action removeConfiguration

The removeConfiguration action is used to remove database and application configuration that is performed by the configuration tool. This action is equivalent to running the removeJ2EEConfiguration and removeDatabaseConfiguration actions together.

```
-action removeConfiguration -dbuser userid
-dbpwd password -wasuser userid
-waspwd password [-wasrxauser userid]
```

Chapter 15. Command line configuration   127
action reapplyAppServerTuning
The action is used to reapply application server tuning.

```
-action reapplyAppServerTuning [-wasuser userid]
[-waspwd password] [-applicationServerNode nodeName] 
[-applicationServerName appServerName]
```

action enableAppSecurity
The `enableAppSecurity` action is used to enable application security for the
application. This action sets the `mxe.useAppServerSecurity` property to a value of
1, and updates the `mxe.ldapUserManagement` property according to the setting of the
`-usermanagement` parameter. This value is written to the database when updated.
The `maximouiweb`, `maxrestweb`, `meaweb`, and `mboweb` web.xml files are updated during
this action.

```
-action enableAppSecurity [-usermanagement {j2ee,mixed}]
[-buildAndDeployEAR] [-validateUsers] [-force]
```

action disableAppSecurity
The `disableAppSecurity` action is used to disable application security for the
application. This action sets the `mxe.useAppServerSecurity` property to a value of
0. This value is written to the database when updated. Using this action reverts the
security implementation to Maximo security for users and groups. The
`maximouiweb`, `maxrestweb`, `meaweb`, and `mboweb` web.xml files are updated during this
action.

```
-action disableAppSecurity [-buildAndDeployEar] [-force]
```

action updateApplication
The `updateApplication` action is used to update the application by updating the
database and redeploying application EAR files.

```
-action updateApplication [-updatedb] [-deploymaximoear] [-deployhelperear]
[-wasuser userid] [-waspwd password]
[-enableSkin Classic|tivoli09|tivoli13] [-enableEnhancedNavigation]
[-enableRestrictivePasswordPolicy]
```

action addLanguages
Use the `addLanguages` action to configure additional languages for a deployment.

```
-action addLanguages [-additionallangs locale1,locale2,locale3]
[-inputfile path to input properties file]
```

The application server must be stopped when you add languages. If you do not
use the `stopAppServer` parameter with the `addLanguages` action, you must stop the
application server manually before you use the `addLanguages` action.

The following locale values are supported.

```
<table>
<thead>
<tr>
<th>Language</th>
<th>Locale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>ar</td>
</tr>
<tr>
<td>Brazilian Portuguese</td>
<td>pt_BR</td>
</tr>
</tbody>
</table>
```

---

IBM Maximo Asset Management: Installation Guide (WebSphere Application Server, SQL Server, Active Directory)
Table 10. Locales supported by the configuration program (continued)

<table>
<thead>
<tr>
<th>Language</th>
<th>Locale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatian</td>
<td>hr</td>
</tr>
<tr>
<td>Czech</td>
<td>cs</td>
</tr>
<tr>
<td>Danish</td>
<td>da</td>
</tr>
<tr>
<td>Dutch</td>
<td>nl</td>
</tr>
<tr>
<td>Finnish</td>
<td>fi</td>
</tr>
<tr>
<td>French</td>
<td>fr</td>
</tr>
<tr>
<td>German</td>
<td>de</td>
</tr>
<tr>
<td>Hebrew</td>
<td>he</td>
</tr>
<tr>
<td>Hungarian</td>
<td>hu</td>
</tr>
<tr>
<td>Italian</td>
<td>it</td>
</tr>
<tr>
<td>Japanese</td>
<td>ja</td>
</tr>
<tr>
<td>Korean</td>
<td>ko</td>
</tr>
<tr>
<td>Norwegian</td>
<td>no</td>
</tr>
<tr>
<td>Polish</td>
<td>pl</td>
</tr>
<tr>
<td>Russian</td>
<td>ru</td>
</tr>
<tr>
<td>Simplified Chinese</td>
<td>zh_CN</td>
</tr>
<tr>
<td>Slovak</td>
<td>sk</td>
</tr>
<tr>
<td>Slovenian</td>
<td>sl</td>
</tr>
<tr>
<td>Spanish</td>
<td>es</td>
</tr>
<tr>
<td>Swedish</td>
<td>sv</td>
</tr>
<tr>
<td>Traditional Chinese</td>
<td>zh_TW</td>
</tr>
<tr>
<td>Turkish</td>
<td>tr</td>
</tr>
</tbody>
</table>

**action configureProducts**

The `configureProducts` action is used to configure more products that are installed after an initial installation and configuration. This action verifies a full installation and configuration of an existing product was completed successfully before it continues. This action can configure multiple products after they are installed. This action can also be used in an upgrade scenario.

```
```

**action deployMiddlewareConfiguration**

The `deployMiddlewareConfiguration` action is used to configure middleware after it is installed.

```
-action deployMiddlewareConfiguration [-inputfile path to input properties file]
```

The following properties can be included in the input properties file used with the `deployMiddlewareConfiguration` action.

