

Upgrade Guide
Maximo Releases 4.1.1 and 5 to IBM Maximo Release 6

Note

Before using this information and the product it supports, read the information in "Notices" on page Notices-1.

Sixth Edition (September 2010)

This edition applies to version 6 release 5 modification 1 of IBM Maximo Upgrade and to all subsequent releases and modifications until otherwise indicated in new editions.

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About This Publication

Related Documentation

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

Document	Description
<i>IBM Maximo Upgrade Planning Guide</i>	Describes the preparation and tasks for upgrading from Maximo 4.1.1 and 5 to Maximo 6.
<i>Screen Upgrade Tool User's Guide</i>	Describes how to use the Screen Upgrade Tool to upgrade the user interface from Maximo 5 to Maximo 6.
<i>IBM Maximo Application Designer Quick Start Guide</i>	Describes how to customize your IBM Maximo applications. If you use the Screen Upgrade Tool to upgrade your screens, you will use the Application Designer to make additional configurations and final adjustments.
<i>IBM Maximo 5 to 6 Readme File</i>	Describes how to install the Maximo 6.5.1.1 upgrade package in preparation for upgrading the Maximo 5 database to Maximo 6.
<i>IBM Maximo Installation Guide</i>	Describes how to install the 6.5.1.1 upgrade package in preparation for upgrading the Maximo 5 database to Maximo 6. ▼ Application server ▼ IBM Maximo
<i>IBM Maximo Multisite Administrator's Guide</i>	Describes how to configure IBM Maximo for a Multisite implementation.
IBM Maximo Online Help	Provides step-by-step procedures for IBM Maximo applications.

Document	Description
<i>IBM Maximo Reconciliation Module Implementation Guide</i>	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: <ul style="list-style-type: none"> ▼ IT asset data ▼ Deployed asset data.
<i>IBM Maximo System Administrator's Guide</i>	Describes database configuration, security, and other administrative level applications and tasks.
<i>IBM Maximo User's Guide</i>	Provides an overview of the IBM Maximo end-user applications. It also describes how the IBM Maximo applications interact with each other.

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 "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 the **Report problems** tab on the IBM Software Support site: 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 *Software Support Handbook*: techsupport.services.ibm.com/guides/contacts.html.

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

Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support web site daily, so that other users who experience the same problem can benefit from the same resolution.

Upgrading IBM Maximo



Important Upgrade Information

This guide is intended for customers involved in planning or executing the upgrade to Maximo 7. Upgrading through Maximo 6 is an intermediate step in the overall Maximo 7 upgrade process.

Maximo 6 is no longer available as of October 1, 2010. Please refer to the Maximo Upgrade Resources page (<http://www-1.ibm.com/support/docview.wss?rs=3214&uid=swg21266217>) for information on the 6 to 7 upgrade and the latest updates on upgrading to Maximo 7.

Installation Overview

For the purpose of this Maximo upgrade, install/uncompress the Maximo 6.5.1.1 Upgrade package on a Microsoft® Windows server. You install the application server (BEA WebLogic® or IBM WebSphere® Application Server) on a Microsoft Windows or UNIX® server. You deploy the EAR (enterprise archive) files on the server.

Typically, you install the Maximo upgrade on a powerful Windows server for best performance. After you upgrade, the Maximo 6 files can reside on any Windows administrative machine (it need not be a server).

As a general approach, you install/uncompress the Maximo 6.5.1.1 package on a dedicated server that is separate from the servers running Maximo 4.1.1 or 5. However, if you must reuse any computer to install your new Maximo 6 system components, refer to the following table for certain guidelines:

Summary of the Upgrade Flow

Where to Install Maximo 6 Components

Application	Install on same server where Maximo 5 components reside?	Comments
Maximo 6.5.1.1	No	Uncompress the Maximo 6.5.1.1 upgrade package onto only a Windows server.
BEA WebLogic	Yes	Use a different installation folder and different port numbers.
IBM WebSphere	No	Concurrent versions of WebSphere do not run on the same server.

For more information, refer to the Maximo 6 Upgrade Resources page online (<http://www-1.ibm.com/support/docview.wss?rs=3214&uid=swg21266217>) and review the supported software.

Summary of the Upgrade Flow

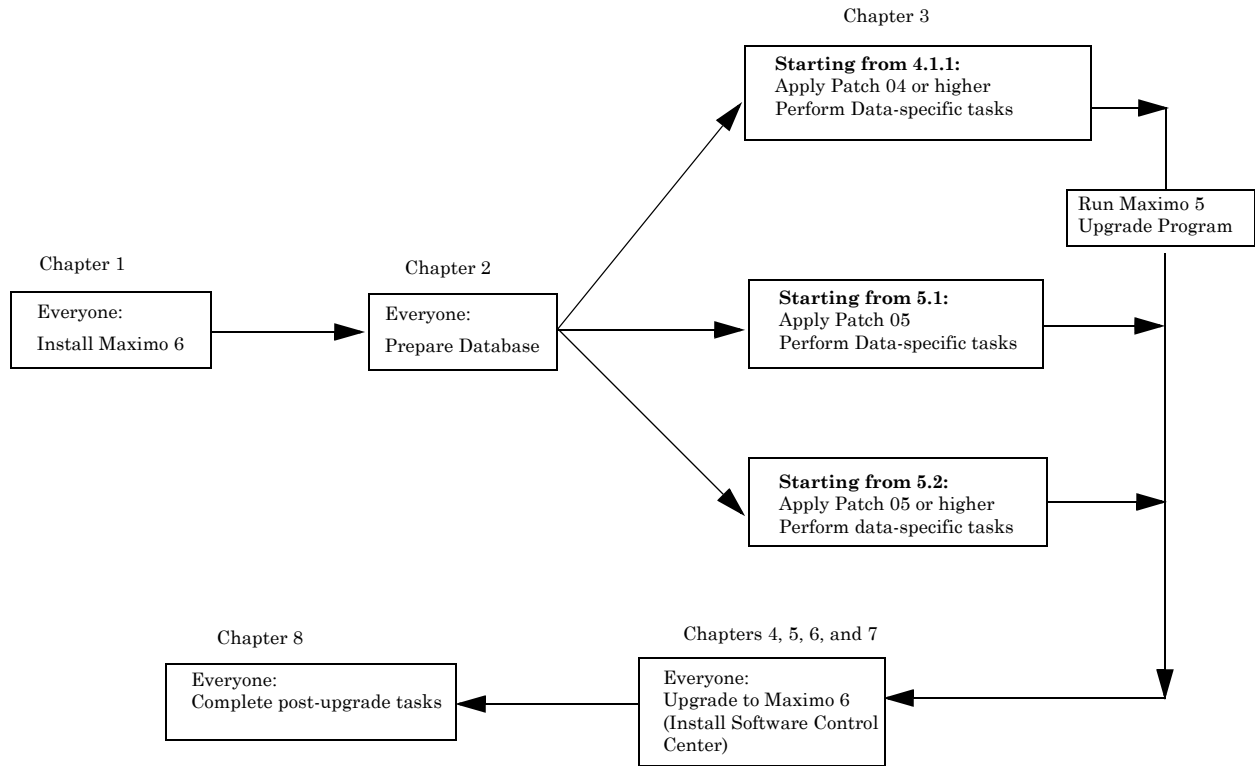
The following table details the general order and tasks that you must follow to upgrade successfully.

Current Release	Task	Comments
All	Install the Maximo 6.5.1.1 upgrade package and, if applicable, Release 6.4 of IBM Maximo Calibration and Release 6.3 of IBM Maximo for Transportation.	Refer to your <i>Maximo Installation Guides</i> provided on the documentation CD-ROM and the industry solution CDs.
All	Prepare the database.	Refer to Chapter 2 "Preparing the Database", on page 2-1.
4.1.1	Data-specific pre-upgrade tasks: <ol style="list-style-type: none">1 Update Maximo 4.1.1 to Patch 04 or later.2 Complete data-specific preparatory tasks.3 Process all Maximo Enterprise Adapter transactions.4 Run the Maximo 5.1 upgrade program.5 Go to Chapters 5 and 6 for details on upgrading Maximo 5 to 6.	Upgrading to Maximo 6 is a two-step process. <ol style="list-style-type: none">1 Run the MAX51UPG.exe program to install the Maximo 4 to 5 upgrade program.2 Run the max651upg.exe program to install the Maximo 6 upgrade program.

Current Release	Task	Comments
5.1	Data-specific pre-upgrade tasks: <ol style="list-style-type: none"> 1 Update Maximo 5.1 to Patch 05. 2 Complete data-specific preparatory tasks. 3 Process all Maximo Enterprise Adapter transactions. 4 Go to Chapters 5 and 6 for details on upgrading Maximo 5 to 6. 	Download and install the latest release's patch from the Maximo Asset Management product page (http://www-306.ibm.com/software/sysmgmt/products/support/IBMMaximoAssetManagement.html).
5.2	Data-specific pre-upgrade tasks: <ol style="list-style-type: none"> 1 Update Maximo 5.2 to Patch 05 or later. 2 Complete data-specific preparatory tasks. 3 Process all Maximo Enterprise Adapter transactions. 4 Go to Chapters 5 and 6 for details on upgrading Maximo 5 to 6. 	To upgrade from 5.2 to 6, you must be on Maximo 5.2 Patch 05 or later. If you are also upgrading Calibration or Transportation, core Maximo 5.2 must be at Patch 6 or later. If you are upgrading Transportation, you must be on Transportation 5.2 Release 2. If necessary, first upgrade from Transportation 5.2 Release 1 to 5.2 Release 2.
All	Upgrade from Maximo 5 to Maximo 6.	Chapters 5 and 6 outline this procedure.
All	Pausing and resuming the upgrade.	Learn how to make your upgrade process more efficient.
All	Post-upgrade tasks.	Refer to Chapter 8 for more details.

Upgrade Flowchart

The following flowchart describes the general order and tasks that you must follow to upgrade:



Install the Maximo 6.5.1.1 Upgrade Package

Before you continue with the pre-upgrade tasks in the following chapter, install Maximo 6.5.1.1 Upgrade package and its components.

If you plan to upgrade IBM Maximo Calibration or IBM Maximo for Transportation, you should also install Release 6.4 of Calibration or Release 6.3 of Transportation before you continue. For more information about how to install the industry solutions, see the *Calibration 6.4 Installation Guide* and the *Transportation 6.3 Installation Guide*.

Steps for Upgrading Maximo 5.1 and 5.2 to Maximo 6

Installing the Maximo 6.5.1.1 Upgrade package and performing the actual upgrade steps are covered in different chapters in this guide. The table that follows ties these steps together in the specific sequence that you should follow for upgrading from Maximo 5.1 and 5.2 to Maximo 6.

Steps for Upgrading Maximo 5 to Maximo 6

Step	Chapter
1 Install the Maximo 6.5.1.1 by unzipping the package on your Windows workstation. You must then edit the maximo.properties file with your Maximo 5.x database connection information.	Chapter 1
2 Install the latest patch version of the Maximo 6 upgrade program.	Chapter 4
3 Run the Maximo 6 upgrade program.	Chapter 6
4 If you plan to use the Maximo Screen Upgrade Tool to upgrade screen configurations that you made to Maximo 5.1 or 5.2 screens, run that program now. (See the <i>Screen Upgrade Tool User's Guide</i> for details).	Chapter 8
IMPORTANT If and when you use the Apply component of the Screen Upgrade Tool, you make changes to the database. It is important to use the Screen Upgrade Tool at this point in the sequence of upgrade steps.	
5 Run updatedb.bat.	Chapter 8
6 Download and install the latest Maximo 6.2.x fixpack for the correct version of Maximo 7.1.1.x. These upgrade utilities and scripts will upgrade the database to Maximo 6.2.5.	Chapter 8
NOTE The fixpack level numbers are one number ahead for Maximo 7. For example, if Maximo 7.1.1.7 is the latest Maximo 7.1.1.x release (the final 7 being the fixpack level), then install the Maximo 6.2.6 fixpack.	

What the Upgrade Supports and Does Not Support

Before you begin the upgrade, it is important to understand what the upgrade program supports and what it does not support.

What the Upgrade Supports

Release 6.5.1.1 of the upgrade supports the upgrade of the following elements of your Maximo system:

- ▼ All data
- ▼ Any configurations that you performed with the Maximo configuration tools
- ▼ Data model
- ▼ User interface and presentation layer
- ▼ Workflow processes
- ▼ Data validations and defaults
- ▼ Integration definitions
- ▼ Escalations
- ▼ The following Maximo industry solutions:
 - Maximo Calibration
 - Maximo Oil & Gas
 - Maximo Pharmaceuticals
 - Maximo Transportation

What the Upgrade Does Not Support

Release 6.5.1.1 of the upgrade does not support upgrading of the following possible elements of your system:

- ▼ Any changes to the Maximo database schema that were not made with the Maximo Database Configuration application.
- ▼ Any changes that you made to Maximo database objects (tables, columns, indexes, and so on) that were not made with the Database Configuration application. Changes made outside of Database Configuration are not upgraded to the Maximo 6 database.
- ▼ Any database objects that you created (including stored procedures, triggers, views, and synonyms) that are dependent on Maximo database objects. These objects are not recreated by the upgrade.
- ▼ Customizations to Maximo code such as changes or additions to Java code, Java applets, JavaScript, and HTML.

The addition of a Maximo option might include changes to the Maximo software code. The following Maximo options are not currently supported by the upgrade program:

- ▼ Maximo Illustrated Parts Catalog
- ▼ The following Maximo industry solutions:
 - Maximo Nuclear
 - Maximo Transmission & Distribution

What the Upgrade Supports and Does Not Support

- ▼ The IBM Global Services service applications, which are listed in Appendix B of the *Upgrade Planning Guide, Release 5 to Release 6*.

If you use Dynamic Value Lists, Field Security, or Data Flow Control, contact IBM order processing to order, install, and run a report that details your use of these three add-ons. Dynamic Value Lists, Field Security, and Data Flow Control are merged into a single Maximo 6 add-on, Field Control. You can choose to manually upgrade the Release 5 add-ons to Field Control yourself, or you can use IBM Global Services to upgrade them for you.

Primavera or Notifications do not modify the Maximo database. Because the upgrade utility operates strictly on the Maximo database, Primavera and Notifications are not explicitly supported. For more information, see Chapter 3, “Preparing the Maximo Data,” and Chapter 8, “Post-Upgrade Tasks.”

The Maximo 6 upgrade does not grant security authorizations to new applications, or to new options within existing applications.

The following configurations are not upgraded by the Maximo 6 screen upgrade; recreate these items manually if you need them:

- ▼ Modified field labels (field labels are now stored in the database).
- ▼ Modified field sizes (field sizes are now stored in the database).
- ▼ Configurations that involve absolute positioning (such as grids).
- ▼ Added PSDI tags.
- ▼ Duplicate controls.
- ▼ Code customizations.
- ▼ Screen customizations that you made to industry solution screens.
- ▼ Anything that does not have an equivalent in Maximo 6, for example applications, controls, or control properties that do not exist in Maximo 6.

For more information on elements supported by the upgrade and elements not supported by the upgrade, see the *Upgrade Planning Guide*.

For some of the items listed as not supported by the upgrade, this guide explains a pre-upgrade task that you must perform before you run the upgrade program. For example there is a pre-upgrade task of removing custom triggers.

ATTENTION Changes to the database that are not made through means supported by the upgrade or failure to perform pre-upgrade tasks can result in errors reported during the upgrade. You must address errors that are reported when you run the upgrade program before you can complete the upgrade. Unsupported database changes or skipping pre-upgrade tasks also might result in erroneous behavior of Maximo 6 itself after you complete the upgrade.

What the Upgrade Supports and Does Not Support

Preparing the Database

2

In this chapter, you perform general database preparatory tasks. The procedures in this chapter are applicable whether you upgrade from Maximo 4.1.1 or Maximo 5.x. For more information, refer to the appropriate upgrade planning guide:

- ▼ *IBM Maximo Release 4 to Release 6 Upgrade Planning Guide*
- ▼ *IBM Maximo Release 5 to Release 6 Upgrade Planning Guide*

Create a test copy of your Maximo 5.x or 4.1.1 database, which includes the following tasks:

Listing of Database-related Tasks

Oracle® 9.2.0.8	Microsoft SQL Server 2000 SP 4
Create database instance.	Create new database.
Import your Maximo 5 schema.	Back up and restore production database to new database.
Install Oracle Text and grant privileges to Maximo 5 schema owner.	Prepare database for text indexes.
Turn off log archiving (redo log archiving). Turn on log archiving after you upgrade to Maximo 6.	Truncate log on checkpoint (turn it off after upgrade completes).

If you are connecting to an Oracle database, continue with the next topic. *Check that your Oracle version is exactly 9.2.0.8. Oracle release 9.2.0.8 corrects an issue that can cause the Maximo upgrade to fail.*

If you are connecting to a Microsoft SQL Server database, go to “Prepare Microsoft SQL Server Instance,” on page 2-3.

Create a Test Copy of Your Maximo Database in Oracle

This section contains information on the following Oracle database-related pre-upgrade tasks:

- ▼ Create database instance.
- ▼ Back up and restore production database to new database.
- ▼ Grant privileges to Maximo 5 Schema owner.
- ▼ Redo log archiving.
- ▼ Complete the upgrade installation worksheet (at the end of Chapter 3: “Preparing the Maximo Data,” on page 3-1.)

Create Database Instance

Create a new Oracle 9.2.0.8 instance for your test database. Install Oracle Text in the new instance.

To use an existing instance, you must install Oracle Text. For more information about installing Oracle Text, refer to your Oracle documentation.

Use an undo tablespace rather than rollback segments.

Back Up and Restore Production Database to New Database

If possible, create your test database in its own Oracle instance. Doing so lets you start, stop, or shut down the database without interfering with other databases. For more information about how to create an Oracle instance and a test copy of your database, refer to your Oracle documentation.

For more information about importing a Maximo 4.1.1 schema, go to <http://techsupport.services.ibm.com/guides/services.html> and search for document ID 1264151.

For more information about importing a Maximo 5 schema, go to <http://techsupport.services.ibm.com/guides/services.html> and search for document ID 1263949.

Grant Privileges to the Maximo Schema Owner

To grant privileges to your Maximo Schema owner, complete the following steps:

- 1 Log in to the database as *System* user.
- 2 Run the following command from an SQL prompt:

```
Grant Execute On ctxsys.ctx_ddl to maximo
```

Redo Log Archiving

Turn off redo log archiving before you upgrade. If the upgrade fails, you must recover from a full backup. You cannot use log recovery.

The following chapter shows you how to perform certain Maximo data-related tasks. Refer to the appropriate sections for upgrading from Maximo 4.1.1, Maximo 5.1, or Maximo 5.2.

Create a Test Copy of Your Maximo Database in Microsoft SQL Server

This section contains information on the following Microsoft SQL Server database-related pre-upgrade tasks:

- ▼ Prepare Microsoft SQL server instance
- ▼ Truncate log on checkpoint
- ▼ Complete the upgrade installation worksheet (at the end of Chapter 3)
- ▼ Resynchronize user accounts

Prepare Microsoft SQL Server Instance

Full-text Search is a setting that you must install when you install Microsoft SQL Server 2000 SP4. To determine if Full-text Search is on your existing Microsoft SQL Server database, complete the following steps:

- 1 Open SQL Query Analyzer from the Tools menu.
- 2 Type the following command in the top query window.

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

If you did not install Full-text Search (the resulting value is zero), do so now. To change this setting and others after you install SQL Server, complete the following steps:

- 3 Insert the Microsoft SQL Server 2000 CD-ROM into the server where you originally installed it.
- 4 Navigate through the installation dialog boxes. From the Setup Type dialog box, select **Custom**. Click **Next**.
- 5 Select the **Full-Text Search** option. Click **Next**.
- 6 Step through the remaining steps and restart the server to complete the installation process.

Truncate Log On Checkpoint

To truncate log on checkpoint, from the SQL Server Enterprise Manager application, complete the following steps:

- 1 From the **File** drop-down list, select the database that you plan to upgrade.
- 2 From the list, right-click the database name and select **Properties**.
- 3 Click the **Options** tab.
- 4 From the **Recovery Model** drop-down list, select **Simple**.
- 5 Clear **Auto update statistics** and **Auto create statistics**. Click **OK**.

Delete Statistics

The upgrade process cannot update a record in the database that has statistics associated with it. The upgrade “mistakes” statistics for indexes.

To delete statistics, from the SQL Server Enterprise Manager application, complete the following steps:

- 1 From the **File** drop-down list, select the database that you plan to upgrade.
- 2 From the **Tools** drop-down list, select **Manage Statistics**.
- 3 From the ensuing dialog box, delete all tables as they appear. Click **OK**.

The following chapter shows you how to perform certain Maximo data-related tasks. Refer to the appropriate sections for upgrading from Maximo 4.1.1, Maximo 5.1, or Maximo 5.2.

Resynchronize User Accounts, if Necessary

If you are moving the database to a different server, you also need to resynchronize user accounts.

For information about resynchronizing user accounts, go to <http://techsupport.services.ibm.com/guides/services.html> and search for document ID 1262275.

Preparing the Maximo Data

3

You have prepared the database. Now, you must perform certain data-specific tasks that might be different whether you are upgrading from Maximo 4.1.1, Maximo 5.1, or Maximo 5.2.

Upgrading from Maximo 4.1.1

To upgrade From Maximo 4.1.1, you must complete the following tasks:

- ▼ Update your Maximo 4.1.1 to Patch 04 or higher
- ▼ Complete Maximo 4.1.1 data-specific preparatory tasks
- ▼ Perform Maximo Enterprise Adapter pre-upgrade tasks

Update Your Maximo 4.1.1 Version to the Latest Patch Level

You first must determine your current Maximo 4.1.1 patch and, if necessary, update to Patch 04 or higher. To check your patch level, click Help About.

To update Maximo to the latest 4.1.1 patch, visit the following Web page:

<http://www-306.ibm.com/software/sysmgmt/products/support/IBMMaximoAssetManagement.html>

Click View All Downloads to download the latest Release 4.1.1 patch.

Complete Maximo 4.1.1 Data-specific Preparatory Tasks

This section explains the following tasks:

- ▼ Create indexes to improve upgrade performance.
- ▼ Assign labor codes.
- ▼ Check for duplicate queries.
- ▼ Change print status to sent.
- ▼ Change work order hierarchy.
- ▼ Save e-commerce buyer company code information.
- ▼ Complete Maximo Enterprise Adapter (MEA) pre-upgrade tasks.

Create Indexes to Improve Upgrade Performance

The following indexes help to improve upgrade performance. Use the Maximo Database Configuration Utility to create new indexes on the Workorder table. To do so complete the following steps:

- 1 Create a composite index on the WONUM and HISTORYLOG columns for the Workorder table.

Upgrading from Maximo 4.1.1

- 2 Create an index on the PARENT column for work order table.
- 3 Create an index on LDKEY column for work order table.

You might have already one or more of these indexes. For more information, refer to the *IBM Maximo System Administrator's Guide*.

Assign Labor Codes

Users must have a labor code before you upgrade. The Validation utility verifies that each user has a labor code. If a user does not have a labor code, the Validation utility fails.

To determine if any users do not have a labor code, using an SQL tool as the user MAXIMO or the schema owner, connect to the database and run the following SQL statement:

```
select username from maxusergroups where laborcode is null and username<>grpname
```

If you receive any results, those users need labor codes, which you can assign in Maximo. For instructions on how to assign Labor Codes, refer to Chapter 2, "Security," in the *Maximo Release 4.1.1 System Administrator's Guide*.

Check for Duplicate Queries

You must refer to saved queries by application name, query name, and site ID (instead of owner name as in Maximo 4.1.1). This change simplifies how to create queries for general use and share them among users. The Upgrade utility rebuilds the QUERY table for this new feature.

If multiple queries have the same application name and query name the Upgrade Validation Utility issues a warning. Run the following SQL statement as user MAXIMO or the schema owner to detect duplicate queries before running the upgrade utilities:

```
select clause, app, count(*) from query group by clause, app having count(*)>1
```

If you receive any results, choose which queries to delete and delete them. You can choose the queries either through SQL or Maximo.

