Oracle® Application Change Management Pack for Oracle E-Business Suite

User's Guide

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Oracle Application Change Management Pack for Oracle E-Business Suite User's Guide, Release 4.0

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- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
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Preface

Intended Audience

Welcome to Release 4.0 of the *Oracle Application Change Management Pack for Oracle E-Business Suite User's Guide.*

This book is intended for database administrators and system administrators who are responsible for performing the tasks associated with maintaining an Oracle E-Business Suite system using the Oracle Application Change Management Pack for Oracle E-Business Suite.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

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Structure

1 Introduction to Oracle Application Change Management Pack for Oracle E-Business Suite
2 Patch Manager
3 Customization Manager
4 Setup Manager
A Supported File Types in Customization Manager
B Customization Manager Coding Standards

Related Information Sources

Oracle Application Management Pack for Oracle E-Business Suite Installation Guide

This manual describes the system requirements and installation procedures for this product.

Oracle Application Management Pack for Oracle E-Business Suite User's Guide

This guide describes how to manage and monitor an Oracle E-Business Suite system with the Oracle Application Management Pack for Oracle E-Business Suite.

Maintaining Oracle E-Business Suite Documentation Set

This documentation set provides maintenance and patching information for the Oracle E-Business Suite DBA. *Oracle E-Business Suite Maintenance Procedures* provides a description of the strategies, related tasks, and troubleshooting activities that will help ensure the continued smooth running of an Oracle E-Business Suite system. *Oracle E-Business Suite Maintenance Utilities* describes the Oracle E-Business Suite utilities that are supplied with Oracle E-Business Suite and used to maintain the application file system and database. It also provides a detailed description of the numerous options available to meet specific operational requirements. *Oracle E-Business Suite Patching Procedures* explains how to patch an Oracle E-Business Suite system, covering the key

concepts and strategies. Also included are recommendations for optimizing typical patching operations and reducing downtime.

Oracle E-Business Suite Developer's Guide

This guide contains the coding standards followed by the Oracle E-Business Suite development staff. It describes the Oracle Application Object Library components needed to implement the Oracle E-Business Suite user interface described in the *Oracle E-Business Suite User Interface Standards for Forms-Based Products*. It provides information to help you build your custom Oracle Forms Developer forms so that they integrate with Oracle E-Business Suite. In addition, this guide has information for customizations in features such as concurrent programs, flexfields, messages, and logging.

Oracle Application Framework Developer's Guide

This guide contains the coding standards followed by the Oracle E-Business Suite development staff to produce applications built with Oracle Application Framework. This guide is available in PDF format on My Oracle Support and as online documentation in JDeveloper 10*g* with Oracle Application Extension.

Oracle Enterprise Manager Concepts

This manual introduces Oracle Enterprise Manager and describes the concepts required to use the product effectively to manage your Oracle environment.

Oracle Enterprise Manager Administration

This guide is an administrative reference that teaches you how to perform day-to-day Enterprise Manager administrative tasks. The goal of this book is to help you understand the concepts behind Enterprise Manager. It teaches you how to perform all common administration tasks needed to effectively monitor and manage targets within your Enterprise Manager environment.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite

automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

1

Introduction to Oracle Application Change Management Pack for Oracle E-Business Suite

Introduction

Oracle Application Change Management Pack for Oracle E-Business Suite provides a centralized view to monitor and orchestrate changes (both functional and technical) across multiple Oracle E-Business Suite systems. Oracle Application Change Management Pack for Oracle E-Business Suite offers the capabilities to manage changes introduced by customizations, patches and functional setups during implementation or maintenance activities.

Oracle Application Change Management Pack for Oracle E-Business Suite is a part of the Oracle Enterprise Manager Grid Control system that provides top-down system management of the entire IT infrastructure. Please note that Oracle Application Management Pack for Oracle E-Business Suite is a prerequisite for Application Change Management Pack for Oracle E-Business Suite.

Oracle Application Change Management Pack for Oracle E-Business Suite contains three main components:

- Patch Manager allows you to deploy patches across Oracle E-Business Suite instances from a single console. Patch Manager integrates with My Oracle Support and can automatically download and deploy patches across multiple (single or multi-node) Oracle E-Business Suite instances. Both Oracle E-Business Suite patches and patchsets, as well as patches created with Customization Manager, are supported.

- Customization Manager automates the process of packaging, releasing, deploying, and migrating customizations for a single Oracle E-Business Suite instance or multiple Oracle E-Business Suite instances. It provides capabilities to integrate with third-party source control repositories to access customizations that need to be

packaged. Before packaging the updates, Customization Manager validates the customization against software coding best practices. These custom packages can then be patched to Oracle E-Business Suite instances like any other Oracle Patch either using the Oracle Applications DBA (AD) utilities or using Patch Manager.

- Setup Manager helps define implementation projects in terms of functional setups that need to be migrated across Oracle E-Business Suite instances. Setup Manager extends the capabilities of Oracle iSetup by providing functional configuration change management capabilities across multiple Oracle E-Business Suite instances.

Application Change Management components can be accessed from the central Change Management dashboard.

Major Benefits

- Simplifies the mechanism of orchestrating changes across multiple Oracle E-Business Suite systems.
- Improves user productivity by automating the deployment of changes.
- Reduces human errors by providing a standards based change deployment framework.
- Provides notifications to specified users of updates to the Oracle E-Business Suite systems.

Application Change Management Pack thus helps to lower the total cost of ownership by providing these benefits from the central Oracle Enterprise Manager console which allows you to manage the entire application environment.

Change Management Dashboard

The Change Management Dashboard gives you quick access to the Change Management Pack's most commonly-used functions, as well as summaries of recent activity.

The Change Approval Requests region is available to users with the required roles. This Change Approval Dashboard shows the summary of recent change approval requests that have been updated. You can also search for a specific change approval request or navigate to the complete list by clicking the "Home" link.

For Patch Manager, recent patching activity is listed. The summary lists patch runs that have completed, that are in progress, or that are scheduled. You can click on the patch names to drill down to more information. You can also search for patches, go to the Patch Dashboard, or start/schedule a new patch application.

For Customization Manager, the most recently updated packages, for both Release 11*i* and Release 12, are shown. Recent activity regarding packages including their statuses

is also shown. You can click on the package names to drill down for more information. You can search for packages, create new packages, set up your File Source and Oracle E-Business Suite mappings, or access reports. Also, you can manage custom applications and track requests pertaining to custom application registration/validation on one or more instances.

For Setup Manager, a summary of projects for Release 11*i* and Release 12 is shown, as well as recent activity on projects. You can click on the project names for more information on each project. You can also search for project or create a new project from the dashboard.

Setting Up Credentials

When using the Oracle Application Change Management Pack for Oracle E-Business Suite, you will need to access Oracle E-Business Suite instances. You can set up credentials for these instances for every user as a one-time setup step instead of entering them every time you need to access an instance.

Please note that preferred credentials are not shared across users.

To set up credentials:

1. Within Oracle Enterprise Manager, select the **Preferences** global link.
2. Select Preferred Credentials.
3. Select the Set Credentials icon to set the credentials for the desired target type.
    - For Patch Manager, choose these target types:
        - Oracle E-Business Suite - Set the values for "Apps Schema Username", "Apps Schema Password", "System Schema Username", "System Schema Password", "Applications Login Username", and "Applications Login Password".
        - Oracle E-Business Suite Infrastructure - Set the values for "Operating System Username" and "Operating System Password" for both the database and APPL_TOP contexts.
    - For Customization Manager, choose the following target types:
        - Host - You must set the "Normal Username" and "Normal Password" for the host from where files will be checked out. This host is referenced within File Source Mapping.
        - Oracle E-Business Suite Infrastructure (APPL_TOP Context) - Set the "Operating System Username" and "Operating System Password" for the Oracle E-Business Suite instance referred to by an E-Business Suite

Mapping.

- Oracle E-Business Suite - Set the "Apps Schema Username" and "Apps Schema Password" for an Oracle E-Business Suite instance only if you intend to include PLD files within a customization package.

You must set the credentials for Oracle E-Business Suite Infrastructure for every instance that is used for building Java patches or reports. Both the Applications and the Database context credentials for each Oracle E-Business instance must be set.

For Customization Manager, it is also required to set the APPLSYS schema credentials, APPS schema credentials and SYSTEM schema credentials for using the custom applications registration and validation functionality for the given Oracle E-Business suite instance.

- For Setup Manager, choose the following target types:
  - Oracle E-Business Suite Infrastructure (APPL_TOP Context) - You must set the "Operating System Username" and "Operating System Password" for the Oracle E-Business Suite instance referred to by an E-Business Suite Mapping.
  - Oracle E-Business Suite - You must set the "Applications Login Username" and "Applications Login Password" for an Oracle E-Business Suite instance.
  - Oracle E-Business Suite - You must set the "Apps Schema Username" and "Apps Schema Password" for an Oracle E-Business Suite instance. The Oracle E-Business Suite user should have the Oracle iSetup responsibility.
  - Addition setup required on the Oracle E-Business Suite side - You must assign 'Oracle iSetup' and 'LCM EM Client' responsibilities to the Application users whose Preferred Credentials would be provided in Oracle Enterprise Manager for Setup Manager.

Creating Roles

Application Change Management Pack supports segregation of duties to different users based on the roles assigned in Oracle Enterprise Manager.

This section describes how to set up basic user roles for Application Change Management Pack. For Approver roles under the Change Approval Framework, see: Change Approval Framework, page 1-6.

Note: In the steps below you update the configuration file

"amp.properties". The changes made to this file will take at least fifteen (15) minutes to take effect. If you want the changes to take effect immediately, restart the OMS.

Follow these configuration steps to enable role-based access:

1. Ensure that the property "enableRoleBasedSecurity" is set to 'Y' within the "amp.properties" file under $ORACLE_HOME/sysman/config on the Oracle Management Server.

2. Create the "EBS_PM_ROLE" for Patch Manager:

    1. Click the **Create** button under Setup > Roles.

    2. Enter the role name as 'EBS_PM_ROLE'.

    3. Review and save the role.

3. Repeat steps 1 and 2 for the Customization Manager and Setup Manager roles:

    - 'EBS_CM_ROLE' for Customization Manager

    - 'EBS_AZ_ROLE' for Setup Manager

Once the role is created, you can assign the EBS_PM_ROLE to the users who intend to use Patch Manager. Likewise, you can do the same for Customization Manager and Setup Manager. This step can be done in Oracle Enterprise Manager using the navigation Setup (Global link) > Administrators >**Edit** button.

You can also restrict users to a certain set of targets. For instance, with Customization Manager, you might want to restrict the customization developers to only the development Oracle E-Business Suite instance along with the host where checkout can be performed. This restriction can be achieved by associating only the required targets to the given administrator. Similarly, with Setup Manager, you might want to control target access to extract and deploy functional configuration data based on user roles such as implementation developer and implementation manager.

Notifications Setup

You have the option of sending e-mail notifications to users regarding updates to the Oracle E-Business Suite systems. To have these notifications sent successfully, you must have the system set up properly:

- Ensure that the agent on the Oracle Management Server is up and running.

- Ensure that the command parDeploy has been run as part of the setup of Oracle Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0). See My Oracle Support

Knowledge Document 731861.1, "How To Set Up Software Library Manually In Grid Control," for more information.

- Enter the SMTP information as described below.

To set the SMTP information in Oracle Enterprise Manager:

The Outgoing SMTP Server information must be entered in Oracle Enterprise Manager.

> **Note:** If the SMTP information is not set correctly, notifications will not be sent.

1. Within Oracle Enterprise Manager, navigate to Setup > Notification Methods.
2. Set the Outgoing Mail (SMTP) Server value.
3. Enter additional information as needed.

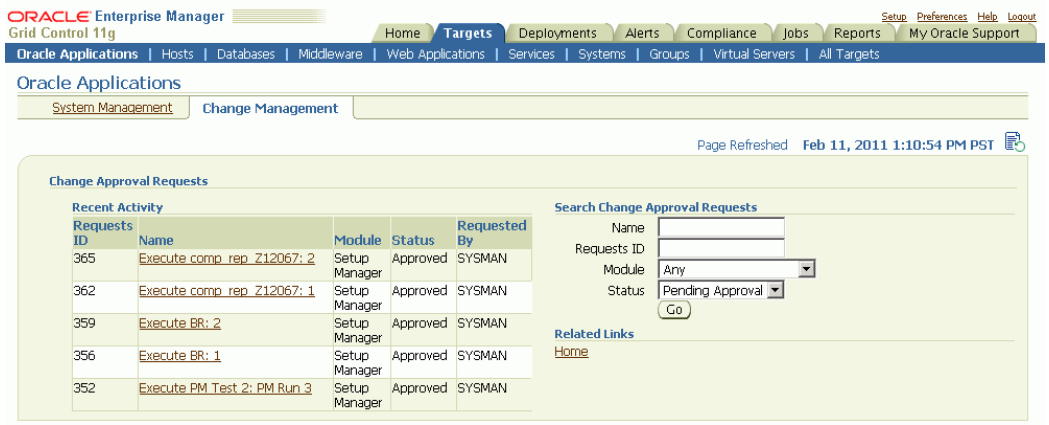
Change Approval Framework

The Change Approval Framework helps ensure that all changes done using any of the products of Application Change Management Pack for Oracle E-Business Suite (ACP) go through a change approval mechanism. This change control mechanism entails one level of approval for any change that results in a configuration or code change of an Oracle E-Business Suite instance. The Change Approval Framework provides tracking and auditing with respect to the change control requests and historical data. A common change control tracking dashboard is provided for tracking all change requests within ACP. Auto-approvals are possible if the requestor is a Super Administrator or has the respective approver role with approval target access.

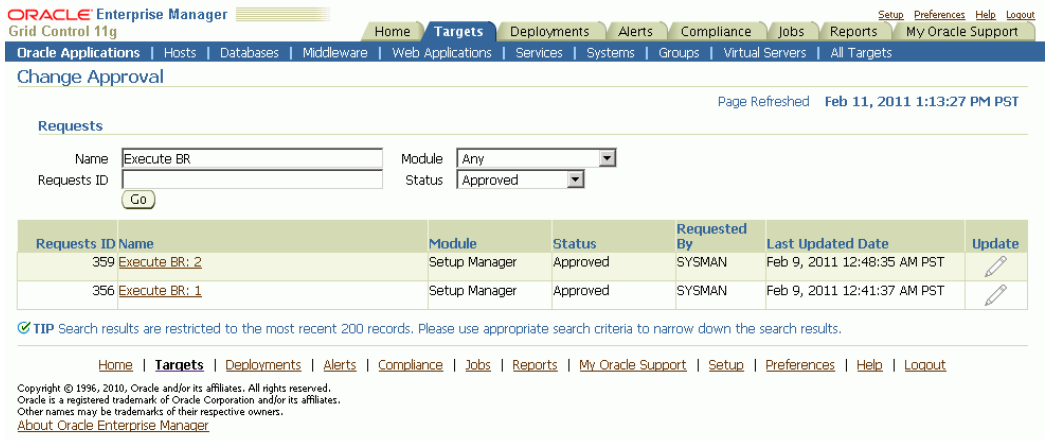
All critical changes within Patch Manager, Setup Manager, and Customization Manager would need to go through the change control mechanism. These changes can be outlined as below for the respective products:

- Customization Manager - Registration of a new custom application
- Customization Manager - Release and Obsoletion of a customization package
- Patch Manager - Application of one or more patches over one or more Oracle E-Business Suite instances
- Setup Manager - Execution of project involving one or more target Oracle E-Business suite instances

The main Change Management tab lists recent activity for change approval requests:



Click on the Home link to see the Change Approval Dashboard.



The Change Approval Dashboard for monitoring a change request originating from any of the above products is provided for users with approver roles. Only users with these approver roles are able to access the Change Approval Dashboard. These roles are:

- EBS_PM_APPROVER for Patch Manager
- EBS_CM_APPROVER for Customization Manager
- EBS_AZ_APPROVER for Setup Manager

Also, the requests view shown in the Change Approval Dashboard would be limited according to the role of the user. For instance, a user with EBS_CM_APPROVER role would only see Customization Manager-related pending requests.

The Change Approval Dashboard allows users with the proper roles to perform the following:

- Search for requests as per role access.

- Approve or reject a given change control request after viewing details.
- Track heuristic data with respect to change control requests for auditing purposes using "Related History".

Approver Roles

The following approver roles are supported:

- EBS_CM_APPROVER: This role is designated for Customization Manager approvers. Users who have this role assigned with the appropriate target privileges can approve/reject change approval requests to:
  - Release/Obsolete a given package
  - Register a custom application on a given instance
- EBS_PM_APPROVER: This role is designated for Patch Manager approvers. Users who have this role assigned with the appropriate target privileges can approve/reject requests for execution of a given patch run.
- EBS_AZ_APPROVER: This role is designated for Setup Manager approvers. Users who have this role assigned with the appropriate target privileges can approve/reject requests for execution of a given project.

Also, you can enable fine-grained control over the target access for approvals. The property "targetLevelPrivilegeForApproval" defines the minimum target privilege required for approval role user. By default it is same as that of normal user (VIEW). However, the valid Values are VIEW, OPERATOR, FULL. For instance, if this property is set to "OPERATOR", then only users with OPERATOR/FULL privileges over the target would be considered as valid approver for the given target.

User Scenarios in Change Approval

In the scenarios that follow, users can be of the type "Administrator" or "Super Administrator". The standard ACP user roles are EBS_PM_ROLE, EBS_CM_ROLE, EBS_AZ_ROLE, as described elsewhere. The approver roles, which are needed to access the Change Approval Dashboard are EBS_PM_APPROVER, EBS_CM_APPROVER, and EBS_AZ_APPROVER.

Approvals for a module are enabled via a property ("enableApproval_<module>") in the **amp.properties** file, where <module> could be PM, CM, or AZ:

For example, enable approvals for Customization Manager with the following setting:

```
enableApproval_CM=Y
```

For Patch Manager, you would enable approvals with the following:

```
enableApproval_PM=Y
```

For Setup Manager, you would enable approvals with the following:

```
enableApproval_AZ=Y
```

The following user scenarios are possible:

1. User is of the type "Administrator" and has only one or more of the standard ACP user roles, and enableApproval_<module> is 'N':
   - enableRoleBasedSecurity is 'Y' - The user has access to only the respective modules based on his/her standard ACP role(s). All requests by this user are 'Auto Approved', but the user has no access to the Change Approval Dashboard.
   - enableRoleBasedSecurity is 'N' - The user has access to all the modules' user interfaces. All his/her requests are 'Auto Approved', but the user has no access to the Change Approval Dashboard.
2. User is of type "Administrator" and has only one or more of the standard ACP user roles, and enableApproval_<module> is 'Y':
   - enableRoleBasedSecurity is 'Y' - The access to only respective modules based on his/her standard user role(s). All requests must be manually approved. The user has no access to the Change Approval Dashboard.
   - enableRoleBasedSecurity is 'N' - The user has access to all the modules' user interfaces. All his/her requests must be manually approved, and the user has no access to the Change Approval Dashboard.
3. User is of type "Administrator" and has one or more approver role(s), and enableApproval_<module> is either 'Y' or 'N':
   - enableRoleBasedSecurity is 'Y' and enableApproval_<module> is 'N' - The user has access to only the respective modules based on his/her standard ACP role(s), including the module for which he/she has the approver role. All requests are 'auto approved'. However, the user has access to the Change Approval Dashboard, although he/she can view only requests for the module for which he/she has the approver role.
   - enableRoleBasedSecurity is 'N' and enableApproval_<module> is 'Y' - The user has access to all the modules. All his/her requests for the module need to be manually approved. However, the user has access to the Change Approval Dashboard, although he/she can view only requests for the module for which he/she has the approver role.
4. User is of type "Super Administrator" and enableApproval_<module> is either 'Y' or 'N':
   - All change requests that are submitted are "auto-approved" and the related

history shows the audit trail for the same.

5. User is of type "Administrator" and enableApproval_<module> is 'Y' and the user has the respective approver role and approval target access to ALL targets associated with the change request.
   - All change requests submitted are "auto-approved" and the related history shows the audit trail for the same.

6. User is of type "Administrator" and enableApproval_<module> is 'Y' and the user does not have the approver role for the given module:
   - All change requests submitted need to be manually approved by a user with the approver role for the given module and approver target access for all targets involved in the change request. However, for the release/obsoletion of a package for Customization Manager, approver target access is not required. The related history shows the audit trail for the given change approval request.

Diagnostic Tests

Oracle Application Change Management Pack for Oracle E-Business Suite includes diagnostic tests that can be run to ensure your system is set up correctly to use the pack's features. These tests are run using the Pack Diagnostics link under Related Links on the Oracle Applications page. For more information on using the Pack Diagnostics link, see: Running Pack Diagnostics Tests, *Oracle Application Management Pack for Oracle E-Business Suite User's Guide*.

2

Patch Manager

Introduction

Patch Manager allows you to deploy patches across Oracle E-Business Suite instances from a single console. You can create a patch run definition and run it multiple times on multiple instances and you can copy a patch procedure and modify it to suit your business needs. Also, you can easily access details on patch runs, correct errors if necessary, and continue the patch runs.

Key Features

Patch Manager

- Automates the deployment patches across multiple Oracle E-Business Suite instances.
- Utilizes most common Oracle E-Business Suite Applications DBA (AD) Utilities.
- Utilizes patching best practices and reduces downtime.
- Integrates with Customization Manager to deploy custom packages.
- Supports downloading patches directly from My Oracle Support for deployment.
- Supports deployment of patches that were previously downloaded to a central location on the Oracle Management Server.
- Supports National Language Support (NLS) patches.
- Provides a complete history of all patch deployments.
- Provides a customizable patch deployment procedure.

- Leverages Oracle Enterprise Manager infrastructure for distributed processing.

With Patch Manager, you can

- View the readme of a patch with just one click.
- Schedule deployments based on the target's time zone.
- Schedule deployments of patches immediately or in the future.
- Perform a complete series of pre/post health checks when deploying patches.
- Track and monitor all patching deployments "In Progress", "Scheduled", "Saved" and "Completed" from a centralized console.
- Send and receive alert notifications for patch failures and completion.

Diagnostic Tests for Patch Manager

You can run diagnostic tests on your system in preparation for running Patch Manager procedures. These tests can be accessed from the Diagnostics dashboard, available from the Pack Diagnostics link on the Oracle Applications page. For more information on running diagnostic tests, see: Running Pack Diagnostics Tests, *Oracle Application Management Pack for Oracle E-Business Suite User's Guide*.

The following tables list tests related to Patch Manager:

Generic Diagnostic Tests for Patch Manager

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	Check permissions for OMS Stage directory	Determine if a stage directory is defined on the OMS. Determine if the owner of has read/write permissions to that directory.	Expected results are: the OMS Stage Directory Location, with the OMS user with read/write permissions.
EMGC	Check Patch Manager Stage directories	Verify if the amp.properties file (located in $ORACLE_HOME/sysman/config on the OMS) has proper definitions for Patch Manager Stage directories	Refer to Running a Patching Procedure, page 2-8 for instructions on completing this step.

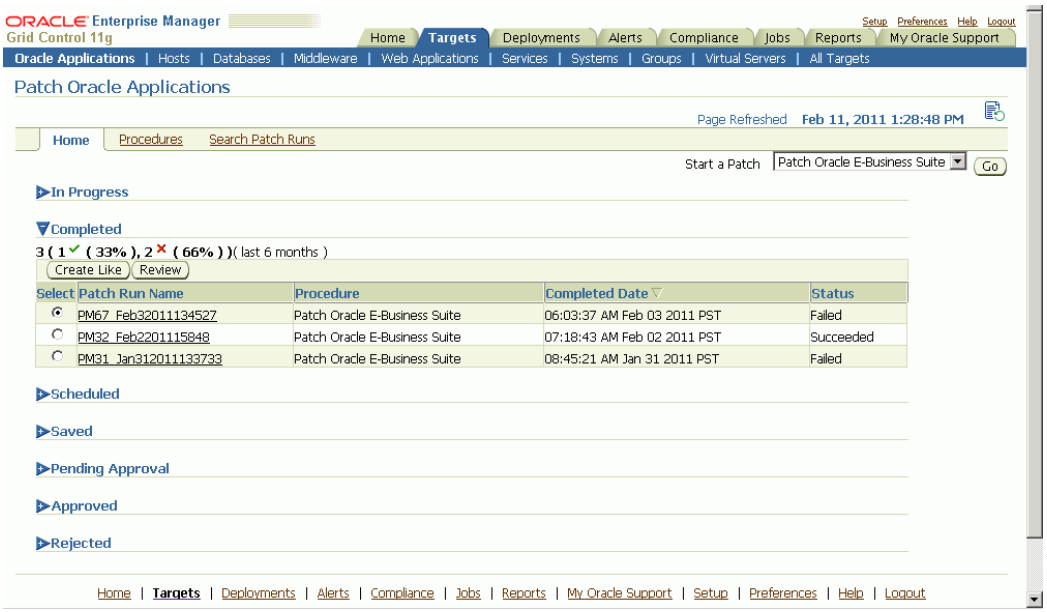
Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	CheckMetalinkCredentials	Verify if username/password credentials are entered for My Oracle Support.	Refer to the Oracle Enterprise Manager documentation for instructions on completing this step.
EMGC	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	
EBS	Check for EBS CPU Count	Verify that the target Oracle E-Business Suite system's CPU Count is greater than zero (0).	If there is not a valid snapshot, contact Oracle Support.
EBS	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	

User-Specific Diagnostic Tests for Patch Manager

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	CheckPackRole	Verify if the Oracle Enterprise Manager user (that is, the user executing the diagnostic test) has the required role to execute Patch Manager functionality. The role is EBS_PM_ROLE, and must be granted to the Oracle E-Business Suite user in the setup process, via Roles and Administrators.	Create users as required. See: Creating Roles, page 1-4.

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	Check if approval is enabled and preferred credentials exist.	Verify if the Change Approval Framework is enabled in the `amp.properties` file (located in `$ORACLE_HOME/sysman/config` on the OMS).	If approval is enabled, ensure preferred credentials are set for the target Oracle E-Business Suite system(s).
EMGC	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	
EBS	Check if EBS Snapshot in OMS Repository is valid	Verify if the Oracle E-Business Suite snapshot in OMS Repository is valid.	A snapshot shows data about a system for a point in time. If the snapshot is invalid, navigate to Targets > Oracle Applications > <target system name>. Expand "Application Nodes". For each node, click on the Report icon and click the **Refresh** button on the View Configuration page.
EBS	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	

Patch Manager Home



The Patch Manager Home tab lists your patch runs according to their status: Completed, Scheduled, Saved, Pending Approval, Approved, and Rejected.

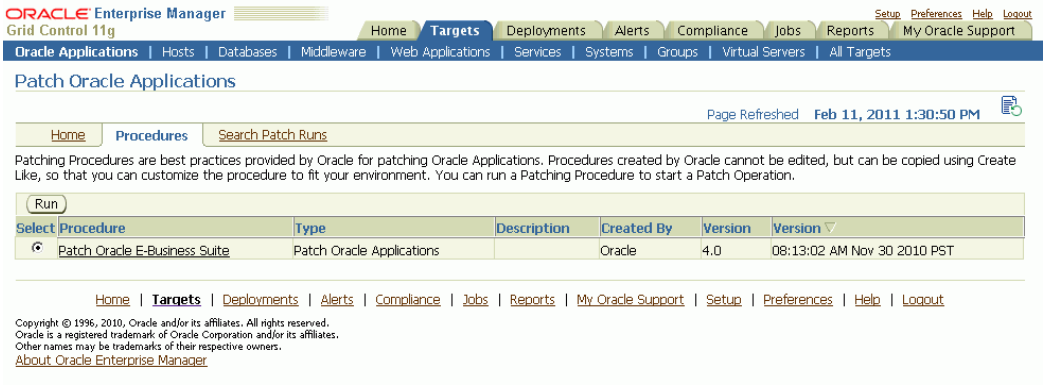
You can click on a Patch Run name to view its details. See: View a Patch Run, page 2-22
.

To start a new patch run, you can select "Patch Oracle E-Business Suite" or your customized patching procedure from the "Start a Patch" list.

To copy an existing patch run, in order to change any aspect of the patch run or to run an identical run due to changes in the patch or target, select the Patch Run you wish to copy and click the **Create Like** button.

To view the details of an existing patch run, select the patch run in the Patch Manager Home tab and click the **Review** button.

Patching Procedures



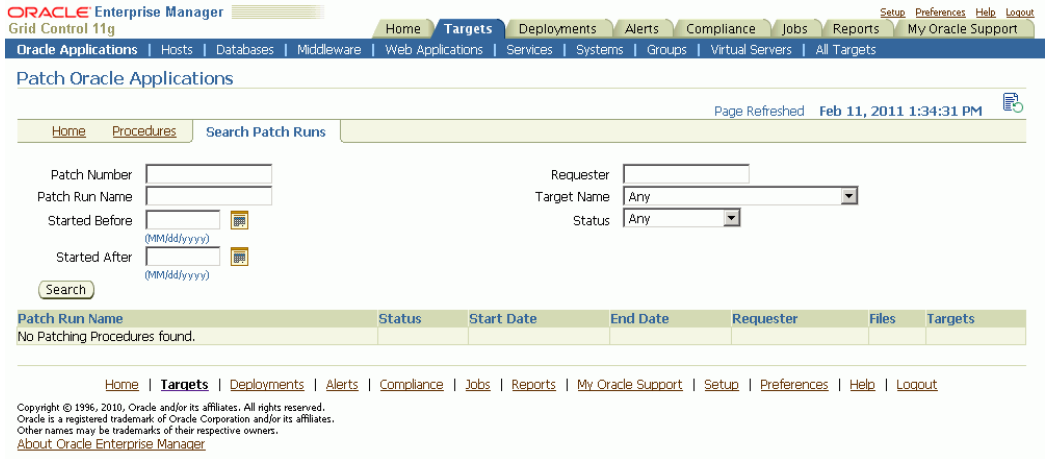
The Procedures tab lists the available patching procedures. You cannot edit procedures created by Oracle, but you can copy them using the Create Like feature (accessed from Procedures Tab by clicking on the name of the procedure and then choosing Create Like), and then customize the copies to fit your environment.

To run a patching procedure, select the procedure from the table and click **Run**.

> **Important:** During the patching Deployment Procedure the system will try to black out the targets associated with an Oracle E-Business Suite system. In order for the blackout to occur, the user submitting the patch run must have been granted the 'operator' or 'blackout target' target privilege for the Oracle E-Business Suite targets. Below is a list of Oracle E-Business Suite targets that will be blacked out if the system detects this user has the authority to black them out:
>
> - Concurrent Processing Service
> - Forms Based Applications Service
> - Internal Concurrent Manager
> - Listener
> - Oracle Applications Infrastructure Service
> - Oracle Applications Service
> - Oracle Applications System
> - Oracle Concurrent Manager
> - Oracle E-Business Suite Custom Objects

- Oracle E-Business Suite Infrastructure
- Oracle E-Business Suite Nodes System
- Oracle E-Business Suite Patch Information
- Oracle E-Business Suite System
- Oracle E-Business Suite Workflow
- Oracle Workflow Agent Listener
- Oracle Workflow Background Engine
- Oracle Workflow Notification Mailer
- Self Service Applications Service
- Workflow Service
- Database Instance
- Host

Searching for a Patch Run



Use the Search Patch Runs tab to search for particular patch runs.

The search criteria are:

- Patch Number - Enter the number of a patch applied in the patch run.

- Patch Run Name - Enter the name of the patch run entered in the Patch Run Details page.
- Started Before - Enter the date before which the patch run was started.
- Requester - Enter the user name of the requester.
- Target Name - Enter the name of the target in the patch run.
- Started After - Enter the date after which the patch run was started.
- Status

Patch runs that meet the search criteria are shown in the search table. Click on the patch run name link to view details of the patch run.

Running a Patching Procedure

Oracle provides you with patching procedures that are best practices for patching Oracle E-Business Suite. Procedures created by Oracle cannot be edited, but they can be copied using the "Create Like" feature so that you can customize the procedure to fit your environment.

To run a patch procedure, or create a patch run, you can do one of the following:

- From the Home tab for Patch Manager, choose "Patch Oracle E-Business Suite" or your customized patching procedure from the "Start a Patch" list and click the **Go** button.
- Navigate to the Procedures tab, select a procedure, and click the **Run** button.
- From the Deployments tab, Deployment Procedures link, select a procedure of type "Oracle Applications Patching Procedure". Click Schedule Deployment.

Note that you can also copy an existing patch run. From the Home tab, select the patch run you wish to copy and click the **Create Like** button.

> **Note:** In the Patch Run interview you can use the **Back** button to go back to a previous step; however, entered values on the current page will be lost.

