Oracle® Preventive Controls Governor

Installation Guide

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Oracle Preventive Controls Governor Installation Guide

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Installation Overview

Preventive Controls Governor (PCG) is a set of applications that run within Oracle E-Business Suite. These applications include:

- Form Rules, which modifies the security, navigation, field, and data properties of Oracle EBS forms.

- Flow Rules, which defines and implements business processes.

- Audit Rules, which tracks changes to the values of fields in database tables that underlie Oracle EBS.

- Change Control, which regulates changes to the values of fields in Oracle EBS forms. It can monitor change, require a reason for a change, or require approval for a change.

In the background, PCG also provides "User Provisioning" functionality employed by a separately installed product, Application Access Controls Governor.

PCG can display information in any of thirteen languages: US English, traditional Chinese, standard (simplified) Chinese, Danish, Dutch, French, French-Canadian, German, Italian, Japanese, Korean, Brazilian Portuguese, or Spanish.

You can install version 7.3.4, or upgrade to it from the previous version. The installation (or upgrade) procedure accommodates all thirteen languages.

PCG components are installed on the forms and concurrent manager servers on which Oracle EBS runs. The installation process implements the following architecture:

- Database Schema: Installation requires the identification of a schema for use by PCG applications. You're strongly advised to use a dedicated schema named XXLAAPPS. However, you may use a schema that has already been established for third-party products.

- Tablespace: You're advised to create a tablespace for indexes used by PCG database objects. (An already established tablespace may be used.)

- Database Objects: PCG makes use of database tables, packages, sequences, and workflows, which are placed in the XXLAAPPS (or user-specified) schema.

- Application Server Objects: PCG uses custom forms, which are installed on the application server. Custom forms are located in language-specific subdirectories of the $XXLAAPPS_TOP/forms directory.

- Program Executables: PCG uses program executables to report on, migrate, and compile business rules. Reports, programs, and Java files are installed on the concurrent manager server (typically the database server). Custom programs are located in language-specific subdirectories of the $XXLAAPPS_TOP/forms directory; some executable programs may also reside in the $XXLAAPPS_TOP/bin directory.

Two comprehensive Installer programs place PCG applications on the concurrent manager server and forms server — either for a fresh installation or for an upgrade from the earlier version. (They also install a rules engine that provides functionality to the applications.) Each Installer may be run in any of three modes:

- GUI: The Installer programs present a series of windows that prompt for information necessary for the installation. Each window also provides access to a help window. As you progress through the windows, you can return to windows you had completed earlier in order to review or change the entries in them. (The Installers retain any entry you don't change, even if you return to a step earlier than the one in which such an entry was made.) GUI mode is the default.

- Console: The Installer programs present a series of prompts in a command console. In response, you provide information necessary for the installation. Console mode prompts for the same information as GUI mode, but does not enable you to return to earlier prompts and does not provide help screens.

- Silent: The Installer programs read parameters from properties files, and then run without user interaction.

Preparatory Procedures

Before installing Preventive Controls Governor, ensure the following:

- Grant the following APPS schema objects the execute privilege to the PCG schema:
    - FND_FILE — Package Spec and Body
    - FND_PROFILE — Package Spec and Body

- Download and install Java Runtime Environment (JRE) 1.7.x (if it does not exist already in your operating system). Having done so, set the JAVA_HOME environment variable to the location in which you have installed JRE 1.7.x. Then add $JAVA_HOME/jre/bin to your environment variable path.

- Each of your database server, forms server, and concurrent manager server may run on its own host machine. If so, complete the following tasks to confirm that the host machines communicate properly:
    - Send a file via FTP from the database server to the concurrent manager server, and from the concurrent manager server to the forms server.
    - Perform a remote execution of the shell file, by any of the following methods: Enable rsh (remote shell), enable ssh (secured shell), have a common mount point, manual.

Sizing Considerations

Make sure your forms server has 100 megabytes (MB) of disk space for PCG files, and the concurrent manager server has 100 MB of disk space for PCG executable files.

Moreover, the PCG schema requires the following amounts of disk space:

• 100 MB for most PCG database tables.

• An additional 1 gigabyte (GB) for two temp tables used in Audit Rules processing — LAAD_AUDIT_KEYS and LAAD_AUDIT_VALUES.

The GRC Controls schema (XXLAAPPS or user-specified) requires space to encompass shadow tables used by Audit Rules — one-third the space taken by each audited table.

Software Requirements

Each instance of Preventive Control Governor runs with an instance of Oracle E-Business Suite. Certified versions of EBS are identified on the *GRC Suite Certification Matrix*, Doc ID 741001.1 on My Oracle Support.

Oracle Linux 7 is the certified operating system for PCG. Some other operating systems are supported, meaning that they should run PCG, but have not been tested. Complications may arise, and if so you may require additional assistance. Windows operating systems are not supported.

Each PCG 7.3.4 instance requires an Oracle 12.2.0.3 database, also known as 19*c*.

Obtain Installation Files

The PCG 7.3.4 application is available from the Oracle Software Delivery Cloud.

1. In a web browser, navigate to edelivery.oracle.com. Sign in (or create an account).

2. Search for Oracle Preventive Controls Governor. Among the search results, click the Oracle Preventive Controls link to add the installation file to your download queue. Click Continue.

3. In a second page, select Linux x86-64 in the Platforms/Languages field of the row for Preventive Controls Governor. Click Continue.

4. In a third page, click the check box that confirms you accept the Oracle License Agreement. Click Continue.

5. In a fourth page, review your selections and click Download.

For any given release of Preventive Controls Governor, you may need to install patches. If so, they are identified in the Release Notes for that release, and you can download them from My Oracle Support. Instructions for installing each patch are provided in a readme file that accompanies its download.

Prepare Properties Files

If you intend to run the Installer programs in silent mode, you need first to edit the two properties files you extracted, inserting information specific to your installation. (If you intend to use GUI or console mode, you don't need the properties files, and you can ignore this section.)

To insert values in the files, use a text editor. Each file consists of a series of name-value statements, each of which sets a parameter name equal to a value and each of which is preceded by an explanatory comment. (Each comment begins with a # symbol.) In each statement, edit information to the right of an equals sign; don't (with one exception, discussed below) modify text to the left of the equals sign.

Insert into the files exactly the same information as you would supply in response to prompts if you were to run the Installers in GUI mode. For detailed descriptions of that information, see Chapter 2, "Install Preventive Controls Governor."

The two properties files — ladbinstall.properties (concurrent manager) and lafrminstall.properties (forms) — share many parameters, which correspond as follows to the GUI prompts discussed in Chapter 2:

- CUST_NAME and LICENSE_KEY: Prompts in the License Key window, step 1 on page 10 (concurrent manager), or step 1 on page 14 (forms).

- #STAGE_DIR: Prompt in the Staging window, step 2 on page 10 (concurrent manager), or step 2 on page 15 (forms).

  This statement is the exception to the rule that you should leave parameter names intact. In the assumption you will want the Installers to set default staging directories, this statement is commented out in the properties file. To use the statement, you must not only supply a staging directory path to the right of the equals sign, but also delete the # symbol at the beginning of the statement.

- DB_HOST_NAME, DB_SID, and DB_PORT: Prompts in the Database Host window, step 3 on page 11 (concurrent manager), or step 3 on page 15 (forms).

- DB_XXLAAPPS_SCHEMA_NAME, DB_XXLAAPPS_PASS, DB_APPS_SCHEMA_NAME, and DB_APPS_PASS: Prompts in the Database Schema window, step 4 on page 11 (concurrent manager), or step 4 on page 15 (forms).

  Another exception: The concurrent-manager-installation window does not prompt for the Oracle EBS schema name, although the forms-installation window does. The properties file requires it (typically APPS) as the value for the DB_APPS_SCHEMA_NAME parameter.

