



Agile Product Lifecycle Management

Database Upgrade Guide

v9.3.1

Part No. E16474-02

July 2011

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Preface

Oracle's Agile PLM documentation set includes Adobe® Acrobat PDF files. The [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html> contains the latest versions of the Agile PLM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Agile PLM Documentation folder available on your network from which you can access the Agile PLM documentation (PDF) files.

Note To read the PDF files, you must use the free Adobe Acrobat Reader version 9.0 or later. This program can be downloaded from the [Adobe Web site](http://www.adobe.com) <http://www.adobe.com>.

The [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html> can be accessed through **Help > Manuals** in both Agile Web Client and Agile Java Client. If you need additional assistance or information, please contact My Oracle Support (<https://support.oracle.com>) for assistance.

Note Before calling Oracle Support about a problem with an Agile PLM manual, please have the full part number, which is located on the title page.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, 7 days a week. For TTY support, call 800.446.2398. Outside the United States, call +1.407.458.2479.

Readme

Any last-minute information about Agile PLM can be found in the Readme file on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html>.

Agile Training Aids

Go to the [Oracle University Web page](http://www.oracle.com/education/chooser/selectcountry_new.html) http://www.oracle.com/education/chooser/selectcountry_new.html for more information on Agile Training offerings.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

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Preparing for the Upgrade

This chapter includes the following:

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| ▪ Preparing the System | 1 |
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You can upgrade your database from your currently installed version to Agile PLM 9.3.1 using the Automated Upgrade Tool.

The upgrade tool takes inputs from a property file and completes the upgrade using your existing database as the source database. When complete, the destination database is upgraded to the 9.3.1 release. Please see the AUT Release Notes for more information about supported upgrade paths for this release.

Preparing the System

To become familiar with the upgrade procedure, it is recommended that you prepare a separate test environment and perform the upgrade there first. It is highly recommended that you run the upgrade on the machine that is hosting the destination database.

Agile PLM supports Oracle 10g and 11g databases. You **MUST** have Oracle Database Server on the system where you are installing the Agile database before starting the upgrade. For information on installing Oracle databases, refer to the related documentation available on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html>.

If you are upgrading from an 8.5 product and your Oracle 8i home is not installed on the machine where you will be performing the upgrade, you must map (or mount) a local drive on the destination machine to point to the existing Oracle 8i home. Also, if you are upgrading from an 8.5 product, you must create a new Oracle database instance for the new Agile PLM product version and try to reuse the existing 8.5 Oracle instance.

Note Ensure binary compatibility of the mounted binaries (for example, ensure that you map a drive containing Windows binaries to a Windows system only).

You must also have JRE 1.5 installed. The JAVA_HOME environment variable must be set to the path for that JRE on the system where AUT is run.

Database Upgrade Planning

The entire upgrade process may take a considerable amount of time depending on the size of the database and the hardware configuration. Based on past experience, 75% of the upgrade process

is spent on upgrading and backing up the database. We strongly recommend running the schema backup and upgrade on a test system so that appropriate time can be scheduled for the production deployment.

There are two types of upgrade:

- **Upgrade destination in place** - Source database is upgraded with the existing database user. In the *aut.properties* file, the parameter `sourceEqualsDestination` is set to true.
- **Upgrade source to destination** - A new database user is created in the destination database instance using *useragile.sql*, and then the source database is upgraded to that user. In the *aut.properties* file, the parameter `sourceEqualsDestination` is set to false.

Task Overview

The sequence of actions to be performed for an upgrade is as follows:

1. Undeploy the Agile PLM application.
2. Upgrade the database to 9.3.1:
 - a. Download the Agile PLM database installer and Automated Upgrade Tool (AUT). For instructions on downloading the database installer, see the *Agile PLM Database Installation Guide*. For instructions on downloading the AUT, see [Downloading the Automated Upgrade Tool](#) on page 2.
 - b. Configure and run AUT. For instructions on configuring AUT for each type of upgrade, see [Understanding the Property Files](#) on page 5 and [Whether Source Equals Destination](#) on page 6.
 - c. Generate maintenance scripts for the target release: Run the database installer, choosing the **Generate Maintenance Scripts only** option. See [Generating Maintenance Scripts Only](#) on page 3.
 - d. Reorganize the database as described in [Reorganizing the Database](#) on page 21.
3. Install the Agile PLM application software.
4. Deploy the Agile PLM application.

Downloading the Automated Upgrade Tool

The Automated Upgrade Tool can be downloaded from Oracle Support.

To download the software:

1. Log in to [My Oracle Support](https://support.oracle.com) (https://support.oracle.com).
2. Under **Patches & Updates**, click **Product or Family (Advanced Search)**.
 1. Select the **Include all products in a family** checkbox.
 2. Enter the following search parameters:
 - **Product** : Oracle Agile Applications
 - **Release** : Agile PLM Tools 9
 - **Platform** : Select the appropriate platform, for example, Microsoft Windows (32-bit).
 3. Click **Search**.
 4. Links to Averify and AUT are displayed in the search results.

5. Select the Patch ID and click **Download**.
3. From the Patchset zip file, extract the contents of the AUT.zip file to your destination database server. After the AUT is extracted, all of the files are located in an AUT directory on the local drive. In this document, this directory is referred to as the AUT_HOME.

Creating the Agile PLM Database Instance

Unless you plan to upgrade in-place, a new database instance must be created before you can upgrade your existing database. This database instance will be used as the destination database during the upgrade process.

To create the Agile PLM 9.3.1 database instance, follow the instructions in the *Agile PLM Database Installation Guide*, based on your specific operating system.

