Oracle® Governance, Risk and Compliance Controls

Upgrade Guide

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Governance, Risk and Compliance Controls Installation and Upgrade Guide

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Introduction

Governance, Risk and Compliance Controls (GRCC) provides a platform in which two applications run. They can impose controls by default on instances of Oracle E-Business Suite and PeopleSoft Enterprise, and may be configured to work with other business-management applications as well.

- Transaction Controls Governor (TCG) enables users to define "models," each of which specifies circumstances under which individual transactions would pose an unacceptable risk to a company.
- Application Access Controls Governor (AACG) regulates access to duties assigned in business-management applications. 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 8.5.1 can also implement "User Provisioning" — it can evaluate access policies as roles or responsibilities are assigned to users, preventing them from gaining risky access.

In earlier versions (8.0 through 8.2.1), the platform contained only AACG, and the product was known as Application Access Controls Governor. In version 8.5.0, TCG was added to the platform; as a result the product as a whole is now named Governance, Risk and Compliance Controls.

To run version 8.5.1, you must upgrade to it from version 8.5.0; you cannot install version 8.5.1 directly. To implement version 8.5.0, you may install it directly, or you may upgrade to it from any of versions 8.0 through 8.2.1. To perform the version 8.5.0 installation or upgrade, see the *Installation and Upgrade Guide* for version 8.5.0. Then, to upgrade to version 8.5.1, 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 8.5.1 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 8.5.1 of GRCC from version 8.5.0:
   - Use the database and software components already installed for version 8.5.0. (These are listed in the "Prerequisites" section, below.)
   - Download GRCC files and perform the GRCC upgrade.

   To complete these procedures, see Chapter 2 of this manual. Because this upgrade reuses the database already installed for version 8.5.0, 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 8.5.0.
   - Connections to business-management applications in which controls created in GRCC will be implemented. For more on configuring "datasource" connections, see the *User Guide* for verion 8.5.1.
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.

To upgrade from version 7.2.3 or earlier of AACG, install version 8.5.0 of GRCC and then upgrade to verion 8.5.1. Use its migration utility to copy earlier-version SOD rules into the version-8.5.1 instance. (The migration process converts SOD rules into access policies.) For information on the migration utility, see the *Application Access Controls Governor User Guide* for version 8.5.1.

Supported Operating Systems

GRCC runs on a server with, by preference, a Linux operating system. Windows Server is also supported. For details about supported operating systems, see the *Oracle Governance, Risk and Compliance Applications Support Matrix*.

Prerequisites

To have installed version 8.5.0 of GRCC successfully, you will have already met the following prerequisites. For the sake of completeness, however, ensure that the following are installed on the GRCC server:

- Oracle 10g or 11g database. The certified version is 11gR1-64 bit. The system global area (SGA) requires 4 gigabytes.
- Tomcat Application Server version 5.5

If you are installing on Linux, you must have Sun Java Development Kit 1.6 or higher. If you are installing Windows, use Sun JDK or JRockit R27.5.0 for Java SE 6; the latter is recommended. In any case, GRCC must have its own dedicated Java container. It was not designed to coexist in a container with other web applications.

If you are installing on Linux, add the following to the /etc/security/limits.conf file:

```
*    soft    nproc     4096
*    hard    nproc     16384
*    soft    nofile    20480
*    hard    nofile    65536
```

If you are installing on Solaris, set the following configuration parameter in /etc/system to protect against exploitation of buffer overflow attacks. (There is no need to do this for OEL or other Linux variations.)

```
noexec_user_stack = 1
```

On the server or a client system, the following web browsers can display the GRCC interface:

- FireFox 3.5
- Microsoft Internet Explorer 8, with the Adobe SVG plugin available from http://www.adobe.com/svg/viewer/install/mainframed.html.

Restricted Use Licenses

Restricted-use: WebLogic Suite, Oracle Data Integrator; each of which may only be used with the Application Access Controls Governor or Transaction Controls Governor product.