- XXLAAPPS_SHORT_NAME and APPL_TOP: Prompts in the Application TOP window, step 5 on page 12 (concurrent manager), or step 5 on page 15 (forms).

- ENVFILE and ADOVARS: Prompts in the Environment window, step 6 on page 13 (concurrent manager), or step 6 on page 16 (forms).

The ladbinstall.properties file contains one parameter — INDEX_TABLESPACE — that does not appear in lafrminstall.properties. This parameter corresponds to the Index Table Space prompt in step 4 on page 11.

The lafrminstall.properties file contains two parameters that don't appear in the ladbinstall.properties file. These two parameters correspond as follows to the GUI prompts discussed in Chapter 2:

- APPSORA: The final prompt in the Environment window, step 6 on page 16.

- CUSTOM_CHOICE: The prompt in the CUSTOM.pll window, step 7 on page 16. In the properties file, any value other than *No* (case-sensitive) is equivalent to *Yes*.

Finally, both files contain a parameter that does not correspond to any GUI prompt. For you to run the Installers in silent mode, an INSTALLER_UI parameter must be set to the value *silent*. This is the default; don't change it.

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Install Preventive Controls Governor

In broad terms, the PCG installation or upgrade process involves four steps:

1. Create a tablespace for PCG indexes, and a custom database user/schema. The user/schema name XXLAAPPS is recommended. Or, if you're upgrading PCG, use the tablespace and schema created for your earlier instance.

2. Run the Installer program to place PCG tables, packages, sequences, and work-flows on the concurrent manager server. All the table names begin with the prefix *LA*, and all tables reside in the PCG schema (typically XXLAAPPS). The concurrent manager server installation must precede the forms server installation.

3. Run the Installer program to place PCG forms on the forms server. All custom forms are located in language-specific subdirectories of the $XXLAAPPS_TOP/forms directory.

4. Configure a remote compilation feature, which makes libraries resident on the concurrent server available to the forms server.

Create a User and Tablespace

If you're performing a new installation of PCG 7.3.4, create the PCG tablespace and database user/schema. The latter must be granted the connect and resource privileges in the Oracle EBS database. You're strongly advised to use the name XXLAAPPS for the new user, and to create all PCG database objects in the XXLAAPPS schema.

Execute the following before you create the schema. Connect to the CDB (container database) and change the session to PDB (pluggable database):

```
$ sqlplus/nolog
SQL> connect / as sysdba
SQL> show pdbs

CON_ID     CON_NAME     OPEN MODE     RESTRICTED
------     --------     ---------     ----------

2          PDB$SEED     READ ONLY     NO
3          ebsdb        READ WRITE    NO
SQL> alter session set container="ebsdb";
SQL> show user;
SYS
```

The following is a sample SQL script that can be used to create the user:

```
CREATE USER XXLAAPPS
IDENTIFIED BY XXLAAPPS
DEFAULT TABLESPACE &DEF_TSPACE
TEMPORARY TABLESPACE &TMP_TSPACE
QUOTA UNLIMITED ON &DEF_TSPACE
QUOTA 0K ON SYSTEM
ENABLE EDITIONS;
GRANT CONNECT TO XXLAAPPS;
GRANT RESOURCE TO XXLAAPPS;

GRANT SELECT ON GV$INSTANCE TO APPS;
GRANT SELECT ON ALL_OBJECTS TO XXLAAPPS WITH GRANT OPTION;
GRANT SELECT ON DBA_OBJECTS TO XXLAAPPS;
GRANT SELECT ON ALL_TABLES TO XXLAAPPS;
GRANT SELECT ON ALL_VIEWS TO XXLAAPPS;
GRANT CREATE VIEW TO XXLAAPPS;
```

Connect to the pluggable database with user APPS and execute these comands:

```
GRANT EXECUTE ON FND_FILE TO XXLAAPPS;
GRANT EXECUTE ON FND_PROFILE TO XXLAAPPS;
```

Allocate a minimum of 80 MB of space, 40 on the tmp directory and 40 on the file system from which the installer is to be launched.

If you're upgrading PCG, you're assumed first to have upgraded your database to 19*c*. As part of that operation, the 19*c* database inherited the PCG tablespace and schema from the previous database version. Determine the name of the PCG tablespace, and the name and password for the PCG schema, as you will need to supply these during the upgrade. As part of the upgrade, execute all the grant statements shown above. Before upgrading, take a backup of your PCG schema.

Prepare for Installation

Complete the following steps before running the installation programs.

1. Execute the environment file, if it is not included in the profile:

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

2. At the operating-system command prompt, use the make-directory command to create a custom application top (the high-level directory for PCG file storage).

   Its form must be the full path to the Oracle APPL_TOP; then, as a subdirectory, the PCG database user name; and finally, as a subdirectory at the next level, the value *12.x.x*. For example, if the Oracle APPL_TOP were /oracle/bin/ebiz12/appl, the PCG database user name were XXLAAPPS, and the Oracle EBS release were 12.2.9, the following command would create the custom application top:

   ```
   mkdir /oracle/bin/ebiz12/appl/xxlaapps/12.2.9
   ```

3. Export the custom application top path in the environment file (which is named for the database SID and host name, with a .env extension, and is located in the Oracle APPL_TOP directory). If the path in step 2 were the custom top, the environment-file entry would look like this:

   ```
   XXLAAPPS_TOP="/oracle/bin/ebiz12/appl/xxlaapps/12.2.9"
   export XXLAAPPS_TOP
   ```

4. In the directory $APPL_TOP/admin, locate topfile.txt; open it for editing. Add an entry that sets the relationship of the Embedded-Agent-database-user-name subdirectory to the APPL_TOP directory. In the current example:

```
xxlaapps    /oracle/bin/ebiz12/appl/
```

5. In the directory $APPL_TOP/admin, create the file applcust.txt. Open it for editing, and insert the same entry as you did in step 4.

6. Navigate to the $ADMIN_SCRIPTS_HOME directory and, from it, run three scripts. Each prompts for the APPS password or the APPS username and password.

   • adstpall.sh

   • adautocfg.sh

   • adstrtal.sh

Install Concurrent Manager Server Components

To install PCG components on the concurrent manager server (or upgrade them from the previous version), run the file ladbinstall.bin. (Although the Installer displays windows labeled "GRC Controls Database Install," it actually places files on the concurrent manager server.)

1. Transfer the ladbinstall.bin file to the concurrent manager server, via FTP in binary mode. Use the applmgr account.

2. Use applmgr to log in to the concurrent manager server. Ensure that the user (login ID) has write and read privileges on $APPL_TOP.

3. Execute the environment file, if it is not included in the profile:

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

4. Set the execute permission on ladbinstall:

```
$ chmod +x ladbinstall.bin
```

5. Execute ladbinstall.bin:

   • To run in GUI or console mode, ensure that ladbinstall.properties is absent from the directory where ladbinstall.bin resides. To run in silent mode, be sure that both files are in the same directory.

   • Use the name ladbinstall.bin as the command to run in GUI or silent mode. Add the argument *-i console* to run in console mode.

All three Installer modes require the same information; GUI and console prompt for it, and silent reads it from files. If you choose GUI mode (as shown in the following procedure), you can perform these operations in each of the windows:

• Review a brief description of the information you need to provide.

• Click on the Help button to open a window that provides a more expansive description of the information you need to provide. (After you review this information, click on the Close button to exit the Help window.)

• Type installation information in the labeled text boxes (or accept defaults).

• When you complete one window, click on the Next button to move from it to the next window.

• Click the Previous button if you wish to return to a window you completed earlier.