After the 9.3.1 database instance is created, run the *useragile.sql* script, located in the `oracle_home/admin/<SID>/create/<agile schema user>` directory, to create a new, empty user in the database.

Note Change the token values inside the @ symbols in the *useragile.sql* file before running the script. Replace username **agile** with the desired username to create the user.

Generating Database Maintenance Scripts Only

To upgrade an existing Agile schema, you do not need to recreate the database instance. You only need to generate the database maintenance scripts for the target release.

The procedure for generating maintenance scripts is detailed below.

On Windows:

1. Run the database installer and enter appropriate information for Destination Location, Database Size and Oracle Home, as described in the *Agile PLM Database Installation Guide*.
2. When prompted for the Oracle SID, change the default SID **agile9** to the existing SID.
3. Select the **Generate database maintenance scripts only** option. Click **Next**.
4. Follow on-screen directions to generate scripts.

A confirmation message appears when you have successfully generated the maintenance scripts.

On UNIX:

1. Run the `agile9database.sh` script as described in the *Agile PLM Database Installation Guide*.

```
$ chmod u+x agile9database.sh
```

```
$ ./agile9database.sh [Enter]
```
2. When prompted to choose the installation mode, enter **S** to generate maintenance scripts only. This generates the database scripts but does not execute them.

3. Follow on-screen directions to generate scripts.

A confirmation message appears when you have successfully generated the maintenance scripts.

Validating the Databases

You should validate the source and destination databases to ensure a successful upgrade by performing the following checks:

- Run the latest `averify` script on the source database and fix any errors.
- For each database upgrade, you should know the following:
 - Source and destination database user and password
 - Destination system user and password
 - TNS configuration for source and destination database on the respective database systems
 - Paths to the Oracle Homes

- Map the source and destination Oracle Homes, if necessary.

- Validate the TNS entries of the source and destination databases.

On a command line, change `ORACLE_HOME` to point to the Oracle Home of the source database, then try to connect to it using the TNS name. Repeat this procedure for the destination database.

- Make sure the destination database user exists and there are no objects in the schema.

Note This does not apply if your source database is also your destination database.

- Make sure the source and destination database users have the same roles and privileges.
- Make sure the Agile tablespaces in the destination and source databases match. Also, the destination database should have unlimited tablespace.
- Verify that the available tablespace in the destination database is sufficient to complete the database upgrade.

Understanding the Property Files

This chapter includes the following:

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| ▪ The aut.properties File..... | 5 |
| ▪ The psupgrade.properties File..... | 10 |
| ▪ The peupgrade.properties File..... | 13 |

AUT uses property files to supply the input information to the database scripts. If you are not upgrading a Product Cost Management 8.5 or Program Execution 8.5 database, you should only complete the *aut.properties* file. If you are also upgrading a Product Cost Management 8.5 or Program Execution 8.5 database, you should complete either the *psupgrade.properties* file or the *peupgrade.properties* file, in addition to the *aut.properties* file.

The aut.properties File

The *aut.properties* file, located in the \$AUT_HOME\config directory, contains user-supplied information on the source and destination databases. The source database parameters contain information about the database to be upgraded. The destination database parameters contain information about the user and host details of the database where the source database is being upgraded. These parameters are used by the database scripts during the upgrade process.

Defining Upgrade Parameters

You can edit the *aut.properties* file to define the following parameters:

- Whether Source Equals Destination
- Destination Details
- Source Details
- Averify Details
- Import Warnings
- Language Details
- Character Set Encoding Details
- File Manager Internal Locator Details
- Destination Version
- 8.5 Only Details
- PPM 9.3.1 Details

Each parameter is followed by an example displaying the correct format for each parameter value. You must complete the source and destination details in order for AUT to proceed with the upgrade.

Whether Source Equals Destination

| Parameter | Value Definition |
|------------------|--|
| sourceEqualsDest | <p>Determines if the source database is upgraded to the destination database with or without the database user.</p> <p>If this value is set to true (upgrade destination in-place):</p> <ul style="list-style-type: none"> the source database is upgraded without exporting and importing the database user to the destination database. This means that the existing database user is upgraded instead of importing to a new database user and then upgrading. <p>Note This does NOT apply if your source and destination databases are on different versions of the Oracle database.</p> <ul style="list-style-type: none"> AUT does not perform an export unless a value for the <code>src.db.backup</code> parameter is specified. the source database details are not required. |

Destination Details

| Parameter | Value Definition |
|-------------------------|---|
| dest.jdbc.url | The JDBC connection string to the destination database. The format is jdbc:oracle:thin@<DESTINATION_DB_HOST_NAME>:<PORT>:<SID> where DESTINATION_DB_HOST_NAME is the hostname of the destination database, PORT is the listener port of the destination database (1521 is the default), and SID is the database instance. |
| dest.jdbc.driver | The database driver to use for JDBC connections to the destination database. The default is oracle.jdbc.driver.OracleDriver . |
| dest.db.user | The database user in the destination database. |
| dest.db.password | The encrypted database password of the destination database. Use the <code>encryptpwd</code> utility located in the \$AUT_HOME\bin directory to encrypt the password. |
| dest.db.system.user | The name of the user with 'system' privileges in the destination database instance. |
| dest.db.system.password | The encrypted password of the user account with 'system' privileges in the destination database instance. |
| dest.tns.name | The TNS name for the destination database. |
| dest.oracle.home | <p>The Oracle Home of the destination database. This value can be a mapped drive on the system where the AUT is run which points to the shared folder on the host machine.</p> <hr/> <p>Note Use either double back slashes or a forward slash for directory separation, for example, d:/oracle/ora102 or D:\\oracle\\ora102</p> <hr/> |