Prerequisites

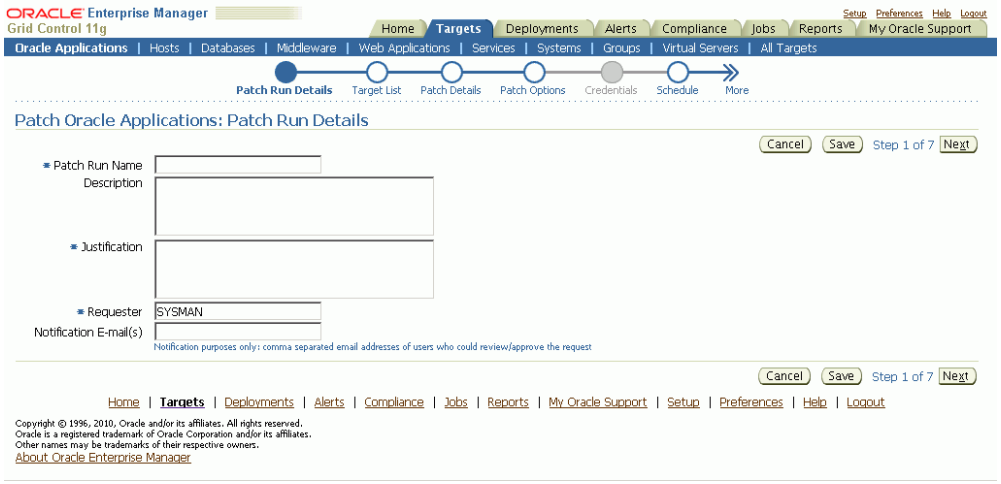
❒ You have the option of downloading an Oracle patch directly from My Oracle Support through Patch Manager or downloading the patch first to a central location on the Oracle Management Server (OMS) and then using Patch Manager to deploy

it. If you choose to download the patch to an OMS location, do that first and set the following properties in the amp.properties file:

```
metalinkEnabled=N
omsPatchStageDir=<directory to which you downloaded the patch>
```

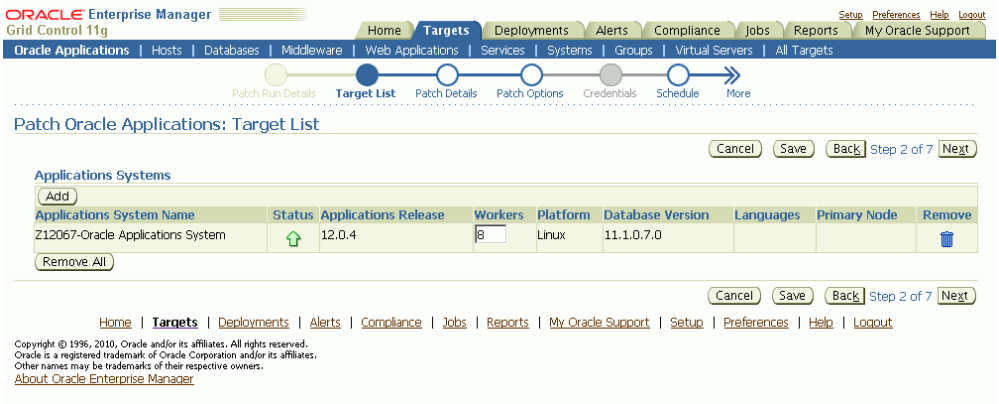
To create a Patch Run:

1. On the Patch Run Details page, enter the details below.



- Patch Run Name - Enter a user-friendly name for the patch run. You can search on this name later on.
- Description
- Justification
- Requester - The default value is the user name with which you are signed in. You can change this to another name.
- Notification E-mail(s)

2. On the Target List page, enter the target system(s) to which the patch(es) will be applied.



> **Note:** If an Oracle E-Business Suite system has a shared APPL_TOP, a dropdown list is available so you can choose the primary node for the system. The node chosen on this page will determine which node is used to run adpatch, to run any other AD utilities specified, and to stage patches. Make sure you choose the primary node in this case.

To search for available targets, click the Add button under "Applications Systems". The List of Values (LOV) window displays the target names and their release levels. Select the desired targets from this window. Note: All targets selected must be at the same release level.

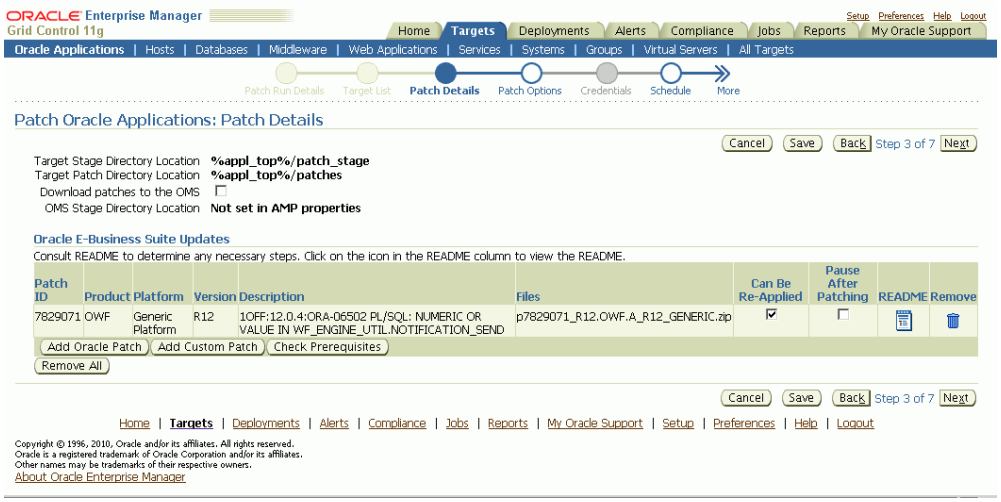
Once selected, the system name will appear in the Target List with the following:

- Applications System Name - The name of the system.
- Status - The status of the system (Up or Down).
- Applications Release - The release level of the applications system.
- Workers - The number of workers available on the system. Note that you can change this value.
- Platform - The type of platform on which the applications system is running.
- Database Version - The release level of the database for the applications system.
- Languages - The languages installed on this system. Note: Newly installed languages may not show up yet if collections haven't run.
- Remove - Click this icon to remove this applications system from the Target List.

You can click the **Remove All** button to remove all applications systems from the

Target List.

3. In the Patch Details page, select the details for the patch(es) to be applied.



The following are shown on the Patch Details page:

- Target Stage Directory Location - The directory to which zipped patches are downloaded.

- Target Patch Directory Location - The directory to which patches are unzipped, and from where the patches are applied.

If the target's stage directory location is set in the amp.properties file, that will be shown here. In the amp.properties file (in the $ORACLE_HOME/sysman/config directory), the following properties can be set to specify the target's stage directory and the target's patch directory, respectively.

```
targetPatchStageDir=%appl_top%/patch_stage
targetPatchDir=%appl_top%/patches
```

Use the option "Download patches to the OMS" if you want to download the patch(es) to the OMS first.

> **Important:** You must have at least 'view' target privilege on the agent(s) of the target hosts. For example, say you are patching an Oracle E-Business Suite system that contains 3 middle tiers. You must have the 'view' privilege (or greater) on the agents of these 3 middle tiers.

The OMS Stage Directory Location is another property in the same amp.properties file as above, and can be used to specify the OMS's stage directory. If specified in the amp.properties file, this directory will be the default for the OMS Stage Directory Location field.

```
omsPatchStageDir=/tmp
```

> **Note:** If you want to have the "Download patches to the OMS" option checked by default, you can set the property 'downloadPatchToOMS' to 'true' in the amp.properties file. For example:
>
> ```
> downloadPatchToOMS=true
> ```

Enter the Software Updates you wish to apply. Use the **Add Oracle Patch** to add a patch from Oracle, and use **Add Custom Patch** to add a custom patch created through Customization Manager.

> **Important:** Before you deploy a custom patch in Patch Manager, you should run the Instance Comparison Report to compare the technology stack properties of the package with those of the instance to which the package is being deployed. Patch Manager does not stop the deployment of a patch if the technology stack properties are not compatible, so you should make your best judgement based on the Instance Comparison Reports.

To add an Oracle patch:

1. Select **Add Oracle Patch.**

2. In the Search and Select window, Patch Oracle E-Business Suite, if you are downloading a patch or patches from My Oracle Support, you can search based on the following criteria:

   - Patch Number

   - Platform - "Any" returns patches for all platforms, or Generic if patch is not port-specific.

     If you are searching for a patch for a specific platform, your search results will return a Generic-platform patch if no platform-specific patch exists.

   - Language - "All installed languages" will return the base (Generic or platform-specific) patch plus any language patches (if they exist) for every language installed on the selected targets. Choosing a specific language from the drop-down list will return its language patch if it exists plus the base patch.

   You can also select **Simple Search** to search simply on the Patch Number.

   The search results will include the following for each patch found:

   - Patch Number

- Platform
- Version
- Language
- Description
- Superseded Patch

If you plan to deploy patches from an OMS location, the Search window will provide a List of Values based on the patches located in the directory specified for the 'omsPatchStageDir' property in the amp.properties file.

Choose the desired patches and click **Select** to return to main window.

> **Note:** You must retrieve the desired patch through the Search and Select: Add Oracle Patch window and provide the stage and patch directory location in this step, even if you have already downloaded the patch to the stage location (the process will not re-download the patch, however).

To add a custom patch:

1. Select **Add Custom Patch.**
2. In the Search and Select window, you can search based on the following criteria:
   - Patch Number
   - Patch Name
   - Description
   - Created By
   - Version
   - Language

   The search results will include the following for each patch found:
   - Patch Number
   - Patch Name
   - Version

- Language
- Description
- Created By

Choose the desired patches and click **Select** to return to main window. A listing of patches is given.

A Merge Patches check box appears at the top of the table if more than one patch has been selected.

> **Note:** You should merge AD patches separately from non-AD patches.

The following appears for each patch in the table.

- Patch ID - The patch number.
- Product - The short name of the owning product.
- Platform - The platform for the patch.
- Version - The version to which the patch is valid.
- Description - The description of the patch.
- Files - The files to be downloaded for the patch.
- Password - A password is necessary for downloading controlled-release patches. Passwords expire after 21 days, so for scheduled deployments further in the future make sure you have already downloaded the patch and staged it.
- Order - The order the patches should be applied. Will only be displayed when you have more then one patch selected and don't have merge patches check box checked.
- Can Be Re-applied - You can check this box if the patch can be re-applied with no ill effects. In the case of testing, it might be necessary to apply the same patch repeatedly, in which case this box should be checked.
- Pause After Patching - Check this box if you will need to perform post-patching steps (such as running a script) immediately after this patch is applied. This option does not appear when the Merge Patches check box is checked.

  Note that this option causes the Deployment Procedure job to halt with the status of "Failure" so that the job is paused for post-patching steps. Once you

have performed your required tasks, select the **Retry** button within the EM Console.

- README - Click on this icon to review the README file for the patch.
- Techstack Report - Only applicable to custom patches. This report is described in the section on Instance Comparison Reports in Creating a Report, page 3-37.
- Remove - If you want to remove this patch from the list, click this icon.

Finally, you can check for prerequisites for your patches using the **Check Prerequisites** button.

4. Specify Patch Options.

Specify details for how the patch should be applied.

For more information on many of these options, see: *Oracle E-Business Suite Patching Procedures* and *Oracle E-Business Suite Maintenance Utilities*.

Patching Procedure Options include the following:

- Create Target Backup Before Patching - Adds a pause after system is prepared for backup allowing for a manual backup.
- Create Target Backup After Patching - Adds a pause after patch is applied and database is brought back down to allow for a manual backup.
- Enable HotPatch Mode - Patch will be applied without shutting down the applications or database, disabling archive mode, or enabling maintenance mode.

In HotPatch mode, AutoPatch applies a patch regardless of whether the Oracle E-Business Suite system is in maintenance mode. Maintenance mode controls the system downtime period by managing user login sessions.

> **Note:** In HotPatch mode, if the patch application fails, the process will still perform/execute the blackout steps in the "Patch Oracle E-Business Suite" procedure. The blackout notifies other Enterprise Manager administrators that a maintenance procedure is being performed on the environment.

- Disable Archive Mode - Issues an 'alter database noarchivelog' command.
- Pause Before AutoPatch Steps - Adds a pause before AutoPatch (adpatch) is run to allow for any necessary manual preparation.

  AutoPatch (adpatch) is the Oracle Applications DBA (AD) tool that applies patches to an Oracle E-Business Suite system.
- Pause After AutoPatch Steps - Adds a pause immediately after patch is applied to allow for any necessary manual activities.

  > **Note:** This option is not the same as the "Pause After Patching" option in the Patch Details page (Step 3). The "Pause after Patching" step, performed at the individual patch level, causes the Deployment Procedure job to halt so that manual steps can be done immediately after that patch is applied. The "Pause After AutoPatch Steps" option introduces a manual step into the Deployment Procedure which causes the Deployment Procedure to pause. This manual step can be used to do manual work or it can be modified in a custom procedure to run an automated script.

- Run AutoConfig - Run AutoConfig, the AD tool that manages configuration changes in an Oracle E-Business Suite system.
- Pause After AutoConfig Test Mode Step - Adds a pause after AutoConfig is run in test mode to allow for validation of changes.

AutoPatch Options include the following:

- Enable Prerequisite Patch Checking - Prevents you from applying a patch without first applying all required prerequisite patches.
- Disable JSP Compilation - Tells adpatch not to automatically compile

out-of-date JSP files (nocompilejsp command).

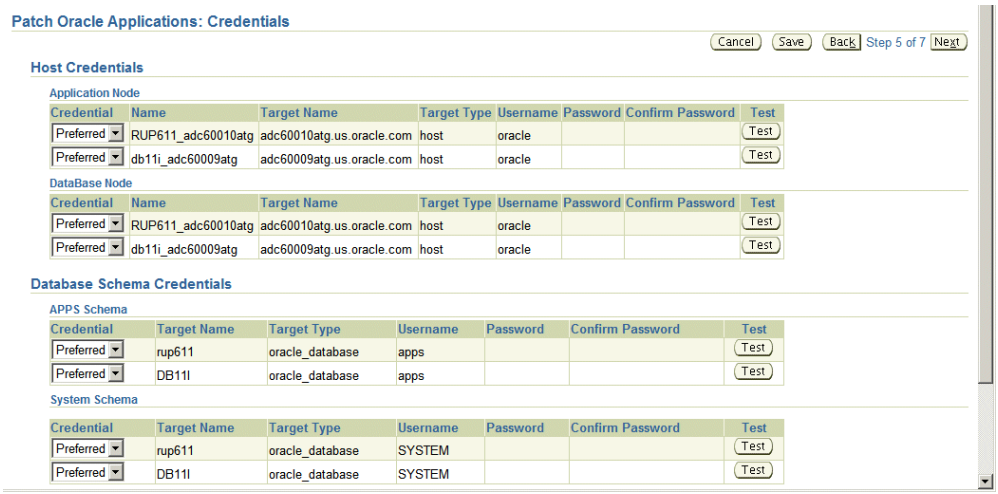
- Disable Invalid Objects Compilation - Tells adpatch not to compile invalid objects (nocompiledb command).
- Enable Schema Validation - Tells adpatch to connect to all registered Oracle E-Business Suite schemas at the start of the patching process.
- Disable File Generation - Tells adpatch not to run commands normally found in generate driver (nogenerateportion command).

AD Administration Options are listed below. These tasks are done to manage database objects (database objects or data in the database related to Oracle E-Business Suite). For example, a patch might add new menu entries or change the setup of a flexfield.

- Generate Message Files - Creates new message files after the messages have been loaded into the database. The README should instruct you when this is necessary.
- Compile APPS Schema - Compiles the APPS schema.
- Compile Menu Information - Compiles menus.
- Compile Flexfields - Compiles flexfields.
- Recreate Grants and Synonyms for APPS Schema - Recreates grants and synonyms for the APPS schema.

5. Enter Credentials.

> **Note:** If the change approval feature is turned on for Patch Manager, the system will skip the credentials page altogether in the interview.



Enter credentials as required on this page. Credentials may be required for the following:

- For the host, the application node and database credentials.
- For the database schema, the APPS schema and system schema credentials.

You can choose whether to use the Preferred Credentials or to enter in new credentials here. Preferred credentials can be entered by selecting the **Preferences** global link and selecting "Preferred Credentials". Relevant credentials are listed for "Oracle E-Business Suite".

For each password, you are required to confirm your entry. You can test your entries on this page as well. Note that if the target is down, then the test result will appear as a failure.

For the application node and database node credentials on the host, the following is shown:

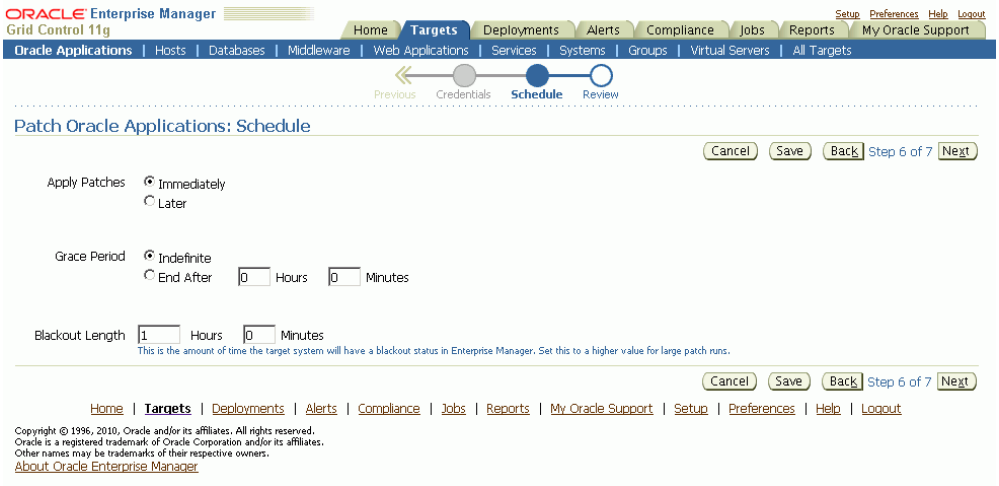
- Credential - Defaults to "Preferred" if preferred credentials exist. You can choose to use the preferred credentials or override them with entries on this page. If you choose to use the preferred credentials, the Password and Confirm Password fields are disabled. You can still test the credentials from this page. If you choose the Preferred credentials option and they do not exist you cannot go to the next page.
- Name - Name of the node.
- Target Name - Name of the target.
- Target Type - Type of target, for example, "host".
- Username - The username with which to connect.

- Password - Enter the password.
- Confirm Password - Confirm your password entry.
- Test - Use the **Test** button to validate your credentials. Note: This test is the only validation of credentials until the Deployment Procedure runs. Navigating to the next page does not validate in order to provide the ability to schedule a patch for an environment that is currently down.

For the APPS schema and system schema credentials for the database, the following is shown:

- Credential - You can choose to use the preferred credentials or override them with entries on this page. If you choose to use the preferred credentials, the Password and Confirm Password fields are disabled. You can still test the credentials from this page.
- Target Name - Name of the target.
- Target Type - Type of target.
- Username - The username with which to connect.
- Password - Enter the password.
- Confirm Password - Confirm your password entry.
- Test - Use the **Test** button to validate your credentials.

6. Specify the Schedule for the patch application.



You can choose to apply the patches immediately or at a later date.

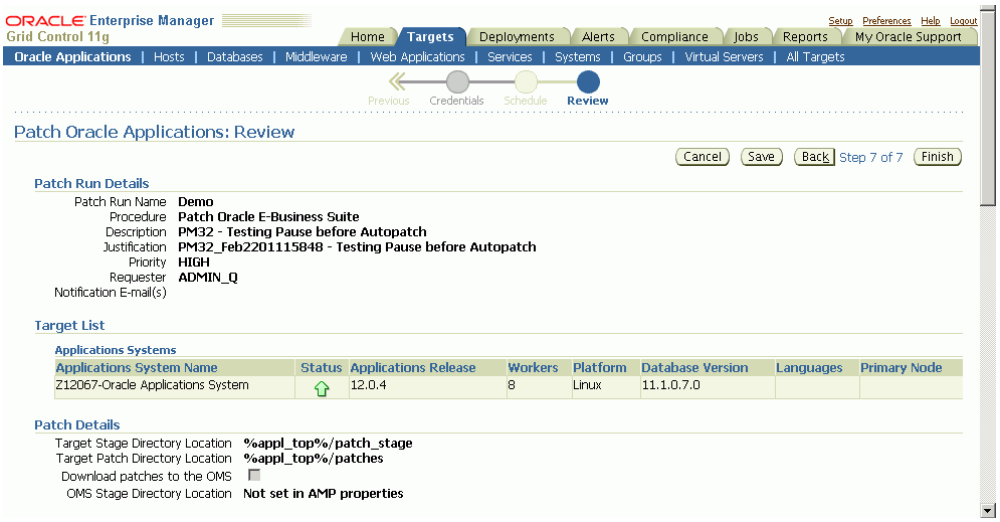
If you choose Immediately as the schedule type to have the patches applied immediately.

If you choose Later, you can specify the time and date you wish to have the patches applied. Provide the Time Zone, Date and Time.

You can specify a Grace Period as well. If you choose an Indefinite Grace Period, then if for some reason the patches cannot be applied at the immediate time, the system will try to apply them as soon as possible, and will keep trying indefinitely. If you provide a defined Grace Period by specifying the system to end the Grace Period after your given hours and minutes, the system will not try to apply the patches after that amount of time.

The Blackout Length indicates the amount of time the target system will have a blackout status in Enterprise Manager. Set this length to a higher value for large patch runs.

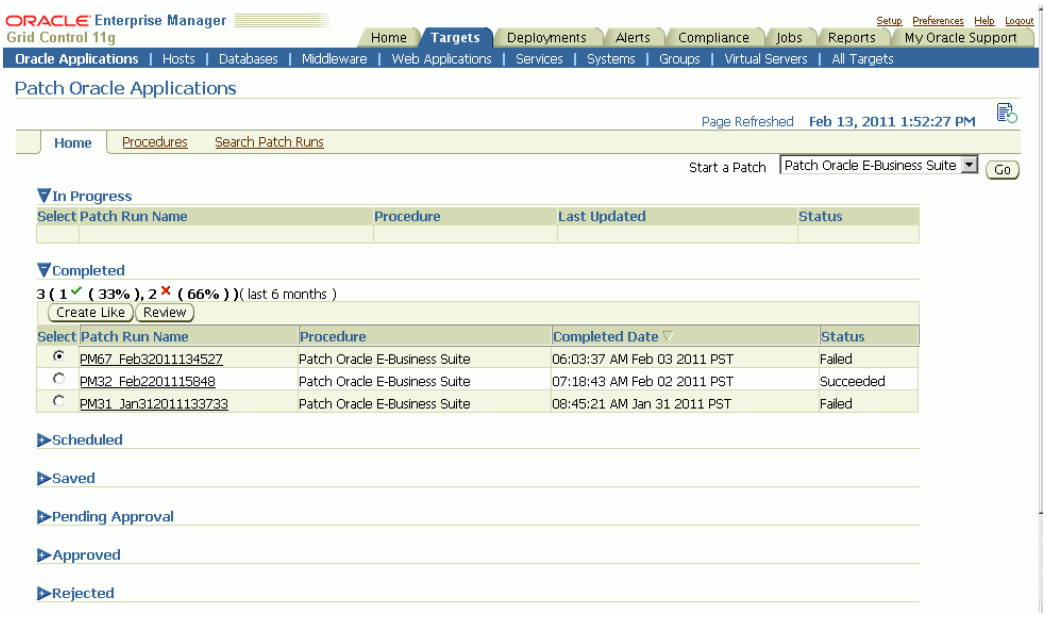
7. Review your patch run.



The Review Page lets you review your patch run details, target list, patch details, patching options, credentials, and schedule.

Copying a Patch Run

You might want to copy an existing patch run to change some aspect of it or to rerun it due to changes in the patch or target. To do this, select the patch run in the Patch Manager Home tab and click the **Create Like** button.



The system will take you through the patch run creation pages as if you were creating a new patch run, but with most values copied from the original patch run. Please note the following:

- The Patch Run Name defaults to the original name prefixed with "Copy of" and appended with the date.
- The Requester field has a default value of the original requester's user name. Change this value as appropriate.
- The new patch run would be scheduled to run immediately by default, because the original run may have been scheduled for a now past date and time.

Viewing a Patch Run

To view the user-entered details of a patch run, select the patch run in the Patch Manager Home tab and click the **Review** button.

You can navigate to the details of the deployment of a patch run in one of several ways:

- From the Patch Manager Home tab, click on the Patch Run name link for the patch run.
- From the search results on the Search Patch Runs tab, click on the Patch Run name link.
- From the Deployments tab, click on the Deployment Procedures link, then the Procedure Completion Status Tab. Click on Run name.

The above navigation paths take you to the Status page for the procedure. The Status page is part of the Oracle Deployment Manager. Refer to the Oracle Enterprise Manager online help for more information on Oracle Deployment Manager.

Information on this Status Page includes when the patch run was started and completed and each step in the procedure and its status. You can also drill down in each step to view logging information, errors, and so on.

Extending Patch Manager Deployment

You can extend Patch Manager procedures using the Deployment Procedure Manager using the steps below. In these steps you create a copy of an existing procedure and extend it in the Deployment Procedure Manager.

1. From the Patch Manager Procedures tab, click on the name of a procedure.
2. From the View Procedures page, click the **Create Like** button.
3. Rename the copy of the original procedure as desired. You can make other updates here as well.
4. Save your new procedure.
5. Upon saving, the Deployment Procedure Manager Procedures tab appears. Your new procedure is listed first. You can select this procedure and click **Edit** to add steps, choose notifications, or make other changes. For example, you might want to add steps to a copy of the shipped Patch Oracle E-Business Suite procedure to automate the following steps: Pre-Patch Application Tier Backup, Post-Patch Database Tier Backup, or Post-Patch Application Tier Backup.

For more information on the Provisioning Manager and the Deployment Procedure Manager in Oracle Enterprise Manager, see the following:

- *Oracle Enterprise Manager Concepts*
- *Oracle Enterprise Manager Grid Control Quick Start Guide*
- Oracle Enterprise Manager online help

Logging, Health Checks, and Troubleshooting

This section describes logging, health checks, and troubleshooting features within Patch Manager.

How to View the AD Patch Log

To view the AD Patch Log for a patch run, follow these steps:

1. Navigate to your patch run using any method in "View a Patch Run".
2. Click on the Patch Run Name.
3. Click on the adpatch step (Apply Patch).
4. Click on Job Status.
5. Expand the bottom task.
6. Click on Step: Execute command as normal user.

How to Skip Failed Workers

1. Navigate to your patch run using any method in "View a Patch Run".
2. Click on the Patch Run Name.
3. Click on the adpatch step (Apply Patch).
4. Select the check box for the failed target.
5. Click Update and Retry.
6. Change the parameter "restart_workers" to YES and click Retry.

   Note: These steps are also listed in the AD Patch Log when you have a failed worker.

Troubleshooting Patch Manager Deployment Failures

1. Navigate to your patch run using any method in "View a Patch Run".
2. Click on the Patch Run Name.
3. Click on the Job Details tab.
4. Click on Job Name.
5. Click on the Step Name that failed.
6. The resulting page displays the output log with any errors encountered. Note that this page only lists job failures. You can also review the Oracle Management Server (OMS) and drill down into any deployment procedure step.

Health Checks

Patch Manager validates these servers shutting down and starting up: listener, Forms server, Apache web services, and Internal Concurrent Manager.

3

Customization Manager

Introduction

Customization Manager automates the process of packaging, releasing and reporting customizations for a single Oracle E-Business Suite instance or multiple Oracle E-Business Suite instances. It provides capabilities to integrate with third-party source control repositories to access customizations that need to be packaged. It also integrates with Patch Manager for deployment of custom patches to one or more Oracle E-Business Suite instances.

Customization Manager also provides a dashboard to manage custom applications across Oracle E-Business Suite instances. It provides capabilities to not only register and validate custom applications across instances, but also a drill down to the custom objects associated with any registered custom application on a given instance. Registration and validation of the custom application ensures that custom packages associated with the custom application can be deployed on the given Oracle E-Business Suite instance.

Key Benefits

- Automates creation of customization packages that are deployable with Patch Manager or standard Oracle E-Business Suite Applications DBA (AD) Utilities
- Provides repository to manage/catalog customizations.
- Validates custom code against software coding best practices using a standards checker.
- Integrates with most source control systems.
- Supports National Language Support (NLS) patches.
- Generates reports on customization packages or manifests in these formats: rich text

format (RTF) for Microsoft Word, PDF, or Microsoft Excel.

- Leverages Oracle Enterprise Manager infrastructure for distributed processing.
- Provides an interface to manage custom applications across the enterprise.

File Types

Customization Manager allows you to package custom files of a variety of file types, including the following:

- Oracle Application Object Library (FND) objects - menus, responsibility, concurrent programs, and so on
- Forms
- Reports
- Database objects - views, tables, triggers, packages, and so on
- Oracle Application Framework components

For more information on file types, see the appendix.

For more information on making customizations, see the *Oracle E-Business Suite Developer's Guide* and the *Oracle Application Framework Developer's Guide*.

Setup Steps for Customization Manager

- Ensure that the Preferred Credentials are set for each user as described in the first chapter.
- Ensure that "amp.properties" file under $OMS_HOME/sysman/config has the property called 'stageDir' defined with value of the name of the folder that is to be used as a stage with read/write permissions. For example,

  ```
  stageDir=/tmp
  ```

- Configure the stage directory for the Oracle E-Business Suite Infrastructure for the particular instance you will use for building patches that contain Java or PLD files. This step can be done via the All Targets page in Oracle Enterprise Manager (search for Oracle E-Business Suite Infrastructure) and drilling down to set the stageDir value of APPL_TOP Context.

Major Features and Definitions

Package

A package is a fundamental unit of work of Customization Manager. A package consists of all the relevant objects that constitute a customization along with all the necessary metadata relevant for the given customization. A customization package can have one or more custom patches associated which can be deployed to promote customizations.

File Manifest

The file manifest contains a list of files to be included in a package.

File Metadata Repository

The File Metadata Repository stores metadata information of custom files used to create customization packages. This information can be used to manage and catalog customizations within the system.

Technology Stack Details

The Technology Stack Details for a package is a snapshot of the technology stack properties for the Oracle E-Business Suite instance where the package was compiled.

Reporting

Customization Manager provides several methods for generating reports on packages:

- Generate a Standard report on a single package.
- Compare two packages using a Comparison report.
- The Instance Comparison report can be used to compare a given package against an instance with respect to technology stack, files with versions, missing entries for file driver file, custom products involved, and so on. It can be used to assess the likely impact before actually applying the custom patch on the given instance

Reports can be generated in RTF for Microsoft Word, PDF, and Microsoft Excel.

Releasing a Package

Once a customization package is created and tested successfully, it might need to be shared with other users. This is possible by updating the package metadata and setting the package status as "Released".

Obsoleting a Package

For scenarios where the given customization is no longer valid, the customization package may be retired by updating the package metadata and setting the package status to "Obsoleted".

Applications Standards Validation

Customization Manager has a standards checker to check the that the files included in a custom package meet certain coding standards. This checker tests all code for standards compliance and cannot be turned on or off.

Some standards are mandatory and will result in failure when Customization Manager attempts to build the package. Other standards are recommended, and the standards checker will give a warning but the package will be built.

For example, Customization Manager mandates that each file included within a customization package has an Oracle-compliant source header present within the file. If a file in a package is missing this header, the package cannot be built.

Oracle-compliant Source Header

Each file included within a customization package is recommended to have an Oracle-compliant source header present within the file.

The following is an example of an Oracle-compliant header:

```
$Header: sample.txt 10.1 2002/06/06 09:38 lmathur noship $
```

The header contains the following elements:

- Filename
- Revision ID - This needs to be incremented every time a file is checked in
- Date and time of checkin
- Author
- Shipment state - ship/noship

Automatic Header Update and Insertion

This option can be enabled while defining or updating the "File Source Mapping" used for package creation. When the "Automatic header update" option is selected, Customization Manager takes care of querying the source control repository to derive the revision number and updates the Oracle-compliant header present within the file with the same, during the process of package creation.

It is important to ascertain that the correct "Version command" is provided to lookup/query the revision number from the given source control repository, except when using CVS or File System. This feature is not supported when the source repository is 'File System'. Also, for CVS there is no need to specify the version command as the header is always looked up from the $Header string present within the file.

> **Important:** When using the automatic header update feature with CVS, you must have a $Header placeholder within each source file. The placeholder header must be embedded in the source file before the file is checked in into CVS.
>
> Also ensure that you change the file name with the correct case within the $Header before embedding the header in the file.

> **Important:** When using Subversion, it is required to use Subversion client version 1.2 or above for automatic header update.

Automatic header update is supported for all file types. For binary files like forms, reports, and so on, you must provide a dummy placeholder for the header with enough appropriate offset (space). It is recommended to leave at least 40% extra offset (space) to accommodate incrementing revision numbers. During the process of package creation, the system uses this as a placeholder and updates it with the correct header. Again, the automatic header update option should be enabled and the correct version command should be specified within the file source mapping. The header is calculated based on the release and the version in the source control. For example, if you are building a package for Release 12 and the version of the file in the subversion repository is 29, then the header version calculated would be 120.29.

Automatic header insertion is supported only for selected file types when using Subversion as the source control system. In this case, Customization Manager inserts a valid Oracle compliant header into the source file during the process of package creation, even when there is no $Header present in the file. The following file types are supported for automatic header insertion in case the file does not contain a proper $Header:

- .css
- .drvx
- .htm
- .html
- .ildt
- .java

- .jlt
- .jsp
- .ldt
- .msg
- .odf
- .pdt
- .pkb
- .pkh
- .pks
- .pl
- .plb
- .pls
- .sh
- .slt
- .sql
- .tpl
- .wft
- .wfx

Uploading Existing Custom Patches

You can upload a custom patch to Customization Manager repository:

The upload option is provided to upload existing custom patches created in the Customization Manager repository. On upload, a package with status "Succeeded" is created. The status can move to status "Released" or "Obsoleted" as other customization packages. One or more NLS patches can be uploaded for a given package. Once uploaded, the patches can be deployed using Patch Manager. Also, attachments can be added for the uploaded packages.