- Note that titles of windows you have completed appear in black along the left of each window; those yet to be completed are shown in grey.

To complete the concurrent manager server installation:

1. In the License Key window, enter Oracle as the Customer Name and the following case-sensitive value as License Key: 6MR6457YE5RJO1C8T3JhY2xl. A message displays the applications you can install; click the OK button to clear it.


2. Specify a staging directory — a temporary location for source files:
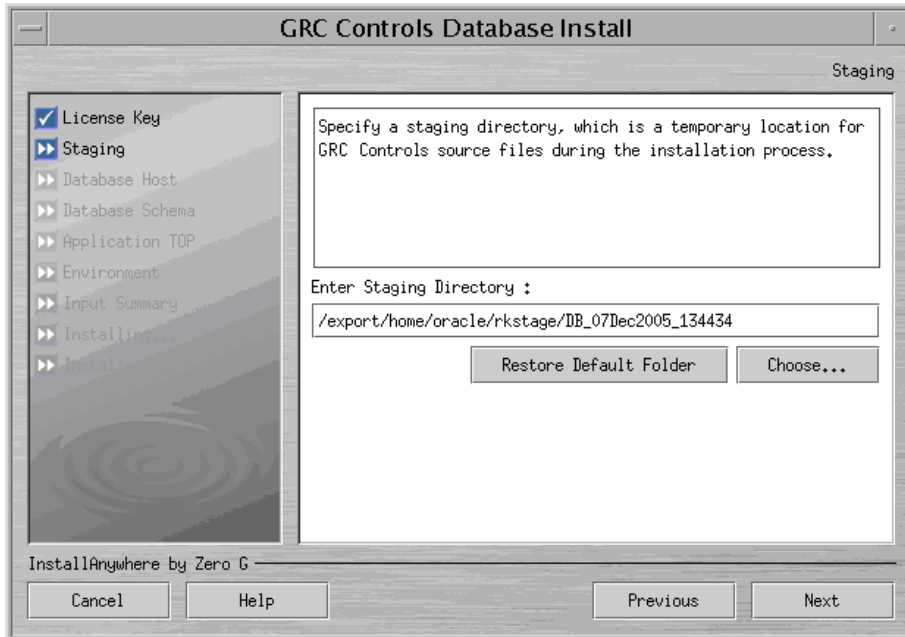
The Installer suggests a default directory; its name is a timestamp for the moment you perform the installation, with *DB*. If you wish to select another directory, click the Choose button and, in a Select a Folder window, navigate to

the directory you want. If you specify a nonexistent directory, the Installer creates that directory. If you navigate away from the default directory and want to return to it, click on the Restore Default Folder button.

3. Verify the default values for the host name, SID (service identifier), and network port of the Oracle EBS database server, which the Installer takes from the shell environment. If the defaults are not correct, enter correct values.
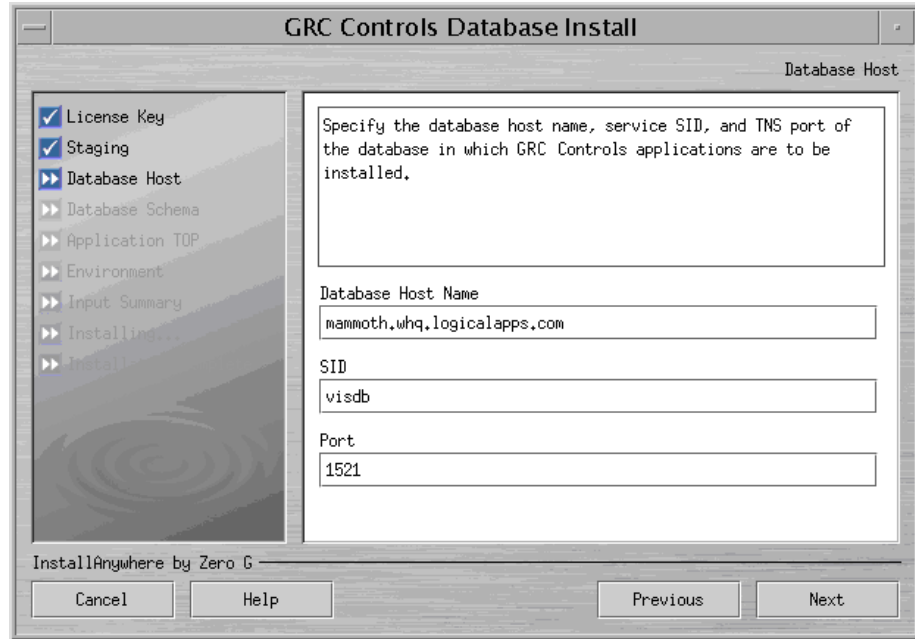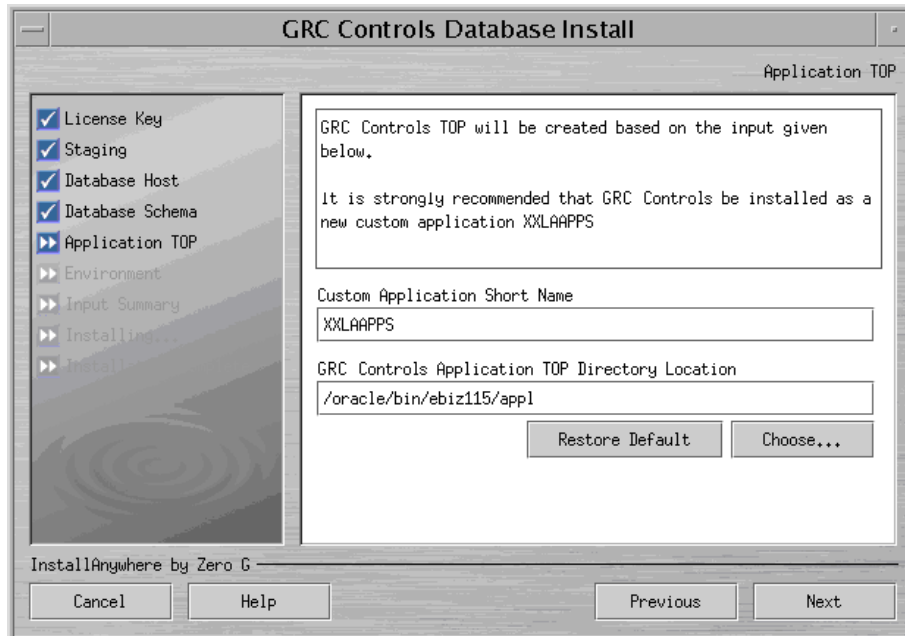

4. Supply log-on values for the PCG schema and Oracle (APPS) schema:

If you're upgrading, enter the values established during installation of the earlier release. For a fresh installation, you will have created a PCG schema and index tablespace (see page 7); enter the schema name (typically XXLAAPPS) in the GRC Controls Schema field; and the schema password and tablespace name in the

appropriate fields. Also supply the password for the database schema that serves Oracle EBS in the Oracle APPS Schema Password field.

5. Establish the GRC Controls TOP — the high-level directory for PCG file storage.

   • In the GRC Controls Application TOP Directory Location field, specify a directory that is the parent of the GRC Controls TOP. By default, the Installer selects the Oracle EBS TOP as the parent directory.

   • In the Custom Application Short Name field, specify a short name that is appended to the parent directory to form the GRC Controls TOP directory. By default the Installer selects XXLAAPPS as the short name.

These values must match the APPL_TOP and immediate subdirectory you configured earlier (see page 8), but not the release-level value (such as *12.2.9*). Otherwise, if you're upgrading, enter the values established during installation of the earlier release. If you're performing a fresh installation, you may accept the defaults or configure other values.