Additional details on restricted-use rights:

WebLogic Suite restricted to the following components: WebLogic Server and Diagnostics Pack for Oracle Middleware. The GRC application can only be deployed within a single GRC based WLS domain.

Restricted use Oracle Data Integrator – Target Database (restricted to use with Application Access Controls Governor or Transaction Controls Governor as the only target).

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Upgrading GRCC

In broad terms, complete these steps to upgrade version 8.5.0 of Governance, Risk and Compliance Controls to version 8.5.1:

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

Noting Your Current Settings

For version 8.5.0, you have already configured settings that establish connectivity between Governance, Risk and Compliance Controls and its database. As you upgrade to 8.5.1, 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-8.5.0 instance of GRCC: Open a web browser and, in its address field, enter the following:

   `http://host:tomcat_port/grcc`

   Replace *host* with the fully qualified domain name (FQDN) of your GRCC 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 GRCC: Supply your user name and password, and click on Login.
3. In the Navigation panel (to the left on the GRCC 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 database password.) Copy 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 GRCC Schema

Governance, Risk and Compliaince Controls requires a schema in an Oracle 10g or 11g database. For version 8.5.1, use the schema already created for version 8.5.0. Before upgrading, take a backup of your GRCC schema.

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

Downloading Files

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

1. Locate the Governance, Risk, and Compliance Controls Disk in your Oracle media pack. In its dist directory, locate the file grcc_851.zip. Copy the file to your staging directory, and extract its contents there.
2. One of the files you've extracted is called grcc.war. Execute the following command to validate it.

   ```
   md5sum grcc.war
   ```

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

   ```
   53a26bbe8d2958f516c5b1a2b8c71465
   ```

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. For version 8.5.0, you should have created a directory for a Report Repository and a second directory for the storage of ETL data used by Transaction Controls Governor. Ensure that these directories exist, and note the path to each as you will need to supply them later as configuration values.
3. Remove the directory *TomcatHome*/webapps/grcc, and all its contents.

   Note: Throughout this document, replace the value *TomcatHome* with the full path to the highest-level directory in which Tomcat components are installed.

   Also remove the grcc directory from the Tomcat work area (*TomcatHome*/work/Catalina/localhost/grcc). You may want to save Tomcat logs (located at *TomcatHome*/logs) to another location, then delete them.
4. Copy the file grcc.war from your version-8.5.1 staging directory to *TomcatHome*/webapps. This copy operation overwrites an older version of grcc.war.

Certain modifications to Tomcat settings are necessary for GRCC, but you are assumed to have made these modifications during installation of GRCC 8.5.0. There is no need to make them again.

Moreover, if you are upgrading on a Windows server you are assumed also during installation of GRCC 8.5.0 to have ensured that the <Connector> port setting of the *TomcatHome*\conf\server.xml file contains the value *URIEncoding= "UTF-8"*.

5. Start the Tomcat application server (or if you run Tomcat as a Windows service, start the service).

6. Open a web browser and, in its address field, enter the following:

   `http://host:tomcat_port/grcc`

   Replace *host* with the FQDN of your GRCC 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).

7. An Application Configuration panel appears, with a Properties tab selected. (Ignore the Analytics Integration, User Integration, and Patterns tabs.)

   In the GRCC Schema section of the Properties panel, supply the following information about the GRCC database. (If you are upgrading, these correspond to values you recorded in “Noting Your Current Settings” on page 2-1.)