Note: Reporting and update capabilities are not available for the uploaded packages.

Automatic File Driver File Generation and Update

A file driver file is a master file for adpatch to identify valid Oracle E-Business Suite files for a given product (including a custom product). It is required to have an entry within the file driver file for selected file types like forms, reports, and so on. If not, then the following error is thrown during patching: "File in patch is not a known Oracle Applications file".

Customization Manager takes care of this file driver file requirement automatically. Customization Manager implicitly generates a file driver file for the relevant files in a package. During deployment with Patch Manager, these entries are automatically added to the custom product master file driver file. In case a user applies a patch manually with adpatch, he or she can run updateFileDriver.pl within the <package>/meta-inf folder **before** invoking adpatch.

Note that if you get the error "File in patch is not a known Oracle Applications file" while applying a custom patch built with Customization Manager, then it could be due to a missing entry in file driver file for the custom product for one or more custom files.

The file driver file for a custom product is located under:

`$<custom_product_top>/admin/driver/<custom_product_short_name>file.drv`

For example, if XXCO is the custom product, then you can find the file driver file under

`$XXCO_TOP/admin/driver/xxcofile.drv`

All custom files would require an entry in the respective file driver file depending on the custom product they belong, EXCEPT files which have destination path beginning with any of the following:

- admin
- sql
- mds
- lib
- patch
- help
- def

as well as any java file under destination path beginning with "java".

The usual format for an entry into the file driver file is:

```
<product>  <subdirectory>  <filename>
```

Sample entries are as below:

```
xxco    admin/sql XXCONLADD.sql
xxco    forms/<LANG> XXCOFORM.fmb
```

Change Approval in Customization Manager

This section provides examples of how the Change Approval Framework is used with Customization Manager.

Change Approval is supported in Customization Manager for the following:

- Releasing a package
- Obsoleting a package
- Registration of a custom application

Prerequisites

Approvals for Customization Manager must be enabled with the following setting in the amp.properties file::

```
enableApproval_CM=Y
```

There is a user who is either a Super Administrator or who has the role EBS_CM_APPROVAL_ROLE. For registration of a custom application, it is also required that the user has approver target access for the given E-Business Suite instance.

Scenario - Request to Release a Package

Here is an example of a package undergoing release with Change Approval enabled. Note that a similar process can be used in making a package obsolete.

1. A user requests for release/obsolete package from the Update Package Metadata page.
2. The package then goes into Pending Approval status. The package cannot be updated any more.
3. The Super Administrator or Approver with the EBS_CM_APPROVAL_ROLE role logs in and navigates to the Change Approval Requests Dashboard.
4. The Super Administrator or Approver updates the request "Release: <package>".

   If the request is approved, the package is released. If the request is rejected, the package goes back to its old status (Succeeded).

Scenario - Request to Register a Custom Application

Here is an example of registering a custom application.

1. A user (for example, "John") requests to register a defined custom application for a given instance.

   The request then goes into Pending Approval status. It can be tracked from the "Custom Application Requests" dashboard.

2. The Super Administrator or Approver with the EBS_CM_APPROVER role, and approver target access to the Oracle E-Business Suite instance, logs in and navigates to the Change Approval Requests Dashboard.

3. The Approver updates the request "Register:<custom application>".

   If approved, the request moves to the "Approved" status. If rejected, the request moves to the "Requested" status.

4. The original requestor, "John", logs in and navigates to "Custom Application Requests". If his request is approved, he can select the request and execute it.

   The job log can be tracked from the request details. The change request history also tracks all events.

Diagnostic Tests for Customization Manager

You can run diagnostic tests on your system in preparation for using Customization Manager. These tests can be accessed from the Diagnostics dashboard, available from the Pack Diagnostics link on the Oracle Applications page. For more information on running diagnostic tests, see: Running Pack Diagnostics Tests, *Oracle Application Management Pack for Oracle E-Business Suite User's Guide*.

The following tables list tests related to Customization Manager:

Generic Diagnostic Tests for Customization Manager

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	CheckOMSStage	Determine if a stage directory is defined on the OMS. Determine if the owner of the directory has read/write permissions to that directory.	Expected results are: the OMS Stage Directory Location and the OMS user with read/write permissions.

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	
EBS	CheckEBSHome	Verify permissions for APPL_TOP.	Verify that the user running the diagnostic test has the correct permissions for the APPL_TOP directory structure. If the test fails, provide the correct Preferred Credentials information in "E-Business Suite" or "E-Business Suite Infrastructure". See: Setting Up Credentials, page 1-3.
EBS	CheckAgentStage	Verify permissions within the Agent stage directory.	Verify that the user running the diagnostic test has the correct permissions for the Agent stage directory structure. If the test fails, provide the correct Preferred Credentials information in "E-Business Suite" or "E-Business Suite Infrastructure". See: Setting Up Credentials, page 1-3.

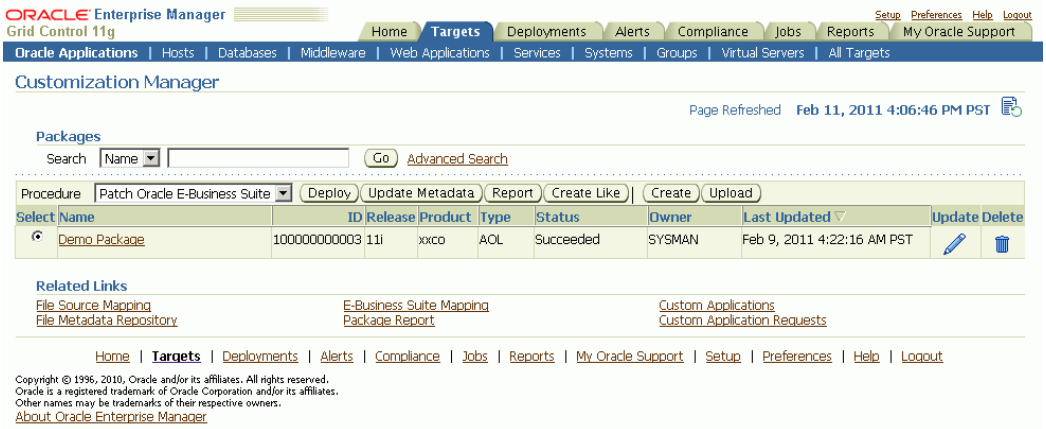
Task	Step	Description	Notes/Expected results/Corrective Measures
EBS	CheckAgentHome	Verify permissions within the Agent home directory.	Verify that the user running the Diagnostic test has the correct permissions for the $AGENT_HOME directory structure. If the test fails, provide the correct Preferred Credentials information in "E-Business Suite" or "E-Business Suite Infrastructure". See: Setting Up Credentials, page 1-3.
EBS	Check Customization Manager related AD Patches for 11i Release	Verify that certain AD patches have been applied on the Oracle E-Business Suite target.	The set of required interoperability patches will vary for the different Oracle E-Business Suite releases (that is, Release 11*i* , Release 12, and so on). The list of patches is contained in an XML file that might be modified to include or exclude recommended patches. The file is located at: <OMS_HOME>\sysman\admin\emdrep\ebs\testsuites\CMTestSuite.xml
EBS	Check Customization Manager Patches for 11i Release	Verify that certain Customization Manager patches have been applied on the Oracle E-Business Suite target.	The set of required interoperability patches will vary for the different EBS releases (that is, Release 11*i* , Release 12, and so on). The list of patches is contained in an XML file that might be modified to include or exclude recommended patches. The file is located at: <OMS_HOME>\sysman\admin\emdrep\ebs\testsuites\CMTestSuite.xml

Task	Step	Description	Notes/Expected results/Corrective Measures
EBS	CheckAmpAcp	Verify that the Agent is patched with the latest Oracle E-Business Suite management pack release. The Application Management Pack and the Application Change Management Pack patches are required on both the OMS and Agents.	If the Agent is not at the appropriate release, then it will need to be installed or upgraded through Oracle Universal Installer.
EBS	GetAPPSConfigVariables	Check if the context property JDBC_URL is available.	The context variable JDBC_URL needs to be set with non-null values for the Customization Manager jobs to proceed successfully. If the test fails, wait until the metric collection occurs, or force evaluation of the metric collection explicitly
EMGC	Summary	A summary of all of the diagnostic tests that have been executed, in these groups: Successful, Failed, With Warning, Aborted, and Total.	

User-Specific Diagnostic Tests for Customization Manager

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	CheckPackRole	Verify if the Oracle Enterprise Manager user (that is, the user executing the diagnostic test) has the required role to execute Customization Manager functionality. This role is EBS_CM_ROLE, and must be granted to the Oracle E-Business Suite user in the setup process, via Roles and Administrators.	Create users as required. See:Creating Roles, page 1-4.
EBS	CheckEBSGlobalCred	Check Oracle E-Business Suite Preferred Credentials. This test verifies if the "Applsys Schema", "Apps Schema", and "System Schema" username/password exist; and, if so, if they are valid for a particular instance.	Verify the validity of the credentials supplied for the "Applsys Schema", "Apps Schema", and "System Schema" username/password for the "E-Business Suite" target type in Preferred Credentials. If the test fails, provide the correct credentials for the user in question. See: Setting Up Credentials, page 1-3.
EBS	Summary	A summary of all of the diagnostic tests that have been executed, in these groups: Successful, Failed, With Warning, Aborted, and Total.	

Customization Manager Main Page



The main page for Customization Manager lists packages that are registered in the system. For each package, the following is given:

- Name - The name of the package.
- ID - The ID of the package. This is always unique across packages.
- Release - The Oracle E-Business Suite release level for the package.
- Product - The owning product or custom application.
- Type - The type of package. Valid values include AOL, FORMS, PL/SQL, XML Publisher, OAF, and Others. This is purely for classification purposes and has no bearing on the functionality of the package.
- Status - The status of the package. Valid values include Saved, In Progress, Failed, Succeeded, Released, Pending Approval, and Obsoleted. Note that some actions are restricted based on the status of a package.
- Owner - The owner of the package. Note that some actions are restricted based on the owner of a package.
- Last Updated - The date and time the package was last updated.
- Update - Use this icon to update a package.
- Delete - Use this icon to delete a package.

You can search for a package based on its name or ID, or click the "Advanced Search" link to perform a search on other criteria.

The following functions are available for a given package (depending on its status and

ownership):

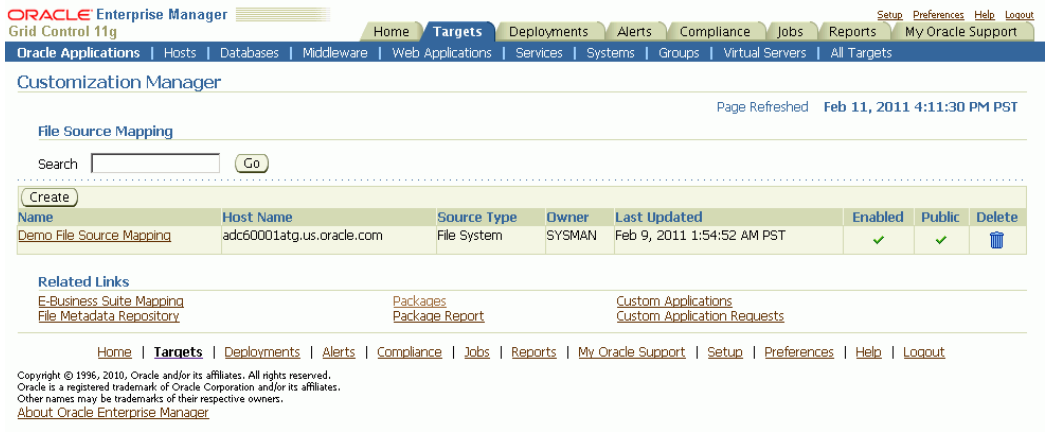
- Using the procedure specified, deploy the package as a patch job in Patch Manager using the **Deploy** button. Packages with statuses "Succeeded" or "Released" can be deployed.
- Update the package metadata using the **Update Metadata** button. Packages with the statuses Succeeded or Released only can be updated for metadata changes, provided they are owned by the user currently logged in.
- Run a report on the package using the **Report** button. Packages with statuses Succeeded, Released or Obsoleted can be used for reports.

You can also create a new package using the **Create** button.

Use the Related Links at the bottom of the page to access the following features:

- File Source Mapping
- E-Business Suite Mapping
- Package Report
- File Metadata Repository
- Custom Applications
- Custom Application Requests

Registering File Source Mapping



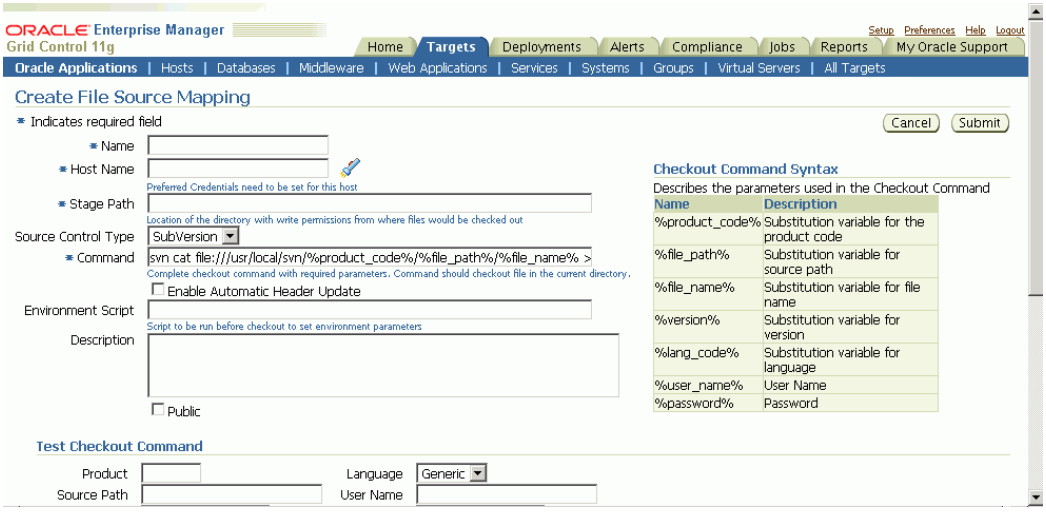
File Source Mapping captures all the required metadata for retrieving custom files from a source control or file system repository. Creating a File Source Mapping is usually performed once as a setup step. You may create one or more File Source mappings, if

required.

The main File Source Mapping page allows you to search for a File Source Mapping by name. The table lists each mapping with the following:

- Name - The name given to the mapping. Click on the link to go to the Update File Source Mapping page.
- Host Name - The name of the host from where the source control or file system is accessible.
- Source Control Type - The type of the source control system. Valid values are: SubVersion, CVS, File System, or Others.
- Owner - The user who created this File Source Mapping.
- Last Updated - The date and time the mapping was last updated.
- Enabled - Specifies if the mapping is enabled or disabled. You can enable/disable a mapping in the Update File Source Mapping page.
- Public - Whether the given mapping is public. If a mapping is public, all users can view it, but only the owner and Super Administrators can edit it.
- Delete - Use the icon provided to delete a mapping. You can delete a mapping only when no package is associated with it.

To create a File Source Mapping:



Perform the following steps to create your File Source Mapping. Note that for the checkout command, you should follow the checkout command syntax provided on the page.

1. Enter the name for the file source mapping.

2. Enter the host name of the file source mapping. You can select the host from the list of values.

3. Enter the stage path. This should be a folder on the given host with read/write access which is used for temporary processing during checkout.

4. Select the source control type. Possible values are:

   - SubVersion
   - CVS
   - File System
   - Others

   The source control type is used to default the checkout command. However, the checkout command can be modified based on your source control or file system configuration. If your source control system is not among CVS, SubVersion or File System, then you may choose "Others" and enter your checkout command.

5. Enter the complete command, with required parameters, to be used to check out files. The parameters that can be used to construct the checkout command are mentioned under the "Checkout Command Syntax: section. Oracle strongly recommends that you to test the checkout command by using the "Test Checkout Command" option. It is also important to ascertain that the user provided within the "host" credentials has the correct permissions on the given host selected for checkout.

6. Optionally enter the environment script to be run before files are checked out, to set any environment parameters ore preprocessing, if required.

7. Enter a description for your reference.

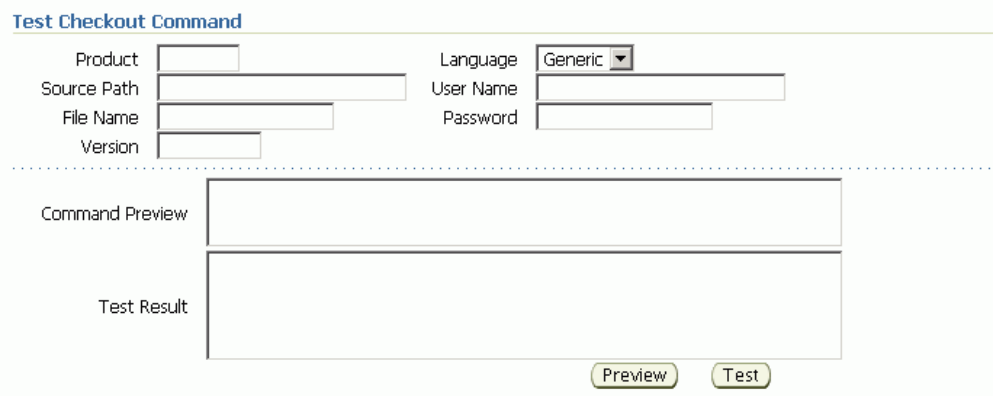
8. Mark the file source mapping as Public if desired.

   If a file source mapping is marked as Public, any user can view it and use it to create a package. However, only the owner and Super Administrators can edit the file source mapping.

   This feature is typically useful when you would want the system administrator to create one mapping and enable all developers to use them, without having them know the details of the source control system.

   Note that a Super Administrator can see all transactions. A Super Administrator can access all file source mappings, Oracle E-Business Suite mappings, reports, and packages. A Super Administrator can also modify and delete them.

9. The "Test Command" feature allows you to test the checkout command and the version command provided on the remote checkout host. It is strongly recommended that you test the checkout command and version command to help prevent any failures during checkout while creating a package. Enter Test Checkout Command information



Enter the following:

- Product
- Source Path
- File Name
- Version
- Language
- User Name - If your source control system requires it and a %user_name% token is included within the checkout command.
- Password - If your source control system requires it and a %password% token is included within the checkout command.

Use the **Preview** or **Test** button to preview or test the checkout command and version command. The results will be shown in the Command Preview or Test Results field.

To update a File Source Mapping:

You can update a File Source Mapping by clicking on its name listed in the main File Source Mapping page. You can only update the fields described below. It is not possible to update the host for a given file source mapping.

Note that you can check or uncheck the Enabled box to enable or disable a file source mapping.

1. Enter the source control type. Possible values are:
   - SubVersion
   - CVS
   - File System
   - Others
2. Enter the complete command, with required parameters, to be used to check out files.
3. Enter the stage path. The stage path is the location of the directory, with write permissions, to where the files would be checked out.
4. Optionally enter the environment script to be run before files are checked out, to set environment parameters.
5. Enter a description.
6. Mark the file source mapping as Public if desired. If it is marked as Public, all users can view the mapping. However, only the owner and Super Administrators can edit it.
7. The separate preview and test section is provided so that you can preview the checkout command and test it on the remote checkout host. It is strongly recommended that you test the checkout command before actually using it to create a package.

   Enter the following:
   - Product
   - Source Path
   - File Name
   - Version
   - Language
   - User Name
   - Password

   Use the **Preview** or **Test** button to preview or test the checkout command. The results will be shown in the Command Preview or Test Results field.

Example of a File Source Mapping with Parameters

The following table provides information on the file source mapping parameters and sample values for each parameter.

Name	Description	Related User Interface Page	Sample Value
%product_code%	Substitution variable for the product code	Create/Update Package - File Listing	xxco
%file_path%	Substitution variable for source path	Create/Update Package - File Listing	patch/115/import
%file_name%	Substitution variable for file name	Create/Update Package - File Listing	Custom_Responsibilities.ldt
%version%	Substitution variable for version	Create/Update Package - File Listing	115.32
%lang_code%	Substitution variable for language	Create/Update Package - File Listing	US
%user_name%	Substitution variable for username	Create/Update Package - General	developer1
%password%	Substitution variable for password	Create/Update Package - General	welcome1

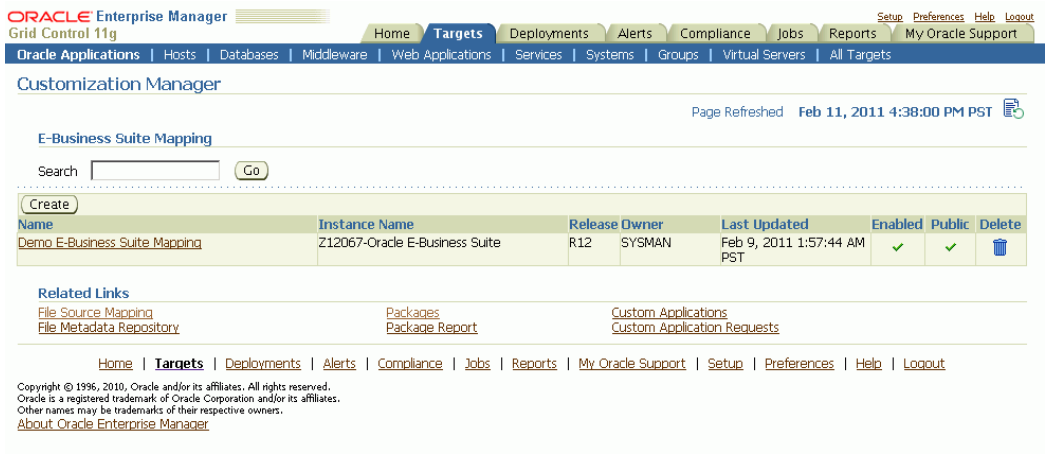
Here is the syntax of a checkout command with the parameters:

```
svn cat
file:///usr/local/svn/%product_code%/%file_path%/%lang_code%/%file_name%
--username %user_name% --password %password% > %file_name%
```

Here is the above checkout command with values substituted for the parameters:

```
svn cat
file:///usr/local/svn/xxco/patch/115/import/US/Custom_Responsibilities.l
dt --username developer1 --password <password> >
Custom_Responsibilities.ldt
```

E-Business Suite Mapping



Creating an E-Business Suite Mapping is an optional setup step. This mapping is used if Java or PLD file compilation is required. It is also used for report generation. The E-Business Suite Mapping indicates the Oracle E-Business Suite instance which would be used to compile Java or PLD files or used for report generation. Please note that all operations on this instance are read-only and using an instance for E-Business Suite mapping cannot cause any kind of change on the given instance via Customization Manager.

The main E-Business Suite Mapping page allows you to search for an E-Business Suite Mapping by name. The table lists each mapping with the following:

- Name - The name given to the mapping. Click on the link to go to the Update E-Business Suite Mapping page.
- Instance Name - The name of the Oracle E-Business Suite instance.
- Release - Release level of the Oracle E-Business Suite instance.
- Owner - The user who created this mapping.
- Last Updated - The date the mapping was last updated.
- Enabled - Specifies if the mapping is enabled or disabled. You can enable/disable a mapping in the Update E-Business Suite Mapping page.
- Public - Whether this E-Business Suite Mapping is available for all users. If a mapping is marked as Public, all users can view it, but only the owner and Super Administrators can edit it.
- Delete - Use the icon provided to delete a mapping. You can delete a mapping only when there are no packages associated with it.

Select the **Create** button to create a new mapping.

To create an E-Business Suite Mapping:

Use the following steps to create an E-Business Suite Mapping.

1. Enter a name for the mapping.

2. Enter the name of the reference Oracle E-Business Suite instance. Options for this instance are automatically discovered by Oracle Application Management Pack for Oracle E-Business Suite.

3. Mark the mapping as Public, if desired.

   If an E-Business Suite Mapping is marked as Public, any user can view it and use it to create a package, but only the owner and Super Administrators can edit it.

   This feature is typically useful when you would want the system administrator to create one mapping and enable all developers to use them, without having them know the details of the source control or Oracle E-Business Suite system.

   Note that a Super Administrator can see all transactions, including E-Business Suite mappings. A Super Administrator can access all file source mappings, E-Business Suite mappings, reports, and packages. A Super Administrator can also modify and delete them.

4. Enter the stage path. The stage path is the location of the directory with write permissions used for temporary processing during compilation and build process.

5. Enter the prepend classpath. This field is valid only with Java files; this classpath is prepended to these files when a package is built. This can be used to specify any third party libraries if you custom java files have dependencies on them.

6. Enter a description for the mapping.

To update an E-Business Suite Mapping:

To update an E-Business Suite Mapping, click on its name in the main E-Business Suite Mapping page. Note that you cannot update the E-Business Suite Mapping name or the instance mapping here.

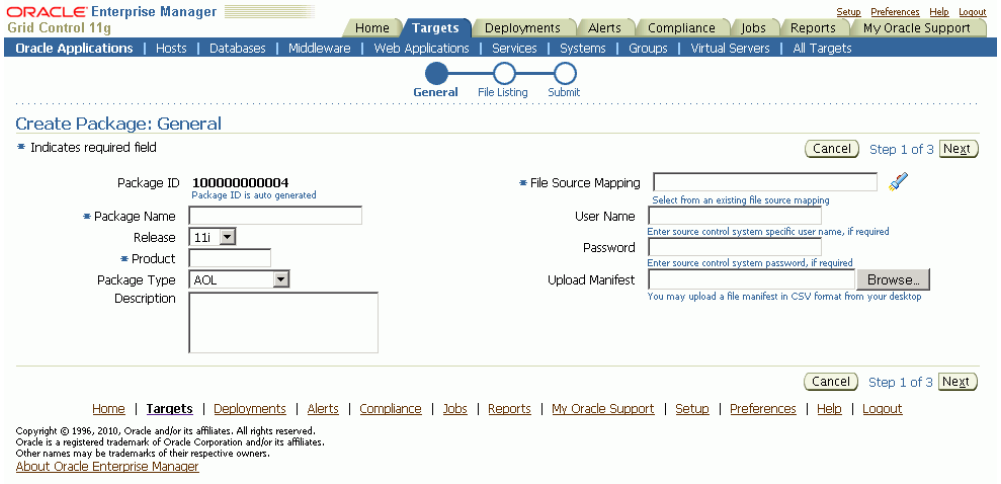
1. Check the Enabled box if you want the E-Business Suite Mapping to be active.
2. Check or uncheck the "Public" box depending on whether the mapping should be viewable by all users.
3. Enter the stage path. The stage path is the location of the directory with write permissions to where files would be compiled.
4. Enter the prepend classpath. This field is valid only with Java files; this classpath is prepended to the environment classpath during package compilation.
5. Enter a description for the mapping.

Creating a Package

Use the following procedures to create packages:

To create a package:

1. Enter general information for the package. The Package ID is an auto-generated unique number.



- Package Name - Enter a user-friendly name for the package.
- Product - Enter the owning product application. This product can be a custom

product created in Oracle E-Business Suite (not in Customization Manager).

- Package Type - Enter the package type. This value is for your own classification and convenience for searching and cataloging. No validation is performed on this field.

- Description - Enter a description for your reference. This description becomes part of the package readme.

- File Source Mapping - Enter the File Source Mapping for this package. Select from the list of previously-defined mappings.

- User Name - Enter the user name to connect to the source control system, if required. The User Name will be substituted in the "%user_name%" parameter of the checkout command.

- Password - Enter the password for the above user name, if required. The password entered here would be substituted for the %password% token within your checkout command.

- Upload Manifest - If you have a file manifest in a comma-separated value (CSV) format on your computer, you can upload it here.

  The following is an example of a file manifest:

```
#Product,SourcePath,FileName,Version,Type,DestPath,LangCode
xxco,java\r12\reporter\cpserver,XXCOCustomCp.java,115.1,java,java
/r12/reporter/cpserver,Generic
xxco,patch\115\import,XXCOConcprog.ldt,115.9,software
ldt,patch/115/import,US
xxco,patch\115\import,XXCOMenu.ldt,,software
ldt,patch/115/import,US
xxco,patch\115\import,XXCOReqGroup.ldt,115.3,software
ldt,patch/115/import,US
xxco,patch\115\import,XXCOResp.ldt,115.7,software
ldt,patch/115/import,US
xxco,patch\115\import,XXCOUser.ldt,115.6,software
ldt,patch/115/import,US
xxco,forms,XXCOFRM.fmb,,fmb,forms,US
```

2. Enter the file listing.

You may add or remove file entries manually from the File Listing page. Alternatively, you may also include file entries from the File Metadata Repository using the **Include Files** button.

For each file, enter the following:

- Product - The owning product application. This product can be a custom product created in Oracle E-Business Suite (not in Customization Manager). This would be substituted in the "%product_code%" parameter in the checkout command.

- Source Path - The source directory for the file on the source control system or file system. This would be substituted in the "%file_path%" parameter in the checkout command.

- File Name - The name of the file. This would be substituted in the "%file_name%" parameter in the checkout command.

- Version - Optional. The version of the file. The version is only needed if the checkout command will use the version information. This would be substituted to the "%version%" parameter in the checkout command.

- Type - The type of the file. Ensure that correct type is selected for the file entry. The Oracle Applications DBA (AD) patch driver instructions are based on the type selected. For details, please refer to the appendix describing the file types.

- Destination Path - The destination path for the file in the Oracle E-Business Suite instance excluding the language subdirectory relative to the product top.

For common file types, a default destination path is provided automatically but this default value can be overridden.

The destination path must be an AD-compliant destination path according to Oracle E-Business Suite standards.

The destination path in the patch driver is automatically suffixed with the language code chosen with exception to "Generic".

> **Note:** For "Generic" files, ensure that the destination path is entered correctly: For example,
>
> ```
> Product: XXCO
> Source Path: forms/US
> File Name: IDC.fmb
> Destination Path: forms
> Language: US
> ```
>
> The final destination path is "forms/US" but the values are entered separately.

- Language - Optional. The language code for the file. Select the language code as needed to generate the respective NLS patch.

  > **Important:** Customization Manager strongly recommends that each file included within a customization package has an Oracle-compliant source header present within the file.
  >
  > The following is a sample Oracle compliant header:
  >
  > ```
  > $Header: sample.txt 10.1 2002/06/06 09:38 lmathur
  > noship $
  > ```
  >
  > The header contains the following elements:
  >
  > - Filename
  > - Revision ID - This needs to be incremented every time a file is checked in
  > - Date and time of checkin
  > - Author
  > - Shipment state - ship/noship

3. Enter the E-Business Suite information (Conditionally required). The E-Business Suite mapping information is only required when the package contains at least one Java or PLD file. You can select the Oracle E-Business Suite Mapping from the list provided.

4. Enter the Package Metadata. You can enter the instructions for package application here. These instructions will become part of the package readme.

5. Enter Comments. These comments will be recorded as part of the package history for tracking changes made to the package.

6. Enter Prerequisite Information.

   For Release 11*i* packages, you can enter one or more prerequisite patch numbers that can be used for deployment validation with AD utilities.

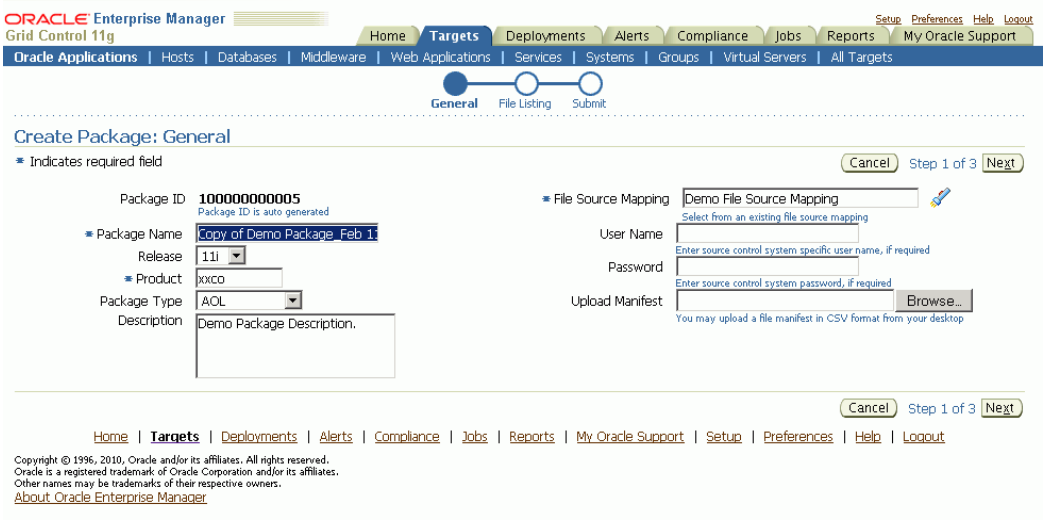
   For Release 12 (and higher) packages, enter in the prerequisite patch numbers that will be used in validation when the package is deployed through Patch Manager. Note that this validation is done only if you use the **Check Prerequisites** button in the Patch Details page when creating a patch run in Patch Manager.