Source Details

| Parameter | Value definition |
|-----------------|---|
| src.jdbc.url | The JDBC connection string to the source database. The format is jdbc:oracle:thin@<SOURCE_DB_HOST_NAME>:<PORT>:<SID> where SOURCE_DB_HOST_NAME is the hostname of the source database, PORT is the listener port of the source database (1521 is the default), and SID is the database instance. |
| src.jdbc.driver | The database driver to use for JDBC connections to the source database. The default is oracle.jdbc.driver.OracleDriver. |
| src.db.user | The database user in the source database. |
| src.db.password | The encrypted database password of the source database. Use the encryptpwd utility located in the \$AUT_HOME\bin directory to encrypt the password. |
| src.tns.name | The TNS name for the source database. |
| src.oracle.home | <p>The Oracle Home of the source database. This value can be a mapped drive on the system where the AUT is run which points to the shared folder on the host machine.</p> <hr/> <p>Note Use either double back slashes or a forward slash for directory separation, for example, d:/oracle/ora102 or D:\oracle\ora102.</p> <hr/> |
| src.db.backup | Back up or do not back up the database into a dump file. If true, then the source database is backed up by exporting the database user into a dump file located at \$AUT_HOME\workingdir\AgileSrcDbBackup.dmp. If you are also upgrading a Product Cost Management or Program Execution database, their respective dump files are named Agile85pcmBACKUP.dmp and Agile85peBACKUP.dmp. |

Note If you are upgrading from Product Cost Management or Program Execution only, leave all Source detail properties blank in the *aut.properties* file.

Averify Details

| Parameter | Value Definition |
|---------------------|---|
| averify.error.count | <p>Specifies the number of averify errors to occur before the AUT stops the upgrade.</p> <p>Specify -1 to ignore the errors and continue with the upgrade.</p> <p>Specify +1 to stop the upgrade if an error occurs. Once you fix the error, you can run AUT again to continue the upgrade.</p> |

Ignore Import Warnings

| Parameter | Value Definition |
|---------------------|---|
| ignore.imp.warnings | Decide if the AUT ignores the import warnings or not while importing the database. If set to true, the warnings are ignored. AUT will stop if there is a critical error. |

Language Details

| Parameter | Value Definition |
|-----------|---|
| i18n.lang | Specifies the language of the operating system where the database is located. The values are English, Japanese, Chinese, or French. |

Character Set Encoding Details

| Parameter | Value Definition |
|-----------|---|
| nls.lang | Specifies the character set encoding being used during database import and export. For example, AMERICAN_AMERICA.UTF8. <i>Note:</i> Customers upgrading from AA and 8.5 releases to Agile PLM should set this variable to 'American_America.UTF8' when running AUT on a non-English client. This is necessary to ensure that the following database users - ifuser, superadmin, and agileuser - are successfully upgraded. |

File Manager Internal Locator Details

| Parameter | Value Definition |
|-------------------------------|--|
| file.manager.internal.locator | Specifies the location of the file manager. The content_url column in the files table is upgraded with an encrypted URL based on the file type. This URL is used after upgrading for full text search configuration. The format is <a href="http://<FILE_MANAGER_HOST>:<PORT>/Filemgr/AttachmentServlet">http://<FILE_MANAGER_HOST>:<PORT>/Filemgr/AttachmentServlet . |

Destination Version

| Parameter | Value Definition |
|--------------|---|
| dest.version | The version of the upgraded Agile PLM database. |

8.5 Only Details

| Parameter | Value Definition |
|---------------------------|---|
| isPC | Each of the parameters must have a value if the source database is either 8.5 or 8.5 SPx only. Set the parameter to true for the components that are installed on the source database and to false for the components that are not installed. |
| isPSI | |
| isPCM | |
| isPE | |
| username.migration.action | <p>Determine how you want the Agile users in the source database to appear in the destination database. The value is set as the number of one of the following choices:</p> <ol style="list-style-type: none"> 1. FIRSTNAME LASTNAME 2. LASTNAME FIRSTNAME 3. FIRSTNAME, LASTNAME 4. LASTNAME, FIRSTNAME 5. None of the above. FIRSTNAME will be migrated to LASTNAME. <p>If your database contains mixed cases, choose the option that reflects the format for most of your users. The remaining users must be migrated manually after the upgrade.</p> |
| gmt.timezone.difference | The GMT time zone of your database. The database and Agile application server must be on the same GMT time zone. The GMT time zone format is six characters, (+ or -)hh:mm, for example, GMT would be -00:00. |
| dest.users.timezone | The timezone to be used for the upgraded database. A text file listing the time zones that are supported is provided in the <AUT_HOME/config directory . Each timezone has a corresponding ID. Enter the ID that corresponds to the applicable time zone as the value for this parameter. |
| dest.users.encode.type | <p>The encode type to be used for the upgraded database. All the supported encode types are specified in comments immediately above this parameter in the <i>aut.properties</i> file. Each encode type has a corresponding ID number. Enter the ID number that corresponds to the applicable encode type as the value for this parameter.</p> <p>For example, to set the default encode type to Unicode (UTF-8), set <code>dest.users.encode.type= 5</code></p> |

PPM 9.3.1 Details

PPM 9.3.1 supports time-stamps for Schedule, Estimated, and Actual Dates, allowing users to define tasks with durations in hours, minutes or even seconds.