   - User Name: Supply the user name for the GRCC database. (In version 8.0, this parameter was called ag.connection.username.)
   - Password: Supply the password for the GRCC database. (In version 8.0, this parameter was called ag.connection.password.)
   - Confirm Password: Re-enter the password for the GRCC database. (This parameter did not exist in version 8.0.)
   - Port Number: Supply the port number at which the GRCC database server communicates with other applications. (In version 8.0, this parameter was called ag.connection.port.)
   - Server Identifier: Supply the service identifier (SID) for the GRCC database server. (In version 8.0, this parameter was called ag.connection.sid.)
   - Server Name: Supply the FQDN of the database server. (In version 8.0, this parameter was called ag.connection.server.)
   - Report Repository Path: Supply the full path to the Report Repository directory discussed in step 2 on page 2-2. (In version 8.0, this parameter was called ag.report.repository.path.)
   - 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*. (This parameter did not exist in version 8.0.)
   - Transaction ETL Path: Enter the full path to the directory, discussed in step 2 on page 2-2, that holds ETL data used by Transaction Controls Governor. (This parameter did not exist in versions eariler than 8.5.0.)

8. In the Application Configuration panel, select or clear check boxes in the Performance Configuration section:

   - Externalize Report Engine: Select the check box to enable the reporting engine to run in its own java process, so that the generation of very large reports does not affect the performance of other functionality. However, select the check box only if you have installed GRCC on hardware that is identified as "recommended" in the *Governance, Risk and Compliance Support Matrix.*
   - Optimize Distributed Operation: Select the check box to increase the speed at which GRCC performs distributed operations such as data synchronization. However, for this selection to have any effect, at least one datasource (page 2-5) must have an entry in its DB Agent field. (This entry, in turn, is a DB Link name configured externally to GRCC.) The Optimize Distributed Operation setting enhances performance only in GRCC exchanges with datasources with values entered in the DB Agent field.
   - Optimize Appliance-Based Operation: Select the check box to optimize performance if the GRCC application and GRCC schema reside on the same machine. Do not select this check box if the GRCC application and schema do not reside on the same machine. If you select this check box, you must enter a value in the ORACLE_HOME Path field.

     When you select the Optimize Appliance-Based Operation field, an ORACLE_HOME Path field appears. In it, enter the full, absolute path to your Oracle Home — the directory in which you have installed the Oracle database that houses the GRCC schema.
   - Enable Era-Based ETL Optimization: Select this check box to cause TCG data synchronization to operate only on data entered in business-management applications after a specified date. (This setting has no impact on data synchronization operations for AACG.)

     When you select the Enable Era-Based ETL Optimization field, and Analysis Start Date field appears. In it, enter a date from which you want synchronization runs to recognize data changes. When you click in the field, a pop-up calendar appears. Click left- or right-pointing arrows to select earlier or later months (and years), and then click on a date in a selected month.

9. In the Application Configuration panel, select the check boxes for up to eleven languages in which you want GRCC to be able to display information to its users. These are located in a Language Preferences section. 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 GRCC.

   Note: A Web Services Administration section contains a single field, Use Basic Administration. It is used for the integration of GRCC with an application whose database shares its user information through LDAP technology. However, there are limitations that could materially affect data and functionality. Therefore, you should configure LDAP integration in general, and enable the Use Basic Administration field in particular, *only* with the assistance of Oracle Consulting Services or another organization experienced in this type of integration for GRCC.

10. In the Application Configuration panel, click on the Test button to validate the parameter values you've entered. Upon passage of the test (if GRCC 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.
11. Exit the Application Configuration panel.
12. Shut down the Tomcat application server (or the Windows service in which it runs).
13. If you are installing on Linux, navigate to your staging directory and, from there, run the script file grcc_update.sh with *TomcatHome*/webapps/grcc passed as a parameter:

    ```
    cmd> grcc_update.sh TomcatHome/webapp/grcc
    ```

    If you are installing on a Windows server, omit this step.
14. Start the Tomcat application server, and then wait at least 10 minutes. **Warning:** During this waiting period, a prompt to restart the Tomcat application server may appear. If so, ignore it. (You will need to stop and restart Tomcat once again, but must not do so until you have waited at least 10 minutes and completed step 15.)
15. Determine whether the installation is complete. To do so, review the GRCC log (*TomcatHome*/webapps/grcc/log/grcc.log) and determine whether processes have finished. They have done so when the log has stopped growing. If the log indicates problems, contact Oracle Support. Otherwise, move on to step 16 *only* when the log has stopped growing.
16. Shut down the Tomcat application server (or the Windows service in which it runs). Then restart it.
17. Review the GRCC log once again to search for errors in the installation or setup of the GRCC schema. The log includes a "Summary of schema updates"; if any status there indicates failure, search for "ORA-" in the log file to find details of the error, and report them to Oracle Support. Otherwise, continue with step 18.
18. Open a web browser. Clear its cache, and then, in its address field, *manually type* the following URL. (This ensures that you open a fully refreshed instance of GRCC, rather than a cached instance that is no longer valid.)