To select parent directory, click on the Choose button and, in a Select a Folder window, navigate to the directory you want. If you name a nonexistent directory, the Installer creates it. Click Restore Default to return to the default directory.

No matter what case you use to enter values, the Installer saves the short name as all uppercase (and adds the uppercase *_TOP* to create a top shell variable), and the directory location as all lowercase. (However, for a reinstallation, the Installer does not change the case of an existing application TOP.)

If you have selected an application short name that is already in use, the Installer displays a warning message when you click the Next button. To respond:

• Click Enter Again to set a new value.

• Click Continue to accept the duplicate application short name. This choice is correct if you're upgrading PCG For a fresh installation, however, this option causes PCG and another application to share the name, with the risk that files for one application or the other might be overwritten.

- Click Abort to abandon the PCG installation.

6. Specify paths to files that contain environment variables for the Oracle EBS shell. (The installation adds PCG-specific entries to these files.)

Accept the defaults, or click a Choose button and, in a Select a Folder window, navigate to a directory you want. If you name a nonexistent directory, the Installer creates it. To return to the default directory, click the Restore Default button.

7. Review your selections in the Input Summary form:
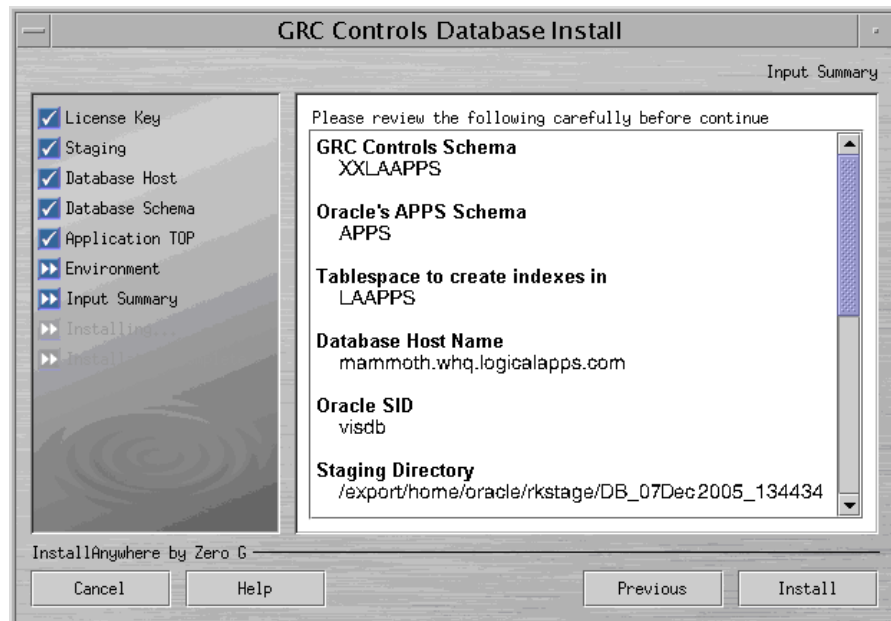
If you determine that any entry is inappropriate, you can click on the Previous button until you reach the form in which you selected the entry, and change it. (The Installer retains any entries you don't change, even if you pass by them as you return to an earlier step in the installation process.)

8. In the Input Summary form, the label for the button at the lower right has changed from *Next* to *Install*. When you're satisfied with your selections in earlier forms, click on the Install button to complete the installation.

The Installer displays error messages (if any are warranted) upon completing the installation of each PCG application, and displays an overall status upon completing the installation of all products. If the overall status is Success, the installation has finished with no errors.

If errors occur, they or the overall status may be classified as Warning, Nonfatal, or Fatal, depending on severity. The Installer recovers (restores the system to its state prior to the installation) for Fatal errors, but not for Warning or Nonfatal errors. For details about errors and the installation process, navigate to the directory from which the Installer ran and review two log files: LADB_LOG_*timestamp.log* and LADB_ERROR_*timestamp.log*, where *timestamp* is the date and time at which the Installer ran.

Install Forms Server Components

To install PCG forms server components, run the file lafrminstall.bin:

1. If the concurrent manager and forms servers run on the same host, re-source the environment by opening a new shell.

2. Transfer the lafrminstall.bin file to the forms server, via FTP in binary mode. Use the applmgr account.

3. Use applmgr to log in to the forms server. Ensure that the user (login ID) has write and read privileges on $APPL_TOP.

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

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

5. Set the execute permission on lafrminstall:

   ```
   $ chmod +x lafrminstall.bin
   ```

6. Execute lafrminstall.bin:

   • To run in GUI or console mode, ensure that lafrminstall.properties is absent from the directory where lafrminstall.bin resides. To run in silent mode, be sure both files are in the same directory.

   • Use the name *lafrminstall.bin* as the command to run in GUI or silent mode. Add the argument *-i console* to run in console mode.

Most windows (or console prompts) for the forms installation are identical to those for the concurrent manager installation. If you select GUI mode, you perform the same operations in each window as you did for the concurrent-manager-server Installer.

To complete the forms server installation:

1. In the License Key window, enter Oracle as the Customer Name and the following case-sensitive value as License Key: 6MR6457YE5RJO1C8T3JhY2xl. (These are the same as the values for concurrent-manager-server installation.) A message displays the applications you can install; click the OK button to clear it.

2. In the Staging form, once again select a directory for the temporary placement of source files. The Installer once again suggests a default — its name a time-stamp for the moment you perform the installation, along with *FRM* (for forms).

If you wish to select another directory, click on the Choose button. In a Select a Folder window, navigate to the directory you want. If you specify a nonexistent directory, the Installer creates that directory. If you navigate away from the default directory and want to return to it, click on the Restore Default Folder button.

3. In the Database Host form, select the database host name used where the concurrent manager installation has been run, and the appropriate SID and port values.

4. In the Database Schema window, there is no longer an Index Table Space field (as it would be inapplicable to forms installation), but where the concurrent-manager-server Installer requested only a password for the Oracle EBS schema, the forms-server Installer asks for a name as well:

For the Apps Schema field, accept the default value, APPS. (This needs to match the concurrent-manager-server value, which is hard-coded.) For the other fields:

- For an upgrade, enter values already established during installation of your earlier release.

- For a fresh installation, enter the values you entered for concurrent-manager installation.

5. In the Application TOP form, establish the GRC Controls TOP for the forms server — the highest-level directory for the storage of PCG files.

- In the GRC Controls Application TOP Directory Location field, specify a directory that is the parent of the GRC Controls TOP. The Installer defaults to the forms-server-specific Oracle EBS TOP as the parent directory.

- In the Custom Application Short Name field, specify a short name that is appended to the parent directory to form the GRC Controls TOP directory. By default the Installer selects XXLAAPPS as the short name.

The application short name for the forms server must be the same as the concurrent manager server's. If you're upgrading, enter the parent directory established during installation of the earlier release. For a fresh installation, you can select a parent directory other than the default: click on the Choose button and, in a Select a Folder window, navigate to the directory you want. If you name a nonexistent directory, the Installer creates it. Click Restore Default to return to the default directory.

No matter what case you use to enter values, the Installer saves the short name as all uppercase (and adds the uppercase _TOP to create a top shell variable), and the directory location as all lowercase. (However, for a reinstallation, the Installer does not change the case of an existing application TOP.)

The forms-server Installer, like its concurrent-manager-server counterpart, presents a warning if you select an application short name that is already in use and it presents the same response options:

- Click Enter Again to return to the Application TOP form and set a new value.
- Click Continue to accept the duplicate application short name. This choice is correct if you're upgrading PCG. For a fresh installation, however, this option causes PCG and another application to share the name, with the risk that files for one application or the other might be overwritten.
- Click Abort to abandon the PCG installation.

