Oracle® Application Access Controls Governor

Upgrade Guide

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Oracle Application Access Controls Governor Upgrade Guide

Primary Author: David Christie

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Introduction

Application Access Controls Governor (AACG) regulates access to duties assigned in business-management applications. By default it controls access to Oracle E-Business Suite and PeopleSoft Enterprise, and it may be configured to work with other business-management applications as well. It implements "access policies," which identify duties that are considered to conflict with one another because, in combination, they would enable individual users to complete transactions that may expose a company to risk.

Within any business-management application, AACG can recognize policy conflicts after duties are assigned to users. In Oracle E-Business Suite or PeopleSoft Enterprise, version 8.2.1 of AACG can also implement "User Provisioning" — it can evaluate access policies as roles or responsibilities are assigned to users, preventing them from gaining risky access.

To run version 8.2.1, you must upgrade to it from version 8.2.0; you cannot install version 8.2.1 directly. To implement version 8.2.0, you may install it directly, or you may upgrade to it from any of versions 8.0, 8.01, 8.1, or 8.1.1. To perform the version 8.2.0 installation or upgrade, see the *Installation and Upgrade Guide* for version 8.2.0. Then, to upgrade to version 8.2.1, complete the following steps.

1. To implement User Provisioning in Oracle EBS instances, ensure that version 7.3.1 of Preventive Controls Governor (PCG) is installed in each Oracle EBS instance that is subject to AACG analysis. (Earlier versions of AACG permitted the use of earlier PCG versions, but AACG 8.2.1 requires version 7.3.1 of PCG.)

   PCG is a set of applications which primarily apply controls within Oracle EBS, but which also support User Provisioning in AACG. For installation instructions, see the *Preventive Controls Governor Installation Guide* for version 7.3.1.

   There is no similar prerequisite for implementing User Provisioning in a PeopleSoft instance.

2. Upgrade to version 8.2.1 of AACG from version 8.2.0:

   - Use the database and software components already installed for version 8.2.0. (These are listed in the "Prerequisites" section on page 1-2.)
   - Download AACG files. (AACG also requires certain open-architecture files. If you preserved those downloaded for version 8.2.0, there is no need to download them again.)
   - Perform the AACG upgrade.

To complete these procedures, see Chapter 2 of this manual. Because this upgrade reuses the database already installed for version 8.2.0, it inherits certain information, which need not be reconfigured. This includes:

- "Global user" configuration — criteria for identifying business-application users, whose IDs in those applications may vary from one application to another. For more on global user configuration, see the *Installation and Upgrade Guide* for version 8.2.0
- Connections to business-management applications over which access policies created in AACG will exercise control. For more on configuring "data source" connections, see the *User Guide* for version 8.2.1.

3. Perform an additional Provisioning Embedded Agent (PEA) installation in each instance of Oracle EBS or PeopleSoft that is to be subject to User Provisioning. For Oracle PEA installation, see Chapter 3 of this manual; for PeopleSoft PEA installation, see Chapter 4.

If you want to upgrade from version 7.2.3 or earlier of Application Access Controls Governor, perform a new installation of version 8.2.0, upgrade it to version 8.2.1, and then use the AACG migration utility to copy earlier-version SOD rules into the version-8.2.1 instance. (The migration process converts SOD rules into access policies). For information on using the migration utility, see the *User Guide* for version 8.2.1.

Supported Operating Systems

Application Access Controls Governor runs on a server with, by preference, a Linux operating system. Windows Server is also supported. For detailed information about supported operating systems, see the *Oracle Governance, Risk, and Compliance Controls Suite Compatibility Matrix*.

Prerequisites

Before installing Application Access Controls Governor, ensure that the following are installed on the server:

- Oracle 10g database.
- Tomcat Application Server version 5.5

Moreover, if you are installing on a Linux server, you must have Sun Java Development Kit 1.5. If you are installing on a Windows server, you may use the Sun JDK or JRockit R27.5.0 for Java SE 6; the latter is recommended. In any case, AACG must have its own dedicated Java container. It was not designed to coexist in a container with other web applications (even other applications in the Governance, Risk, and Compliance Controls Suite).

On the server or a client system, either of the following web browsers can display the AACG interface:

- FireFox 2.*x*
- Microsoft Internet Explorer 6 or 7, with the Adobe SVG plugin available from http://www.adobe.com/svg/viewer/install/mainframed.html.

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Upgrading AACG

In broad terms, complete these steps to upgrade version 8.2.0 of Application Access Controls Governor to version 8.2.1:

1. Download files to the AACG server and prepare them for use.
2. Install and configure the software.

Noting Your Current Settings

For version 8.2.0, you have already configured settings that establish connectivity between Application Access Controls Governor and its database. As you upgrade to 8.2.1, you will need to re-enter these settings. Take note of them now, so that you will have them at hand when you need to re-enter them.

