

Oracle Agile Engineering Data Management

Enterprise Integration Platform Installation and Upgrade Guide

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Preface

Agile PLM is a comprehensive enterprise PLM solution for managing your product value chain.

Audience

This document is intended for administrators and users of the Agile PLM products.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at
<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit
<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit
<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Related Documents

Oracle's Agile PLM documentation set includes Adobe® Acrobat PDF files. The Oracle Technology Network (OTN) website
<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.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Installation Requirements

Platform Support Matrix

In general, the Integration Platform is running on any platform which provides a Java Runtime Environment 7. Nevertheless, there are some restrictions based on certain connectors which are listed below:

The Agile EDM Connector supports all platforms which are supported by Agile e6.2.0.0.

The Administration Client is part of the Integration Platform. Since it is a Java application and only needs a Java Runtime Environment, no platform restrictions apply. The Administration Client does also allow remote administration of the Integration Platform. In that case, you need to have a network connection between the workstation where you run the Administration Client and the Integration Platform Server.

Enterprise Integration Platform

Since the Enterprise Integration Platform is a Java application, a Java Runtime Environment is required. This is not part of the installation package and therefore needs to be installed beforehand.

Note: As the Enterprise Integration Platform includes a Web Server now that is able to handle JSPs, a Java Compiler must be installed. Either you install a Java Development Environment (JDK) where this is included, or you install a Java Runtime Environment and copy the file `tools.jar` from the JDK's `lib` directory to the JRE's `lib` directory.

Please remember to install the Java Runtime Environment on all platforms where you want to run the Enterprise Integration Platform or parts of it. If you installed it on a UNIX system for example, and you want to use the GUI tools on a Windows system from this installation location via a shared network drive, you have to install a Java Runtime Environment on your Windows machine as well.

This version of the Integration Platform runs on Java 7 (latest patch level recommended). You may download this from the website of the respective operating system provider:

AIX:	http://www.ibm.com/developerworks/java/jdk/aix/service.html
Windows, Solaris, Oracle Linux/Intel:	http://www.oracle.com/technetwork/java/javase/overview/index.html
HP-UX:	http://www.hp.com/go/java

Note: After the installation of the Java Runtime Environment, please set the environment variable JAVA_HOME to point to its installation directory.

Third-Party Libraries

As certain third-party libraries are not shipped with the Enterprise Integration Platform anymore, please download them from the following locations as needed:

Library	Purpose	Download Location	Installation Instructions
js.jar	JavaScript support for XSL transformations	www.mozilla.org/rhino/	Browse to Downloads and then to the Rhino downloads archive. The preferred version to download is 1.7R4. Copy the file js.jar from the ZIP file to the libs directory.
wsdl4j.jar	WSDL generation for WebServices	sourceforge.net/projects/wsdl4j	Browse to Downloads and to the link to View older releases in the WSDL4J package. The preferred version to download is 1.6.3. Copy the file lib/wsdl4j.jar to the libs directory.

Agile EDM

The minimum Agile EDM version to be used together with the Integration Platform is Agile EDM e6.2.0.0.

Hardware Requirements

Minimum Network Connectivity and Bandwidth

Note: 100 MB/s LAN connections based on TCP/IP between the Integration Platform, Agile EDM Server and ERP Server.

Note: At a minimum, a TCP/IP loopback device is required

Minimum Memory Requirements

The following recommendations are incremental to the amount of RAM required for other applications and the operating system.

- Minimum of 128 MB for the Integration Platform.

- Minimum of 30 MB for the Administration Client

Minimum Disk Space

The basic server installation requires 120 MB which also includes administration client installation.

Depending on the location of the queue database, temp directory for DEBUG files and checked-out physical files and log directory, more space may be required during runtime.

Software Requirements

Java Runtime Environment

This version of the Integration Platform runs on Java 7 (latest patch level recommended). You may download this from the website of the respective operating system provider:

AIX:	http://www.ibm.com/developerworks/java/jdk/aix/service.html
Windows, Solaris, Oracle Linux/Intel:	http://www.oracle.com/technetwork/java/javase/overview/index.html
HP-UX:	http://www.hp.com/go/java

Please check that the JAVA_HOME environment variable is set correctly. You should get the version of the current installation of the Java Runtime Environment, when calling on the Integration Platform Server the program:

```
java -version
```

Agile EDM Server and Java Daemon

The minimum Agile EDM version to be used together with the Integration Platform is Agile e6.2.0.0. Older versions of Eigner or Agile EDM products are not supported.