To ensure that the correct durations are reflected in programs that were created with earlier releases, the following parameters need to be specified. These specifications should match related

entries in the *agile.properties* file. If the default start and end times specified in the *agile.properties* file do not match your entries here, change the entries manually.

| Parameter | Value Definition |
|------------------------|--|
| dest.ppm.start.time | Start time of the work day in 24-hr format. For example, 08:00. |
| dest.ppm.end.time | End time of the work day in 24-hr format. For example, 17:00. |
| dest.ppm.working.hours | Total working hours in a day, in 24-hr format. For example, 08:00. |

Note Although PPM supports timestamps with hours, minutes and seconds, the time span defined as working hours in the *agile.properties* file should be specified only in hours and minutes, not in seconds. For example, you can use the time span 08:30:00 to 17:30:00, but not 8:30:25 to 17:30:25.

Note Customers upgrading from a previous release to 9.3.1 may notice a discrepancy in the schedule dates of upgraded programs which have an Activity-Milestone-Activity construct with FS dependencies and time buffers, as described in the following scenario:

Task 1 (1-day duration) has an FS dependency with Gate1, and Gate 1 has an FS dependency with Task 2 (1-day duration). Both dependencies have a 1-day time buffer also specified. During upgrade to 9.3.1, an extra day is added to the schedule. The duration for these tasks in 9.2.2.x will be 3 days, in 9.3.1, it will show up as 4 days.

Upgrading customers who encounter this issue are requested to contact Oracle Support for assistance in fixing the data.

The psupgrade.properties File

The *psupgrade.properties* file, located in the \$AUT_HOME\config directory, contains user-supplied information on the existing Product Cost Management database. During an upgrade of a Product Cost Management database, the data is merged into the Agile PLM database. The parameters in the file are used by the database scripts during the upgrade process to determine how the data is migrated. This file should be completed in addition to the *aut.properties* file if you are migrating a Product Cost Management database.

It is recommended to perform a test upgrade of the Product Cost Management database with reports to evaluate the database and make any necessary corrections before performing the actual data migration.

Defining the psupgrade.properties Parameters

| Parameter | Value Definition |
|----------------------|---|
| pcm.jdbc.url | The JDBC connection string to the Product Cost Management database. The format is jdbc:oracle:thin@<SOURCE_DB_HOST_NAME>:<PORT>:<SID> where SOURCE_DB_HOST_NAME is the hostname of the Product Cost Management database, PORT is the listener port of the database (1521 is the default), and SID is the database instance. |
| pcm.jdbc.driver | The database driver of the Product Cost Management database. The default is oracle.jdbc.driver.OracleDriver. |
| pcm.db.user | The database user of the Product Cost Management database. |
| pcm.db.password | The encrypted database password of the Product Cost Management database. Use the encryptpwd utility located in the \$AUT_HOME\bin directory to encrypt the password. |
| pcm.tns.name | The TNS entry name in the Oracle Home of the source database. |
| pcm.oracle.home | The Oracle Home of the Product Cost Management 8.5 database. Note Use either double back slashes or a forward slash for directory separation, for example, d:/oracle/ora102. |
| generate.pcm.reports | <p>Set this parameter to true to generate a report about the data contained in the Product Cost Management database before migration. The report will display data matching the following rules:</p> <ul style="list-style-type: none"> ▫ Update firstname, lastname, and user organization for the matched user login ID, if you set the update.matched.user.data parameter to true. ▫ Migrate the Product Cost Management Items not found in Agile 8.5, if you set the migrate.pcm.items.not.found.in.pc parameter to true. ▫ Convert all manufacturer names to uppercase, if you set the convert.mfrName.to.upperCase parameter to true. ▫ Update all Agile 8.5 manufacturer data with the Product Cost Management manufacturer data for the same manufacturer, if you set the update.matched.mfr.data parameter to true. ▫ Migrate Product Cost Management manufacturer parts not found in Agile 8.5, if you set the migrate.pcm.mpns.not.found.in.pc to true. <p>If you set this parameter to false, migration will proceed without a report being generated.</p> <p>If you choose to have a report generated, AUT will stop. After viewing the report and you are satisfied with the results, change</p> |

| Parameter | Value Definition |
|-----------------------------------|---|
| | this parameter to false and run AUT again. |
| report.folder.location | Location where you want the report to be generated. |
| update.matched.user.data | If set to true, the firstname, lastname, and user organization are updated based on matching users in the Agile 8.5 database. |
| migrate.pcm.items.not.found.in.pc | If set to true, all Product Cost Management items not found in the Agile 8.5 database are migrated. |
| convert.mfrName.to.upperCase | If set to true, all manufacturer names are converted to uppercase. |
| migrate.pcm.mpns.not.found.in.pc | If set to true, all Product Cost Management manufacturer parts not found in the Agile 8.5 database are migrated. |
| update.matched.mfr.data | If set to true, all Agile 8.5 manufacturer data is updated with the Product Cost Management data for the same manufacturer. |
| expiry.date.to.remove.prices | Removes prices based on the entered expiration date. All prices previous to the entered date are removed. If no date is entered, the prices are checked against the current date. Enter a date in the following format: MM-DD-YYYY. |
| migrate.suppliers.with.autonumber | <p>If set to true, all suppliers are given autonumbers. If set to false, you must provide a supplier code map file and add its location to the <code>supplier.code.crossref.filepath</code> parameter.</p> <p>The file should be in the form of comma separated text file with the heading in the first line as</p> <pre>supplierName,supplierCode Agile,agil EMS1,emsCode1</pre> |
| supplier.code.crossref.filepath | Location of the supplier code map file. |

| Parameter | Value Definition |
|---|--|
| iFS Details* | |
| copy.files | If set to true, the file attachments are copied. |
| src.ifs.folder | The mapped drive location of the local iFS files folder. |
| src.ifs.schema | The database user of the Product Cost Management database. |
| dest.ifs.folder | The path where the upgraded file vault will be located. |
| dest.ifs.schema | The database user of the destination database. |
| *After the database is upgraded, you will need to run the IFS Reorganization tool to restructure the file vault to match the current format. For more information on this tool, see the Installation Guide. | |