6. In the Environment form, specify paths to files that contain environment variables for the Oracle EBS shell (the first two prompts) and for forms paths (the APPSORA prompt). Accept the defaults, or click a Choose button and, in a Select a Folder window, navigate to a directory you want. If you enter the name of a nonexistent directory, the Installer creates that directory. To return to the default directory, click the Restore Default button. In any case select values that are appropriate for the forms server.

7. When you complete the Environment form, the forms server Installer presents a CUSTOM.pll form:
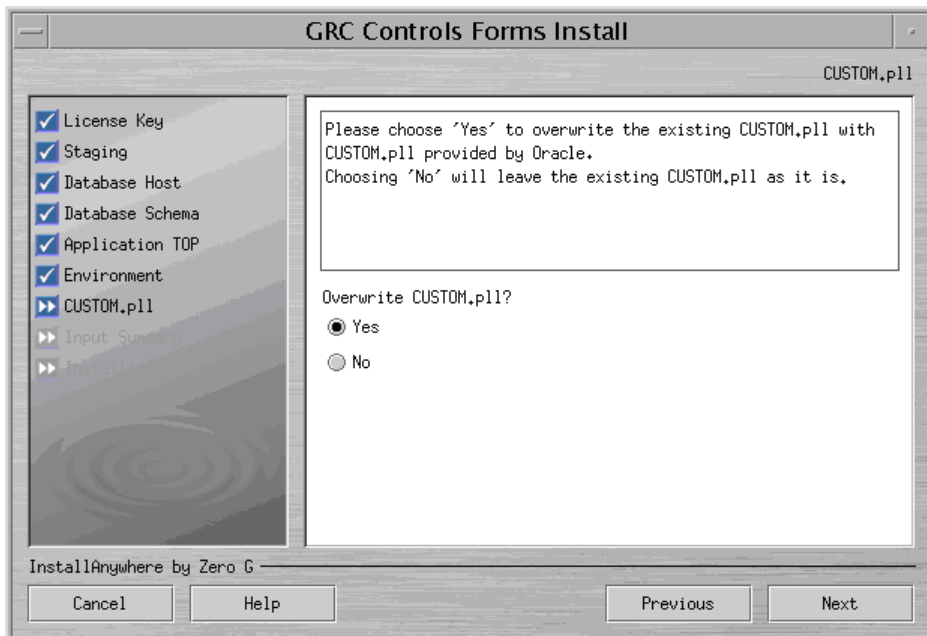
If you select Yes, the Installer backs up your existing CUSTOM.pll (the backup has a timestamp appended to the .pll file extension). The installer then overwrites the original with a version that contains links to a file called LACUSTOM.pll. Forms server installation requires that the CUSTOM.pll file contain these links.

If your original CUSTOM.pll contained any customization, and you select Yes here, then to retain your customizations you would need to copy them manually from the backup file to the new version of CUSTOM.pll. However, source code added to CUSTOM.pll by customers not specific to PCG, although known to work, is not supported under any circumstance.

If you select No, the installer retains your existing CUSTOM.pll. In this case, you need to edit the file to insert links to LACUSTOM.pll (see below). However, Oracle does not support these edits to the CUSTOM.pll file.

In effect, selecting Yes in this CUSTOM.pll form and then performing no edits to the resulting PCG-specific version of CUSTOM.pll is the only option Oracle supports.

8. In the Input Summary form, review the selections you have made. If you determine that any entry is inappropriate, you can click on the Previous button until you reach the form in which you selected the entry, and change it. (The Installer retains any entries you don't change, even if you pass by them as you return to an earlier step in the installation process.)

9. When you're satisfied with the selections you have made in preceding forms, click on the Install button in the Input Summary form to complete the forms server installation.

The Installer displays error messages (if any are warranted) upon completing the installation of each PCG application, and displays an overall status upon completing the installation of all products. If the overall status is Success, the installation has finished with no errors.

If errors occur, they or the overall status may be classified as Warning, Nonfatal, or Fatal, depending on severity. The Installer recovers (restores the system to its state prior to the installation) for Fatal errors, but not for Warning or Nonfatal errors. For details about errors and the installation process, navigate to the directory from which the Installer ran and review two log files: LAFRM_LOG_*timestamp.log* and LAFRM_ERROR_*timestamp.log.* Timestamp is the date and time the Installer ran.

CUSTOM.pll Modifications

If you chose (in step 7) not to overwrite your CUSTOM.pll file, edit the CUSTOM.pll file. However, Oracle does not support these edits. (If you selected Yes in step 7, ignore this section and skip ahead to "Configure the Remote Compilation.")

1. In place of the existing code for *Procedure Event(event_name varchar2)*, substitute the following:

```
PROCEDURE event(event_name varchar2) is
  form_name     varchar2(30) := name_in('system.current_form');
  block_name    varchar2(30) := name_in('system.cursor_block');
  field_name    varchar2(30) := name_in('system.current_item');
  function_name      varchar2(30);
  parameters    varchar2(2000);
```

```
begin
  if (event_name = 'ZOOM') then
    la_enhncmtmgr_pkg.la_zooms(form_name,block_name,
       function_name,parameters);
      if function_name is not NULL
      then
        if parameters is null then
          fnd_function.execute(function_name,'Y','N');
        elsif 'ZOOMSPECIAL' = substr(parameters,1,11) then
          lacustom.event('ZOOMSPECIAL'); -----new code 081903
        else
          parameters := lazoom.zoom_event(parameters);
          fnd_function.execute(function_name,'Y','N',parameters);
        end if;
  end if;
--------------------------------WNF
  elsif (event_name='WHEN-NEW-FORM-INSTANCE') then
   lacustom.event('WNF');
-------------------------WNB
  elsif (event_name = 'WHEN-NEW-BLOCK-INSTANCE') then
   lacustom.event('WNB');
---------------------------WNI
  elsif (event_name = 'WHEN-NEW-ITEM-INSTANCE') then
   lacustom.event('WNI');
----------------------WNR
  elsif (event_name = 'WHEN-NEW-RECORD-INSTANCE') then
   lacustom.event('WNR');
----------------------WNV
  elsif (event_name = 'WHEN-VALIDATE-RECORD') then
   lacustom.event('WVR');
----------------------
  elsif (substr(event_name,1,7) = 'SPECIAL') then
   execute_menu(event_name);
---------------------------------------------
   else lacustom.event(event_name);   --put other events here
   end if;
end event;
```

2. In place of the code for *Function zoom_available*, substitute the following:

```
FUNCTION zoom_available return boolean is
   v_enabled  varchar2(20);
 begin   --x
   v_enabled := lazoom.zoom_enabled;
   IF v_enabled = 'TRUE' THEN
     return TRUE;
   else
     return FALSE;
   end if;
 RETURN NULL;
 end zoom_available;
```

3. Attach the following libraries. (Remove the path when attaching the libraries.)

   • LACUSTOM.pll

   • LABRSQL.pll

4. Compile the file and ensure there are no compilation errors.

Servlet Mode

If the forms server runs in servlet mode, you must edit a file to enable Oracle to recognize the GRC Controls TOP you selected during installation (see step 5 on page 15).

To determine whether the forms server runs in servlet mode, identify the file represented by the Oracle environment variable $FORMS60_WEB_CONFIG_FILE. Open that file and search for its serverURL entry. If that entry is set to the value */forms/formservlet*, the forms server runs in servlet mode. If the entry is blank, the forms server runs in socket mode, in which case you need not complete the following procedure.

If the forms server runs in servlet mode:

1. Using a text editor, open a file called formservlet.ini. The file is located either in $APACHE_TOP/Jserv/etc or in $IAS_ORACLE_HOME/Apache/Jserv/etc.