    ```
    http://host:tomcat_port/grcc
    ```

    Replace *host* with the FQDN of your GRCC 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).

Datasources

As noted earlier, the version 8.5.1 upgrade inherits data-source configuration from the version-8.5.0 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* datasources, however, see the *Governance, Risk and Compliance Controls User Guide* for version 8.5.1.)

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

1. Log on to GRCC. In a web browser, enter the following, in which *host* represents the FQDN of your GRCC 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 GRCC 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 Datasource 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 Datasource ID column. In it, note the ID number assigned to the datasource.

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

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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 8.5.0, you must reinstall it for version 8.5.1.

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 8.5.1 of the PEA. Keep the following in mind:

- You can install GRCC 8.5.1 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 a GRCC user. It's recommended that you create a user called *wsclient*, and specify that user during PEA installation. For information on creating users, see the *Governance, Risk, and Compliance Controls User Guide* for version 8.5.1.

When you configure an Oracle EBS instance as a GRCC datasource, GRCC generates a datasource ID number. You must supply that number as you install the PEA. Thus sequence matters: Upgrade GRCC on its server and configure each EBS instance as a datasource (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 grcc-peainstallation-8.5.1-SNAPSHOT-ebs-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 grcc-peainstallation-8.5.1-SNAPSHOT.jar, install.properties, and pea.properties reside in the staging directory.

2. To perform the automated installation, 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. GRCC User Provisioning Poll handles the approval

or rejection of User Provisioning requests in the Oracle EBS instance. GRCC User Provisioning Request Recovery transmits stored requests to GRCC when communications with the EBS instance have been interrupted, then restored. The recommended value for both programs is *30*.

3. 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:

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

   ```
   java -jar grcc-peainstallation-8.5.1-SNAPSHOT.jar -ebs
   ```

   The installation program prompts for property values required by the PEA:

   - Enter GRCC user name

     If you created a wsclient user on your GRCC instance, supply the value *wsclient* here. If not, supply the user name configured for any GRCC user.

   - Enter GRCC password

     Enter the password for the user identified in the previous property.

   - Enter GRCC server name

     Supply the fully qualified server name of the server on which GRCC is installed (on which Tomcat is installed and the grcc.war file is deployed; see “Performing the Installation,” beginning on page 2-2). To verify, ping the GRCC server from the server where the PEA is being installed.

   - Enter GRCC port number

     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).

   - Enter GRCC web services URL

     This property specifies the URL of the webservice where the GRCC instance is installed. This URL should be */grcc/services/GrccService/*.

   - Enter GRCC web services timeout

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

   - Enter datasource ID

     Supply the datasource ID assigned by GRCC to the Oracle EBS instance in which you are installing the PEA. (This value is available in the GRCC Data Administration panel; see “Datasources,” page 2-5).

   The installation program updates the pea.properties file and then executes the installation.

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 eleven languages, for which you will need to know language codes as you perform the installation. These codes include:

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

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/grcc_provdb_pkg.pks
   ```

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

   ```
   sqlplus appsSchemaName/appsSchemaPassword
   @db/grcc_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 above).