   > **Note:** Prerequisite information entered here for Release 12 packages is only used in deployment by Patch Manager.

7. Enter Mailing List information.

   You can enter e-mail addresses for people who should be sent notifications about the package's creation status on the event of success or failure. It is recommended to have e-mail notifications set so that the appropriate users can be notified about the package success or failure.

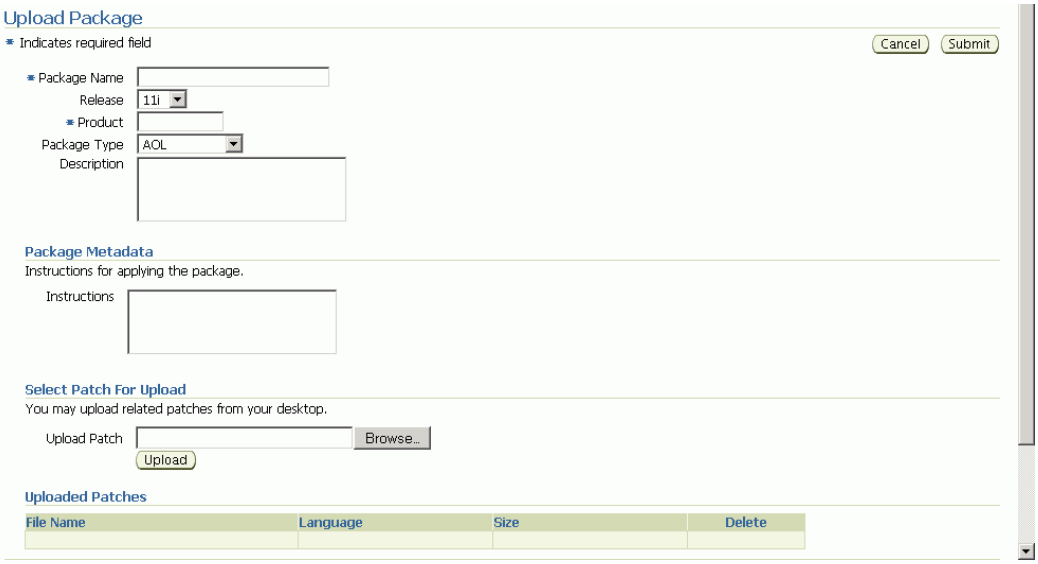
To create a package using the "Create Like" option:



Customization Manager allows you to create a package by copying the details from an existing package. This procedure can be used typically to create a mirror copy of the package or create another package with minor modifications without having to enter all

the relevant details about the package.

To create a package using the "Upload" option:



If you have any legacy custom patches, the same can be uploaded to the Customization Manager repository in context to a new customization package. Click on the "Upload" button from the package search page to upload an existing custom patch. While uploading a custom patch, the following information is required:

- Package Name
- The release to which the custom patch belongs to.
- The custom product/application associated with the custom patch
- Package type: only for classification purposes
- Description for your reference
- Any specific instructions for applying the custom patch

You can upload one or more custom patches (NLS patches) to this customization package. However, it is important that all of them must be associated with the same unique patch number. Clicking the **Submit** button creates a customization package with the status "Succeeded". This customization package can now be deployed just like any other customization package and can be "Released" or "Obsoleted", when required.

Updating a Package

To update a package, find the package listing in the main Customization Manager page

and select the icon in the Update column.

To update a package's definition:

1. Enter general information for the package. The Package ID is an auto-generated unique number and cannot be updated. The Package Name cannot be updated as well.

   - Product - Enter the owning product application. This product can be a custom product created in Oracle E-Business Suite (not in Customization Manager).

   - Package Type - Enter the package type. This value is for your own classification and convenience for searching and cataloging. No validation is performed on this field.

   - Description - For your reference.

   - File Source Mapping - Enter the File Source Mapping for this package. Select from the list of previously-defined mappings.

   - User Name - Enter the user name to connect to the source control system, if required. The User Name and Password (below) will be substituted in the "%user_name%" and "%password%" parameters of the checkout command.

   - Password - Enter the password for the above user name, if required.

   - Upload Manifest - If you have a file manifest as a comma-separated value (CSV) format on your computer, you can upload it here.

2. You may add or remove file entries manually from the File Listing page. Alternatively, you may also include file entries from the File Metadata Repository using the **Include Files** button.

   For each file, enter the following:

   - Product - The owning product application. This product can be a custom product created in Oracle E-Business Suite (not in Customization Manager).

   - Source Path - The source directory for the file on the source control system or file system. This would be substituted in the "%file_path%" parameter in the checkout command.

   - File Name - The name of the file. This would be substituted in the "%file_name%" parameter in the checkout command.

   - Version - Optional. The version of the file. The version is only needed if the checkout command will use the version information. This would be substituted in the "%version%" parameter in the checkout command.

- Type - The type of the file. Ensure that correct type is selected for the file entry. type. The Oracle Applications DBA (AD) patch driver instructions are based on the type selected.

- Destination Path - The destination path for the file in the Oracle E-Business Suite instance excluding the language subdirectory. This must be an AD-compliant destination path according to Oracle E-Business Suite standards. The destination path in the patch driver is automatically suffixed with the language code chosen with exception to "Generic". The destination path for a file entry is defaulted to the source path, which may be modified if necessary.

- Language - Optional. The language code for the file. Select the language code as needed to generate the respective NLS patch.

3. Enter the E-Business Suite mapping information (Conditionally required). The E-Business Suite mapping information is only required when the package contains at least one Java or PLD file. You may select the E-Business Suite Mapping from the list provided.

4. Enter the Package Metadata. You can enter the instructions for package application here. These instructions will become part of the package readme.

5. Enter Comments. These comments will be recorded as part of the package history for tracking changes made to the package. As a best practice, it is recommended to add comments describing the changes done to the package and other details. Any comments added are tracked with the package history information.

6. Enter Prerequisite Information.

   For Release 11*i* packages, you can enter one or more prerequisite patch numbers that can be used for deployment validation with AD utilities.

   For Release 12 (and higher) packages, enter in the prerequisite patch numbers that will be used in validation when the package is deployed through Patch Manager. Note that this validation is done only if you use the **Check Prerequisites** button in the Patch Details page when creating a patch run in Patch Manager.

   > **Note:** Prerequisite information entered here for Release 12 packages is only used in deployment by Patch Manager.

7. Enter in Mailing List information. You can enter e-mail addresses for people who should be sent notifications about the package's update status on the event of success or failure.

Saving a Package

If, in the process of creating or updating a package definition, you want to save the package definition before submitting a request to have Enterprise Manager actually build the package, click the **Save** button on the final Submit page of the Create/Update process. Your package definition will be saved and it will appear on the main Customization Manager page with a status of Saved.

Searching for a Package

You can perform an Advanced Search for packages with the following criteria:

- Name
- ID
- Product
- Instruction Contains
- Prerequisite Patch
- Description Contains
- Owner
- Release
- Package Type
- Standards Check Results
- Status
- Language
- Public (Choose whether you want results with only Public packages, no Public packages, or either)
- Contains File
- Contains File with Version (Used in conjunction with "Contains File")
- Updated within (Days)
- File Source Mapping

- E-Business Suite Mapping
- Last Updated By

Viewing Package Details

You can view package details by clicking on its name in the search results table on the main Customization Manager page.

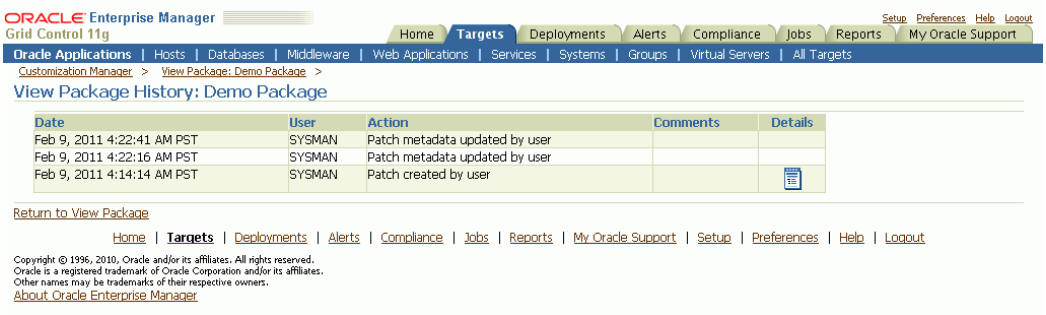
Package Details

The following details are shown in this region:

- Package ID
- Package Name
- Release
- Standard Checker Results - For detailed results, click on the link.
- Created - The date and time the package was created.
- Last Updated - The date and time the package was last updated.
- Status - The status of the package. Possible values are: In Progress, Succeeded, Saved, Failed, Released, and Obsoleted.
- Product
- Package Type
- E-Business Suite Mapping Name – If applicable.
- File Source Mapping Name
- Owner
- Uploaded: Whether this package was created as a result of a patch upload.
- Public: Whether this package is shared across all users.

History Details (View Package History)

The package history provides a chronological view of all the important events in the lifecycle of a package.



Click the **History Details** button to go to the View Package History page, which provides high-level history tracking of the package, including the timestamp and user-entered comments for the following events:

- Creation of package
- Update of package
- Release of package

You can also drill down to the Oracle Enterprise job details for the package creation and any updates.

View Log

Use the **View Log** button to view the most recent Oracle Enterprise Manager job details for the package.

Description

Any description entered for the package is shown here.

Instructions

Instructions entered in the Package Metadata field are shown here.

Patch Downloads

For each patch generated, the following information is shown here:

- File Name - Click on the patch file name link to download the patch.
- Language - The language of the patch.
- Size - The size of the patch.
- Readme - Click on the icon to download the readme. The readme file is in HTML

format and includes the package description and package metadata.

Typically, each customization package could be associated with one or more language patches.

Manifest

The file manifest is shown here. Details for each file include Product, Source Path, File Name, Language, Destination Path, Version, and Last Updated timestamp.

Use the **Download Manifest** button to download the manifest as a comma-separated values (CSV) file, viewable in Microsoft Excel.

You can search for a specific file by entering in the file name in the "Locate File" field and clicking **Go**. Wildcard characters "%" and "*" are supported here.

Technology Stack Details

Technology Stack details for a package is a snapshot of the technology stack properties for the Oracle E-Business Suite instance where the package was compiled. Patch Manager, when deploying the patch, checks the compatibility of the details specified here with the environment to which the package is being deployed. You can first check Technology Stack compatibility yourself by running "Instance Comparison" reports.

Attachments

You may add or remove any associated documentation like project plan, design documents, and so on. For each attachment, the following is listed:

- File Name
- Description
- Last Updated timestamp

You can remove an attachment from the package using the Delete icon. If the package is Released or Obsoleted, then the attachments cannot be deleted.

Mailing List

View the e-mail addresses for people who should be sent notifications about the package, on the event of success or failure.

Package History

View the history of the package by clicking the **History Details** button. The package history captures a trail of all major actions upon the package with the comments captured.

Updating Package Metadata

Package metadata can be updated to change the status of the package or to push the file entries metadata in the package to the File Metadata Repository. The "Update Package Metadata" page enables you to do the following:

- Change the status of the package. You can release or obsolete a package by changing its status to "Released" or "Obsoleted". Once a package is updated to the "Released" status, it can no longer be updated and becomes accessible to other users. Once a package is updated to the "Obsoleted" status, it can no longer be updated or deployed.

  Note: With the Change Approval Framework, once an approver approves a request to release/obsolete a customization package from a user, the package is released/obsoleted. The user does not need to release/obsolete the package explicitly after the approval.

  Tip: Add comments for future reference when you release or obsolete a package. For example, state the reason why you are obsoleting a package.

- Add file metadata entries to the File Metadata Repository.

- If you are the owner of the package or super administrator, you can mark the package as "Public" which entitles the package to be shared across all users for view/update.

- Add comments which are recorded in the package history for the above changes.

Standards Checker Results

The results of the standards checker can be accessed by clicking on the standards checker status.

The standard checker results can also be downloaded as a CSV format file by clicking the **Download Results** button.

To view details about the standard checker validations for a given file, click on the overall status against each file. The details about the standard checker validations include the standard name, result and the message.

In case the standard checker completes with "Error", the package processing is aborted and there are no patches generated.

Package Reports

Customization Manager offers powerful reporting capabilities to help you document, compare and track your customizations. You can generate three types of reports on packages:

- A Standard report gives you details on a single package, including technology stack requirements and the file manifest. You might use this to document customizations.

- A Comparison report allows you to compare two packages. For example, you might want to compare their technology stack snapshots or the versions of the files included in the packages.

- An Instance Comparison report allows you to compare the details of the package with that of an actual Oracle E-Business Suite instance. The details which are compared include custom application, file driver file entries, file manifest and versions, and the technology stack snapshot of a package to the technology stack properties of a given instance. By doing this comparison you can determine possible compatibility issues of the package with the instance and assess the possible impact/possible issues before actually applying the patch.

The technology stack compatibility information and the report is also available from the Patch Manager interview process by clicking the "Technology Stack Report" icon on the Patch Details page.

> **Important:** Oracle strongly recommends that you generate an Instance Comparison report for each custom package and the instance where it is intended to be deployed to identify any technology stack incompatibilities before actually applying the patch.

Reports can be accessed from the Reports link on the Change Management dashboard, or from the Reports link under Related Links on the Package Search page.

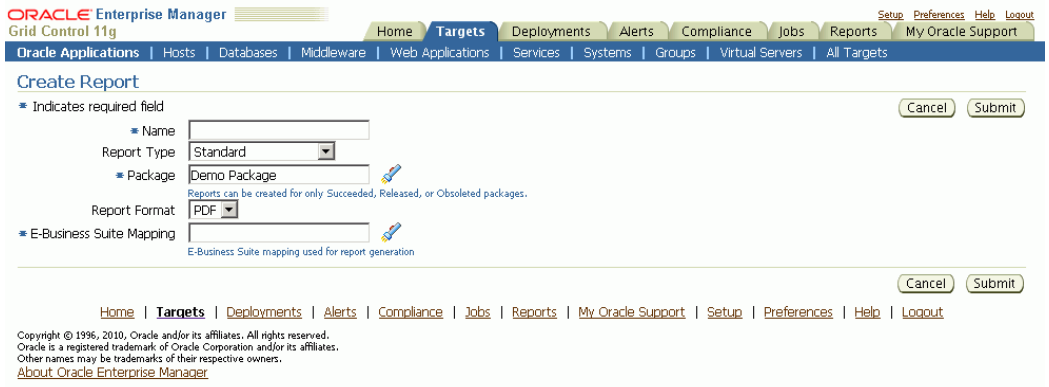
Creating a Report

To create a report, you can

- Select a package from the Package Search results page and click **Report**
- Click **Report** button on the View Package page, or
- Click the **Create** button on the Package Report page.

To create a Standard Report:

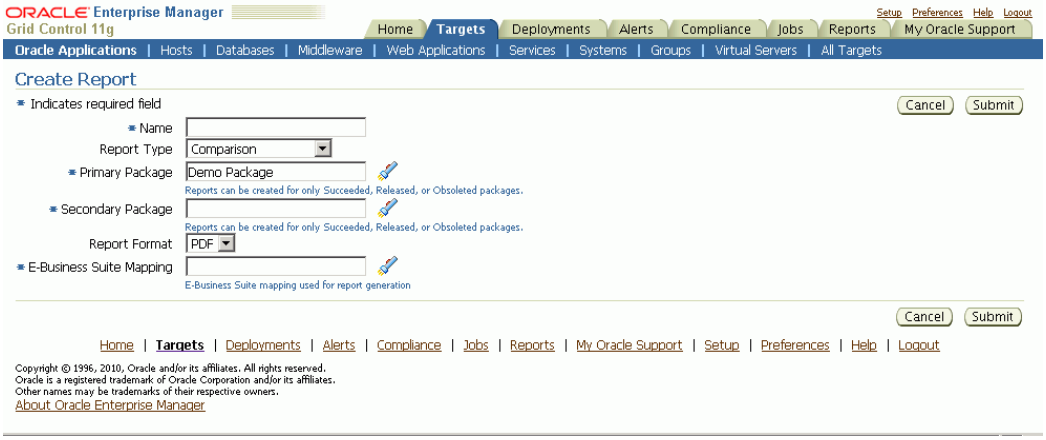
A Standard report gives you details on a single package, including technology stack requirements and the file manifest.



1. Enter in a user-friendly name for your report.
2. Choose Standard for the Report Type.
3. Enter the package you want the report to be based on in the Package field. This package must have the status of Succeeded, Released, or Obsoleted.
4. Enter the Report Format. Options are:
   - PDF (Portable Document Format)
   - RTF (Rich Text Format)
   - XLS (Microsoft Excel format)
5. Enter the Oracle E-Business Suite Mapping to be used for the report generation.
6. Click **Submit**.

To create a Comparison Report:

A Comparison report allows you to compare two packages. For example, you might want to compare technology stack requirements or versions of the files included in the packages.



1. Enter in a user-friendly name for your report.
2. Choose Comparison for the Report Type.
3. Enter the package name in the Primary Package field. This package must have the status of Succeeded, Released, or Obsoleted.
4. Enter the package name in the Secondary Package field. This package must have the status of Succeeded, Released, or Obsoleted.
5. Enter the Report Format. Options are:
   - PDF (Portable Document Format)
   - RTF (Rich Text Format)
   - XLS (Microsoft Excel format)
6. Enter the Oracle E-Business Suite Mapping to be used for the report generation. Please note that this instance would be only used to publish the report using BI Publisher.
7. Click **Submit**.

To create an Instance Comparison Report:

An Instance Comparison report allows you to compare the technology stack properties of a package to the technology stack properties of a given instance. By doing this

comparison, you can tell if the package can be properly deployed on the instance.

In addition, the report lists any missing entries in the file driver file, and compares files and versions within the package to those of the instance.

1. Enter in a user-friendly name for your report.

2. Choose Instance Comparison for the Report Type.

3. Enter the package you want the report to be based on in the Package field. This package must have the status of Succeeded, Released, or Obsoleted.

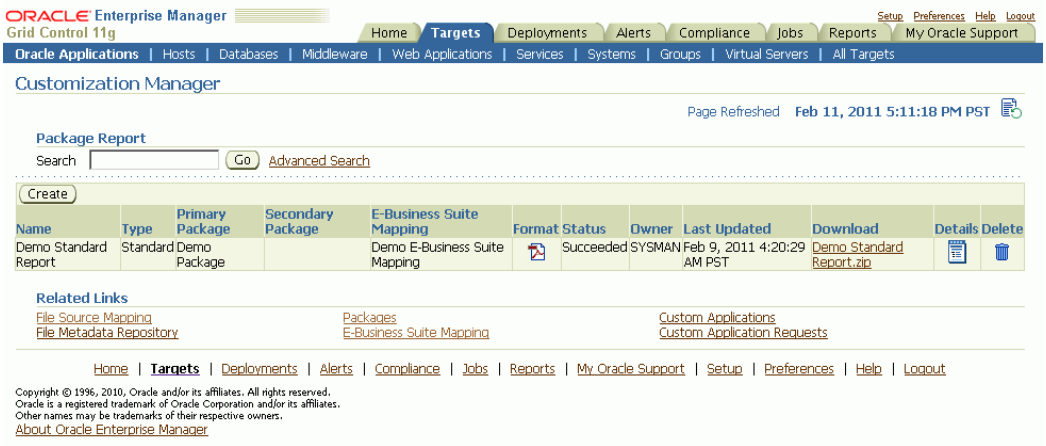
4. Enter the Report Format. Options are:

   - PDF (Portable Document Format)
   - RTF (Rich Text Format)
   - XLS (Microsoft Excel format)

5. Enter the Oracle E-Business Suite Mapping to be used for the report comparison. The Oracle E-Business Suite instance referred by this mapping would be the one which would be compared against the package. As a best practice, it is recommended to generate an instance comparison report for every instance where you intend to deploy the package, to identify any possible incompatibilities/issues before actually applying the package.

6. Click **Submit**.

Viewing a Report



In the Package Report search results table, the following is shown for each report:

- Name - The name of the report.
- Type - The type of the report; either Standard, Comparison, or Instance Comparison.
- Primary Package - The primary package on which the report is based.
- Secondary Package (if any) - For Comparison reports, the second package used in the comparison.
- E-Business Suite Mapping - The E-Business Suite Mapping used in the report generation or comparison.
- Format - The format of the report; either PDF, RTF, or XLS.
- Status - The status of the report.
- Last Updated - The Last Updated timestamp for the report.
- Download - Click on the link provided to download a ZIP file containing the report.
- Details - Click on the Details icon to view details on the report submission job. This link takes you to the Oracle Enterprise Manager Deployments Status page for the report submission.
- Delete - Click on the Delete icon for the report to delete the report.

Standard Report Output File

The Standard Report output file has three sections:

- Package Details - Information pertaining to the package's definition.
- Technology Stack Information - Properties and values of the technology stack of the instance mapped through the Oracle E-Business Suite Mapping for the package.
- File Manifest - The listing of the files in the package, including their respective product, source path, name, version, language, and type.

Comparison Report Output File

The Comparison Report output file has three sections:

- Package Details - Information pertaining to the packages' definitions.
- Technology Stack Information - This section shows a comparison of the values of the two packages' technology stack details.
- File Manifest - This section shows a comparison of the versions of each given file in the two packages.

Instance Comparison Report Output File

The Instance Comparison Report output file has three sections:

- Package Details - Information pertaining to the package's definition.
- Oracle E-Business Suite Instance Information - Basic information for the instance used in the report comparison. Information includes name, patch level for Applications DBA (AD), patch level for Oracle Application Object Library (FND), and the database release information.
- Missing custom products/applications.
- Missing entries in file driver file.
- File comparison to report missing files or version differences.
- Technology Stack Details - For each given property, this table lists the value for the package and the Oracle E-Business Suite instance, and how they compare to each other.

Searching for a Report

You can search for a report by its name on the main Package Report page, or click the Advanced Search link to search based on additional criteria, including:

E-Business Suite Mapping - The E-Business Suite mapping used for the report generation or comparison.

- Primary Package - The primary package for the report.
- Secondary Package - The secondary package, if any. The secondary package would be used in Comparison Reports.
- Type - The type of report; either Standard, Comparison, or Instance Comparison.
- Report Format - The format chosen for the report; either PDF, RTF, or XLS.

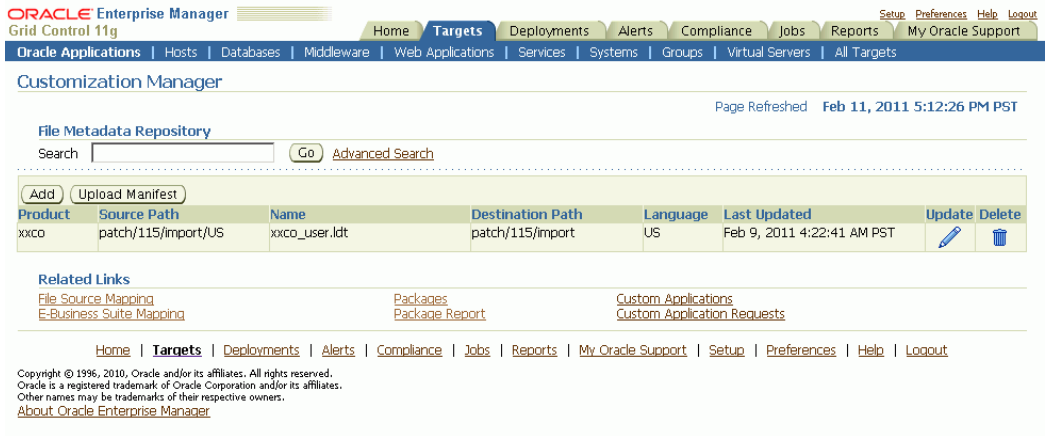
Releasing and Sharing a Package

After a package is released, it is implicitly shared with other users to deploy. Use the Update Package Metadata page to release a package. See: Updating Package Metadata, page 3-35.

> **Note:** With the Change Approval Framework, once an approver approves a request to release a customization package from a user, the package is released. The user does not need to release the package explicitly after the approval.

Before you deploy a custom package in Patch Manager, you should run the Instance Comparison Report to compare the technology stack properties of the package with those of the instance to which the package is being deployed. Patch Manager does not stop the deployment of a patch if the technology stack properties are not compatible, so you should make your best judgement based on the Instance Comparison Reports.

Maintaining the File Metadata Repository



The File Metadata Repository stores metadata information on each file. It can be used as a cataloging repository for all custom files within your enterprise.

The File Metadata Repository is also aware of the objects within the custom files. This capability typically applies to SQL scripts and PL/SQL packages where the objects are tables, indexes, sequences, views, and so on.

The system can parse and discover objects within custom files when added to the File Metadata Repository. This can be initiated from the "Update Package metadata" screen on clicking the box "Add file metadata to file repository".

Examples of custom objects include:

- Tables
- Views
- Mviews and Mview logs
- Triggers
- PL/.SQL package names
- Indexes

You can view and updates objects populated for a give file. You can also search for files containing specified objects and include them during package creation or update.

Search capabilities are limited to:

- PL/SQL spec and body (all formats)
- SQL files

- Oracle Application Framework XML files
- XDF

The information on a file can be uploaded to the repository in one of three ways:

- By uploading a package's file manifest in CSV format to the repository.
- By adding metadata for an individual file manually to the repository.
- By updating the metadata for a file already in the repository.

You can add metadata to the repository using the "Add file metadata to file repository" option in the Update Metadata page.

The File Metadata Repository can be accessed from its link on the Change Management Dashboard under Customization Manager.

You can search for a file by entering the filename in the Search field on the main File Metadata Repository page. Alternatively, use Advanced Search to search for its file using one or more of the following: Filename, Product, Language, Source Path, Destination Path, or Object.

Also, during the package create/update flow, you can search for files or files referring to objects within the file metadata repository using the **Include Files** button.

To upload a file manifest:

1. Select the **Upload Manifest** button from the main File Manifest Repository page.
2. Select your file manifest file using the **Browse** button for the File Manifest field.
3. Optionally add a description.
4. Click **Submit**.

To upload an individual file:

1. Optionally add a description.
2. Enter the name of the file.
3. Enter the product to which the file belongs.
4. Enter its source path.
5. Enter the destination path.
6. Enter the language for the file.

7. Optionally enter a description.

8. Click **Submit**.

To update the metadata for a file already in the File Metadata Repository:

1. Select the Update icon for the file in the Search results table in the main File Metadata Repository page.

2. Update the file name, product, source path, destination path, language, and/or description as desired.

3. Click **Submit**.

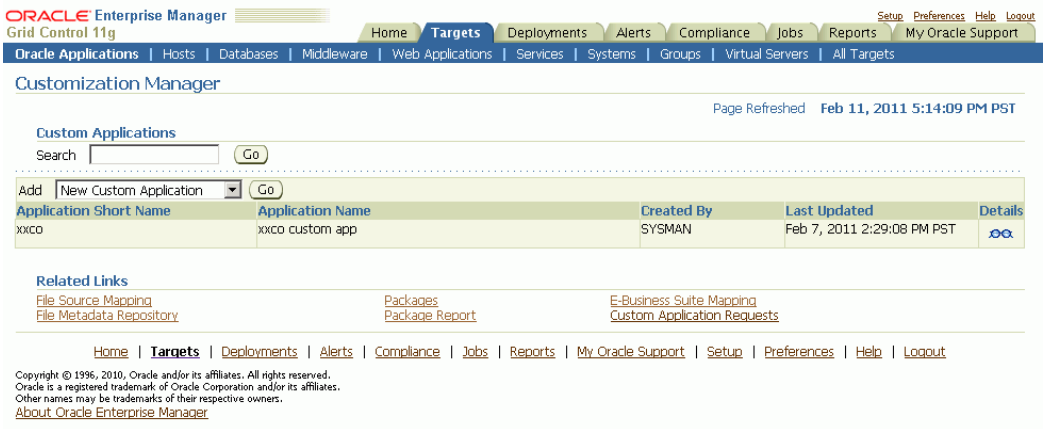
   It is possible to associate one or more customization objects to a given file. For instance, a PLS file might be associated with a PL/SQL procedure name as one of the objects. You might update a given file entry to associate one or more customization objects to it. This capability allows you to catalog and later search for customization objects using the Advanced Search option within the File Metadata Repository. However, there are currently no validation checks built into the system that use this information during package creation or deployment.

Managing Custom Applications

You can manage your custom applications via the dashboard. The common dashboard allows you to:

- View custom applications and instance associations
- Register a new custom application
- Validate an already registered custom application

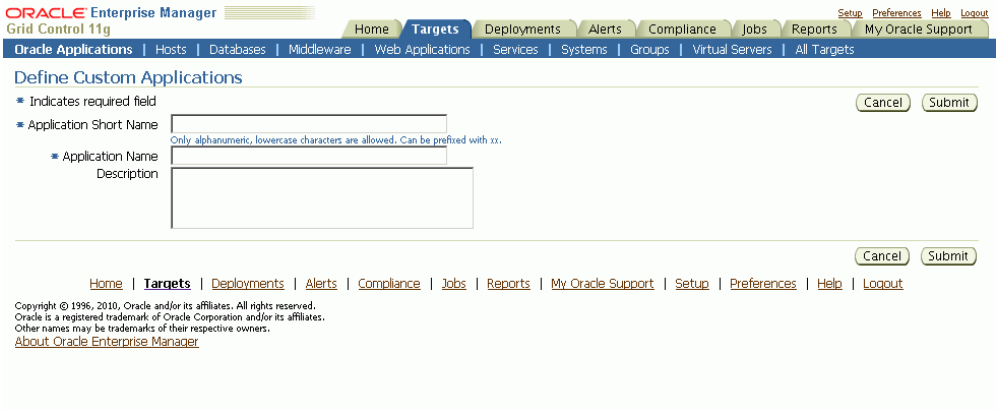
Navigation: The Custom Applications page is accessible from the Change Management Dashboard > Customization Manager region > Custom Applications link.



Note that a custom application "definition" is de-coupled from registration. Once an application is defined, it can be registered on one or more instances.

To define a new custom application:

1. Navigate to the Custom Applications page. Select "New Custom Application", and click **Go**. The Define Custom Applications page appears.



2. Specify an Application Short Name for your application. Note that only alphanumeric characters are allowed, and letters must be lowercase. The application short name is recommended to be prefixed with "xx".

3. Specify an Application Name for your application.

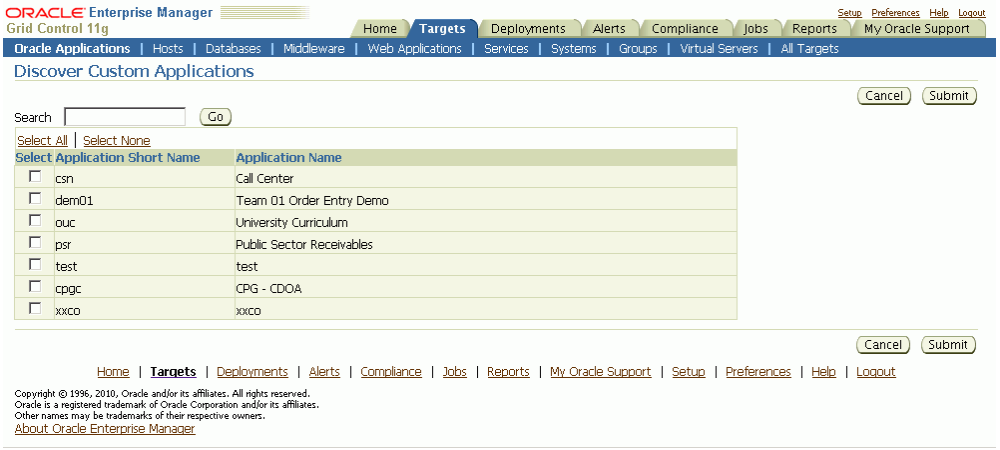
4. Optionally provide a description.

5. Click **Submit** to save your work.

Note that a custom application definition is not associated with any specific Oracle E-Business Suite instance but can be used to register the given custom application on one or more Oracle E-Business Suite instances.

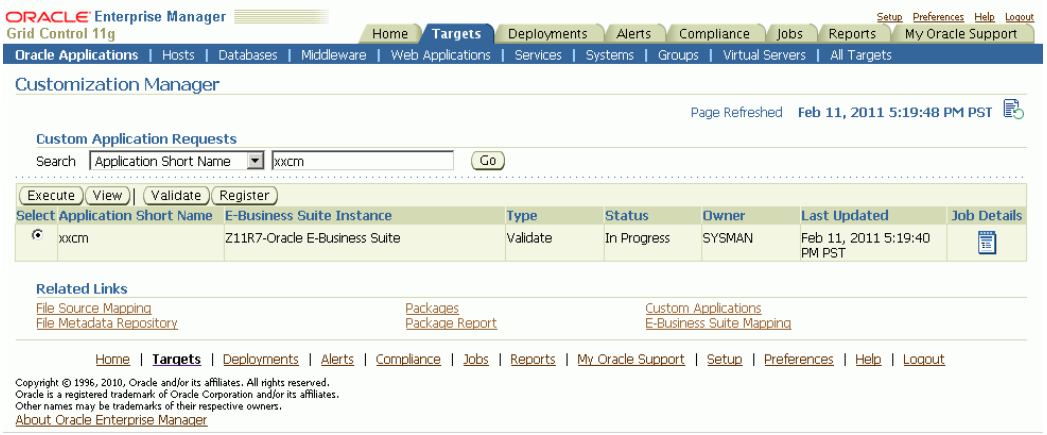
To discover an existing custom application:

1. Navigate to the Custom Applications page. Select "Existing Custom Application", and click **Go**. The Discover Custom Applications page appears.