Remove Default Queries

Default queries cause serious errors during post-upgrade because queries will not have been updated to reflect new table definitions. Run the following SQL statement as user MAXIMO or the schema owner to remove duplicate queries before you run the upgrade utilities:

```
truncate table defaultquery
```

Change Print Status to Sent

The status of Print is no longer an option in 5.x and later. To upgrade the existing status records, update any existing records with the value of Print to the new value of INPRG. To do so, run the following SQL commands:

```
update po set status = (select value from valuelist where listname='POSTATUS' and maxvalue='INPRG')
where status = (select value from valuelist where listname='POSTATUS' and maxvalue='PRINT');
```



```
update postatus set status = (select value from valuelist where listname='POSTATUS' and
maxvalue='INPRG')
where status = (select value from valuelist where listname='POSTATUS' and
maxvalue='PRINT');
```

```
update rfq set status = (select value from valuelist where listname='RFQSTAT' and
maxvalue='INPRG')
where status = (select value from valuelist where listname='RFQSTAT' and
maxvalue='PRINT');
```

```
update rfqstatus set status = (select value from valuelist where listname='RFQSTAT' and
maxvalue='INPRG')
where status = (select value from valuelist where listname='RFQSTAT' and
maxvalue='PRINT');
```

The status records will upgrade properly now.

Change Work Order Hierarchy

If columns in the WPOPERATION table or the WORKORDER table are configured to NOT NULL, change these columns to let NULLS (the Maximo default) for the upgrade to run successfully.

To determine which table columns are currently set to prohibit NULLS, run the following SQL Statement:

```
select tname, name, nulls from maxsyscolumns where tname in
('WPOPERATION', 'WORKORDER') and nulls='N' order by tname, name
```

If your results list any columns that are not listed in the following table, you must change them back to NULLS=Y in Database Configuration. The default number of columns is 31.

TBNAME (TABLE NAME)	NAME (COLUMN NAME)	N (NULL VALUE)
WORKORDER	ACTLABCOST	N
WORKORDER	ACTLABHRS	N
WORKORDER	ACTMATCOST	N
WORKORDER	ACTSERVCOST	N
WORKORDER	ACTTOOLCOST	N
WORKORDER	CHARGESTORE	N
WORKORDER	ESTATAPPRLABCOST	N
WORKORDER	ESTATAPPRLABHRS	N
WORKORDER	ESTATAPPRMATCOST	N
WORKORDER	ESTATAPPRSERVCOST	N
WORKORDER	ESTATAPPRTOOLCOST	N
WORKORDER	ESTDUR	N
WORKORDER	ESTLABCOST	N
WORKORDER	ESTLABHRS	N
WORKORDER	ESTMATCOST	N
WORKORDER	ESTSERVCOST	N
WORKORDER	ESTTOOLCOST	N
WORKORDER	HASCHILDREN	N
WORKORDER	HASFOLLOWUPWORK	N
WORKORDER	HISTORYFLAG	N
WORKORDER	OUTLABCOST	N
WORKORDER	OUTMATCOST	N
WORKORDER	OUTTOOLCOST	N
WORKORDER	STATUS	N
WORKORDER	STATUSDATE	N
WORKORDER	VIEWWOASOPER	N
WORKORDER	WFACTIVE	N
WORKORDER	WONUM	N
WPOPERATION	OPDURATION	N

```
WPOPERATION          WONUM          N
WPOPERATION          WPOPERATION    N
31 rows selected
```

Save E-Commerce Buyer Company Code Information

This section applies only to Online Commerce Service (OCS) customers.

NOTE If you do not know if you use the punch-out capability, consult the `MXServer.properties` file in your Maximo installation and look for a section similar to the following example. If you do not find any entries such as `mxe.catalog.1`, `mxe.catalog.2`, and `mxe.catalog.3`, then you are not using the punch-out capability. Go to the next topic “Maximo Enterprise Adapter Pre-Upgrade Tasks,” on page 3-4.

You must insert e-commerce punch-out buyer names in the `MXServer.properties` file in Maximo 4.1.1 into the `SITEECOM` table after you upgrade. Print or save the following section from the `MXServer.properties` file:

```
// -----
// Names & Properties of different catalog providers.
// Enter each catalog entry with a incremental ID (has to be in
// sequence).
//
//
mxe.catalog.ID=CATALOG_NAME,CUSTOMER_COMPANY_CODE,VENDOR_COMPANY_C
ODE,CUSTOMER_REPLY_URL
// -----
mxe.catalog.1=My Suppliers,ECOMBUYR,KENNEDY,http://
www.yourcompany.com:8080
mxe.catalog.2=Ariba Test Suppliers,ARBBUYER,ARBVEND,http://
www.yourcompany.com:8080
mxe.catalog.3=ABC Company,BUYER,1000009999,http://
www.yourcompany.com:8080
// mxe.catalog.3=wesco,WSC,http://www.yourcompany.com:8080
// mxe.catalog.4=internal,A0001,http://www.yourcompany.com:8080
```

To view the e-commerce company information, use an SQL tool to connect to the database and run the following command:

```
select * from companies where ecommerceenabled = 'Y';
```

In particular, note the `mnetcompanyid` record.

Maximo Enterprise Adapter Pre-Upgrade Tasks

Clients using the Maximo Release 4.1.1 Integration Gateway (MIG) or Maximo Release 4.1.1 Enterprise Adapter (MEA) must consider the following:

- ▼ Multiple organizations and sites
- ▼ User exit customizations
- ▼ Interface table formats
- ▼ XML structures (Maximo Enterprise Adapter only)
- ▼ API control code values (MIG only)
- ▼ Integration control values (Maximo Enterprise Adapter only)
- ▼ Interface table and queue transactions

For more information about these considerations refer to the *Maximo Enterprise Adapter Release 4.1.1 to 5.2 Upgrade Guide*. Before you proceed to the next chapter, you must complete integration-specific pre-upgrade procedures. The following list include some of these features:

- ▼ Upgrade from the 4.1.1 MIG
 - ▼ Planning Maximo 6 Maximo Enterprise Adapter implementation
 - ▼ Saving API Control Code Values
 - ▼ Completing Interface Table Transactions
 - ▼ Backing up Data and Files
 - ▼ Deleting the PL/SQL MIG Database Objects
- ▼ Upgrade from the 4.1.1 Maximo Enterprise Adapter
 - ▼ Planning to Upgrade User Exit Customizations
 - ▼ Planning Maximo 6 Maximo Enterprise Adapter implementation
 - ▼ Completing Interface Table and Queue Transactions
 - ▼ Backing up Data and Files
 - ▼ Deleting the 4.1.1 Maximo Enterprise Adapter Database Objects

For more information about these steps, refer to the *Maximo Enterprise Adapter Release 4.1.1 to 5.2 Upgrade Guide*.

NOTE At this time, skip to the section “Back Up and Restore Production Database to New Database,” on page 3-12.

Upgrading from Maximo 5.1

To upgrade from Maximo 5.1, you must complete the following tasks:

- ▼ Update Maximo 5.1 to Patch 05.
- ▼ Complete data-specific preparation tasks.
- ▼ Process all Maximo Enterprise Adapter transactions.

Update Your Maximo 5.1 to Patch 05

To determine your current Maximo 5 product, database, and, if applicable, Maximo Enterprise Adapter versions, use the following instructions:

Determining the Maximo Version

To determine the current Maximo version, complete the following steps:

- 1 Windows/UNIX: `cd <maximo_root>`
- 2 Windows (UNIX): `version.bat (. /version.sh)`

MAXIMO Application Server 5.1.0 Build 016 854, DB Build V510-38

MAXIMO Enterprise Adapter (MEA) 5.1.0. Build MEA016 854, DB Build V510MEA-21

Determining the Maximo Database Version

To determine the current Maximo database version, connect to the database as the schema owner (default is MAXIMO, all uppercase) through an appropriate SQL utility and run the following command:

```
select varvalue from maxvars where varname='MAXUPG'  
V510-38
```

Determining the Maximo Enterprise Adapter Version

To determine the current Maximo Enterprise Adapter version, connect to the database as the schema owner (default is MAXIMO) through an appropriate SQL utility and run the following command:

```
select varvalue from maxvars where varname='MEAUPG'  
V510MEA-21
```

Apply Patch 05 or Later to Maximo 5

After you determine the version that you are running, if necessary, update your database to a minimum level of Patch 05.

You can obtain the latest Maximo 5.1 patch from the Downloads section of the Maximo Asset Management product page (<http://www-306.ibm.com/software/sysmgmt/products/support/IBMMaximoAssetManagement.html>).

Complete Maximo 5.1 Data-specific Preparatory Tasks

The status of Print is no longer an option in 5.x and later. To upgrade the existing status records, update any existing records with the value of Print to the new value of INPRG. To do so, run the following SQL commands:

```
update po set status='INPRG' where status='PRINT'  
update postatus set status='INPRG' where status='PRINT'  
update rfq set status='INPRG' where status='PRINT'  
update rfqstatus set status='INPRG' where status='PRINT'
```

The status records will upgrade properly now.

Remove Notifications, if Necessary

If you have Notifications installed, you should remove it before you upgrade.

Process All Maximo Enterprise Adapter Transactions

Queues

You must process all transactions in the inbound and outbound queues before you proceed with the upgrade program.

The upgrade process deletes all queues, interface tables, and all Maximo Enterprise Adapter configuration tables from the database. If you want, back up these tables after you process all Maximo Enterprise Adapter transactions.

To determine if any outstanding transactions exist, connect to the database as the Maximo 5 schema owner and run the following SQL commands:

SQL Commands

Queue	SQL Command
OUT	select count (*) from mout_interdata;
IN—Sequential	select count (*) from max_interdata;
IN—Continuous	select count (*) from max_interdata_bat;

If an SQL command returns a count greater than 0, the corresponding queue contains unprocessed transactions.

If an SQL command contains incomplete transactions or transactions that contain errors, correct and reprocess them before you upgrade.

For information about correcting errors, refer to the *IBM Maximo Enterprise Adapter System Administrator's Guide Release 5.x*.

Interface Tables

To list your interface tables, complete the following steps:

- 1 Use an interactive SQL utility tool to connect as the Maximo schema owner.
- 2 From an SQL prompt, enter the following command:

```
Select tname from maxtables where app = 'INTERFACE' and tname like '%INTERFACE'
order by tname;
```

To determine if unprocessed transactions exist in your interface tables, complete the following steps:

- 1 Use an interactive SQL utility tool to connect as the Maximo schema owner.
- 2 Enter the following SQL command for each interface table:

```
Select * from interfacetablename where IMPORTSTATUS <> 'DONE';
```

If an SQL command returns any rows, the corresponding interface table contains unprocessed transactions.

Custom Interface Tables

If custom interface tables exist on your system, check those tables for unprocessed transactions.

NOTE At this time, skip to the section “Back Up and Restore Production Database to New Database,” on page 3-12.

Upgrading from Maximo 5.2

To upgrading from Maximo 5.2, you must complete the following tasks:

- ▼ Update your Maximo 5.2 to the latest patch level.
- ▼ Complete data-specific preparation tasks.
- ▼ Process all Maximo Enterprise Adapter transactions.
- ▼ Remove custom triggers.

- ▼ Select the Correct Regional and Language Option.
- ▼ Select a System Administrator User ID.

Update Your Maximo 5.2 Version to the Latest Patch Level

To determine your current Maximo 5 product, database, and, if applicable, Maximo Enterprise Adapter versions, use the following instructions:

Determining the Maximo Version

To determine the current Maximo version, complete the following steps:

- 1 Windows/UNIX: `cd <maximo_root>`
- 2 Windows (UNIX): `version.bat` (`./version.sh`)

MAXIMO Application Server 5.2.05 Build 409, DB Build V520-14

MAXIMO Enterprise Adapter (MEA) 5.2.05. Build 409, DB Build V520MEA-6

Determining the Maximo Database Version

To determine the current Maximo database version, connect to the database as the schema owner (default is MAXIMO, all uppercase). Use an SQL utility and run the following command:

```
select varvalue from maxvars where varname='MAXUPG'  
V520-14
```

Determining the Maximo Enterprise Adapter Version

To determine the current Maximo Enterprise Adapter version, connect to the database as the schema owner (default is MAXIMO) use an SQL utility and run the following command:

```
select varvalue from maxvars where varname='MEAUPG'  
V520MEA-6
```

Apply Patch 05 or Later to Maximo 5

After you determine the version that you are running, if necessary, update your database to Patch 05 or later. You can obtain the latest Maximo 5.2 patch from the Downloads section of the Maximo Asset Management product page (<http://www-306.ibm.com/software/sysmgmt/products/support/IBMMaximoAssetManagement.html>).

Process All Maximo Enterprise Adapter Transactions

Queues

You must process all transactions in the inbound and outbound queues before you proceed with the upgrade program.

NOTE The upgrade process deletes all queues, interface tables, and all Maximo Enterprise Adapter configuration tables from the database. If desired, back up these tables after you process all Maximo Enterprise Adapter transactions.

To determine if any outstanding transactions exist, connect to the database as the Maximo 5 schema owner and run the following SQL commands:

SQL Commands

Queue	SQL Command
OUT	select count (*) from mout_interdata;
IN—Sequential	select count (*) from max_interdata;
IN—Continuous	select count (*) from max_interdata_bat;

If an SQL command returns a count greater than 0, the corresponding queue contains unprocessed transactions.

If an SQL command contains incomplete transactions or transactions that contain errors, correct and reprocess them before you upgrade.

For information about correcting errors, refer to Chapter 11, “Error Processing,” in the *IBM Maximo Enterprise Adapter System Administrator's Guide Release 5.x*.

Interface Tables

To list your interface tables, complete the following steps:

- 1 Use an interactive SQL utility tool to connect as the Maximo schema owner.
- 2 From an SQL prompt, enter the following command:

```
Select tbname from maxtables where app = 'INTERFACE' and tbname like '%INTERFACE'
order by tbname;
```

To determine if unprocessed transactions exist in your interface tables, complete the following steps:

- 1 Use an interactive SQL utility tool to connect as the Maximo schema owner.
- 2 Enter the following SQL command for each interface table:

```
Select * from interfacetablename where IMPORTSTATUS <> 'DONE';
```

If an SQL command returns any rows, the corresponding interface table contains unprocessed transactions.

Custom Interface Tables

If custom interface tables exist on your system, check those tables for unprocessed transactions.

Remove Reporting Tools

If you had previously used an embedded reporting tool in the Maximo 4, 5, or 6 releases, remove these installations before proceeding with the upgrade.

Remove Notifications and Primavera, if Necessary

If you have Notifications installed, you should remove it before you upgrade. If you have Primavera installed, you should uninstall it before you upgrade.

Remove Custom Triggers

Before you upgrade, remove all custom triggers that exist on any table in your Maximo 5, which includes Syclo[®] triggers.

Select the Correct Regional and Language Option

You specify the correct installation language in the operating system local settings. To do so, complete the following steps:

- 1 From the Control Panel, select Regional and Language Options.
- 2 Ensure that the Regional and Languages Options tab, plus the Advanced tab reflect the correct language.

Enabling Custom Applications

If you created custom applications in Maximo, after the upgrade, the ORIGINALAPP column in the MAXAPPS table will have a null value. You must manually change the value to reflect either the original application name of the cloned application, or the value: CUSTAPP.

Using an SQL tool, review the entries in the MAXAPPS table and take appropriate action as follows:

- ▼ If it is a cloned application and ORIGINALAPP=null, then update the record to point to the correct ORIGINALAPP name.
- ▼ If it is not a cloned application and ORIGINALAPP=null, then update the value of the ORIGINALAPP column to CUSTAPP.

You must perform this action for all of your custom applications that appear in the MAXAPPS table.

Enabling Industry Solutions

If you are also upgrading IBM Maximo Calibration or IBM Maximo for Transportation, ensure that the following requirements are met:

Product Name	Minimum patch level before upgrading
IBM Maximo	Maximo 5.2 Patch 6

IBM Maximo for Calibration Release 2	Calibration 5.2 Patch 5
IBM Maximo for Transportation 5.2 Release 2	Transportation 5.2 Release 2 Patch 3 If necessary, first upgrade Transportation 5.2 Release 1 to 5.2 Release 2.

Refer to your industry solution *Patch Release Notes* for details on how to apply the latest patch for your industry solutions.

Transportation Data Preparation

If you are upgrading IBM Maximo for Transportation 5.2 Release 2 to Transportation 6.3, you must complete the following pre-upgrade tasks.

Clear All Data from the PLUSTMTRIMP Table

The upgrade will fail if any records reside in the PLUSTMTRIMP table at upgrade time. If unprocessed meter reading records are in the PLUSTMTRIMP table, you should process those records. Then delete all records from the PLUSTMTRIMP table.

Provide Duration Data for All 5.2 Warranty Coverage

In Transportation 6.3, duration information for warranty coverage is required information. This data was not required for 5.2 warranty records.

Your Transportation 5.2 equipment warranty coverage and item warranty coverage records must contain values for both Time Duration (PLUSTWARRCVR.TIMEDURATION) and Time Units (PLUSTWARRCVR.TIMEUNITS). If this data is not present in all warranty records, the Validation Checker returns an error, and you cannot complete the upgrade process.

NOTE See Appendix D, “Location of Transportation Records After Upgrade,” in the *Upgrade Planning Guide, Release 5 to Release 6*, for information on where certain 5.2 Transportation records reside in the Release 6 database tables after upgrading to Transportation 6.3.

Back Up and Restore Production Database to New Database

Regardless of your starting point, back up and restore your newly prepared Maximo database.

Complete the Upgrade Installation Worksheet

Complete the following worksheet by recording certain names and values from the Maximo 5 test database that you just created. The page and step numbers in the right column of the worksheet indicate where you need the requested information.

Installation Information

Obtain Information from Maximo 5	Record the Information Here	Use the Information Here
Database-related		
Database server name		Step 2 on page 4-8
Database port number: Oracle: 1521 (default) Microsoft SQL Server 1433 (default)		Step 2 on page 4-8
Database name		Step 2 on page 4-8
Database/Schema owner		Step 2 on page 4-8
Database owner name and password		Step 2 on page 4-8
Maximo Administration-related		
Maximo administrator	Default is SYSADM	Step 2 on page 4-8
User name to create new Maximo users	Default is DEFLTREG	Step 2 on page 4-8
Password		Step 2 on page 4-8

Installing the Maximo Upgrade Program

4

This chapter contains two main sections:

- ▼ Upgrading from Maximo 4.1.1
- ▼ Upgrading from Maximo 5

Upgrading from Maximo 4.1.1

Upgrading from Maximo 4.1.1 is a two step-process. First, you must upgrade to version 5, which includes its own set of utilities, and then you use different utilities to upgrade to Maximo 6.

In this section you complete the following tasks:

- ▼ Install the Maximo 5 upgrade utilities.
- ▼ Add upgrade path to folder.
- ▼ Connect to your test database.
- ▼ Run the Integrity Checker Utility.
- ▼ Run the Validation Utility.
- ▼ Run the Upgrade Utility.

Install the Upgrade Utilities

To install the database upgrade utilities, complete the following steps on the designated upgrade workstation:

- 1 Insert the Maximo Release 5.1 Upgrade CD into the CD-ROM drive.
- 2 Using Windows Explorer, double-click the MAX51UPG.EXE file on the CD to start the Setup program.
- 3 After the Welcome dialog box opens, the Choose Destination dialog box opens. Use this dialog box to specify the destination folder for the upgrade utility files. The default is c:\maxupg.

ATTENTION Use the default folder names throughout the Setup program.

- 4 Follow the Setup program prompts to install of the upgrade utilities.

Add Upgrade Folder to Path

To run the upgrade program, the upgrade folder *must be* in the path of the workstation where you run the upgrade utilities. The default is c:\maxupg. The following table lists instructions for various operating systems. Follow the step for your system.

Operating System	Step for Adding Upgrade Folder to Workstation Path
Windows 2000 Professional and XP	Append the path environment variable via the Settings/Control Panel/System/Advanced tab and click the Environment Variables button.

Connect to Your Test Database

Depending on the database you are using, use one of the following procedures to connect to your test database:

- ▼ If you are using Oracle, use Oracle’s tools to create an alias. Use SQL*Plus to confirm the connection to your test copy of the database.
- ▼ If you are using Microsoft SQL Server, create an ODBC Data Source Name (DSN) for your test database. Confirm the connection to the test copy of the database.

Edit the SQL.INI File

The SQL.INI file ensures that the Maximo upgrade utilities can connect to the database. To edit the SQL.INI file, go to the c:\maxupg folder and complete the following steps:

Oracle Editing Guidelines

- 1 In the [win32client.dll] section, “uncomment” the following sqlora32 communications DLL:

```
comdll=sqlora32
```

- 2 In the [oragtwy] section, add the following test database:

```
REMOTEDBNAME={DB alias},{connect string}
```

For example:

```
REMOTEDBNAME=MAXTEST,@MAXTEST
```

- 3 Save your changes and exit the editor.

Microsoft SQL Server Editing Guidelines

- 1 In the [win32client.dll] section, uncomment the following communications DLL:

```
comdll=sqlodb32
```

- 2 In the [odbcrt] section, add the following test database:

```
REMOTEDBNAME=MAXTEST,DSN=MAXTEST
```

- 3 Save your changes and exit the editor.

Verify Connectivity Using SQLTalk

To verify connectivity using SQLTalk, complete the following steps:

- 1 From the maxupg folder or the folder that you indicated, double-click **sqltalk.exe** and verify the connection by entering the following command:

```
connect MAXTEST MAXIMO MAXIMO;
```

where MAXTEST is your database name, MAXIMO is the schema owner, and MAXIMO is the schema owner's password.

- 2 Press **Ctrl + Enter**.

ATTENTION *Do not connect to your production database.*

- 3 Exit SQL Talk. You now have proper connectivity to run the Upgrade programs.

Run the Integrity Checker

To run the Integrity Checker, complete the following steps:

- 1 Click the Integrity Checker icon on your desktop to start the utility and display the Database Integrity Checker dialog box.
- 2 Populate the following fields:
 - ▼ **Database**—Name of the database.
 - ▼ **Schema Owner**—Owner of the schema that you are upgrading. The default owner is MAXIMO.
 - ▼ **Password**—Schema owner's password.

Report Only Mode

Initially, you run the Integrity Checker in Report Only mode, the default. It runs the utility, but it does not change or repair the database.

- 1 Enter the appropriate information and select the **Report Only** option to determine the current state of the integrity.
- 2 Click **OK** to begin the connection phase.

After you connect to the database, the utility populates the read-only **Server Type** and **Database Version** fields.

- 3 Click **OK**.
- 4 If you are using Microsoft SQL Server, the SYSSQL Connect dialog box appears.
- 5 Enter the SYSSQL user password in the **SYSSQL Password** field.

- 6 Click **OK** to begin the connection phase.

As the Integrity Checker runs, an arrow appears to indicate the phase in progress. It displays a check next to each phase as it ends.

- 7 After the Integrity Checker Completed Successfully dialog box opens, click **Yes**.

Upon completion, the Integrity Checker produces two files:

- ▼ **MAXINTEG.LIS**—basic information (for example, messages, warnings, errors).
- ▼ **MAXINTEG.LOG**—a more detailed log that contains each transaction that the utility recorded, including the complete listing of errors, warnings, and SQL statements that the Integrity Checker produced.

The .LIS and .LOG files are in the folder that you ran Integrity Checker from (the default is c:\maxupg). You can open and review the files. Rename or print a copy of each file, because the Integrity Checker overwrites the .LIS and .LOG files each time it runs.

When you run the Integrity Checker in Report mode, the database does not change. Review the .LIS file (a shorter version of the .LOG file) and examine any errors and warnings reported. If you need more extensive information, you can review the .LOG file.

Correct all errors before you run the Integrity Checker successfully. If the Integrity Checker runs and finds errors, investigate the cause of the errors and take the corrective action. Also, investigate warnings and take appropriate corrective action. You can correct issues that generate warnings before or after you upgrade.

