This edition applies to Release 6.3 of IBM Maximo for Utilities and IBM Maximo Spatial Asset Management and to all subsequent releases and modifications until otherwise indicated in new editions. This edition replaces any previous edition of this document.

Third-Party Technology: Certain Maximo products contain technology provided under license from third parties, as noted in the following table:

<table>
<thead>
<tr>
<th>IBM Product</th>
<th>Third-Party Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Sentry Spelling-Checker Engine © 2000 Wintertree Software, Inc.</td>
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About This Publication

This section explains how this guide can help you to use IBM® Maximo® for Utilities and IBM Maximo Spatial Asset Management. It also provides information about other IBM Corporation resources available to you, such as additional documentation and support.

Intended Audience

If you are the system administrator, network administrator, or other professional who installs Utilities or Spatial Asset Management, read this guide to install Utilities or Spatial Asset Management properly into your IBM Maximo 6 installation.

Related Information

You can find more information about Maximo Utilities and Maximo Spatial Asset Management in the following document:

- **IBM Maximo for Utilities and IBM Maximo Spatial Asset Management User’s Guide Addendum**

The *IBM Maximo for Utilities and IBM Maximo Spatial Asset Management User’s Guide Addendum* is a separate document delivered in Adobe® Systems’ Portable Document Format (PDF) with the product software. The guide should be used in conjunction with the standard Maximo documentation set.

For more information about Maximo, refer to the following documentation:

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IBM Maximo Finance Manager’s Guide</strong></td>
<td>Describes how IBM Maximo completes financial transactions and how to set up general ledger accounts.</td>
</tr>
<tr>
<td><strong>IBM Maximo Installation Guide</strong></td>
<td>Describes how to install and configure the following software:</td>
</tr>
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<td></td>
<td>▼ Application server</td>
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<td><strong>IBM Maximo Multisite Administrator’s Guide</strong></td>
<td>Describes how to configure IBM Maximo for a Multisite implementation.</td>
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<tr>
<td>Document</td>
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<tr>
<td>IBM Maximo Online Help</td>
<td>Provides step-by-step procedures for IBM Maximo applications.</td>
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<tr>
<td><em>IBM Maximo Reconciliation Module</em></td>
<td>Describes how to use the IBM Maximo Reconciliation module to reconcile the two types of information that IBM Maximo maintains about information technology (IT) assets:</td>
</tr>
<tr>
<td><em>Implementation Guide</em></td>
<td>▪ IT asset data</td>
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<td>▪ Deployed asset data</td>
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<tr>
<td><em>IBM Maximo Report Administration and Development Guide</em></td>
<td>Describes how to use Actuate to design and administer IBM Maximo reports.</td>
</tr>
<tr>
<td><em>IBM Maximo System Administrator’s Guide</em></td>
<td>Describes database configuration, security, and other administrative level applications and tasks.</td>
</tr>
<tr>
<td><em>IBM Maximo User’s Guide</em></td>
<td>Provides an overview of the IBM Maximo end-user applications. It also describes how the IBM Maximo applications interact with each other.</td>
</tr>
<tr>
<td><em>IBM Maximo Workflow Implementation Guide</em></td>
<td>Provides information about how to use IBM Maximo to plan, design, build, test, implement, and manage Workflow processes.</td>
</tr>
<tr>
<td><em>IBM Maximo Enterprise Adapter (MEA)</em></td>
<td>Describes how to configure and use the IBM MEA.</td>
</tr>
</tbody>
</table>

**IBM Support**

IBM Software Support provides assistance with product defects.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. For information about the types of maintenance contracts available, see "Enhanced Support," in the *Software Support Handbook* at techsupport.services.ibm.com/guides/services.html.

Complete the following steps to contact IBM Software Support with a problem:

1. Define the problem, gather background information, and determine the severity of the problem. For help, see the "Contacting IBM," in the *Software Support Handbook* at techsupport.services.ibm.com/guides/beforecontacting.html.

2. Gather diagnostic information.
3 Submit your problem to IBM Software Support in one of the following ways:

a Online: Click **Submit and track problems** on the IBM Software Support site at [www.ibm.com/software/support/probsub.html](http://www.ibm.com/software/support/probsub.html).

b By telephone: For the telephone number to call in your country, go to the Contacts page of the IBM Software Support Handbook at [techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html).

If you submit a problem that is a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail.

Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.
This guide takes you through the steps to install Utilities or Spatial Asset Management on a pre-configured Maximo 6.2.1 system.

This chapter describes what you must know before installing the applications and briefly describes the features provided by the Utilities and Spatial Asset Management applications.

The Utilities CD contains 12 Actuate reports. For information about how to install the reports, see “Installing the Actuate Encyclopedia for Utilities” on page 4-1. The Spatial Asset Management CD does not contain any reports.