1. Start your existing version-8.2.0 instance of AACG: Open a web browser and, in its address field, enter the following:

   `http://host:tomcat_port/ags`

   Replace *host* with the fully qualified domain name (FQDN) of your Application Access Controls Governor server, and replace *tomcat_port* with 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during Tomcat installation).
2. Log on to AACG: Supply your user name and password, and click on Login.
3. In the Navigation panel (to the left on the AACG interface), expand the Administration entry (click on its plus sign), and then click on Application Configuration.
4. An Application Configuration panel displays the settings you've established for most database-connectivity parameters. (For security purposes, it does not display the AACG database password.) Make a copy of the settings. (For example, highlight the fields displaying your settings by dragging your mouse across them, click on Ctrl+C to copy the settings, open a word processor or spreadsheet, and press Ctrl+V to paste in the copied settings.)

Backing Up the AACG Schema

Application Access Controls Governor requires a schema in an Oracle 10g database. For version 8.2.1, use the schema already created for version 8.2.0. Before upgrading, take a backup of your AACG schema

To use the multilingual capabilities of AACG, make sure the database that hosts the AACG schema is set up for UTF-8 encoding. Specifically, the character set should be set to AL32UTF8. Refer to your Oracle Admin guide for more information on verifying or configuring your database with the recommended character set.

Downloading Files

Before downloading files, create a staging directory on the Active Access Controls Governor server. When this directory is created, complete the following steps:

1. Locate the Governance, Risk, and Compliance Controls Suite Disk in your Oracle media pack. In its dist directory, locate the file acg_821.zip. Copy the file to your staging directory, and extract its contents there.
2. One of the files you've extracted is called ags.war. Execute the following command to validate it.

   ```
   md5sum ags.war
   ```

   In response to this command, a checksum value is returned. Ensure that it matches the following value:

   ```
   fa7cdda009dee416efa65829ca3285fd
   ```

3. Certain open-architecture files are required. You will have already downloaded these files to the staging directory you created as you installed version 8.2.0. If you have not removed them, you can reuse them for version 8.2.1, and so need not download them again. If you have removed them, download files from the following sites to your version-8.2.1 staging directory.

   jasperreports-1.3.2.jar
   A Java reporting system
   License:
   `http://www.jasperforge.org/index.php?option=com_content&task=view&id=81&Itemid=89`
   Download:
   `http://mirrors.ibiblio.org/pub/mirrors/maven/jasperreports/jars/jasperreports-1.3.2.jar`

   Depending on the web browser you use, the file may download as *jasperreports-1.3.2.zip*; if so, change its name to *jasperreports-1.3.2.jar*. (If the file downloads as *jasperreports-1.3.2.jar*, do not change its name.)

   kettle-2.5.2.jar
   common-2.5.jar
   cache-2.5.jar
   jxl-2.5.jar
   javadbf-2.5.jar
   js-2.5.jar
   A metadata-driven ETL tool

License:

```
http://wiki.pentaho.com/display/EAI/PDI+License+FAQ
```

Download

```
http://sourceforge.net/project/downloading.php?group_id=
140317&use_mirror=superb-west&filename=Kettle-
2.5.2.zip&95414959
```

xpp3_min-1.1.3.4.O.jar
A streaming pull XML parser
License:

```
http://www.extreme.indiana.edu/viewcvs/~checkout~/XPP3/java
/LICENSE.txt
```

Download:

```
http://www.extreme.indiana.edu/dist/java-
repository/xpp3/jars/xpp3_min-1.1.3.4.O.jar
```

As you download this file, be sure to change its name from *xpp3_min-1.1.3.4.O.zip* to *xpp3_min-1.1.3.4.O.jar*.

edtFTPj-1.5.3.jar
Kettle dependency
License:

```
http://www.enterprisedt.com/products/edtftpj
```

Download:

```
http://www.findjar.com/jar/com.enterprisedt/jars/edtFTPj
-1.5.3.jar.html
```

A findJAR page opens; click on its download link. The download file is originally named *edtFTPj-1.5.3.zip*. Change its name to *edtFTPj-1.5.3.jar*.

4. If you have downloaded open-architecture files for version 8.2.1, prepare the Kettle files you've downloaded by completing the following tasks. (If you are reusing the files downloaded for version 8.2.0, you have already completed these tasks and need not repeat them.)

   - Create a subdirectory of your staging directory, called lib_stage.
   - Extract the contents of Kettle-2.5.2.zip in the lib_stage subdirectory.
   - From the staging directory, execute the following commands. In each, replace the value *stagedir* with the name of your staging directory:

```
cp lib_stage/Kettle-2.5.2/libswt/common.jar
stagedir/common-2.5.jar
cp lib_stage/Kettle-2.5.2/libext/CacheDB.jar
stagedir/cache-2.5.jar
cp lib_stage/Kettle-2.5.2/libext/jxl.jar stagedir/jxl-
2.5.jar
cp lib_stage/Kettle-2.5.2/libext/javadbf.jar
stagedir/javadbf-2.5.jar
cp lib_stage/Kettle-2.5.2/libext/js.jar stagedir/js-2.5.jar
cp lib_stage/Kettle-2.5.2/lib/kettle.jar
stagedir/kettle-2.5.2.jar
```

Performing the Upgrade

When the necessary files are downloaded, complete these steps:

1. Shut down the Tomcat application server (or, if you are installing on a Windows server and run Tomcat as a Windows service, stop the service).
2. Remove the directory *TomcatHome*/ webapps/ags, and all its contents. Also remove the ags directory from the Tomcat work area (*TomcatHome*/work/Catalina/localhost/ags). You may want to save Tomcat logs (located at *TomcatHome*/logs) to another location, then delete them.

