

**Oracle® Fusion Middleware**

Patching Guide for Oracle Forms and Reports

11g Release 2 (11.1.2)

**E36789-06**

October 2016

This book describes the process used to patch your existing  
Oracle Forms and Reports installation.

Copyright © 2013, 2016, Oracle and/or its affiliates. All rights reserved.

Primary Author: Arup Roy

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

**U.S. GOVERNMENT END USERS:** Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

---

---

# Contents

<b>Preface .....</b>	vii
Intended Audience.....	vii
Documentation Accessibility .....	vii
Related Documents .....	vii
Conventions .....	viii
<b>1 Oracle Fusion Middleware Patching and Upgrade Overview</b>	
1.1 Installation, Patching, and Upgrade Terminology.....	1-1
1.1.1 Patching.....	1-1
1.1.2 Migration.....	1-1
1.1.3 Upgrade.....	1-1
1.1.4 Installation .....	1-2
1.2 Patching and Upgrade Tools.....	1-2
1.3 About Database Patches for Oracle Fusion Middleware .....	1-2
<b>2 Patching Oracle Fusion Middleware with Oracle OPatch</b>	
2.1 About Patching .....	2-1
2.1.1 Types of Patches That can be Used with OPatch .....	2-1
2.1.2 Types of Patches That can not be Used with OPatch .....	2-2
2.2 About OPatch .....	2-2
2.2.1 Getting OPatch .....	2-2
2.2.2 Getting Patches.....	2-3
2.2.3 OPatch Environment Variables .....	2-3
2.2.4 OPatch System Requirements.....	2-3
2.2.5 Backup and Recovery Considerations for Patching .....	2-4
2.3 OPatch in a Fusion Middleware Environment.....	2-4
2.3.1 A Typical Patching Scenario .....	2-4
2.3.2 Patching a Fusion Middleware Product.....	2-6
2.3.3 Patching in a Distributed Environment.....	2-7
2.3.3.1 Patching with a Local Middleware Home .....	2-7
2.3.3.2 Patching with a Shared Middleware Home .....	2-8
2.3.4 Patching Artifacts Deployed Outside the Oracle Home .....	2-9
2.4 Running OPatch .....	2-10
2.4.1 Applying Patches and Deploying Patched Artifacts to WebLogic Servers .....	2-10
2.4.1.1 Using the OPatch Property File.....	2-11

2.4.1.2	Using the -auto Option .....	2-11
2.4.1.3	Using the apply Command .....	2-12
2.4.1.4	Sample Output for the apply Command .....	2-12
2.4.2	Rolling Back Patches and Deploying Patched Artifacts to WebLogic Servers .....	2-14
2.4.3	Deploying Patched Artifacts to WebLogic Servers.....	2-15
2.4.4	Listing the Source Oracle Homes .....	2-16
2.4.5	Listing the Domains Created from the Middleware Home or Oracle Home .....	2-17
2.4.6	Listing the Applicable Oracle Homes for a Patch.....	2-19
2.4.7	Listing Patches Applied to an Oracle Home or WebLogic Domain.....	2-20
2.4.8	Maintaining OPMN, Oracle HTTP Server, Fusion Middleware Control, and WebLogic Server	2-22
2.4.9	Maintaining Oracle Client, JDBC and Networking .....	2-22
2.4.10	Starting or Stopping a Runtime Instance .....	2-22
2.5	Troubleshooting OPatch in a Fusion Middleware Environment.....	2-25
2.5.1	Notes About Patching the MDS Repository .....	2-25
2.5.2	Setting the Machine Name and Listen Address.....	2-25

### **3 Applying the Latest Oracle Fusion Middleware Patch Set**

3.1	Summary of the Oracle Fusion Middleware Patching Process .....	3-1
3.2	General Pre-Patching Tasks.....	3-2
3.2.1	Reviewing System Requirement, Certification and Interoperability Information....	3-2
3.2.1.1	System Requirements and Specifications.....	3-2
3.2.1.2	Certification and Supported Platforms for Oracle Forms and Reports.....	3-2
3.2.1.3	Interoperability and Compatibility .....	3-3
3.2.2	Stopping the Servers and Processes .....	3-3
3.2.3	Backing Up Your Middleware Home, Domain Home and Oracle Instances .....	3-3
3.2.4	Backing Up Your Database and Database Schemas .....	3-3
3.2.5	Renaming the emCCR File for Silent Patching.....	3-4
3.3	Downloading and Starting the Installer .....	3-4
3.3.1	About the Installers Used for Patching .....	3-4
3.3.2	Downloading the Required Installer .....	3-4
3.3.3	Starting the Installer .....	3-5
3.4	Applying the Patch Set.....	3-5
3.5	Starting the Servers and Processes .....	3-6
3.6	Verifying Your Patch Set Installation.....	3-7

### **4 Post-Patching Procedures**

4.1	Post-Patching Tasks for System Components .....	4-1
4.1.1	Upgrading System Components .....	4-2
4.1.2	Upgrading Oracle Configuration Manager .....	4-3
4.1.3	Resolving JDBC Errors in Oracle Reports and Oracle Portal .....	4-4
4.1.4	Adding Datafiles to the OLTS_CT_STORE and OLTS_ATTRSTORE Tablespaces for Oracle Internet Directory	4-5
4.1.5	Generating the BASE64 Encoded Encryption Key for OPSS.....	4-5
4.1.6	Enabling Dynamic Audit Metadata Model for OPSS Running in JavaSE Mode .....	4-5
4.1.7	Configuring Diagnostic Framework Dump Sampling.....	4-6
4.1.8	Adding Batik Library Jar Files to the JRF Template for IBM WebSphere .....	4-6

## **A Oracle Forms and Reports Patch Set Installer Screens**

A.1	Welcome .....	A-2
A.2	Software Updates.....	A-3
A.3	Installation Type .....	A-4
A.4	Prerequisite Checks .....	A-5
A.5	Specify Installation Location .....	A-6
A.6	Specify Security Updates .....	A-7
A.7	Installation Summary .....	A-8
A.8	Installation Progress .....	A-9
A.9	Installation Complete .....	A-10



---

---

# Preface

The *Oracle Fusion Middleware Patching Guide for Oracle Forms and Reports* describes the tools and procedures required for you to patch your existing Oracle Forms and Reports 11g Release 2 (11.1.2).