Table 11. Properties that can be used in the `deployMiddlewareConfiguration` action input file

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTTP Server</td>
<td>IHS.HTTPPort</td>
</tr>
</tbody>
</table>
Table 11. Properties that can be used in the `deployMiddlewareConfiguration` action input file (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHS</td>
<td><code>IHS.InstallLocation</code></td>
</tr>
<tr>
<td></td>
<td><code>IHS.WebserverName</code></td>
</tr>
<tr>
<td>LDAP server properties</td>
<td><code>LDAP.AdminDN</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.AdminPassword</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.BaseEntry</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.GroupSuffix</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.OrgContainerSuffix</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.ServerHostName</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.ServerPort</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.UserSuffix</code></td>
</tr>
<tr>
<td></td>
<td><code>LDAP.Vendor</code></td>
</tr>
<tr>
<td>General middleware configuration properties</td>
<td><code>MW.Operation</code></td>
</tr>
<tr>
<td>WebSphere properties</td>
<td><code>PLG.InstallLocation</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.AdminPassword</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.AdminUserName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.ApplicationServerName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.CellName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.DeploymentManagerNodeName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.DeploymentManagerProfileName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.InstallLocation</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.LDAPAutomatedConfig</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.ND.AutomateConfig</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.NodeName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.ServerProfileName</code></td>
</tr>
<tr>
<td></td>
<td><code>WAS.SOAPConnectorPort</code></td>
</tr>
<tr>
<td></td>
<td><code>WCT.InstallLocation</code></td>
</tr>
</tbody>
</table>

**Configuration program properties**

Maximo Asset Management properties can be modified with the command line configuration program by using an `input.properties` file. When you set a property value to a Windows path, you must use two consecutive backslashes, for example, `C:\IBM\WebSphere\AppServer`. When you set property values to a Linux or UNIX path, use single forward slashes. For example, `/opt/IBM/db2/V10.5`.