2. Select the custom application you wish to discover and add. You can use the Search feature to narrow down the results the table.

To validate a custom application:



Existing registered applications can be validated.

1. Navigate to the Custom Applications page. Click the "Custom Application Requests" link at the bottom of the page. The Custom Application Requests page appears. Click the **Validate** button. Alternatively, you can also select the instance and click the **Validate** button from the custom application view details screen.

2. Enter in the Application Short Name for the application. You can use the LOV provided. Note that the Application Name defaults in.

3. Enter in the Oracle E-Business Suite instance. You can use the LOV provided. Note that the Preferred Credentials need to be set for this Oracle E-Business Suite instance.

4. Click **Submit**. A job to validate the custom application will be submitted. Validation is based on certain standards and is provided by Oracle Applications DBA (AD) utilities.

To register a custom application on an Oracle E-Business Suite instance:

1. Navigate to the Custom Applications page. Click the "Custom Application Requests" link at the bottom of the page. The Custom Application Requests page appears. Click the **Register** button. Alternatively, you can also click the **Register** button on the Custom Application details page.

2. Enter in the Application Short Name for the application. You can use the LOV provided. Note that the Application Name defaults in.

3. Enter in the Oracle E-Business Suite instance. You can use the LOV provided. Note that the required APPLSYS schema, APPS schema and system schema Preferred Credentials need to be set for this Oracle E-Business Suite instance.

4. Enter in an Application ID. Oracle recommends you use an application ID greater than 50000. Customization Manager automatically generates and defaults the recommended application ID.

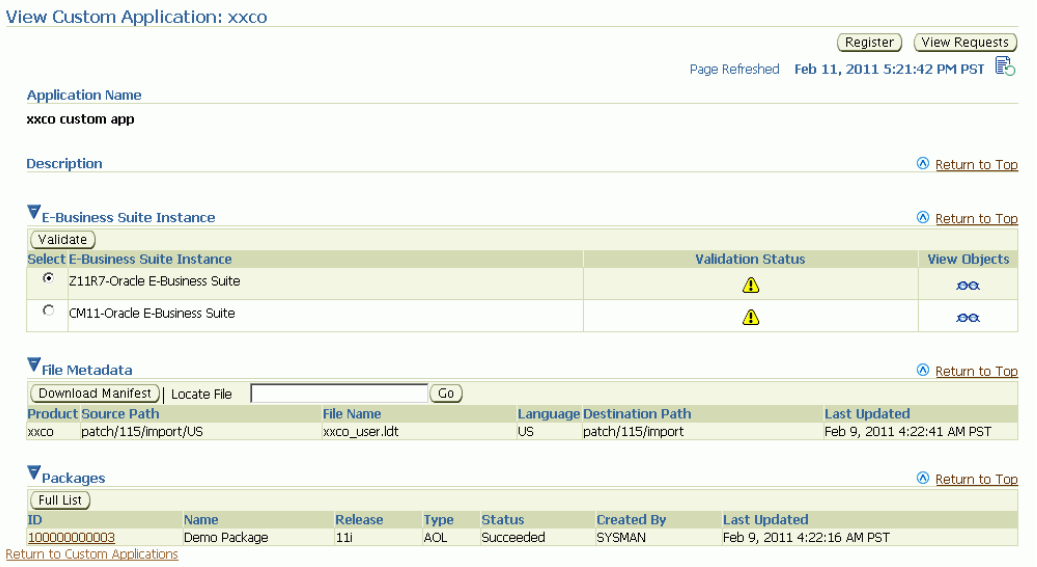
5. Select "Run AutoConfig" if desired. AutoConfig execution is necessary for the custom application to be available for patching. Please run AutoConfig manually if you do not chose to run it during the custom application registration.

6. When change approval is enabled, enter e-mail addresses for Notification E-mail(s). In registering a custom application, you first submit a request to register the application. This request must then be approved (either automatically or manually, depending on your Change Approval Framework setup).

7. Enter a justification.

8. Click **Submit**. A request to register the custom application will be submitted.

To view details of custom application:



You can view details of a custom application. Details include:

- List of instances where custom application is present with statusvalidated/not validated. If the status is not validated, it is recommended to use the **Validate** button to launch a validation request. A valid status ensures that custom patches for the given custom application can be applied on that instance.

- Custom objects associated with the given custom application which are present on the given instance can be viewed by clicking on the "View Objects" icon. Customization Manager automatically discovers and relates the following objects associated with a custom application:

    - Custom forms

    - Profile options

    - Request sets

    - Database objects

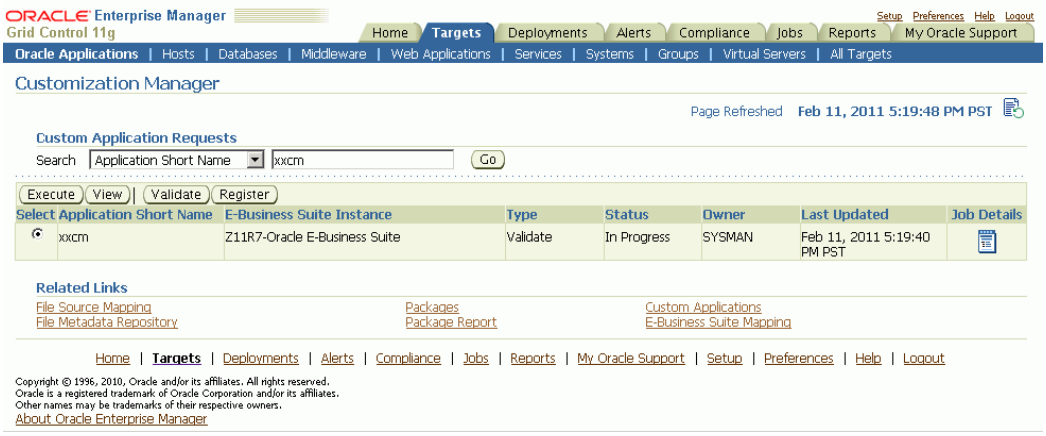
    - Alerts

    - Audit group information

- All files in the File Metadata Repository for the given custom application.

- List of packages that have been created for the custom application.

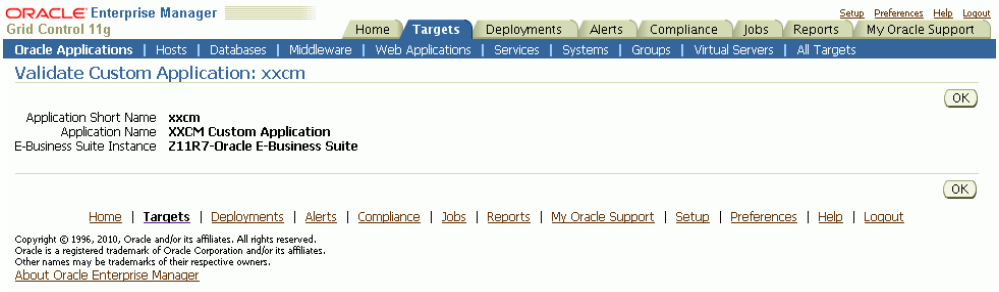
To track details of a custom application request:



A custom application request can be used to register or to validate a custom application on a given instance.

1. Navigate to the Custom Applications page. Click the "Custom Application Requests" link at the bottom of the page. The Custom Application Requests page appears. Select a custom application request from the table and click **View**.

2. Details for the request will be shown.



> **Tip:** To debug or view logs of a custom application request, click on "Job Details" icon against the specific custom application request. This would navigate to the EM job log associated with the custom application request. Click and view details on the "DO_JOB" step to view the detailed log of the given custom application request. In case of a failure of a custom application request, a new request should be submitted after rectifying the errors/failures listed in the job details log.

To execute a job to register or validate a custom application when the change approval system is enabled:

1. Confirm that the request to execute the job to register or validate the custom application has been approved. To do this, navigate to the Custom Applications page. Click the "Custom Application Requests" link at the bottom of the page. The Custom Application Requests page appears. Approved requests will be listed with the Status "Approved".

2. Select an Approved custom application request from the table and click **Execute**.

3. The system will attempt to execute a job to register or validate the custom application. If the system cannot execute the job, details regarding the job will be shown.

Known Limitations

Known limitations with Customization Manager include:

- Because Enterprise Manager 11g Grid Control Release 1 uses an https OMS port by default, all links used in Customization Manager use https mode. Due to a known limitation with Internet Explorer and https-enabled websites, Customization Manager cannot download files, including patches, readmes, file manifests, and package reports in Internet Explorer. Another browser such as Mozilla Firefox should be used instead.

4

Setup Manager

Introduction

Setup Manager is the next generation of an existing Oracle E-Business Suite tool called Oracle iSetup. Setup Manager extends the capabilities of Oracle iSetup in a number of important ways, including the ability to create reusable templates and projects, enforce dependencies, and perform simultaneous, multi-node loads, among others.

Key Features

Setup Manager allows you to do the following:

- Migrate functional configuration/setup data across point releases of Oracle E-Business Suite. Group extracts, loads, transforms, and reports into projects for easier management and reuse.
- Use out-of-box project templates to quick-start an implementation based on project types.
- Use out-of-box support to orchestrate loads on an instance based on template dependency.
- Orchestrate extracts, loads, transforms, and reports that are dependent on each other.
- Set simple or advanced filters to narrow down the extracted records. Manage multiple extracts, transforms, reports, and loads on the same instance or on different instances.
- Transform the extracts offline using Microsoft Excel templates and reuse and load on the same or difference instances.
- Cascade the changes from the master to detail objects while transforming the

extracts.

- Create your own attribute mapping to cascade attribute values from master to detail setup objects in addition to default ones.
- Synchronize Oracle E-Business Suite instances at regular intervals.
- Share the Projects with other users.
- Attach project-related documents to projects.
- Upload extracts from your desktop.
- Notify users of the status of the project plan execution.
- Execute same project plan multiple times.
- Schedule a project plan for a future date.

In addition, Setup Manager provides these features:

- Project execution is integrated with the change approval system.
- Strict enforcement on what a user can do based on Oracle E-Business Suite target instances (RBAC).

Major Features and Definitions

Instances

There are two types of instances used with Setup Manager:

- Source instance: The instance from which data is extracted.
- Target instance: The instance where data is to be loaded.

Project

A project is defined as a grouping of related extracts, transforms, loads, and reports. Projects are a key enhancement in Setup Manager and are designed to dramatically reduce the amount of time and effort associated with the management of configuration/setup data. A key feature of projects is the ability to sequence individual loads into the target instance, thus enforcing the proper order that respects the relationships that exist between configuration/setup data. A project can be scheduled to execute at a future specified time. The same project can be executed multiple times. Project executions are integrated with the change approval system.

Project Plan

You can create a project plan to add one or more tasks as you choose. A project plan binds the various tasks together so that they can be executed together multiple times. A project plan gives you the ability to orchestrate the tasks according to your needs.

Tasks

You can define Extract (including Uploaded Extracts and Transformed Extracts) tasks, Load tasks, and Report tasks. You can edit parameters of those tasks such as Select Setup Objects, Deployment Report, and Update Records to control execution of the tasks to meet your requirements.

Selection Set

A selection set is a logical set of related configuration/setup data. Oracle creates, delivers, and supports over 15 different selection sets in Releases 11*i* and 12, for data from multiple products, including Oracle Application Object Library, Financials, Human Resources, and Manufacturing. You use selection sets to define which type of configuration data that you want to extract from a source instance, and then load the resultant extract into one or more target instances.

Custom Selection Set

You can create selection set by selecting setup objects of your choice. Custom selection sets are useful when you want to sequence load order of setup objects or pull setup objects across product families such as Financials and Manufacturing.

Extracts

Extracts are specific sets of data extracted from a source instance, according to the definition of the selection set used.

Uploaded Extracts

You can download extract zip files from Setup Manager to your desktop to archive or to manipulate the enclosed files. These files can then be re-zipped and uploaded back into Setup Manager for a project. You can reuse these uploaded extracts when creating a project plan. Alternatively, you can also upload an extract from a stage directory.

Transform

Transforms are editable extracts in which data is presented to you as reusable Microsoft Excel templates. You can make changes to setup data offline and upload it back to Setup Manager. Setup Manager can create extracts out of the modified Microsoft Excel data

and this modified data can be loaded to the same Oracle E-Business Suite instance or other Oracle E-Business Suite instances.

Loads

A load is extracted or transformed data being loaded into a target instance.

Reports

Reporting is a powerful aspect of Setup Manager. Reports can be created in one of several formats (Microsoft Excel, PDF, and RTF), and types (deployment reports, standard, and comparison).

In addition, standard reports support the BR100 style, called the "Setup Document Style", used in Oracle iSetup.

Attachments

You can add project-related documents as attachments to a project.

Executions

The instance of execution of a project is referred as execution. You can execute a project multiple times. You can also schedule the project execution as needed. Project execution is integrated with the change approval system, which means you can control who executes which project.

Execution Sequence

Execution Sequence is the sequence in which the tasks are executed. Tasks having the same execution sequence are executed in parallel in a batch. The next batch would start only after successful completion of the current batch. You can also update the execution sequence while executing the project.

Diagnostic Tests for Setup Manager

You can run diagnostic tests on your system in preparation for using the Setup Manager features. These tests can be accessed from the Diagnostics dashboard, available from the Pack Diagnostics link on the Oracle Applications page. For more information on running diagnostic tests, see: Running Pack Diagnostics Tests, *Oracle Application Management Pack for Oracle E-Business Suite User's Guide*.

The following table lists tests related to Setup Manager:

Generic Diagnostic Tests for Setup Manager

Task	Step	Description	Notes/Expected results/Corrective Measures
EMGC	CheckForPOILibrary	Check if the Apache POI library is present on the OMS.	The Apache POI Library is shipped by Apache and is used for reading and writing Microsoft Excel files through Java. These Microsoft Excel files are used in the transformation functionality.
EMGC	CheckOMSStage	Determine if a stage directory is defined on the OMS. Determine if the owner of the directory has read/write permissions to that directory.	Expected results are: the OMS Stage Directory Location and the OMS user with read/write permissions.
EMGC	CheckPackRoles	Verify if the Oracle Enterprise Manager user (that is, the one executing the diagnostic test) has the required role to execute Setup Manager functionality. The pertinent role is EBS_AZ_ROLE, and this must be granted to the Oracle E-Business Suite user in the setup process, via Roles and Administrators.	Create users as required. See:Creating Roles, page 1-4.
EMGC	Summary	A summary of all of the diagnostic tests that have been executed, in the following groups: Successful, Failed, With Warning, Aborted, and Total.	

Searching for a Project

You can search for a project on the main Projects page. Search on the project name in

Simple Search or on the name and/or release in the Advanced Search page.

A Super Administrator is able to see all projects created by all users.

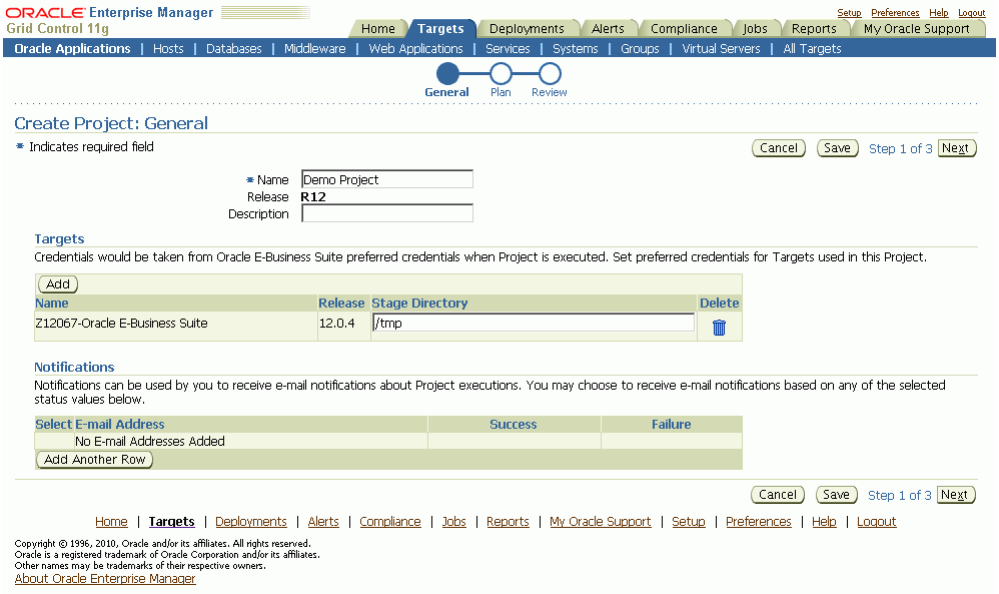
Creating a Project

Use the Create Project pages to create a project.

To begin, navigate to the Projects page within Setup Manager and select the **Create** button.

To create a project:

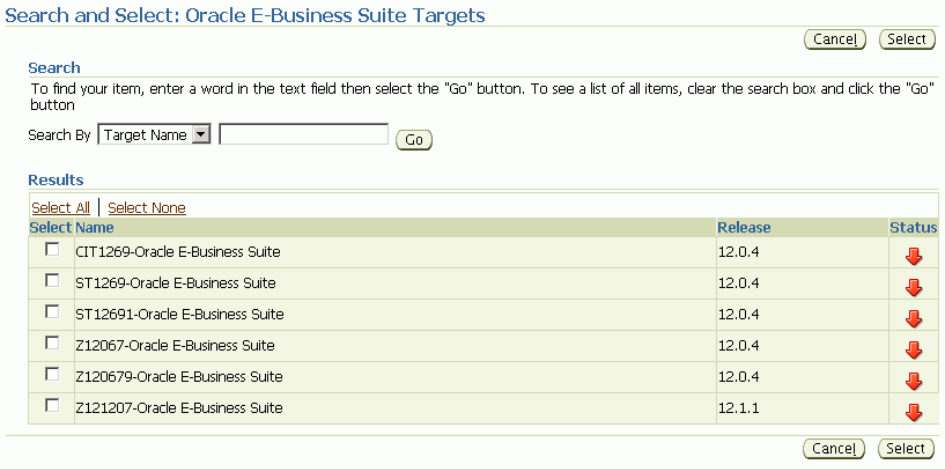
1. Enter General information for the project:



- Name - User-defined name for the project.
- Release - Either 11i or R12.
- Description - User-defined description of the project.
- Targets - Add all of the instances, both source and target, that might be involved in this project. The instances that have been discovered and available to you based on your role privileges will appear in the LOV field.

  For Super Administrators, all discovered targets for a particular release would be displayed.

  Other users can "unshare" and end-date the public projects.

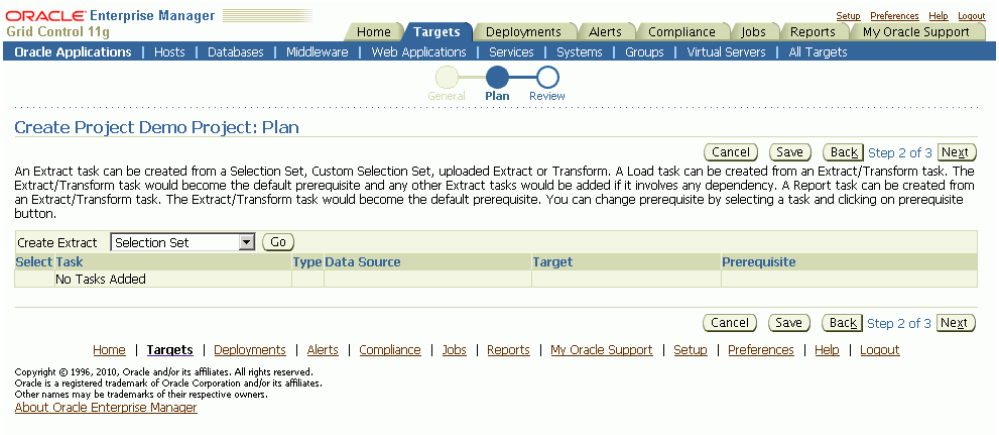


- Notifications - Add the e-mail addresses for users who should be notified when a project is completed with the status of Success and/or Failure.

Click on **Next** to create the project plan.

2. Create the project plan. The first step to creating a project plan is defining the type of extract. The four options are:

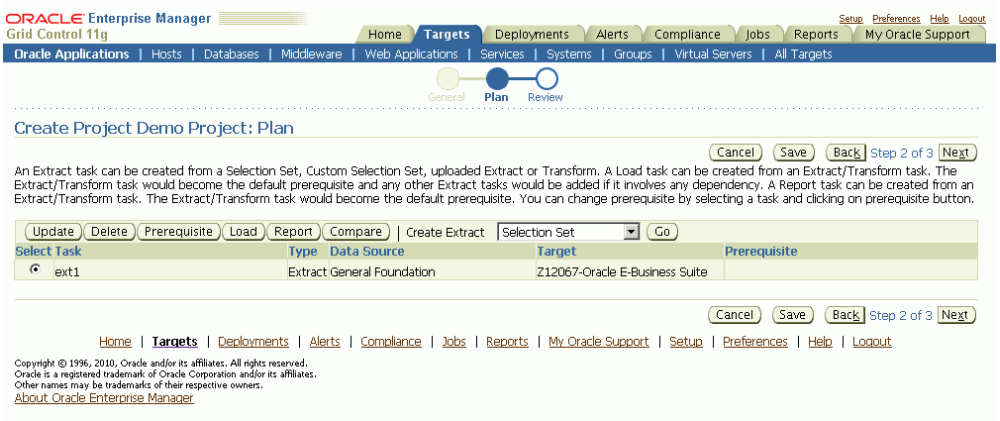
   - Selection Set - This will be the most common type. You can create your extract based on the delivered Selection Sets.
   - Custom Selection Set - You can choose individual entities to create a unique combination of extracts.
   - Uploaded Extracts - You can use an uploaded extract to define the operation.
   - Transform - You can add a transform which has been created using extracts.
   - Execution - You can use an extract from an execution.



Detailed information on creating an extract task is in the section Creating an Extract Task, page 4-9. For information on adding a transform to a project, see: Adding a Transform to a Project Plan, page 4-16.

3. Once you have created the first project plan that contains the extract task as mentioned above, you can take the following additional actions on the existing project:

   - Create Extract - By selecting **Go**, you can create additional extracts for your project.
   - Load - Create a Load for a designated extract/transform.
   - Report - Create a Report for a designated extract/transform.
   - Compare - Create a Comparison Report for two designated extracts/transforms.
   - Update - Update an existing extract, transform, load, or report.
   - Delete - Delete an existing extract, transform, load, or report.
   - Prerequisite - Modify the order in which the project will execute its contents.



Click on **Next** to review the Project Details.

4. Review the project details and select **Finish**.

Creating an Extract Task

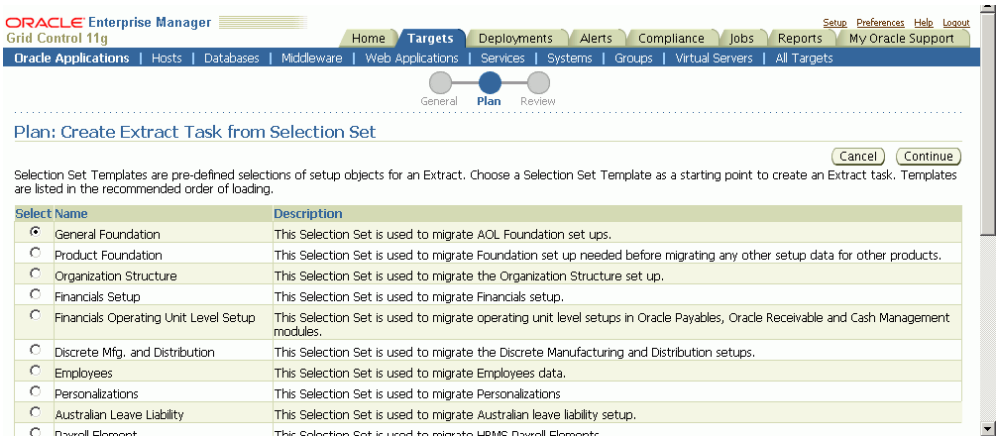
You can create an extract using any one of the following procedures:

- Creating from a Selection Set
- Creating from a Custom Selection Set
- Creating from an Uploaded Extract
- Using a Transform (described in the next section)
- Creating from an Execution

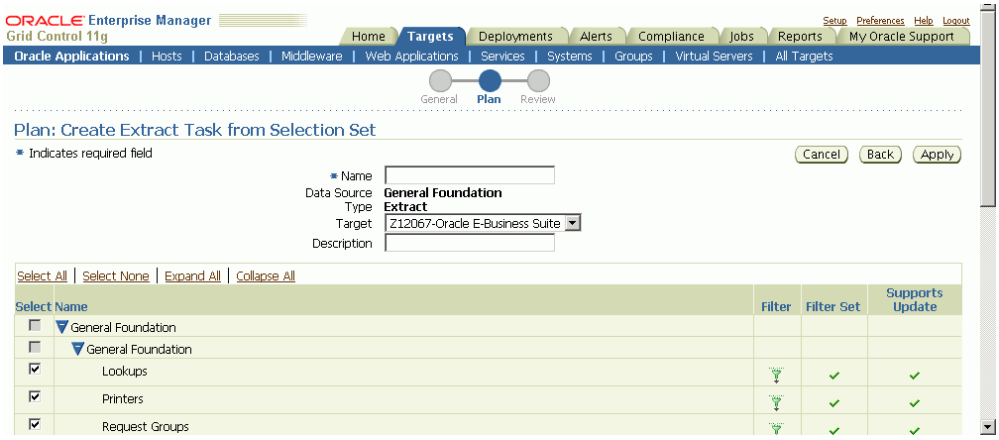
To create an extract from a Selection Set:

Use these steps to create an extract using a predefined selection set.

1. Select "Selection Set" from the **Create Extract** list and click **Go**.
2. In the Plan: Create Extract Task from Selection Set page, select the desired selection set template for the implementation and click the **Continue** button.



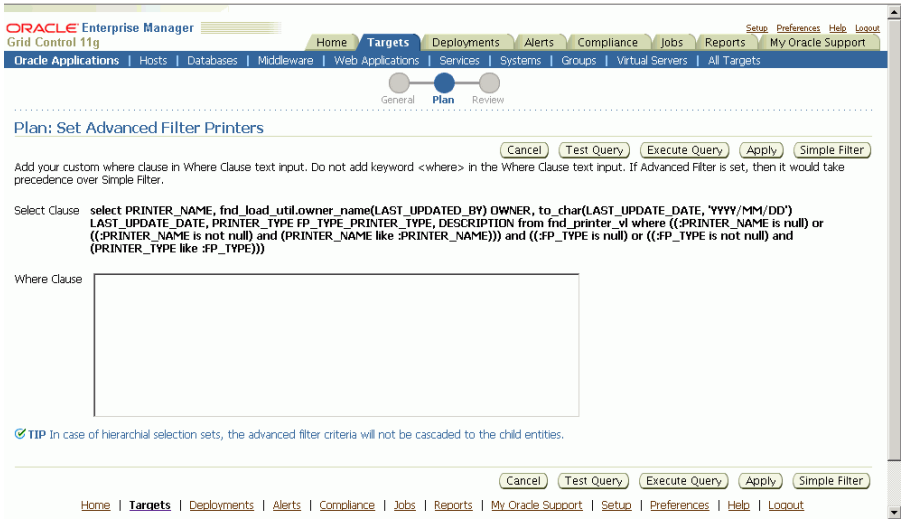
3. In the next page, you can view and/or update information on the selection set:



- Name - User-defined name for the extract.
- Data Source - The name of the Selection Set that you are using. This field cannot be updated.
- Type - "Extract" will be displayed. This field cannot be updated.
- Target - The instance that you want to extract the data from (that is, the source instance).
- Description - User-defined description of the extract.
- Selection Set components - All the configuration/setup data components that comprise of the Selection Set will be displayed in a table. You can:
    1. Select which entities need to be included in the extract.

2. Use the filter icon (to the right of each component) to further refine and tailor the exact type and number of configuration/setup data that you want to extract.

3. In the Set Filter Screen, you can click on the Advance Filter button and set your own WHERE clause.



The Advanced Filter setting would take precedence over Simple Filter if it has been set. Avoid using the Advanced Filter setting in a hierarchical selection set such as Financial Operating Unit Level Setup and Payroll Element where automatic cascading of filter values would not happen for advanced filter values.

Use the **Test Query** button to test if your WHERE clause produces a well-formed query. Note that this button only tests whether the clause is well-formed, and not whether the desired results are returned.

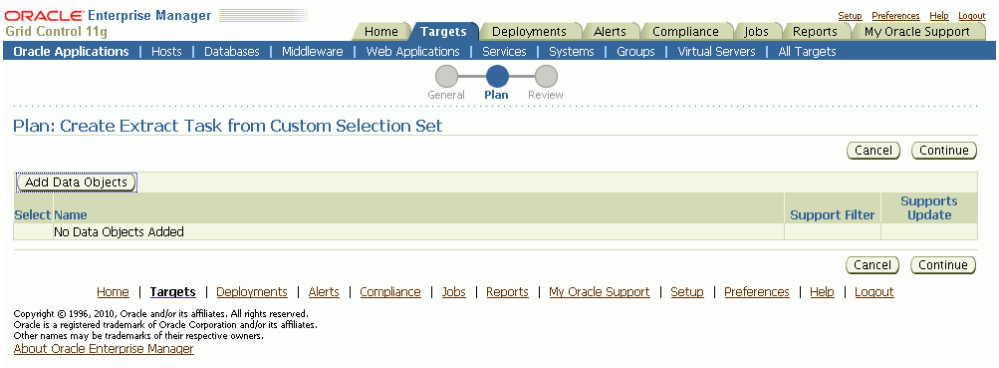
Use the **Execute Query** button to preview what your query results would be. When you execute the query here, the first 200 records for the query are returned, and you can check if they match what you expect from the query.

4. Click **Apply** to save your changes and go back to the Create Project Page.

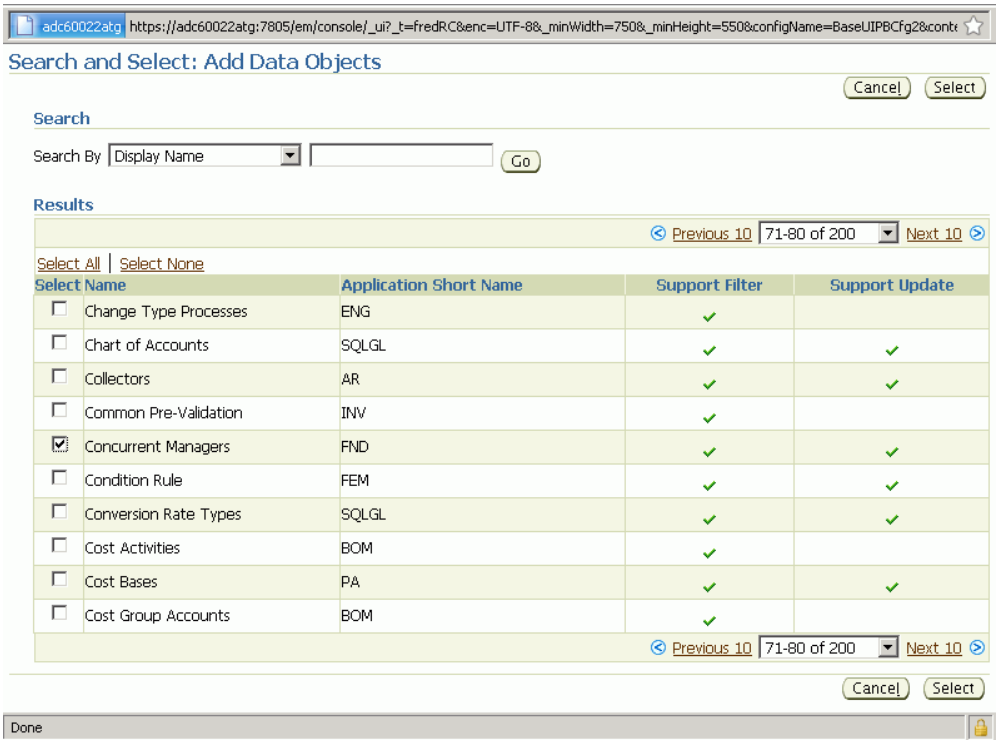
To create an extract from Custom Selection Set:

You can create an extract using a custom selection set. You might want to do this if you have different APIs from multiple existing selection sets that you want to mix and match for a custom selection set.