## Intended Audience

This guide is intended for existing Oracle Fusion Middleware users who are upgrading their Oracle Fusion Middleware Oracle Forms and Reports 11g Release 2 (11.1.2) environment to a more recent version or to the latest version. To follow the instructions provided in this document, the reader should be comfortable running system administration operations, such as creating users and groups, adding users to groups, and installing operating system patches on the computer where the products are going to be installed. Users on UNIX systems who are updating their Oracle Fusion Middleware software may need `root` access to run some scripts.

## Documentation Accessibility

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

### Access to Oracle Support

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

## Related Documents

For additional information, see the following manuals:

- *Oracle Fusion Middleware Concepts*. This book introduces the common terms and concepts in an Oracle Fusion Middleware environment.
- *Oracle Fusion Middleware Administrator's Guide*. This book contains information for managing your Oracle Fusion Middleware environment after installation and configuration is complete.
- *Oracle Fusion Middleware High Availability Guide*. This book contains information for installing Oracle Fusion Middleware in high availability environments.

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

---

# Oracle Fusion Middleware Patching and Upgrade Overview

This book describes the tools available for you to patch your existing Oracle Fusion Middleware Forms and Reports environment.

The following topics are covered:

- Section 1.1, "Installation, Patching, and Upgrade Terminology"
- Section 1.2, "Patching and Upgrade Tools"
- Section 1.3, "About Database Patches for Oracle Fusion Middleware"

## 1.1 Installation, Patching, and Upgrade Terminology

This section describes various terms that you should be familiar with before you continue.

### 1.1.1 Patching

Patching involves copying a small collection of files over an existing installation. A **patch** is normally associated with a particular version of an Oracle product and involves updating from one minor version of the product to a newer minor version of the same product (for example, from version 11.1.1.2.0 to version 11.1.1.3.0).

A **patch set** is a single patch that contains a collection of patches designed to be applied together.

### 1.1.2 Migration

Migration typically involves moving from a third-party (non-Oracle) product to an Oracle product.

It can also be used to refer to moving an existing set of software parameters (for example, an existing configuration or existing domain) from one release to another.

### 1.1.3 Upgrade

Upgrade involves moving from a previous major version to a new major version. For example, an upgrade would be required to move from Oracle Application Server 10g to Oracle Fusion Middleware 11g.

### 1.1.4 Installation

Installation is when new software is copied onto your system for use. After the new software is installed, you can patch it or upgrade it as necessary.

## 1.2 Patching and Upgrade Tools

Table 1–1 provides a brief summary of the patching and upgrade tools, and provides pointers to more detailed information.

**Table 1–1 Summary of Patching, Migration, and Upgrade Tools**

Tool	Description	More Information
OPatch	<p>OPatch is typically used to patch the software on your system by copying a small collection of files over your existing installation.</p> <p>In Oracle Fusion Middleware, OPatch is used to patch an existing Oracle Fusion Middleware 11g installation.</p>	Chapter 2, "Patching Oracle Fusion Middleware with Oracle OPatch"
WebLogic Server Upgrade Installer	<p>WebLogic Server Upgrade Installer is used to update your existing Oracle WebLogic Server installation to the latest available version.</p> <p>Oracle Fusion Middleware products require the presence of Oracle WebLogic Server and its directory structure on your system. When you update your Oracle Fusion Middleware software, you must also update the version of Oracle WebLogic Server on your system using the WebLogic Server Upgrade Installer.</p> <p>The WebLogic Server Upgrade Installer is only available from My Oracle Support.</p>	<i>Oracle Fusion Middleware Upgrade Guide for Oracle WebLogic Server</i>
Upgrade Assistant	<p>The Upgrade Assistant is used to upgrade schemas and configuration information from Oracle Application Server 10g to Oracle Fusion Middleware 11g.</p>	<i>Oracle Fusion Middleware Upgrade Planning Guide</i>

## 1.3 About Database Patches for Oracle Fusion Middleware

This guide provides instructions for applying Oracle Fusion Middleware patches to your existing Oracle Fusion Middleware installations.

However, there are specific cases where you might be instructed to apply an Oracle Database patch to an existing Oracle Fusion Middleware Oracle home. This is because some Oracle Fusion Middleware products include specialized components, such as application programming interfaces (APIs), software libraries, and other software code developed for Oracle Database products.

In these specific cases, you might be referred to Oracle Database patching and installation documentation for more information.

Note that in most cases Oracle Fusion Middleware patches include all necessary software updates. You should apply Database patches only when specifically instructed or if you are experiencing a specific issue that can be resolved by the database patch.

---

# Patching Oracle Fusion Middleware with Oracle OPatch

This document describes patching options available for Oracle Fusion Middleware.

The following topics are covered:

- Section 2.1, "About Patching"
- Section 2.2, "About OPatch"
- Section 2.3, "OPatch in a Fusion Middleware Environment"
- Section 2.4, "Running OPatch"
- Section 2.5, "Troubleshooting OPatch in a Fusion Middleware Environment"

## 2.1 About Patching

Patches are a small collection of files copied over to an existing installation. They are associated with particular versions of Oracle products.

### 2.1.1 Types of Patches That can be Used with OPatch

OPatch can be used for the following types of patches:

#### **A patch set exception (also known as a PSE, one-off, or interim patch)**

This is usually a single fix for a single problem. One-offs in ST products (GC, DB/AS Control etc) are packaged and applied via OPatch. One-offs are bug fixes given to customers in critical need and are not cumulative, regressed or versioned. You can use the `opatch lsinventory` command to see which one-off patches are installed on your system.

#### **A patch bundle (also known as an MLR patch)**

This type of patch is created by putting several fixes into a single patch. This is usually done if several fixes are needed and the various interim patches apply to the same modules and cause the prior patch to be removed if applied individually as they can not coexist. Patch bundles are also applied using OPatch and metadata information about them are also kept in a set of XML files in the inventory and manipulated by OPatch.