Since the Agile EDM Connector is using the Java-ECI for connecting to Agile EDM, please make sure that the Agile EDM Java Daemon is configured and running properly.

Installation

The distribution is provided as a zipped tar file because the UNIX execution file rights are not preserved by WinZIP.

We recommend using WinZIP on Windows Platforms for expanding the delivered file.

On UNIX platforms you need the respective tar and unzip tools (recommended gtar and unzip).

Configuration

The configuration of the Integration Platform is done in XML files and XML stylesheet files. Although you can use any text editor to modify those files, we recommend using special XML/XSL Editing tools.

These tools are not part of the standard distribution of the Enterprise Integration Platform.

Installation Overview

This document describes the installation of the Enterprise Integration Platform together with Agile EDM.

In order to install the Integration Platform, several steps have to be performed:

1. Install the software on the server machine, where the Integration Platform should run.
2. Install the application specific software required by the Integration Platform, e.g. loader files in Agile EDM.
3. Modify the configuration file in order to define the involved connectors, mappings and operations (Business Objects).
4. Modify the mapping files based on the requirements.
5. Test the Integration Platform with the new configuration.

Basic Installation

The software is provided as a distribution package, which includes all files and directories needed for successfully running the application.

Installation Steps

1. Copy the installation package onto the dedicated server, which should be used for running the Integration Platform. The used server needs to be able to connect to the Agile EDM Java Daemon via ECI and to ERP system via RFC.
2. Uncompress the package into the install directory of the Integration Platform, e.g. into the directory `c:\agile\eip` on MS-Windows (this will be referred to as `<eai.home>` in the rest of the document).

Following directory structure will be created under `<eai.home>`:

- `archive`: Directory for archived queue entries
- `bin`: Contains the startup scripts for the applications
- `conf`: Contains the configuration and mapping files
- `data`: Contains the XDOs (data packages) when persistence is activated
- `db_util`: Contains database utilities
- `docs`: Contains the documentation/manuals
- `install`: Contains all additional installation files, which are required for external applications, e.g. Agile EDM
- `libs`: Contains all library files (except JRE files)
- `log`: Contains all log/trace files, depending on setting in configuration file
- `tmp`: Contains all temporary files, which are neither log files nor XDO data files

Installing Oracle Database Client

If not done yet, you need to install an Oracle Database Client.

Refer to the Agile EDM Server Installation Guide on Windows and UNIX in the chapter “Installing Oracle Database Client” for installation instructions.

Note: To run EIP, the Environment Variable `ORACLE_HOME` must be set to the root directory of the Oracle Client installation (see Software location path in GUI Installation)

Database Creation

Before using the Enterprise Integration Platform, the needed database tables must be created.

Note: Although it might be possible to create the EIP's database objects with the same user as other applications (e.g. Agile EDM), we strongly recommend using a separate user (a schema in Oracle). Please read carefully the chapter Tools in the "EIP Administration Guide for Agile e6.2.0.0" for further information.

Note: It is recommended to create the new database user with own database files (tablespace in Oracle). The advantages of separate database files are independent from other tables and users (e.g. from Agile EDM), and easier to backup and replicate. Because the tables are constantly growing in size, and if they are not cleaned up on a regular basis, the initial size of the database file should be considered big enough. The definitions for Agile e6 may be used as a guideline for specifying the initial database size and extends. Since this is only a recommendation, you may feel free to use the same database files as an existing Agile e6 installation or even the same database user, especially if you do not expect too much data load.

In order to create the database tables, please call the SQL script `cre_eip_db.sql` in the directory `db_util`. The script can be used to create and drop the EIP database. It removes EIP tables, indexes and stored procedures, and creates them again. This script has to be executed in the database as configured in file `eai_ini.xml`.

Example to execute the script with the SQL Plus tool:

```
@cre_eip_db.sql edb edb_idx edb_lob
```

The default parameter are:

- `edb`: data tablespace
- `edb_idx`: index tablespace
- `edb_lob`: lob tablespace

Three Oracle PL/SQL procedures needed by EIP will also be installed during execution of the script:

- `EIP_CLEANUP_ALL`
- `EIP_CLEANUP_BPM_QUEUE`
- `EIP_CLEANUP_EIP_QUEUE`

The log file `cre_eip_db.log` will be created.

EIP Wallet

EIP wallet will be generated by cryptographer tool or encrypt tool.

The directory 'wallet' needs to be created manually in the directory `<eai.home>`, and will contain the EIP wallet. If the directory is not available, an error message will be displayed.

Note: Please make sure that only EIP users have access to the directory wallet.