Table 12. Maximo Asset Management properties

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared database properties</td>
<td><code>mxe.db.schemaowner</code></td>
<td>Owner of the database schema.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>maximo</code>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This value is written to the database when updated.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>mxe.db.user</td>
<td>User ID that accesses the database.</td>
<td></td>
</tr>
<tr>
<td>mxe.db.password</td>
<td>Password for the user ID that accesses the database.</td>
<td></td>
</tr>
<tr>
<td>Database.RemoteAccessUserName</td>
<td>Database server system user ID that is used for configuring the database remotely. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.RemoteAccessPassword</td>
<td>Password for user ID named in <code>Database.RemoteAccessUserName</code>. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>DB2 Properties</td>
<td>Database.DB2.ServerHostName</td>
<td>Fully qualified host name of the DB2 server. For example, <code>mymachine.mydomain.com</code>. This value is written to the database when updated.</td>
</tr>
<tr>
<td>Database.DB2.ServerPort</td>
<td>Database server port. For example, 50005. This value is written to the database when updated.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.InstanceName</td>
<td>Name of the database instance. For example, <code>ctginst1</code>. This value is written to the database when updated. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.InstanceUserPassword</td>
<td>Password for the database instance owner. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Database.DB2.InstanceAdminGroup</td>
<td>Group for the instance administrator. For example, ctgadm1. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.DatabaseName</td>
<td>Name of the database. For example, maxdb76. This value is written to the database when updated.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.InstallLocation</td>
<td>Install location of the database. For example, /opt/IBM/db2/V10.5. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2LogFileSize</td>
<td>Set the size for transaction logs. For example, 8192. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.AppCtlHeapSize</td>
<td>Application control heap size. For example, 1024. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Database.DB2.ApplHeapSize</td>
<td>Application heap size. For example, 1024. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Database.DB2.LockListSize</td>
<td></td>
<td>Size that is allocated to the lock list. For example, AUTOMATIC. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.LogSecond</td>
<td></td>
<td>Number of secondary log files allowed. For example, 100. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.ServiceUser</td>
<td></td>
<td>User ID used to autostart. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified. This property is only required if DB2 is installed on a Windows system.</td>
</tr>
<tr>
<td>Database.DB2.ServicePassword</td>
<td></td>
<td>Password for Database.DB2.ServiceUser. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified. This property is only required if DB2 is installed on a Windows system.</td>
</tr>
<tr>
<td>Database.DB2.ExtentSize</td>
<td></td>
<td>Number of pages per extent (group of pages). For example, 32. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.FencedUser</td>
<td>Fenced user ID for DB2 on Linux or UNIX systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>db2fenc1</code>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validateForNewDeploy</code>, or <code>automatedDbConfig</code> parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.FencedUserPassword</td>
<td>Password for the fenced user ID for DB2 on Linux or UNIX systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validateForNewDeploy</code>, or <code>automatedDbConfig</code> parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.FencedGroupName</td>
<td>Default group for database fenced user.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>ctgfgrp1</code>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validateForNewDeploy</code>, or <code>automatedDbConfig</code> parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.AuthType</td>
<td>Method DB2 uses to authenticate users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>server</code>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validateForNewDeploy</code>, or <code>automatedDbConfig</code> parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.DataTablespaceName</td>
<td>DB2 table space name for the product database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>maxdata</code>.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.BufferPoolName</td>
<td>DB2 buffer pool name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, <code>MAXBUFPPOOL</code>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validateForNewDeploy</code>, or <code>automatedDbConfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Database.DB2.BufferPoolSize</td>
<td>Size of the buffer pool.</td>
<td>For example, 4096. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.DataTablespaceLocation</td>
<td>Location of DB2 database table space data files.</td>
<td>For example, CTGDAT. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.DataTablespaceSize</td>
<td>Table space size, which is measured in Mb.</td>
<td>For example, 5000. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.TempTablespaceName</td>
<td>Temporary table space name.</td>
<td>For example, maxtemp. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.TempTablespaceLocation</td>
<td>Location of temporary table space.</td>
<td>For example, CTGTMP. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.DB2.TempTablespaceSize</td>
<td>Temporary table space size, which is measured in Mb.</td>
<td>For example, 1000. This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automatedbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
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<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.IndexTablespaceName</td>
<td>Index table space name. For example, maxdata.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.IndexTablespaceLocation</td>
<td>Location of index table space. For example, CTGDAT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.IndexTablespaceSize</td>
<td>Index table space size, which is measured in Mb. For example, 5000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.InstanceAdminUserName</td>
<td>Administrative user or the database instance. For example, db2admin.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For Unix and Linux platforms, this value must be the same as the instance owner.</td>
</tr>
<tr>
<td></td>
<td>Database.DB2.InstanceAdminPassword</td>
<td>Password for the user ID specified for Database.DB2.InstanceAdminUserName.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automateddbconfig parameters are specified.</td>
</tr>
<tr>
<td>Oracle</td>
<td>Database.Oracle.SchemaPassword</td>
<td>Password for the schema owner.</td>
</tr>
<tr>
<td></td>
<td>Database.Oracle.InstanceName</td>
<td>Oracle instance name. This value is written to the database when updated.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Database.Oracle.SoftwareOwner</td>
<td>Owner of the software installation.</td>
<td>For example, oracle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.SoftwareOwnerPassword</td>
<td>Password for the user ID listed in <code>Database.Oracle.SoftwareOwner</code>.</td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.InstallLocation</td>
<td>Oracle installation location. For example, <code>/opt/app/oracle/product/10.2.0/db_1</code>.</td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.DataTablespaceName</td>
<td>Oracle table space name for the product database.</td>
<td>For example, maxdata.</td>
</tr>
<tr>
<td>Database.Oracle.DataTablespaceSize</td>
<td>Table space size, which is measured in Mb.</td>
<td>For example, 5000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the <code>createResourcesIfMissing</code>, <code>validatefornewdeploy</code>, or <code>automateddbconfig</code> parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
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<tr>
<td>---------------------------</td>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Database.Oracle.TempTablespaceName</td>
<td>Temporary table space name.</td>
<td>For example, maxtemp.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.TempTablespaceSize</td>
<td>Temporary table space size, which is measured in Mb.</td>