#### **Security Patches (also known as Critical Patch Updates or CPUs)**

Security patches are different from other patch types in that they only fix a single or small number of problems, and that they should be applied as soon as possible – when

a security patch is released extra attention is brought to the existence of the security problem. CPUs are periodic security bundles released by Oracle and are very much like interim patches and will be applied just like an interim patch using OPatch. Just like interim patches, CPUs are not versioned.

#### **Patch Set Updates (PSUs)**

Patch Set Updates are released on a quarterly basis, following the same schedule as the Critical Patch Updates (CPUs). These come out the closest Tuesday to the 15th of the months of January, April, July and October. Patch Set Update content is intended to address the top fifty critical bugs affecting the broad customer base.

### **2.1.2 Types of Patches That can not be Used with OPatch**

The only type of patch that cannot be used with OPatch is a patch set. A patch set contains a large number of merged patches, is thoroughly tested, changes the version of the product it is applied to, and can sometimes introduce new functionality. Patch sets are cumulative bug fixes that fix all bugs and consume all patches since the last base release. Patch sets and the Patch Set Assistant are usually applied through OUI-based product specific installers.

## **2.2 About OPatch**

OPatch is a Java-based utility that runs on all supported operating systems and requires installation of the Oracle Universal Installer. This document contains information pertaining to OPatch commands that are most commonly used in an Oracle Fusion Middleware environment. You can use all supported OPatch commands if you choose; for a full list of OPatch commands and for more information about the OPatch utility, refer to the *Oracle Universal Installer and OPatch User's Guide* at the following URL:

[http://download.oracle.com/docs/cd/E11882\\_01/em.112/e12255/toc.htm](http://download.oracle.com/docs/cd/E11882_01/em.112/e12255/toc.htm)

This section contains the following:

- Section 2.2.1, "Getting OPatch"
- Section 2.2.2, "Getting Patches"
- Section 2.2.3, "OPatch Environment Variables"
- Section 2.2.4, "OPatch System Requirements"
- Section 2.2.5, "Backup and Recovery Considerations for Patching"

### **2.2.1 Getting OPatch**

OPatch can be found in your Fusion Middleware product's *ORACLE\_HOME*/OPatch (on UNIX operating systems) or *ORACLE\_HOME*\OPatch (on Windows operating systems) directory.

Oracle recommends that you always check for and obtain the latest version of OPatch from My Oracle Support (formerly Oracle MetaLink).

1. Access and log into My Oracle Support at the following location:

<http://support.oracle.com/>

2. In the Search Knowledge Base field, enter **224346.1**. This is the ID of the document that describes how to obtain the latest version of OPatch.

3. In the search results, click on the link corresponding to document ID 224346.1.
4. In the document, click on the **Patch 6880880** link which will take you to the screen where you can obtain the latest version of OPatch based on release versions and platforms.

Make sure you verify that the OPatch release number in the "Release" column is "11.1.0.0.0" as this is the correct version of OPatch for Oracle Fusion Middleware 11g products.

## 2.2.2 Getting Patches

You can obtain the latest patches by specifying the patch ID in My Oracle Support (formerly MetaLink):

1. Access and log into My Oracle Support at the following location:  
<http://support.oracle.com/>
2. Click the **Patches & Updates** link.
3. Enter the **Patch ID or Number**, then click **Search**. A Patch Search Results table appears.
4. Using the Release and Platform columns, find the desired patch, then click the associated Patch ID.
5. In the page that now appears, click the **Download** button in the right-hand column.

## 2.2.3 OPatch Environment Variables

OPatch uses the environment variables listed in Table 2–1:

**Table 2–1 OPatch Environment Variables**

Variable	Description
ORACLE_HOME	Points to the location of the Oracle home directory.
MW_HOME	Points to the location of the Middleware home directory.
PATH	Points to the location(s) from which various commands should be run.

## 2.2.4 OPatch System Requirements

The OPatch utility has the following requirements:

- The ORACLE\_HOME environment variable must point to a valid Oracle home directory and match the value used during installation of the Oracle home directory.
- If the `-invPtrLoc` command-line argument was used during installation, then it must be used when using the OPatch utility. Oracle recommends the use of the default central inventory for a platform.
- The `java`, `ar`, `cp`, and `make` commands must be available in one of the directories listed in the PATH environment variable. The commands are not available for all platforms.

## 2.2.5 Backup and Recovery Considerations for Patching

It is highly recommended that you back up the ORACLE\_HOME before any patch operation. You can back up the ORACLE\_HOME using your preferred method. You can use any method such as zip, cp -r, tar, and cpio to compress the ORACLE\_HOME.

If the ORACLE\_HOME does not appear when you execute the opatch lsinventory -detail command, the ORACLE\_HOME might be missing from the Central Inventory, or the Central Inventory itself could be missing or corrupted.

If the ORACLE\_HOME is listed when you execute the opatch lsinventory -detail command, but the products and components within the ORACLE\_HOME are not listed, the inventory within the ORACLE\_HOME (local inventory) might be missing or corrupted.

If the local inventory is corrupted or lost for some reason, you can simply restore the ORACLE\_HOME/inventory (on UNIX operating systems) or ORACLE\_HOME\inventory (on Windows operating systems) if it was backed up. If a backup does not exist, you may have to reinstall the software.