1. Select "Custom Selection Set" from the Create Extract list and click **Go**.

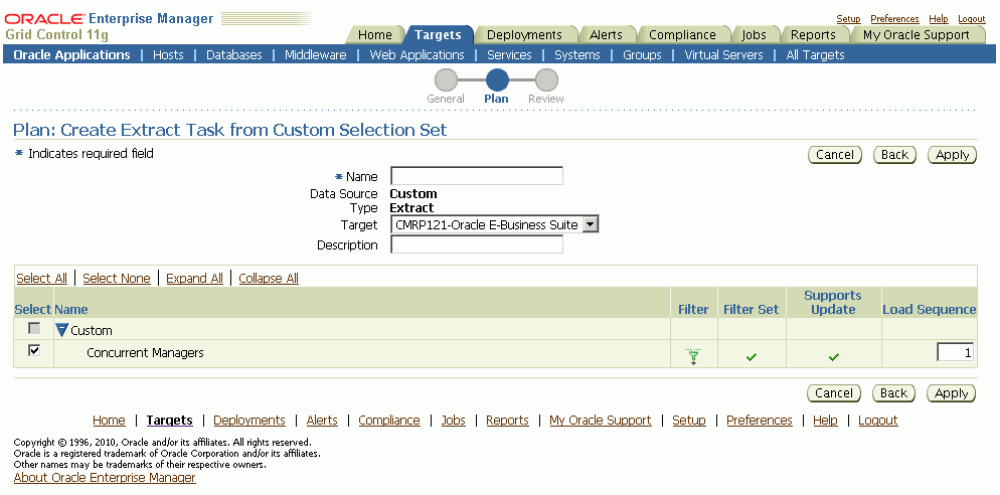


2. Click the **Add Data Objects** button and select the individual components that you wish to add.



3. Click **Continue**.

4. In the next page, you can view and/or update information on the selection set:



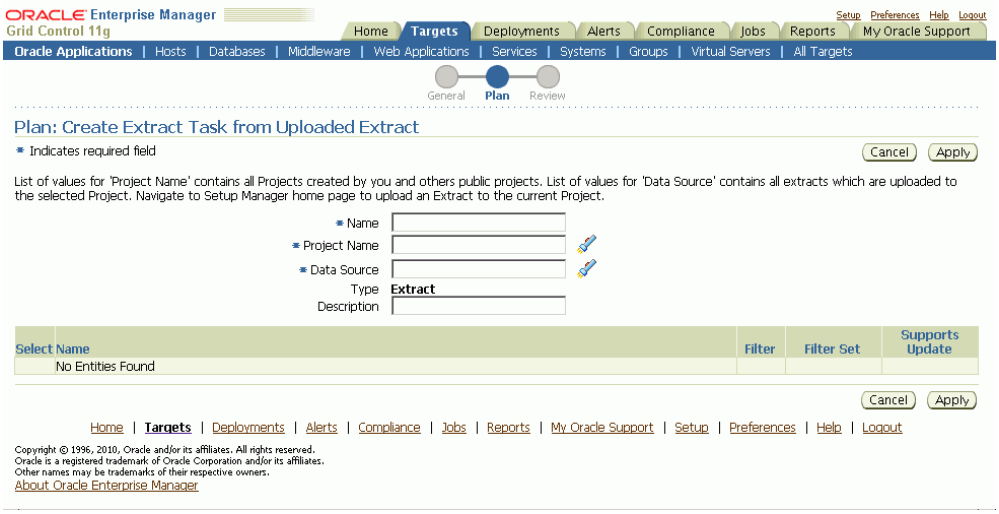
- Name - User-defined name for the extract.
- Data Source - "Custom" will be displayed. This field cannot be updated.
- Type - "Extract" will be displayed. This field cannot be updated
- Target - The instance that you want to extract the data from (that is, the source instance)
- Description - User-defined description of the extract.
- Setup Objects/Components - All the setup objects that were selected will be displayed in a table. The filter feature allows you to further limit the number and type of records in the extract.

5. Click **Apply** to save your changes and go back to the Create Project Page.

To create an extract from an Uploaded Extract:

You can create an extract based on a previously-uploaded extract. Note that you cannot change the setup objects selected. An scenario in which you might want to do this is if your existing extract complies with a complex security policy, and you want your new extract to comply with the same security policy. Creating the new extract based on the old uploaded extract helps you accomplish this task.

1. Select "Uploaded Extract" from the **Create Extract** list and click **Go**.



2. In the next page, you can view and/or update the following information
   - Name - User-defined name for the extract.
   - Project Name - Use the LOV to find projects created by you and public projects created by others.
   - Data Source - Use the LOV to choose from the list of extracts that are uploaded to the selected Project.
   - Type - "Extract". This field cannot be updated.
   - Description - User-defined description of the extract.
   - Selection Set Details of the uploaded extract.
3. Click **Apply** to save your changes and go back to the Create Project Page.

To create an extract from an Execution:

You can create an extract task from an existing project plan execution. This method offers the following benefits:

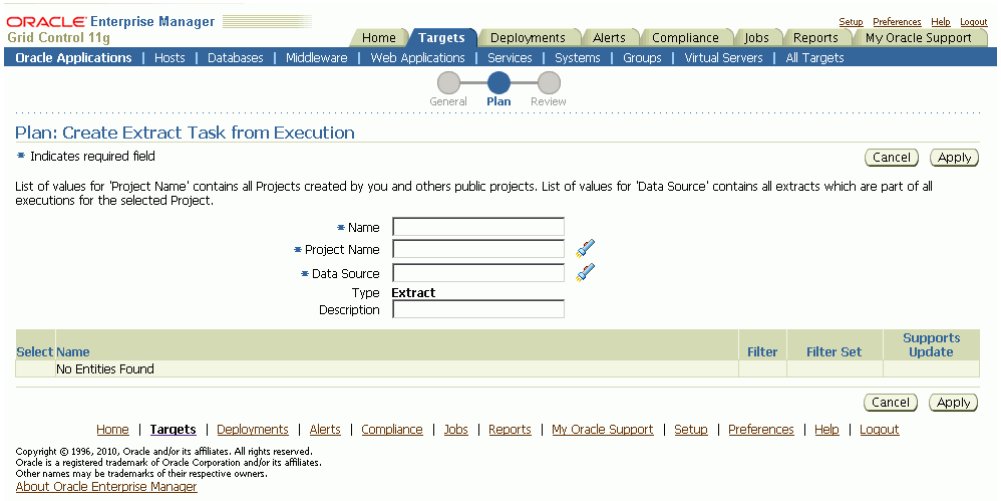
- You can reuse extracts that have been already executed, instead of fetching the same extract data again from the Oracle E-Business Suite instance
- The new extract task gets the data from the execution and not the Oracle E-Business Suite instance.

This method is the most efficient method for getting the extract data for a selection set, if a corresponding extract execution is already available.

Note: The selection set and filtering parameters for the new extract will be the same as that in the execution's definition, and cannot be modified.

Because the data in the new extract task is not fetched from the Oracle E-Business Suite instance, the extract data might not be synchronized with the Oracle E-Business Suite instance.

1. Select "Execution" from the **Create Extract** list and click **Go**.



2. In the next page, enter the following information:

   - Name - User-defined name for the extract.
   - Project Name - Use the LOV to find projects created by you and public projects created by others.

     Data Source - Use the LOV to choose from the list of executions of the selected project.
   - Type - "Extract". This field cannot be updated.
   - Description - User-defined description of the extract.

   Note that you cannot change the setup objects selected.

3. Click **Apply** to save your changes and go back to the Create Project Page.

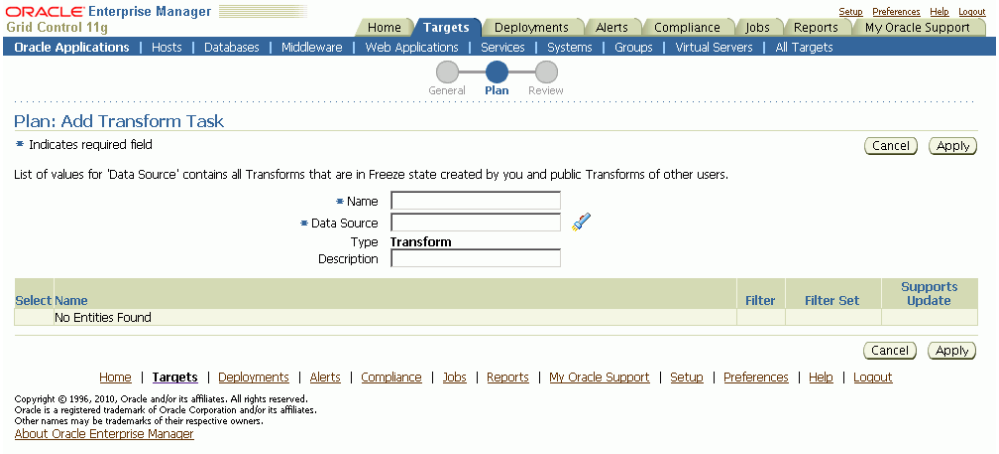
Adding a Transform to a Project Plan

To add a transform to a project plan:

You can add a task to add a transform to a project plan. Note that you can add only Transforms that are in the Freeze state to a project plan. The Transform LOV restricts searches by Release and Published status by default. A Super Administrator would be able to select any transform.

1. In the Project Plan page, navigate to the option in the Create Extract list to add a transform to a project plan. Select "Transform" and click **Go**.

2. In the Create Transform Task Page, provide the details listed below.



   - Name - Name of the transform task.

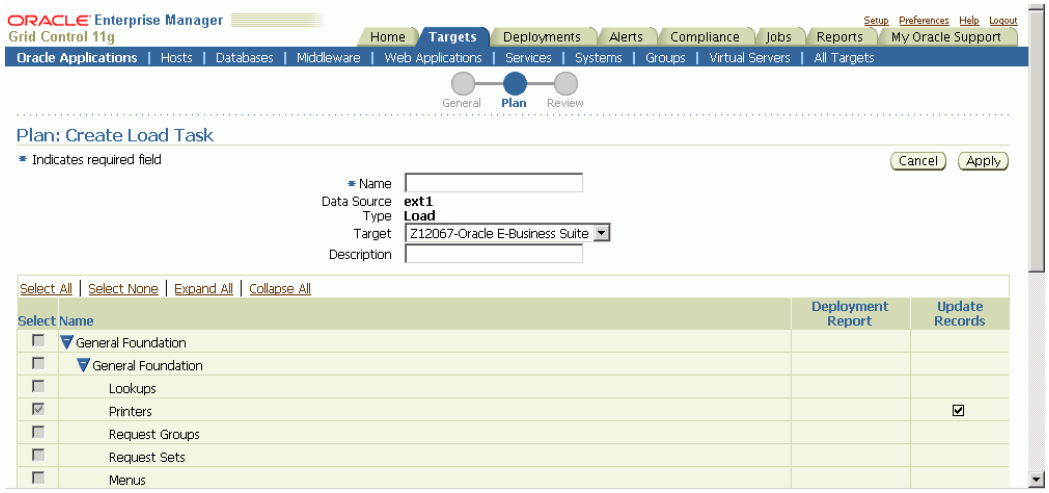
   - Data Source - The data source is the transform that you created earlier. Only transforms in the Freeze state appear in the LOV. This search will also bring up other users' Published transforms in the Freeze state. A Super Administrator is able to add any transform in the Freeze state (regardless of the user associated with it).

   - Description - Description of the extract.

   - Setup Objects - All the setup objects of the template selected above are displayed. You can view the template and save it in creating a task.

3. Click **Apply**. You will be redirected to the Project Create Page. The transform task is similar to any other extract tasks, so you are able to create Load, Report, and Comparison Report tasks on it.

Creating a Load Task



Load tasks are created within an existing project, and after the corresponding extract has been defined.

To create a load task:

1. To create a load task, select any one of the extracts or transforms in the current project and click **Load**.

2. In the Create Load Task page, enter into the following fields:

   - Name - Enter a user-friendly name for the load.

   - Data Source - The name of the extract or transform that you are working with. This field cannot be updated.

   - Type - "Load". This field cannot be updated.

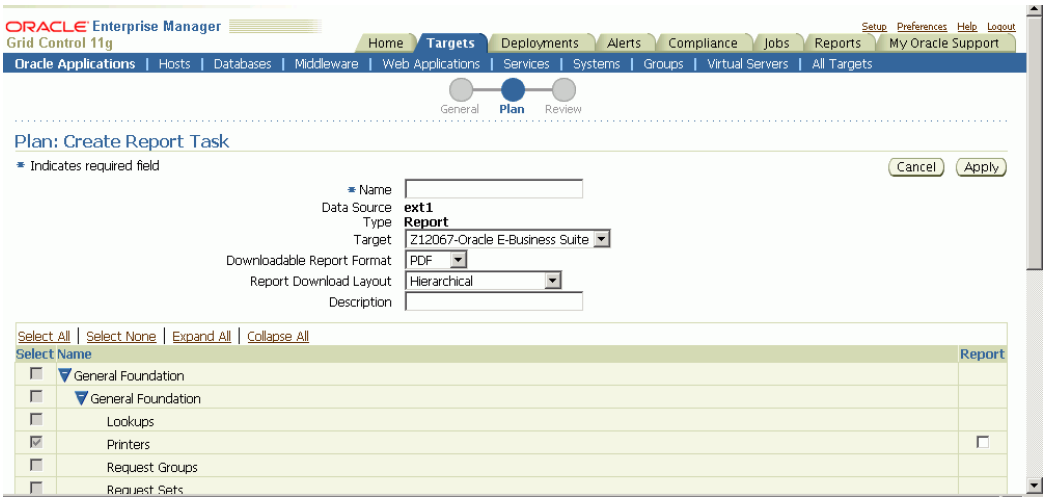
   - Target - The instance name where you want to load the data (that is, the Target instance).

   - Description - Enter a description of the load.

   - Setup Objects/Components - All the setup objects/components of the extract or transform will be displayed in the HGrid. For each setup object/component you can select a check box to enable a Deployment Report or overwrite existing records (that is, Update Records).

3. Click **Apply** to save your changes and go back to the Create Project page.

Creating a Report Task



Report tasks are based on existing extracts or transforms. Report tasks are created within an existing project, and after the respective extract or transform has been defined.

To create a report task:

1. To create a report task select any one of the extracts or transform in the current project and click on the **Report** button.

2. Enter in the following information:

   - Name - User-defined name for the standard report.

   - Data Source - The name of the extract or transform that you are working with. This is display-only.

   - Type - "Report". This is display-only.

   - Target - The instance name where you want to run the report.

   - Downloadable Report Format - Choose PDF, RTF, or Excel.

   - Report Download Format - If you have chosen a report format of PDF or RTF above, you can choose between "Hierarchical" or "Setup Document Style" (BR100 style) for this field.

   - Description - User-defined description of the load.

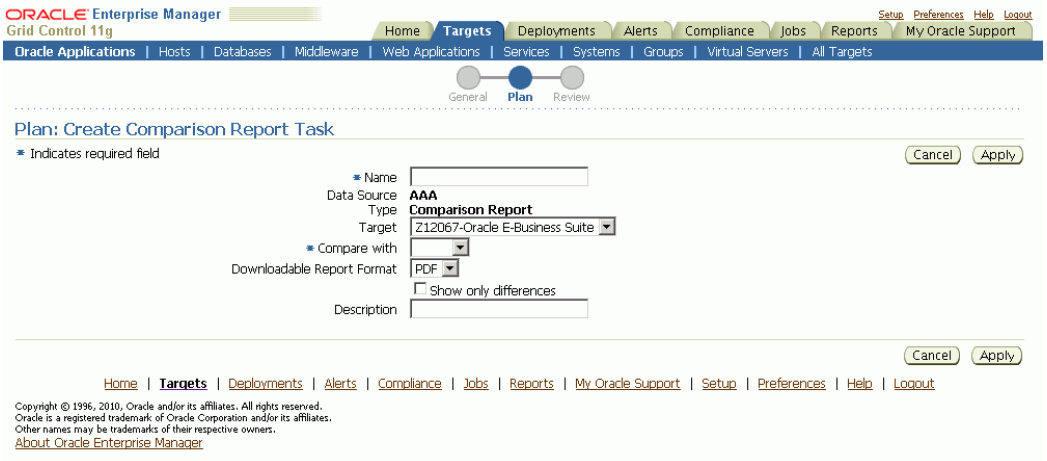
3. Specify which components you want included in the report in the Report column of

the HGrid.

4. Click **Apply** to save your changes and go back to the Create Project page.

Creating a Comparison Report Task

Comparison report tasks are based on existing extracts or transforms. A comparison report task is created within an existing project after the respective extract or transform has been defined.



To create a comparison report task:

1. 1. To create a comparison report task, select any one of the extracts or transforms in the current project and click on the **Compare** button.

2. Enter in the following information:

   - Name - Enter a name for the comparison report task.
   - Data Source - The name of the "first" extract or transform that you are working with. This is display-only.
   - Type - "Comparison Report". This is display-only.
   - Target - The instance on which you want to run the comparison report.
   - Compare with - The name of the "second" extract or transform. The comparison report will compare the "first" and "second" extracts/transforms.
   - Downloadable Report Format - Choose PDF or RTF.
   - Show only differences - This check box instructs the comparison report to

display only those records that are different in the extracts or transforms.

- Description - Enter a description for the comparison report task.

3. Click **Apply** to save your changes and go back to the Create Project page.

Editing Task Prerequisites

You can provide instructions so that project tasks execute in a certain order or sequence. Tasks can execute both in parallel and serially. Note that a task can have multiple prerequisite tasks.

Sequencing instructions can set from within a project, or they can be modified just prior to executing the project.

The instructions in this section illustrate how to provide sequencing instructions from within the project.

To edit prerequisites:

1. Select a task. Click on **Prerequisite**.
2. A window with a list of the other project tasks appears. Select the task that must precede the task highlighted in Step 1.
3. Click **OK**. The prerequisite task will appear in the project plan table.

Reviewing a Project

After you edit prerequisites, you can review your project details and check the execution sequence. You can simply save your project, or save and execute it, and then return to the main Projects page. From the main Projects page you can add attachments to your project.

Managing Uploaded Extracts

You can upload extracts that are needed for the project.

To upload an extract from your desktop:

1. From the Setup Manager landing page, select a saved project and click the **Upload Extracts** button. Here you can see all the uploaded extracts for the project. Click on the **Upload Extract from Desktop** button.
2. Enter the following:

- Name - A name for the extract.
- Data Source - Location and name of the file that you want to upload.
- Description

3. Click **Upload**.

To upload an extract from a stage directory:

1. From the Setup Manager landing page, select a saved project and click the **Upload Extracts** button. Here you can see all the uploaded extracts for the project. Click on the **Upload Extract from Stage Directory** button.
2. Enter the following:
   - Name - A name for the extract.
   - Stage Directory on Server - The absolute zip file path.
   - Description
3. Click **Upload**.

To view uploaded extracts for a project:

1. From the Setup Manager landing page, click on the Uploaded Extracts icon for the project.
2. The next page will list the extracts uploaded for the project.

   Click on the link in the Download column to download the uploaded extract.

To delete an uploaded extract for a project:

1. From the Setup Manager landing page, click on the Uploaded Extracts icon for the project.
2. The next page will list the extracts uploaded for the project.
3. Select an uploaded extract and click the **Delete** button.

Managing Attachments

You can attach one or more documents that are relevant to the project (for example, background, Project Contents, pre/post instructions, advice, and so on).

To add an attachment:

1. From the Setup Manager landing page, select a saved project and click the Add Attachment button.

2. Enter in the following:

   - Name - A name of the attachment.

   - Data Source - Location and name of the file that you want to attach.

   - Description.

3. Click **Upload**.

To view attachments for project:

1. From the Setup Manager landing page, click on the Attachments icon for the project.

2. The next page will list the attachments for the project.

3. Click on the link in the Download column to download the attachment.

To delete an attachment for a project:

1. From the Setup Manager landing page, click on the Attachments icon for the project.

2. The next page will list the attachments for the project.

3. Select an attachment and click the **Delete** button.

Viewing a Project

The Setup Manager landing page displays the saved projects in a grid with the following columns.

- Name - Project name.
- Release - 11i or R12. Defined when creating the project.
- Owner - The name of the user that created the project.
- Last Updated On - The date in which the project was last updated.
- Published - Denotes if a certain project is accessible to all users. If not checked, then it is accessible to only the owner.
- View Executions - View historical runtime executions of a project.
- Uploaded Extracts - View uploaded extracts (in zip format) in the Setup Manager secure archive repository.
- Attachments - View/Attach additional document(s) for a specific project.

Allowable Actions

From the Setup Manager landing page, you can perform the following actions on the selected projects.

Please note that other users can update or execute the public Projects only if the user's targets list match. Other users cannot add Targets to public Projects.

- Update - Many of the components of an existing project can be modified or

changed, notably targets and Selection Sets.

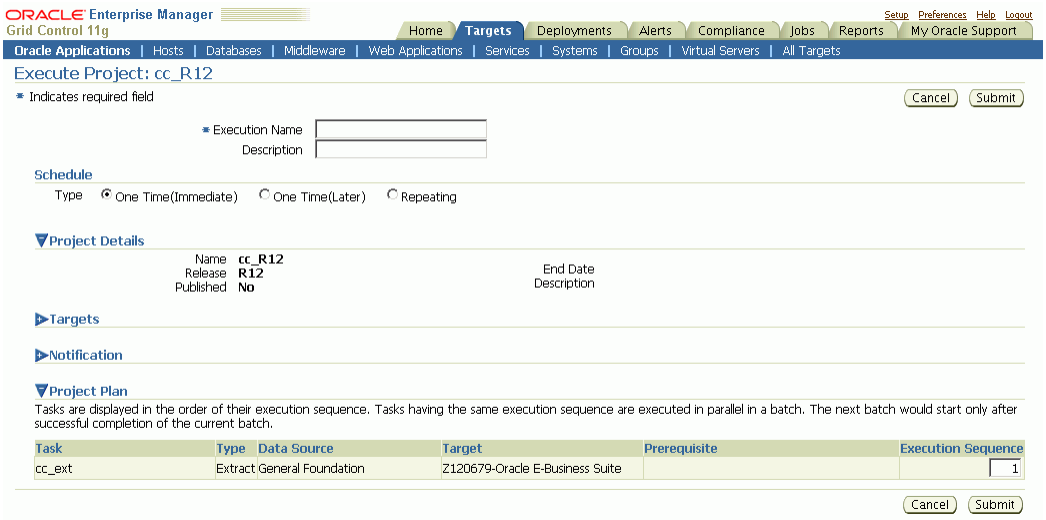
- Create Like - This feature allows you to create a new project based on an existing project. This feature is useful if the majority of the parameters of the project are the same, and you wish to change only a few selections. Also, if the project owner had published the current project, then another user can create a new project using the "Create Like" feature.

- Execute - Execute a selected project.

- Upload Extract - Upload a Setup Manager or Oracle E-Business Suite Extract zip file from a desktop into the Setup Manager repository.

- Add Attachment - Add an attachment to a project.

Executing a Project



Please note the following about executing Projects:

- All executions would be audited even if Approval is turned off.

- There can be only one execution request in "Pending Approval". A user is not allowed to submit a new approval request until the old one has been approved or rejected by an approver. To execute an approved request, user should navigate to Execution Summary screen and submit from there by selecting the request.

- Only a Super Administrator can delete completed executions.

- The drilldown capability to Transform > Generate templates is available from the Execution Detail > View Task Extract page. This button would appear only for

successful ones.

- A Project cannot be executed after its end date. If there are any schedules associated with the Project, then those schedules which appear after the end date will not be picked up.
- If the current user does not have the necessary approval role, the above screen will show a "Submit For Approval" button instead of a "Submit" button.

To execute a project:

1. From the Project Search page, select a project and click the **Execute** button. Alternatively, click on a project name (link) and click **Execute** on the View Project page.
2. Enter an Execution Name and description for the execution of the project. You can review information on the project as well, and if needed, update the Execution Sequence numbers for the tasks.
3. The execution can also be scheduled with the following available Schedules
   - One Time (Immediate)
   - One Time (Later)
   - Repeating
4. Click **Submit**.

Change Approval in Setup Manager

See the first chapter for information on the Change Approval Framework. This section provides an example of how change control can be implemented in Setup Manager.

Change Approval is supported in Setup Manager to control the execution of Projects.

Prerequisites

Approvals for Setup Manager must be enabled with the following setting in the amp.properties file:

```
enableApproval_AZ=Y
```

For this example, there must be a user who is either a Super Administrator or who has the role EBS_AZ_APPROVER.

Scenario - Request to Execute a Project

Here is an example of a request for executing a Project with Change Approval enabled.

1. A user makes a request for executing a Project.
2. The request then goes into Pending Approval status. The Project cannot be updated or executed any more.
3. The Super Administrator or Approver with the EBS_AZ_APPROVER role logs in and navigates to the Change Approval Dashboard.
4. The Super Administrator or Approver updates the request to either "Approved" or "Rejected".

   If the request is approved, the Project can be submitted for execution. Once the Project is approved, it can be updated and any edits on this session would not be considered for older approved executions until new approval has been submitted. There can be only one request in Pending Approval status for a Project.

   If the request is rejected, the Project can be updated. But the rejected execution request cannot be submitted for execution.

If the user is an Approver or Super Administrator, then there would not be any approval flow. The execution request would be automatically approved and audited, and the execution would be submitted.

Even if approval is disabled by setting the property 'enableApproval_AZ' to the value of 'N', the execution requests are audited and those requests are visible to the Super Administrator.

In the case of public projects, there is a good chance that the approved executions are submitted by users who have not raised the change approval requests. In these cases, the executions' job logs will be visible only to the user who submitted the executions.

Viewing Project Executions

After you submit an execution request, the View Execution page appears.

Click on the execution name link to view details for the execution.

You can perform the following tasks for a selected execution:

- View log - View the log file for the execution after it has completed.
- Restart - Start another execution of this project if and only if the prior execution has failed.
- Delete - Delete the execution if its status is 'Running' or 'Scheduled'. This capability is available only for a Super Administrator.

- View task details and download the extract and deployment report file.
    - In the execution details page click on the task name. The task details page will appear where you can seethe total number of records extracted and loaded.
    - You can download the extract content .zip file and deployment report file from the execution details page.

Managing Transforms and Templates

Transforms are simply editable extracts. Setup Manager can provide you the XML or LDT configuration data as an XSL template so that you can edit and transform the functional configuration data offline. The Setup Manager framework handles the conversion of an XML/LDT files to an XLS file and vice versa. Note that this transformation capability is restricted to Generic Loader and iSetup framework APIs only.

The following sections describe how you can transform, edit, or add functional configuration data offline and then add the Transform to a Project Plan.

A Super Administrator can see all Transforms created by all users. Other users can delete and "unshare" public Transforms. Transforms added to a Project Plan will not be overwritten by recent changes that are later done to the original transform.

Navigation: From the Change Management Dashboard, select the Transform or Interfaces links from the Setup Manager region.

Restrictions on using Microsoft Excel for Transformation

The following list outlines some of the restrictions for working with an Excel workbook for a transformation.

- All attribute values in Excel are of type plain text only even though some may have the attribute datatype of Number or Date in the database. Therefore it is highly recommended that you not change these to any type other than text.
- Do not format Dates.
- The number of records per Excel work book is configurable and is 10000 by default. If the actual record count exceeds 10K, then the data would be written in multiple Excel workbooks. (This value can be changed from the default by modifying property 'azNoOfRecordsPerXLSheet' in amp.properties file. The maximum value that can be given is 65536 as the maximum number of rows allowed in Microsoft Excel 2000 is 65536.)
- Bandwidth between the master and details IDs is configurable and is 1000000 by default. (This value can be changed from default by modifying the property

'azBatchSizeBetweenDetail' in the amp.properties file.)

- A maximum of 4K characters is supported per Excel sheet and if a column value exceeds 4K, then SM_LONG_COLUMN would be shown in Excel. If a user overrides the SM_LONG_COLUMN with other text, then the user-entered text would be considered.

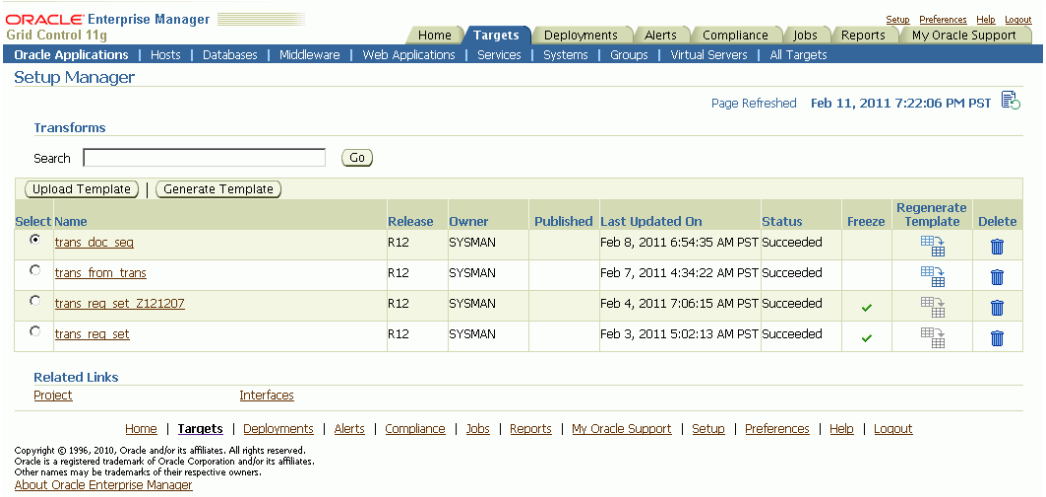
- The first five columns that appear in the Excel sheet are metadata columns: -ID, PARENT ID, STATUS, TRANSFORMED, DELETE. The actual data column will proceed after these columns.

- Editing the Excel header which contains the attribute names is not supported. The first row must be the attribute names and users must not modify this row.

- Users must ensure validity of IDs * Parent IDs. If the appropriate link is not provided, then newly/edited records will not be considered when Setup Manager creates an extract file from the transformed values.

Searching for a Transform

This page allows you to search for a transform, as well as generate a template for a new transform and upload a template.



To search for a transform:

1. Navigate to the Transform Search page from the Setup Manager section of the Change Management Dashboard. Alternatively, click on a "Transform" link from any Setup Manager page.

2. Enter a name of a transform and click **Go**.

3. The search results will be shown in the results table. The following columns are shown:

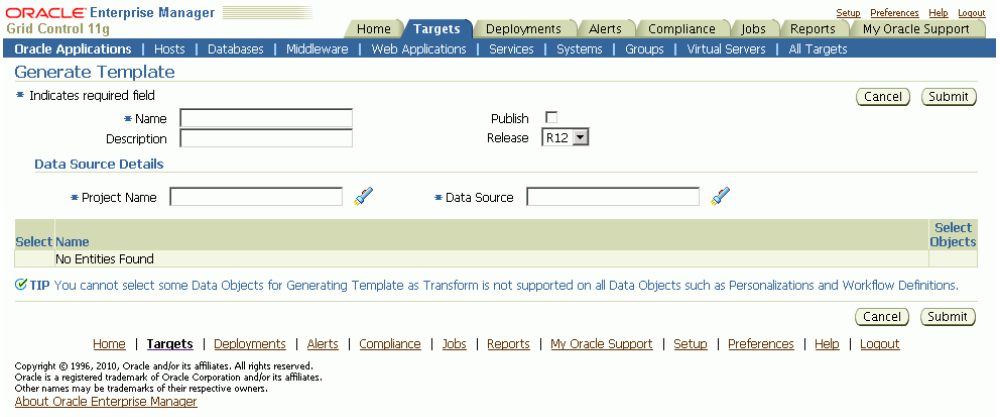
   - Name - Name of the Transform
   - Release - Transform release
   - Published - If another can view the content, then tick would appear.
   - Last Update Date - Last update date
   - User - Owner of the project.
   - Regenerate Template - Click on this icon to regenerate templates again.
   - Delete - Click on this icon to delete a Transform.

Generating and Regenerating a Template

To generate a template:

Provide information in this step that Setup Manager will collect while generating the template in a Transform.

1. Navigate to Transform Search page. Click on the Generate Template button on Transform Search table.



2. Enter in the following information for the template:

   - Name - Name for the Transform.
   - Release - Choose the Oracle E-Business Suite release for which data is to be migrated.

- Publish - Select the check box if you want to share the Transform with other users.
- Description - Description for the project.
- Project - Use the LOV to pick a project.
- Data Source - Use the LOV to pick uploaded extracts or executions from a project.
- The Transform Objects Hgrid has the following headers:
  - Name - Name of the object.
  - Select - Select the box to select an object for Transform.

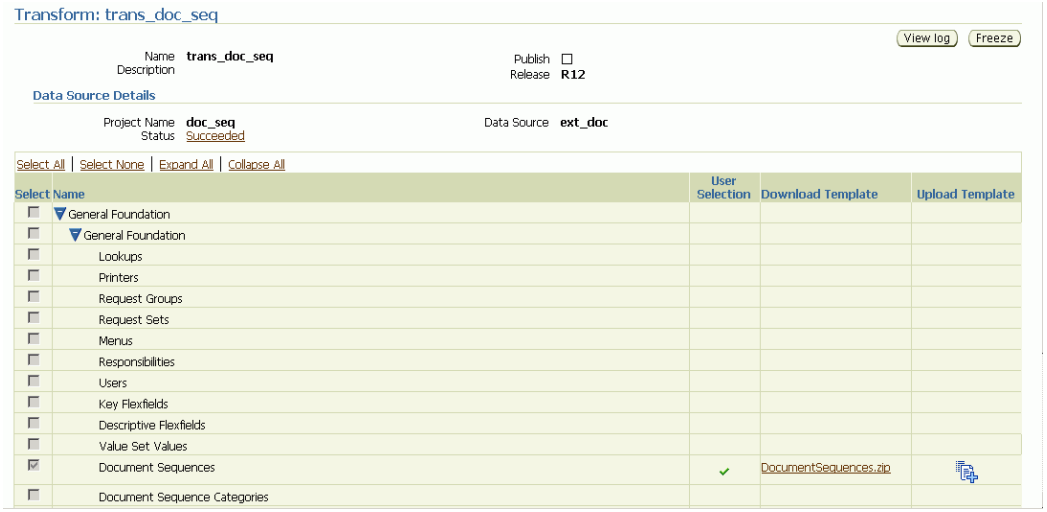
To regenerate a template:

Setup Manager collects the information provided in this step while regenerating the template in a Transform.