### Installation Qualifications

Installing Utilities or Spatial Asset Management requires system administrator rights and privileges, and a system administrator. To install Utilities or Spatial Asset Management, be familiar with the following tasks and technology:

- PC installation tasks, such as creating folders, editing files, and running scripts
- Utilities such as Enterprise Manager® or any database editor such as SQL*Plus for IBM DB2® or Oracle® database servers
- RDBMS system administration privileges

### System Requirements

Ensure that you have the following software before beginning the installation procedure.

**Software Requirements:**

- ArcGIS® Server 9.2 Service Pack 3
- ArcGIS Server 9.2 Java Web ADF Usability Update Patch
- ArcSDE® 9.2 Service Pack 3
- DB2 9.1
- Oracle 10gR2
- WebSphere 6.1.0.7
- Microsoft Internet Explorer 7
Utilities Overview

**NOTE** If you are an existing customer running Maximo 6.2.1 with WebSphere 6.0.2, install WebSphere 6.1.0.7 to support Maximo for Utilities 6.3 and Maximo Spatial Asset Management 6.3. For information about migrating to WebSphere 6.1.0.7, see “Feature Pack for Web Services: Using the Migration wizard to migrate product services” at http://publib.boulder.ibm.com/infocenter/wasinfo/v6r1/index.jsp?topic=com.ibm.websphere.wsfep.multiplatform.doc/info/ae/ae/tmig_wiz.html.

**NOTE** If you are a new Maximo customer, for information about installing WebSphere 6.1.0.7, see “Network Deployment: Installing the product and additional software” at http://publib.boulder.ibm.com/infocenter/wasinfo/v6r1/index.jsp?topic=com.ibm.websphere.nd.doc/info/ae/ae/tins_install.html.

Client Workstation

The client workstation screen resolution must be set to 1280 by 1024 pixels for the Open Map and Edit Map Features dialog boxes to work in the GIS applications.

If users' workstations will not be set to 1280 by 1024 pixels, edit presentation files to change the settings for the dialog boxes. For information about editing the files, see “Optional: Edit Presentation Files for Dialog Box Size” on page 3-12.

Utilities Overview

Utilities provides features to create, manage, and assign crews, and to create compatible unit (CU) records and perform estimates for CU work. Utilities includes applications enhanced with geographic information system (GIS) features and functions. Use GIS-enabled applications to create, view, and manage spatially-enabled assets, locations, service requests, and work orders.

Utilities provides these capabilities in the following new and cloned applications:

- Assets (T&D)
- Crew Management (T&D)
- Crew Types (T&D)
- CU Estimating (T&D)
- CU Library (T&D)
- GIS Admin (T&D)
- Locations (T&D)
- Service Requests (T&D)
- Work Order Tracking (T&D)

In order to support the Utilities applications, Maximo contains the following cloned applications:

- Assignment Manager (T&D)
- Job Plans (T&D)
- Labor Reporting (T&D)
- Organizations (T&D)
- Purchase Contracts (T&D)
- Quick Reporting (T&D)
NOTE Utilities-specific application names contain “(T&D)”. T&D stands for “transmission and distribution.”

If you customized any of the core Maximo applications that the clones are based on, you must make the same customizations to the cloned applications after you install Utilities.

Spatial Asset Management Overview

Spatial Asset Management provides capabilities for creating and managing assets, locations, work orders, and service requests within a geospatial context.

Spatial Asset Management provides these capabilities in the following new and cloned applications:

- Assets (T&D)
- GIS Admin (T&D)
- Locations (T&D)
- Service Requests (T&D)
- Work Order Tracking (T&D)

Spatial Asset Management contains the following cloned applications:

- Assignment Manager (T&D)
- Job Plans (T&D)
- Labor Reporting (T&D)
- Organizations (T&D)
- Purchase Contracts (T&D)
- Quick Reporting (T&D)

NOTE Spatial Asset Management application names contain “(T&D)”. T&D stands for “transmission and distribution.” The spatial-enhanced application names contain (T&D) because they are also included in the Utilities industry solution. Spatial Asset Management does not include Crew Management (T&D), Crew Types (T&D), CU Estimating (T&D), or CU Library (T&D). The cloned applications have additional fields to support those crew and CU-related applications contained in Utilities. You can hide these fields that do not pertain to the GIS-enhanced applications.

If you customized any of the core Maximo applications that the clones are based on, you must make the same customizations to the cloned applications after you install Spatial Asset Management.
Installing Utilities or Spatial Asset Management

This chapter describes how to install and configure Utilities or Spatial Asset Management and provides important information that you must know before installing Utilities or Spatial Asset Management.

Installation Checklist

This checklist provides an overview of the installation process. Detailed instructions begin on the next page.

CAUTION

Perform this update in a test environment before updating your production environment.

[ ] 1 Determine current software version.

[ ] 2 Stop the Maximo application servers and services.

[ ] 3 Back up your entire <Maximo> folder.

[ ] 4 Back up your database.

[ ] 5 Install Utilities or Spatial Asset Management.

[ ] 6 Install Maximo Utilities License Files or Maximo Spatial Asset Management License Files.