<td>For example, 1000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.IndexTablespaceName</td>
<td>Index table space name.</td>
<td>For example, maxdata.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.IndexTablespaceSize</td>
<td>Index table space size, which is measured in Mb.</td>
<td>For example, 1000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.Oracle.ServerHostName</td>
<td>Fully qualified host name of the Oracle server.</td>
<td></td>
</tr>
<tr>
<td>Database.Oracle.ServerPort</td>
<td>Port number that is used by Oracle.</td>
<td>For example, 1521.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This value is written to the database when updated.</td>
</tr>
<tr>
<td>Database.DBAUserName</td>
<td>Oracle DBA user name.</td>
<td>For example, sys.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Database.DBAPassword</td>
<td>Password for user ID listed for Database.DBAUserName.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
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<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Microsoft SQL Server   | Database.SQL.DatabaseName | Name of the database.  
For example, maxdb76.  
This value is written to the database when updated. |
| Database.SQL.DataFileName | A way to specify the name of the data file used for the database.  
For example, maxdb76_dat.  
This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified. |
| Database.SQL.DataFileMaxSize | Maximum size for data file for the database. |
| Database.SQL.DataFileSize | Initial size for data file for the database in kb.  
For example, 5000.  
This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified. |
| Database.SQL.LogFileName | A way to specify the name for the database transaction log file.  
For example, maxdb76_log.  
This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified. |
| Database.SQL.LogFileSize | Microsoft SQL Server transaction log file size.  
This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified. |
| Database.SQL.DataFilegroupName | Database logical name file group.  
For example, PRIMARY.  
This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified. |
<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database SQL Server</td>
<td>Database.SQL.HostName</td>
<td>Host name of the database server. For example, myhost.mydomain.com.</td>
</tr>
<tr>
<td></td>
<td>Database.SQL.ServerPort</td>
<td>Database server port. For example, 1433. This value is written to the database when updated.</td>
</tr>
<tr>
<td></td>
<td>Database.SQL.InstanceAdminUserName</td>
<td>Administrative user for the Microsoft SQL Server instance. Used during installation for creating and modifying the database and database user. For example, sa. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td>Database.SQL.InstanceAdminPassword</td>
<td>Administrative user password. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>WebSphere Application Server Network</td>
<td>WAS.InstallLocation</td>
<td>Installation location for WebSphere Application Server Network Deployment. For example, C:\IBM\WebSphere\AppServer. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties. • WAS.MIFSIBPropertiesFile • WAS.CronSIBPropertiesFile • WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td>WebSphere Application Server Network</td>
<td>WAS.DeploymentManagerHostName</td>
<td>Host name of the WebSphere Application Server Network Deployment deployment manager. This value is written to the database when updated.</td>
</tr>
<tr>
<td>WebSphere Application Server Network</td>
<td>WAS.DeploymentManagerPassword</td>
<td>Administrative user password. This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatedbconfig parameters are specified.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>WAS.DeploymentManagerProfileName</td>
<td>WAS.DeploymentManagerProfileName</td>
<td>WebSphere Application Server Network Deployment profile name. For example, ctgDmgr01. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties. • WAS.MIFSIBPropertiesFile • WAS.CronSIBPropertiesFile • WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td>WAS.DeploymentManagerProfileRoot</td>
<td>WAS.DeploymentManagerProfileRoot</td>
<td>Location of the WebSphere Application Server Network Deployment profile. For example, C:\IBM\WebSphere\AppServer\profiles\ctgDmgr01 This property is only required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties. • WAS.MIFSIBPropertiesFile • WAS.CronSIBPropertiesFile • WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td>WAS.NodeName</td>
<td>WAS.NodeName</td>
<td>WebSphere Application Server Network Deployment node name. For example, ctgNode01</td>
</tr>
<tr>
<td>WAS.ApplicationServerName</td>
<td>WAS.ApplicationServerName</td>
<td>WebSphere Application Server Network Deployment application server name. For example, MXServer. This value is written to the database when updated.</td>
</tr>
<tr>
<td>WAS.CellName</td>
<td>WAS.CellName</td>
<td>WebSphere Application Server Network Deployment cell name. For example, ctgCell01</td>
</tr>
<tr>
<td>WAS.AdminUserName</td>
<td>WAS.AdminUserName</td>
<td>WebSphere Application Server Network Deployment administrator name. For example, wasadmin.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>WAS.AdminPassword</td>
<td>WebSphere Application Server Network Deployment administrator password.</td>
</tr>
</tbody>
</table>
|                   | WAS.RemoteAccessUserName          | WebSphere Application Server Network Deployment deployment manager system user ID used for tasks such as copying Integrated Solutions Console web archive files and fetching the keystore. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties.  
• WAS.MIFSIBPropertiesFile  
• WAS.CronSIBPropertiesFile  
• WAS.UISIBPropertiesFile |
|                   | WAS.RemoteAccessPassword          | WebSphere Application Server Network Deployment deployment manager system user password. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties.  
• WAS.MIFSIBPropertiesFile  
• WAS.CronSIBPropertiesFile  
• WAS.UISIBPropertiesFile |
|                   | WAS.SOAPConnectorPort             | SOAP port for WebSphere Application Server Network Deployment deployment manager. For example, 8879. |
|                   | WAS.VirtualHost                   | Name of the WebSphere Application Server Network Deployment virtual host. For example, maximo_host. |
|                   | WAS.WebServerHostName             | Host name where the HTTP server is located.                              |
|                   | WAS.SibName                       | Name of the service integration bus. For example, intjmsbus.              |
Table 12. Maximo Asset Management properties (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAS.SibHiMsg</td>
<td>Service integration bus high message count.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, 500000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatej2econfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.WebServerName</td>
<td>Name of the WebSphere Application Server Network Deployment web server. Used to manage HTTP server from within WebSphere Application Server Network Deployment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, webserver1.</td>
</tr>
<tr>
<td></td>
<td>WAS.SibPersistMessages</td>
<td>Binary value that indicates if service integration bus messages are persisted in either the product database or a local derby database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A value of true indicates that the messages are persisted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the createResourcesIfMissing, validatefornewdeploy, or automatej2econfig parameters are specified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
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<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
</tbody>
</table>
Table 12. Maximo Asset Management properties (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAS.SibDSName</td>
<td>Service integration bus data source name that is created to access the service integration bus persistence store. For example, intjmsds.</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBName</td>
<td>Name of the service integration bus messages database. This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBInstance</td>
<td>Instance name of the service integration bus database. This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBInstancePassword</td>
<td>IBM DB2 instance users password for the SIB IBM DB2 data store. This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
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</tr>
<tr>
<td></td>
<td>WAS.SibDBServerName</td>