By first run of cryptographer tool or encrypt tool the wallet will be generated in directory <eai.home>/wallet/private/eip.

The cryptographer tools check the wallet at every run, and generate a new wallet if it does not exist in directory <eai.home>/wallet/private/eip.

Configuration and Customization

For more information about configuring and customizing the Enterprise Integration Platform, please refer to the "EIP Administration Guide for Agile e6.2.0.0".

Modifying the Configuration Files

The configuration has to be done in at least two files in the conf directory: run.conf and eai_ini.xml. Each one of them needs to be set up accordingly in order to have the Integration Platform start up and run properly.

The configuration file run.conf lists the classpaths used by the Integration Platform.

The configuration file eai_ini.xml consists of certain sections for the different modules of the Integration Platform, e.g. Controller, Connector and Mapping.

Note: The password encryption had been changed due to be compliant with the Oracle Security Guidelines. It will use the same method as Agile e6 (e.g. for the encryption of the database password). Therefore all passwords in the eai_ini.xml file needs to be re-generated.

For an Oracle non-RAC databases, it is advised to not use the OCI driver (which is enabled by default) but the JDBC thin driver. This behavior could be altered by the following line in the eip.conf file:

```
wrapper.java.additional.9=-Deip.oracle.thin=false
```

When set to false, the OCI driver is used that is required for RAC, otherwise the JDBC thin driver is used.

Modifying the Mapping Files

As mentioned before, XSL files are used for mapping purposes. Since the connectors create and read XML data (i.e. the message XDO), converting the XDO to a specific format will be done by the XML Mapping engine.

The names of the XSL mapping files, which are used by the Integration Platform, are provided in the eai_ini.xml configuration file.

For more information about XSL tools, please refer to the chapter Frequently Asked Questions in the "EIP Administration Guide for Agile e6.2.0.0".

Configuring EIP on Oracle Linux

The EIP package for Oracle Linux, downloaded from Oracle Software Delivery Cloud, does not contain the Oracle DB client library `libclntsh.so.12.1`. You have to use the Oracle DB client that is installed with Oracle Agile e6.2.0.0. If the EIP is installed on the same server as Agile e6.2.0.0, it will use the Oracle Client of the Oracle Agile e6.2.0.0 installation. If not, the same Oracle Client installation as for Oracle Agile e6.2.0.0 needs to be executed on the EIP server.

The EIP's startup scripts and startup configuration files make references to the Oracle JDBC JARs and OCI shared libraries from the Oracle Client installation directories via the `ORACLE_HOME` environment variable. It supports both the Oracle Agile e6.2.0.0 Oracle Client installation and the Oracle Instant Client installation.

To run EIP, the Environment Variable `ORACLE_HOME` must be set to the root directory of an Oracle Client installation.

Testing and Starting

For testing and starting the Enterprise Integration Platform, please refer to the chapter Running the Enterprise Integration Platform in the "EIP Administration Guide for Agile e6.2.0.0".

Starting as a Windows Service

The EIP Daemon is a Java Service Wrapper for Windows Server 2012 R2 Enterprise Edition (64bit). It may be used to start and stop the Enterprise Integration Platform from the Service Control Panel.

Installation Steps

1. The environment variables EAI_HOME and JAVA_HOME must be set!
2. Run the script daemon.cmd from the bin directory with the argument "install" to install the service:
3. Open Start > Control Panel > Administrative Tools > Services and ensure that the service is running with the same user as the Agile EDM server instance (default is axalantrt).
4. Use the entry "EnterpriseIntegrationPlatform Daemon" to start or stop the Enterprise Integration Platform.

```
bin\daemon.cmd install
```

The service may be removed by calling the script with the argument "remove".

Troubleshooting

If the service does not start or terminates unexpectedly, check the additional log file daemon.log that is located in logs. It contains service internal messages and should be reviewed for daemon configuration problems.

Starting as a UNIX Daemon

The EIP Daemon is a Java Daemon Wrapper for UNIX. It may be used to start and stop the Enterprise Integration Platform from the Service Control Panel.

Installation Steps

1. The environment variables EAI_HOME and JAVA_HOME must be set!
2. Run the script daemon.sh from the bin directory with the argument "start" to install the service:

```
bin/daemon.sh start
```

The service may be stopped by calling the script with the argument "stop".

3. Check if the daemon is running by calling:

```
bin/daemon.sh status
```

Troubleshooting

If the service does not start or terminates unexpectedly, you may check the additional log file daemon.log that is located in logs. It contains service internal messages and should be reviewed for daemon configuration problems.