[ ] 7 Rebuild the EAR files.
Installation Procedures

The following procedures explain how to install Utilities and Spatial Asset Management.

Determine Current Software Version

Your Maximo system must include Maximo 6.2.1 before you install Utilities or Spatial Asset Management. Your installation of Maximo 6.2.1 must be running on WebSphere 6.1.0.7.

Stop the Maximo Application Server

Before you install Utilities or Spatial Asset Management, have all users exit Maximo. Stop all Maximo Application servers and services, and exit all other programs.

Create Backups

Before you install Utilities or Spatial Asset Management, back up both your entire <Maximo> folder and your database.

Install Utilities or Spatial Asset Management

NOTE If you have multiple Maximo folders or directories, install Utilities or Spatial Asset Management once for each Maximo folder or directory.

To do this task, complete the following steps:

1 Insert the Utilities CD or Spatial Asset Management CD into the CD-ROM drive.

2 Browse the CD-ROM and choose one of the following actions:
   ▼ To install Utilities, select installs/utilities and run utilities63.exe.
   ▼ To install Spatial Asset Management, select installs/sam and run mxessam63.exe.

3 Follow the on-screen instructions.

NOTE Installation stops if Maximo 6.2.1 has not been installed.

4 To ensure that you are running the latest release, run the PowerUpdate utility toward the end of the installation. The PowerUpdate program checks for and retrieves available updates.

5 Open a DOS window and change directory to <Maximo>/tools/maximo.

6 Run updatedb.bat to update your database with the changes that Utilities requires.
Install Maximo License Files

Load the Maximo Utilities Product Enabler CD or the Maximo Spatial Asset Management Product Enabler CD and run setup.exe to install the required license files.

Build EAR Files

Rebuild your maximo.ear and maximohelp.ear files. Update your maximo.properties file before you build the EAR files. For information about building EAR files, refer to your IBM Maximo Installation Guide.

Restart the Application Server and Deploy EAR Files

Restart the Maximo application server and redeploy your EAR files in order for Utilities or Spatial Asset Management to be available to users. For information about deploying EAR files, refer to your IBM Maximo Installation Guide.

NOTE The IBM Maximo Installation Guide documents installing Maximo 6.2.1 running on WebSphere 6.0. Utilities and Spatial Asset Management require WebSphere 6.1.0.7. Due to the later version of WebSphere, when you complete the steps in the section “Deploying the EAR Files” in the IBM Maximo Installation Guide, omit steps 2, 5, 6, 7, 9, and 10, as they are not applicable and do not exist for WebSphere 6.1.0.7. Those steps apply only to WebSphere 6.0.
This chapter describes how to use ArcGIS Server Manager and the XML tool to configure and add GIS functionality to certain applications in Utilities and Spatial Asset Management.

If you are implementing the GIS applications with Utilities, or implementing Spatial Asset Management, follow the procedures in this chapter to provide GIS functionality in Assets (T&D), Locations (T&D), Service Requests (T&D), and Work Order Tracking (T&D).

If you are implementing Utilities and do not wish to add the GIS-enabled applications, do not perform the procedures described in this chapter.

### Configuration Checklist

This checklist provides an overview of the configuration process. Detailed instructions begin on the next page.

1. Use ArcGIS Server Manager to create a web application, add services and tasks, and configure GIS functionality.
2. Save the generated web application and extract the faces-config.xml file from WEB-INF folder.
3. Use the xml tool to modify the maximo faces-config.xml.
4. Modify the maximo.properties file.
5. Rebuild the EAR files.
6. Use ArcCatalog and ArcMap to add columns to GIS tables, join tables, and define map labels.
7. Use Maximo applications to enable GIS functionality and activate relationships between GIS feature classes and Maximo tables.

### Configuration Procedure Using ArcGIS Server Manager

Complete the following procedures with ArcGIS Server Manager. You use the GIS Server Manager to configure web applications, define services and tasks, and configure properties for each of the tasks. The generated web application and its configuration parameters determine the content and presentation on the Map tab in the GIS-enabled applications.
Perform the configuration procedure to use the GIS-enabled applications. If the GIS administrator adds features to the database after you complete the steps in this chapter, and wants those features to be available for editing in the T&D applications, you must complete the configuration process again.

There are seven web pages of tasks using ArcGIS Server Manager. In the following instructions, you perform each task on the specified numbered web page. The web page number is displayed in the upper-right corner of the ArcGIS Server Manager page, as “page 1 of 7,” “page 2 of 7,” and so on. The beginning of each of the following procedures indicates the corresponding web page on which you perform the described steps.

For more information about using ArcGIS Server Manager, see your ArcGIS documentation.

**Create a Web Application**

To create a web application, complete the following steps:

1. Log in to ArcGIS Server Manager.
2. Click the Applications tab.
3. Click **Create Web Application**. Page 1 of 7 of ArcGIS Server Manager opens.
4. In the **Web application Name** field, type a name for the application.
5. In the **Description** field, type a description of the application.
6. Click **Next** to proceed to page 2 of 7 in ArcGIS Server Manager.