   If you use Oracle E-Business Suite Release 12:

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

If you use an earlier version of Oracle EBS:

```
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/GRCC_PROV.pll module_type=library
   userid=appsSchemaName/appsSchemaPassWord
   ```

   For earlier versions of Oracle EBS:

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

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

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

7. To compile the forms, execute on 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):

   For Oracle EBS Release 12:

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

   For earlier versions of Oracle EBS:

   ```
   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 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 3-2).

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

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

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

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

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

- Replace the placeholder *CODE* with the 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) and execute the installation program, specifying a “manual” argument:

   ```
   Java –jar grcc-peainstallation-8.5.1-SNAPSHOT.jar -ebs
   -manual
   ```

   This prepares the pea.properties file loading into the database (as specified in step 5).

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 *appsPassword* are the user name and password for the database used by Oracle E-Business Suite.

```
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-common-8.1.0-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-oebs-8.1.0-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-common-8.1.1-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-oebs-8.1.1-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-common-8.1.2-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-oebs-8.1.2-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-common-8.2.0-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-oebs-8.2.0-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-common-8.2.1-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing lib/ag-pea-oebs-8.2.1-SNAPSHOT.jar
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing grcc.properties
dropjava –user appsUserName/appsPassword –verbose –resolve
-genmissing pea.properties
```

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

```
loadjava –user appsUserName/appsPassword –verbose –resolve
lib/grcc-encryption-8.5.1-SNAPSHOT.jar
loadjava –user appsUserName/appsPassword –verbose –resolve
lib/grcc-peacommon-8.5.1-SNAPSHOT.jar
loadjava –user appsUserName/appsPassword –verbose –resolve
lib/grcc-peaebs-8.5.1-SNAPSHOT.jar
```

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

```
loadjava –user appsUserName/appsPassword –verbose –resolve
grcc.properties
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 language.

1. Log in to Oracle E-Business Suite as any user with the Application Developer responsibility.

2. Select the Application Developer responsibility, and select the Requests: Run option in the Application Developer Navigator.
3. The Submit a New Request window appears. In it, select Single Request and click on the OK button.
4. 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.)
5. A Parameter window appears. In it, enter the following:
   - Language: With each run of the concurrent program, enter one of the language codes shown on page 3-4
   - Application: GRC Controls Custom
   - Mode: DB_TO_RUNTIME

   Click on the OK button.
6. In the Submit Request window, click on the Submit button.
7. 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.
8. 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 FIN (8.9 or 9.0) or PeopleSoft HR (8.9 or 9.0), and Java. Even if you have installed the PEA for an earlier version, you must reinstall it for version 8.5.1.

You can install GRCC 8.5.1 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 must supply the username and password of a GRCC user. It's recommended that you create a user called *wsclient*, and specify that user during PEA installation. For information on creating GRCC users, see the *Governance, Risk and Compliance Controls User Guide* for version 8.5.1.

When you configure a PeopleSoft instance as a GRCC datasource, GRCC generates a datasource ID. You must supply that number as you install the PEA. Thus sequence matters: Install GRCC on its server and configure each PeopleSoft instance as a datasource (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 Governance, Risk, and Compliance Controls disk in your Oracle media pack. On it locate grcc-peainstallation-8.5.1-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, GRCC_AGENT_85_PS_FIN90, and GRCC_AGENT_85_PS_HR90, each of which contains files. Also, files called grcc-peainstallation-8.5.1-SNAPSHOT.jar, pea.properties, and log4j.properties reside in the staging directory.

2. Execute the installation program to update the pea.properties file:

   ```
   java –jar grcc-peainstallation-8.5.1-SNAPSHOT.jar -psft
   ```

   The installation program prompts for property values required by the PEA:

   - Enter GRCC user name

     If you created a wsclient user on your GRCC instance, supply the value *wsclient* here. If not, supply the user name configured for any GRCC user.

   - Enter GRCC password

     Enter the password for the user identified in the previous property.

   - Enter GRCC server name

     Supply the fully qualified server name of the server on which GRCC is installed (on which Tomcat is installed and the grcc.war file is deployed; see “Performing the Installation,” beginning on page 2-2). To verify, ping the GRCC server from the server where the PEA is being installed.

   - Enter GRCC port number

     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).