Repair Mode

After you investigate errors, run the Integrity Checker in Repair mode. Repair mode might correct some errors in the database. To run the Integrity Checker in Repair mode, complete the following steps:

- 1 Click the Integrity Checker icon on your desktop to start the utility and display the Database Integrity Checker dialog box. Repair mode may correct some of the errors in the database.
- 2 Choose **Repair** and click **OK**. The Confirm Repair dialog box opens.
- 3 Click **OK**. The Database Integrity Checker repeats each phase that you previously ran in Report Only mode. If Repair mode changes the database, the utility instructs you to run Database Configuration.

Database Configuration

You must run Database Configuration in Maximo Release 4.1.1. For more information about performing a database configuration, refer to Chapter 4, “Database Configuration,” in the Release 4.1.1 *Maximo System Administrator’s Guide*.

When you run Database Configuration it opens the Maximo - WARNING dialog box, which notifies you of incomplete configuration changes (made when you ran the Integrity Checker in Repair mode).

- 1 Choose Yes to keep all the changes.
- 2 To configure the database, select Configure Changes from the Actions menu in Database Configuration.
- 3 After you configure your database changes, check for backup tables.
- 4 To restore the backup tables, select Restore Backup Tables from the Actions menu in Database Configuration.

Repeat Use of Report Mode

After you run the Integrity Checker in Repair mode and configure the database, run the Integrity Checker again in Report Mode to determine if any errors remain. If errors do occur, run Repair Mode again as described in the following topic.

Repeat Use of Repair Mode

If necessary, run the Integrity Checker again in Repair Mode and configure the database to correct any existing errors. If errors still occur, correct them manually. Investigate the log files and the cause of the errors and take corrective action.

Run the Integrity Checker in Repair mode as many times as necessary until no errors occur. Investigate warnings and take appropriate corrective action. For more information, refer to “Troubleshooting”, on page B-1.

NOTE You cannot upgrade until no errors occur. Warnings do not prevent a database from passing. You can correct the situations that generate warnings before or after you upgrade.

After the Integrity Checker runs without error, it marks the database as passed by opening the Integrity Checker Successful dialog box. Click **Yes**.

Back up your database after you run each utility.

Run the Upgrade Validation Utility

After your database passes the Integrity Checker, create a new backup, and then run the Upgrade Validation Utility. To do so, complete the following steps:

- 1 Click the Validation Utility icon on your desktop to start the utility and display the Database Upgrade Validation Utility dialog box.
- 2 To use the Database Upgrade Validation utility, populate the following fields:

- ▼ **Database**—Name of the database.
- ▼ **Schema Owner**—Owner of the schema that you are upgrading. The default owner is MAXIMO.
- ▼ **Password**—Password of the schema owner.

- 3 Click **OK**. The connection phase begins.

After you connect to the database, the utility populates the read-only **Server Type** and **Database Version** fields.

As the Upgrade Validation Utility runs, an arrow appears to indicate the phase in progress. A check appears next to each phase as it ends.

After the connection phase ends, the utility establishes a connection with the database. At this point, the Confirm Database Parameters dialog box opens. It contains information about the database version and type of database server.

ATTENTION If you do not have a backup copy of your database, click **Cancel** and create a backup copy now.

- 4 Click **Continue** to continue the upgrade validation. The Upgrade Validation Completed Successfully dialog box opens.
- 5 Click **Yes**.

Responding to Error Messages and Warning Messages

For information about errors and warnings listed in the MAXVLDAT.LIS and MAXVLDAT.LOG files, see “Troubleshooting”, on page B-1. Fix any errors and restart Upgrade Validation.

Run the Upgrade Utility

After the Upgrade Validation utility runs successfully, create a new backup, and then run the Upgrade utility. To do so, complete the following steps:

- 1 Click the Upgrade Utility icon on your desktop to start the utility and open the Database Upgrade Utility dialog box.
- 2 To use the Database Upgrade utility, populate the following fields:
 - ▼ **Database**—Name of the database.
 - ▼ **Schema Owner**—Owner of the schema that you are upgrading. The default owner is MAXIMO.
 - ▼ **Password**—Password of the schema owner.
- 3 Click **OK**. The Connect dialog box opens.
- 4 Enter the Password.
- 5 Click **OK** to continue with the connection phase. The Multisite Setup Screen opens.

- 6** Enter an Organization ID and a Site ID to complete the upgrade. The Organization ID is typically the geographic location that you have defined as a business unit. The Site ID is typically where the work is being performed.

For more information about Multisite, refer to the *Multisite Administrator's Guide*.

The values that appear in the following Multisite Setup dialog box are examples for a single organization with a single site.

ATTENTION If you do not have a backup copy of your database, click **Cancel** and create a backup copy now.

- 7** Enter the Organization ID and Site ID. Click **OK**.

After the connection phase ends, the utility opens the Confirm Database Parameters dialog box. It shows information about the database version and database platform.

- 8** Click **Continue**. The Database Objects Storage dialog box opens and prompts you to select a table space/segment for tables and indexes that you are upgrading. (It is the last dialog box that opens before the utility runs).

- 9** Select a different table space, or accept the default data in the fields.

If you encounter errors while you upgrade, correct them and restart the upgrade program. For more information, see “Troubleshooting”, on page B-1.

- 10** Click **Yes**.

- 11** Choose **Close** to close the **Upgrade Utility** dialog box.

Improving Performance

You have completed the tasks that remove the database statistics. You now must regenerate new statistics to improve the performance of your upgrade. Depending whether you are connecting to an Oracle database, or Microsoft SQL Server database, refer to one of the following two sections:

- ▼ Analyze table commands (Oracle)
- ▼ Update Statistics (Microsoft SQL Server)

Analyze Table Commands (Oracle Only)

After you upgrade the database, analyze all tables to ensure that the Oracle Cost-Based Optimizer has up-to-date statistics. You can use commands to generate and execute a file of ANALYZE commands for all Maximo tables. Connect to the MAXIMO schema and run the following commands in SQL*Plus:

```
set heading off
set feedback off
```

Upgrading from 5.1 or 5.2

```
set pagesize 1000
spool C:\anatable.sql(in UNIX type: spool anatable.sql)
select 'ANALYZE TABLE ', tname, ' COMPUTE STATISTICS;' from maxtables where
storagepartition is not null;
spool off
start C:\anatable.sql(in UNIX type: start anatable.sql)
host erase C:\anatable.sql(in UNIX type: host rm anatable.sql)
```

Update Statistics (Microsoft SQL Server Only)

After you upgrade the database to the Maximo 5 architecture, perform a Query Analyzer to update statistics. To do so, complete the following steps:

- 1 Start Query Analyzer and log in to SQL Server as MAXIMO.
- 2 Select the database from the drop-down list.
- 3 Type the following command and press the yellow triangle icon to execute it:

```
EXEC sp_createstats 'indexonly'
```

Back Up Your Database

You have now completed the first half of the upgrade process. At this point, back up your database.

Congratulations, you are now at version 5.1. Continue with the next section.

Upgrading from 5.1 or 5.2

The Maximo 6.5.1.1 upgrade package is a modified Maximo 6 environment that contains all of the Java classes and data files that use utility classes like a Maximo 6 installation, but this package can only be used for the sake of upgrading a Maximo 5 database.

In this section, you perform two main tasks:

- ▼ Install/uncompress the Maximo 6.5.1.1 Upgrade package.
- ▼ If you have installed KPI Manager, run a script to remove it from your Maximo 5.2 system (not applicable to Maximo 5.1).

Installing the Upgrade Program

To install the Maximo upgrade program, complete the following steps:

- 1 Install/uncompress the Maximo 6.5.1.1 Upgrade package.
- 2 Edit the maximo.properties file for your database connection information.

Information Regarding Your Database Type

	Oracle	SQL Server
Database server name	Enter the Oracle host name.	Enter the SQL Server host name.
Port number	1521 (default).	1433 (default).
Database name	Enter the Oracle system identifier.	Enter the SQL Server database name.
Database owner	Maximo (default).	Maximo (default).
Password of database owner	Maximo (default).	Maximo (default).

Installing Industry Solution Upgrade Programs

If you have IBM Maximo Calibration or IBM Maximo for Transportation, you need to upgrade those products as well. To do so, you must install the Calibration or Transportation upgrade programs. These upgrade programs enable the core Maximo upgrade program to also upgrade Calibration and Transportation.

You must install the Calibration and Transportation upgrade programs into the same directory location where you installed the IBM Maximo upgrade program.

Installing the IBM Maximo Calibration Upgrade

- 1 If necessary, insert the IBM Maximo Upgrade CD into the CD drive.
- 2 Run the upgrade install program: `calibration_upg.exe`.
- 3 Navigate to the same directory where the IBM Maximo upgrade is installed.
- 4 Follow the prompts to complete the Calibration upgrade installation program.

Installing the IBM Maximo for Transportation Upgrade

- 1 If necessary, insert the IBM Maximo Upgrade CD into the CD drive.
- 2 Run the upgrade install program: `transportation_upg.exe`.
- 3 Navigate to the same directory where the IBM Maximo upgrade is installed.
- 4 Follow the prompts to complete the Transportation upgrade installation program.

NOTE See Appendix D, “Location of Transportation Records After Upgrade,” in the *Upgrade Planning Guide*, for information on where certain 5.2 Transportation records reside in the Release 6 database tables after upgrading to Transportation 6.3.

Removing Maximo Dashboard and KPI Manager (Configurable Start Center) Files

Maximo Dashboard and KPI Manager is a 5.2 add-on that lets you create configurable start centers. If you installed Maximo Dashboard and KPI Manager with Maximo 5.2, remove it. The associated files cannot be upgraded. From an SQL utility, run the appropriate database-specific command. Run the command from the server where you installed Maximo 6.

Oracle	<code><Maximo_root>\tools\Maximo\classes\psdi\upgrade\V520\Removedashboard.ora</code>
Microsoft SQL Server	<code><Maximo_root>\tools\Maximo\classes\psdi\upgrade\V520\Removedashboard.sqs</code>

Back Up Your Database

You are now ready to run the upgrade program. Before doing so, back up your database and then continue with the next chapter.

Understanding the Upgrade Utilities

5

This chapter explains the Integrity Checker, Validation, and Upgrade utilities. The next chapter explains how you use these utilities to complete the upgrade processes.

You launch the Upgrade Utilities program via a batch file named `upgradeui.bat`. You installed this file during the upgrade installation program that you completed in Chapter 4.

You can view the output of these utilities in log files, which the system generates in the `<Maximo_installation>\tools\Maximo\log` folder. If you run these utilities again, the system overwrites the log files unless you exit the Upgrade Utilities program and invoke it again. This action creates a new log file with a different time stamp.

The Integrity Checker Utility

The Integrity Checker utility verifies the current database and reports on common errors. The Integrity Checker does not identify all of the data errors that could exist. However, you must correct all errors found by the Integrity Checker before you can run the Validation utility.

The following list contains some of the tests it performs as part of verifying database integrity:

- ▼ Verifies “same-as” information
- ▼ Identifies indexes and related information (for example, name length greater than 18 characters)
- ▼ Identifies pending configuration changes
- ▼ Identifies inconsistencies between user and group accounts and security tables in Maximo
- ▼ Verifies existence of various Maximo tables and columns across meta-data tables, and at database (system) level
- ▼ Verifies the definitions of tables and columns across, and at database (system) level

The Integrity Checker runs in two modes: Report mode and Repair mode.

Report Mode

Report mode creates a listing of the problems that you must fix.

The Integrity Checker Utility

Repair Mode

Repair mode fixes errors that do not require manual intervention. Other errors are recorded in the log and lis files and you must fix them manually.

Upon completion, the Integrity Checker produces two files:

- ▼ lis file—basic information (for example, messages, warnings, errors).
- ▼ log file—a more detailed log containing each transaction that the utility recorded, including a complete list of errors, warnings, and SQL statements that the Integrity Checker produced.

The lis and log files are located in the <Maximo_installation>\tools\Maximo\log folder. You can open and review the files with any text editor.

When you run the Integrity Checker in Report mode, the database does not change. Review the lis file (a shorter version of the log file) and examine any errors and warnings reported. If you need more information, you can review the log file.

You must correct all errors before you can successfully run the Integrity Checker to completion. If the Integrity Checker runs and finds errors, investigate the cause of the errors and take the corrective action required. Also investigate warnings and take appropriate corrective action.

Running Integrity Checker in Repair mode accomplishes the following actions:

- ▼ If a Maximo user is not a database user, it drops the user from Maximo and the security tables.
- ▼ If a Maximo group is not a database user, it drops the group from Maximo and the security tables.
- ▼ If a Maximo group is not a Maximo user, it drops the group from Maximo.
- ▼ If a Maximo user is in a group that is not a Maximo group, it drops the group from Maximo and security tables.
- ▼ Refresh MAXSYSINDEXS and MAXSYSKEYS from native indexes.
- ▼ If a Maximo table owns no columns, it drops the table from Maximo.
- ▼ If bad table alias exists, it changes the alias to V_ <tablename>.
- ▼ If a rowstamp or a MaxTriggers trigger is missing, it creates the trigger.
- ▼ If Maximo column does not exist, it drops the column from Maximo.
- ▼ If Maximo column is defined differently on the database, it changes Maximo definition to match database.
- ▼ If rowstamp is null, it populates rowstamp from trigger.
- ▼ If column A is same-as column B and root column for column C (C->A->B), it makes column C same-as column B (C->B).
- ▼ If a same-as column is defined differently than the root column, it changes the same-as column definition to match the root.

- ▼ If an autokey is not referenced, it drops the autokey.

The Integrity Checker utility also checks the following data states. These checks were not in some previous versions of the Integrity Checker:

- ▼ Every Maximo table and view must have a valid primary key column sequence.
- ▼ Every primary key column sequence must correspond to a unique index.
- ▼ Every persistent Maximo table must have a column defined as its unique ID.
- ▼ Every unique column ID must correspond to a unique index.
- ▼ Nonpersistent tables cannot have persistent columns.
- ▼ Same-as columns must have the same “must-be” setting.
- ▼ A YORN column must be required (not null).
- ▼ All autokeys referenced by columns must exist.
- ▼ Columns mapped to domains cannot have values not in the domain.
- ▼ Columns mapped to domains must be the same datatype as the domain.
- ▼ Domains must have valid domain types, maxtypes, and lengths.
- ▼ All rows in configuration tables (MAXTABLESCFG, MAXSYSCOLSCFG, and so on) must match the base table (MAXTABLES, MAXSYSCOLUMNS, and so on).

**Orphaned
LONGDESCRIPTION**

An orphaned long description is a record in the LONGDESCRIPTION table that is not linked to a Maximo record, such as a work order or location record. The LDKEY column links the LONGDESCRIPTION record to the Maximo record. These records might be in the LONGDESCRIPTION table due to archiving or from manual updating of the database.

The upgrade will fail if any orphaned long descriptions exist.

Integrity Checker issues a warning like the following one:

```
WARNING -- The following tables reference orphaned long descriptions; to remove them,
run Integrity Checker in Repair mode. Tue Jun 20 14:18:14 EDT 2006
joboperation Tue Jun 20 14:18:14 EDT 2006
report Tue Jun 20 14:18:14 EDT 2006
workorder Tue Jun 20 14:18:14 EDT 2006
woperation Tue Jun 20 14:18:14 EDT 2006
```

IMPORTANT Run Integrity Checker in Repair mode to remove orphaned long descriptions.

Integrity Checker Record Count

New to the Integrity checker, is the ability to review how many records are in each of the applications.

The record count appears in the Validate<time_stamp>.lis file and is located in the following directory: \tools\maximo\logs.

You can use the record count to identify potential trouble spots (very large records) and flag them with a Pause callout. This creates an opportunity for you, for example, to create temporary indexes to aid with performance, backup the database, or resume the upgrade (carriage return). You then take another backup as it reaches the next Pause callout. For more information, see Chapter 7: "Interrupting the Upgrade Process," on page 7-1.

The Validation Utility

Validation checks that valid data in the source Maximo database that is known to need user intervention is transformed correctly before the upgrade can proceed. An example of this is that in 5.x you could have tools with a toolnum value equal to an itemnum value in the ITEM table. In Maximo 6, the tools are moved to the ITEM table, so the upgrade requires these numbers to be unique.

The Validation utility also generates lis and log files. They both contain the same information, except that the log file reveals the SQL statements showing how validation occurs and the lis file omits those SQL statements.

The following list contains some of the tests it performs as part of validating your database for the upgrade:

- ▼ Checks for the existence of tables, columns, or indexes to be added.
- ▼ Verifies that data will change successfully (that is, report registrations, addition of unique indexes, massaging of data for bug fixes, new features).
- ▼ Checks that the database passed the Integrity Checker.
- ▼ Checks that the database version is correct (matches MetaDoc.xml).
- ▼ Checks that no backup or unrestored tables exist.
- ▼ Checks that the database is not being configured.
- ▼ Checks that a table, column, or index to be updated or deleted does exist.
- ▼ Checks that a component of a GL account code cannot contain the new delimiter.
- ▼ Ensures that each row has remarks in MAXTABLES and MAXSYSCOLUMNS.
- ▼ Checks that two menu picks cannot have the same menu position.

- ▼ Checks that no Workflow processes are active.
- ▼ If duplicate records exist, the utility lists error messages and generates the corresponding XML files, where you must edit the files. For more information see “XML Files Generated by the Validation Utility,” on page 5-5.
- ▼ You also might encounter “parent-loop” errors from Validation.
- ▼ You also might encounter “circular reference” errors in the Validation log file.

The Validation utility updates the MAXVARS table to indicate if Validation completed successfully. You must run the Validation utility without errors before you can run the Upgrade utility.

XML Files Generated by the Validation Utility

The Validation utility writes error data to XML files that you must resolve by editing each file and adding a *new* value to each error record.

- ▼ If you are upgrading from Maximo 5.1 (starting from database version 15 or 38), the XML files appear in the \upgrade\V510 directory.
- ▼ If you are upgrading from Maximo 5.2, the XML files appear in the \upgrade\V520 directory.

UpgTools.xml

In Maximo 6, tools and items reside in the existing ITEM table. During the validation process, if an item has the same ID as that of a tool in an organization, the conflicting ID is written to this file. You must provide an alternate ID to populate the tool record in the ITEM table.

UpgMeterNames.xml

In Maximo 6, meter names reside in the METER table to enable performance comparisons between similar assets and locations. In earlier versions of Maximo, meter names were stored in the individual equipment record and they were not required. As a consequence, meter readings for equipment might exist without a meter label. This file would contain those equipment that have meter readings, but no corresponding meter names/labels. You then must provide a meter name to populate the METER table and create the asset meter relation in the ASSETMETER table.

UpgMasterPM.xml

In Maximo 6, Master PMs are at the system level and are in a new table, MASTERPM. Master PMs records from different sites in the existing PM table are now in the new MASTERPM table. Some records might have the same ID and those records are written to this file. You must provide an alternate ID.

UpgAssetAttributes.xml

In Maximo 6, ASSETATTRIBUTE table is now at the system level. Cases could exist where organization specific data becomes duplicated at the system

level. In those cases, this XML file lists the conflicting values, their organization ID value, and a place holder for the new value where you specify a new value to avoid duplication of the ID value.

UpgServices.xml

In Maximo 6, services and items reside in the existing ITEM table. During the validation process, if an item has the same ID as that of a Service in an organization, the conflicting ID is written to this file. You must provide an alternate ID to populate the Service record in the ITEM table.

UserTables.xml

In Maximo 6, every object has an attribute that contains the name of the unique ID for the records of that object. The upgrade adds a unique ID column to all core Maximo tables. For your user-defined tables, you can choose whether to add a unique ID column. To fully support Maximo functionality, a unique ID should be added. However, there might be special cases when you do not want a unique ID. For example, if your pre-upgrade database has a user-defined inherited table that is used in non-Maximo applications, and you do not want to alter the table structure, you can choose not to add the unique ID.

Core tables in Maximo 5 and 6 also have a column named “rowstamp” which supports other core functionality. When you added user-defined tables in Maximo 5, you chose whether to add the rowstamp column to the native table. If you did not add the rowstamp in Maximo 5 but want to add it for Maximo 6, you can choose to have it added by the upgrade.

The Validation utility identifies each user-defined table and determines default behavior for adding the unique ID and rowstamp. This is done by creating a file named UserTables.xml. UserTables.xml has an element for each user-defined table, each of which contains these two subelements:

- ▼ adduniqueid—This element is assigned a default value of “true” (add a unique ID column) or “false” (do not add a unique ID column). You can change the default value if you want. But if the value is set to “false,” be aware that not all core functionality will be supported for that table in Maximo 6.
- ▼ addrowstamp—This element is assigned a value of “true” or “false” to correspond to the value in Maximo 5. You can set the value to “true” to have the upgrade add the rowstamp column.

UpgClassification.xml

In Maximo 6, the ASSETCLASS table in the organization level of previous versions has become the CLASSIFICATION table in the system level. Cases might exist where organization-specific data becomes duplicated at the system level. In those cases, the UpgClassification.xml file lists the conflicting values, their organization value, and a place holder for the new value where you specify a new value to avoid duplication.

UpgWorkflow.xml

In Maximo 6, this file contains the location of a copy of your Maximo 5 MXServer.properties file. You can copy this file to the root folder (for example: C:\Maximo) where you installed Maximo 6.

The Upgrade Utility

The Upgrade utility performs the actual database upgrade.

New to the upgrade process is the ability to pause and resume the upgrade. In the event that the upgrade process fails, you have the ability to resume the upgrade from the point of failure, rather than from the beginning of the process.

You can also, after reviewing the `validate<time_stamp>.lis` file generated by the Integrity Checker process, insert pause callouts to manually pause the upgrade process. You can now take a snapshot/export of the database, run SQL queries, create indexes, modify data values, and so forth. For more on this feature, see Chapter 7: “Interrupting the Upgrade Process,” on page 7-1.

The **Upgrade** tab in the Upgrade Utility interface features fields where you enter data. Use the following descriptions of these fields to help you in determining what values to enter in Chapter 6, “Upgrading to Maximo 6,” on page 6-1.

Duplicating a User and Naming It MAXADMIN

The default “super user” in Release 6 is MAXADMIN, which is a new default account that is provided in Release 6. Much of the Release 6 documentation refers to this account. MAXADMIN is the approximate equivalent of the Release 5 user SYSADM.

To have the upgrade create a MAXADMIN account so that the upgraded database has a MAXADMIN account like a newly installed Release 6 database does, specify 1 (Yes) in the **Should the upgrade duplicate a user and call this duplicate MAXADMIN** field. You must specify Yes for a MAXADMIN user to exist when the upgrade finishes.

If you specify that you want to duplicate a user, specify the user name in the **Name of the user to be duplicated** field. The default is SYSADM. You can specify another user name if you created a Release 5 user that more closely matches the MAXADMIN role.

Default Craft for Labor That Has a Rate and No Craft

The upgrade program splits the 5.2 Labor record into two separate records in Maximo 6:

- ▼ Labor record
- ▼ LaborCraftRate record

The Craft and Pay Rate information that had been in the Labor record in 5.2 is in the LaborCraftRate record, which is a “child” record to the Maximo 6 Labor record.

The business rules in Maximo 6 do not allow a LaborCraftRate record to exist without a Rate. Therefore, in order to address the situation in which a 5.2 Labor record had a pay rate, but no craft, you must enter a Default Craft.

Default Order Unit

In Maximo 6, inventory records require an order unit. When you upgrade, any record that does not have an order unit, uses the value in this field for that record's order unit. The order unit specified in the Default Order Unit field is also used to populate the MEASUREUNIT table.

Maximo Base Language Code

Every instance of Maximo 6 requires a base language. Descriptions in the base language of master records are stored in the base tables. For example, ITEM table's description column contains the description strings in English for a system that has English as the base language. Non-base language descriptions are stored in the secondary language tables. The value that you enter here sets the two letter code of your base language of your choice.

- ▼ DE: German
- ▼ EN: English
- ▼ ES: Spanish
- ▼ FR: French
- ▼ IT: Italian
- ▼ JA: Japanese
- ▼ KO: Korean
- ▼ NL: Dutch
- ▼ PT: Portuguese
- ▼ SV: Swedish
- ▼ ZH: Chinese

Default Issue Unit

In Maximo 6, inventory records require an issue unit. When you upgrade, records that do not have an issue unit, the value that you enter in the Default Issue Unit field is used by the system for that record's issue unit. The issue unit specified here also is used by the system to populate the MEASUREUNIT table.