   Note: Throughout this document, replace the value *TomcatHome* with the full path to the highest-level directory in which Tomcat components are installed.
3. Copy the file ags.war from your version-8.2.1 staging directory to *TomcatHome*/webapps. This copy operation overwrites an older version of ags.war.

   Certain modifications to Tomcat settings are necessary for AACG, but you are assumed to have made these modifications during installation of AACG 8.2.0. There is no need to make them again.
4. Start the Tomcat application server (or if you run Tomcat as a Windows service, start the service).
5. Open a web browser and, in its address field, enter the following:

   `http://host:tomcat_port/ags`

   Replace *host* with the FQDN of your Application Access Controls Governor server, and replace *tomcat_port* with 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during installation).
6. An Application Configuration panel appears, with a Properties tab selected. (Ignore the Analytics Integration and User Integration tabs.)

   In the Database section of the Properties panel, supply the following information about the AACG database. (These correspond to values you recorded in "Noting Your Current Settings" on page 2-1.)

   - User Name: Supply the user name for the AACG database.
   - Password: Supply the password for the AACG database.
   - Confirm Password: Re-enter the password for the AACG database.
   - Port Number: Supply the port number at which the AACG database server communicates with other applications.
   - Server Identifier: Supply the service identifier (SID) for the AACG database server.
   - Server Name: Supply the FQDN of the database server.
   - Report Repository Path: Supply the full path to the Report Repository. This is a directory, created during the installation of version 8.2.0, that stores AACG report history — copies of reports that AACG users schedule to be run.
   - Log Threshold: Select a value that sets the level of detail in log-file entries. From least to greatest detail, valid entries are *error*, *warn*, *info*, and *debug*.

A Third-Party Libraries section presents a single field, Third-Party Library Path. In it, enter the full path to the directory into which you downloaded third-party jar files (see step 3 on page 2-2), which is either of the following:

- If you are reusing the files downloaded during 8.2.0 installation, the staging directory for version 8.2.0
- If you downloaded the files once again for the 8.2.1 upgrade, the staging directory for version 8.2.1.

This enables AACG, as you complete the upgrade, to copy the files to a directory in which AACG can use them. (When this copy operation is complete, the Third-Party Libraries section no longer appears in the Application Configuration panel.)

In the Performance Configuration section, select or clear the Externalize Report Engine check box. Selecting it causes the AACG reporting engine to run in its own Java process, so that the generation of large reports does not impact other functionality. Select it, however, only if you are installing AACG on hardware identified as "preferred" in a document titled *AACG 8.x Hardware Platform Requirement*.

In the Language Preferences section, select the check boxes for up to twelve languages in which you want AACG to be able to display information to its users. Once selected in the Properties panel, these languages are available for selection by individual users as they configure their user profiles or as they log on to AACG.

7. In the Application Configuration panel, click on the Test button to validate the parameter values you've entered. Upon passage of the test (if AACG can connect to its database and if it can read the directory path for the Report Repository), a Save button becomes active. Click on it to save the settings.
8. Exit the Application Configuration panel. Shut down the Tomcat application server (or, if you run Tomcat as a Windows service, stop the service).
9. Restart the Tomcat application server (or, if you run Tomcat as a Windows service, restart the service).
10. Open a web browser and, in its address field, enter the following:

    `http://host:tomcat_port/ags`

    Replace *host* with the FQDN of your Application Access Controls Governor server, and replace *tomcat_port* with 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during installation).
11. Examine the progress meter displayed on the web browser, and wait for it to complete. The progress meter may take several minutes to appear.
12. Check the upgrade log (*TomcatHome*/webapps/ags/log/ags.log), in particular to determine whether an "Overall status of schema updates" entry is set to *success*. If not, contact Oracle Support. If so, proceed to set 13. (You may also consult the log for information about other problems with the upgrade, if any occur.)
13. Shut down the Tomcat application server (or, if you run Tomcat as a Windows service, stop the service). Wait for a popup message that instructs you to restart the application server; when it appears, clear the message and restart Tomcat (or the Windows service in which it runs).

Validating Downloaded Files

To ensure that files have downloaded correctly, calculate their checksums. (Or, if you are reusing third-party files downloaded and validated for version 8.2.0, skip this section.) To validate files, navigate to the directory *TomcatHome*/webapps/ags/WEB-INF/lib. Then run the following command for each file, substituting the actual file name for the placeholder *filename*:

```
md5sum filename
```

Then, ensure that the checksum value returned for each file matches the value shown in the following table:

File Name	Checksum Value
jasperreports-1.3.2.jar	57e79eae691a4fe16b50ee921ab9117a
kettle-2.5.2.jar	f4615e347bd54e7536010ccb8ff83444
common-2.5.jar	8ab087f48815d80fe81a1e0cc8ad3345
cache-2.5.jar	35c92597232fd096bac276f3253abee5
jxl-2.5.jar	cb0b83e999a76364ed6b554dfc354d11
javadbf-2.5.jar	eb4da2d1f8ba245a2cc6605d50c64f9f
js-2.5.jar	b9c260c5b03c0e8511119a7fb87650d8
xpp3_min-1.1.3.4.O.jar	58908507281834b123024eb6d9be0b7e
edtFTPj-1.5.3.jar	5273ebd698dd7268732a554d47e655b0

Data Sources

As noted earlier, the version 8.2.1 upgrade inherits data-source configuration from the version-8.2.0 installation; that is, it is already connected to business-management applications in which it will implement access policies. You need not repeat this configuration. (For information on configuring *new* data sources, however, see the *User Guide* for version 8.2.1.)