<td>Server name of the system that is hosting the service integration bus message database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the <code>WAS.SibPersistMessages</code> property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBServerPort</td>
<td>Database server port for the database that contains the service integration bus messages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, 50005.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the <code>WAS.SibPersistMessages</code> property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
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<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBUserName</td>
<td>User ID used to access the persistence data store database for service integration bus messages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the <code>WAS.SibPersistMessages</code> property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td></td>
<td>WAS.SibDBUserPass</td>
<td>Password for user ID named in WAS.SibDBUserName.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is only required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDBInstallDir</td>
<td>Where the service integration bus database is installed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, c:\program files\ibm\sqllib.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDbFencedUser</td>
<td>Fenced user ID for the service integration bus database. This property is only used for databases that are hosted on Linux and UNIX systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, db2fenc1.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the database is hosted on a Linux or UNIX system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
</tbody>
</table>
Table 12. Maximo Asset Management properties (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAS.SibDbFencedPassword</td>
<td>Password for the fenced user ID for the service integration bus database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the database is hosted on a Linux or UNIX system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDbInstanceAdminUser</td>
<td>Instance owner for the service integration bus database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the database is hosted on a Windows system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td>WAS.SibDbInstanceAdminPassword</td>
<td>Password for the instance owner of the service integration bus database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the WAS.SibPersistMessages property is set to true.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required if the database is hosted on a Windows system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This property is required in the properties file that is specified in one of the following properties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.MIFSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.CronSIBPropertiesFile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WAS.UISIBPropertiesFile</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>WAS.SibDbRemoteAccessUser</td>
<td>Database server system user that is used to configure the service integration bus remotely. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties.</td>
<td></td>
</tr>
<tr>
<td>WAS.SibDbRemoteAccessPassword</td>
<td>Password for user ID named in WAS.SibDbRemoteAccessUser. This property is required if the WAS.SibPersistMessages property is set to true. This property is required in the properties file that is specified in one of the following properties.</td>
<td></td>
</tr>
<tr>
<td>WAS.VmmGroupRDN</td>
<td>Relative Distinguished Name of the location of virtual member manager groups. For example, ou=groups,ou=SWG,o=IBM,c=US.</td>
<td></td>
</tr>
<tr>
<td>WAS.VmmUserRDN</td>
<td>Relative Distinguished Name of the location of virtual member manager users. For example, ou=users,ou=SWG,o=IBM,c=US.</td>
<td></td>
</tr>
<tr>
<td>WAS.UseClustersForDeploy</td>
<td>Deploy the application EAR to a cluster. For example, true.</td>
<td></td>
</tr>
<tr>
<td>WAS.UIClusterName</td>
<td>Name of the cluster that manages UI tasks. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 12. Maximo Asset Management properties (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAS.WAS.UIEnableJMS</td>
<td>Enable or disable JMS for Maximo Enterprise Adapter for the UI cluster. For example, true. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.UISIBPropertiesFile</td>
<td>File that contains SIB persistence properties if you are persisting messages in the UI clusters bus. For example, c:\sibdb-ui.properties. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.CronClusterName</td>
<td>Name of the cluster that manages cron tasks. For example, maximocron. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.CronEnableJMS</td>
<td>Enable JMS for Maximo Enterprise Adapter for the cron task cluster. For example, true. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.CronSIBPropertiesFile</td>
<td>File that contains SIB persistence properties if you are persisting messages in the cron clusters bus. For example, c:\sibdb-cr.properties. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.ReportingClusterName</td>
<td>Name of the cluster that manages reporting tasks. For example, maximorpt. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
</tbody>
</table>
### Table 12. Maximo Asset Management properties (continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAS.MIFClusterName</td>
<td>Name of the cluster that manages Maximo Integration Framework tasks. For example, maximomea. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.MIFEnableJMS</td>
<td>Enable JMS for Maximo Enterprise Adapter for the Maximo Integration Framework task cluster. For example, true. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td></td>
<td>WAS.MIFSIBPropertiesFile</td>
<td>File that contains SIB persistence properties if you are persisting messages in the Maximo Integration Framework clusters bus. For example, c:\sibdb_mif.properties. Set a value for this parameter if WAS.UseClustersForDeploy is set to true.</td>
</tr>
<tr>
<td>Multi-tenancy</td>
<td>mt.sysprovider.tenantcode</td>
<td>Tenant code identifier for the multi-tenancy system provider. For example, MTM. This property is required to enable multi-tenancy.</td>
</tr>
<tr>
<td></td>
<td>mt.sysprovider.desc</td>
<td>Description of the multi-tenancy manager.</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.adminuserid</td>
<td>User ID of the multi-tenancy configuration manager. For example, maxadmin. This property is required to enable multi-tenancy. This value can be the same value used for the mtadminuser user.</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.adminpassword</td>
<td>Password for the User ID of the multi-tenancy configuration manager. This property is required to enable multi-tenancy. This value can be the same value used for the mtadminpwd value.</td>
</tr>
<tr>
<td>Category</td>
<td>Property</td>
<td>Definition</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.tenantcode</td>
<td>Tenant code identifier for the multi-tenancy configuration manager. For example, 6A. This property is required to enable multi-tenancy.</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.desc</td>
<td>Description of the multi-tenancy global administrator.</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.dbuser</td>
<td>User ID of the multi-tenancy configuration manager used to connect to the database. For example, ADMIN. This property is required to enable multi-tenancy. This value can be the same value used for the mtdbuser user.</td>
</tr>
<tr>
<td></td>
<td>mt.configmanager.dbpassword</td>
<td>Password for the user ID of the multi-tenancy configuration manager that is used to connect to the database. This property is required to enable multi-tenancy. This value can be the same value used for the mtdbpwd value.</td>
</tr>
<tr>
<td></td>
<td>mxe.mt.enabled</td>
<td>Value that indicates whether multi-tenancy is enabled. For example, a value of 1 indicates that multi-tenancy is enabled. A value of 0 indicates that multi-tenancy is not enabled for the product.</td>
</tr>
<tr>
<td></td>
<td>mxe.mt.db.adminuser</td>
<td>This value is the same as the value set for the mtdbuser parameter. This property is set in the maximo.properties file during the maxinst operation.</td>
</tr>
<tr>
<td></td>
<td>mxe.mt.demo.extratenants</td>
<td>Number of sample tenants to create when you enable multi-tenancy. For example, 10. This property is set in the maximo.properties file during the maxinst operation.</td>
</tr>
</tbody>
</table>
Chapter 16. Configuring your product with performance analysis data