2. In the formservlet.ini file, look for a block of entries bounded by the lines *#Begin Customization* and *#End Customization*.

3. Add the following entry anywhere between the Begin and End Customization lines:

   ```
   XXLAAPPS_TOP=$APPL_TOP/xxlaapps/12.2.9
   ```

   Note, however, that the value XXLAAPPS is correct in this entry only if you have accepted the default application short name during installation. If not, then in each of the two places that the value XXLAAPPS appears in this entry (whether in upper or lower case), substitute the short name you created in step 5 on page 15.

4. Save and close the file.

Configure the Remote Compilation

To finish the installation, you must configure a remote compilation feature, which makes libraries resident on the concurrent server available to the forms server.

1. Log on to the concurrent manager server.

2. Source out the Oracle EBS shell environment.

3. Navigate to the $XXLAAPPS_TOP/bin directory (a subdirectory, called bin, of the GRC Controls TOP directory, which you established in step 5 of the concurrent manager server installation process).

4. Grant the execute permission on a file called laconfig.sh:

   ```
   $ chmod +x laconfig.sh
   ```

5. Run the laconfig.sh file:

   ```
   $ laconfig.sh
   ```

Running the laconfig.sh file produces a series of command-line prompts. Respond to them as follows:

1. You're prompted to enter the GRC Controls application short name. If that name is other than XXLAAPPS, type it and press the Enter key. (Case is not significant.) If the short name is XXLAAPPS, simply press the enter key in response to the prompt.

2. A prompt displays a path to a Java executable; you must confirm that this is the path to the Java executable used by Oracle EBS. It is, if you sourced out the

Oracle EBSshell environment before running the laconfig.sh file (no matter how many Java executables reside on your system). It may not be, if you did not source out the Oracle EBS shell environment and have more than one Java executable on your system.

If the prompt displays the path to the Oracle EBS Java executable, type *Y* (for yes) and press the Enter key. If not, type *N* (for no), press the Enter key, then type the full path to the Java executable used by Oracle EBS and press the Enter key again.

3. A prompt displays a path for a file that sets the Oracle EBS environment; you must confirm that it is correct. The default value is taken from the shell as $APPL_TOP/$APPLFENV, and this selection is always safe; to accept it, press *Y* (for yes) and press the Enter key. But what's really at issue is the file that sets the GRC Controls TOP, which is a subsidiary file of $APPLFENV. You may wish to specify it instead; if so, type *N* (for no), then type the full path to the appropriate file and press the Enter key.

4. The following prompt appears:

```
Choose your node configuration from below:
1.  All servers (CM/Forms) share the same application top
    directory
2.  Forms server has different application top file system
    than concurrent managers
3.  Exit Program
```

Enter 1 if all database, forms, and concurrent servers exist under a single application TOP, or 2 if each exists under its own application TOP (regardless of whether they reside on a single machine or more than one).

5. You're prompted to enter the number of distinct application TOPs used by forms servers. Type the number and press the Enter key.

6. For each of the application TOPs you include in the count in step 5, you're prompted to select a method for transferring files to the application TOP directory. Enter one of the following and press the Enter key:

- 1 for secured shell (ssh)

- 2 for remote execution (rexec)

- 3 for telnet

- 4 for local file system (copy)

- 5 for manual

7. For each application TOP, you're prompted for supporting information if you have selected any of the first four access methods. (Method 5, manual, requires no supporting information.)

- Server host name if you selected option 1, 2, 3, or 4

- Full path to PCG binary files if you selected option 1, 2, 3, or 4

- User ID if you selected option 1, 2, or 3

- Password if you selected option 3

Entries are validated, so that if you enter incorrect supporting information you're prompted to try again.

When you finish executing the laconfig.sh file, verify that the following files exist:

- Concurrent manager server (under $XXLAAPPS_TOP/bin): LAGENLIB.prog, LAMIGRATE.prog, LAIMPORT.prog, and GRC_BIP_RPT_UPLOAD.prog

- Forms server: LAFORMSGEN.prog

Finally, if you want to enable migration (the ability to port PCG configurations from one instance to another) with password security:

1. Navigate to \\System Administrator Responsibility\Profile\System.

2. Query for the LAAPPS: Enable Migration Security profile option.

3. Set the value to Yes at site level. (This can be controlled further at the responsibility and user levels.)

Bounce the Servers

When you finish configuring the remote compilation feature, bounce both the form server and the concurrent manager server.

Postinstallation Tasks

Once the installation is complete, you must perform additional tasks. Some are required in any case, and others only if you run particular versions of Oracle E-Business Suite or if other special circumstances apply.

Compile SQL Rules

From within PCG, you must run an option to compile SQL rules:

1. Log on to the GRC Controls responsibility in Oracle E-Business Suite. In that responsibility, select Form Rules.

2. A GRC Controls–Oracle Rules form opens. Select its Form Rules tab.

3. Click on Tools in the menu bar, and then Oracle Form Rules Compile All Active SQL Rules in the Tools menu.

4. A pop-up message informs you of an ID number for the concurrent request that executes the SQL rule compilation. Make a note of the number, and then click on the OK button to close the message.

5. 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 the Refresh Data button), and the entry in the Status field is *Normal*.

   d Close the Requests form: click on the × symbol in its upper right corner.

Associate GRC Controls Functions

Use a Mass Associate Function feature to make PCG functions available to users:

- For a PCG upgrade, activate all PCG functions. Submit a request to exclude each function from all menus, then submit a request to include each function in all menus.

- For a fresh PCG installation, associate a GRC Controls Activate Responsibilities function with responsibilities or menus from which administrators open the Oracle Users form. (This activates an Activate Responsibilities menu option. PCG inserts it in the Actions menu of the Users form to support Application Access Controls Governor.)

To complete these tasks:

1. In the GRC Controls–Oracle Rules form, ensure that either the Form Rules or Flow Rules tab is selected.

2. Click on GRC Controls Utilities in the menu bar, and then on Mass Associate Function in the Utilities menu. A Mass Associate Function form appears.

3. Click on the Menu or Responsibility radio button (to determine which type of item you will associate with the function).

4. In the Function Name field, select one of the functions available to PCG — for example, GRC Controls Activate Responsibilities.

5. Choose the menus or responsibilities you want to associate with the function you've selected. By default, the Include radio button is selected for all items in the Associate Function list. You can:

   - Exclude or include all menus or responsibilities. Click on the Select All check box so that it changes to read "Deselect All." Then click on it again; this selects all the Exclude radio buttons and clears all the Include radio buttons, and it changes the check box label back to "Select All." Click on it once again; this selects all the Include radio buttons and clears all the Exclude radio buttons, and it changes the check box label back to "Deselect All."

   - Deselect individual included menus or responsibilities by clicking on the Exclude radio button for each.

   - Select individual excluded menus or responsibilities by clicking on the Include radio button for each.

6. Click the Submit button. Users with access to the newly associated menus or assigned the newly associated responsibilities then have access to the function.

Change Control Wizard

In Preventive Controls Governor, a Change Control Wizard enables users to write rules that impose change control on Oracle E-Business Suite fields. In order for the Wizard to be used, you must run a Create Audit Rules Objects option:

1. In the GRC Controls–Oracle Rules form, ensure the Audit Rules tab is selected.

2. Click on GRC Controls Utilities in the menu bar, and then Create Audit Rules Objects in the GRC Controls Utilities menu.

3. A pop-up message indicates that a concurrent request has been run. Make a note of its number, and then click on the OK button to close the message.

4. Optionally, verify completion of the request. (See step 5 on page 21.)

Source the PCG Environment

Edit an .xml file known as a "context file" in order for Oracle EBS to source the PCG environment. (Sourcing is done through the use of a .env file, for which the context file serves as a template.)