**Choose Map Services**

To choose map services, complete the following steps on page 2 of 7 in the ArcGIS Server Manager.

**NOTE** For information on creating a map service, refer to your ArcGIS Server Manager documentation. You must create map services before you can choose them

2. In the **Type** field, select the network where your GIS server is installed.
3. In the **Host** field, enter the name of the host where your GIS server is installed.
4. Perform either of the following actions:
   - To authenticate using the currently logged in user name and password, select the **Use logged in user's credentials** checkbox.
To authenticate using a different set of credentials, enter values in the User name, Password, and Domain fields.

5 Click OK. The Add GIS Server dialog box closes. The Available Services box displays a list of map services that have been developed and configured to work with ArcGIS Server.

6 In the Available Services box, select the pooled service and click Add. The pooled service is displayed in the Selected Services box.

**NOTE** Configure at least one pooled service to use as the primary resource for the map display on the Map tab in the GIS-enabled applications. If your implementation supports versioned editing, configure one non-pooled service to use for editing a version. For information about configuring pooled and non-pooled services, see the ArcGIS Server documentation.

7 If you want to add a non-pooled service, select it from the Available Services list and click Add.

**NOTE** Make sure that the pooled service remains at the top of the Selected Services list.

8 Click Next to proceed to page 3 of 7 in ArcGIS Server Manager.

**Add Tasks**

To add tasks, complete the following steps on page 3 of 7 in the ArcGIS Server Manager:

1 Click the Select tab. The Available Tasks box lists tasks you can add to the web application.

2 In the Available Tasks box, select Find Address and click Add. Find Address1 is displayed in the Current Tasks list.

3 In the Available Tasks box, select Editing and click Add. Editing1 is displayed in the Current Tasks list.

4 If your configuration supports versioned editing, in the Available Tasks box, select Editing and click Add. Editing2 is displayed in the Current Tasks list.

5 Click the Supporting Resources tab.

6 In the Available Services box, expand the tree for the GIS server.

7 Select the geocode service to use with the Find by Address task and click Add. The geocode service is displayed in the Selected Services box. For information on how to configure and create geocode services, refer to the ArcGIS Server documentation.

8 Click Next to proceed to page 4 of 7 in ArcGIS Server Manager.
Configure Tasks

To configure the Find Address task, complete the following steps on page 4 of 7 in the ArcGIS Server Manager:

Find Address

1. In the **Configure Task** field, select Find Address1 from the dropdown menu.

2. In the **Supporting Resource** field, select the geocode service that you selected in step 7 of the **Add Tasks** procedure.

3. Click **Apply**.

Editing

To configure the Editing task, complete the following steps on page 4 of 7 in the ArcGIS Server Manager:

1. In the **Configure Task** field, select Editing1 from the dropdown menu. Editing1 is the task for non-versioned editing on the Map tab.

2. In the **Task Name** field, change the name to Editing.

**NOTE** The task name must be Editing, not Editing1, in order for the configuration utility to find the task.

3. In the **Service** field on the General tab, select the pooled service from the dropdown menu.

4. In the **Edit Data In** field, select the connection used by the service that you want to edit from the drop-down menu.

5. The Editable Layers scroll list displays all of the non-versioned layers in the selected service. Select the check box for each layer that you want to allow the user to edit.

6. Click the Settings tab to configure system-wide editing settings.

7. To configure the types of allowable edits, select the check box for each type of edit users can perform: **Add Features**, **Edit Attributes**, and **Edit Features**.

8. To set tolerances and colors for highlights and vertices, enter values in the **Tolerance**, **Snapping Tolerance**, **Highlight Color**, and **Vertices Color** fields.

**NOTE** The tolerances, colors, and snapping rules that you select are system-wide default settings. However, in the Settings dialog box in the GIS-enabled Maximo applications, users may change these settings to apply to their current session.

9. Click **Apply**.
Versioned Editing

To configure the Versioned Editing task, complete the following steps on page 4 of 7 in the ArcGIS Server Manager:

1. In the Configure Task field, select Editing2 from the dropdown menu.

**NOTE**
Configure versioned editing only if your implementation allows users to edit the DEFAULT version of the map.

Use the Security Groups application to select the options you want to make available to users. To let users perform Versioned Editing, select the Grant Access checkbox for “Edit Map Features” for each spatial-enabled application. For more information about Security Groups, see Security Groups help.

2. In the Task Name field, change the name to Versioned Editing.

**NOTE**
The task name must be Versioned Editing, not Editing2, in order for the configuration utility to find the task.

3. In the Service field on the General tab, select the non-pooled service from the dropdown menu.

4. In the Edit Data In field, select the connection used by the service that you want to edit from the drop-down menu.

5. In the Editable Layers scroll list, select the check box for each layer that you want to let the user edit.

**NOTE**
The editable layers that you select are system-wide default settings. However, in the Settings dialog box in the GIS-enabled Maximo applications, users may change which layers are editable and which layers are not editable.