AACG assigns an ID number to each data source. If you intend to enable User Provisioning for an Oracle EBS or PeopleSoft data source (see Chapters 3 and 4), you will need to know its data source ID. To determine the number:

1. log on to AACG. In a web browser, enter the following, in which *host* represents the FQDN of your AACG server, and *tomcat_port* is replaced by 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during Tomcat installation).

   ```
   http://host:tomcat_port/ags
   ```

2. In the Navigation panel (to the left of the AACG interface), expand the Administration entry (click on its + sign) and select (click on) the Data Administration entry in the Administration list.
3. Right-click on the header row in the Data Administration panel.
4. A menu appears. Position the mouse cursor over its Columns option; a list of available columns appears.

5. In that list, select the check box for the Data Source ID column (click on it so that a check mark appears).
6. Left-click anywhere outside of the menu and list of columns to close them.
7. The Data Administration panel now displays a Data Source ID column. In it, note the ID number assigned to the data source.

If, having determined the data source IDs for your data sources, you wish to remove the Data Source ID column from view, repeat this procedure but clear the Data Source ID check box (click on it so that the check mark disappears).

3

Installing the Oracle PEA

In support of the AACG User Provisioning feature, install a Provisioning Embedded Agent (PEA) on each instance of Oracle E-Business Suite that is to be subject to AACG analysis. Installations on Oracle EBS 11.5.10 and R12 (12.0.4) are supported. Even if you have installed the PEA for version 8.2.0, you must reinstall it for version 8.2.1.

On each EBS instance for which you want to enable User Provisioning, you must install version 7.3.1 of Preventive Controls Governor (PCG) before installing version 8.2.1 of the PEA. Keep the following in mind:

- You can install AACG 8.2.1 on its server without first having installed PCG on any EBS instance. If so, however, AACG would not be able to apply User Provisioning to Oracle EBS instances. You can implement User Provisioning subsequently; to do so, you would first install PCG, then the PEA, on each EBS instance for which you want to enable User Provisioning.
- Even after User Provisioning is enabled, you may choose to reinstall PCG on an EBS instance. If so, you must also reinstall the PEA on that instance.

This chapter describes an automated PEA installer and a manual PEA installation process. If the Oracle EBS concurrent manager server and forms server reside on the same instance, attempt automated installation first, as it's simpler. If not, or if the automated installer fails, use the manual process. In either case, first complete some preliminary steps that apply to both automated and manual installations.

Preliminary Steps

If you run your Oracle EBS instance in the Linux operating system, you must set a display option. To do so, execute the following command:

```
export DISPLAY=localhost:1.0
```

As you install the PEA, you must supply the username and password of an AACG user. You can use the logon credentials of any user configured on the AACG instance you upgraded in Chapter 2. It's recommended, however, that you create a user called *wsclient*, and specify that user during PEA installation. For information on creating AACG users, see the *Application Access Controls Governor User Guide* for version 8.2.1.

When you configure an Oracle EBS instance as an AACG data source, AACG generates a data source ID number. You must supply that number as you install the PEA.

Thus sequence matters: Install AACG on its server and configure each EBS instance as a data source (see Chapter 2) before you install the PEA on any EBS instance.

In the Oracle EBS instance on which you are installing the PEA, navigate to the custom application TOP (conventionally called XXLAAPPS_TOP) created on the Preventive Controls Governor forms server. Execute a directory listing to determine if it has a subdirectory named *mesg*. If not, create the subdirectory:

```
mkdir mesg
```

Downloading and Preparing Files

Create a staging directory on the server that supports Oracle E-Business Suite. When this directory is created, complete the following steps:

1. Locate the Governance, Risk, and Compliance Controls Suite Disk in your Oracle media pack. On it locate ag-pea-installation-8.2.1-SNAPSHOT-oebs-package.zip. Copy it to the staging directory, and extract its contents into that directory.

   The extraction should produce subdirectories of the staging directory called db, fndload, Forms, and lib, each of which contains files. Also, files called ag-pea-installation-8.2.1-SNAPSHOT.jar, install.properties, and pea.properties reside in the staging directory.

2. In the staging directory, use a text editor to open and edit the pea.properties file. (This step is required regardless of whether you are performing automated or manual installation.) Provide values for the following properties:

   - pea.datasource.id=<number>

     Supply the data source ID assigned by AACG to the Oracle EBS instance in which you are installing the PEA. (This value is available in the AACG Data Administration panel; see "Data Sources," page 2-6).

   - pea.aacg.webservice.server=<servername>

     In place of <*servername*>, supply the name of the server on which AACG is installed (on which Tomcat is installed and the ags.war file is deployed; see step 3 *et sequens*, beginning on page 2-4).

   - pea.aacg.webservice.port=<portNumber>

     In place of <*portNumber*>, supply the Tomcat port number — 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during Tomcat installation).