## 2.3 OPatch in a Fusion Middleware Environment

This section describes the Oracle OPatch utility as it pertains to an Oracle Fusion Middleware environment. You should be familiar with the Oracle Fusion Middleware concepts introduced in the *Oracle Fusion Middleware Installation Planning Guide*, which is available at the following URL:

[http://download.oracle.com/docs/cd/E15523\\_01/install.1111/b32474/toc.htm](http://download.oracle.com/docs/cd/E15523_01/install.1111/b32474/toc.htm)

This section contains the following:

- Section 2.3.1, "A Typical Patching Scenario"
- Section 2.3.2, "Patching a Fusion Middleware Product"
- Section 2.3.3, "Patching in a Distributed Environment"
- Section 2.3.4, "Patching Artifacts Deployed Outside the Oracle Home"

### 2.3.1 A Typical Patching Scenario

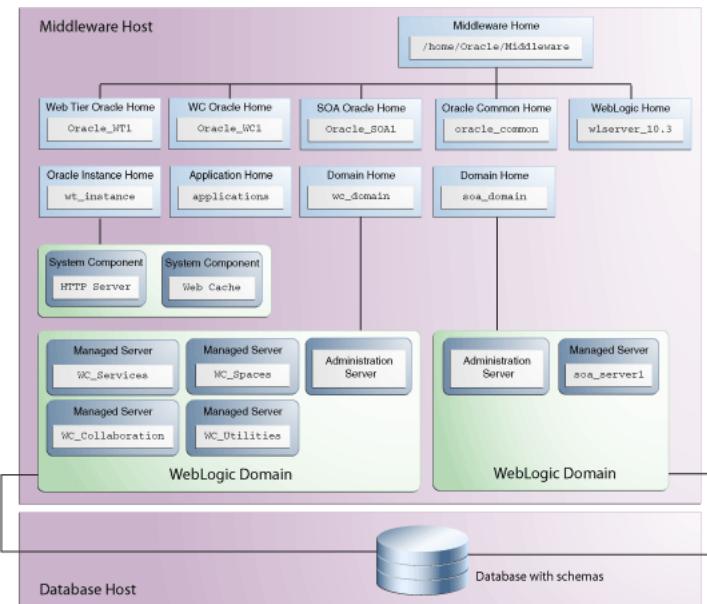
Consider a common, non-distributed Fusion Middleware topology for Oracle SOA Suite, as shown in Figure 2–1:

---

**Note:** OPatch can be used to patch any Fusion Middleware product, even though only a few are shown in this example. OPatch can not be used to patch Oracle WebLogic Server.

---

**Figure 2–1 Common Fusion Middleware Topology for Oracle SOA Suite and Oracle WebCenter**



Suppose you have a problem in the SOA Domain. Below is a typical patching process:

### Step 1. Contact Oracle Support

You can contact your Oracle support representative, or you can go to My Oracle Support (formerly OracleMetaLink):

<http://support.oracle.com/>

### Step 2. Check for Existing Patches

If Oracle Support is not able to resolve the issue, they may ask to see if you have any patches already installed on your system. To determine this information, you should run the `opatch lsinventory` command.

To check if a particular patch is installed in the Oracle home (or the set of Oracle homes within a Middleware home) you use the `opatch checkInstalledOneOffs` command. See Section 2.4.7, "Listing Patches Applied to an Oracle Home or WebLogic Domain" for more information about this command.

### Step 3. Obtain OPatch and the Necessary Patch

Upon determining that you are in need of a new patch and it has not already been installed on your system, you should do the following:

1. Make certain that you have the latest version of OPatch, as described in Section 2.2.1, "Getting OPatch".
2. Obtain the patch as described in Section 2.2.2, "Getting Patches".

### Step 4. Determine the Oracle Home

Once you obtain the patch, determine the Oracle home directory to which you are going to apply the patch.

The most common type of patch available in a Fusion Middleware environment involves patching a specific Oracle home directory. Some patches (for example, a patch pertaining to JRF) may apply to multiple Oracle home directories within a specific

Middleware home. A third type of patch could involve client components in one Oracle home and server components in a different Oracle home (for example, Oracle WebCenter in the WebCenter Oracle home depends on BPEL Process Manager in the Oracle SOA Suite Oracle home).

If you do not know the name of your Oracle home, you should run the `opatch lshomes` command as described in Section 2.4.6, "Listing the Applicable Oracle Homes for a Patch" to obtain a list of Oracle homes that pertain to the domain. In this example, the Oracle home to which the patch should be applied is the SOA Oracle home.

After you determine your Oracle home, you should run the `opatch checkApplicable` command as described in Section 2.4.6, "Listing the Applicable Oracle Homes for a Patch" to make sure that the patch can actually be applied to the Oracle home.

As the Middleware home is the top-level entity in a Fusion Middleware topology, the location of your Middleware home will be required for many of the OPatch commands in a Fusion Middleware environment.

#### **Step 5. Read the README File**

Read the README file that accompanies the patch. This file contains important information and instructions that must be followed prior to applying your patch.

For example, the README file may instruct you apply the patch using the `-auto` option (described in Section 2.4.1.2, "Using the -auto Option"). The more common scenario is that the README will instruct you to use a series of OPatch commands, including `opatch stop` and `opatch start` (see Section 2.4.10, "Starting or Stopping a Runtime Instance").

#### **Step 6. Apply the Patch**

After you determine the Oracle home to which you need to apply the patch, you should apply the patch with the `opatch apply` command as described in Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers".

#### **After Applying the Patch...**

In most cases, after you apply the patch the instructions in the README file will tell you to run the `opatch start` command to re-start your servers.

After the patching is complete and your servers are restarted, you should check your product software to verify that the issue has been resolved.

If for some reason the result is not satisfactory, you can use the `opatch rollback` command to remove the patch from the Oracle home. See Section 2.4.2, "Rolling Back Patches and Deploying Patched Artifacts to WebLogic Servers" for more information, and consult the README file for specific instructions.

### **2.3.2 Patching a Fusion Middleware Product**

Many Fusion Middleware artifacts are deployed to a runtime environment, where applications pick up these binaries for execution. A common example of this are J2EE artifacts (for example, `.ear`, `.war`, or `.rar` files) or J2EE shared libraries deployed to a Managed Server or cluster running within a domain. Patching in a Fusion Middleware environment involves updating and replacing these artifacts in the Oracle home. The servers to which the artifacts are deployed need to be restarted for the changes to take effect.

After the artifacts are deployed, there are various staging modes that affect how WebLogic Server treats these artifacts, which in turn determine how the applications are patched. All artifacts in Oracle Fusion Middleware 11g Release 2 (11.1.2) are deployed in NoStage Mode, which means that each Managed Server must access the archive files from a single source directory for deployment. If a J2EE application is deployed to three Managed Servers within a cluster, each Managed Server must be able to access the same application archive files from a shared or network-mounted directory in order to deploy the new J2EE application.