6. In the Editable Versions list, select the check box for each version that you want to let the user edit.

7. Click Apply.

8. Click the Settings tab to configure system-wide editing settings.

9. To configure the types of allowable edits, select the check box for each type of edit users can perform: Add Features, Edit Attributes, and Edit Features.

10. To set tolerances and colors for highlights and vertices, enter values in the Tolerance, Snapping Tolerance, Highlight Color, and Vertices Color fields.

**NOTE**
The tolerances, colors, and snapping rules that you select are system-wide default settings. However, in the Settings dialog box in the GIS-enabled Maximo applications, users may change these settings to apply to their current session.

11. Click Apply.

12. Click the Advanced tab.
Configuration Procedure Using ArcGIS Server Manager

13 To set the Reconcilement Policy for the system to use for versioned editing, select either Parent Win or Child Win. To determine row or column precedence, select either Row Level or Column Level.

NOTE To make the appropriate Reconcilement Policy selections, see your GIS administrator for the business rules for reconciling and posting database changes.

14 Click Apply.

15 Click Next to proceed to page 5 of 7 in ArcGIS Server Manager. There is no action required on page 5 of 7.

16 Click Next to proceed to page 6 of 7 in ArcGIS Server Manager.

Name Web App, Review Configuration, and Save

To name the app, review the configuration, and save it, complete the following steps on page 6 of 7 in the ArcGIS Server Manager:

1 In the Title text field, type a name for the web application.

2 Click Next. The system displays the configuration.

3 Click Save Web App to save the application and proceed to page 7 of 7 in ArcGIS Server Manager.

NOTE If you need to make any changes, click Previous until you reach the appropriate tab to make the edits, then click Next until you return to this page to save the application.

Export, Save, and Extract

To export the application, save the file, and extract the folder, complete the following steps on page 7 of 7 in the ArcGIS Server Manager and in your file management system:

1 Select the check box for the web application you created and click Export.

2 In the File Download dialog box, click Save.

3 Save the compressed folder to your file system.

4 Open the compressed folder.

5 Extract the WEB-INF folder to the file system. This folder contains the faces-config.xml file that has all the configurations you registered using the ArcGIS Server Manager.
Merge faces-config.xml Files Using the XML Tool

To use the generated GIS faces-config.xml file in the GIS-enhanced applications, use the xml tool to merge the generated GIS faces-config.xml file with the Maximo default faces-config.xml file. The xml tool updates, adds, and deletes nodes in the Maximo faces-config.xml file based on nodes in the generated GIS faces-config.xml file.

To merge the two faces-config.xml files, complete the following steps:

1. Before you run the xml tool, back up your Maximo faces-config.xml file.

2. Run the following script:

```
[maximo]\tools\maximo\tnd-facesxmltransform.bat
```

Usage: `-s<source faces-config.xml file> -o<output faces-config.xml file (optional)>

where [maximo] is where Maximo is installed on your system.

Default Parameter Values:

- `o`: `[maximo]\tools\maximo\output-faces-config.xml`

3. Replace the Maximo faces-config.xml with the newly generated file in:

```
[maximo]\applications\maximo\maximouiweb\webmodule\WEB-INF
```

Modify the maximo.properties File

Before you start Utilities or Spatial Asset Management, set GIS properties in the maximo.properties file.

To set GIS properties in the maximo.properties file, complete the following steps:

1. In Windows Explorer, navigate to:
   `<Maximo_root_directory>\applications\maximo\properties`.

2. Open the maximo.properties file with a text editor.

3. At the end of the maximo.properties file, add the following properties:

```
//GIS Related properties
mxe.spatial.arcgis.server=<server>
mxe.spatial.arcgis.domain=<domain>
mxe.spatial.arcgis.username=<username>
```
// password for gisserver
mxe.spatial.arcgis.password=<password>

// your Map Service name as set in ArcGIS Server Manager
mxe.spatial.arcgis.mapobject=<mapservice>

// name of your server where ArcSDE is running
mxe.spatial.arcgis.server=<sdeserver>

// database user account for sde
mxe.spatial.arcsde.username=<dbuser>

// database password for database user account
mxe.spatial.arcsde.password=<dbpassword>

// the service_name for ArcSDE in windows or port number, port number must be used when ArcSDE is remote to the ArcGIS Server
mxe.spatial.arcsde.instance=<esri_sde OR port>

// name of database, set as default for oracle as it does not apply
mxe.spatial.arcsde.database=<databasename>

// sde version to connect
mxe.spatial.arcsde.version=<sdeversion>

4  Save and close the maximo.properties file.

Rebuild and Redeploy the EAR File

After modifying the properties file, rebuild and deploy the EAR files. For information about deploying EAR files, refer to your IBM Maximo Installation Guide.