   - Enter GRCC web services URL

     This property specifies the URL of the webservice where the GRCC instance is installed. This URL should be */grcc/services/GrccService/*.

   - Enter GRCC web services timeout

     Enter a timeout, in seconds, for communication with the Oracle EBS server. The default value is 300.

   - Enter datasource ID

     Supply the datasource ID assigned by GRCC to the Oracle EBS instance in which you are installing the PEA. (This value is available in the GRCC Data Administration panel; see “Datasources,” page 2-5).

   - Enter PeopleSoft SID

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

   - Enter PeopleSoft port:

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

   - Enter PeopleSoft FQDN

     Supply the fully qualified domain name of the PeopleSoft database server.

   - Enter PeopleSoft user name

     Supply the user name for the PeopleSoft database schema.

   - Enter PeopleSoft user password

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

- Enable PeopleSoft PEA? (y/n)

  Enter the value *y* to enable the PEA, or the value *n* to disable the PEA.

- Enter log4j properties location

  Specify the path to a directory in which the log4j.properties file will reside — *PS_HOME*\appserv\classes\log4j.properties, in which *PS_HOME* represents the full path to the highest level directory in which PeopleSoft components are installed.

  (In step 3, you'll edit a copy of this file that's located in your staging directory. During installation, the file will be copied from the staging directory to a place where it can be used, and this property tells where it should be copied.)

- Enter PEA log location

  Set the path an name of a log file that records information about communications between PeopleSoft and GRCC. The path is *PS_HOME*\appserv*APP*\LOGS\grcc-peapsclient.log, in which *PS_HOME* represents the full path to the highest level directory in which PeopleSoft components are installed, and *APP* is replaced by FIN or HR, depending on whether the PEA is being install on an instance of PeopleSoft Financials or Human Resources.

- Enter interval for PEA poller

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

The installation program generates a temporary folder in the staging directory; it contains grcc-peaps-8.5.1-SNAPSHOT.jar for installation of PEA on PeopleSoft.

3. In the staging directory, use a text editor to open and edit the log4j.properties file. Set the following property:

   ```
   log4j.appender.file.File = PS_HOME\appserv\APP\LOGS\grcc-peapsagent.log
   ```

   In this value, replace *PS_HOME* with the full path to the highest level directory in which PeopleSoft components are installed, and *APP* with FIN or HR, depending on whether the PEA is being install on an instance of PeopleSoft Financials or Human Resources.

   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. 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.

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

   ```
   grcc-peacommon-8.5.1-SNAPSHOT.jar
   grcc-encryption-8.5.1-SNAPSHOT.jar
   commons-logging-1.1.jar
   log4j-1.2.14.jar
   ojdbc14-10.2.0.3.jar
   ```

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

   ```
   grcc-peaps-8.5.1-SNAPSHOT.jar
   ```

   (The temporary folder was generated by the running of the installation program.)

4. Copy the log4j.properties file from your staging directory to the directory you specified for it in the "Enter log4j properties location" property when you ran the grcc-peainstallation-8.5.1-SNAPSHOT.jar file.

5. Use the psadmin utility to restart the PeopleSoft application server. (See step 1 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 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 GRCC_AGENT_85_PS_FIN90 and GRCC_AGENT_85_PS_HR90 to appear in the a field labeled "Select Project from the List Below," and a Select button to become active.

4. For PeopleSoft 9.0 Financials, select GRCC_AGENT_85_PS_FIN90 in the "Select Project" field, and click on the Select button. For PeopleSoft 9.0 HR, select GRCC_AGENT_85_PS_HR90 in the "Select Project" field, and click on the Select button.

5. When the 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 and click on the Save All icon or File > Save All.

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.