Create Item Set

Create Item Set is a general description that comprises the following fields:

- ▼ Create distinct item set for each organization (1,0)
- ▼ Enter organization to use for Item Master
- ▼ Initial Item Set ID

These fields are related and described as follows:

You can have a distinct Item set for each organization or define an Item set that all organizations share.

Entering a value of 1 (yes) in the Create distinct item set for each organization (1,0) creates a *distinct* item set for each organization and populate it with the corresponding items of each organization.

Entering a value of **0** (no) in the Create distinct item set for each organization (1,0), will create a Master Item Set that all organizations share.

Entering a value of 0, also requires that you enter data in the following two fields: **Enter organization to use for Item Master** and **Initial Item Set ID**.

In the **Enter organization to use for Item Master** field, enter the organization name whose items would be used to create the list of items in the Item Set that all organizations share.

In the **Initial Item Set ID** enter the initial ID of the item set to be created.

Create Company Set

Create Company Set is a general description that comprises the following fields:

- ▼ Create distinct company set for each organization (1,0)
- ▼ Enter organization to use for Company Master
- ▼ Initial Company Set ID

These fields are related and described as follows:

The user has a choice of having either a distinct Company (vendor) set for each organization, or define a Company set that is shared by all organizations.

Entering a value of **1** (yes) in the Create distinct company set for each organization (1,0) will create a *distinct* company set for each organization and populate it with the corresponding companies of each organization.

Entering a value of **0** (no) in the Create distinct company set for each organization (1,0), will create a Master Company Set that is *shared* by all organizations.

Entering a value of 0, also requires that you enter data in the following two fields: **Enter organization to use for Company Master** and **Initial Company Set ID**.

In the **Enter organization to use for Company Master** field enter the organization name whose companies you would later use to create the list of companies in the Company Set that all organizations share.

In the **Initial Company Set ID** enter the initial ID of the company set to be created.

Initial Holding Location

You specify a holding location that is used as a temporary location during the receiving process. The holding location is used for items that require inspection or serialization prior to being routed to their destination location, such as a storeroom or a work order. One holding location with the name that you specify is created for each site.

Duplicating a User and Naming It MAXADMIN

Ensure that the initial holding location identifier is a location name that did not exist in your Maximo 5 database.

Upgrading to Maximo 6

6

In this chapter, you perform the following general tasks in the order that they are listed. You also perform these tasks from the server where you installed the upgrade program (previous chapter).

- 1 Launch the Maximo Upgrade Utilities.
- 2 Connect to the Maximo 5 database by running the Login utility.
- 3 If present, remove Maximo Enterprise Adapter (MEA) from your Maximo 5 installation.
- 4 Run the Integrity Checker utility.
- 5 Run the Validation utility.
- 6 Run the Upgrade utility.

After you launch the Maximo Upgrade Utilities, the remaining tasks correspond to the five tabs that appear on the Maximo Upgrade Utilities program: Login, Uninstall MEA, Check Integrity, Validate, and Upgrade. You perform these tasks beginning with the Login tab and ending with the Upgrade tab.

Back up your database after performing Integrity Checker, Validation, and the Upgrade.

IMPORTANT Be sure that you are using the latest edition of the *Upgrade Guide*. You can find the edition number on the legal page (page ii) of the *Upgrade Guide*. The latest edition is available at the Maximo 6 Upgrade Resources page online (<http://www-1.ibm.com/support/docview.wss?rs=3214&uid=swg21266217>). You also can order the latest version of the upgrade program from the Maximo 6 Upgrade Resources page.

Launching the Maximo Upgrade Utilities

Before you can work with any utilities (tabs), you must launch the Maximo Upgrade Utilities interface by running the **upgradeui.bat** program that you installed in Chapter 4. To do so, from the server where you installed the Upgrade program, complete the following steps:

- 1 From a command prompt, change directory to:

```
<root_maximo>\tools\Maximo\
```

For example: `c:\Maximo\tools\Maximo\`

- 2 At the prompt, type **upgradeui.bat** and press Enter.

The Maximo Upgrade Utilities interface opens, displaying the Login tab.

Run the Login Utility

The Login tab, by default, points to the Maximo.properties file that the Upgrade installation program modified.

The program checks for a version number in the Maximo 5 version field. If you click another tab when the Login tab is empty you receive an error message.

The Login tab is aware of the database that you want to upgrade based on the entries that you provided in Chapter 4, "Installing the Maximo Upgrade Program," on page 4-1, while installing the Upgrade program.

You return to the Login tab after you completely upgrade a particular database and enter a different path or properties file to connect to a different database. Activities that take place in the other tabs affect the database that is currently connected to in the Login tab.

To run the Login tab, complete the following steps:

- 1 Review the read-only information in the Database section (DB Alias, User Name, and Current Maximo Version) and verify that they reflect the correct database information pertaining to your Maximo 5 product. The properties information that appears in the Properties section pertains to your Maximo 5 system.
- 2 If you are a Maximo Enterprise Adapter user, accept the default values for the Properties Files directory by clicking the **Uninstall MEA** tab. If you are a Maximo Enterprise Adapter user, click the Integrity Checker tab.

Optional: Run the Uninstall Maximo Enterprise Adapter Utility

If you are using the Maximo Enterprise Adapter (MEA) product, run the Uninstall MEA utility. Uninstall MEA removes all Maximo Enterprise Adapter tables from the Maximo 5 database. You will use the new Maximo 6 tables.

NOTE You must have processed all Maximo Enterprise Adapter transactions by this time. Refer to "Process All Maximo Enterprise Adapter Transactions," on page 3-8.

Uninstalling the Maximo Enterprise Adapter does not compromise any of your Maximo Enterprise Adapter data, because the data resides within core Maximo.

To remove the Maximo Enterprise Adapter tables, complete the following steps:

- 1 Click **Uninstall MEA**.
- 2 Click **OK** in the ensuing message box

You can view the log file that the system generates in the <maximo_installation>\tools\maximo\log\.

NOTE

You might have custom tables that the Uninstall MEA utility might not delete. To ensure that those tables are also removed, open an SQL tool, run the following script, and if any custom tables exist, remove them.

```
select * from maxsyscolumns where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxsyscolumns2 where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxsyscolscfg where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxtables where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxtablescfg where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxtables2 where servicename='MIC';
```

```
select * from maxservice where servicename='MIC';
```

```
select * from maxsysindexes where tname in (select tname from maxtables where app='INTERFACE');
```

```
select * from maxsyskeys where colname='APISEQ';
```

```
select * from maxsequence where name='APISEQ';
```

- 3 Exit from the Upgrade utility, shut down the database, and create a cold backup of the database.
- 4 Start the database, and then launch the Upgrade utility (upgradeui.bat).

Run the Integrity Checker Utility

To run the Integrity Checker utility, complete the following steps:

- 1 Click **Repair** mode.
- 2 Click **Run Integrity Checker**.
- 3 Using Windows Explorer navigate to the error messages lis and log files located in the following location (Maximo 6 installation folder):

```
<maximo_root>\tools\Maximo\log
```

- 4 Using your text editor, first open the **lis** (Integrity<time_stamp>.lis) file to find the problem areas and then open the **log** (Integrity<time_stamp>.log) file to obtain detail regarding the error messages.

Run the Validation Utility

- 5 Use the Database Configuration and Signature Security applications in the Control Center module to fix reported errors.

For errors that are written to the metadata and not to the Configuration tables, you can use an SQL tool to access the records in the database directly and correct errors from an SQL prompt.

- 6 Run **Integrity Checker** again.
- 7 Exit from the Upgrade utility, shut down the database, and create a cold backup of the database.
- 8 Start the database, and then launch the Upgrade utility (upgradeui.bat).

You might need to run the Integrity Checker a number of times and search again for errors in the log and lis files. Resolve all errors before proceeding with the next tab, Validation.

Run the Validation Utility

Ensure that you have corrected all errors that the Integrity Checker flagged before you continue with the Validation tasks. To run the Validation utility, complete the following steps:

- 1 From the Validation tab, click **Run Validation**.
- 2 Use Windows Explorer to navigate to the error message lis and log files in the following location (Maximo 6 installation folder):

```
<maximo_root>\tools\Maximo\log
```

- 3 Use your text editor to open the **lis** (Validation<time_stamp>.lis) file to find the problem areas and then open the **log** (Validation<time_stamp>.log) file to get details about the error messages.

Notable errors include a listing of XML files that you must edit. These XML files are in

```
<Maximo_root>\tools\Maximo\classes\psdi\upgrade\V520\
```

(or the appropriate folder that depicts the current Maximo version that you are about to upgrade to Maximo 6). You also might have to heed certain warning messages. For various types of errors that you might encounter, see “The Validation Utility” on page 5-4.

- Use a text editor to open each XML file and specify a unique value within the empty quotation marks, as shown in the following example:

An example of the `UpgAssetAttributes.xml` file *before* editing. Note that the quotation marks do not contain any value.

```
<?xml version="1.0" encoding="UTF-8"?>
<document table="ASSETATTRIBUTE" database="jdbc:oracle:thin:@172.22.11.110:1521:QL08">
  <RECORD assetattrid="UPGATT1" orgid="EAGLENA" description="UPG attribute 1" newAssetattrid="" />
  <RECORD assetattrid="UPGATT1" orgid="EAGLESA" description="Eagle SA dup attribute" newAssetattrid="" />
</document>
```

You must enter valid values within the quotation marks. Ensure that these values are consistent with data-type and length that was present in your Maximo 5 tables. For example, if you had integer values, you must use integer values; if you had alpha numeric values with a minimum length of 8 characters, then type alphanumeric values that are not greater than 8 characters.

An example of the `UpgAssetAttributes.xml` file *after* you edit it. Note the value within the double quotes.

```
<?xml version="1.0" encoding="UTF-8"?>
<document table="ASSETATTRIBUTE" database="jdbc:oracle:thin:@172.22.11.110:1521:QL08">
  <RECORD assetattrid="UPGATT1" orgid="EAGLENA" description="UPG attribute 1" newAssetattrid="UPGATT1">
  <RECORD assetattrid="UPGATT1" orgid="EAGLESA" description="Eagle SA dup attribute" newAssetattrid="UPGATT5" />
</document>
```

- Exit from the upgrade utility, shut down the database, and create a cold backup of the database.
- Start the database, and then launch the Upgrade utility (`upgradeui.bat`).

Run the Upgrade Utility

The database must pass the Validation check successfully with no errors. To help you decide what values to enter in the Upgrade tab, see “The Upgrade Utility” on page 5-7. To run the Upgrade utility, complete the following steps:

- Click the **Upgrade** tab.
- In the **Should the upgrade duplicate a user and call this duplicate user MAXADMIN (1/0)** field, enter 1 or 0.
- In the **Name of user to be duplicated** field, enter the name of the Release 5 user whose profile should be duplicated as the Release 6 MAXADMIN user. The default is SYSADM.
- In the **Create distinct company set for each organization (1/0)** field, enter 1 or 0.
- In the **Default Craft for Labor that have a rate and no craft** field, enter an existing craft name.
- In the **Default Order Unit** field, enter an existing unit name.
- In the **Initial Company Set ID** field, enter a set ID.
- In the **Enter Organization to use for Company Master** field, enter an existing organization name.

Run the Upgrade Utility

- 9 In the **Maximo Base Language Code** field, enter one of the following values: DE, EN, ES, FR, IT, JA, KO, NL, PT, SV, ZH.
- 10 In the **Default Issue Unit** field, enter an existing issue unit name.
- 11 In the **Enter Organization to use for Item Master** field, enter an existing organization name.
- 12 In the **Initial Item Set ID** field, enter an item set ID.
- 13 In the **Create distinct item set for each organization (1/0)** field, enter 1 or 0.
- 14 In the **Enter initial holding location** field, specify a location name, for example, Holding.
- 15 Click **Set**.
- 16 Click **Run Upgrade**.

Depending on the size of your database, it might take many hours for the upgrade to complete.

- 17 Check for errors in the log file (`<maximo_installation>\tools\maximo\log\`).

The Upgrade Utility Log Files

File Name	Description
Upgrade<time_stamp>.log	Check this entire file for any upgrade errors.
ConfigDB<time_stamp>.log	Check ConfigDB file for any configuration errors.
RestoreFromBackup<time_stamp>.log	Check the RestoreFromBackup file for possible restore errors.
DropBackup<time_stamp>.log	Check this file for any errors, though it is unlikely to contain errors.

- 18 Back up your database.

Interrupting the Upgrade Process

7

You can interrupt the upgrade process in two ways: pause it or stop it. You pause the upgrade process in order to query the data or create indexes to improve the upgrade performance. You can also back up the database using import/export capabilities of your database software. However, import and export take much longer to back up and restore than shutting down the database and backing up the files. Therefore, you are more likely to use the stop functionality.

The Upgrade program uses sets of files called callouts to manipulate the data within the Maximo-related database tables. To pause the Upgrade program, you insert a special type of callout XML statement, the pause callout. If there are any problems with your upgrade after a pause callout, you can restore the database, fix the error, and resume the upgrade from the pause that you inserted before the failure. If the Upgrade program fails, it rolls back any changed data to the previous successful commit statement. When you resume the Upgrade program, it continues processing the upgrade from after the last successful callout.

To stop the upgrade process for the purpose of backing up the database, insert a stop callout. You must also create an SQL file that the stop callout will call and cause the database to stop running.

You can view a list of the callouts in the AppCalloutList.xml file in the V520 or V510 folder under the \tools\maximo\classes\psdi\upgrade\folder.

Identifying Where to Interrupt the Upgrade

The pause or the stop feature applies to the Upgrade utility. When you click Run Upgrade from the Upgrade Utility tab, the upgrade undergoes three phases:

- ▼ Phase 1: The upgrade creates new data structure. It uses Metadoc files to create Maximo configuration tables and adjusts values and performs database configuration to create new tables with no restrictions.
- ▼ Phase 2: This is where the callouts are executed. Data is moved to new tables. You insert the pause and stop callouts in this phase.
- ▼ Phase 3: Uses database configuration to place all the restrictions, for example, this column is not null.

The idea is to stop the upgrade once before Phase 2 begins, once before Phase 3 begins, and before and after the UpgradeLangCodeAndUniqueID callout in phase 2 so that you can take a quick backup of each segment.

Inserting a Pause or Stop Callout

An important consideration as to where to insert the stop callouts depends upon the callouts that have more than one commit statement (for example, the UpgradeLangCodeAndUniqueID callout). This is important because if the upgrade fails at one of the commit statements in the middle of the callout, you cannot correct the problem and resume the upgrade. You must restart from the most recent backup, then correct the problem and restart the upgrade.

In addition, the Integrity Checker process produces a set of log files (\tools\maximo\logs) that list the number of records for each Maximo-related table in the database. You use these log files to identify the tables that have a large number of records and would take a longer time to process. Consider pausing the upgrade before any callout that manipulates large database tables. You can insert as many pause callouts as you want.

Inserting a Pause or Stop Callout

The following instructions provide a good approach to using callouts. You insert four stop callouts in the AppCalloutList.xml file as follows:

- ▼ Before the first callout, UpgradeAddTempIndexes.
- ▼ Before the UpgradeLangCodeAndUniqueID callout.
- ▼ After the UpgradeLangCodeAndUniqueID callout.
- ▼ At the end of the last callout, UpgradeDropTempIndexes.

You can insert as many stop callouts as you want in the AppCalloutList.xml file. You are not confined to the four in the list.

Complete the following steps:

- 1** Open the **AppCallOutList.xml** file from the following location: \tools\maximo\classes\psdi\upgrade\V520 or V510, depending on your starting point.
- 2** Search for the **UpgradeAddTempIndexes** callout. It is the first callout listed in the AppCallOutList.xml file.
- 3** Using your text editor, insert a line before the UpgradeAddTempIndexes callout.

- 4 Type either of the following callouts exactly as it appears:

Callout Type	Reason for Use
Stop: <APP filename="Stop"></APP>	<p>To stop the upgrade (recommended for all four interruptions at this time), complete the following sub-steps:</p> <ol style="list-style-type: none"> a Create a file named: UpgradeStop.sql (exactly as depicted in bold). b The file must contain the following lines (with the semicolon on the next line): <pre>select 1 from Stop_the_upgrade ;</pre> c Save the file in the following directory: \tools\maximo\classes\psdi\upgrade\V520 or V510
Pause: <APP filename="Pause"></APP>	To query data or create indexes. No need to create an SQL file. A pause file already exists.

- 5 Search for the **UpgradeLangCodeAndUniqueID** callout.
- 6 Include the pause or the stop callout before *and* after the UpgradeLangCodeAndUniqueID callout.
- 7 Scroll down the AppCallOutList.xml file and find the last callout: **UpgradeDropTempIndexes**.
- 8 Insert a pause or stop callout after the UpgradeDropTempIndexes callout.
- 9 Save the AppCallOutList.xml file and close it.

Running the Upgrade with the Stop Callouts

Another good practice is to use the stop callouts in the Upgrade program as follows:

- 1 After having modified the AppCallOutList.xml file, run the upgrade Utility. Refer to "Run the Upgrade Utility," on page 6-5.
- 2 Once the Upgrade stops with a missing table error at the first stop, UpgradeAddTempIndexes, shut down the database and take a cold backup of the database.
- 3 Remove the first pause (before UpgradeAddTempIndexes), save the AppCallOutList.xml file, and *restart* the database and the upgrade until it stops again.
- 4 Shut down the database and take another cold backup of the database.

Repeat steps 2 and 3 for the UpgradeLangCodeAndUniqueID and the UpgradeDropTempIndexes callouts. The following is a sequence of actions that you must complete:

- 5 Start the database and the Upgrade program (upgradeui.bat).
- 6 After it stops at the beginning of the UpgradeLangCodeAndUniqueID callout, shut down the database and take a cold backup.
- 7 Remove the stop callout just before the UpgradeLangCodeAndUniqueID callout and save the XML file.
- 8 Start the database and the Upgrade program (upgradeui.bat).
- 9 After it stops at the end of the UpgradeLangCodeAndUniqueID callout, shut down the database and take a cold backup.
- 10 Remove the stop callout and save the file.
- 11 Restart the database and the Upgrade program.
- 12 After it stops at the beginning of the UpgradeDropTempIndexes callout, shut down the database and take a cold backup.
- 13 Remove the last stop callout and save the file.
- 14 Start the database and the Upgrade program (upgradeui.bat).
- 15 After it stops at the end of the entire Upgrade program, you can take another backup.

Using a Pause Callout

The pause callout gives you an opportunity to decide if you do want to stop the database. You can insert as many stop and pause callouts as you want. With pause callouts, you do not have to shut down the database. And you can run queries or create indexes and resume the upgrade by pressing Enter.

Resuming the Upgrade

In the event that the upgrade process fails, you can resume the upgrade from the point of failure, rather than from the beginning of the process. This feature can save you a lot of time and resources.

Should the upgrade fail, the upgrade undoes (rolls back) data manipulation to the previous commit statement. The upgrade keeps track of the last successful callout. When you resume the upgrade, all processing is bypassed until it reaches the last successful callout and continues from there. You resume the upgrade process by pressing Enter.

The following list provides an overview of the post-upgrade tasks:

- [] Update the Maximo database
- [] Install the Maximo 6.2 fixpack (that matches the latest Maximo 7 version)

Update the Maximo Database

Make sure the Maximo 6 database is at the latest version. To update the database to the latest version, complete the following steps:

- 1 Back up your newly upgraded database.
- 2 From a command prompt, change directory to <maximo_root>/tools/maximo.
- 3 Run **updatedb.bat**.

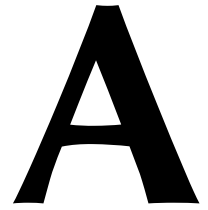
Install the Maximo 6.2 Fixpack (that matches the latest Maximo 7 version)

Download and install the latest Maximo 6.2.x fixpack for the correct version of Maximo 7.1.1.x. These upgrade utilities and scripts will upgrade the database to Maximo 6.2.5.

NOTE The fixpack level numbers are one number ahead for Maximo 7. For example, if Maximo 7.1.1.7 is the latest Maximo 7.1.1.x release (the final 7 being the fixpack level), then install the Maximo 6.2.6 fixpack.

Install the Maximo 6.2 Fixpack (that matches the latest Maximo 7 version)

Maximo Enterprise Adapter Configuration and Customization Tasks



If you use the Maximo Enterprise Adapter (MEA) upgrade adapter, the amount of post-upgrade tasks that you must perform depends upon the data format that you use in the Maximo 5 Maximo Enterprise Adapter (XML or interface tables), the interfaces that you use, and the extent of customization.

This section describes configuration and customization tasks that you might need to perform if you use the upgrade adapter. Not all tasks apply to all customers. Details of each task follow the table. For more information about integration changes related to each task, refer to the *IBM Maximo Release 5 to Release 6 Upgrade Planning Guide*.

If you decide to use the Maximo 6 integration rather than the upgrade adapter, perform the configuration tasks described in the configuration chapter of the *IBM Maximo Enterprise Adapter System Administrator's Guide*.

Post-Upgrade Configuration and Customization Tasks

Task	Required?
Updates to Integration Objects and Interfaces	
Obsolete Columns	Yes
Duplicate Columns	Yes
Integration Objects for Customized Maximo 5 Interfaces	If you modified Maximo 5 interfaces
Integration Components for New Maximo 5 Interfaces	If you created Maximo 5 interfaces
Contracts, Crafts, and Labor Interfaces	See text
Updates to Processing Classes	
Location of Custom Processing Logic	Yes
Obsolete and Duplicate Columns	Yes
Interface Queue Tables	If you use interface tables
Inventory and Purchasing Ownership	See text
Selective Bypassing of Transactions	See text
EXPDONE Field	See text
Values Objects	If you use XML
Synchronization of Currency Codes	Yes
Maximo 6 Integration Configuration Tasks	Yes
Error Handling	Yes

Updates to Integration Objects and Interfaces

The upgrade adapter generates integration objects and upgraded interfaces for predefined Maximo 5 interfaces, but not for customized interfaces. For example, the upgraded PO interface reflects the predefined Maximo 5 PO interface. It does not include any changes that you made to that interface. The upgrade adapter also does not provide an upgraded version of Maximo 5 interfaces that you created.

This section describes updates you might need to make to accommodate your Maximo 5 customization.

NOTE The upgrade adapter generates separate inbound and outbound interfaces, in accordance with Maximo 5 interface processing. However, the upgraded interfaces reflect the content of the 6.0 integration objects, which contain the combined inbound and outbound fields. Therefore, the upgraded inbound and outbound interfaces will contain the same fields.

Obsolete Columns

The interfaces that the upgrade adapter generate reflect the content of the Maximo 6 integration objects, which in turn reflect the Maximo 6 Maximo database tables. Therefore, differences might exist between the fields in the predefined Maximo 5 interfaces and the fields in the upgraded interfaces, for the following reasons:

- ▼ New fields added to Maximo 6 integration
- ▼ Maximo 5 fields deleted from Maximo 6 integration
- ▼ Maximo 5 fields renamed in Maximo 6 integration
- ▼ Aliases assigned to duplicate fields
- ▼ Maximo database changes that are not related to the integration
- ▼ Common integration objects for inbound and outbound interfaces

For a list of deleted and renamed columns, see "Tables of Integration Components," on page A-15. Check your customized interfaces for references to these columns. Update the integration objects that correspond to interfaces that use these fields.

For information about updating integration objects, refer to the Integration Objects help.

NOTE You also must update any custom processing that refers to the obsolete fields.

Duplicate Columns

If you do not use interface tables, skip this section.

Duplicate column names can result in errors during the creation of interface tables and flat files.

The upgrade adapter creates aliases for duplicate fields in the upgraded interfaces, but not in customized interfaces. Check for duplicate column names in customized interfaces and assign aliases to the corresponding fields in the integration object.

You assign aliases through the Add/Modify Alias dialog box in the Integration Objects application. For more information, refer to the Integration Objects help.