To rebuild and redeploy EAR files, complete the following steps:

1  Rebuild your maximo.ear and maximohelp.ear files.

2  Restart the Maximo application server and redeploy your EAR files.

Edit Feature Class Properties and Layer Properties

Use ArcCatalog to add columns to the feature class tables. Adding columns lets the GIS administrator activate relationships between GIS and Maximo tables. Use ArcMap to join GIS and Maximo tables. Once tables are joined, users can query GIS features and Maximo records in the Query by Attribute dialog box on the Map tab. You also can change the labels on the map in ArcMap to reflect Maximo attribute values for linked GIS features.

Edit the GIS Schema

Edit the GIS database to link GIS feature classes to the Maximo database. For each GIS feature class that you want to link to a Maximo table, you must add two columns.

To add columns, complete the following step:

1  Start ArcCatalog.

2  Expand the Database Connections node in the left pane.
3 Select your database. (For example, gisowner localhost.sde.)

4 Double-click the feature class that you want to link to the Maximo database. The Feature Class Properties dialog box opens.

5 Use the values in the following table to add two columns to each feature class that you want to link to a Maximo table.

Maximo Tables and Corresponding GIS Schema Values

<table>
<thead>
<tr>
<th>To link the feature class to the following Maximo table</th>
<th>Add these two values in the Field Name field</th>
<th>Select the following Data Type values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSET</td>
<td>MXCREATIONSTATE</td>
<td>Short Integer</td>
</tr>
<tr>
<td></td>
<td>MXASSETUID</td>
<td>Long Integer</td>
</tr>
<tr>
<td>LOCATION</td>
<td>MXCREATIONSTATE</td>
<td>Short Integer</td>
</tr>
<tr>
<td></td>
<td>MXLOCATIONSID</td>
<td>Long Integer</td>
</tr>
<tr>
<td>WORKORDER</td>
<td>MXCREATIONSTATE</td>
<td>Short Integer</td>
</tr>
<tr>
<td></td>
<td>MXWORKORDERID</td>
<td>Long Integer</td>
</tr>
<tr>
<td>TICKET</td>
<td>MXCREATIONSTATE</td>
<td>Short Integer</td>
</tr>
<tr>
<td></td>
<td>MXTICKETUID</td>
<td>Long Integer</td>
</tr>
</tbody>
</table>

6 Repeat steps 4-7 for each feature class that you want to link to the Maximo database.

7 Click OK to close the dialog box.

Join GIS and Maximo Database Tables

The Query by Attribute dialog box on the Map tab in the GIS-enabled applications supports queries against both the GIS and Maximo database tables, if the tables are joined.

To join GIS and Maximo database tables, complete the following steps:

1 Open ArcMap.

2 In the left pane, double-click the layer that you want to join to a Maximo table. (For example, Distribution Tx OH.) The Layer Properties dialog box opens.

3 On the Joins and Relates tab, in the Joins section, click Add. The Join Data dialog box opens.

4 In the **Choose the field in this layer that the join will be based on** field, select the GIS database field you want to use. (For example, OBJECTID.)
Set Up GIS Functionality

5 In the Choose the table to join to this layer field, browse to select the Maximo table that you want to use. (For example, MAXIMO.ASSET.)

6 In the Choose the field in the table to base the join on field, select the Maximo database field that you want to use. (For example, ASSETUID.)

7 Click OK to close the Add dialog box.

8 Click OK to close the Layer Properties dialog box.

Set Label Properties for Map Views

After the GIS and Maximo database tables are joined, you can set layer properties to use Maximo attribute values as labels for the record’s matching GIS feature.

To set label properties, complete the following steps:

1 In ArcMap, in the left pane, select the layer whose label properties you want to change. The Layer Properties dialog box opens.

2 On the Labels tab, in the Label Field, select the Maximo table and column that has the values you want to use. (For example, MAXIMO.ASSET.ASSETNUM).

3 You can change the Text Symbol values.

4 Click OK to close the Layer Properties dialog box.

Set Up GIS Functionality

Use the Organizations (T&D) and GIS Admin (T&D) applications to enable GIS and activate relationships between the GIS features and the Maximo database tables.

Enable GIS Functionality

Use the Organizations (T&D) application to enable GIS functionality. Enabling GIS functionality lets users view the Map tab and use GIS-related actions in Assets (T&D), Locations (T&D), Service Requests (T&D), and Work Order Tracking (T&D).

1 Launch Maximo.

2 Enter your User Name and Password and click Sign In.

3 From the Start Center, select Go To > Administration > Organizations (T&D).

4 Select any organization from the List tab.
Set Up GIS Functionality

5 From the Select Action menu, select **GIS System Settings**. The GIS System Settings dialog box opens.

6 To enable GIS functionality, select the **GIS Enabled?** option.

7 Click **OK** to close the dialog box.

Relate Feature Classes to Maximo Tables

Use the GIS Admin (T&D) application to activate relationships between GIS feature classes and Maximo database tables. The relationships are set up in an inventory of production GIS feature classes. Each feature class is defined as related to one of the following: MX Asset, MX Location, MX Service Request, or MX Work Order. The following procedure activates the relationships.