5

Resetting Passwords

Passwords for Governance, Risk and Compliance Controls users expire, and must be reset, every 90 days. This gives rise to two distinct issues:

- An admin user, which exists by default in every instance of GRCC, gives rights to all functionality offered by GRCC. A utility exists to reset this user's password if the user account should become locked.
- When you install a Provisioning Embedded Agent on an instance of Oracle EBS or PeopleSoft, you must specify a GRCC user, known conventionally as wsclient. When this user's password expires and is reset on GRCC, it is out of sync with the password specified on each Oracle EBS or PeopleSoft instance. A utility exists to change the password on those instances so that it matches the password when it has been reset on GRCC.

Resetting the Admin Password

Governance, Risk and Compliance Controls comes with one user account created by default. Both its user name and password are *admin*, and it is assigned an admin role, which gives rights to all functionality offered by GRCC.

Because the admin user is powerful, one is advised to create another administrative user and use the seeded admin user as a backup. Moreover, in the event that the admin user's password cannot be reset by normal means (if, for example, the account is locked because a user made too many consecutive incorrect attempts to log on), the password can be reset through the use of a password reset utility:

- You can run the utility only from the command line on the server on which GRCC is installed. To do so, you must have privileges to run the utility on the server.
- You must know GRCC schema information, including the GRCC password.

To run the utility, execute a password-reset jar file on the GRCC server, as follows:

```
java –jar grcc-utility-8.5.1-SNAPSHOT.jar
```

You will then be prompted to enter GRCC schema information. Once you've done so, you will be prompted to enter a new password. It must meet password require-ments: A password is case-sensitive and must consist of at least eight characters,

taken from each of four character sets: uppercase letters, lowercase letters, numbers, and special characters (which comprise !@#$%&*). Moreover, the password must not match any of the previous three passwords, and it is invalid if it matches or contains the user name.

The following is sample output of the password-reset utility:

```
Enter schema host name: someserver.hq.host.com
Enter schema port: 1521
Enter schema sid: orcl
Enter schema username: grcc_85a
Enter schema password: grcc_85a
Verifying schema.  Please wait ...
Enter new 'admin' password:
```

Resetting the Password of the PEA User

If your organization installed provisioning embedded agents (PEAs) in Oracle EBS or PeopleSoft instances, it specified a GRCC user during PEA installation. (It was recommended that a user called wsclient be created for this purpose, but any GRCC user could in fact have been designated.)

Every 90 days, an administrator must log on to GRCC and reset the password for this user. The administrator would use the GRCC User Administration page to reset this password. (See the *Governance, Risk and Compliance Controls User Guide*.)

Immediately after doing so, the administrator would need to change the password in each Oracle EBS or PeopleSoft instance on which a PEA is installed, so that it matches the newly changed password on GRCC.

To reset the password on PEA instances, complete the following steps:

1. As the PEA was installed, a staging directory was created on the Oracle EBS or PeopleSoft instance. Navigate to that staging directory.
2. Execute the following command:

   ```
   java -jar grcc-peainstallation-8.5.1-SNAPSHOT.jar -changepassword
   ```

3. The program prompts for property values required by the PEA. Enter the following. (Except for the password, these values are the same as those specified when the PEA was installed.)

   - Enter GRCC user name

     Enter the user name of the GRCC user that was specified during PEA installation. As noted, the recommended value is *wsclient*.

   - Enter GRCC password

     Enter the new password you've just created in GRCC for the user specified during PEA installation.

   - Enter GRCC server name

     Supply the fully qualified server name of the server on which GRCC is installed (on which Tomcat is installed and the grcc.war file is deployed; see "Performing the Installation," beginning on page 2-2). To verify, ping the GRCC server from the server where the PEA was installed.

- Enter GRCC port number

  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).

- Enter GRCC web services URL

  This property specifies the URL of the webservice where the GRCC instance is installed. This URL should be */grcc/services/GrccService/*.

- Enter GRCC web services timeout

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

- Enter datasource ID

  Supply the datasource ID assigned by GRCC to the Oracle EBS instance in which you are installing the PEA. (This value is available in the GRCC Data Administration panel; see “Datasources,” page 2-5).

The program updates the pea.properties file and then executes password change.