Take note of the following:

- If multiple Managed Servers on multiple machines are used, the path to the application bits must be the same on all machines because there is a single point of entry for the application in the domain configuration.
- Since the source location for the application bits is fixed and points back to its own *ORACLE\_HOME* location, all domains that were created using a given *ORACLE\_HOME* will pick up the patched bits once the *ORACLE\_HOME* is patched.
- If you are using multiple Managed Servers on multiple machines and the product *ORACLE\_HOME* is not shared or network-mounted on the target Managed Servers, then each machine must have the product installed on an *ORACLE\_HOME* on the local file system from which the Managed Servers can access the application binaries. Therefore, the *ORACLE\_HOME* on each local file system of each machine must be patched separately.

The steps that need to be performed for this scenario are as follows:

1. Stop all Managed Servers in the WebLogic Domain to which the application is deployed.
2. Use the `opatch apply` command to apply the bits to an Oracle home.
3. Restart all the Managed Servers in the same WebLogic Domain.

Steps 1 and 3 are performed by the Fusion Middleware capabilities in OPatch.

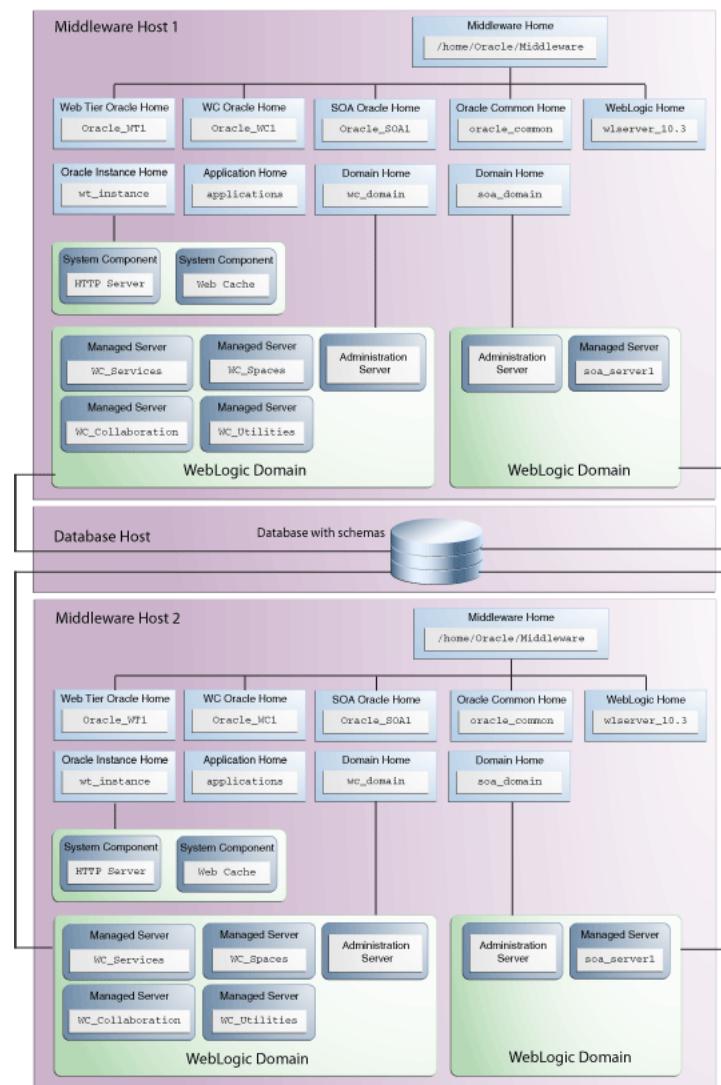
### 2.3.3 Patching in a Distributed Environment

The process to patch in a distributed environment depends on whether or not your Middleware home directory is shared or not shared.

#### 2.3.3.1 Patching with a Local Middleware Home

Consider the environment shown in Figure 2–2. This is a distributed environment, where you have identical topologies on separate machines, each with its own local Middleware home and Fusion Middleware products inside the Middleware home:

**Figure 2–2 Distributed Fusion Middleware Topology for Oracle SOA Suite and Oracle WebCenter**

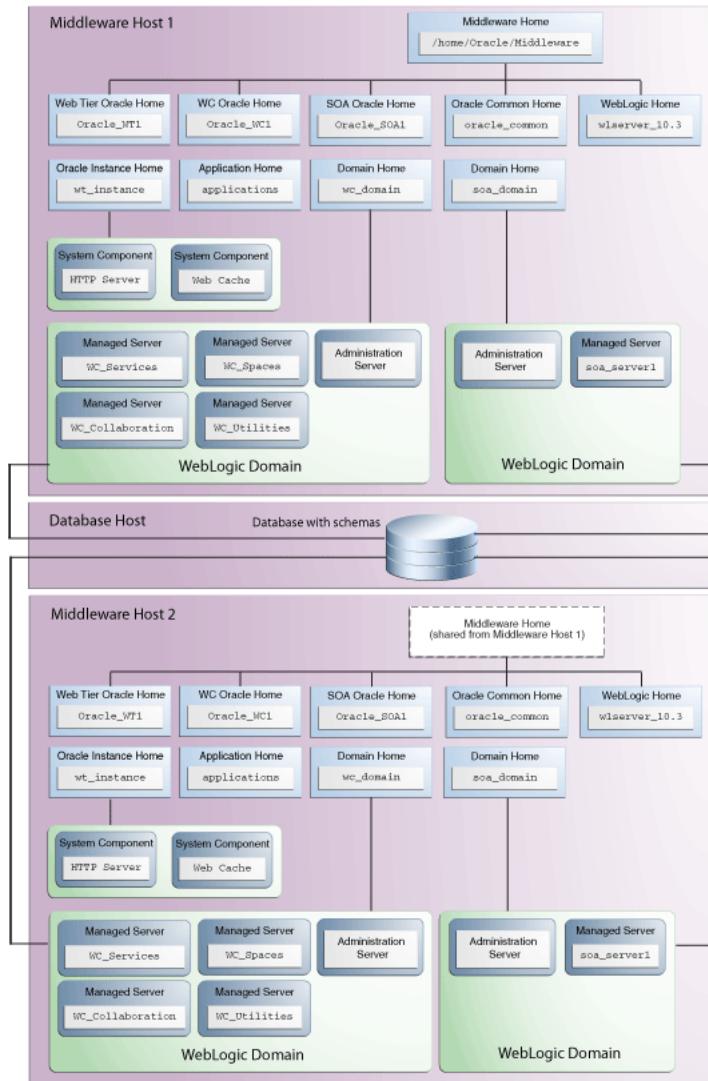


If you encountered a problem in the SOA domain, you would have to patch the corresponding Oracle home on each machine separately, according to the instructions in the README file. After you patch the SOA Oracle home on "Middleware Host 1," for example, you must then repeat the same procedure on "Middleware Host 2."

### 2.3.3.2 Patching with a Shared Middleware Home

Consider the environment shown in Figure 2–3. This is also a distributed environment, where you have identical topologies on separate machines, but the Middleware home on "Middleware Host 2" is shared or NFS mounted:

**Figure 2-3 Distributed Fusion Middleware Topology for Oracle SOA Suite and Oracle WebCenter**



In this topology, if you encountered a problem in the SOA Domain, you would only need to patch the SOA Oracle home on either "Middleware Host 1" or "Middleware Host 2" in accordance with the instructions in the README file, and OPatch would automatically patch all of the matching Oracle homes that share the same Middleware home.

### 2.3.4 Patching Artifacts Deployed Outside the Oracle Home

Some applications, such as Oracle Enterprise Manager Fusion Middleware Control and Oracle Web Services Manager Policy Manager (WSM-PM), are deployed outside of the product Oracle home (in the Oracle Common Home or `oracle_common`) directory. OPatch can also apply patches to files that reference the `oracle_common` directory.

## 2.4 Running OPatch

The OPatch utility is located in the *ORACLE\_HOME*/OPatch (on UNIX operating systems) or *ORACLE\_HOME*\OPatch (on Windows operating systems) directory. Below is the syntax for the OPatch utility:

```
path_to_opatch/opatch command -options
```

Acceptable values for *command* are described in Table 2–2.

Valid *options* for each *command* are described in the sections that describe each *command*.

**Table 2–2 Commands for the OPatch Utility in a Fusion Middleware Environment**

Command	Description
apply	Apply the patch to an Oracle home and deploy the patch to a WebLogic domain. For details, see Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers".
rollback	Remove the patch from an Oracle home. For details, see Section 2.4.2, "Rolling Back Patches and Deploying Patched Artifacts to WebLogic Servers".
deploy	Deploy the patch to a WebLogic domain. For details, see Section 2.4.3, "Deploying Patched Artifacts to WebLogic Servers".
checkApplicable	List all Oracle homes to which a patch can be applied. For details, see Section 2.4.6, "Listing the Applicable Oracle Homes for a Patch".
lshomes	List the Oracle homes that have been used to create WebLogic Domains. For details, see Section 2.4.4, "Listing the Source Oracle Homes".
lsdomains	List all WebLogic domains created from the Middleware home or specific Oracle home. For details, see Section 2.4.5, "Listing the Domains Created from the Middleware Home or Oracle Home".
checkInstalledOneOffs	Check if certain patches are installed on any Oracle homes. For details, see Section 2.4.7, "Listing Patches Applied to an Oracle Home or WebLogic Domain".
start   stop	Start or Stop a WebLogic Administration Server, Managed Server, or Cluster. For details, see Section 2.4.10, "Starting or Stopping a Runtime Instance".

To view additional information for these Fusion Middleware options, use the following command:

```
path_to_OPatch/opatch -help -fmw
```

### 2.4.1 Applying Patches and Deploying Patched Artifacts to WebLogic Servers

The *apply* command in a Fusion Middleware environment applies the patch to the Oracle home on the local machine.

---

**Note:** The option to apply a patch to a Middleware home (including all Oracle homes inside that Middleware home) is not yet available.

---

### 2.4.1.1 Using the OPatch Property File

Sensitive information such as Administration Server credentials, and other important information such as the Administration Server URL, domain location and applications directory location, are obtained by prompts from the console. In some cases, default values may be found and specified by OPatch; in these cases, press Enter to use these default values.

Automation applications such as Grid Control may invoke OPatch with the `-silent` option, which does not prompt for any input from the console. To supply the necessary Administration Server credentials and other information, a response file can be created and passed to OPatch as an argument with the `-property_file` option.

For Fusion Middleware components, `userConfigFile` and `userKeyFile` can be specified in the property file as keys with corresponding file names. The `userConfigFile` file contains an encrypted user name and password, while the `userKeyFile` contains a secret key that is used to encrypt and decrypt the user name and password. Similarly, the `AdminServerURL` (URL of the Administration Server), `DomainHome` (full path to the domains directory) and `ApplicationsDir` (full path to the applications directory) can also be specified in the properties file.

### 2.4.1.2 Using the -auto Option

Some patches are certified by Oracle Product Support as capable of being used with the `-auto` option, which can automate certain portions of your patching procedure. The `-auto` option applies the patch to the Oracle home; verifies that the patch is actually applied, then performs any necessary redeploy operations against the specified WebLogic Domain, including stopping and starting all the servers that are affected by the patch. If your patch is certified for use with the `-auto` option, you will be informed of such in the patch's README file.

**2.4.1.2.1 Configuring Node Manager** Beginning with OPatch release 11.1.0.8.2, the `-auto` option requires the Node Manager user name and password. In order for OPatch to be used properly:

- The Administration Server must be up and running.
- If the Managed Servers are up and running, OPatch will stop the servers, apply the patch, then restart the servers.

If the Managed Servers are not running, OPatch will apply the patch but then you must manually start the servers in order to see the effects of the patch.

To configure Node Manager, refer to "General Node Manager Configuration" in *Oracle Fusion Middleware Node Manager Administrator's Guide for Oracle WebLogic Server*.