To activate relationships, complete the following steps:

1 From the Maximo Start Center, click Go To > Administration > GIS Admin (T&D). The GIS Admin (T&D) application opens.

2 On the GIS Admin (T&D) single-page application, click **New Row**.

3 In the **Feature Class** field, click Select Value. The Select Value dialog box opens.

4 Click **Refresh** to import the feature classes from the server. The system loads the feature classes in the Select Value dialog box.

**NOTE** If feature class values do not appear in the Select Value dialog box, check to make sure the server is running and check the properties in the maximo.properties file.

5 Select the feature class you want to activate and click **OK**. The Select Value dialog box closes. Maximo populates the **Table Name** field with the valid Maximo database table name for the GIS feature class you selected.

6 Repeat steps 3-5 for each feature class you want to activate.

7 Click **Save**.

Grant Access to Versioned Editing

Use the Security Groups application to grant access to versioned editing. Versioned editing is accessed through the Edit Map Features action. For more information about Security Groups, see Security Groups help.

To grant access to versioned editing, complete the following steps:

1 From the Maximo Start Center, click Go To > Security > Security Groups. The Security Groups application opens.

2 On the List tab, select the group to which you want to grant privileges.
Set Up GIS Functionality

3  On the Applications tab, in the Applications table window, select the application (Assets (T&D), Locations (T&D), Service Requests (T&D), or Work Order Tracking (T&D)).

4  In the Options table window, select the **Grant Access?** checkbox for Edit Map Features.

5  Click Save Group.

6  Repeat steps 3-5 for each application in which you want versioned editing available to users.

Optional: Edit Presentation Files for Dialog Box Size

Complete the following procedure only if users are not going to be working with the recommended screen resolution of 1280 by 1024 pixels. The Edit Map Features and Open Map dialog boxes are configured for 1280 by 1024. If users will be working with a different resolution, these dialog boxes will be unusable.

**Dialog Box Width and Height Specifications**

<table>
<thead>
<tr>
<th>If workstation resolution is</th>
<th>Set width to</th>
<th>Set height to</th>
</tr>
</thead>
<tbody>
<tr>
<td>800x600</td>
<td>“720”</td>
<td>“261”</td>
</tr>
<tr>
<td>1024x768</td>
<td>“944”</td>
<td>“429”</td>
</tr>
<tr>
<td>1400x1050</td>
<td>“1320”</td>
<td>“711”</td>
</tr>
<tr>
<td>1600x1200</td>
<td>“1520”</td>
<td>“861”</td>
</tr>
</tbody>
</table>

To change the size of the dialog boxes, complete the following steps:

1  Browse to the presentations folder.

2  To change the size of the Edit Map Features dialog box, modify the “width” and “height” attribute values in the line containing:

   "<dialog id="plusdeditm"

   in the following files. Refer to the Dialog Box Width and Height Specifications table for attribute values.

   ▼ resources\presentations\plusdasset.xml
   ▼ resources\presentations\plusdloc.xml
   ▼ resources\presentations\plusdsr.xml
   ▼ resources\presentations\plusdwotrack.xml

3  To change the size of the Open Map dialog box, in the resources\presentations\system\library.xml file, modify the “width” and “height” attribute values in lines starting with the following code. Refer to the Dialog Box Width and Height Specifications table for attribute values.

   "  <dialog id="plusd_servicerequest_map_dialog"  
   "  <dialog id="plusd_workorder_map_dialog"  
   "  <dialog id="plusd_asset_map_dialog"  

4 Login to the Maximo application and go to:

http://maximoserver:portnumber/maximo/webclient/utility/import.jsp,
where maximoserver is replaced with the appropriate server name and
portnumber is replaced with the correct port number. (The default port
number is 7001.)

5 Import the presentation files on the Import page.

Your Utilities or Spatial Asset Management implementation is now available
for creating features and using maps.
This chapter describes how to install the Actuate Encyclopedia for your Utilities installation.

If you are implementing Spatial Asset Management, do not perform the steps described in this chapter. There are no reports specific to Spatial Asset Management.

Actuate Installation Checklist

The following checklist provides an overview of the installation process. Detailed instructions begin on the next page.

**CAUTION** Install the Actuate Encyclopedia in a test environment before you install to your production environment.

[ ] 1 Back up your report encyclopedia folder.

[ ] 2 Run the Utilities reports installation.

[ ] 3 Take the Actuate Reports Volume offline.

[ ] 4 Import the Utilities Encyclopedia.

[ ] 5 Bring the Actuate Reports Volume online.

Installation Procedure

The procedure described below explains how to install the Encyclopedia for Utilities.

Install Utilities

Install Utilities before you install the Actuate reports. For more information, see “Installation Checklist” on page 2-1

Back Up Report Encyclopedia

Back up your report encyclopedia before installing the Utilities reports.
Installation Procedure

Installing Reports

To install reports, complete the following steps:

1. Insert the Utilities CD into the CD-ROM drive on the computer where Actuate iServer is installed.

2. In the installs\reports folder, browse the folder that matches with the name of your operating system and run the executable file.