The peupgrade.properties File

The *peupgrade.properties* file, located in the \$AUT_HOME\config directory, contains user-supplied information on the existing Program Execution database. During an upgrade of a Program Execution database, the data is merged into the Agile PLM database. The parameters in the file are used by the database scripts during the upgrade process to determine how the data is migrated. This file should be completed in addition to the *aut.properties* file if you are migrating a Program Execution database.

It is recommended to perform a test upgrade of the Program Execution database with reports to evaluate the database and make any necessary corrections before performing the actual data migration.

Defining the peupgrade.properties Parameters

| Parameter | Value Definition |
|----------------|---|
| pe.jdbc.url | The JDBC connection string to the Program Execution database. The format is jdbc:oracle:thin@<SOURCE_DB_HOST_NAME>:<PORT>:<SID> where SOURCE_DB_HOST_NAME is the hostname of the Program Execution database, PORT is the listener port of the database (1521 is the default), and SID is the database instance. |
| pe.jdbc.driver | The database driver of the Program Execution database. The default is <code>oracle.jdbc.driver.OracleDriver</code> . |
| pe.db.user | The database user of the Program Execution database. |
| pe.db.password | The encrypted database password of the Program Execution database. Use the <code>encryptpwd</code> utility located in the \$AUT_HOME\bin directory to encrypt the password. |
| pe.tns.name | The TNS entry name in the Oracle Home of the Program Execution database. |

| Parameter | Value Definition |
|---|---|
| pe.oracle.home | The Oracle Home of the Program Execution database. Use either double back slashes or a forward slash for directory separation, for example, d:/oracle/ora102. |
| create.del.subclass | If set to true, the Deliverables subclass will be created after upgrade for data currently in that subclass. If set to false (default, the data currently in the Deliverables subclass will be migrated to the Tasks subclass after upgrade. |
| generate.pe.reports | If set to true, a report on any circular dependencies in the data is generated and no data is migrated. If set to false, no report is generated and the data is migrated. If you choose to have a report generated, AUT will stop. After viewing the report and correcting the dependencies, change this parameter to false and run AUT again. |
| report.folder.location | Location where you want the report to be generated. |
| pe.weekend.days | Comma-separated numbers representing the weekend days in a week. The default days are Saturday and Sunday. Format: 1,7 |
| currency.description | Base currency. The default is US Dollars (USD). |
| iFS Details* | |
| copy.files | If set to true, the file attachments are copied. |
| src.ifs.folder | The mapped drive location of the local iFS files folder. |
| src.ifs.schema | The database user of the Program Execution database. |
| dest.ifs.folder | The path where the upgraded file vault will be located. |
| dest.ifs.schema | The database user of the destination database. |
| *After the database is upgraded, you will need to run the IFS Reorganization tool to restructure the file vault to match the current format. For more information on this tool, see the Installation Guide. | |

Upgrading the Agile PLM Database

This chapter includes the following:

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| ▪ What's Not Upgraded | 16 |
| ▪ Troubleshooting the Upgrade | 16 |
| ▪ Data Migration for Signoff User Dual Identification | 18 |

Running the Automated Upgrade Tool

Before running the AUT:

- Make sure you have completed all of the pre-requisites listed under Preparing for the Upgrade.
- Edit the property file with the correct values for your upgrade. See Understanding the Property Files on page for more information.
- On UNIX, change the user permissions on all of the files under AUT_HOME in order for the upgrade log files to be created and the shell scripts under AUT_HOME/bin to be run.
- On AIX or systems with non-Sun JVMs, ensure that you remove the following parameters in the files mentioned below. You must do this before running Averify as well.

| Remove this parameter | From this file |
|--------------------------|--|
| -hotspot -ms128m -mx640m | aut.sh located in <AUT>/bin |
| | averify.sh located in <Averify>/bin |
| -hotspot -ms64m -mx64m | encryptpwd.sh located in <AUT>/bin |
| | encryptpwd.sh located in <Averify>/bin |

Checking the Status of the Upgrade

You can monitor the status through the log files that are generated during the upgrade. The **\$AUT_HOME\logs** directory contains all of the upgrade-related log files. *AUT.log* is the main log file for the upgrade. Separate directories are created for the logs generated by averify and the database scripts. These log files are located in the **averifylogs** and **oracle** subdirectories.

What's Not Upgraded

Markup restrictions that were enforced through privileges are not retained when you upgrade. With the new security model implemented in 9.2.2.2, **Markup** is a subclass under the **File Folders** class and all markup privileges are automatically enabled. To prevent users from viewing or modifying the existing markups, you must *disable* blanket privileges at File Folders class level in Java Client and *enable* Markup privilege for relevant users only.

Troubleshooting the Upgrade

The following list describes some problems that can occur during the database upgrade:

What if I can't resolve my TNS service name?

If the TNS service name cannot be resolved, then the service name specified in the *aut.properties* file is not correctly defined in the *tnsnames.ora* file.