1. Using an xml editor, open the file $APPL_TOP/admin/*sid_host*.xml. In this file name, replace *sid* with the system identifier for the APPS database and *host* with the host name of the machine on which the APPS database resides.

2. In the file, search for the value *ZX_TOP*.

3. Add the following line immediately beneath the ZX_TOP row.

```
<XXLAAPPS_TOP oa_var="s_xxlaappstop" oa_type="PROD_TOP"
oa_enabled="FALSE">$APPL_TOP/xxlaapps/12.2.9</XXLAAPPS_TOP>
```

   Note the following:

   • The value *XXLAAPPS* is correct in this line only if you accepted the default application short name during installation. If not, then in each of the four places that the value XXLAAPPS appears in this line (whether in upper or lower case), substitute the short name you created in step 5 on page 12.

   • In place of the value $APPL_TOP, supply the actual full path to the Oracle EBS TOP directory.

4. Save the file.

Audit Rules

Audit Rules affords database auditing not only to users, but also to Change Control in PCG. To prepare auditing functionality, complete the following tasks.

First, add the LACSVREPORT style to the printer you will use for Audit Rules:

1. In the System Administrator responsibility, select Install, then Printer, then Register.

2. A Printers form appears. In its Printer field, select the printer you wish to use with Audit Rules. Note the value that appears in the Type field when you select the printer, and then click on the Printer Types button.

3. A Printer Types form appears. In its Type field, query for the Type you noted in step 2. (Press the F11 key; enter the Type value in the Type field; press Ctrl+F11.)

4. In the Style list of values, select LACSVREPORT; the software automatically supplies an associated value under Driver Name.
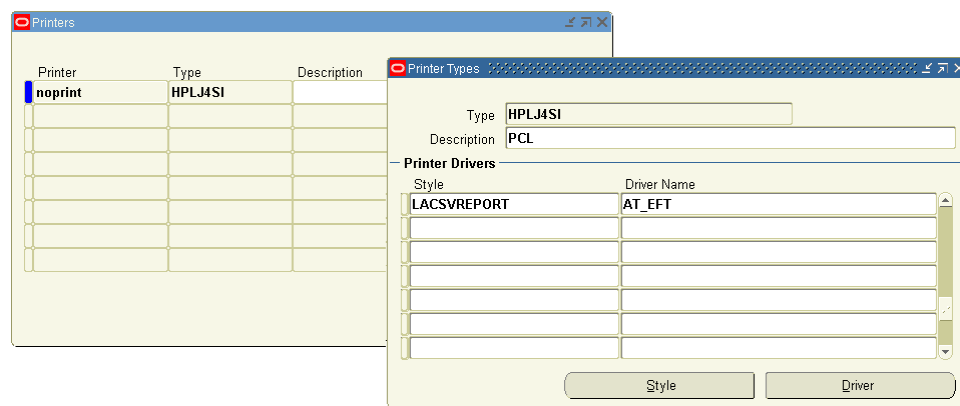
5. Click on File in the menu bar, then on Save in the File menu.

Second, schedule a concurrent-request program called Audit: Dequeue Process to be run periodically. This enables reports for the Audit Rules and Preventive Controls Governor (change control) to display current data. So the period at which you schedule the running of this concurrent program depends upon the frequency with which you expect to run these reports. To schedule the program:

1. Switch to the GRC Controls responsibility. (Use the Switch Responsibility icon, sixth from the left on the tool bar.)

2. In the Navigator, select Requests: Run under the Administration heading.

3. In the Submit a New Request form, select Single Request and click the OK button.

4. In the Submit Request form, select Audit: Dequeue Process in the Name field (the program takes no parameters). Then click on the Schedule button.

5. In the Schedule form, select the Periodically radio button. In related fields, select values appropriate for the schedule you want to set. Click on the OK button.

6. In the Submit Request form, click on the Submit button.

Different Hosts

If the database server and concurrent manager server are on different hosts, make the following changes to the Tkprof script (LATKPROF.prog), which is located in the PCG binary directory on the concurrent manager server. (The changed lines are shown in boldface.) The value *<db_ login>* is the user name to log on to the database server, and the value *<db_ hostname>* is the database server name.

```
#!/bin/sh
oracle_login=$1
tempfile=$$latkprof.txt
temptrc=$$latkprof.trc
echo Temp file $tempfile
echo tkprof directory "$5"
pwd
tkfiles=`ssh <db_login>@<db_hostname> ls $5`
for i in $tkfiles
do
echo processing $i
scp <db_login>@<db_hostname>:$i /tmp/$temptrc
tkprof /tmp/$temptrc /tmp/$tempfile explain=$1
cat /tmp/$tempfile
rm /tmp/$tempfile
rm /tmp/$temptrc
done
```

If you have multiple APPS schemas, the LA_ENHNCMTMGR_PKG must be created as a synonym under each schema. To perform this operation, run the following command:

```
create synonym LA_ENHNCMTMGR_PKG for apps.LA_ENHNCMTMGR_PKG
```

If this is not set, the following error message appears when a user attempts to log on to a read-only or MRC (multiple reporting currency) responsibility:

```
la_enhncmtmgr_pkg not declared
```

Unwanted Characters

If, as PCG is used, unwanted characters appear in forms in any of the twelve languages PCG can display, complete these steps to remove them:

1. Navigate to $ORACLE_HOME/forms60/admin/resources.

2. From there, navigate to the directory for the language in which the unwanted characters appear.

3. Back up the file fmrweb.res.

4. Copy the file fmrweb_utf8.res file as fmrweb.res.

5. Stop and restart the forms server.

Read-Only APPS Schema

PCG requires access to various database objects on the APPS schema. If you don't allow custom objects to refer directly to the APPS schema, you can create a custom APPS schema with read-only permissions. (It's customarily referred to as the APPSREADONLY schema.) To do so, run the following scripts, which the Installer has placed on your system.
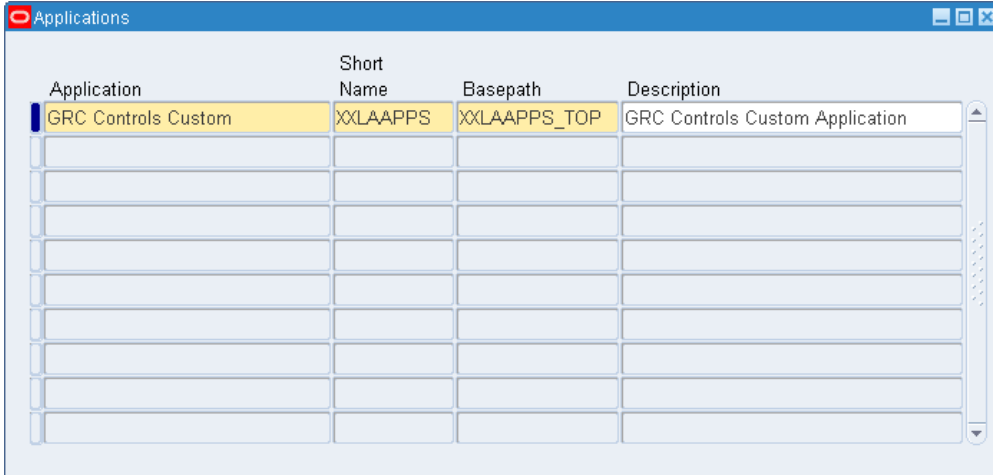
- laa_rd_custom_tab_grants_to_apps.sql: This script is executed from XXLAAPPS. It contains the grants having "WITH GRANT OPTION" for XXLAAPPS custom objects.

- laa_rd_apps_views_syn_to_schema.sql: This script is executed from APPS. It gives grants and creates synonyms in the destination schema for the identified Oracle APPS tables.