   - pea.aacg.webservice.url=/<ags>/services/AGService/

     This property specifies the URL of the webservice where the AACG instance is installed. This URL should be */ags/services/AGService/* (remove the angle brackets from <*ags*> if they appear in the properties file).

   - pea.aacg.webservice.username=wsclient

     If you created a wsclient user on your AACG instance, supply the value *wsclient* here. If not, supply the user name configured for any user of Application Access Controls Governor 8.2.1. For example, AACG comes with one user, *admin*, configured by default, so *admin* would be a legitimate value.

- pea.aacg.webservice.password=<password>

  In place of <*password*>, enter the password for the user identified in the previous property. If that's *wsclient*, supply the password for that user. If you chose *admin*, the password is also *admin*. (For security purposes, however, you are advised to change this password. If you do, and if you supplied *admin* as the userName in the previous property, supply the updated password here.)

- pea.aacg.webservice.timeout=<number of seconds>

  Enter a timeout, in seconds, for communication with the Oracle EBS server. The default value is 30.

Other properties are internal to AACG. These include pea.type, pea.userkeys, pea.responsibility.accesstype, and pea.test. Do not modify their values.

3. To perform the automated installation, also use a text editor to open and edit the install.properties file in the staging directory. (For a manual installation, this step is unnecessary.) Provide values for the following properties:

- APPS_USER_NAME = *APPS*

  Supply the username for the database schema that supports your Oracle EBS instance. Typically, this value is *APPS*.

- APPS_PASSWORD = *apps_schema_password*

  Supply the password for the Oracle EBS database schema identified in the previous property.

- XXLAAPPS_USER_NAME = *XXLAAPPS*

  Supply the username for the database schema that supports PCG installed on your Oracle EBS instance. Typically, this value is *XXLAAPPS*.

- XXLAAPPS_PASSWORD = *XXLAAPPS_passsword*

  Supply the password for the Preventive Controls Governor database schema identified in the previous property.

- HOST = *hostname*

  Supply the host name for the Oracle EBS database server.

- PORT = *number*

  Supply the port number at which the Oracle EBS database server communicates with other applications.

- SID = *service_identifier*

  Supply the service identifier (SID) for the Oracle EBS database server.

- FREQUENCY = 30

  Supply a number that sets the interval, in minutes, at which two PEA concurrent programs are to run. AACG User Provisioning Poll handles the approval or rejection of User Provisioning requests in the Oracle EBS instance. AACG User Provisioning Request Recovery transmits stored requests to AACG when communications with the EBS instance have been interrupted, then restored. The recommended value for both programs is *30*.

4. Execute the environment file, if it is not included in the profile. Run this command:

```
. $APPL_TOP/$APPLFENV
```

Automated Installation

Once you have downloaded files and prepared them, execute the following steps to complete an automated installation. Remember, you can attempt the automated installation only if the Oracle EBS concurrent manager server and forms server reside on the same instance.

1. Navigate to your staging directory.
2. Run the installation file. Execute the following command:

   ```
   java -jar ag-pea-installation-8.2.1-SNAPSHOT.jar
   ```

3. When the file finishes running, review its log file: In the staging directory, use a text editor to open the file *debugInstall.log*. It notes status for several installation stages (Status of Packages, Status of Concurrent Programs, Status of Load Java, and Status of Forms), as well as for overall installation.
   - If the status for each is *Success*, PEA is installed. Ignore the manual installation procedure.
   - Otherwise, the debugInstall.log file lists errors that have occurred at each stage. Either resolve the errors and retry the automated installation process, or complete the manual installation process (see the next section).

Manual Installation

If your Oracle EBS concurrent manager server and forms server reside on separate instances, or if the automated PEA installation has failed, execute a manual installation instead. Once you have downloaded files and prepared them, complete the following sections.

Forms Installation

First, install forms. The PEA uses forms in twelve languages, for which you will need to know language codes as you perform the installation. These codes include:

D	German	**JA**	Japanese
DK	Danish	**KO**	Korean
E	Spanish	**PTB**	Brazilian Portuguese
F	French	**US**	American English
FRC	French Canadian	**ZHS**	Simplified Chinese
I	Italian	**ZHT**	Traditional Chinese

Complete the following steps:

1. Navigate to your staging directory.
2. Execute the following command to execute the package (PKS).

   (Here and in subsequent steps, *appsSchemaName* and *appsSchemaPassword* are the user name and password for the database schema used by Oracle E-Business Suite.)

   ```
   sqlplus appsSchemaName/appsSchemaPassword
   @db/aacg_provdb_pkg.pks
   ```

3. Execute the following command to execute the package body (PKB).

   ```
   sqlplus appsSchemaName/appsSchemaPassword
   @db/aacg_provdb_pkg.pkb
   ```

4. To set the environment variable, execute one of the following commands, once for each language. As you do, replace the placeholder *CODE* with the appropriate language code (see page 3-4).