Configure Maximo Asset Management with optimized settings.

About this task

The IBM Performance Analysis Suite checks Maximo Asset Management for compliance with best practices and optimized performance settings. The IBM Performance Analysis Suite collects configuration data about the database, host operating system settings, WebSphere Application Server Network Deployment and IBM HTTP Server, applies a set of performance metrics to the data, and then generates a report.

The system tuner utility takes IBM Performance Analysis Suite data and automatically configures your environment and middleware.

Procedure

1. Click the link on the Maximo Asset Management launchpad to download the IBM Performance Analysis Suite from the IBM developerWorks community and install it on the Maximo Asset Management administrative workstation.
3. Log on to the Maximo Asset Management administrative workstation, open a command prompt, and change to the `install_home\scripts` directory.
4. Run the `tuneSystem` command. All parameters listed are required.

   ```
tuneSystem -d install_dir -e env_name -w workspace_zip_file
   -r [generate|update] -c [warning|critical] -o output_dir -p plugin_name
   --debug
   ```

   Use this parameter to turn on debug logging.

   `-d install_dir`
   Use this parameter to specify where the IBM Performance Analysis Suite is installed on the system.

   `-e env_name`
   Use this parameter to enter the name of the environment you defined when you used the IBM Performance Analysis Suite to collect data about your environment.

   `-w workspace_zip_file`
   Use this parameter to enter the name of the zipped file containing the data that was collected when you used the IBM Performance Analysis Suite.

   `-r [generate|update]`
   Use this parameter to generate scripts to update Maximo Asset Management configuration.

   If you use `generate`, the scripts are generated in the output directory you specify. You must manually run these scripts to re-configure Maximo Asset Management. A file with an extension of `.sql` is generated to update the Maximo Asset Management database. A file with an extension of `.py` is
generated to update the Maximo Asset Management application server. A file with an extension of .sh or .bat is generated to update the Maximo Asset Management administrative workstation.

If you use **update**, the scripts are generated and then run on the system to update Maximo Asset Management configuration.