Integration Objects for Customized Maximo 5 Interfaces

If you added MBOs to any predefined Maximo 5 interfaces, update the corresponding integration object to include the MBO. After you save the integration object, the interface reflects the changes. You upgrade the integration object through the Integration Objects application.

For more information, refer to the Integration Objects help.

Integration Components for New Maximo 5 Interfaces

If you created custom Maximo 5 interfaces, perform the following tasks to create equivalent interfaces for use with the Maximo 6 integration:

- ▼ Create an integration object that defines the sub-records and fields in the interface.
- ▼ Associate the integration object with an integration point.
- ▼ Create an interface that corresponds to the integration object and integration point.

You perform the first two tasks in the Integration Objects application, and the third in the Integration Interfaces application.

For more information, refer to the online help for the Integration Objects and Integration Interfaces applications.

Contracts, Crafts, and Labor Interfaces

The changes to the Contracts, Crafts, and Labor applications are beyond the scope of the upgrade adapter. Therefore, upgraded versions of the related Maximo 5 interfaces are not available.

Review the Maximo 6 contract, craft, and labor interfaces. If necessary, customize the corresponding integration objects and processing classes to meet your business requirements.

Updates to Processing Classes

Three major aspects of the Maximo 6 integration processing affect how and where you implement your Maximo 5 customization in the Maximo 6 integration:

- ▼ All external systems that use the same adapter share the same processing classes.
- ▼ Every processing class applies to a particular interface.
- ▼ Additional new customization points exist in the Maximo 6 integration.

In addition, smaller modifications in the processing between Maximo 5 and Maximo 6 will require some modifications to your custom logic.

This section addresses how these changes affect your custom Maximo 5 logic and its implementation in the Maximo 6 integration.

Location of Custom Processing Logic

All Maximo 6 external systems that use the same adapter share the same processing classes. In addition, Maximo 6 processing logic can apply to a

MBO, an interface, all interfaces associated with an integration point, or an external system.

Examine your user exit classes for external system-specific behavior and modify them as needed. Also, determine the Maximo 6 customization point(s) where you will duplicate your Maximo 5 user exit classes and custom ERP exit classes.

In order to decide which customization points to use, read the following chapters of the Maximo 6 *IBM Maximo Enterprise Adapter System Administrator's Guide*.

- ▼ Chapter 2: Architecture
- ▼ Chapter 3: Outbound and Inbound Processing
- ▼ Chapter 14: Customization with Processing Rules
- ▼ Chapter 15: Customization with User Exits

Obsolete and Duplicate Columns

Check your custom ERP processing classes and user exit classes for references to obsolete columns and to duplicate columns for which you have provided an alias. Modify those references to refer to the current column name.

For more information, see "Updates to Integration Objects and Interfaces," on page A-2.

Interface Queue Tables

The format and polling of interface queue tables has changed in the Maximo 6 integration. Modify the logic that reads from and writes to interface queue tables, to process them as described in the *IBM Maximo Release 5 to Release 6 Upgrade Planning Guide*. Do this for every external system that uses interface tables.

Inventory and Purchasing Ownership

Maximo 6 integration processing does not consider the system that owns purchase orders and inventory, nor does it distinguish between stock, non-stock, and special order items.

If necessary, customize Maximo 6 user exit classes to simulate Maximo 5 processing on the basis of inventory ownership, purchase order ownership, and item type.

Selective Bypassing of Transactions

The Maximo 6 integration does not have interface controls that allow the integration processing to selectively bypass a transaction on the basis of its organization or site.

If necessary, customize Maximo 6 user exit classes or create processing rules to bypass processing on the basis of organization or site values.

EXPDONE Field

The EXPDONE column is replaced by the SENDERSYSID column. If your custom code checks the value of the EXPDONE field, modify it to check the value of the SENDERSYSID field instead.

Values Objects

If you use interface tables only, ignore this section.

The interfaces that the upgrade adapter provides create XML with the Maximo 5 wrapper and process similar inbound XML. The content in these interfaces uses the Maximo 5 XML structure. The interfaces provide an ER structure that resembles the Maximo 5 IR. The first two levels of data appear as siblings and the third level as a child. The content can differ from the content of the original Maximo 5 XML if the corresponding MBOs have changed.

Update any custom processing that accesses the second level sub-records of the internal record, as described in the following paragraph. This change applies to user exits that loop through multi-level objects (PO, PR and Invoices).

Values objects are part of webMethods[®]. Maximo 6 does not use them, so remove references to values objects and imports of webMethods classes. Also, call a new method of StructureData class, as shown in the following table.

Method	Description
getLevelData(String childName)	Returns a Values array. User code loops through this array to access individual child Values objects.
getChildrenData (String childName)	Returns a list of JDOM Element objects. User code loops through this list to access individual child elements.

The following examples show how the user exit code that loops through POLINE records changes in the Maximo 6 integration.

Maximo 5 sample code

```
import com.wm.util.Values;
import psdi.iface.mic.*;
.
.
.
StructureData struc = . . .
Values[] allLines = struc.getLevelData("POLINE");

if (allLines == null)
    return;

for (int i = 0; i < allLines.length; i++)
{
    struc.setAsCurrent(allLines[i]);
    .
    .
    .
}
```


Maximo 6 sample code

```

    }
import psdi.iface.mic.*;
.
.
.
    StructureData irData = . . .
    List allLines = irData.getChildrenData("POLINE");

    /*
    * Loop thru the Po Lines
    */
    for (int i = 0; i < allLines.size(); i++)
    {
        irData.setAsCurrent(allLines, i);
        .
        .
        .
    }

```

Synchronization of Currency Codes

Maximo no longer automatically generates currency code masters. Manually synchronize currency codes between Maximo and external systems.

Maximo 6 Integration Configuration Tasks

The upgrade adapter does not move Maximo 5 configuration data to the Maximo 6 integration. You must manually configure the Maximo 6 integration.

For a complete list of configuration tasks and procedures, refer to the configuration chapter in the *IBM Maximo Enterprise Adapter System Administrator's Guide*.

Error Handling

While the Maximo 5 Maximo Enterprise Adapter manages interface errors within the interface table, the Maximo 6 integration provides a common error handling mechanism for interface tables, XML, and flat files. The Maximo 6 integration also writes error data in a different format and provides a different mechanism for deleting and retrying errors.

Familiarize yourself with error handling in Maximo 6 integration. For more information, refer to the *IBM Maximo Enterprise Adapter System Administrator's Guide*.

Tables of Integration Components

The following tables list the integration components used in the Maximo 5 Maximo Enterprise Adapter and the Maximo 6 integration, and those generated by the upgrade adapter.

NOTE The letter *Y* in the Out or In column in the following tables indicates that the corresponding interface or interface table is used for outbound or inbound processing, respectively.

Maximo 5 and Maximo 6 Interfaces and Interface Tables

Maximo 5 and Maximo 6 Interfaces and Interface Tables

Maximo 5				Maximo 6			
Interface Name	Interface Table	Out	In	Interface Name	Interface Table	Out	In
INVOICE	MOUT_AP_INTERFACE MAX_AP_INTERFACE	Y	Y	MXINVOICEInterface	MXINVOICE_IFACE	Y	Y
CHARTOFACCOUNTS GLCOMPONENTS	MAX_COA_INTERFACE		Y	MXCOAInterface MXGLCOMPInterface	MXCOA_IFACE MXGLCOMP_IFACE		Y Y
COMPANIES	MAX_COM_INTERFACE	Y	Y	MXVENDORInterface	MXVENDOR_IFACE	Y	Y
FINCNTRL	MAX_FC_INTERFACE		Y	MXPROJInterface	MXPROJ_IFACE		Y
TOOLTRANS_GL INVTRANS_GL INVOICETRANS_GL LABTRANS_GL SERVRECTRANS_GL MATRECTRANS_GL MATUSETRANS_GL	MOUT_GL_INTERFACE	Y		MXJOURNALInterface	MXJOURNAL_IFACE	Y	
MATUSETRANS	MOUT_ISU_INTERFACE MAX_ISU_INTERFACE	Y	Y	MXISSUEInterface	MXISSUE_IFACE	Y	Y

Tables of Integration Components

Maximo 5 and Maximo 6 Interfaces and Interface Tables (Continued)

Maximo 5				Maximo 6			
Interface Name	Interface Table	Out	In	Interface Name	Interface Table	Out	In
ITEM	MAX_ITM_INTERFACE	Y	Y	MXITEMInterface	MXITEM_IFACE	Y	Y
INVENTORY				MXINVENTORYInterface	MXINVENTORY_IFACE	Y	Y
INVBALANCES				MXINVBALInterface	MXINVBAL_IFACE	Y	Y
INVVENDOR				MXINVVENDORInterface	MXINVVENDOR_IFACE	Y	Y
LABOR	MAX_LC_INTERFACE		Y	MXLABORInterface	MXLABOR_IFACE	Y	Y
LABTRANS	MAX_LPY_INTERFACE	Y	Y	MXEMPACTInterface	MXEMPACT_IFACE	Y	Y
PO	MOUT_PO_INTERFACE	Y	Y	MXPOInterface	MXPO_IFACE	Y	Y
	MAX_PO_INTERFACE						
PR	MOUT_PR_INTERFACE	Y	Y	MXPRInterface	MXPR_IFACE	Y	Y
	MAX_PR_INTERFACE						
SERVRECTRANS	MOUT_RCV_INTERFACE	Y	Y	MXRECEIPTInterface	MXRECEIPT_IFACE	Y	Y
MATRECTRANS	MAX_RCV_INTERFACE						
	MOUT_RCV_INTERFACE	Y					
	MAX_RCV_INTERFACE	Y					
INVRESERVE	MOUT_RSV_INTERFACE	Y		MXINVRESInterface	MXINVRES_IFACE	Y	Y
LOCATIONS	MOUT_SRL_INTERFACE	Y	Y	MXSTORELOCInterface	MXSTORELOC_IFACE	Y	Y
	MAX_SRL_INTERFACE						
WORKORDER	MOUT_WO_INTERFACE	Y	Y	MXWOInterface	MXWO_IFACE	Y	Y
	MAX_WO_INTERFACE						

Maximo 5 and Upgraded Interfaces and Interface Tables

Maximo 5 and Upgraded Interfaces and Interface Tables

Maximo 5				Upgrade Adapter			
Interface Name	Interface Table	Out	In	Interface Name	Interface Table	Out	In
INVOICE	MOUT_AP_INTERFACE	Y		MOUT_AP_INTERFACE	MOUT_AP_INTERFACE	Y	
	MAX_AP_INTERFACE		Y	MAX_AP_INTERFACE	MAX_AP_INTERFACE		Y
CHARTOFACCOUNTS GLCOMPONENTS	MAX_COA_INTERFACE		Y	MAX_COA_INTERFACE	MAX_COA_INTERFACE		Y
COMPANIES	MAX_COM_INTERFACE	Y	Y	MAX_COM_INTERFACE	MAX_COM_INTERFACE	Y	Y
FINCNTRL	MAX_FC_INTERFACE		Y	MAX_FC_INTERFACE	MAX_FC_INTERFACE		Y
TOOLTRANS_GL INVTRANS_GL INVOICETRANS_GL LABTRANS_GL SERVRECTRANS_GL MATRECTRANS_GL MATUSETRANS_GL	MOUT_GL_INTERFACE	Y		MOUT_GL_INTERFACE	MOUT_GL_INTERFACE	Y	
MATUSETRANS	MOUT_ISU_INTERFACE	Y		MOUT_ISU_INTERFACE	MOUT_ISU_INTERFACE	Y	
	MAX_ISU_INTERFACE		Y	MAX_ISU_INTERFACE	MAX_ISU_INTERFACE		Y

Tables of Integration Components

Maximo 5 and Upgraded Interfaces and Interface Tables (Continued)

Maximo 5				Upgrade Adapter			
Interface Name	Interface Table	Out	In	Interface Name	Interface Table	Out	In
ITEM INVENTORY INVBALANCES INVVENDOR	MAX_ITM_INTERFACE	Y	Y	MAX_ITM_INTERFACE	MAX_ITM_INTERFACE	Y	Y
LABOR	MAX_LC_INTERFACE		Y				
LABTRANS	MAX_LPY_INTERFACE	Y	Y	MAX_LPY_INTERFACE	MAX_LPY_INTERFACE	Y	Y
PO	MOUT_PO_INTERFACE MAX_PO_INTERFACE	Y	Y	MOUT_PO_INTERFACE MAX_PO_INTERFACE	MOUT_PO_INTERFACE MAX_PO_INTERFACE	Y	Y
PR	MOUT_PR_INTERFACE MAX_PR_INTERFACE	Y	Y	MOUT_PR_INTERFACE MAX_PR_INTERFACE	MOUT_PR_INTERFACE MAX_PR_INTERFACE	Y	Y
MATRECTRANS SERVRECTRANS MATRECTRANS SERVRECTRANS	MOUT_RCV_INTERFACE MAX_RCV_INTERFACE	Y	Y	MOUT_RCV_INTERFACE MAX_RCV_INTERFACE	MOUT_RCV_INTERFACE MAX_RCV_INTERFACE	Y	Y
INVRESERVE	MOUT_RSV_INTERFACE	Y		MOUT_RSV_INTERFACE	MOUT_RSV_INTERFACE	Y	
LOCATIONS	MOUT_SRL_INTERFACE MAX_SRL_INTERFACE	Y	Y	MOUT_SRL_INTERFACE MAX_SRL_INTERFACE	MOUT_SRL_INTERFACE MAX_SRL_INTERFACE	Y	Y
WORKORDER	MOUT_WO_INTERFACE MAX_WO_INTERFACE	Y	Y	MOUT_WO_INTERFACE	MOUT_WO_INTERFACE	Y	

Upgraded Integration Components

The following information applies to integration objects marked with one or two asterisks:

- * This is a merged, not a hierarchical, integration object. For more information about merged integration objects, refer to the *IBM Maximo Enterprise Adapter System Administrator's Guide*.
- ** This integration object and its related interfaces do not support contracts (blanket and price agreements)

Upgraded Integration Components

Interface Name	Interface Table	Out		In		Integration Object	Integration Object Sub-Records (MBOs)
		XML	Iface Table	XML	Iface Table		
INVOICE	MOUT_AP_INTERFACE	Y	Y	Y		MX5XAP	INVOICE
MAX_AP_INTERFACE	MAX_AP_INTERFACE			Y	Y		INVOICELINE INVOICECOST
CHARTOFACCOUNTS				Y		MX5XCOA	CHARTOFACCOUNTS
MAX_COA_INTERFACE	MAX_COA_INTERFACE			Y	Y		
COMPANIES	MAX_COM_INTERFACE		Y		Y	MX5XCOM	COMPANIES
MAX_FC_INTERFACE	MAX_FC_INTERFACE				Y	MX5XFC	FINCNTRL
MATUSETRANS	MOUT_ISU_INTERFACE	Y	Y	Y		MX5XISU	MATUSETRANS
MAX_ISU_INTERFACE	MAX_ISU_INTERFACE			Y	Y		
ITEM	MAX_ITM_INTERFACE		Y		Y	MX5XITM*	ITEM INVENTORY INVBALANCES INVENDOR

Tables of Integration Components

Upgraded Integration Components (Continued)

Interface Name	Interface Table	Out		In		Integration Object	Integration Object Sub-Records (MBOs)
		XML	Iface Table	XML	Iface Table		
JOURNALS	MOUT_GL_INTERFACE		Y			MX5XJRNL*	INVOICETRANS INVTRANS LABTRANS MATRECTRANS MATUSETRANS SERVRECTRANS TOOLTRANS
LABTRANS	MOUT_LPY_INTERFACE	Y	Y	Y	Y	MX5XLPY	LABTRANS
MAX_LPY_INTERFACE	MAX_LPY_INTERFACE			Y			
PO	MOUT_PO_INTERFACE	Y	Y	Y	Y	MX5XPO**	PO POLINE POCOST
MAX_PO_INTERFACE	MAX_PO_INTERFACE			Y			
PR	MOUT_PR_INTERFACE	Y	Y	Y		MX5XPR	PR PRLINE PRCOST
MAX_PR_INTERFACE	MAX_PR_INTERFACE			Y	Y		
RECEIPTS	MOUT_RCV_INTERFACE	Y	Y	Y		MX5XRCV*	MATRECTRANS SERVRECTRANS
MAX_RCV_INTERFACE	MAX_RCV_INTERFACE			Y	Y		
INVRESERVE	MOUT_RSV_INTERFACE	Y	Y			MX5XRSV	INVRESERVE
LOCATIONS	MOUT_SRL_INTERFACE	Y	Y	Y		MX5XSRL	LOCATIONS
MAX_SRL_INTERFACE	MAX_SRL_INTERFACE			Y	Y		
WORKORDER	MOUT_WO_INTERFACE	Y	Y			MX5XWO	WORKORDER

Maximo 5 Columns Replaced or Removed in Maximo 6 Integration

This section lists Maximo 5 columns that have been replaced or removed from the Maximo 6 interfaces. The first table lists changes that are common to all interfaces. Subsequent tables list the changes specific to each interface.

All Maximo 6 Interfaces

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
APISEQ		TRANSSEQ	Column replaced by TRANSSEQ in Maximo 6
APISITE			Column removed from Maximo 6
BATCHID			Column removed from Maximo 6
BATCHLINEID			Column removed from Maximo 6
IMPORTMESSAGE			Column removed from Maximo 6
IMPORTSTATUS			Column removed from Maximo 6
IMPORTTIMESTAMP			Column removed from Maximo 6
ROWSTAMP			Column removed from Maximo 6
SOURCEID			Column removed from Maximo 6

MOUT_AP_INTERFACE—AP Invoices Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
INVOICE			
TOTALLINES	NO		Column removed from MOUT_AP_INTERFACE in Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6

Tables of Integration Components

MOUT_AP_INTERFACE—AP Invoices Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
WFID	WFID		Column removed from Maximo 6
INVOICELINE			
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
SCHARGECODE	SCHARGECODE	ITEMNUM	Column replaced by ITEM (of type SERVICE) in Maximo 6
SERVICE	SERVICE		Column removed from Maximo 6
INVOICECOST			
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6

MAX_AP_INTERFACE—AP Invoices Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
INVOICE			
WFID	WFID		Column removed from Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6
TOTALLINES	NO		Column removed from Maximo 6
INVOICELINE			
SCHARGECODE	SCHARGECODE	ITEMNUM	Column replaced by ITEM (of type SERVICE) in Maximo 6

MAX_AP_INTERFACE—AP Invoices Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
SERVICE	SERVICE	LINETYPE	Column replaced by LINETYPE in Maximo 6
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
INVOICECOST			
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6

MAX_COA_INTERFACE—Chart of Accounts Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
CHARTOFACCOUNTS			
DISABLED	DISABLED	ACTIVE	Column replaced by ACTIVE in Maximo 6
CH1	CH1		Column removed from Maximo 6
CH2	CH2		Column removed from Maximo 6
CH3	CH3		Column removed from Maximo 6
CH4	CH4		Column removed from Maximo 6
CH5	CH5		Column removed from Maximo 6

Tables of Integration Components

MAX_COM_INTERFACE —Companies Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
COMPANIES			
LONGDESC	NAME_LONGDESCRIPTION	NAME_LD	Column replaced by NAME_LD in Maximo 6
PRIMARYCONTACT	NO		Column removed from MAX_COM_INTERFACE in Maximo 6
PRIMARYREMIT	NO		Column removed from MAX_COM_INTERFACE in Maximo 6

MAX_FC_INTERFACE—Financial Control Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
FINCNTRL			
LDKEY	LDKEY		Column removed from Maximo 6

MOUT_GL_INTERFACE—General Ledger Journal Entries Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
FINCNTRL			
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6

MOUT_GL_INTERFACE—General Ledger Journal Entries Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
TASKID	TASKID	FCTASKID	Column replaced by FCTASKID in Maximo 6
OTHR	OTHR		Column removed from Maximo 6
STARTDATE	STARTDATE	FC_STARTDATE	Column replaced by FC_STARTDATE in Maximo 6
TOOLNUM	TOOLNUM		Column removed from Maximo 6. Tools are now defined as Items in Maximo 6

MOUT_GL_INTERFACE

JE1			Column removed from Maximo 6
JE2			Column removed from Maximo 6
JE3			Column removed from Maximo 6
JE4			Column removed from Maximo 6
JE5			Column removed from Maximo 6
JE6			Column removed from Maximo 6
JE7			Column removed from Maximo 6
JE8			Column removed from Maximo 6

MOUT_ISU_INTERFACE— Inventory Issues Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MATUSETRANS			

Tables of Integration Components

MOUT_ISU_INTERFACE— Inventory Issues Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
LONGDESC	DESCRIPTION_LONGDESCRIPT ION	DESCRIPTION_LD	Column replaced by DESCRIPTION_LD in Maximo 6
METERREADING	METERREADING		Column removed from Maximo 6
METERREADING2	METERREADING2		Column removed from Maximo 6

MAX_ISU_INTERFACE—Inventory Issues Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MATUSETRANS			
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
METERREADING	METERREADING		Column removed from Maximo 6
METERREADING2	METERREADING2		Column removed from Maximo 6

MAX_ITM_INTERFACE—Items Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
ITEM			
CLASSSTRUCTUREID	CLASSSTRUCTUREID	HIERARCHYPATH	Column replaced by HIERARCHYPATH in Maximo 6

MAX_ITM_INTERFACE—Items Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
HAZARDID	HAZARDID		Column removed from MAX_ITM_INTERFACE in Maximo 6
ITEM_EXTERNALREFID	EXTERNALREFID		Column removed from Maximo 6
ITEM_OWNERSYSID	OWNERSYSID		Column removed from Maximo 6
ITEM_SOURCESYSID	SOURCESYSID		Column removed from Maximo 6
LDKEY	LDKEY		Column removed from Maximo 6
LIFEEXP	LIFEEXP		Column removed from Maximo 6
STOCKTYPE	STOCKTYPE	COMMODITY/ COMMODITYGROUP	Column replaced by COMMODITY/ COMMODITYGROUP in Maximo 6
INVENTORY			
BINNUM	BINNUM		Column removed from MAX_ITM_INTERFACE in Maximo 6
CATALOGCODE	CATALOGCODE		Column removed from MAX_ITM_INTERFACE in Maximo 6
CONTROLACC	CONTROLACC	IV_CONTROLACC	Column replaced by IV_CONTROLACC in Maximo 6
CONVERSION	CONVERSION		Column removed from MAX_ITM_INTERFACE in Maximo 6
GLACCOUNT	GLACCOUNT	IV_GLACCOUNT	Column replaced by IV_GLACCOUNT in Maximo 6
INV_EXTERNALREFID	EXTERNALREFID		Column removed from Maximo 6

Tables of Integration Components

MAX_ITM_INTERFACE—Items Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
INV_OWNERSYSID	OWNERSYSID		Column removed from Maximo 6
INV_SOURCESYSID	SOURCESYSID		Column removed from Maximo 6
INVCOSTADJACC	INVCOSTADJACC	IV_INVCOSTADJACC	Column replaced by IV_INVCOSTADJACC in Maximo 6
SENDERSYSID	SENDERSYSID		Column removed from MAX_ITM_INTERFACE in Maximo 6
SHRINKAGEACC	SHRINKAGEACC		Column removed from MAX_ITM_INTERFACE in Maximo 6
INVBALANCES			
SENDERSYSID	SENDERSYSID		Column removed from MAX_ITM_INTERFACE in Maximo 6
SITEID	SITEID		Column removed from MAX_ITM_INTERFACE in Maximo 6
INVVENDOR			
CONVERSION	CONVERSION		Column removed from MAX_ITM_INTERFACE in Maximo 6
MANUFACTURER	MANUFACTURER		Column removed from MAX_ITM_INTERFACE in Maximo 6
MODELNUM	MODELNUM		Column removed from MAX_ITM_INTERFACE in Maximo 6