Perform the following checks to fix the error:

- Verify that a *tnsnames.ora* file exists and is in the correct place. See your Oracle documentation for more information on the required name and location.
- Verify that the service name exists in one of the *tnsnames.ora* files. Add the service name, if necessary.
- Make sure there are no syntax errors in the *tnsnames.ora* file, especially unmatched parentheses or stray characters.

Why did I receive an Invalid User Name or Password error in the AUT.log file?

You may receive this error if the database connection was not successful. The following Oracle error messages may be displayed:

EXP-00004: invalid username or password

Cause: An invalid username or password was specified.

Action: Retry with a valid username and password.

ORA-01017: invalid username/password; logon denied

Cause: An invalid username or password was entered in an attempt to log on to Oracle. The username and password must be the same as was specified in a GRANT CONNECT statement. If the username and password are entered together, the format is username/password.

Action: Enter a valid username and password combination in the correct format.

What errors would I see if an import fails?

An import can end abnormally due to some of the following reasons:

IMP-00009: abnormal end of export file

Cause: The export file is probably from an aborted Export session.

Action: If so, retry the export and import.

IMP-00013: only a DBA can import a file exported by another DBA

Cause: The privileges needed to import an export file generated by a database administrator do not exist. Only a database administrator can import such files.

Action: The source and destination database users should have the same roles and privileges. Because the source database has the DBA role, the database destination should also have the role. If you do not want the destination database to have the DBA role, then remove the role from the source database and retry the upgrade.

IMP-00041: Warning: object created with compilation warnings

Cause: The object in the SQL statement following this error was created with compilation errors. If this error occurred for a view, it is possible that the base table of the view was missing or altered.

Action: This is a warning. The object may have to be recompiled before being used.

Why is AUT hanging?

AUT may not be hanging. Processes may be running that seem to take longer than others. For example:

- Indexes may be missing on the source database. If this is the case, *averify* may be running slowly.
- The import may be taking a longer time because it's a large database.

What should I do if AUT suddenly exits?

Check the AUT.log file. If no information is available, then the AUT could not start because of invalid settings. Check the pre-requisites and the contents of the *aut.properties* file before retrying.

If I have database connection problems, what Oracle errors will I get?

Database connection errors can occur if the SQL connection to the source or destination database is lost. Make sure that the database connections are available before running the AUT. If connection problems occur, you may see some of the following Oracle error messages:

ORA-01034: ORACLE not available

Cause: Oracle was not started. Possible causes include the following:

- The SGA requires more space than that was allocated for it.
- The operating system variable pointing to the instance is improperly defined.

Action: Refer to accompanying messages for possible causes and correct the problem mentioned in the other messages. If Oracle has been initialized, then on some operating systems, verify that Oracle was linked correctly.

ORA-01089: immediate shutdown in progress - no operations are permitted

Cause: The SHUTDOWN IMMEDIATE command was used to shut down a running Oracle instance, terminating any active operations.

Action: Wait for the instance to be restarted or contact the database administrator.

ORA-01090: shutdown in progress - connection is not permitted

Cause: The SHUTDOWN command was used to shut down a running Oracle instance, disallowing any connects to Oracle.

Action: Wait for the instance to restart or contact the database administrator.

ORA-12541: TNS: no listener

Cause: The connection request could not be completed because the listener is not running.

Action: Ensure that the supplied destination address matches one of the addresses used by the listener - compare the tnsnames.ora entry with the appropriate listener.ora file (or tnsnav.ora if the connection is by way of an interchange). Start the listener on the remote machine.

I received an ORA-00955 error in my AUT.log file. What should I do?

ORA-00955: name is already used by an existing object

Cause: An attempt was made to create a database object (such as a table, view, cluster, index, or synonym) that already exists. A user's database objects must have distinct names.

Action: Enter a unique name for the database object or modify or drop the existing object so it can be reused.

You can ignore this in the Agile schema because the object already exists. The upgrade process takes care of dropping the object and recreating it if there are any changes.

I received an ORA-00904 error. What should I do?

ORA-00904: MS_JAVA ".LONGNAME":Invalid Identifier.

Solution: Log in as the **sys** user and run the \$ORACLE_HOME\javavm\install\initdbj.sql script.

I received an ORA-01555 error. What should I do?

ORA-01555: "snapshot too old (rollback segment too small" when using Automatic Undo Management (AUM).

Solution: The UNDO tablespace is too small. Increase the size of the UNDO tablespace. Note that the UNDO tablespace should be large enough to store the undo data generated by active transactions as well as those preserved to honor the undo retention setting.

Increase the value of the Undo_retention parameter. This is important for systems running long queries. The parameter's value should at least be equal to the length of the longest running query on a given database instance. This can be determined by querying the V\$UNDOSTAT view once the database has been running for a while:

```
SQL> select max (maxquerylen) from v$undostat;
```

How long does it take the AUT to run?

The amount of time it takes the AUT to run depends on the database size. The amount of time needed to upgrade is also based on the database version of the source database. Import and export steps can be avoided by using the sourceEqualsDest property which also reduces the time.

Data Migration for Signoff User Dual Identification

Agile provides optional data migration scripts that can be used by customers who choose to implement the Signoff User Dual Identification feature for approval signoffs. The Signoff User Dual Identification feature was introduced to address FDA regulations laid out in 21 CFR Part 11 Section

11.200. The system now facilitates the usage of two forms of identification from the user when signing off on a document such as a change order.

If the Login Password is to be used as a second form of identification, the following scripts can be used to automate the required administration procedures.