1. Navigate to Transform Search page. Click on the Regenerate Template icon for a Transform in the Transform Search table.
2. Enter in the following information for the template. Note that you can update only the Publish and Description fields.
   - Publish - Select the check box if you want to share the Transform with other users.
   - Description - Description for the project.

Updating a Transform

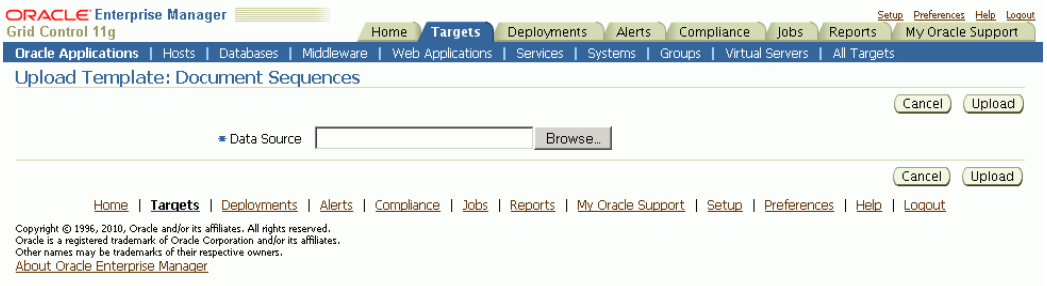
To update a transform:



Navigate to this page by clicking the Transforms link under Setup Manager from the Change Management Home page, then selecting a Transform.

The next few sections describe how to update a transform.

To upload a template:



You can select a Template from your Desktop and upload it. You can choose Cascade Changes from the current entity down to its children. This option appears only in the case of a hierarchical selection set.

1. To upload a template, click on the Upload Template icon for a given object.

2. If desired, select the Cascade Changes option.

   The Cascade Changes option applies only to root setup objects.

   The Cascade Changes option does not apply on sibling data objects even if mapping

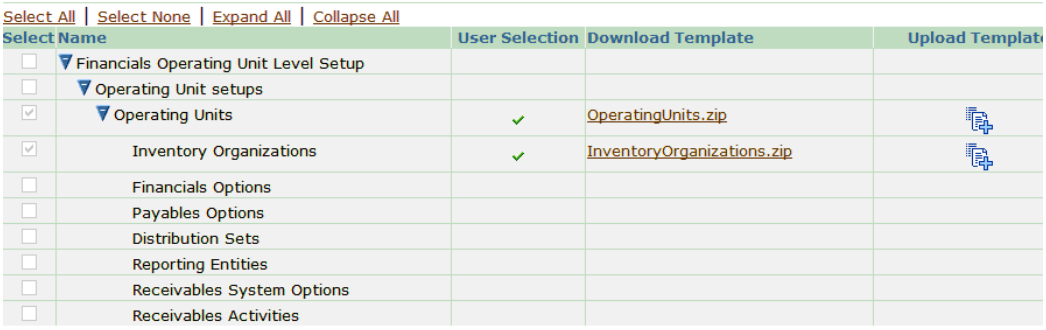
exists between the interfaces.

By default, the value would be cascaded for the setup objects having one or more child setup objects even if they appear in a flat selection set. For example, the Accounting Calendar has Period Types and Period Sets as child objects. If a user changes an attribute value in Period Types and uploads it back, then if there is a valid attribute mapping between Period Types and Period Sets, then the attribute value would flow from Period Types to Period Sets if the criteria match.

3. Select a Data Source.

Example of Editing a Microsoft Excel Spreadsheet for Transformation

This section describes an example of editing a Microsoft Excel spreadsheet for transformation of a financial operating unit level selection set. The extract contains Operating Units and Inventory Organizations APIs, as shown in the figure below. The transform is created using this extract. After the transform is completed successfully, a ZIP file is created for both the entities in the extract.

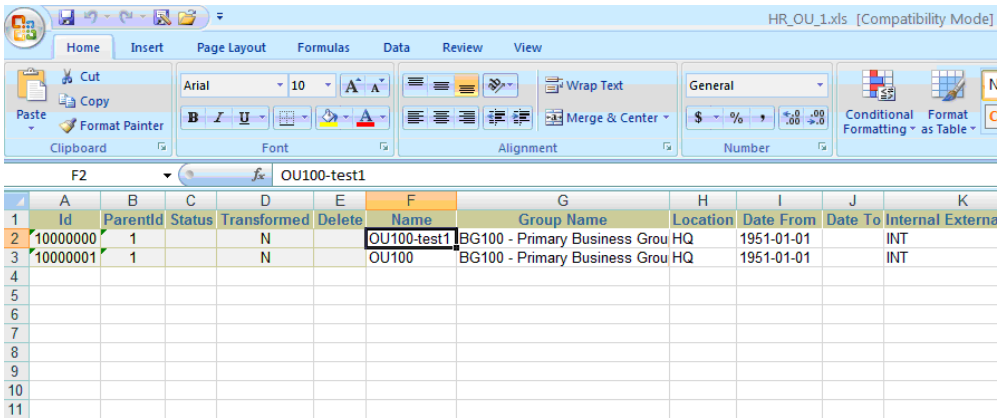


1. Download the OperatingUnits ZIP file to the Desktop and unzip it.

   The downloaded Transform ZIP file has the following contents:

   - driver.xml
   - One or more Excel files (Here, HR_OU_1.xls)

2. Click on the .xls file. The Excel workbook appears as shown in the figure below:



The "OperatingUnits" workbook has four sheets, one for each data source for Operating Unit API (Operating Unit, Classification, Classification Type and Organization Tl).

The structure of the Operating Unit API is as follows:

- Operating Unit
  - Classification
    - Classification Type
- Organization Tl

The first five columns in the Excel sheet are metadata columns: ID, ParentID, Status, Transformed and Delete:

- ID - Unique Identifier for a record in the API
- ParentID - ID of the Parent record
- Status - Status of the record in the Transform. It can be Updated, Inserted, Updated with Warning, or Inserted with Warning
- Transformed – Y or N. Y if any of the attributes in that particular record is transformed.
- Delete – Yes or No. To delete records, select Yes.

Next to the metadata columns are the attribute names for a data source.

The following three operations can be performed and are described below:

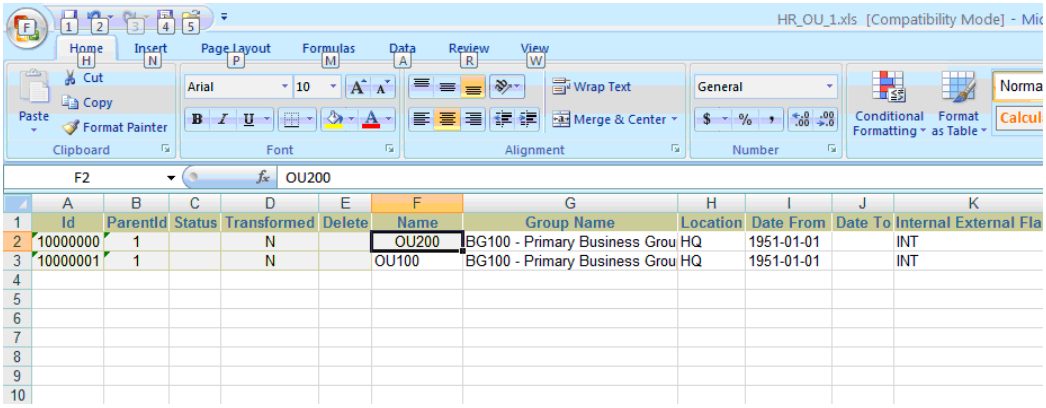
- Update existing records
- Insert new records

- Delete existing records

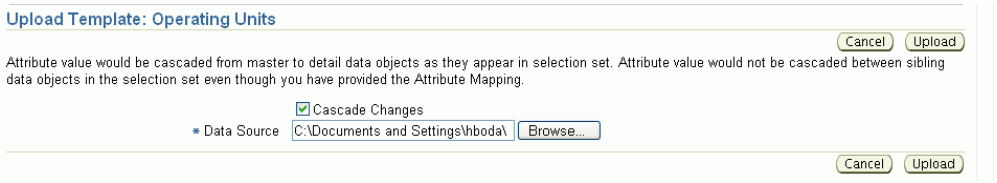
Updating existing records

To update existing records in the database, just update the value in the Excel sheet.

For example, in the Operating Unit data source, the operating unit name has to be changed from OU100-test1 to OU200, as shown in the figure below.



1. Zip the files (One or more Excel files along with driver.xml) and upload it by clicking on Upload Template icon against Operating Units, as shown in the figure below.



2. Select the Cascade Changes box if the changes need to be cascaded down to Inventory Organizations API.

3. Select your ZIP file as the Data Source.

4. Click **Upload**.

Cascade Changes

Cascade changes between two Interfaces can occur if and only if there is an attribute mapping defined between these two Interfaces.

Cascade changes happen within the master entity object (for example, Operating Units) as well as to the detail entity object (for example, Inventory Organizations). There are two types of cascade operations that take place:

- Cascade due to attribute mapping
- Cascade due to name-value match

Cascade due to attribute mapping

Here is an example: The following figure shows the attribute mappings between Operating Units and Inventory Organizations.

Update Dependent Interface: Inventory Organizations

Indicates required field

Cancel Save Apply

Release **R12**
Interface Name **Operating Units**
Dependent Interface Name **Inventory Organizations**

Define Attribute Mapping

Data Source	Attribute Name	Dependent Data Source	Dependent Attribute Name	User Defined	Enabled	Delete
Operating Unit	Name	Inventory Org	Operating Unit Name		☑	
Operating Unit	Group Name	Inventory Org	Group Name		☑	

Add Another Row

Cancel Save Apply

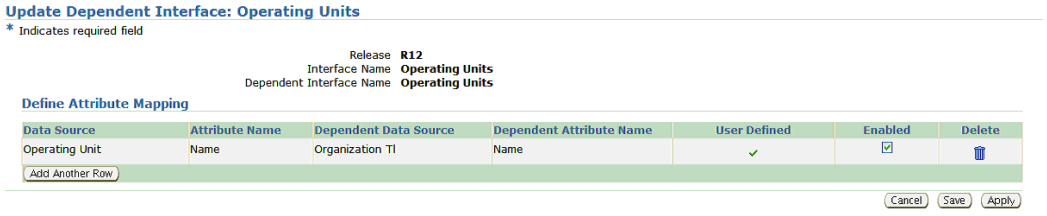
The Name and Group Name of Operating Unit are mapped to Operating Unit Name and Group Name, respectively.

In this example, if you open the Inventory Organization Excel sheet, you see that the Operating Unit Name was changed to OU200 for the records having IDs '10000000', '10000001' and '10000002', as shown in the figure below.

AH	AI	AJ	AK	AL	AM	AN	AO
Attribute 20	Cost Allocation	Soft Coding	Set Of Books Name	Legal Entity Name	Operating Unit Name	Organization Code	Classification
			PL100	US12-3456789	OU200		INV
			PL100	US12-3456789	OU200		INV
			PL100	US12-3456789	OU200		INV
			PL100	US12-3456789	OU100	100	INV
			PL100	US12-3456789	OU100	101	INV
			PL100	US12-3456789	OU100	102	INV

Cascade due to name-value match

Within the API, the system does a name and value match to find out if there are any eligible records to be transformed. For example, within the Operating Unit API: Operating Unit and Organization TL are linked through a view link. Even though there is no attribute mapping defined between these two entities, the transform does a name-value match between these two data sources, finds out the mapping, and cascades the data.



Update Dependent Interface: Operating Units

* Indicates required field

Release **R12**
Interface Name **Operating Units**
Dependent Interface Name **Operating Units**

Define Attribute Mapping

Data Source	Attribute Name	Dependent Data Source	Dependent Attribute Name	User Defined	Enabled	Delete
Operating Unit	Name	Organization Tl	Name	✓	☑	

Add Another Row

Cancel Save Apply

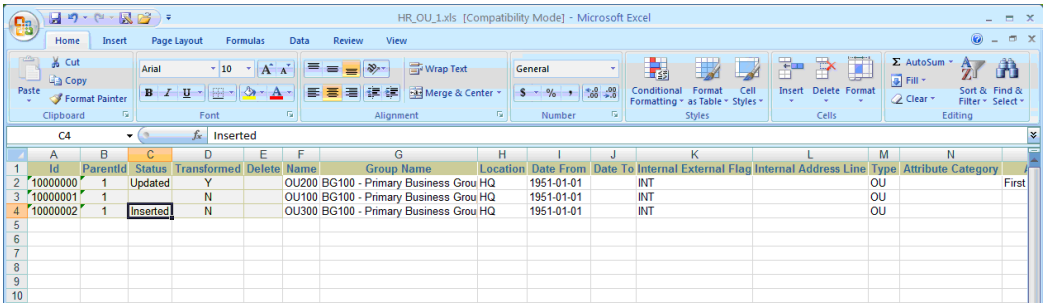
Also, across the APIs within a hierarchical selection set, a name and value match is performed during the transform for the attributes that have been changed.

Inserting new records

To insert a new record to the API, first the record needs to be inserted at the master object level (Operating Unit), then at the detail level (Organization Tl, Classification, Classification Type). If any records are inserted at the detail without inserting records at master, the details records will be 'Skipped'. Also, if the records are inserted only at the master and not inserted at the detail level, then the records at the master will have the status as 'Inserted with Warning'.

While inserting new record to any data source, both the unique ID and proper ParentID need to be specified.

In the above example, say we insert new operating unit OU300. As the Operating Unit already have records with ID '10000000' and '10000001', the new record should be given an ID as '10000002' and an ParentID as '1', as shown in the figure below:

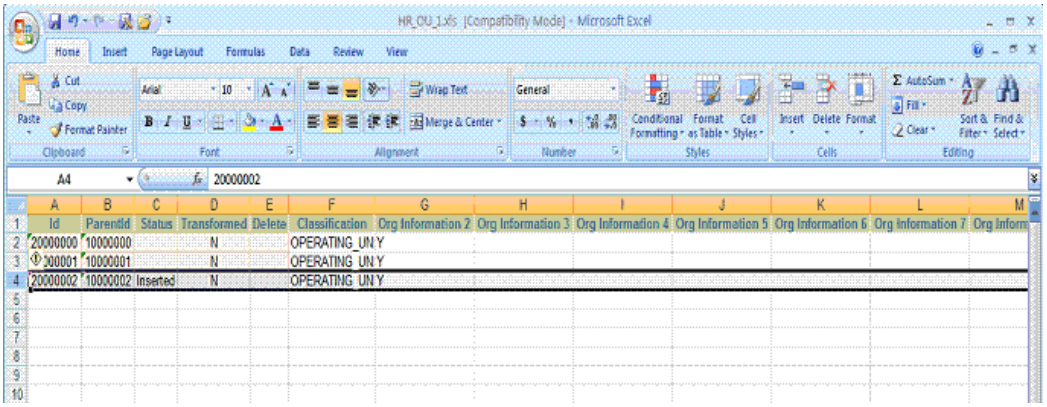


	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Id	ParentId	Status	Transformed	Delete	Name	Group Name	Location	Date From	Date To	Internal External Flag	Internal Address Line	Type	Attribute Category
2	10000000	1	Updated	Y		OU200	BG100 - Primary Business Grou	HQ	1951-01-01		INT		OU	First
3	10000001	1		N		OU100	BG100 - Primary Business Grou	HQ	1951-01-01		INT		OU	
4	10000002	1	Inserted	N		OU300	BG100 - Primary Business Grou	HQ	1951-01-01		INT		OU	
5														
6														
7														
8														
9														
10														

Now the detail information needs to be added to Organization Tl, Classification, and Classification Type data sources with the proper ID and ParentID. The data appears as follows after insertion.

For Classification, note in the figure below the record with ID '20000002', ParentID '10000002', and Status 'Inserted'.

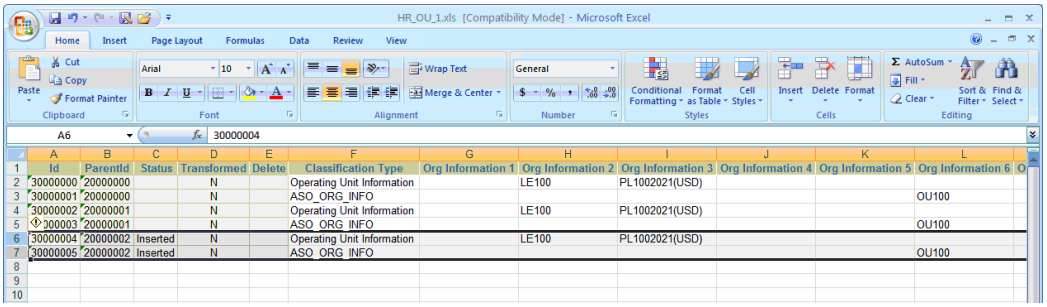
Classification



For Classification Type, the following records are inserted, as shown in the figure below:

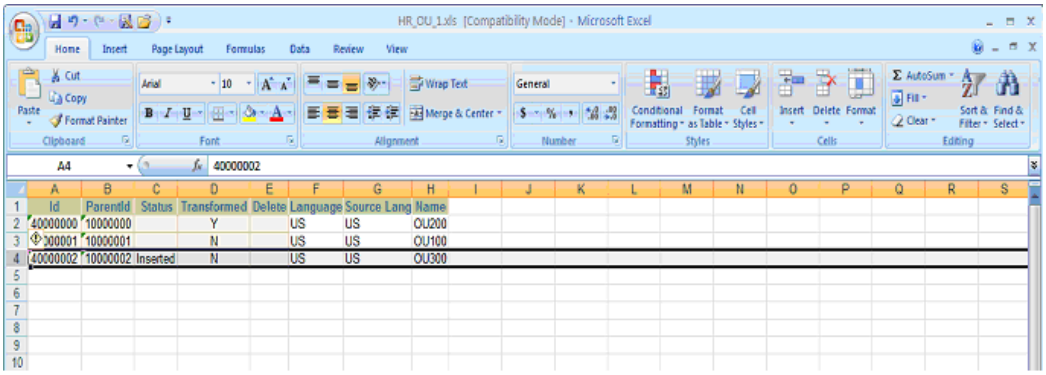
- ID '30000004', with ParentID '20000002', Status 'Inserted', and Classification Type 'Operating Unit Information'
- ID '30000005', with ParentID '20000002', Status 'Inserted', and Classification Type 'ASO_ORG_INFO'

Classification Type



For Organization Tl, note the record with ID '40000002', ParentID '10000002', Status 'Inserted', and Name 'OU300', as shown in the figure below:

Organization Tl



Zip the files (One or more Excel files along with driver.xml) and upload it by clicking on the Upload Template icon for Operating Units.

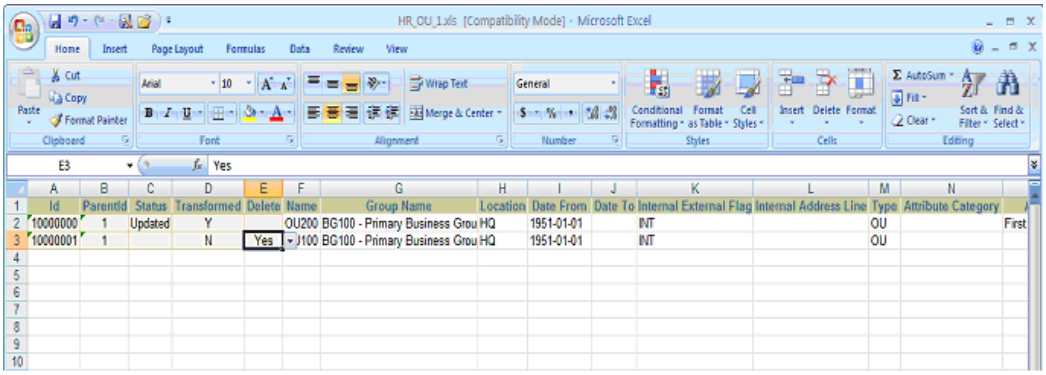
Deleting existing records

To delete existing records from the extract select 'Yes' from the delete dropdown list box in the Excel file for the IDs that need to be deleted. After the deletion is selected at the master level, the detail records are also deleted. If we delete the record with Name 'OU100' (for example, with ID '10000001' in Operating Unit), the related detail records in Classification, Classification Type, and Organization Tl are also deleted.

1. Select 'Yes' in the dropdown Delete Column for the ID '1000000' in Operating Unit.

2. Zip the files (One or more Excel files along with driver.xml) and upload it by clicking on Upload Template icon for Operating Units.

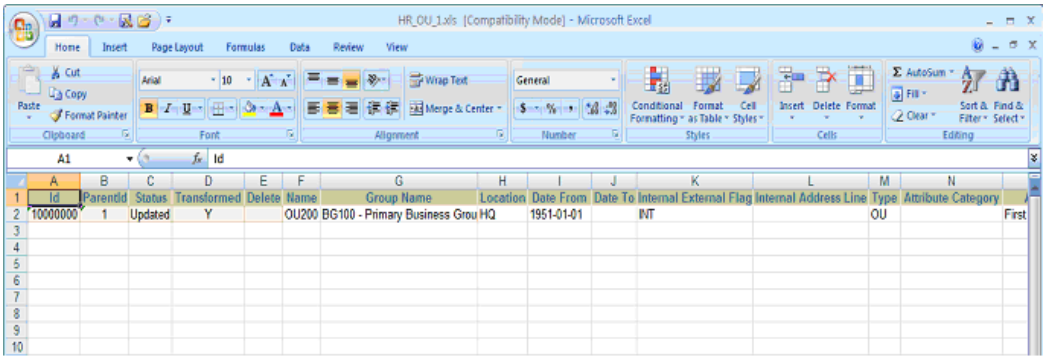
In the following example, the record with the ID '10000001' is marked with "Yes" in the Delete column as shown in the figure below.



After the transform is completed successfully, the data looks as shown in the following figures for Operating Unit, Organization Tl, Classification, and Classification Type data

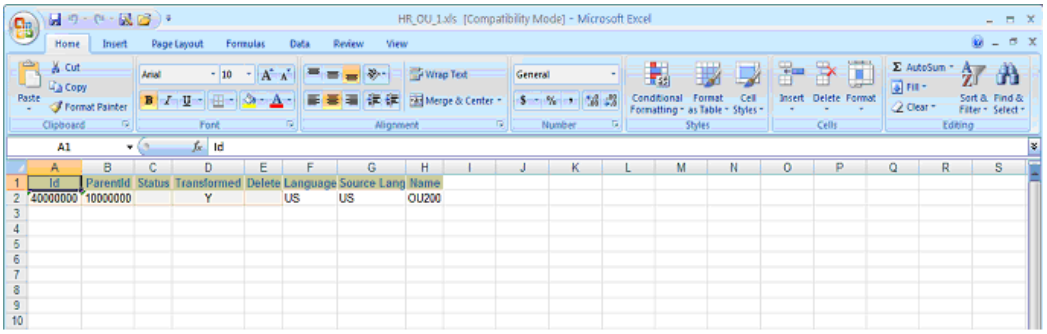
sources. Note that the record with the ID '10000001' is no longer listed in the Operating Unit figure below.

Operating Unit



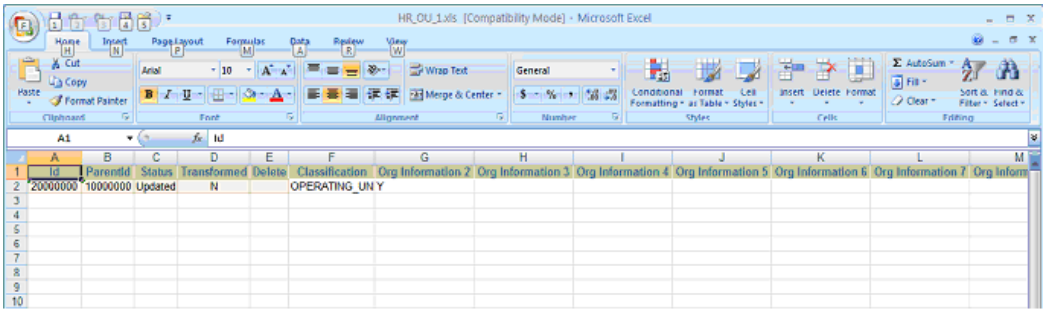
For Organization Tl, note that the record with the Parent ID of '10000001' is not listed in the figure below.

Organization Tl



The related detail record for Classification is deleted, as shown in the figure below.

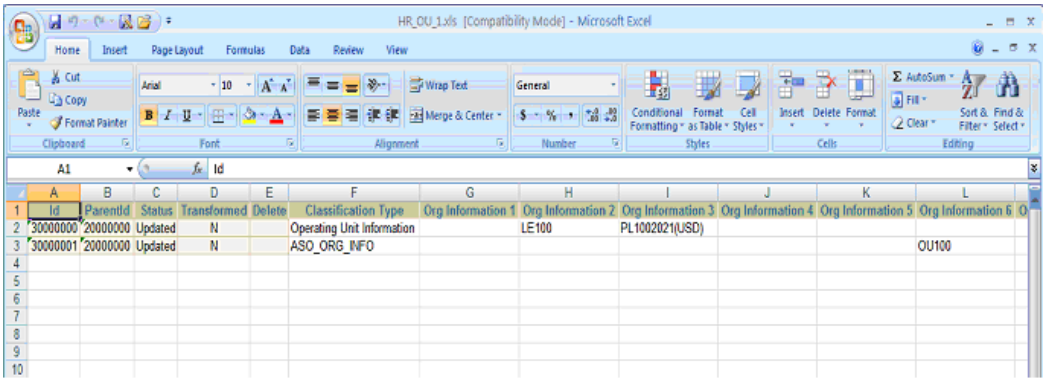
Classification



Id	ParentId	Status	Transformed	Delete	Classification	Org Information 2	Org Information 3	Org Information 4	Org Information 5	Org Information 6	Org Information 7	Org Inform
20000000	10000000	Updated	N		OPERATING_UN	Y						

The related detail record for Classification Type is also deleted, as shown in the figure below.

Classification Type



Id	ParentId	Status	Transformed	Delete	Classification Type	Org Information 1	Org Information 2	Org Information 3	Org Information 4	Org Information 5	Org Information 6
30000000	20000000	Updated	N		Operating Unit Information		LE100	PL1002021(USD)			
30000001	20000000	Updated	N		ASO_ORG_INFO						OU100

Downloading a Transform

To download a transform:

1. Click on the name of the transform in the Download Template column.
2. Save the ZIP file to your disk.

Freezing a Transform

To freeze a Transform:

1. If you are finished with the transform process, you can freeze the transform by clicking the **Freeze** button. Transforms that are in a Freeze state can be added to a

project plan for the same release.

You cannot edit a transform in the Freeze state, but you can unfreeze a transform for further progress. However, these later changes do not affect the transform content added previously to a project plan.

> **Note:** If any errors occur while uploading or cascading the transform and if you still wish to continue with the Freeze option, then data XML from the original extract will be copied for those setup objects that have errors.

2. Click **View Log** to view details of the job in which the transform was done.

Discovering Interface Metadata

To discover Interface Metadata:

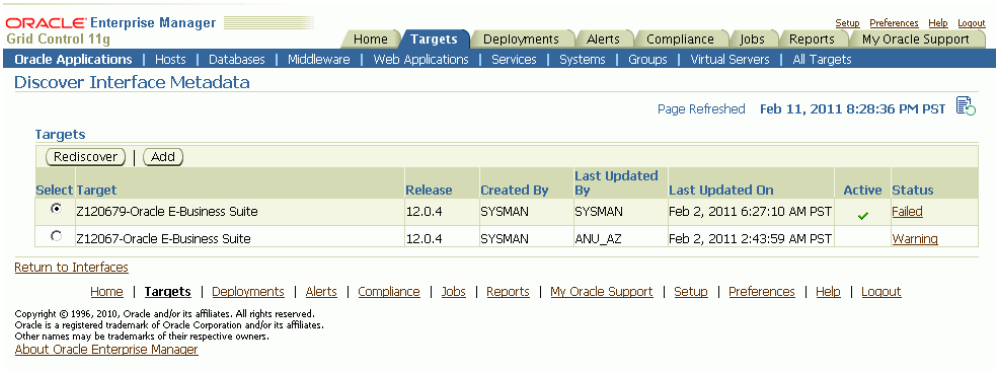
Before creating a transform, you must discover the interface metadata for the specific Oracle E-Business Release. To do this, perform the steps below for the Discover Interface Metadata page.

You can also use the Discover Interface Metadata to manage your Interface Metadata targets.

You can refresh the Interface Metadata by selecting any target and clicking on the **Refresh** button on the Discover Interface Metadata page. The currently selected refreshed target will then become active.

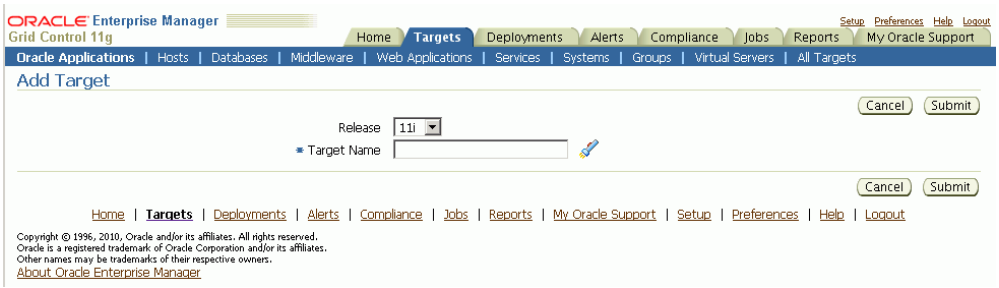
> **Note:** You can add multiple Release 11*i* or Release 12 targets but at any given time only one Release 11*i* target and one Release 12 target would be active.

1. Navigate to Interfaces > Discover Interface Metadata > Add Target.



Click **Add** to add a target.

2. On the next page, specify the Release of the target. Use the LOV to specify the Target Name.



3. Click **Submit**.

   Only one request to discover Interface Metadata can be in the status Pending or Running at a time.

Managing Interfaces

An Interface Attribute mapping can be created between data sources of same or related (dependent) interfaces; for example, Base Data Source -> Translated Data Source.

Attribute mapping between two interfaces will not be used if the two interfaces appear in the Selection Set as siblings.

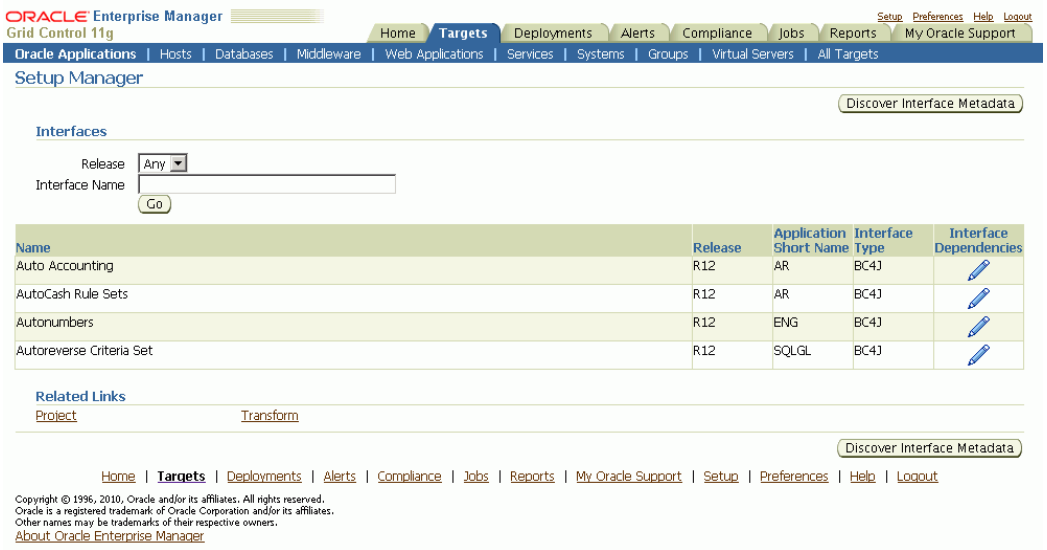
A dependent Interface Attribute Mapping is used between master to detail interfaces as they appear in hierarchical selection sets such as the Oracle Financials Operating Unit Level Setup and Payroll Element. To define the relation between two interfaces, a minimum of one attribute mapping is mandatory.

Dependent Interface Mappings are not user specific; that is, a mapping created by one user can be used in another user's transform. If a user does not want to use some or all interface mappings, he or she can uncheck the Enabled box in the Define Attribute Mapping screen.