MAX_ITM_INTERFACE—Items Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
ORDERUNIT	ORDERUNIT		Column removed from MAX_ITM_INTERFACE in Maximo 6
SENDERSYSID	SENDERSYSID		Column removed from MAX_ITM_INTERFACE in Maximo 6
VENDORLASTCOST	LASTCOST		Column removed from MAX_ITM_INTERFACE in Maximo 6
VND_DESCRIPTION	DESCRIPTION	DESCRIPTION	Column replaced by DESCRIPTION in Maximo 6. This attribute is shared by both ITEM and INVVENDOR.
VND_EXTERNALREFID	EXTERNALREFID		Column removed from Maximo 6
VND_OWNERSYSID	OWNERSYSID		Column removed from Maximo 6
VND_SOURCESYSID	SOURCESYSID		Column removed from Maximo 6
INVTRANS			
QUANTITY	QUANTITY		Column removed from MAX_ITM_INTERFACE in Maximo 6
COMPANIES			
COMP_EXTERNALREFID	EXTERNALREFID		Column removed from Maximo 6
COMP_OWNERSYSID	OWNERSYSID		Column removed from Maximo 6
COMP_SOURCESYSID	SOURCESYSID		Column removed from Maximo 6
ECOMMERCEENABLED	ECOMMERCEENABLED		Column removed from MAX_ITM_INTERFACE in Maximo 6

Tables of Integration Components

MAX_ITM_INTERFACE—Items Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
EXCHANGE			
EXCHANGERATE2	EXCHANGERATE		Column removed from MAX_ITM_INTERFACE in Maximo 6
LOCATIONS			
ISDEFAULT	ISDEFAULT		Column removed from MAX_ITM_INTERFACE in Maximo 6
LOC_EXTERNALREFID	EXTERNALREFID		Column removed from Maximo 6
LOC_OWNERSYSID	OWNERSYSID		Column removed from Maximo 6
LOC_SOURCESYSID	SOURCESYSID		Column removed from Maximo 6
LOCATION	LOCATION		Column removed from MAX_ITM_INTERFACE in Maximo 6
MAXVARS			
COSTCURRENCYCODE		COSTCURRENCYCODE1	Column replaced by COSTCURRENCYCODE1 in Maximo 6

MAX_LPY_INTERFACE—Labor Pay Outbound and Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
LABTRANS			
OTSCALE	OTSCALE		Column removed from Maximo 6

MAX_LPY_INTERFACE—Labor Pay Outbound and Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
OTHR	OTHR		Column removed from Maximo 6
MAXVARS			
CURRENCYCODE	NO		Column removed from MAX_LPY_INTERFACE in Maximo 6
CURRENCYCODE2	NO		Column removed from MAX_LPY_INTERFACE in Maximo 6
WORKORDER			
FAILURECODE	FAILURECODE		Column removed from MAX_LPY_INTERFACE in Maximo 6
TSKID	TASKID		Column removed from MAX_LPY_INTERFACE in Maximo 6
INSPECTOR	INSPECTOR		Column removed from MAX_LPY_INTERFACE in Maximo 6
MEASUREMENTVALUE	MEASUREMENTVALUE		Column removed from MAX_LPY_INTERFACE in Maximo 6
MEASUREDATE	MEASUREDATE		Column removed from MAX_LPY_INTERFACE in Maximo 6

Tables of Integration Components

MAX_LPY_INTERFACE—Labor Pay Outbound and Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
OBSERVATION	OBSERVATION		Column removed from MAX_LPY_INTERFACE in Maximo 6
POINTNUM	POINTNUM		Column removed from MAX_LPY_INTERFACE in Maximo 6

MOUT_PO_INTERFACE—Purchase Orders Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
PO			
PRIVATE	PRIVATE		Column removed from Maximo 6
TOTALLINES	NO		Column removed from Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6
WFID	WFID		Column removed from Maximo 6
POLINE			
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
ORGID	ORGID	POL_ORGID	Column replaced by POL_ORGID in Maximo 6

MOUT_PO_INTERFACE—Purchase Orders Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
POLINELONGDESC	DESCRIPTION_ LONGDESCRIPTION	POL_DESC_LD2	Column replaced by POL_DESC_LD2 in Maximo 6
RECEIVEDTOTALCOST	RECEIVEDTOTALCOST	POL_RCVDTOTALCOST	Column replaced by POL_RCVDTOTALCOST in Maximo 6
SCHARGECODE	SCHARGECODE		Column removed from Maximo 6
SERVICE	SERVICE		Column removed from Maximo 6
SITEID	SITEID	TOSITEID	Column replaced by TOSITEID in Maximo 6
COMPANIES			
MFGNAME	NAME		Column removed from MOUT_PO_INTERFACE
MAX_PO_INTERFACE			
APISYNC			Column removed from Maximo 6

MAX_PO_INTERFACE—Purchase Orders Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
PO			
PRIVATE	PRIVATE		Column removed from Maximo 6
TOTALLINES	NO		Column removed from Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6
WFID	WFID		Column removed from Maximo 6

Tables of Integration Components

MAX_PO_INTERFACE—Purchase Orders Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
POLINE			
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
ORGID	ORGID	POL_ORGID	Column replaced by POL_ORGID in Maximo 6
POLINELONGDESC	DESCRIPTION_LONGDESCRIPTION	POL_DESC_LD2	Column replaced by POL_DESC_LD2 in Maximo 6
RECEIVEDTOTALCOST	RECEIVEDTOTALCOST	POL_RCVDTOTALCOST	Column replaced by POL_RCVDTOTALCOST in Maximo 6
SCHARGECODE	SCHARGECODE	ITEMNUM	Column replaced by ITEM (of type SERVICE) in Maximo 6
SERVICE	SERVICE		Column removed from Maximo 6
SITEID	SITEID	TOSITEID	Column replaced by TOSITEID in Maximo 6

MAX_PO_INTERFACE—Purchase Orders Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MAX_PO_INTERFACE			
APISYNC			Column removed from Maximo 6

MOUT_PR_INTERFACE—Purchase Requisitions Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
PR			
DESCRIPTION	DESCRIPTION	PRDESCRIPTION	Column replaced by PRDESCRIPTION in Maximo 6
TOTALLINES	NO		Column removed from Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6
WFID	WFID		Column removed from Maximo 6
PRLINE			
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
ORGID	ORGID	PRL_ORID	Column replaced by PRL_ORGID in Maximo 6
RPCARDVERIFICATION	PCARDVERIFICATION	PRL_CARDVERIF	Column replaced by PRL_CARDVERIF in Maximo 6

Tables of Integration Components

MOUT_PR_INTERFACE—Purchase Requisitions Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
SCHARGECODE	SCHARGECODE	ITEMNUM	Column replaced by ITEM (of type SERVICE) in Maximo 6
SERVICE	SERVICE		Column removed from Maximo 6
COMPANIES			
MFGNAME	NAME		Column removed from MOUT_PR_INTERFACE in Maximo 6

MOUT_PR_INTERFACE—Purchase Requisitions Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MOUT_PR_INTERFACE			
APISYNC			

MAX_PR_INTERFACE—Purchase Requisitions Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
PR			
DESCRIPTION	DESCRIPTION		Column removed from MAX_PR_INTERFACE in Maximo 6
TOTALLINES	NO		Column removed from Maximo 6
WFACTIVE	WFACTIVE		Column removed from Maximo 6
WFID	WFID		Column removed from Maximo 6
PRLINE			
AGREEMENTPONUM	AGREEMENTPONUM	CONTRACTREFNUM	Column replaced by CONTRACTREFNUM in Maximo 6
AGREEMENTPOTYPE	AGREEMENTPOTYPE		Column removed from Maximo 6
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
SCHARGECODE	SCHARGECODE	ITEMNUM	Column replaced by ITEM (of type SERVICE) in Maximo 6
SERVICE	SERVICE		Column removed from Maximo 6
COMPANIES			

Tables of Integration Components

MAX_PR_INTERFACE—Purchase Requisitions Inbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MFGNAME	NAME		Column removed from MAX_PR_INTERFACE in Maximo 6
MAX_PR_INTERFACE			
APISYNC			Column removed from Maximo 6

MOUT_RCV_INTERFACE—Receipts Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MATRECTRANS			
APPROVEBY	APPROVEBY		Column removed from Maximo 6
APPROVED	APPROVED		Column removed from Maximo 6
EQNUM	EQNUM	MATREC_ASSETNUM	Column replaced by MATREC_ASSETNUM in Maximo 6
LONGDESC	DESCRIPTION_ LONGDESCRIPTION		Column removed from MOUT_RCV_INTERFACE in Maximo 6
LOTNUM	TOLOT	TOLOT	Column replaced by TOLOT in Maximo 6
MOUT_RCV_INTERFACE			
RECID			Column replaced by MATRECTRANSID or SERVRECTRANSID in Maximo 6

MAX_RCV_INTERFACE—Receipts Inbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
MATRECTRANS			
APPROVEBY	APPROVEBY		Column replaced by CHANGEBY in Maximo 6
APPROVED	APPROVED		Column replaced by STATUS in Maximo 6
EQNUM	EQNUM	MATREC_ASSETNUM	Column replaced by MATREC_ASSETNUM in Maximo 6
LONGDESC	DESCRIPTION_ LONGDESCRIPTION	DESCRIPTION_LD	Column replaced by DESCRIPTION_LD in Maximo 6
LOTNUM	TOLOT	TOLOT	Column replaced by TOLOT in Maximo 6
MAX_RCV_INTERFACE			
RECID			Column replaced by MATRECTRANSID or SERVRECTRANSID in Maximo 6

MOUT_RSV_INTERFACE—Inventory Reservations Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
INVENTORY			
CONVERSION	CONVERSION		Column removed from MOUT_RSV_INTERFACE in Maximo 6

Tables of Integration Components

MOUT_RSV_INTERFACE—Inventory Reservations Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
INVRESERVE			
DESCRIPTION	DESCRIPTION	IR_DESCRIPTION	Column replaced by IR_DESCRIPTION in Maximo 6
DIRECTREQ	DIRECTREQ	IR_DIRECTREQ	Column replaced by IR_DIRECTREQ in Maximo 6
EXTERNALREFID	EXTERNALREFID	IR_EXTERNALREFID	Column replaced by IR_EXTERNALREFID in Maximo 6
GLACCOUNT	GLACCOUNT	IR_GLACCOUNT	Column replaced by IR_GLACCOUNT in Maximo 6
LOCATION	LOCATION	IR_LOCATION	Column replaced by IR_LOCATION in Maximo 6
ORGID	ORGID	IR_ORGID	Column replaced by IR_ORGID in Maximo 6
OWNERSYSID	OWNERSYSID	IR_OWNSYSID	Column replaced by IR_OWNSYSID in Maximo 6
SENDERSYSID	SENDERSYSID	IR_SENDERSYSID	Column replaced by IR_SENDERSYSID in Maximo 6
WORKORDER			
CHANGECHILDSTATUS	CHANGECHILDSTATUS		Column removed from Maximo 6
EQLOCPRIORITY	EQLOCPRIORITY	ASSET_LOCPRIORITY	Column replaced by ASSET_LOCPRIORITY in Maximo 6
EQNUM	EQNUM	IR_EQNUM	Column replaced by IR_EQNUM in Maximo 6
INTERRUPTABLE	INTERRUPTABLE		Column removed from Maximo 6

MOUT_RSV_INTERFACE—Inventory Reservations Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
LEADCRAFT	LEADCRAFT		Column removed from Maximo 6
TASKID	TASKID	IR_FCTASKID	Column replaced by IR_FCTASKID in Maximo 6

MOUT_WO_INTERFACE—Work Orders Outbound

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
WORKORDER			
EQLOCPRIORITY	EQLOCPRIORITY	ASSETLOCPRIORITY	Column replaced by ASSETLOCPRIORITY in Maximo 6
EQNUM	EQNUM	ASSETNUM	Column replaced by ASSETNUM in Maximo 6
FOLLOWUPFROMWONUM	FOLLOWUPFROMWONUM		Column removed from Maximo 6
INTERRUPTABLE	INTERRUPTABLE	INTERRUPTIBLE	Column replaced by INTERRUPTIBLE in Maximo 6
LEADCRAFT	LEADCRAFT	LEAD	Column replaced by LEAD in Maximo 6
WFACTIVE	WFACTIVE		Column removed from MOUT_WO_INTERFACE in Maximo 6
WFID	WFID		Column removed from Maximo 6
WOASSIGNMNTQUEUEID	WOASSIGNMNTQUEUEID		Column removed from Maximo 6
EQUIPMENT / ASSET			

Tables of Integration Components

MOUT_WO_INTERFACE—Work Orders Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
EQCLASS	CLASSIFICATION		Column removed from Maximo 6
ROLLOVER1	ROLLOVER1		Column removed from Maximo 6.
ROLLOVER2	ROLLOVER2		Column removed from Maximo 6
FINCNTRL			
PROJECTID	PROJECTID	FCPROJECTID	Column replaced by FCPROJECTID in Maximo 6
TASKID	TASKID	FCTASKID	Column replaced by FCTASKID in Maximo 6

MOUT_WO_INTERFACE—Work Orders Outbound (Continued)

Maximo 5.2		Maximo 6.0	
Name	Source Column	Attribute Name	Change Description
LOCOPER			
LOSTATUS	STATUS		Column removed from Maximo 6
LOCLASS	CLASSIFICATION		Column removed from Maximo 6
VALUELIST - WOSTATUS Related			
MAXSTATUS	MAXVALUE		Column removed from Maximo 6
MOUT_WO_INTERFACE			
APISYNC			Column removed from Maximo 6
UTRANSTYPE			Column removed from MOUT_WO_INTERFACE in Maximo 6

B

Troubleshooting

This appendix lists the error and warning messages, in numerical order, associated with the three upgrade utilities in Maximo 4.1.1, and in Maximo Release 5. The appendix also provides a cause and action for each.

There are two main sections of this appendix:

- ▼ Error and Warning Messages, Upgrading 4.1.1 to 5
- ▼ Error and Warning Messages, Upgrading 5 to 6

Check the Support Web Site

Make sure you check the Maximo Asset Management product page (<http://www-306.ibm.com/software/sysmgmt/products/support/IBMMaximoAssetManagement.html>) for the latest documentation updates and database issues.

Error and Warning Messages, Upgrading 4.1.1 to 5

Bracketed Terms

Terms appearing in <angle brackets> in the list of generalized error and warning messages indicate variables. The more frequently occurring variables in this section are listed in the following table.

<maxindex>	Maximo index; for example, Sysindx
<maxobject>	Maximo record or table; for example, Archive
<maxtype>	Maximo Column data type; for example, Integer
<maxvar>	Variable contained in a Maximo table; for example, Basecurrency1
<module>	Module of the affected application; for example, WO
<objecttype>	Type of object; for example: application, module, screen, sigoption, or table
<table.column>	Table name and column name; for example, Workorder.Wonum

Integrity Checker Error Messages, 4.1.1 to 5

Errors will prevent the Integrity Checker from successfully passing. All errors must be corrected.

ERROR [003E]:

Case statement out of range - Too many key columns in Index:
<index_name>.

Cause:

Maximo only recognizes a maximum of 8 columns in an index. The reported index has too many columns defined.

Action:

Use the database configuration module to change the index to have a maximum of 8 columns defined. You may need to contact your Maximo database administrator or Maximo Support to accomplish this.

ERROR [005E]:

Unrecognized MaxType of '<maxtype>' found for column
<table.column>.

Cause:

Maximo only recognizes certain data types. The reported column's data type has been changed and Maximo no longer recognizes it.

Action:

Use the Database Configuration application to change the column's data type to the data type defined for this column. You may need to contact your Maximo database administrator or Maximo Support to accomplish this.

ERROR [006E]:

Incompatible definitions found for column <table.column>
- In the system table, the column is defined as <systype>
- In MaxSysColumns, the column is defined as <maxtype>

Cause:

An incompatibility exists between the column definition in the database's system catalog and Maximo's catalog (*MAXSYSCOLUMNS* table).

Action:

If you selected Report Only, call Maximo Support.

If you selected Repair and the column is either must-be or same-as (same as a root column) or root (same-as columns are the same as the root column), the incompatibility is *not* repaired. In this case you need to call Maximo Support, or use the Database Configuration application to correct the incompatible column definitions.

If you selected Repair and the column is not must-be, same-as (same as the root column), or root (same-as column is same as the root column), Repair modifies the MAXSYSCOLUMNS type so that it is compatible with what is defined as the back end (database's system catalog) type. Refer to the *Technical Reference Guide* for the list of data types for the table.

ERROR [007E]:

Column <table.column> is specified as a same-as target but does not exist as a column.

Cause:

Certain columns in Maximo database tables are set up to be the *same as* other columns, called root columns, in the same or different tables. Although this same-as relationship is defined in MAXSYSCOLUMNS, the root column does not exist in the Maximo database. The attributes (data type, length, scale) of existing Maximo columns are the same as the attributes of the column in the error message. However, the column indicated by the error message does not exist.

Action:

Consider whether the columns form a valid relationship, what other columns may be involved in this relationship, etc. If the relationship is valid, refer to the *Technical Reference Guide* to identify the missing same-as target column. Use this information to update MAXSYSCOLUMNS and MAXSYSCOLSCFG

for the SAMEASCOLUMN and SAMEASTABLE. The missing column may have to be added to the base Maximo database table. If necessary, contact Maximo Support.

ERROR [008E]:

Column <table.column> is 'same-as' linked to column <same as table column>, but does not share the type definition.
– <column> is defined as <column definition>
– <root> is defined as <same as definition>

Cause:

Certain columns in Maximo database tables are required to be the *same as* other columns, called root columns, in the same or different tables. The root column and the same-as column are supposed to have the same data type, length, and scale. This same-as relationship was broken by modifying the definition of one of the columns.

Action:

If you selected Report Only, contact Maximo Support to repair the error.

If you selected Repair and the data type does not match, Repair mode changes the same-as column's data type to match the root column's data type. You need to run the Maximo Database Configuration application in order for changes to take effect. Then rerun the Integrity Checker. Note following limitations.

- ▼ If the same-as column is set up as *must-be*, it cannot be automatically repaired. Contact Maximo Support.
- ▼ If the same-as column has a value list associated with it, *and* the value list data type does not match the root column data type, *and* the value list type is 3 or 4 (Maximo defined value list), *and* the Maximo release version is 4.0 or above, this error cannot be repaired automatically. Contact Maximo Support.

NOTE:

If the above conditions are all true, except that the valuelist type is 1 or 2 (user-defined valuelist), the valuelist will be disassociated but Automatic Repair will take place.

- ▼ If length does not match, Repair mode compares all the columns that are the same as the root column, and changes their length to match that of the longest column. This prevents user data loss and allows the *same-as* relationship to be maintained. You must run the Maximo Database Configuration application for changes to take effect, then rerun the Integrity Checker.

ERROR [014E]:

Column <table.column> is defined as a root column and is 'same-as' linked to another column. A column cannot be both.

Cause:

A column that is being referenced as a root column in a same-as relationship is itself referencing another column as the root column in a same-as relationship. There can only be one same-as reference between columns.

Action:

Run the Integrity Checker in Repair mode to resolve multiple same-as relationships between columns.

ERROR [017E]:

Invalid MaxTables definition for table <table>. Neither TBALIAS nor CURTBALIAS can be the same as the table name.

Cause:

A table alias is missing or is the same as the table name.

Action:

Make sure the aliases exist and are different from the table name. Running the Integrity Checker in Repair mode corrects this problem.

ERROR [020E]:

The following names were found in MaxTables, but do not exist as tables.

Cause: One or more table names are defined in MAXTABLES, but do not exist in the Maximo database. All Maximo database tables must be defined in the MAXTABLES table, and may appear in other Maximo tables as well, including AUTOKEY, MAXSYSCOLUMNS, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, MAXSYSCOLUMNS2, MAXSYSDOMAIN.

Action: If you selected the Report Only run-time option and you determine that the table is required, re-create the table. Use backup (if available) to restore the data in the table.

If the table is not required, remove the table name entry from all of the Maximo tables listed above. For example, delete * from MAXTABLES where tbnname = '.....'.

Additionally, if the table name entry is for a custom application, remove any application entries from the following Maximo tables: MAXAPPS, MAXHLP, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE. For example, delete * from MAXAPPS where app = '.....'. We recommend you call Maximo Support.

If you selected the Repair option, the table name entry and application entry (if the table name entry was for a custom application) are removed from the tables listed above. In Repair mode, you do not get a chance to maintain these relevant entries and restore the table from backup.

ERROR [021E]: The following table names were found in MaxSysColumns but not in MaxTables.

Cause: A table name entry was found in MAXSYSCOLUMNS, but the table is not defined in MAXTABLES table. The names of all Maximo database tables must be entered in the MAXTABLES table. Each table name also appears in the MAXSYSCOLUMNS table, together with the names of all columns in that table. The table name may also be found in one or more of these tables: AUTOKEY, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, MAXSYSCOLUMNS2, and MAXSYSDOMAIN.

Action: If you selected the Report Only option, and the table exists in the database, contact Maximo Support.

If you selected the Report Only option and the table does not exist in the database, you must remove the table name entries from all of the Maximo tables listed above, including MAXSYSCOLUMNS. For example, delete * from MAXSYSCOLUMNS where tbnname = '.....'. Additionally, if the table name entry is for a custom application, you must remove any application entries from the following Maximo tables: MAXAPPS, MAXHLP, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE. For example: delete * from MAXAPPS where app = '.....'. We recommend you call Maximo Support.

If you selected the Repair option and the table exists in the database, the problem cannot be repaired automatically. Contact Maximo Support.

If you selected the Repair option and the table does not exist in the database, the table name entry will be removed from all of the Maximo tables listed above, including the MAXSYSCOLUMNS table. Additionally, if the table name entry was for a Custom Application, any application entries will be

removed from the following Maximo tables: MAXAPPS, MAXHLP, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE.

ERROR [023E]:

Length of column <table.column> in MaxSysColumns differs from the actual column.

– In the System table, the length of the column is defined as <system length>

– In MaxSysColumns, the length of the column is defined as <maximum length>

Cause:

An incompatibility exists between the column definitions in the Database system catalog and the Maximo catalog (*MAXSYSCOLUMNNS* table).

Action:

If you selected the Report Only option, contact Maximo Support.

If you selected the Repair option and the column is must-be, same-as (same as a root column), or root (other columns are same as this column), this problem cannot be repaired automatically. Contact Maximo Support.

If you selected the Repair option and the column is not must be, same as, or root, the MAXSYSCOLUMNNS length is modified to the length that is defined in the database system catalog.

ERROR [026E]:

Cause:

The column '<table.column>' was not found in the system table.

An incompatibility exists between the column definition in the database's system catalog and Maximo's catalog (*MAXSYSCOLUMNNS* table).

All Maximo columns must be defined as columns in the database's system catalog. This column is not defined in the system catalog.

Action:

If you selected the Report Only option, you must either re-create the column in the system catalog, or delete all occurrences of the column in MAXSYSCOLUMNNS, MAXSYSCOLUMNNS2, and MAXSYSCOLSCFG tables. We recommend that you contact Maximo Support to correct this situation.

If you selected the Repair option and the column is must-be, same-as (same as some root column), or root (other columns are same as this column), this problem cannot be repaired automatically. Contact Maximo Support.

If you selected the Repair option and the column is not must be, same as, or root, all entries for this column name will be removed from MAXSYSCOLUMNNS, MAXSYSCOLUMNNS2, and MAXSYSCOLSCFG tables.

ERROR [027E]:

Cause:

The following table names were found in MaxTables but not in MaxSysColumns.

A table name is missing from MAXSYSCOLUMNNS even though the name is present in the MAXTABLES table.

The names of all Maximo database tables must be entered in the MAXTABLES table. Each table name also appears in the MAXSYSCOLUMNNS table, together with the names of all columns in that table. The table name may also be found in one or more of these tables: AUTOKEY, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, MAXSYSCOLUMNNS2, and MAXSYSDOMAIN.

Action:

If you selected the Report Only option and the table exists in the database, contact Maximo Support.

If you selected the Report Only option and the table does not exist in the database, you must remove the table name from all of the Maximo tables listed above, including the MAXTABLES table. For example: delete * from MAXTABLES where tname = '.....'. Additionally, if the table name is for a Custom Application, remove any application entries from these Maximo tables: MAXAPPS, MAXHLP, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, APPDOCTYPE. For example: delete * from MAXAPPS where app = '.....' We recommend you contact Maximo Support.