- **c [warning|critical]**
  Use this parameter to specify which conditions identified by the IBM Performance Analysis Suite to update in Maximo Asset Management. If you use **critical**, configuration values that were categorized as critical by the IBM Performance Analysis Suite are updated by the Maximo Asset Management system tuner utility. If you use **warning**, configuration values that were categorized as either critical or warnings by the IBM Performance Analysis Suite are updated by the Maximo Asset Management system tuner utility.

- **o output_dir**
  Use this parameter to specify where to output the scripts generated by the Maximo Asset Management system tuner utility.

- **p plugin_name**
  Use this parameter to enter the name of the plugin you specified when you used the IBM Performance Analysis Suite.

- **h**
  Use this parameter to display help for the **tuneSystem** command.

  ```
  tuneSystem -d install_dir -e env_name -w workspace_zip_file
  -r [generate|update] -c [warning|critical] -o output_dir -p plugin_name
  ```

What to do next

You should use the IBM Performance Analysis Suite and the **tuneSystem** command to perform Maximo Asset Management configuration updates as part of your regularly scheduled maintenance program.

Related information:


Chapter 17. Backup and restoration

Like all important business data, it is a good idea to establish a process and schedule for backing up Maximo Asset Management data.

Back up and restore middleware application data using the methods described in the documentation for that product is important. Also, establish a process for backing up data contained on the Maximo Asset Management administrative workstation.

The default installation directory on the Maximo Asset Management administrative workstation is `C:\ibm`. This directory contains the critical files for your Maximo Asset Management deployment, which includes all class files and customizations that have been performed in your environment, the current Enterprise Archive (EAR) file, and the properties files and installation tools used for your environment. Plan to back up Maximo Asset Management administrative workstation data just after initial deployment and schedule periodic backups on an ongoing basis.

Backing up the administrative workstation

It is recommended that you back up all Maximo Asset Management middleware applications and Maximo Asset Management administrative workstation on a regular basis.

About this task

The default installation directory on the administrative workstation is `\ibm`. This directory contains the critical files for your Maximo Asset Management deployment.

Specifically, the administrative workstation contains the following items:

- Class files and customizations performed in your environment.
- The current Enterprise Archive (EAR) file that was deployed to the application server.
- The properties files and installation tools used for your environment.

It is important to make a back up of the database at the same time that you back up the administrative workstation. During restoration, you restore the database back up at the same time you restore the administrative workstation back up it was paired with.

To back up critical Maximo Asset Management information, complete the following steps:

Procedure

1. Back up the Maximo Asset Management database, J2EE server, and authentication server information using the instructions provided by your middleware vendors.
2. Create a backup of the installation directory. By default, this directory is `\IBM\SMP`. Ensure that all file permissions are preserved.
Restoring the administrative workstation

This section details how to restore previously backed up Maximo Asset Management administrative workstation information. This information can be used to return an existing Maximo Asset Management administrative workstation to a previous state.

Before you begin

It is important to restore the back up of the database that was made when you backed up the administrative workstation. A database back up should be restored with the administrative workstation back up it was paired with.

About this task

To restore Maximo Asset Management information to an administrative workstation, complete the following steps:

Procedure

1. Restore the database back up that was paired with the administrative workstation back up you are restoring.
2. Log on to the target administrative system with the same user ID that was used to install the product on the existing administrative workstation.
3. Copy the Maximo Asset Management installation files and directories to the file system of the target administrative system. You must maintain the directory structure of the original installation. For example, if the Maximo Asset Management installation directory on the existing administrative system is \IBM\SMP, you cannot copy those files to a \NewAdminWS\IBM\SMP directory on the target administrative workstation.
Chapter 18. Uninstalling the product

Uninstalling Maximo Asset Management version 7.6 includes removing configuration values from Maximo Asset Management and associated middleware, and then uninstalling Maximo Asset Management.

Maximo Asset Management uninstallation is a comprehensive procedure and does not support partial removal of individual components or process managers, including process managers that are deployed by other products. Process managers of previously deployed products are also removed when you uninstall Maximo Asset Management.

Maximo Asset Management can only be uninstalled using the Maximo Asset Management installation and configuration programs as directed. Do not use other methods to attempt to uninstall Maximo Asset Management, such as using the Add/Remove Programs panel.

After the Maximo Asset Management uninstallation process is complete, you can reinstall Maximo Asset Management by using the Maximo Asset Management installation and configuration programs.

Remove Maximo Asset Management configuration

The first step to uninstall Maximo Asset Management is to remove configuration values using the Maximo Asset Management configuration program.

About this task

If you choose the option to delete the database instance, table spaces, the database, and the database instance are removed. The instance user, database users, and system users that were created with the configuration program can also be removed. For WebSphere Application Server Network Deployment, specify credentials for the WebSphere administrative user to uninstall the Maximo Asset Management application. If you choose the option to delete WebSphere artifacts, the application server and JMS queue information are removed.