   If you use Oracle E-Business Suite Release 12:

   ```
   export FORMS_PATH=$FORMS_PATH:$AU_TOP/forms/CODE
   ```

   If you use Oracle EBS 11.5.10:

   ```
   export FORMS60_PATH=$FORMS60_PATH:$AU_TOP/forms/CODE
   ```

5. Execute one of the following commands to compile the library:

   For Oracle E-Business Suite Release 12:

   ```
   frmcmp_batch module=Forms/AACG_PROV.pll module_type=library
   userid=appsSchemaName/appsSchemaPassWord
   ```

   For earlier versions of Oracle EBS:

   ```
   f60gen module=Forms/AACG_PROV.pll module_type=library
   userid=appsSchemaName/appsSchemaPassWord
   ```

6. Execute the following command to copy the compiled library.

   ```
   cp Forms/AACG_PROV.*  $AU_TOP/resource
   ```

7. To compile the forms, execute one of the following commands, once for each language. Again, as you do, replace the placeholder *CODE* with the appropriate language code (see page 3-4).

   If you use Oracle EBS Release 12:

   ```
   frmcmp_batch module=Forms/CODE/LAASCAUS.fmb
   userid=appsSchemaName/appsSchemaPassWord
   ```

   If you use Oracle EBS 11.5.10:

   ```
   f60gen module=Forms/CODE/LAASCAUS.fmb
   userid=appsSchemaName/appsSchemaPassWord
   ```

8. To back up the compiled forms, execute the following command, once for each language. Again, as you do, replace the placeholder *CODE* with the appropriate language code (see page 3-4).

   ```
   cp $XXLAAPPS_TOP/forms/CODE/LAASCAUS.fmx
   $XXLAAPPS_TOP/forms/CODE/LAASCAUS.fmx.orig
   ```

   (If you followed recommendations as you installed Preventive Controls Governor, you selected XXLAAPPS as the application short name, and the environment variable shown in this command — $XXLAAPPS_TOP — is correct. If you chose another application short name as you installed Preventive Controls Governor, make sure the environment variable in this command and the next reflects the application short name you created.)

9. To copy the compiled form, execute the following command once for each language. Again, as you do, replace the placeholder *CODE* with the appropriate language code (see page 3-4).

   ```
   cp Forms/LAASCAUS.fmx $XXLAAPPS_TOP/forms/CODE/LAASCAUS.fmx
   ```

Concurrent Programs Installation

Change to your staging directory and, from it, run the following commands to set up concurrent programs that support AACG User Provisioning. In these commands:

- *appsSchemaName* and *appsSchemaPassword* are the user name and password for the database schema used by Oracle E-Business Suite.
- *XXLAAPPSUserName* is the user name for the database schema that supports Preventive Controls Governor. This value is case-sensitive.
- *frequency* is a number setting the interval, in minutes, between scheduled runs of concurrent programs (see the description of the FREQUENCY option on page 3-3).

Execute the following command to execute the AACG User Provisioning Poll concurrent program:

```
sqlplus appsSchemaName/appsSchemaPassword
@db/aacgexecutable.sql XXLAAPPSUserName frequency
```

Execute the following command to execute the AACG User Provisioning Request Recovery concurrent program:

```
sqlplus appsSchemaName/appsSchemaPassword
@db/aacgexecrecover.sql XXLAAPPSUserName frequency
```

Once this initial setup is complete, execute the following command once for each of the twelve supported languages, so that concurrent-program messages, parameter names, and descriptions are available in each language. As before:

- Replace the placehoder *CODE* with an appropriate language code (see page 3-4).
- *appsSchemaName* and *appsSchemaPassword* are the user name and password for the database schema used by Oracle E-Business Suite.
- *stagedir* is the path to the staging directory in which you copied and extracted PEA files.

```
FNDLOAD appsSchemaName/appsSchemaPassword 0 Y UPLOAD
$FND_TOP/patch/115/import/afcpprog.lct stagedir/fndload/CODE/
AACG_CONCURRENT_PROGRAMS.ldt
```

Lookup Table Insertions

From your staging directory, execute the following command to insert records in an LAA_lookup table. In this command, *xxlaappsSchemaName* and *xxlaappsSchemaPassword* are the user name and password for the database schema used by Preventive Controls Governor.

```
sqlplus xxlaappsSchemaName/xxlaappsSchemaPassword
@db/addproperties.sql
```

Load Java

Complete the following steps:

1. Set the DB environment of APPS (the Oracle EBS database).
2. Execute the following commands. These commands should not error out:

```
dropjava
loadjava
```

3. Execute the following commands. Here (and in steps 4 and 5), *appsUserName* and *appsUserPassword* are the user name and password for the database used by Oracle E-Business Suite.

```
dropjava -user appsUserName/appsPassword -verbose  -resolve
lib/ag-pea-8.1.2-SNAPSHOT.jar
```

```
dropjava -user appsUserName/appsPassword -verbose  -resolve
pea.properties
```

4. Execute the following commands to load the pea jar into the database.

```
loadjava -user appsUserName/appsPassword -verbose
-resolve lib/ag-pea-common-8.2.1-SNAPSHOT.jar
```

```
loadjava -user appsUserName/appsPassword -verbose
-resolve lib/ag-pea-oebs-8.2.1-SNAPSHOT.jar
```

5. Execute the following command to load the modified pea.properties file into the database:

```
loadjava -user appsUserName/appsPassword -verbose
-resolve pea.properties
```