If you selected the Repair option and the table exists in the database, the problem cannot be repaired automatically. Contact Maximo Support.

If you selected the Repair option and the table does not exist in the database, the table name is removed from all of the Maximo tables listed above, including the MAXTABLES table. Additionally, if the table name entry was for a Custom Application, any application entries are removed from the following Maximo tables: MAXAPPS, MAXHLP, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, APPDOCTYPE.

ERROR [029E]:

The following Maximo table columns do not have a corresponding entry in MaxSysColumns.

Cause:

A Maximo table column does not have a corresponding entry in MAXSYSCOLUMNS.

This message may indicate a database table problem that could not be fixed automatically. In any case, this error must be resolved before continuing. Ignoring this error during an upgrade could result in a faulty upgrade, which could prevent the application from running smoothly.

Action:

The listed table columns must be manually inserted or deleted from the MAXSYSCOLUMNS table. Refer to the *Technical Reference Guide* and your SQL Language guide, or call Maximo Support.

ERROR [030E]:

Cause:

The ROWSTAMP trigger was not found for table <table>. The table is missing a rowstamp trigger. This might have been caused by installation of the integration gateway.

Action:

Re-create the trigger, or run the Integrity Checker in Repair mode to automatically provide the missing trigger.

ERROR [031E]:

Cause:

The ROWSTAMP trigger was found DISABLED for table <table>. The rowstamp trigger was inadvertently or otherwise disabled.

Action:

You can enable the trigger manually, or run the Integrity Checker in Repair mode to automatically enable the trigger.

ERROR [032E]:

Cause:

The following Maximo table's ROWSTAMP columns allow NULL values. A rowstamp is a unique identifier for a row of data. It should never be null. The tables listed for this error allow null rowstamps. This might have been caused by installation of the integration gateway; it could also have been caused by a database having been brought forward through multiple upgrades.

Action:

The rowstamp columns for these tables must be redefined to require a value that is not null. If any rowstamps are null, a value should be assigned. Update

the row to assign a rowstamp value. Refer to the *Technical Reference Guide* and your SQL Language guide, or call Maximo Support.

ERROR [044E]:

The database is missing one or all views.

Cause:

>>Views must be re-created. Further processing is being aborted. The Maximo database needs the following seven views in order for Maximo and the Integrity Checker program to run: SYSTABLES, SYSCOLUMNS, SYSINDEXES, SYSKEYS, SYSSYNONYMS, SYSTABAUTH, and SYSCOLAUTH. If these views are not present, they must be re-created.

This error message will only display in Oracle 9i (9.0.1).

Action:

Create Maximo Application Views in Oracle 9i (9.0.1) using the following instructions:

1 Connect to Oracle via SQL*Plus, as user sys.

2 Enter the following command:

```
connect sys/passwd@connect_string as sysdba
```

where *connect_string* is the string you used when connecting to the Oracle database.

3 Enter the following command:

```
@ "C:\PROGRAM FILES\Control Center\MAXINST\VIEW9.ORA"
```

where C is your drive letter.

After the script runs, exit SQL*Plus.

ERROR [045E]:

The following external indexes have names longer than 18 characters; this is not permitted in Maximo.

Cause:

The Maximo database requires that index names have a maximum length of 18 characters. This restriction was bypassed through the database backend, and an index name was created containing more than 18 characters.

If an index name is more than 18 characters, Maximo will fail (especially when the Database Configuration application is used.). You cannot create an index from Maximo having a name length of more than 18 characters.

Action:

Any index with a name longer than 18 characters must be dropped from the database back end using SQLTalk , WISQL or SQL*Plus. If the index is required, you can create it using the Database Configuration application. To pass the Integrity Check, make sure index names have a maximum length of 18 characters. Refer to the *Technical Reference Guide* for more details. If you need additional help, contact Maximo Support or your Maximo Database Administrator to drop and recreate these indices (maximum name length: 18 characters) using the Database Configuration application.

ERROR [046E]:

Can not proceed with Index Integrity check, as some index names are longer than 18 characters. See ERROR 045E, above.

ERROR [051E]:

The following tables MUST be restored in order to Upgrade the Maximo database.

Cause:

When the database tables are configured using the Database Configuration application, Maximo makes backup copies of the tables, then applies your changes to the original tables. Once this is done, you should run the Database Configuration application again and restore the data from the backup tables.

If this data restoration is not performed, the Integrity Checker will stop the process with this error message because there may be serious implications to the overall upgrade of the Maximo database.

Action: To pass the Integrity Checker, you must run the Database Configuration application and select the option to restore from the backup tables. You are then given the choice of retaining the backup tables after restoration or dropping them. We advise that you drop the backup tables because it saves memory disk space. Dropping the backup tables, however, is not mandatory. If you need additional assistance, contact Maximo Support.

ERROR [052E]:

Required MaxVar <maxvar> not found.

Cause:

One or more variables is missing from the MAXVARS table.

Maximo stores many variables in its MAXVARS table. Some of these variables must be present for the Integrity Checker utility to run.

Action:

Insert the missing MAXVAR into the MAXVARS table. See your Maximo database administrator or contact Maximo Support.

Integrity Checker Warning Messages, 4.1.1 to 5

Warning messages will not prevent the Integrity Checker from successfully passing. We recommend that you investigate and correct warning messages.

WARNING [009W]:

Inconsistent definitions found for column <table.column>.

Cause:

A column is defined one way in Maximo, and another way in the database.

Action:

Determine which column definition is correct, and redefine the incorrect column definition to match the correct one. If you are unsure which definition is correct, contact Maximo Support. The Integrity Checker Repair mode option will make the Maximo column definition match the database definition.

WARNING [018W]:

Unimplemented database configuration changes found.

Cause:

Changes were made to the database tables, possibly by the Database Configuration application or Integrity Checker Repair option, but the changes are still pending.

Action:

Run the Database Configuration application. Either complete the changes and configure the database, or, if you do not want to make those changes, discard them. If you need additional help, contact Maximo Support.

WARNING [019W]:

The following backup tables exist.

Cause:

Tables were restored from backup data using the Database Configuration application, but the backup tables were not dropped.

Action:

Check that the tables have been restored, then, using Database Configuration, drop the backup tables. Dropping the backup tables saves memory disk space. If you need additional assistance, contact Maximo Support.

WARNING [022W]:

The following table names were found in the Maximo schema but not in MaxTables. If these non-Maximo tables are not required, they should be dropped via the database back-end.

Cause:

Tables were found in the Maximo database that have no entry in Maximo's schema (MAXTABLES, MAXSYSCOLUMNS, etc.)

Action: Determine if the tables are necessary. Drop these tables from the database if they are no longer required. This saves memory disk space. See your Maximo database administrator or call Maximo Support if you need help removing the tables. The following tables, identified during testing, may be dropped:

- ▼ AREA (functionality remove in 2.11)
- ▼ AREALOCN (functionality remove in 2.11)
- ▼ VALUELISTCFG (functionality remove in 2.11)
- ▼ NEWCOLUMNS (Series 3 or 5 temporary table)
- ▼ EVALMAXINDEXES (used by Maximo utilities program)

WARNING [030W]: The Rowstamp trigger was not found and therefore created for the table.

Cause: Maximo defines a Rowstamp trigger for every table in the database. The Integrity Checker verifies that these Rowstamp triggers exist. If any Rowstamp triggers are not found, they are created.

Action: None

WARNING [031W]: The Rowstamp trigger was found DISABLED and therefore ENABLED for the table.

Cause: Maximo defines a Rowstamp trigger for every table in the database. Integrity Checker verifies the existence of these Rowstamp triggers. If a Rowstamp is disabled, the program enables it.

Action: None

NOTE: For warnings 032W – 042W, running the Integrity Checker in Repair mode automatically corrects the conditions causing the warnings.

WARNING [032W]: The following User's Groups were not found in Maxgroups; the user and group should be removed from Maximo security tables.

WARNING [033W]: The following Group's entry is done as a user in Maxusergroups table, as this group exists as a group in Maxusergroups table and also has Maximo privileges.

WARNING [034W]: The following Group and its users should be removed from Maxusergroups and Maxgroups tables, since the group has no Maximo privileges.

WARNING [035W]: The following Groups should be removed from Maximo security tables because they do not exist in the Maxusergroups table.

WARNING [036W]: The following Users should be removed from Maximo security tables because they do not exist in the Maxusergroups table.

WARNING [037W]: The following Groups should be removed from Maxusergroups and Maxgroups tables because they have no Maximo privileges.

WARNING [038W]: The following Users should be removed from Maxusergroups table because they have no Maximo privileges.

WARNING [039W]: The following Users should be removed from Maximo security tables because they are not database users.

WARNING [040W]: The following Users should be removed from Maximo security tables because their group is not a database user group.

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSRGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised. The Upgrade program finds this inconsistency and deletes the redundant entries.

WARNING [042W]: The database does not have the View.

- WARNING [043W]:** The database is missing at least one (and maybe more than one) view. Therefore, ALL views will be created.
- Cause:** Maximo must have certain views in the database. If these are not found, the program will try to load these views from relevant files provided that you supplied the correct password to the Integrity Checker program. Refer to ERROR [044E] for more details.
- Action:** None. This is an informational message only.
- WARNING [047W]:** The indexes for the following Maximo keys are missing or have been redefined.
- Cause:** Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).
- Action:** This is an informational message, so no action is required. We recommend, however, that you review the *Technical Reference Guide* to determine if the index(es) are needed.
- WARNING [048W]:** The Maximo database has a different UNIQUE property for the following original Maximo index definition(s).
- Cause:** Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).
- Action:** This is an informational message only; no action is required. If you want original indexing, refer to the *Technical Reference Guide* for the index naming convention and column definition.
- WARNING [049W]:** The Maximo database has a different CLUSTERED property for the following original Maximo index definition(s).
- Cause:** Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).
- Action:** This is an informational message only; no action is required. If you want the original indexing, contact Maximo Support.
- WARNING [056W]:** Incompatible NULL definitions found for column <table.column>
- ▼ In the system table, NULLs allowed is defined as <sysnulls>
 - ▼ In MaxSysColumns, NULLs allowed is defined as <maxnulls>
- Cause:** The NULLS value in the Maximo table is different that the NULLS value in the system table.
- It is permissible for some columns in a Maximo database to be null, meaning the column contains no value at all. Whether a column can be null is defined by the NULLS value for that column.
- Action:** If you selected the Report option, you must manually modify the NULLS value. If a null value is appropriate for this column, change NULLS to Y in SYSCOLUMNS and MAXSYSCOLUMNS. If this column should *never* be null, change NULLS to N in SYSCOLUMNS and MAXSYSCOLUMNS. This can be done through the database back end. If you need additional help, contact Maximo Support.
- If you selected the Repair option, the NULLS column in the Maximo table MAXSYSCOLUMNS is modified to match the NULLS column in the system table SYSCOLUMNS.

WARNING [063W]: The following users do not have assigned labor codes.
--The database cannot be upgraded to a new version until all users have labor codes.

Cause: The users indicated do not have assigned labor codes.

Action: You must assign labor codes to all users.

Upgrade Validation Utility Error Messages, 4.1.1 to 5

Error messages will prevent the Upgrade Validation Utility from successfully running. Error messages must be corrected.

ERROR [010E]: The following tables cannot be added to the Maximo database because they already exist in the database.

Cause: A table already exists in the database with the same name as a table being added by the Database Upgrade Utility. The new Maximo table cannot be added to the database.

Action: Contact your database administrator to either rename the existing table or remove it from the database.

ERROR [011E]: The <maxobject> table cannot be added to the database because the <maxobject> table already exists, and there are <maxobject> entries in the following tables that need to be removed: (the name of the existing table appears in place of <maxobject>.)

Cause: A table already exists in the database with the same name as a table being added by the Database Upgrade utility, and there are references to the existing table in other Maximo catalog tables. The new table cannot be added to the database.

Action: The existing table needs to be removed from the database or renamed. All references to this table in the Maximo catalog tables need to be removed or renamed as well.

ERROR [012E]: The <maxobject> <objecttype> cannot be added to the database because <maxobject> entries already exist in the following tables and will need to be removed:

Cause: A Maximo catalog record cannot be added to the listed tables because entries for the record already exist in those tables.

Action: The entries must be removed from the listed tables.

ERROR [013E]: The following <objecttype> cannot be added to the database because they already exist and need to be removed:

Cause: The specified objects (MAXVARS or AUTOKEYS) cannot be added to the database because they already exist.

Action: The specified objects should be removed from the database via the backend. If you need help, contact Maximo Support.

ERROR [015E]: The MAXTYPE for <table.column> is incompatible with the new version of Maximo. It is defined as <maxtype>. It needs to be defined as <Maximo Version 4.1.1>.

Cause: The MAXTYPE of the column in question is not what Maximo expects it to be.

Action: The MAXTYPE of the column in question needs to be redefined to the type specified in the error message, and the database must be reconfigured. Run

the Database Configuration application for version 4.1.1 to correct this problem.

NOTE: For read-only fields, update MAXSYSCOLUMNS and MAXSYSCOLSCFG and set the MUSTBE column to N for the affected column, then use the Database Configuration application to change the data type. After running the Database Configuration application, reset the MUSTBE column back to the original value.

ERROR [026E]:
Cause: The column '<table.column>' was not found in the system table. An incompatibility exists between the column definition in the database's system catalog and Maximo's catalog (*MAXSYSCOLUMNS* table).

All Maximo columns must be defined as columns in the database system catalog. This column is not defined in the system catalog.

Action: If you selected the Report Only option, you must either recreate the column in the system catalog, or delete all occurrences of the column in MAXSYSCOLUMNS, MAXSYSCOLUMNS2, and MAXSYSCOLSCFG tables. We recommend that you contact Maximo Support to correct this situation.

If you selected the Repair option and the column is must-be, same-as (same as some root column), or root (other columns are same as this column), this problem cannot be repaired automatically. Contact Maximo Support.

If you selected the Repair option and the column is not must be, same as, or root, all entries for this column name will be removed from MAXSYSCOLUMNS, MAXSYSCOLUMNS2 and MAXSYSCOLSCFG tables.

ERROR [053E]:
Cause: File <filename> not loaded. Generated by the validation if a metadata file is missing.

Action: Reinstall the software.

ERROR [054E]:
Cause: Could not locate original <objecttype> for <objectname> which was renamed. An object was renamed in an earlier version of Maximo, but the information is missing from the upgrade metadata.

Action: Reinstall the software.

ERROR [059E]:
Cause: The QUERY table cannot be upgraded. >>There are duplicate clause names associated with an application. In Maximo Release 4.1.1 you were allowed to have multiple query clauses with the same clause name for each application (provided that each clause had a different owner). In Maximo Release 5.1, each application can have only one query clause with a given clause name.

Action: You must change the clause name of one or more query clauses so that each application has only one query clause with a given name.

ERROR [061E]:
Cause: The following screens cannot be added to the database because of an ID conflict.

app: <application>, screen: <screen>, id: <id>
One or more screens cannot be added to MAXSCREENS because another screen already exists with the same app and ID combination.

Action: You need to update or remove the existing screen.

ERROR [062E]: The following value list entries cannot be added to the database because they already exist and need to be removed:
listname: <listname>, value: <value>, maxvalue:<maxvalue>
or
listname: <listname>, value: <value>

Cause: A value list entry cannot be added to value list because the entry already exists.

Action: You need to update or remove the existing value list entry.

ERROR [063E]: The following users do not have assigned labor codes. >>User SYSADM must use the Labor app to assign labor codes or remove the users.

Cause: The users indicated do not have assigned labor codes.

Action: You must assign labor codes to all users.

Upgrade Validation Utility Warning Messages, 4.1.1 to 5

Warning Messages will not prevent the Upgrade Validation Utility Checker from successfully running. We recommend that warning messages be investigated and corrected.

WARNING [010W]: The following custom application tables and their associated applications have been renamed in order to upgrade. You must rename the associated executables:
<original app> was renamed <new app>
Application Restrictions, Application Order By, Userrestrictions, and Query clauses that reference the renamed tables listed above, have been cleared.

Cause: An application name was changed within the database.

Action: Rename the executable file to the new name.

WARNING [018W]: Unimplemented database configuration changes found.

Cause: Changes were made to the database tables, possibly by the Database Configuration application or Integrity Checker Repair option, but the changes are still pending.

Action: Run the Database Configuration application. Either complete the changes and configure the database, or, if those changes are not wanted, discard them. If you need additional help, contact Maximo Support.

WARNING [019W]: The following backup tables exist.

Cause: Tables were restored from backup data using the Database Configuration application, but the backup tables were not dropped.

Action: Verify that the tables have been restored, then, using Database Configuration, drop the backup tables. Dropping the backup tables saves memory disk space. If you need additional assistance, contact Maximo Support.

WARNING [028W]: The following entries are in MaxSysColumns but are NOT Maximo columns.

Cause: Non-Maximo columns exist in the MAXSYSCOLUMNS table. These columns were probably added at your site.

Action: If you want to keep the information in the columns, you need to take action to preserve it. The columns will be removed by the upgrade.

- WARNING [050W]:** The Application Restrictions and/or Application Order By Clauses for the following applications will be invalidated by the Upgrade because they contain references to tables/columns that have been dropped or renamed:
module: <module>, app: <app>
- Cause:** An application's Restrictions or Order By clause references a table or column that is being eliminated or renamed by the Database Upgrade utility.
- Action:** No action is required until after the database upgrade has completed. You will then need to re-enter the Restrictions and/or Order By clause.
- WARNING [051W]:** The User Restrictions for the following users will be invalidated by the Upgrade because they contain references to tables/columns that have been dropped or renamed:
module: <module>, app: <app>, username: <username>
- Cause:** User Restrictions reference a table or column that is being eliminated or renamed by the Database Upgrade Utility.
- Action:** No action is required until after the database has been upgraded. You will then need to re-enter the User Restrictions.
- WARNING [052W]:** The saved Where clauses for the following applications will be invalidated by the Upgrade because they contain references to tables/columns that have been dropped or renamed:
app: <app>, clausename: <clausename>, owner:<owner>
- Cause:** A saved Where clause references a table or column that is being eliminated or renamed by the Database Upgrade utility.
- Action:** No action is required until after the database has been upgraded. You then need to re-enter the saved Where clause.
- WARNING [057W]:** The following non-Maximo triggers will be dropped as part of the upgrade. Please remember to check these triggers and possibly recreate them after the upgrade is complete:
- Cause:** A trigger is defined for a table that is being eliminated or modified by the Database Upgrade utility. The trigger will be dropped.
- Action:** No action is required until after the database has been upgraded. You then need to recreate the trigger.
- WARNING [064W]** The following custom classes will be de-referenced:
table:<table> column:<column> class name:<class>
- Cause:** If you created your own customized classes and associated them with specific columns in Maximo 4.1.1, these customized classes will probably not work after you upgrade to Maximo 5.1. In Maximo 5.1, all class names are reset to default values. This warning message identifies those columns that need to be reset.
- Action:** You can reset the customized classname associations after you complete the upgrade. You should also check that each custom class still works correctly.

Upgrade Utility Error Messages, 4.1.1 to 5

Error messages will prevent the Upgrade Utility from successfully running. Error messages must be corrected.

- ERROR [057E]:** Cannot create UNIQUE index <maxindex> because duplicate entries exist.

Cause:	More than one record exists with the same unique key.
Action:	When the upgrade is finished, you need to remove duplicate records then create the missing index.
ERROR [058E]:	Cannot create CLUSTERED index <maxindex> because a clustered index already exists.
Cause:	Only one clustered index can be defined for a database table. This table already has a clustered index, so Upgrade could not add the Maximo-defined index.
Action:	When the upgrade is finished, you must determine whether the existing clustered index is correct. If it is not, you should drop the existing index and create the missing Maximo clustered index.

Fixing and Debugging SQL Errors

The upgrade utilities for Release 5.1 at times may encounter SQL errors while upgrading a database. The following information will not explain exactly what caused the SQL error, but it will help you repair the database so the upgrade can continue.

- 1 The first step is to review the log file from the upgrade directory for the actual SQL error. The log files are named maxinteg.log, maxvldat.log, and upg.51.log. The last entry in each file will most likely indicate the error that was detected.
- 2 Copy the SQL statement from the log. Paste and execute it in an SQL editor. The same error should be reported. The SQL statement can then be debugged and repaired for this error. It could be the result of many different problems.

ERROR [Tablespace/Disk-Space]:	The upgrade cannot continue because the operating system is out of disk space.
Cause:	No space is available to continue.
Action:	Increase the tablespace/segment, or free up disk space and continue the upgrade. The upgrade will continue from the point where it left off.
ERROR [INSERT/ UPDATE value is NULL]:	Target column(s) for a given Insert/Update statement are missing value(s).
Cause:	An insert/update statement failed because a valid value was not specified within the insert statement, or a column is required to have a value that was not part of the insert statement.
Action:	The insert statement was most likely the result of copying from the base table into the work table. Debug and repair the SQL Statement and execute it within SQLTalk. If the SQL Statement completed successfully, then update the Maxupgtable and set the Changeimplemented column = 1 for that table only. The upgrade will continue from the point where it left off.

Error and Warning Messages, Upgrading 5 to 6

Bracketed Terms

Terms appearing in <angle brackets> in the following lists of generalized error and warning messages indicate variables. The more frequently occurring variables in this section are listed in the following table.

<table>	Table name, for example, WORKORDER.
<table.column>	Table name and column name, for example, WORKORDER.WONUM.
<nnn>	A numeric value, for example, 12.

Integrity Checker Error Messages, 5 to 6

Errors prevent the Integrity Checker from successfully passing. All errors must be corrected.

ERROR 0067:

Tables exist that have not had their backup data restored. You must run `RestoreFromBackup` before you can run `Upgrade`.

Cause:

When the database tables are configured using the Database Configuration application, Maximo makes backup copies of the tables, then applies your changes to the original tables. Once this is done, you should run the Database Configuration application again and restore the data from the backup tables. If this data restoration is not performed, the Integrity Checker will stop the process with this error message because there may be serious implications to the overall upgrade of the Maximo database.

Action:

To pass the Integrity Checker, you must run the Database Configuration application and select the option to restore from the backup tables. You are then given the choice of retaining the backup tables after restoration or dropping them. It is usually advisable to drop the backup tables because it saves memory disk space. Dropping the backup tables, however, is not mandatory. If you need additional help, contact IBM Maximo Support.

ERROR 0068:

These users should be removed from the security tables because they are not database users:

Cause:

User groups are centrally stored in Maximo database tables called `MAXGROUPS`; users are stored in `MAXUSERGROUPS`. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised. The Upgrade program finds this inconsistency and deletes the redundant entries.

Action:

Run Integrity Checker in Repair mode.

ERROR 0069:

The following groups should be removed from Maximo because they have no `MAXIMO` privileges:

Cause:

User groups are centrally stored in Maximo database tables called `MAXGROUPS`; users are stored in `MAXUSERGROUPS`. If a group or user entry is not present in these tables, it may cause problems while using

Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

Action: Run Integrity Checker in Repair mode.

ERROR 0071: The following users should be removed from Maximo because they have no MAXIMO privileges:

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

Action: Run Integrity Checker in Repair mode.

ERROR 0072: The following users should be removed from the security tables: <table> because they are not Maximo users:

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

Action: Run Integrity Checker in Repair mode.

ERROR 0073: These users should be removed from the security tables because the user's group is not a database user:

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

Action: Run Integrity Checker in Repair mode.

ERROR 0074: The following User's Groups were not found in MAXGROUPS:

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

Action: Run Integrity Checker in Repair mode.

ERROR 0075: This group is defined as a user in the Maximo security tables: <table>

Cause: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.