3. Follow the on-screen instructions.

**NOTE** If you choose IBM DB2® Universal Database 8.2.7 as the database type, the reports Encyclopedia is installed under the folder <ACTUATE8>/utilities/db2_export/export, where <ACTUATE8> is the folder where Actuate 8.3 is installed on your computer.

If you choose Oracle as the database type, the reports Encyclopedia is installed under the folder <ACTUATE8>/utilities/oracle_export/export, where <ACTUATE8> is the folder where Actuate 8.3 is installed on your computer.

4. If your Maximo and Actuate iServers are running, shut them both down.

5. Restart Maximo Server and then restart the Actuate iServer.

Take Actuate Reports Volume Offline

After completing the preceding procedure, complete the following steps:

1. Log in to Actuate Management console (acadmin console) as System Administrator.

2. Click **Stop** to take Reports Volume offline.

**CAUTION** Do not shut down the Actuate Service.

Import Utilities Encyclopedia

Use the appropriate procedure to import the Encyclopedia for Utilities.

**NOTE** For more information about importing reports, see "Importing the Encyclopedia" in your *IBM Maximo Installation Guide*.

**AIX**

To install the Utilities Encyclopedia on AIX®, complete the following steps:

1. Open a shell window.

2. In this shell set the following environment variables:

**Example**

CLASSPATH="<PathToActuate8Folder>/bin/iServer.jar:<PathtoActuate8Folder>/bin"
For example:
CLASSPATH="/home/mxadmin/AcServer/bin/iServer.jar:/home/mxadmin/AcServer/bin"
export CLASSPATH

a LIBPATH="<PathToActuate8Folder>/lib" for example:
LIBPATH="/home/mxadmin/AcServer/lib"
export LIBPATH

b ICU_DATA="<PathToActuate8Folder>/lib" for example:
ICU_DATA="/home/mxadmin/AcServer/lib"
export ICU_DATA

3 Change path to <ACTUATE8>/AcServer/bin folder.

4 Enter the following command to import the encyclopedia: 
   ./acimport -all -force -username <user_Maximo_Administrator> -password <pwd_Maximo_Administrator> -input <path to the exportfiles>

Example
./acimport -all -force -username maxadmin -password maxadmin -input /home/mxadmin/AcServer/utilities/db2_export/export

**Solaris**

To install the Utilities Encyclopedia on Solaris, complete the following steps:

1 Open a shell window.

2 Change path to <ACTUATE8>/AcServer/bin folder.

3 Enter the following command to import the encyclopedia:
   ./acimport -all -force -username <user_Maximo_Administrator> -password <pwd_Maximo_Administrator> -input <path to the exportfiles>

Example
./acimport -all -force -username maxadmin -password maxadmin -input /home/mxadmin/AcServer/utilities/db2_export/export

**Microsoft® Windows**

To install the Utilities Encyclopedia on Microsoft Windows, complete the following steps:

1 Open a DOS prompt.

2 Change path to <ACTUATE8>/iServer/bin folder.

3 Enter the following command to import the Encyclopedia:
   acimport -all -force -username <user_Maximo_Administrator> -password <pwd_Maximo_Administrator> -input <path to the exportfiles>

Example
acimport -all -force -username maxadmin -password maxadmin -input c:\Actuate8\iServer\utilities\db2_export\export
**Bring Actuate Reports Volume Online**

To bring Actuate Reports Volume online complete the following steps:

1. Login to Actuate Management console (acadmin console) as System Administrator.
2. Click **Start** to restart Reports Volume.

**Check Added Reports**

To check that the Utilities Encyclopedia has been successfully installed, open Actuate End User Desktop Application and look in the rpt folder.

The rpt folder contains the following new folders and reports:

<table>
<thead>
<tr>
<th>Folder Name</th>
<th>Report Name</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLUSDCUEST</td>
<td>Cost Distribution Summary</td>
<td>CU Estimating (T&amp;D)</td>
</tr>
<tr>
<td></td>
<td>Estimating Errors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Job Cost Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Property Additions and Retirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Services Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Station Details and Job Instructions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statistical Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Labor Summary</td>
<td></td>
</tr>
<tr>
<td>PLUSDWORKM</td>
<td>Assignment Manager Daily Crew</td>
<td>Assignment Manager (T&amp;D)</td>
</tr>
<tr>
<td>PLUSDWOTRK</td>
<td>Work Order Details</td>
<td>Work Order Tracking (T&amp;D)</td>
</tr>
</tbody>
</table>

To check the new reports are added to the Encyclopedia and users have access privileges, open the Actuate Management Console and check the settings.

For more information about reports, see the *IBM Maximo Report Administration and Development Guide*.

**NOTE**

As the Actuate Reports administrator, you must set up Actuate further to run reports properly.

For more information about enabling reports, refer to your *IBM Maximo Installation Guide*. 
Modify Reports

To modify the Actuate Reports for Utilities, you can copy the source files from the Utilities CD.

The report source is located in:

    installs/report_source
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