**2.4.1.2.2 Using the -auto Option with the -domain Option** The `-auto` option should be used in conjunction with the `-domain` option; the only exception is if only one WebLogic Domain was configured from the Oracle home. In such cases, OPatch will use that domain as the default domain. If multiple domains have been created and the `-domain` option is not used, then it is the user's responsibility to run `opatch deploy` to redeploy the patched artifacts to their respective domains, and also stop and start the affected servers in each of the domains.

### 2.4.1.3 Using the apply Command

The `apply` command (with the `-auto` option specified) performs the following:

1. Stops all affected target servers.

This might involve stopping server instances on other nodes for:

- a. Staged mode applications.
- b. NoStage mode applications sharing the Oracle home.

2. Applies the patch to the Oracle home on the local machine.
3. Performs any required deploy operations for patched artifacts.
4. Restarts all affected servers.

The syntax for the `apply` command is shown below:

```
opatch apply
  [-auto [-domain domain_name]]
  [-mw_home MW_HOME]
  [-oh ORACLE_HOME]
  [-property_file path_to_property_file]
  [-report]]
```

A summary of the options for the `apply` command are described in Table 2-3.

**Table 2-3 Options for the OPatch apply Command**

Option	Description
<code>-auto [-domain domain_name]</code>	Optional - causes OPatch to automate the rollout of the patch to Oracle Fusion Middleware entities. If <code>-auto</code> is used then <code>-domain</code> must also be used to indicate the name of the domain in which the rollout should occur; the exception is when there is only one domain configured out of the Oracle home, in which case the <code>-domain</code> flag is optional. See Section 2.4.1.2, "Using the <code>-auto</code> Option" for more information.
<code>-mw_home MW_HOME</code>	Optional - The Middleware home to which the patch will be applied. The Middleware home specified here supersedes the <code>MW_HOME</code> environment variable. If neither is specified, then the Middleware home from where the command is run will be used.
<code>-oh ORACLE_HOME</code>	Optional - This option is used to specify the Oracle home to which the patch should be applied. This value supersedes the <code>ORACLE_HOME</code> environment variable. If neither is specified, OPatch will apply the updates to the Oracle home from which it was launched.
<code>-property_file name</code>	Optional - absolute path and name of the property file. See Section 2.4.1.1, "Using the OPatch Property File" for more information.
<code>-report</code>	Optional - print out the actions that will be taken by executing the command, but does not actually execute the command.

### 2.4.1.4 Sample Output for the apply Command

Below is a sample output from the `opatch apply` command on a UNIX operating system:

```
[aime@stadm41 Oracle_SOA1]$ ./OPatch/opatch apply
-aut o /OracleFMW/Middleware_PS1_RC2/FMW_patches/9991008/
```

```

-oh /OracleFMW/Middleware_PS1_RC2/oracle_common/
-domain MySOAWebCenterDist
Invoking OPatch 11.1.0.6.9

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/oracle_common
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
                  from          : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version      : 11.1.0.7.0
OUI location     : /OracleFMW/Middleware_PS1_RC2/oracle_common/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/oracle_
common/cfgtoollogs/patch/patch2009-12-06_09-44-02AM.log

Patch history file: /OracleFMW/Middleware_PS1_RC2/oracle_
common/cfgtoollogs/patch/patch_history.txt

```

OPatch detects the Middleware Home as "/OracleFMW/Middleware\_PS1\_RC2"

```

Please enter the WebLogic Admin Server username:> weblogic
Please enter the WebLogic Admin Server password:>
Please enter the WebLogic Admin Server URL(t3://stadm41:7011):>
Please enter the WebLogic domain directory
location(/OracleFMW/MyDomains/domains/MySOAWebCenterDist):>
Please enter the WebLogic applications directory
location(/OracleFMW/MyDomains/applications/MySOAWebCenterDist):>
[FMW] Running apply '-auto' prerequisite checks...
[FMW] ProductDriver::preReq_Product() succeeded
[FMW] ProductDriver::preReq_Deploy() succeeded

```

All the applications affected by this patch are deployed in 'No Stage' mode.  
Redeploy operation will not be performed for the affected applications.  
Please refer to the log file for more details.

```

[FMW] ProductDriver::preReq_LifeCycle() succeeded
[FMW] Apply '-auto' prerequisite checks succeeded...

```

ApplySession applying interim patch '9991008' to OH '/OracleFMW/Middleware\_PS1\_
RC2/oracle\_common'

Running prerequisite checks...

You selected -local option, hence OPatch will patch the local system only.

Please shutdown Oracle instances running out of this ORACLE\_HOME on the local
system.  
(Oracle Home = '/OracleFMW/Middleware\_PS1\_RC2/oracle\_common')

Is the local system ready for patching? [y|n]

y

User Responded with: Y

Backing up files and inventory (not for auto-rollback) for the Oracle Home  
Backing up files affected by the patch '9991008' for restore. This might take a
while...

```

Backing up files affected by the patch '9991008' for rollback. This might take a
while...

Patching component oracle.jrf.j2ee, 11.1.1.2.0...
Copying file to "/OracleFMW/Middleware_PS1_RC2/oracle_common/modules/oracle.jrf_
11.1.1/jrf-api.jar"

Patching component oracle.jrf.dms, 11.1.1.2.0...
Copying file to "/OracleFMW/Middleware_PS1_RC2/oracle_common/modules/oracle.dms_
11.1.1/dms.war"
ApplySession adding interim patch '9991008' to inventory

Verifying the update...
Inventory check OK: Patch ID 9991008 is registered in Oracle Home inventory with
proper meta-data.
Files check OK: Files from Patch ID 9991008 are present in Oracle Home.

The local system has been patched and can be restarted.

[FMW] Ignoring Deploy operations as all patched artifacts are deployed in 'No
Stage' mode
[FMW] Performing Auto Post-Deploy Actions
[FMW] Performing Auto Post-Bounce Actions
-----
The following warnings have occurred during OPatch execution:
1) OUI-67851:
All the applications affected by this patch are deployed in 'No Stage' mode.
Redeploy operation will not be performed for the affected applications.
Please refer to the log file for more details.

-----
OPatch Session completed with warnings.

OPatch completed with warnings.