Upgrade from Older EIP Databases

An older EIP database (EIP for Agile e6.1.3.0 and older) can be upgraded to EIP for Agile e6.2.0.0 with the script `upgrade_eip_db.sql`. This script can be found in the directory `db_util`.

The script needs to be run against the EIP's database.

The script replaces field `JDO_SEQUENCE.ID` with `JDO_SEQUENCE.SEQUENCE_NAME`, and installs three PL/SQL procedures to clean up the EIP database:

- `EIP_CLEANUP_ALL`
- `EIP_CLEANUP_BPM_QUEUE`
- `EIP_CLEANUP_EIP_QUEUE`

Upgrade Tool

Note: This chapter describes the upgrade of the configuration file `eai_ini.xml` from one major version to the next one. For changes in minor versions please refer to the respective Release Notes document.

The Upgrade tool allows upgrading previous versions of the configuration file `eai_ini.xml` to the current EIP version.

The tool can be started with the script `upgrade.cmd` (Windows) and `upgrade.sh` (UNIX) in the `bin` directory.

The following startup options are available (you will get this by adding the `--help` option to the startup script):

Usage: Enterprise Integration Platform Upgrade [-c <conf-dir>] [-h] -i <in> -o <out> [-p <props-file>] [-x <xsl>]

Options:

-c		--conf-dir	Specifies the configuration directory
-h		--help	Shows this help
-i		--in	Input file (REQUIRED)
-o		--out	Output file (REQUIRED)
-p		--props-file	Specifies the properties file
-x		--xsl	XSL file (default: <code>upgrade.xsl</code>)

This is an example on how the tools might be called on Windows:

```
bin\upgrade.cmd -i C:\eigner\eip-old\conf\eai_ini.xml -o
C:\eigner\eip-new\conf\eai_ini.xml
```

The Upgrade tool may provide the following output:

```
[<date>] FORCE (Upgrade) - Input file (2.1.1) : C:\eigner\eip-old\conf\eai_ini.xml
[<date>] FORCE (Upgrade) - Transformation file: C:\eigner\eip-new\conf\upgrade.xsl
[<date>] FORCE (Upgrade) - Output file (2.1.2): C:\eigner\eip-new\conf\eai_ini.xml
[<date>] FORCE (Upgrade) - Transformation done in 0 h 00 min 00 s 297 ms
```

EIP 2.1 to 2.2

General Information

Here you can find information about the installation of the Enterprise Integration Platform Version 2.2 (EIP for Agile e6.2.0.0) on top of EIP 2.1.

Note: Please keep in mind, that additional customizing of the Enterprise Integration Platform (e.g. XSL Mapping) and Agile EDM (e.g. additional Query Forms) will not be upgraded automatically.

Installation

Due to the fact that libraries and configuration files changed between the versions EIP 2.1 and EIP 2.2, we recommend installing EIP 2.2 in a directory separate from EIP 2.1. Additional mapping files and configuration should be incorporated into the EIP 2.2 installation one by one.

Configuration and Customizing

Configuration Settings

The structure of the configuration file `eai_ini.xml` has changed. Therefore, please copy your 2.1 configuration settings carefully one by one to the 2.2 `eai_ini.xml` file.

Note: The usage of the Upgrade tool is highly recommended. Some manual work might also be required.

Following portions of the `eai_ini.xml` file have changed:

The webserver configuration in the controller area is now deactivated by default. If a network connector is used it must be activated and the port needs to be configured properly to not conflict with another process already running on the same port (e.g. a Tomcat installation).

For an Oracle non-RAC databases, it is advised to not use the OCI driver (which is enabled by default) but the JDBC thin driver. This behavior could be altered by the following line in the `eip.conf` file:

```
wrapper.java.additional.9=-Deip.oracle.thin=false
```

When set to "false", the OCI driver is used that is required for RAC, otherwise the JDBC thin driver is used.

Password Encryption

The password encryption had been changed to be compliant with the Oracle Security Guidelines. It will now use the same method as Agile EDM uses (e.g. for the encryption of the database password). Therefore, all passwords in the `eai_ini.xml` file need to be re-generated.

Note: New passwords are now prefixed with {PLM-AES-128}. And there will be different passwords generated from the same input to make it harder to guess or recognize previously used passwords. It is therefore advised to generate separate encrypted passwords for the same input.

The command line tool "encrypt" does not allow specifying the password to be encrypted on the command line anymore. It is recommended to paste the plain password into the system's clipboard before running the tool. The encrypted password

will be stored into the clipboard again. Or you may choose to use the UI tool named "crypt".