User-defined mappings can be deleted by any user. Seeded mappings can only be enabled or disabled; they cannot be deleted.

Use the following procedure to search for interfaces.

To search for an interface:



You can search for an interface on the following:

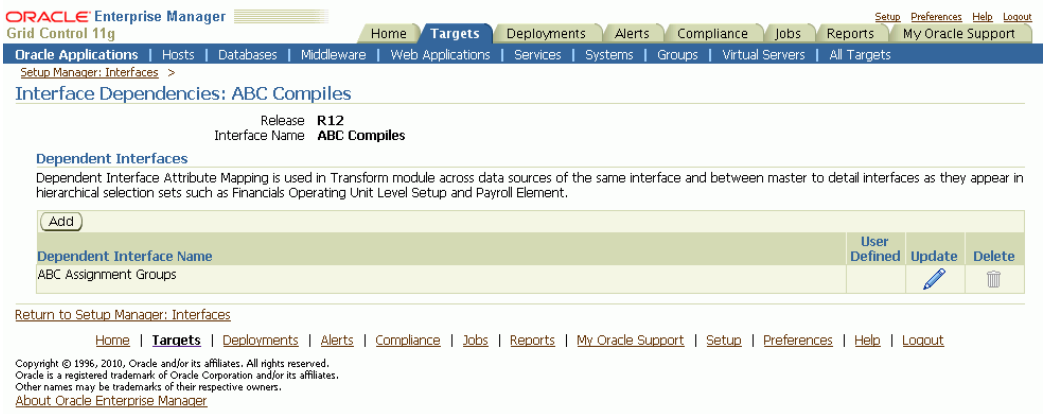
- Release - You can search for interfaces on Release 11*i*, Release 12, or both. The search results will include only records for configured releases.
- Name - Name of the interface.

The results table has the following columns:

- Name - Name of the interface.
- Release - Oracle E-Business Suite release to which this API belongs.
- Application Short Name - Application Short Name.
- Interface Type - BC4J indicates iSetup framework. FNDLOAD indicates Generic Loader.
- Interface Dependencies - Icon to update or add more dependent interfaces and to provide more attribute mappings between the required and the dependent interfaces.

Updating Interface Dependencies

To update interface dependencies:

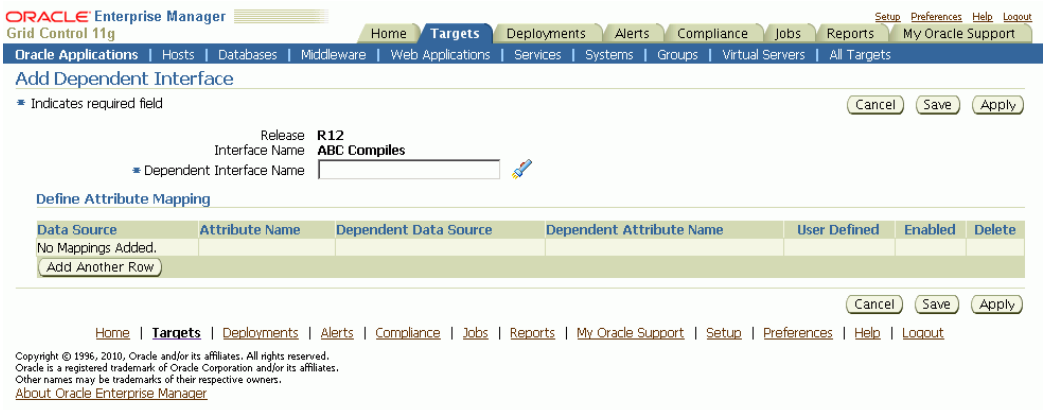


You can navigate to this page from the Interface Dependencies icon in the Interface Search page.

This page lists dependent interfaces for the selected interface. Table columns are:

- Dependent Interface Name - Name of the dependent interface.
- User Defined - Tick mark would appear if a user has created it.
- Update - This icon allows you to update or add an attribute mapping between the current interface and the dependent interface.
- Delete - This icon allows you to delete a dependent interface. This icon is available only for seeded ones.

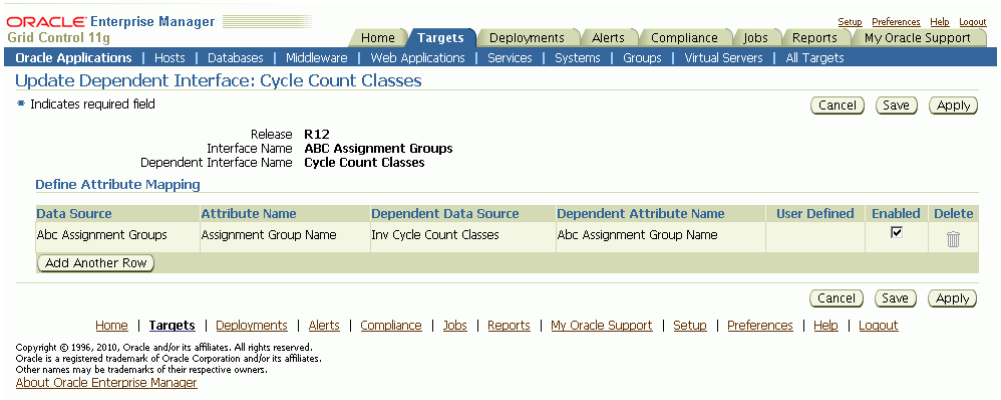
You can add an additional dependent interface by clicking the **Add** button.



Updating Dependent Interfaces

To update a dependent interface:

1. Navigate to the Update Dependent Interface page by clicking on the Update icon for a Dependent Interface in the Update Interface Dependencies page.



2. You can disable an attribute mapping by de-selecting the Enabled box.

3. Click **Add Another Row** to add a new attribute mapping.

Defining an Attribute Mapping

To define an attribute mapping:

1. Click on the **Add Another Row** button in the Define Attribute Mapping region in the Update Dependent Interfaces page.

Enter the following:

- Data Source - Data source of the required interface. The data source is a Java/SQL object that contains the SQL query for extraction. The system gets the SQL query from the data source and uses it as a query against the database. Then the system iterates over the records and writes them as XML or LDT depending on the nature of the API. In other words, a data source is simply a combination of one or more tables using data which is extracted. A data source can be compared to a table.

  Attribute Name - Attribute name of the data source of the required interface. An attribute name can be compared to a table column name.

  Dependent Data Source - Data source of the dependent interface.

  Dependent Attribute Name - Attribute name of the data source of the dependent interface.

- User Defined - A tick mark appears for those rows for which you have created a mapping.

- Enabled - You can enable or disable an attribute mapping. If you have disabled a mapping, then it will not be used at the time for cascading a value from master to detail.

  For example, say there are two setup objects named Employee and Department. The Department table's column 'department_name' is linked to the Employee table's column 'department_name'. If you change the value of department_name in the Department Microsoft Excel file and upload it, then the cascade feature works in one of two ways: If you have enabled attribute mapping between the Department table's and the Employee table's column department_name, then the value that you have changed in the Department table would automatically be reflected in the Employee table. If you have disabled attribute mapping, then this cascading would not happen.

- Delete - You can delete only user-defined attribute mappings.

2. Click **Save** to save your changes and remain on this page. Alternatively, you can click **Apply** to save your changes and go back to the previous page. Click **Cancel** to cancel your updates and return back to the previous page.

A

Supported File Types in Customization Manager

Supported File Types

The following table lists the supported file types in Customization Manager. You can include files of only these types in your custom packages. The Object Action column lists the action that AutoPatch performs on files of the given type.

File Type Name	Source Extension	Description	Object Action
fmb	fmb	Oracle Forms	copy and genform
prt	prt	Oracle Reports driver	copy
rdf	rdf	Oracle Reports	copy and genrep
pld (Forms)	pld	Forms Library	compile to pll; copy and genfpll
pld (Reports)	pld	Reports Library	compile to pll; copy and genrpll
pdf	pdf	document file (Portable Document Format (PDF)	copy
pdf	pdf	XMLP PDF notrans	copy and load using XDOLoader

File Type Name	Source Extension	Description	Object Action
xls	xls	Microsoft Excel file	copy
mmb	mmb	menu file	copy
java	java	Java file	compile and deploy under $JAVA_TOP
zip	zip	zipped file	copy
class	class	Java class file	copy
jpg	jpg	JPEG image file	copy
bmp	bmp	bitmap image file	copy
dbc	dbc	file used for database connection	copy
doc	doc	Microsoft Word document file	copy
dot	dot	Microsoft Word template file	copy
drv	drv	driver file	copy
fmx	fmx	compiled form	copy
software htm	htm	Hypertext Markup Language	copy
html	html	Hypertext Markup Language	copy
odf	odf	object definition file	copy
pkh	pkh	package header	copy and execute as APPS
plb	plb	package body	copy
RTF File	rtf	rich text format	copy
XMLP RTF notrans	rtf		copy and load using XDOLoader

File Type Name	Source Extension	Description	Object Action
sql	sql	SQL script (copy only)	copy
wft	wft	Workflow Text	copy and upload using WFLOAD
xml	xml	Extensible Markup Language file	copy
dll	dll	dynamic link library	copy
mmx	mmx	a kind of menu file	copy
sym	sym	always accompanies a dll	copy
tif	tif	image file (Tagged Image File Format)	copy
sh	sh	Bourne or Korn shell script	copy
jlt	jlt	Java Loader Text - used by AKLOAD.java	copy
eex	eex	Oracle Discoverer	copy
dis	dis	Discoverer Export	copy
lct	lct	Application Object Library Generic Loader control file	copy
software ldt	ldt	used in software patches	copy and upload using FNDLOAD
sqlj	sqlj	SQLJ file	copy
ini	ini	Java Parameter File	copy
xsl (non-dbdrv)	xsl	XML Style Sheets (not used in database driver)	copy
create_view	sql	Create or Replace View Script	copy and execute as APPS

File Type Name	Source Extension	Description	Object Action
create_trigger	sql	Create or Replace Trigger Script	copy and execute as APPS
create_type	sql	Create or Replace Type Script	copy and execute as APPS
create_index	sql	Create Index Script	copy and execute as APPS
seed_data	sql	Custom Seeded Data SQL script	copy and execute as APPS
create_synonym	sql	Create View Synonym Script	copy and execute as APPS
jsp	jsp	Java server page	copy
res	res	resource file to store WF messages and used by WF Resource Generator	copy
ps	ps	Postscript Pages	copy
properties	properties	Java Property Class	copy
pll (Forms)	pll	compiled Forms library	copy and run genfpll
pll (Reports)	pll	compiled Reports library	copy and run genrpll
ogd	ogd	Oracle Graphics	copy
env	env	environment file	copy
js	js	Javascript file	copy
rpt	rpt	Oracle Reports file	copy
jar	jar	Java archive file	copy
Pls	pls	PL/SQL package specification	copy and execute as APPS
Pks	pks	PL/SQL package specification	copy and execute as APPS

File Type Name	Source Extension	Description	Object Action
so	so	UNIX shared library	copy
Jpx	jpx	BC4J Substitution	copy
vsd	vsd	source file for gif files used in translations	copy
dtd	dtd	XML Document Type Definition	copy
xss	xss	Extensible Style Sheet definition	copy
wbmp	wbmp	bitmap file for wireless devices	copy
xgm	xgm	XML Gateway Mapping file	copy
xgd	xgd	XML Gateway Data definition file	copy
pl	pl	Perl Scripts	copy
pm	pm	Perl Modules	copy
drvx	drvx	database driver exception file	copy
pkb	pkb	package body	copy and execute as APPS
software css	css	used in software patches	copy
mac	mac		copy
cfg	cfg	configuration file	copy
txt	txt	plain text file	copy
uix	uix	user interface XML	copy

File Type Name	Source Extension	Description	Object Action
hct	hct	HRMS fast formula loader control file	copy
hdt	hdt	HRMS fast formula loader data file	copy
pdt	pdt	HRMS legislative loader data file	copy
wfx	wfx	Workflow XML loader files	copy
csv	csv	file from which user-needed data is imported	copy
ear	ear	an EJB .jar archive with .xml contents in the META-INF	copy
xdf	xdf	XML files containing object definitions	copy and execute using FNDXDFCMP
JRAD/MDS File	xml	JRAD Files are xml extensions. These extensions should be used for Oracle Application Framework objects under the mds directory.	copy and load using XMLImporter
xlf	xlf	XLF files are generated from xml files	copy
document gif	gif	used in document patches; image files	copy
document htm	htm	used in document patches; HTML files	copy
document ldt	ldt	used in document patches; navigation library files	copy and upload using FNDLOAD
document css	css	used in document patches; cascading stylesheet file	copy and execute using FNDGFU

File Type Name	Source Extension	Description	Object Action
tld	tld	tag library definition file	copy
xsd	xsd	XML Schema provides a means for defining the structure of XML documents	copy
XMLP XSL notrans	xsl	XML Publisher (XDO) non-translatable XSL templates	copy
interface ldt	n	Interface Repository loader file	copy
XMLP RTF template	rtf	XML Publisher (XDO) translatable templates	copy
XMLP xlf	xlf	xlf files generated from translatable XMLP templates	copy
xdf(AW) xlf	xlf	Analytic Workspaces XML files containing object definitions	copy
pkh (no n)	pkh	package definition	copy
wsdl	wsdl	Web Services Description Language File	copy
XMLP RTF notrans	rtf	XML Publisher (XDO) non-translatable RTF templates (recommended)	copy
XMLP PDF notrans	pdf	XML Publisher (XDO) PDF templates	copy
XMLP XML notrans	xml	XML Publisher (XDO) non-translatable XML templates	copy

File Type Name	Source Extension	Description	Object Action
XMLP XSD notrans	xsd	XML Publisher (XDO) non-translatable XML templates	copy
jspx	jspx	JSP document	copy
java_lib	jar	Java library (for compilation only)	Use jar only for compiling; jar is not included into the patch
package_spec	sql	package specification	copy and execute as APPS
package_body	sql	package body	copy and execute as APPS
create_table	sql	Create Table Script	copy and execute as APPS
alter_table	sql	Alter Table Script	copy and execute as APPS
create_sequence	sql	Create Sequence Script	copy and execute as APPS
alter_sequence	sql	Alter Sequence Script	copy and execute as APPS
create_table_owner	sql	Create Table Schema Owner Script	copy and execute as schema owner
alter_table_owner	sql	Alter Table Owner Script (run as schema owner)	copy and execute as schema owner
create_index_owner	sql	Create Index Owner Script	copy and execute as schema owner
sql_owner	sql	Generic SQL Owner Script (copy only)	copy and execute as schema owner
create_view_owner	sql	Create View Owner Script	copy and execute as schema owner
create_synonym_owner	sql	Create Synonym Owner Script	copy and execute as schema owner

File Type Name	Source Extension	Description	Object Action
plx	plx	Oracle Forms library file executable	copy
dat	dat		copy
ico	ico	icon file	copy
dmp	dmp		copy
exp	exp		copy
fdo	fdo		copy
frm	frm		copy
hlp	hlp	help file	copy
inc	inc		copy
inp	inp		copy
msb	msb	Message Dictionary file	copy
obd	obd	online help file	copy
cmd	cmd	NT Command File	copy
csh	csh	shell script file	copy
dbt	dbt	database text file	copy
def	def		copy
flt	flt		copy
fmt	fmt	Oracle Forms form source text file	copy
fpp	fpp		copy

File Type Name	Source Extension	Description	Object Action
fxp	fxp		copy
imp	imp		copy
mk	mk	make file	copy
mmt	mmt	menu text file	copy
pc	pc	Pro*C program	copy
Scr	scr	script file generated by the Oracle Scripting Script Builder" tool"	copy
MSI	xml	Manual Step File	copy
ttf	ttf	TrueType font definition file	copy
conf	conf	configuration file to be released along the product	copy
mdl	mdl	text file created by Oracle Warehouse Builder (OWB) metadata loader file for data import	copy
thtml	thtml	template toolkit for ISD	copy
uit	uit	custom renderer for the FWK header component	copy
mif	mif	XML file that contains schematic information about graphical representation of the structure (RMIM)	copy
coremif	coremif	XML file that contains schematic information about graphical representation of the structure (RMIM)	copy

File Type Name	Source Extension	Description	Object Action
xcfg	xcfg	ADF XML configuration file	copy
rts	rts	resource bundle file for java related tool is Tecate	copy
x2h	x2h	X2h format file for ISD	copy
ppp	ppp		copy
tag	tag		copy
ora	ora	Net8 configuration files (listener.ora, tnsnames.ora)	copy
inf	inf	used for applying updates to windows registry	copy
app	app	used to configure the apache single listener (modplsql)	copy
tcl	tcl	TCL scripts called by Oracle Enterprise Manager's Intelligent Agent for hosted Exchange products	copy
fdi	fdi		copy
clx	clx	spell-checking dictionary file in compressed lexicon format	copy
tlx	tlx	spell-checking dictionary file in text lexicon format	copy
Z	Z	Adaptive Lempel-Ziv compressed file	copy
tpl	tpl	template files	copy
amx	amx	standard XML file	copy
ftg	ftg		copy

File Type Name	Source Extension	Description	Object Action
rlt	rlt		copy
ctl	ctl	SQL*Loader file	copy
rsp	rsp	Rapid Install response file	copy
prc	prc	Palm Pilot application file	copy
odb	odb	Oracle Lite database file required from Mobile Applications	copy
llt	llt		copy
software gif	gif	image file (Graphics Interchange Format)	copy
msg	msg	FND Message Loader Text	copy
OAF Component	java	Oracle Application Framework customizations	compile and deploy under $JAVA_TOP

Recommended Locations for Common File Types

The following table lists recommended locations for some commonly-used file types.

File Types	Description	Recommended destination path (relative to product top)
sql, package_spec,package_body, create_table, alter_table, create_sequence,alter_sequence,create_view,create_trigger, create_type create_index,seed_data,create_synonym,pkh,plb,pls,pkb, create_table_owner,alter_table_owner,create_index_owner, sql_owner,create_view_owner ,create_synonym_owner	SQL, PL/SQL files	patch/115/sql
software ldt	All Generic Loader (FNDLOAD) files	patch/115/import/<LANG>; for example, 'patch/115/import/US'
sh	Shell script	bin
xdf	XDF file	patch/115/xdf
pl	Perl script	bin
fmb	Forms	forms/<LANG>; for example, forms/US
rdf	Report	reports/<LANG>; for example, reports/US
html,xsl,xss,css	HTML and style sheets	html
jsp	JSP	html
XML Publisher templates	XML Publisher templates	patch/115/publisher/templates
java	Java files	java/<package path>; for example, java/test for the file oracle/apps/newprod/test/hello.java

File Types	Description	Recommended destination path (relative to product top)
JRAD/MDS file	Oracle Application Framework-related XML files	mds/<path>
gif	Image files	media
pm	Perl module	perl/<path>

Execution Sequence of SQL File Types

The following table lists the execution sequence of SQL file types.

File Type	Description	Order Of Execution
create_sequence	Create sequence script	1
create_table	Create table script	2
create_table_owner	Create table in custom schema	2
alter_table	Alter table script	3
alter_sequence	Alter sequence script	3
alter_table_owner	Alter table in custom schema	3
create_type	Create or replace type script	4
package_spec	Package specification	5
create_view	Create or replace view script	6
create_synonym	Create view synonym script	6
create_view_owner	Create view in custom schema	6
create_synonym_owner	Create synonym in custom schema	6

File Type	Description	Order Of Execution
package_body	Package body	7
seed_data	Custom seeded data SQL script	8
create_index	Create index script	9
create_index_owner	Create index in custom schema	9
create_trigger	Create or replace trigger script	10
sql	Generic	11
sql_owner	Run SQL in custom schema	11

For example, the type create_sequence will execute before the type create_table or create_table_owner. The types create_table/create_table_owner will execute in parallel before the types alter_table/alter_sequence/alter_table_owner.

B

Customization Manager Coding Standards

Customization Manager Coding Standards

Customization Manager has a standards checker to check the that the files included in a custom package meet certain coding standards. This checker tests all code for standards compliance and cannot be turned on or off.

Some standards are mandatory and will result in failure when Customization Manager attempts to build the package. Other standards are recommended, and the standards checker will give a warning but the package will be built.

Mandatory Standards

The standards in the following table must be met. If a file does not meet these standards then Customization Manager will not build the package containing it.

Standard Name	Description
Header Check	Each file must have an Oracle-compliant source header present.
PLD File Location Standard	PLD files must be located somewhere under one of following directories: resource, plsql, graphs.
SQL using CONNECT Standard	SQL files using a "connect" statement must have a valid dbdrv hint provided within the file.
Java Destination Path Standard	For Java files within a package, the destination path must start with "java".

Standard Name	Description
Java Package Path Standard	For Java files within a package, the destination path for the Java file must match its package structure.

Other Standards

The following table lists standards that if not met, will result in a Warning but the package will still be built.

Standard Name	Description
Java SOP Check	Java files must not use System.out.print
Java System.gc() Check	Java files must not use System.gc
SQL dual reference check	SQL files must not use System.dual, instead use dual
PERL module location	Perl module must be located anywhere under perl directory
PERL file location	Perl files must be located under one of following directories: bin, patch/[release]/bin,admin/template,admin/template/*.
SQL comment standard	SQL file should not have -- as comment
SQL file (!) check	SQL file should not have ! character
PLS (!) check	PLS file should not have ! character
JRAD halign check	JRAD XML files should not contain hAlign
Java package name check	All Java classes must be in packages beginning with: oracle.apps.[prod_name]
Java System.err Check Standard	Java files must not use System.err
SQL file location check	SQL files must be located under one of following directories: admin/sql,admin/template,admin/template/*,patch/ [some dir]/sql,sql

Standard Name	Description
Drvx file location check	Drvx files must be located under one of following directories: patch/[some dir]/driver, admin/template,admin/template/*
Driver File Location Standard	Driver files must be located under one of following directories: admin/driver,patch/[some dir]/driver, admin/template,admin/template/*
LCT File Location Standard	LCT files must be located under one of following directories: admin/import,patch/[some dir]/import,upgrade/[some dir]/import,admin/template,admin/template/*
LDT File Location Standard	LDT files must be located under one of following directories: admin/import,patch/[some dir]/import,help,,admin/template,admin/template/*
PKG File Location Standard	Package files must be located under one of following directories: admin/sql,patch/[some dir]/sql,admin/template,admin/template/*
RTF File Location Standard	RTF files must be located under : patch/115/publisher/templates
XSS Location Standard	XSS files must be located under one of following directories: html,admin/template,admin/template/*
HCT Location Standard	HCT files must be located under one of following directories: patch/[some dir]/import,admin/template,admin/template/*
HDT Location Standard	HDT files must be located under one of following directories: patch/[some dir]/import,admin/template,admin/template/*
PDT Location Standard	PDT files must be located under one of following directories: patch/[some dir]/import,admin/template,admin/template/*
JavaScript Location Standard	JavaScript files must be located under one of following directories: html,patch/[some dir]/html,upgrade/[some dir]/html,admin/template,admin/template/*
PrintStackTrace Check	Using printStackTrace is not recommended
Workflow Location Standard	Workflow files must be located under one of following directories: admin/import,patch/[some dir]/import,admin/template,admin/template/*

Standard Name	Description
XDF Location Standard	XDF files must be located under one of following directories: admin/xdf,patch/[some dir]/xdf,patch/[some dir]/xdf/aw/US
Absolute URL Check Standard	Check for absolute URLs
Report Printer Def File	Report printer files must be located under one of following directories: reports,admin/template,admin/template/*
Form Location Standard	Form files must be located under one of following directories: forms,admin/template,admin/template/*
JAR Location Standard	Jar files must be located under one of following directories: java/3rdparty,java/3rdparty/stdalone,admin/template,admin/template/,patch/115/jar/bpel
JSP Location Standard	JSP files must be located under one of following directories: html,html/jsp/[PROD],html/jsp/[PROD]/[MOD],html/jsp/[PROD]/[MOD]/[sub MOD],admin/template,admin/template/*
Dependency Files Location Standard	Dependency files must be located under one of following directories: java/make,admin/template,admin/template/*
Cmd file Location Standard	CMD files must be located under one of following directories: admin/template,admin/template/*,bin
XML Location Standard	XML files must be located under one of following directories: html,java,mds,patch/115/publisher/defs,admin/template,admin/template/*,patch/115/manualsteps.
XGM Location Standard	XGM files must be located under one of following directories: patch/[some dir]/xml/US,admin/template,admin/template/*
XSL Location Standard	XSL files must be located under one of following directories: html,admin/xdf/xsl,patch/[some dir]/xdf/xsl,patch/[some
ForceViewCheck	One must use FORCE in CREATE statements in view creation scripts
Show Error Check	SQL scripts must not contain the Show errors command
Absolute URL Check	Having absolute URLs is not recommended

Standard Name	Description
Pkg Replace Check	Use CREATE OR REPLACE PACKAGE for package creation. Do not omit OR REPLACE
Pkg Create IS Check	Package creation must not use IS. Instead should always use AS
Xml Parse Standard	XML files should be well-formed
Control M Standard	Text files should not have control M [^M] character
SQL NoLogging Check	Using NOLogging in SQL scripts is not recommended
SQL Serveroutput Check	Using set serveroutput on in SQL scripts is not recommended
Wfx File Naming Standard	WFX filename must end in s, e, or a, ie. [s|e|a].wfx.
16.3 File Naming Standard	Filename should adhere to the 16.3 naming standard
Set Scan Off Standard	Package creation scripts containing ampersand must have SET SCAN OFF
Drop Table check	Drop table should not be used in SQL/PLSQL files as it can result in loss of data
SQL Max Line LengthStandard	No line in a SQL file should be longer than 255 characters
FNDSLOAD Check Standard	FNDSLOAD is obsolete. No dbdrv: hints should refer to FNDSLOAD
Drop Column check	Drop Column should not be used in SQL/PLSQL files
Long Raw check	LONG or LONG RAW columns should not be used
Insert Column check	INSERT SQL statements, should explicitly list the columns about to insert
FNDLOAD/FNDLOADSO syntax check	FNDLOAD/FNDLOADSO must have correct syntax

Standard Name	Description
Admin Dbdrv none check	All files under [PROD_TOP]/admin must have only dbdrv: none
NLADD Sql Check	There should be no [PROD]NLADD.sql files in R12 patches
FNDLOAD ldt phase	dbdrv: FNDLOAD ldt files must have correct phase
Menu file location	Menu files must be located under one of following directories: resource,admin/template,admin/template/*
WFX file location check	WFX files must be located under one of following directories: patch/[some dir]/xml,admin/template,admin/template/*
Create single line check	In SQL files, CREATE command must occur on one line only.
SQL exit check	SQL files must end with exit
Package SpecBody Same file	The package specification and body should be in different files
SQL Absolute path Check	SQL files should not have absolute path in a @ or @@ statements
Calling SQL script check	Use start or @ when calling a SQL script within a SQL script. Do not use @@.
Applsyspub Schema Check	Custom scripts are not allowed to modify APPLSYSPUB schema
Custom File Naming Standard	All files involved in the package must be for a product prefixed with xx""
Pkg body creation Standard	Package body creation scripts should not be in pkh files
Pkg spec creation Standard	Package Spec creation scripts should not be in pkb and plb files
Mview Build deferred Standard	Materialized Views must be created with BUILD DEFERRED option

Standard Name	Description
Mview Parallel Standard	Materialized Views should not be created with parallel command
Mview prebuilt Standard	Materialized Views must not be created with ON PREBUILT TABLE option
Report Location Standard	Report files must be located under one of following directories: reports,admin/template,admin/template/*
Import stmt Check	Java import statements must reference fully qualified Class names
Language check in destination path	The destination path for a file entry in the package creation process should not have the language code as a suffix. The language should be specified separately.
JRAD XML file type	During the package creation process, if an XML file is included with the file type as 'JRAD XML' (File type ID is 1005), then the destination path should start with 'mds'.
Control-M characters in PLD files	If a PLD file contains a control-M character, then some issues may arise while applying a patch containing this PLD file.
SQL whenever sqlerror exit failure rollback	A SQL Script should contain "WHENEVER SQLERROR EXIT FAILURE ROLLBACK;".
Java file empty catch block	An empty `catch` Block finds instances where an exception is caught, but nothing is done.
Avoid returning from a finally block	In Java code, one should avoid returning from a `finally` block - this can discard exceptions. There should be no return statement from a `finally` block.
Avoid catching null pointer exception	Java code should never catch a null pointer exception. A `catch` block may hide the original error, resulting in other more subtle errors.
Java throwing exception in finally block	In Java, throwing exception in a `finally` block is confusing. It may mask an exception or a defect in the code, and it can also make code cleanup unstable.
Java catching throwable	In Java, one should avoid catching `throwable`. This action is dangerous because such a catch can catch other things like OutOfMemoryError.

Standard Name	Description
Java class should not extend error	Errors are system exceptions. Classes should not extend them.
Java files must have rcs_id	All Java files must have the following for source control ID: `public static final String RCS_ID = $Header$`
Java class name check	All Java files should have a class with a name that is the same as that of the file name.
Java empty if check	There should be no empty `if` statements in Java code. An empty `if` statement finds instances where a condition is checked but nothing is done about it.
Java empty while check	There should be no empty `while` statements in Java code.
Java empty finally block	There should be no empty `finally` blocks in Java code. Avoid empty `finally` blocks; these can be deleted.
Java if without braces	In Java, `if` statements must use curly braces. Avoid using `if` statements without curly braces.
Java while without braces	In Java, `while` statements must use curly braces. Avoid using `while` statements without using curly braces. Formats without curly braces are error-prone.
Java switch must have default label	In Java files, `switch` statements should have a default label.
Java empty synchronized	There should be no empty `synchronized` blocks.
Java empty static initializer	There should be no empty `static` initializer blocks.
JRAD files language must be US English	In a JRAD XML file, the language of the XML file should be US English and specified as "xml:lang = 'en-US'"

Java Parameter (INI) extension and location standard	Java Parameter files should follow these standards:
	`-Identified by file extension: .ini`
	`-Location standard:`
	`1.$<PROD_TOP>/admin/template`
	`2.$<PROD_TOP>/admin/template/*`

Standard Name	Description
JDBC TimeStamp Compliance	The proper column bind type should be used when sending/fetching DATE columns. Do not use `Types.TIMESTAMP` or `OracleTypes.TIMESTAMP`.
Do not use ~FILE or ~PATH in .drvx files	~FILE and ~PATH cannot be used in a dbdrv: command in a .drvx file, even within `checkfile`. A .drvx file is not loaded into the database.
dbdrv: fdfcmp should not be called	The database driver should not call fdfcmp.
Files with .drvx extension must contain 'dbdrv: command'	For each driver exception (.drvx) file the line dbdrv: command must exist. The command must be in all lowercase. The line `dbdrv: none` commands fail also.
No drvx files should contain XDOLoader	For all new patches containing Oracle XML Publisher files, the dbdrv command should be added to the file directly instead of using a separate drvx file.
No drvx files should contain dbdrv: PYLOAD	`PYLOAD` should not be in any automatically generated database driver.
dbdrv: FFXBCP must have correct syntax	dbdrv: FFXBCP must have correct syntax: `exec ff bin FFXBCP bin &phase=last(+##) &ui_apps 0 Y( -S | -U | -SU | )`
dbdrv: FFXMLC must have correct syntax	FFXMLC command must contain the following syntax: `exec ff bin FFXMLC bin (&phase=dat(+##)) &ui_apps 0 [yY]`
dbdrv: FNDLIBR must have correct syntax	FNDLIBR command must contain the following syntax: `exec fnd bin FNDLIBR bin <phase> FND FNDCPBWV &ui_apps SYSADMIN 'System Administrator' SYSADMIN`
dbdrv: java htmlLoad.class must have correct syntax	Java htmlLoad.class command must contain the following syntax: `exec java oracle/apps/per htmlLoad.class java -username &un_apps -password &pw_apps -database &jdbc_db_addr -file <.html file>`

Standard Name	Description
dbdrv: java UnzipFile.class must have correct syntax	Java UnzipFile.class command must contain the following syntax: `exec java oracle/apps/ad/jri UnzipFile.class java` The file must also have the .zip extension.
dbdrv: LoadMap.class must have correct syntax	The syntax for LoadMap.class must be as follows: `exec java oracle/apps/ecx/loader LoadMap.class java &phase=dat &un_apps &pw_apps &jdbc_db_addr &fullpath_prod_path_file`
JRAD XML files must have file-version attribute	JRAD XML files must have a file-version attribute to indicate the version of the file. Following is a sample definition of file-version. `<page xmlns:jrad='http://xmlns.oracle.com/jrad' xmlns:oa='http://xmlns.oracle.com/oa' xmlns:ui='http://xmlns.oracle.com/uix/ui' version='9.0.3.7.0_428' xml:lang='en-US' file-version='$Header: AkTestAttachLinkPG.xml 115.0 2003/02/10 18:18:10 tmak noship $' xmlns='http://xmlns.oracle.com/jrad'>` Note that the file-version attribute must have the correct filename and a version.
Translation standard for JRAD files	In JRAD xml files the encoding should be UTF-8 and specified as: "encoding = 'UTF-8'"
Do not end comments with the '-' character	Do not end comments with the '-' character, as this is the default Sql*Plus line continuation character. For lines with a series of '-', end the line with a '+' sign.

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