- laa_rd_apps_packages_to_schema.sql: This script is executed from APPS. It gives grants and creates synonyms in destination schema for the identified Oracle APPS packages.

- laa_rd_custom_packages_to_schema.sql: This script is executed from APPS. It gives grants and creates synonyms in the destination schema for custom packages for the GRCC Suite.

- laa_rd_custom_tab_to_schema.sql: This script is executed from APPS. It gives grants and creates synonyms in destination schema for the custom tables for the GRCC Suite. This script need not be run if the destination schema is XXLAAPPS.

- laa_rd_custom_views_to_schema.sql: This is script is executed from APPS. It gives grants and creates synonyms in the destination schema for the custom views for the GRCC Suite.

- laa_rd_cm_apps_tables_grants.sql: This script is executed from APPS. It gives SELECT grants to the destination schema for Oracle APPS tables accessed by GRCC control monitors.

- laa_rd_cm_apps_tab_synonyms.sql: This script is executed from the destination schema. It creates synonyms for Oracle APPS tables accessed by GRCC control monitors in the destination schema.

3

Validation

As a part of the installation process, the Installer programs complete several "behind-the-scenes" tasks. Open Oracle E-Business Suite forms to confirm that these tasks have been completed.

As you perform these validation steps, you may be instructed to "query for" a value. If so, press the F11 key, type the specified value in a specified field, and then press Ctrl+F11.

1. Log on to the System Administrator responsibility in Oracle E-Business Suite.

2. Select Application, then Register.

3. In the Application field, query for GRC Controls Custom. The form should contain the following values:

4. Switch to the Application Developer responsibility.

   • Select File in the menu bar.

   • Select Switch Responsibility in the File menu.

   • A Responsibilities list appears; in it, select Application Developer.

5. In the Application Developer Navigator, double-click on Application, then Form.

6. In the Form field, query on LABIZ. The form should contain the following values:

7. Switch back to the System Administrator responsibility.

   - Select File in the menu bar.

   - Select Switch Responsibility in the File menu.

   - A Responsibilities list appears; in it, select System Administrator.

8. In the System Administrator Navigator, select Security, then Responsibility, then Request.

9. In the Request Groups form, query for GRC Controls Request Group. The form should contain the following values:

10. Still in the System Administrator responsibility, select Application, then Menu in the Navigator. In the Menus form, query for L<small>AAR</small>_N<small>AVIGATE</small> and confirm the values shown in the following illustration.

11. In the System Administrator Navigator, select Security, then Responsibility, then Define. In the Responsibilities form, query for GRC Controls. (This is the responsibility you would assign to Oracle E-Business Suite users so that they can use PCG applications.)

Switch to the GRC Controls responsibility and, in its Navigator, select Preventive Controls Governor, and then Form Rules. Then do the following:

1. Select Tools in the menu bar, then Oracle Rules Configurations in the Tools menu.

2. An Oracle Rules Configurations form appears. Confirm that a value is displayed in the UTL Path field:

3. The UTL Path field value should match the name of one of the directories set for UTL PATH in your environment. To confirm that, check the directory names in the <DB_NAME>_utlfiledir.txt file, which is available in the <ORACLE_HOME>/dbs directory.

Finally, confirm that appropriate values have been set for GRC Controls libraries:

1. With Form Rules open, click on GRC Controls Utilities in the menu bar, then on Oracle Rules Library in the GRC Controls Utilities menu.

2. With a GRC Controls Libraries form open, click on Tools in the menu bar, then on Value Sets in the Tools menu.

3. In the Name field of the Find Value Set form, enter the value LA% and click on the Find button.

4. Select (one at a time) the LAAC_CATEGORY, LAAR_LIBRARY_MODULES, and LAAR_LIBRARY_THEME entries. For each, confirm that a Segment Values form displays ALL in the Values field for the Values, Effective tab. For example:

Installation History

You can review information about the installation of files for your PCG implementation. To do so:

1. Log on to the GRC Controls responsibility in Oracle E-Business Suite.

2. In the Navigator, select Administration, and then Install History. The Installation History form appears:
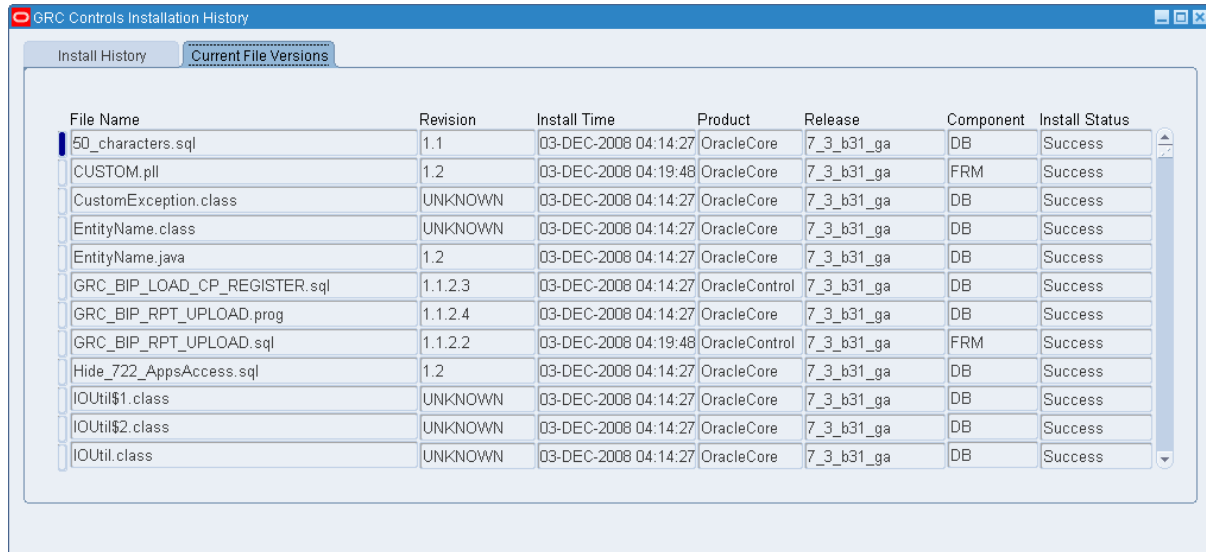

Each row provides information about the installation of a program element. Because there are several elements for each of the servers, a single installation fills multiple rows in the grid.

3. To view a list of the files installed for a given element, click on the row for that element and then on the Installed Files button. The following form appears:

Click on the Close button to clear this form.

4. Finally, to review information about all currently installed files (regardless of whether they were added in the most recent installation), click on the Current File Versions tab:

File Name	Revision	Install Time	Product	Release	Component	Install Status
50_characters.sql	1.1	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
CUSTOM.pll	1.2	03-DEC-2008 04:19:48	OracleCore	7_3_b31_ga	FRM	Success
CustomException.class	UNKNOWN	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
EntityName.class	UNKNOWN	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
EntityName.java	1.2	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
GRC_BIP_LOAD_CP_REGISTER.sql	1.1.2.3	03-DEC-2008 04:14:27	OracleControl	7_3_b31_ga	DB	Success
GRC_BIP_RPT_UPLOAD.prog	1.1.2.4	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
GRC_BIP_RPT_UPLOAD.sql	1.1.2.2	03-DEC-2008 04:19:48	OracleControl	7_3_b31_ga	FRM	Success
Hide_722_AppsAccess.sql	1.2	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
IOUtil$1.class	UNKNOWN	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
IOUtil$2.class	UNKNOWN	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success
IOUtil.class	UNKNOWN	03-DEC-2008 04:14:27	OracleCore	7_3_b31_ga	DB	Success

5. To close the Installation History form, click on its × symbol.