Details of these scripts and the actions they perform are provided in the following table:

| # | Script | Action |
|----|------------------------------------|--|
| 1. | UseLoginPwdYesList.bat | Identifies the list of users who have set the "Use Login Password for Approval" option to Yes in Preferences and writes the output to a comma separated (.csv) file. Note The default filename for the output file is Output.csv. To change the filename, suffix a filename to the command as shown: UseLoginPwdYesList <FileName> . Where <FileName> is the name of the .csv file. |
| 2. | ChangeUseLoginPwdToNo.bat | Resets the "Use Login Password for Approval" option to No for all users who have set it to Yes in Preferences. |
| 3. | LoginPwdAppPwdMatchList.bat | Identifies the list of users who have identical Login and Approval passwords and have set the "Use Login Password for Approval" option to No . Writes the output to a .csv file. |
| 4. | SetApprovalPwd.bat | Resets the approval passwords to an administrator-supplied value for users who have identical Login and Approval passwords and have set the "Use Login Password for Approval" option to No . To change the password, suffix the new password value to the command as shown: SetApprovalPwd <password> . Where <password> is the new value for the approval password. (The password is in cleartext.) |

To migrate data to meet second signature requirements:

1. Locate the second signature migration scripts stored at the following path:
<Agile installation folder>/ agileDomain/tools/ SecondSignature.zip
2. Unzip the **SecondSignature.zip** file and extract the scripts to a new folder (temp directory) in the same location.
3. Run each bat/shell file in the sequence listed in the table above.

Note For Solaris/Linux installations, the corresponding .sh files are provided. You may have to change the format of the script files from DOS to UNIX.

Once approval passwords have been reset, users should be asked to change the administrator-provided approval password to a password of their choice. (This should not be the same as the login password.)

Configuring the Agile PLM Database

This chapter includes the following:

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After the Agile PLM database has been configured and all verify errors have been fixed, you must run additional database scripts to reorganize the database and to enable Full Text Search in the Agile PLM 9.3.1 database.

Reorganizing the Database

Important The Agile PLM 9.3.1 database includes two user accounts, CTXSYS and AGILE. The following upgrade procedure is required for the database sizing and configuration of the CTXSYS and AGILE accounts.

After AUT is run, the upgraded schema and data have been validated. However, the data still needs to be analyzed and statistics generated to enable Cost-Based optimizer (CBO) and Full Text Search (FTS) support. There are eight Agile-specific tablespaces required for optimization. The Agile schema has to be reorganized for this optimization to occur.

Note If you are using Oracle Datapump for import and export, use **agile9expdp** and **agile9impdp** scripts instead of **agile9exp** and **agile9imp** scripts in the steps outlined here.

To reorganize the upgraded schema:

1. On the database server, change to the following directory:
 (Windows) `\\oracle\admin\<Oracle SID>\create\<agile schema user>`
 (UNIX) `$ORACLE_BASE/admin/$ORACLE_SID/create/agile`
2. Run the **agile9exp** script.
 The agile9exp.dmp file is created in the current folder. This dump file is used with the agile9imp script. Make sure the dump file can be imported successfully before proceeding to the next step.

Note If you are using Datapump for export, this file will be called agile9expdp.dmp.
3. Run the **recreateagile** script to drop the existing account and recreate the agile account and schema.
4. Run the **agile9imp** script to import the upgraded Agile schema, including setup of CBO and FTS.
5. Rename the existing agile9exp.dmp file to agile9exp_upgrade9310.dmp for backup. Also rename the agile9exp.log file to agile9exp_upgrade9310.log.

6. Run the **agile9exp** script again.

The Agile9exp.dmp file created can be used as a backup of the system after the Agile PLM 9.3.1 database reorganization.

7. Rename the agile9exp.dmp file to agile9exp_reorg9310.dmp for backup. Also rename the agile9exp.log file to agile9exp_reorg9310.log.
8. Start SQL*Plus from a command line and log in as **agile/tartan** or **agile/tartan@<Oracle SID>**.
9. Run the *agile9_check.sql* file to validate the schema integrity and confirm integrity of the database reorganization.

SQL> @agile9_check.sql

Note Any warnings related to non-Agile tables can be ignored if you wish to retain these tables in the Agile schema. If not, you can drop the non-Agile tables and run *agile9check.sql* again. If any other errors are displayed, contact [Support](http://www.oracle.com/agile/support.html) <http://www.oracle.com/agile/support.html>. All errors must be fixed before proceeding to the next step.

10. Start the Oracle listener.

Note The following steps should only be performed after you have upgraded the Agile PLM application:

11. Start the Agile application server.
12. Shut down the database.
13. Perform a cold backup of all the database-related files.
14. Restart the database, listener, and application server.

Configuring the Agile SDK

If you are using the Agile SDK, delete the **AgileSDK.cache** directory from your client machines after you have upgraded the Agile PLM database and application server. The **AgileSDK.cache** directory can be found under the **temp** directory (%temp%AgileSDK.cache).

Configuring PG&C

If you have the PG&C component installed, additional configuration may be needed for substance migration.

Substance migration is necessary if you have met ALL of the following requirements:

- Upgraded your database from Agile PLM 9.2 to Agile PLM 9.3.1.
- Imported the JGPSSI substances and substance groups.

Note In Agile PLM 9.3.1, you should use IPC declarations with IPC substances and substance groups. Note that the IPC list of substances and substance groups is slightly different than the JGP list of substances and substance groups.

Important Contact your Agile Solutions Delivery representative to obtain the files needed for substance migration.

If you imported the JGPSSI substances in Agile PLM 9.2, but do not want to use the IPC substances, you can continue to use the JGPSSI substances without migrating.