Postinstallation Steps

Regardless of whether you used the automated or manual installation process, run the Generate Messages concurrent program once for each of the twelve languages the PEA supports. To do so, log in to Oracle E-Business Suite as any user with the Application Developer responsibility, and select that responsibility. Then, for each language:

1. Select the Requests: Run option in the Application Developer Navigator.
2. The Submit a New Request window appears. In it, select Single Request and click on the OK button.
3. The Submit Request window appears. In its Name field, query for Generate Messages. (Press the F11 key; type the value *Generate Messages* in the Name field; press Ctrl+F11.)
4. A Parameter window appears. In it, enter the following:
   - Language: The language code (see page 3-4) appropriate for one of the twelve languages the PEA supports
   - Application: GRC Controls Custom
   - Mode: DB_TO_RUNTIME

   Click on the OK button.
5. In the Submit Request window, click on the Submit button.
6. A pop-up window informs you of an ID number for the concurrent request. Make a note of the number, and then click on the OK button to close the message.
7. Optionally, verify that the request has been completed successfully:
   a. Click on View in the menu bar, then on Requests in the View menu.

b. A Find Requests form opens. In it, click on the Specific Request radio button. Type the ID number of your concurrent request in the Request ID field, and click on the Find button.

c. A Requests form opens. In the row displaying information about your request, ensure that the entry in the Phase field is *Completed* (you may need to click on the Refresh Data button), and the entry in the Status field is *Normal*.

d. Close the Request form: Click on the × symbol in its upper right corner.

4

Installing the PeopleSoft PEA

In support of the AACG User Provisioning feature, install a Provisioning Embedded Agent (PEA) on each instance of PeopleSoft Enterprise that is to be subject to AACG analysis. For PeopleSoft, User Provisioning requires PeopleTools 8.49, PeopleSoft 9.0 FIN or PeopleSoft 9.0 HR, and Java. Even if you have installed the PEA for version 8.2.0, you should reinstall it for version 8.2.1.

You can install AACG 8.2.1 on its server without installing the PEA on PeopleSoft instances. If so, however, AACG would not be able to apply User Provisioning to PeopleSoft instances. To implement User Provisioning subsequently, install the PEA on each PeopleSoft instance for which you want to enable User Provisioning. (For PeopleSoft instances, there is no requirement to install an application comparable to Preventive Controls Governor, which is necessary in Oracle EBS instances.)

As you install the PEA, you supply the username and password of an AACG user. You can use the logon credentials of any user on the AACG instance you upgraded in Chapter 2. It's recommended, however, that you create a user called *wsclient*, and specify that user during PEA installation. For information on creating AACG users, see the *Application Access Controls Governor User Guide* for version 8.2.1.

When you configure a PeopleSoft instance as an AACG data source, AACG generates a data source ID number. You must supply that number as you install the PEA. Thus sequence matters: Install AACG on its server and configure each PeopleSoft instance as a data source (see Chapter 2) before you install the PEA on any PeopleSoft instance.

Downloading and Preparing Files

Create a staging directory on the server that supports a PeopleSoft Financials or HR instance. When this directory is created, complete the following steps:

1. Locate the PeopleSoft Enterprise Application Access Controls Governor media pack. On it locate ag-pea-installation-8.2.1-SNAPSHOT-ps-package.zip. Copy it to the staging directory, and extract its contents into that directory.

   The extraction should produce subdirectories of the staging directory called lib, AACG_PS_FIN90_PEA_82, and AACG_PS_HR90_PEA_82, each of which contains files. Also, files called ag-pea-ps-8.2.1-SNAPSHOT.jar, pea.properties, and log4j.properties reside in the staging directory.

2. In the staging directory, use a text editor to open and edit the pea.properties file. Provide values for the following properties:

   - pea.datasource.id=<number>

     Supply the data source ID assigned by AACG to the PeopleSoft instance in which you are installing the PEA. (This value is available in the AACG Data Administration panel; see "Data Sources," page 2-6).

   - pea.aacg.webservice.server=<servername>

     In place of <*servername*>, supply the name of the server on which AACG is installed (on which Tomcat is installed and the ags.war file is deployed; see step 3 *et sequens*, beginning on page 2-4).

   - pea.aacg.webservice.port=<portNumber>

     In place of <*portNumber*>, supply the Tomcat port number — 8080 (if you accepted the default value when you installed Tomcat) or your configured value (if you changed the default during Tomcat installation).

   - pea.aacg.webservice.url=/<ags>/services/AGService/

     This property specifies the URL of the webservice where the AACG instance is installed. This URL should be */ags/services/AGService/* (remove the angle brackets from <*ags*> if they appear in the properties file).

   - pea.aacg.webservice.username=wsclient

     If you created a wsclient user on your AACG instance, supply the value *wsclient* here. If not, supply the user name configured for any user of Application Access Controls Governor 8.2.1. For example, AACG comes with one user, *admin*, configured by default, so *admin* would be a legitimate value.

   - pea.aacg.webservice.password=<password>

     In place of <*password*>, substitute the password configured for the user identified in the previous property. If that's *wsclient*, you would of course supply the password you created for that user. If you chose *admin*, the password is also *admin*. (For security purposes, however, you are advised to change this password. If you do, and if you supplied *admin* as the userName in the previous property, supply the updated password here.)