Procedure

1. Log on to the WebSphere Application Server Network Deployment server with the WebSphere Application Server admin console and stop all of the Maximo Asset Management applications.
2. 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, specify Maximo Asset Management installation location, and then click Launch the Tivoli’s Process Automation Suite configuration program.
3. In the IBM Maximo Asset Management configuration operations page, click Remove Product Configuration Information.
4. In the Remove Product Configuration Information panel, specify credentials to access the database and WebSphere Application Server Network Deployment servers you previously configured for Maximo Asset Management.
5. Click Finish, and then OK to confirm.
Removing WebSphere Application Server Network Deployment configuration

Removing WebSphere Application Server Network Deployment configuration with the Maximo Asset Management configuration program deletes all configuration data.

**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**, specify Maximo Asset Management installation location, and then click **Launch the Tivoli’s Process Automation Suite configuration program**.
2. In the IBM Maximo Asset Management configuration operations page, click **Unconfigure WebSphere Application Server**.
3. In the Unconfigure WebSphere panel, specify credentials for the WebSphere administrative user to remove WebSphere Application Server Network Deployment profile information, and then click **Next**.
4. In the Unconfigure Middleware panel, select the **Unconfigure WebSphere Application Server Network Deployment** option, click **Finish**, and then **OK** to confirm.

Uninstalling Maximo Asset Management and middleware

Use the Installation Manager software to uninstall Maximo Asset Management and any middleware that was installed with the Maximo Asset Management installation program.

**About this task**

After you use the Maximo Asset Management configuration program to unconfigure Maximo Asset Management and associated middleware, use the Installation Manager software to uninstall previously installed components. You must run Installation Manager locally on the system that hosts the component you want to uninstall.

**Procedure**

1. Stop all DB2 and WebSphere Application Server Network Deployment processes on the system.
2. Open a command prompt and start Installation Manager.

<table>
<thead>
<tr>
<th>Windows</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:\Program Files\IBM\Installation Manager\eclipse\IBMIM.exe</td>
<td>IBMIM.sh</td>
</tr>
</tbody>
</table>

3. From the IBM Installation Manager interface, select **Uninstall**.
4. Select the packages that you want to remove and then click **Next**.
5. Review the package summary information and click **Uninstall** to remove the selected packages.
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Index

A
action addLanguages 128
action configureProducts 129
action deployConfiguration 127
action deployDatabaseConfiguration 125
action deployJ2eeConfiguration 127
action deployMiddlewareConfiguration 129
action disableAppSecurity 128
action enableAppSecurity 128
action enableDB2TextSearch 126
action reapplyAppServerTuning 128
action removeConfiguration 127
action removeDatabaseConfiguration 126
action removeJ2EEConfiguration 127
action updateApplication 128
action updateDatabaseConfiguration 124
action updateJ2eeConfiguration 126
action validate And Update Database Configuration 125
action validateAndUpdateJ2eeConfiguration 126
action validateDatabaseConfiguration 124
action validateJ2eeConfiguration 126
administrative workstation backing up 155
restoring 156
AIX fonts 7
large page size support 7
tar command 6

B
backup 155

C
command line configuration program input properties files 116
parameters 117
Command line configuration program actions 124
configuration 100
configuration actions addLanguages 128
configureProducts 129
deployConfiguration 127
deployDatabaseConfiguration 125
deployJ2eeConfiguration 127
deployMiddlewareConfiguration 129
disableAppSecurity 128
enableAppSecurity 128
enableDB2TextSearch 126
reapplyAppServerTuning 128
removeConfiguration 127
removeDatabaseConfiguration 126
removeJ2EEConfiguration 127

D
data source manually creating for the persistent store 41
database server 33
DB2 v10.5 installing 69
directory server manually configuring 35

E
EAR files building manually 111
maintaining 111
error queue 57

F
fonts AIX 7

H
help 99
help information installing in multiple languages 99
HTTP server 11
HTTPOnly configuring 95

I
IBM WebSphere Application Server Network Deployment
HTTPOnly 95
industry solutions 107
installing from command-line 107
installing silently 108
installing with launchpad 107
install automatically configuring existing middleware 25
deploying using manual middleware configuration 33
deploying with manually configured middleware 31
preparing 1 program logs 97
Installation post-installation tasks 100
Installation Manager installing silently 79
installation program logs 97
installing silent 77

J
J2EE server manually configuring 38
JMS activation specification creating for the continuous inbound queue (CQIN) 56
creating for the inbound error queue (CQINERR) 59
JMS connection factory creating 54
JMS queues manually configure 50
JRE configuring in Linux 8

L
launchpad starting 12
libraries Linux 7
required libraries 7
Linux JRE, configuring 8
shared memory, setting 9
swap size, setting 9
ulimit, setting 8