Configuring PPM

With PPM objects, there should always be at least one user in the team, such as Owner. For every user on the team, a corresponding Access Control List (ACL) in the Share should exist. In the 9.0 and 9.1 releases of Agile PLM, a logged in user was allowed to delete all users from Share which included the owner's ACL.

You must clean the corrupted data in the ObjectACL database table to access the shared objects. The data cleanup involves replacing the deleted role with a valid, non-deleted equivalent role.

The following SQL statement cleans all of the corrupted rows in ObjectACL table where a deleted role is assigned to a user with the valid role:

```
DELETE FROM TEAM WHERE ACTIVITY_ID<=0;
INSERT INTO OBJECTACL SELECT TEAM.activity_id, (SELECT CLASS FROM
ACTIVITY WHERE
id=TEAM.activity_id), TEAM.user_id, '9506', sysdate, sysdate FROM TEAM
WHERE TEAM.user_id NOT IN (SELECT USERID FROM OBJECTACL WHERE
OBJECTACL.objid=TEAM.activity_id AND OBJECTACL.objclass IN
(18022,18387))
```

In the previous SQL statement, the Program Team Member role is generally assigned to a user and the ID for this out-of-box role is 9506.

The roleid values may differ if you have customized your database. In this case, use the following SQL statement to obtain roleid values for each role in your database:

```
select ID from nodetable where parentid=5006 and value = '<name of
role>';
```

The Agile Administrator is still allowed to delete a role assigned to a user in the object's ACL. If a role is deleted, an error message stating "Node <number> does not exist in cache." displays when the object is accessed.

Also, in earlier releases of Agile PLM, the Dashboard or other PPM-related home pages were allowed to be selected as the start page. In Agile PLM 9.2.2.1, a license check was added for default home pages. If any users have previously set their preferred Start Page and preferred Inbox to values that are related to PPM objects and PPM is no longer installed, run the following SQL statements to set the pages:

To set the Preferred Start Page to Home for all users:

```
update agileuser set PREFSTARTPAGE=1;
```

To set the Preferred Inbox View to Notifications if the Preferred Inbox View is Activities

```
update agileuser set PREFINBOXVIEW=3 where PREFINBOXVIEW=2;
```

Running the PPM Post-Upgrade Utility

After you have upgraded your database and installed the Agile PLM 9.3.1 application, you must run the PPM Post Upgrade Utility to accommodate the business rule changes introduced in this new version. For information on how to run this utility, see the *Agile PLM Installation Guide* for your specific application server.

AUT Maintenance

This Appendix includes the following:

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Before you upgrade your database, you should always make sure you are using the latest version of the AUT. Changes to scripts such as `averify` may occur after the initial version has been released. To ensure your database is correctly upgraded, always check the [My Oracle Support](https://support.oracle.com) (<https://support.oracle.com>) web site for updates.

Updating the AUT

If updates are needed to the AUT, you can always find the latest version on [My Oracle Support](https://support.oracle.com) (<https://support.oracle.com>). Download the AUT.zip file and extract the file contents into the same directory where you originally extracted the files.

Updating File Attachments

Reorganizing the database sets `FILES.CONTENT_URL` to `NULL`, which means the attachments are not indexed. To enable Full Text Search (FTS) on attachments, the `FILES.CONTENT_URL` must be updated using AUT.

Note The parameter `file.manager.url` is used in place of `file.manager.internal.locator` in AUT version 171 and above. The functionality remains unchanged.

Before running the AUT to update `FILES.CONTENT_URL`:

1. Set the following parameters in `aut.properties`.

`sourceEqualsDest = true.`

**`file.manager.url = <

To obtain the file.manager.url, log on to Agile Java Client and navigate to Admin > Server Settings > Locations > File Manager. Copy the URL from the File Manager URL column.`**

2. Open a command prompt on Windows or a terminal window on UNIX, and navigate to the `AUT/bin` directory:

3. On Windows, run the following batch file:

`aut execute-fts-post-tasks-921`

On UNIX, execute the following shell script:

`./aut.sh execute-fts-post-tasks-921`

4. Open a SQL*Plus session, connect as schema owner (AGILE), and issue the following command:

```
call agile_server_fts.sync_index('files_content_idx');
```

The above process synchronizes the domain indexes with the attachments. The process may take a long time to complete depending on the number and size of attachments. After the process completes, FTS searches can be performed on attachments.

Running Averify

Averify performs an integrity check against the Agile database and reports on specific errors. Averify includes a check for missing indexes and inconsistent data stored in the various database tables. Averify only reports errors, and does not attempt to fix them or modify your database.

Running Averify and using the results to eliminate known errors is a prerequisite for diagnosing problems. Averify is not comprehensive, however, and finding zero errors does not certify a database as perfect.

When you download an updated version of AUT, the latest Averify scripts are also included. The latest Averify tool is also available separately on [My Oracle Support](https://support.oracle.com) (<https://support.oracle.com>). You should run Averify periodically as part of your regular database maintenance procedures.

To run Averify:

1. Make sure you have downloaded the latest version of AUT from [My Oracle Support](https://support.oracle.com) (<https://support.oracle.com>).
2. Make sure you have backed up your database.
3. Go to the \$AUT_HOME\scripts\oracle\utilities\averify directory.
4. Connect to the Agile database from the command line using SQL*Plus.
5. Run the *oracle_averify9x.sql* script.

```
SQL> @oracle_averify9x.sql
```

Note If errors are generated in the *oracle_averify_report.log* file located in the \$AUT_HOME\scripts\oracle\utilities\averify directory, contact Agile Support.