   - pea.aacg.webservice.timeout=<number of seconds>

     Timeout, in seconds, for communication with the PeopleSoft schema. The default value is 300.

   - pea.aacg.pea.ds.schema.sid=<service_identifier>

     Supply the service identifier (SID) for the PeopleSoft database server.

   - pea.aacg.pea.ds.schema.port=<number>

     Supply the number for the port at which the PeopleSoft database server communicates with other applications.

   - pea.aacg.pea.ds.server=<name>

     Supply the FQDN of the PeopleSoft database server.

- pea.aacg.pea.ds.schema.username=<name>

  Supply the user name for the PeopleSoft database schema.

- pea.aacg.pea.ds.schema.password=<password>

  Supply the password for the username identified in the previous property.

- pea.aacg.ps.enabled=1|0

  Enter the value *1* to enable the PEA, or the value *0* to disable the PEA.

- pea.aacg.pea.path.log4j.properties=<path>

  Specify the path to a directory in which the log4j.properties is to reside. An initial copy of this file exists in the staging directory. You will edit this file (see step 3). Then, later in the installation procedure, you will copy the edited version from the staging directory to a directory on the PeopleSoft server. This parameter specifies the directory to which you will copy the edited file.

- pea.log.file=<path>

  Set the path and name of a log file that records information about communications between PeopleSoft and AACG.

- pea.aacg.pea.ps.frequency=<number of minutes>

  Set a time interval, in minutes, at which an "AACG poller" may be scheduled to run. The poller updates role assignments for PeopleSoft users whose User Provisioning requests have been resolved in AACG. In the Roles panel of the PeopleSoft User Profiles page, a user may select a link labeled "Schedule AACG Poller"; if so, the poller runs at intervals defined by this parameter.

Other properties in the pea.properties file are internal to AACG. These include pea.responsibility.accesstype and pea.userkeys. Do not modify their values.

To modify any of these values — for example, the interval at which the AACG poller runs — edit the file and then completely reinstall the PEA. Once the poller is scheduled to run, the only way to stop it is to "bounce" the PeopleSoft instance. To restart the poller, a user would then need to select the "Schedule AACG Poller" link in the Roles panel of the PeopleSoft User Profiles page.

3. In the staging directory, use a text editor to open and edit the log4j.properties file. Set its log4j.appender.file.File property to the path and name of a log file that records information about AACG code embedded in PeopleSoft. (Note that this log is distinct from the one established by the pea.log.file property of the pea.properties file.) Do not modify the values of other properties in the log4j.properties file.

Installing the PEA

Once you have downloaded files and prepared them, execute the following steps:

1. To update jar files with properties specified in the edited pea.properties file, run the following command from the STAGE directory:

   ```
   jar uf ag-pea-ps-8.2.1-SNAPSHOT.jar pea.properties
   ```

2. Stop the PeopleSoft application server.

   To do so, use the psadmin utility: To start it, execute the command *PS_HOME**appserv**psadmin* (on a Linux server) or *PS_HOME**appserv**psadmin.exe* (on a Windows server). In either case, replace *PS_HOME* with the full path to the highest-level directory in which PeopleSoft components are installed. If necessary, see PeopleSoft documentation for information on using the psadmin utility.

3. Copy the following files from the lib subdirectory of your staging directory to the *PS_HOME*\appserv\classes directory:

   ```
   ag-pea-common-8.2.1-SNAPSHOT.jar
   commons-logging-1.1.jar
   log4j-1.2.14.jar
   ojdbc14-10.2.0.3.jar
   ```

4. Copy the following file from the your staging directory to the *PS_HOME*\appserv\classes directory:

   ```
   ag-pea-ps-8.2.1-SNAPSHOT.jar
   ```

5. Copy the log4j.properties file from your staging directory to the directory you specified for it in the pea.aacg.pea.path.log4j.properties parameter of the pea.properties file.

6. Use the psadmin utility to restart the PeopleSoft application server. (See step 2 for information on running the psadmin utility.)

Importing a Project

To complete the PEA installation, import a PeopleTools project:

1. Open the PeopleTools Application Designer. Log in as a user who has the PeopleSoft administrator role.

2. Navigate to Tools > Copy Project > From File…

3. A Copy From File: Select Project dialog opens. In a field labeled "Look in:" navigate to your staging directory. This causes subdirectories of the staging directory to appear in the large, unlabeled field below the "Look in:" field. This also causes AACG_PS_FIN90_PEA_82 and AACG_PS_HR90_PEA_82 to appear in a field labeled "Select Project from the List Below," and a Select button to become active.

4. For PeopleSoft 9.0 Financials, select AACG_PS_FIN90_PEA_82 in the "Select Project" field, and click on the Select button. For PeopleSoft 9.0 HR, select AACG_PS_HR90_PEA_82 in the "Select Project" field, and click on the Select button.

5. When a "Copy from File" dialog appears, click on the Copy button. After the "Progress" dialog disappears, confirm that application objects appear in the Application Designer project window. Then click on the "Save All" icon of select Save All from the File menu.

It's important to follow instructions in the PeopleSoft *Application Import/Update Installation Guide* when you apply an application import/update project to your database. Failure to do so could corrupt your database and cause you to lose customizations that you have made to your database.