- Action:** Run Integrity Checker in Repair mode.
- ERROR 0078:** The database has a different UNIQUE property for the following original index definition(s):
- Cause:** Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).
- Action:** You can potentially improve Maximo performance by re-creating any unique indexes.
- ERROR 0084:** No unique index found for primary key sequence on table(s): <table>
- Cause:** Every Maximo table must have a unique index that corresponds to the primary key sequence that is defined for that table. For these tables, that index is missing.
- Action:** Create a unique index corresponding to the primary key sequence for the table. The primary key sequence for a table is defined by MAXSYSCOLUMNS.PrimaryKeyColSeq.
- ERROR 0085:** Non-sequential primary key sequence on table(s): <table>
- Cause:** Every Maximo table must have a primary key sequence of columns, defined by MAXSYSCOLUMNS.PrimaryKeyColSeq. The values of PrimaryKeyColSeq must be consecutive and sequential. For these tables, the primary key sequence is not consecutive or not sequential.
- Action:** For the definitions of these tables, verify and, if necessary, adjust the values of PrimaryKeyColSeq in MAXSYSCOLUMNS and MAXSYSCOLSCFG. The primary key sequence should have a corresponding unique index.
- ERROR 0089:** These tables should be removed from Maximo because they do not exist in the database: <table>
- Cause:** One or more table names are defined in MAXTABLES, but do not exist in the Maximo database. All Maximo database tables must be defined in the MAXTABLES table, and may appear in other Maximo tables as well, including AUTOKEY, MAXSYSCOLUMNS, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, and MAXSYSCOLUMNS2.
- Action:** If you selected the Report Only run-time option and you determine that the table is required, re-create the table. Use backup (if available) to restore the data in the table.
- If the table is not required, remove the table name entry from all of the Maximo tables listed above. For example, delete from MAXTABLES where tbname = '.....'.
- Additionally, if the table name entry is for a custom application, remove any application entries from the following Maximo tables: MAXAPPS, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE. For example, delete from MAXAPPS where app = '.....'. If necessary, contact IBM Maximo Support.
- If you selected the Repair option, the table name entry and application entry (if the table name entry was for a custom application) are removed from the tables listed above. In Repair mode, you do not get a chance to maintain these relevant entries and restore the table from backup.

ERROR 0091:

The following tables own Maximo columns but are not defined as Maximo tables: <table>

Cause:

A table name entry was found in MAXSYSCOLUMNS, but the table is not defined in MAXTABLES table. The names of all Maximo database tables must be entered in the MAXTABLES table. Each table name also appears in the MAXSYSCOLUMNS table, together with the names of all columns in that table. The table name may also be found in one or more of these tables: AUTOKEY, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, and MAXSYSCOLUMNS2.

Action:

If you selected the Report Only option, and the table exists in the database, contact IBM Maximo Support.

If you selected the Report Only option and the table does not exist in the database, you must remove the table name entries from all of the Maximo tables listed above, including MAXSYSCOLUMNS. For example, delete * from MAXSYSCOLUMNS where tname = '.....'. Additionally, if the table name entry is for a custom application, you must remove any application entries from the following Maximo tables: MAXAPPS, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE. For example: delete from MAXAPPS where app = '.....'. If necessary, contact IBM Maximo Support.

If you selected the Repair option and the table exists in the database, the problem cannot be repaired automatically. Contact IBM Maximo Support.

If you selected the Repair option and the table does not exist in the database, the table name entry will be removed from all of the Maximo tables listed above, including the MAXSYSCOLUMNS table. Additionally, if the table name entry was for a custom application, any application entries will be removed from the following Maximo tables: MAXAPPS, SIGOPTION, USERRESRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE.

ERROR 0092:

The following are defined as Maximo tables but do not contain any Maximo columns: <table>

Cause:

A table name is missing from MAXSYSCOLUMNS even though the name is present in the MAXTABLES table.

The names of all Maximo database tables must be entered in the MAXTABLES table. Each table name also appears in the MAXSYSCOLUMNS table, together with the names of all columns in that table. The table name may also be found in one or more of these tables: AUTOKEY, MAXSYSCOLSCFG, MAXSYSINDEXES, PRINTER, MAXTABLES2, and MAXSYSCOLUMNS2.

Action:

If you selected the Report Only option and the table exists in the database, contact IBM Maximo Support.

If you selected the Report Only option and the table does not exist in the database, you must remove the table name from all of the Maximo tables listed above, including the MAXTABLES table. For example: delete * from MAXTABLES where tname = '.....'. Additionally, if the table name is for a custom application, remove any application entries from these Maximo tables: MAXAPPS, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS,

and APPDOCTYPE. For example: delete from MAXAPPS where app = '.....'. If necessary, contact IBM Maximo Support.

If you selected the Repair option and the table exists in the database, the problem cannot be repaired automatically. Contact IBM Maximo Support.

If you selected the Repair option and the table does not exist in the database, the table name is removed from all of the Maximo tables listed above, including the MAXTABLES table. Additionally, if the table name entry was for a custom application, any application entries are removed from the following Maximo tables: MAXAPPS, SIGOPTION, USERRESTRICTIONS, MAXTABLES, MAXUSERAUTH, MAXSCREENS, DESKTOPDFLTS, FIELDDEFAULTS, and APPDOCTYPE.

ERROR 0093:

The ROWSTAMP trigger was not found for the following tables:
<table>

Cause:

The table is missing a rowstamp trigger. This might have been caused by installation of the integration gateway.

Action:

Re-create the trigger, or run the Integrity Checker in Repair mode to automatically provide the missing trigger.

ERROR 0094:

The ROWSTAMP trigger was found DISABLED on the following tables:
<table>

Cause:

The rowstamp trigger was inadvertently or otherwise disabled.

Action:

You can enable the trigger manually, or run the Integrity Checker in Repair mode to automatically enable the trigger.

ERROR 0095:

Cause:

Null rowstamp(s) found in the following tables: <table>
A rowstamp is a unique identifier for a row of data. It should never be null. The tables listed for this error contain null rowstamps. This might have been caused by a database being brought forward through multiple upgrades.

Action:

Update any rowstamps that are null by assigning a unique rowstamp value.

ERROR 0105:

Cause:

This column should be removed from Maximo because it does not exist in the database: <table.column>

An incompatibility exists between the column definition in the database's system catalog and Maximo's catalog (*MAXSYSCOLUMNS* table).

All Maximo columns must be defined as columns in the database's system catalog. This column is not defined in the system catalog.

Action:

If you selected the Report Only option, you must either re-create the column in the system catalog, or delete all occurrences of the column in the *MAXSYSCOLUMNS*, *MAXSYSCOLUMNS2*, and *MAXSYSCOLSCFG* tables. If necessary, contact IBM Maximo Support to correct this situation.

If you selected the Repair option, all entries for this column name will be removed from *MAXSYSCOLUMNS*, *MAXSYSCOLUMNS2*, and *MAXSYSCOLSCFG* tables. If the column is must-be, same-as (same as some root column), or root (other columns are the same as this column), this problem cannot be repaired automatically. Contact IBM Maximo Support.

ERROR 0108:

These Maximo-owned columns should be removed from the database because they do not exist in Maximo: <table.column>

- Cause:** A Maximo table column does not have a corresponding entry in MAXSYSCOLUMNS.
- This message may indicate a database table problem that could not be fixed automatically. In any case, this error must be resolved before continuing. Ignoring this error during an upgrade could result in a faulty upgrade, which could prevent the application from running smoothly.
- Action:** The listed table columns must be manually inserted or deleted from the MAXSYSCOLUMNS table. Refer to the *Technical Reference Guide* and your SQL Language guide, or call IBM Maximo Support.
- ERROR 0109:** The Maximo definition of this column does not match the actual column: <table.column>
- Cause:** An incompatibility exists between the column definition in the database system catalog and the Maximo catalog (*MAXSYSCOLUMNS* table).
- Action:** If you selected Report Only, call IBM Maximo Support.
- If you selected Repair, Repair modifies the MAXSYSCOLUMNS definition so that it is compatible with what is defined as the back end (database system catalog). Refer to the *Technical Reference Guide* for the list of data types for the table. If the column is must-be, same-as (same as a root column), or root (other columns are the same as this column), the incompatibility is *not* repaired. In this case you need to call IBM Maximo Support, or use the Database Configuration application to correct the incompatible column definitions.
- ERROR 0110:** The Maximo 'nullable' property of this column does not match the actual column definition: <table.column>
Maximo definition is <required/nullable>
Database column is <required/nullable>
- Cause:** The NULLS value of the Maximo column is different than the NULLS value of the system column.
- It is permissible for some columns in a Maximo database to be null, meaning the column contains no value at all. Whether a column can be null is defined by the NULLS value for that column.
- Action:** If you selected the Report option, you must manually modify the NULLS value. If a null value is appropriate for this column, change NULLS to Y in the database and MAXSYSCOLUMNS. If this column should *never* be null, change NULLS to N in the database and MAXSYSCOLUMNS. This can be done through the database back end. If you need additional help, contact IBM Maximo Support.
- If you selected the Repair option, the NULLS column in the Maximo table MAXSYSCOLUMNS is modified to match the NULLS column in the system table.
- ERROR 0111:** This column is defined to be the "same as" a column that does not exist in Maximo: <table.column>
- Cause:** Certain columns in Maximo database tables must be the *same as*—be the same type and size—another column, called a root column, in the same or a different table. The root column and the same-as column are supposed to have the same data type, length, and scale. The indicated column is defined to be the same as a root column, but that root column does not exist.

Action: Redefine the same-as relationship so that it specifies a root column that exists in the Maximo database. The missing column might have to be added to the base Maximo database table. If necessary, contact IBM Maximo Support.

ERROR 0112: The following columns are defined to be 'same-as', but have different definitions: <table.column> <table.column>

Cause: Certain columns in Maximo database tables must be the *same as*—be the same type and size—another column, called a root column, in the same or a different table. The root column and the same-as column are supposed to have the same data type, length, and scale. This same-as relationship was broken by modifying the definition of one of the columns.

Action: If you selected Report Only, contact IBM Maximo Support to repair the error.

If you selected Repair and the data type does not match, Repair mode changes the same-as column's data type to match the root column's data type. You need to run the Maximo Database Configuration application in order for changes to take effect. Then rerun the Integrity Checker. Note following limitations.

- ▼ If the same-as column is set up as *must-be*, it cannot be automatically repaired. Contact IBM Maximo Support.
- ▼ If the same-as column has a value list associated with it, *and* the value list data type does not match the root column data type, *and* the value list type is 3 or 4 (Maximo defined value list), *and* the Maximo release version is 4.0 or above, this error cannot be repaired automatically. Contact IBM Maximo Support.

NOTE If the above conditions are all true, except that the value list type is 1 or 2 (user-defined value list), the value list will be disassociated but Automatic Repair will take place.

If length does not match, Repair mode compares all the columns that are the same as the root column, and changes their length to match that of the longest column. This prevents user data loss and allows the *same-as* relationship to be maintained. You must run the Maximo Database Configuration application for changes to take effect, then rerun the Integrity Checker.

ERROR 0114: The Maximo definition of this column is invalid: <table.column>.

Cause: Maximo only recognizes certain data types. The data type of the reported column has been changed and Maximo no longer recognizes it.

Action: Use the Database Configuration application to change the data type of the column to the data type defined for this column. You might need to contact your Maximo database administrator or IBM Maximo Support to accomplish this.

ERROR 0128: This column is both a root column and is same-as linked to another column: <table.column>

Cause: A column that is being referenced as a root column in a same-as relationship is itself referencing another column as the root column in a same-as relationship. There can only be one same-as reference between columns.

Action: Run the Integrity Checker in Repair mode to resolve multiple same-as relationships between columns.

ERROR 0142: The following groups have no privileges in the Maximo security

- Cause:** tables. The group and its users should be removed from Maximo: User groups are centrally stored in Maximo database tables called MAXGROUPS; users are stored in MAXUSERGROUPS. If a group or user entry is not present in these tables, it may cause problems while using Maximo. The database has been modified through the back end and data consistency between these tables and all other Maximo security tables has been compromised.
- Action:** Run Integrity Checker in Repair mode.
- ERROR 0143:** The following backup tables exist. If the data has been restored and the tables are not required, they should be deleted. <table>
- Cause:** Tables were restored from backup data using the Database Configuration application, but the backup tables were not dropped.
- Action:** Check that the tables have been restored, then, using Database Configuration, drop the backup tables. Dropping the backup tables saves memory disk space. If you need additional help, contact IBM Maximo Support.
- ERROR 0144:** The following tables are mis-defined in MaxTables. A table alias (TBALIAS or CURTBALIAS) cannot be the same as the table name. <table>
- Cause:** A table alias is missing or is the same as the table name.
- Action:** Make sure the aliases exist and are different from the table name. Running the Integrity Checker in Repair mode corrects this problem.
- ERROR 0167:** Native index names longer than 18 characters exist. Before running ConfigDB, you must manually identify and rename these native indexes.
- Cause:** The Maximo database requires that index names have a maximum length of 18 characters. This restriction was bypassed through the database back end, and an index name was created containing more than 18 characters.
- Action:** Any index with a name longer than 18 characters must be dropped from the database back end. Use an SQL editor to drop the index. If the index is needed, you can use the Database Configuration application to re-create it. Refer to the *Technical Reference Guide* for more details. If you need additional help, contact your Maximo database administrator or IBM Maximo Support.
- ERROR 0217:** YORN column <table.column> contains invalid values.
- Cause:** Some Maximo columns serve as switches. They can be true or false, on or off, yes or no. These are referred to as YORN columns (Yes or No). The specified column contains at least one value other than Yes or No. Note that a NULL value (no value) is neither Yes nor No and will cause this error.
- Action:** Update the errant rows to Yes or No.
- ERROR 222:** You have non-core Maximo applications for which the maxapps.originalapp column value is not set properly. For custom applications, please set the originalapp value to CUSTAPP. For cloned/duplicated applications, please set the value to the name of the core Maximo application being cloned, such as WOTRACK, JOBPLAN, PO.
- Cause:** In some Release 5 versions of the Gencust utility, the MAXAPPS.ORIGINALAPP value was not populated when Gencust was run to create a cloned or custom application. Some cloned applications that you have might be industry solution applications. If you have a Release 5 industry

solution, be sure that you have installed the required industry solution patch before you upgrade.

Action: For custom applications, update the ORIGINALAPP value in the MAXAPPS table to CUSTAPP. For cloned applications, update the ORIGINALAPP value to the name of the application that was cloned, such as WOTRACK, PO, and so on.

Integrity Checker Warning Messages, 5 to 6

Warning messages do not prevent the Integrity Checker from successfully passing. But investigate and correct the causes of warning messages.

WARNING 0076: Unimplemented database configuration changes found.
Cause: Changes were made to the database tables, possibly by the Database Configuration application or Integrity Checker Repair option, but the changes are still pending.

Action: Run the Database Configuration application. Either complete the changes and configure the database, or, if you do not want to make those changes, discard them. If you need additional help, contact IBM Maximo Support.

WARNING 0077: The following original Maximo indexes are missing from Maximo:
Cause: Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).

Action: You can potentially improve Maximo performance by re-creating any missing indexes.

WARNING 0079: The database has a different CLUSTERED property for the following original index definition(s):
Cause: Many indexes were originally defined in the Maximo database for better performance. The original indexes have been modified (probably through the back end).

Action: You can potentially improve Maximo performance by re-creating any clustered indexes.

WARNING 0090: These Maximo-owned tables should be removed from the database because they do not exist in Maximo: <table>
Cause: Tables were found in the Maximo database that have no entry in Maximo's schema (MAXTABLES, MAXSYSCOLUMNS, etc.)

Action: Determine if the tables are necessary. Drop these tables from the database if they are no longer required. Dropping unneeded tables saves memory disk space. See your Maximo database administrator or call IBM Maximo Support if you need help removing the tables.

WARNING 0109: The Maximo definition of this column does not match the actual column: <table.column>
Cause: A column is defined one way in Maximo, and another way in the database.

Action: Determine which column definition is correct, and redefine the incorrect column definition to match the correct one. If you are unsure which definition is correct, contact IBM Maximo Support. The Integrity Checker Repair mode

option modifies the Maximo column definition to match the database definition.

- WARNING 0141:** The following users do not have assigned labor codes. The database cannot be upgraded to a new version until all users have labor codes.
- Cause:** The users that are listed do not have assigned labor codes.
- Action:** No action is required unless you are upgrading the database to a newer version of Maximo. To upgrade, you must assign labor codes to all users.
- WARNING 0178:** The following tables reference orphaned long descriptions; to remove them run Integrity Checker in repair mode. <table>
- Cause:** In the LONGDESCRIPTION table, rows exist that are “owned” by the specified tables, but the tables do not contain references to the long description. The long descriptions are “orphans” because they are disassociated from any table and are no longer accessible to Maximo. They continue to occupy space in the database, but serve no purpose.
- Action:** Remove the orphaned rows from the LONGDESCRIPTION table. Run Integrity Checker in Repair mode to remove the orphans.
- WARNING 0201:** Table <table> has more than one owner for LongDescription <nnn>.
- Cause:** A row in the LONGDESCRIPTION table is “owned” by multiple rows in the specified table. The most common cause of this is cloning a data record. Prior to Maximo 6, when a data record was cloned, any long description also should have been cloned. Instead, only the reference to the long description was cloned, and as a result both records refer to the same long description. In Maximo 6, a long description can be owned by one and only one data record.
- Action:** Run Integrity checker in Repair mode. Repair mode clones any problem long descriptions, and associates each with one and only one data record.
- WARNING 0215:** Table <table> references long description <nnn> but the long description does not exist.
- Cause:** At some point, a long description was created for the specified table. The table still references the long description, but the long description no longer exists.
- Action:** Recreate the missing long description, or remove the reference to the long description by setting <table>.LDKey to null. You can run Integrity Checker in Repair mode to reset <table>.LDKey to null.
- (Calibration) WARNING:** Duplicate records found for PLUSCDSPPOINT. Please make POINT field unique for each Asset Function within the Data Sheet.
- Cause:** Duplicated calibration points per Asset Function were found during the Calibration Validation process. The duplicate records are written to the upgrade\V520\PLUSCDSPPOINTDUP.txt file for reference purposes only.
- Action:** Use the Data Sheet application in Maximo to correct the duplicate calibration points.

Upgrade Validation Utility Error Messages, 5 to 6

Error messages will prevent the Upgrade Validation Utility from successfully running. Error messages must be corrected.

- ERROR 0096:** Table cannot be added because it already exists in the database:

- Cause:** `<table>`
A table already exists in the database with the same name as a table being added by the Database Upgrade Utility. The new Maximo table cannot be added to the database.
- Action:** Contact your database administrator to either rename the existing table or remove it from the database.
- ERROR 0099:** Column cannot be added because it already exists in the database:
`<table.column>`
- Cause:** A Maximo catalog record cannot be added to the listed tables because entries for the record already exist in those tables.
- Action:** The entries must be removed from the listed tables.
- ERROR 0143:** The following backup tables exist., If the data has been restored and the tables are not required, they should be deleted.
- Cause:** Tables were restored from backup data using the Database Configuration application, but the backup tables were not dropped.
- Action:** Verify that the tables have been restored, then, using Database Configuration, drop the backup tables. Dropping the backup tables saves memory disk space. If you need additional help, contact IBM Maximo Support.
- ERROR 0168:** Configurable Startcenter found. Please refer to the upgrade guide for instructions on how to remove the associated tables before proceeding.
- Cause:** Tables associated with the Configurable Start Center and KPI Manager were found. At some point, you installed Maximo Dashboard and KPI Manager on Maximo 5.2. These tables cannot be upgraded, and must be removed. Your previous start center configurations will be lost.
- Action:** From an SQL utility, run the appropriate database-specific command. Run the command from the server where you installed Maximo 6.
- Oracle:
- ```
<Maximo_root>\tools\Maximo\classes\psdi\upgrade\V520\Removedashboard.ora
```
- Microsoft SQL Server:
- ```
<Maximo_root>\tools\Maximo\classes\psdi\upgrade\V520\Removedashboard.sqs
```
- After the upgrade, you can modify the default start centers or create new start centers in Maximo 6.
- ERROR 0178:** The following tables reference orphaned long descriptions; to remove them run Integrity Checker in repair mode. `<table>`
- Cause:** In the LONGDESCRIPTION table, rows exist that are “owned” by the specified tables, but the tables do not contain references to the long description. The long descriptions are “orphans” because they are disassociated from any table and are no longer accessible to Maximo. They continue to occupy space in the database, but serve no purpose.
- Action:** Remove the orphaned rows from the LONGDESCRIPTION table. Run Integrity Checker in Repair mode to remove the orphans.
- ERROR 0201:** Table `<table>` has more than one owner for LongDescription `<nnn>`.

Cause:	A row in the LONGDESCRIPTION table is “owned” by multiple rows in the specified table. The most common cause of this is cloning a data record. Prior to Maximo 6, when a data record was cloned, any long description also should have been cloned. Instead, only the reference to the long description was cloned, and as a result both records refer to the same long description. In Maximo 6, a long description can be owned by one and only one data record.
Action:	Run Integrity checker in Repair mode. Repair mode clones any problem long descriptions, and associates each with one and only one data record.
ERROR 0215:	Table <table> references long description <nnn> but the long description does not exist.
Cause:	At some point, a long description was created for the specified table. The table still references the long description, but the long description no longer exists.
Action:	Recreate the missing long description, or remove the reference to the long description by setting <table>.LDKey to null. You can run Integrity Checker in Repair mode to reset <table>.LDKey to null.

Upgrade Validation Utility Warning Messages, 5 to 6

Warning messages do not prevent the Upgrade Validation Utility Checker from successfully running. But warning messages should be investigated and corrected.

WARNING 0076:	Unimplemented database configuration changes found.
Cause:	Changes were made to the database tables, possibly by the Database Configuration application or Integrity Checker Repair option, but the changes are still pending.
Action:	Run the Database Configuration application. Either complete the changes and configure the database, or, if those changes are not wanted, discard them. If you need additional help, contact IBM Maximo Support.
WARNING 223	Upgrade will move/remove e-audit-enabled table <table>, and disable e-auditing of the table. Please review the Upgrade Guide Troubleshooting appendix for information on reenabling e-auditing.
Cause:	The Validation utility encountered a table that was e-audited in Release 5. That table is renamed in Release 6. Tables that are dropped because they are renamed in Release 6 do not have e-auditing automatically reestablished in the Release 6 version of the table. You must reenable e-auditing for the new Release 6 table. (The Release 5 version of the audit tables are retained in the database.)
Action:	Enable e-auditing for the Release 6 table. For information about enabling e-auditing, see the online help for the Database Configuration application, and Chapter 4, “Database Configuration,” in the <i>Maximo System Administrator’s Guide</i> .
WARNING 224	Upgrade will move/remove e-audit-enabled column <table.column>, and disable e-auditing of the column. Please review the Upgrade Guide Troubleshooting appendix for information on reenabling e-auditing.
Cause:	The Validation utility encountered a column that was e-audited in Release 5. That column is renamed in Release 6. Columns that are dropped because they are renamed in Release 6 do not have e-auditing automatically reestablished in the Release 6 version of the column. You must reenable e-auditing for the

new Release 6 column. (The Release 5 version of the audit tables are retained in the database.)

Action: Enable e-auditing for the Release 6 column. For information about enabling e-auditing, see the online help for the Database Configuration application, and Chapter 4, “Database Configuration,” in the *Maximo System Administrator’s Guide*.

Upgrade Utility Error Messages, 5 to 6

Error messages prevent the Upgrade utility from successfully running. Error messages must be corrected.

(Oracle) ORA-01452:

Cannot CREATE UNIQUE INDEX; duplicate keys found.

Cause:

More than one record exists with the same unique key. The SQL statement immediately preceding this message is the statement that failed.

Action:

Resolve the duplicate records and then create the missing index.

(SQL Server) QADB03:

CREATE UNIQUE INDEX terminated because a duplicate key was found for index ID n.

Cause:

More than one record exists with the same unique key. The SQL statement immediately preceding this message is the statement that failed.

Action:

Resolve the duplicate records and then create the missing index.

Fixing and Debugging SQL Errors

The upgrade utilities for Release 5 at times might encounter SQL errors while upgrading a database. The following information does not explain exactly what caused the SQL error, but it does help you repair the database so the upgrade can continue.

- 1 Review the log file from the upgrade directory for the actual SQL error. The last entry in each file will most likely indicate the error that was detected.
- 2 Copy the SQL statement from the log. Paste and execute it within an SQL editor. The same error should be reported. The SQL statement can then be debugged and repaired for this error. It could be the result of many different problems.

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