```

## 2.4.2 Rolling Back Patches and Deploying Patched Artifacts to WebLogic Servers

The `rollback` command allows you to remove an existing one-off patch by specifying the unique patch ID.

The `rollback` command (with the `-auto` option specified) performs the following:

1. Stops all affected target servers.  
This might involve stopping server instances on other nodes for:
  - a. Staged mode applications.
  - b. NoStage mode applications sharing the Oracle home.
2. Rolls back the patch on the Oracle home on the local machine.
3. Performs any required deploy operations for patched artifacts.
4. Restarts all affected servers.

The syntax for the `rollback` option is shown below:

```

opatch rollback -id patch_id
  [-auto [-domain domain_name]]
  [-mw_home MW_HOME]
  [-oh ORACLE_HOME]
  [-property_file path_to_property_file
  [-report]]

```

A summary of the options for the `rollback` command are described in Table 2–4.

**Table 2–4 Options for the OPatch rollback Command**

Option	Description
<code>-id patch_id</code>	Use the <code>-lsinventory</code> option to display all applied patch IDs. Each one-off patch is uniquely identified by an ID. To rollback to a previous patch version, that patch version's ID must be supplied.
<code>-auto [-domain domain_name]</code>	Optional - causes OPatch to automate the rollout of the patch to Oracle Fusion Middleware entities. If <code>-auto</code> is used then <code>-domain</code> must also be used to indicate the name of the domain in which the rollout should occur; the exception is when there is only one domain configured out of the Oracle home, in which case the <code>-domain</code> flag is optional.  Refer to Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers" for more information.
<code>-mw_home MW_HOME</code>	Optional - The Middleware home to which the patch will be applied. The Middleware home specified here supersedes the <code>MW_HOME</code> environment variable. If neither is specified, then the Middleware home from where the command is run will be used.
<code>-oh ORACLE_HOME</code>	Optional - This option is used to specify the Oracle home to which the patch should be applied. This value supersedes the <code>ORACLE_HOME</code> environment variable. If neither is specified, OPatch will apply the updates to the Oracle home from which it was launched.
<code>-property_file name</code>	Optional - absolute path and name of the property file.  Refer to Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers" for more information.
<code>-report</code>	Optional - print out the actions that will be taken by executing the command, but does not actually execute the command.

### 2.4.3 Deploying Patched Artifacts to WebLogic Servers

This operation deploys modified artifacts from the Fusion Middleware `ORACLE_HOME` to the Fusion Middleware domain.

The location of the patch binaries must be specified using the `-ph` option. If the patch is installed in the current Oracle home (the Oracle home from which you are running this command) then the `-ph` option is not required.

If the patch is already applied to the Oracle home, the `-id` option can be used to specify the patch you want to use for deployment.

The syntax for the `deploy` command is shown below:

```
opatch deploy -id patch_id -ph patch_location
  [-auto [-domain domain_name]]
  [-mw_home MW_HOME]
  [-oh ORACLE_HOME]
  [-property_file path_to_property_file]
  [-report]]
```

A summary of the options for the `deploy` command are described in Table 2–5.

**Table 2–5 Options for the OPatch deploy Command**

Option	Description
<code>-id patch_id</code>	The unique ID of the patch that is installed in the Oracle home.
<code>-ph patch_location</code>	The absolute path to the location of the patch. If none is specified, then the current directory is used.
<code>-auto [-domain domain_name]</code>	Optional - causes OPatch to automate the rollout of the patch to Oracle Fusion Middleware entities. If <code>-auto</code> is used then <code>-domain</code> must also be used to indicate the name of the domain in which the rollout should occur; the exception is when there is only one domain configured out of the Oracle home, in which case the <code>-domain</code> flag is optional. Refer to Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers" for more information.
<code>-mw_home MW_HOME</code>	Optional - The Middleware home to which the patch will be applied. The Middleware home specified here supersedes the <code>MW_HOME</code> environment variable. If neither is specified, then the Middleware home from where the command is run will be used.
<code>-oh ORACLE_HOME</code>	Optional - This option is used to specify the Oracle home to which the patch should be applied. This value supersedes the <code>ORACLE_HOME</code> environment variable. If neither is specified, OPatch will apply the updates to the Oracle home from which it was launched.
<code>-property_file name</code>	Optional - absolute path and name of the property file. Refer to Section 2.4.1, "Applying Patches and Deploying Patched Artifacts to WebLogic Servers" for more information.
<code>-report</code>	Optional - print out the actions that will be taken by executing the command, but does not actually execute the command.

#### 2.4.4 Listing the Source Oracle Homes

The `lshomes` command lists all the Oracle homes pertaining to logical entities such as Host or Domain. For a Host, the list of Oracle homes is obtained from the machine's central inventory. For a WebLogic domain, the list of homes is limited to product Oracle homes that are installed within a top-level Middleware home.

If the `-domain` or `-domaindir` option is used, the command lists the Oracle homes that have been used to create or extend the WebLogic domain. If not, all the homes registered with the machine's central inventory or the inventory location specified using `-invPtrLoc` are listed.

The Middleware home can be specified by using the `-mw_home` option or by setting the `MW_HOME` environment variable. When the Middleware home is specified and the `-domain` or `-domaindir` option is not specified, this command will list all the Oracle homes within the Middleware home that are registered with the machine's central inventory or the specified inventory location.

The syntax for the `lshomes` option is shown below:

```
opatch lshomes
  [-domain domain_name | -domain_dir domain_location]
  [-mw_home MW_HOME ]
  [-invPtrLoc path_to_oraInst.loc]
```

A summary of the options for the `lshomes` command are described in Table 2–6.

**Table 2–6 Options for the OPatch lshomes Command**

Option	Description
<code>-domain domain_name</code>	Optional - list the Oracle homes that have been used to create or extend this WebLogic Domain.
<code>-domain_dir domain_location</code>	Optional - list the Oracle homes that have been used to create or extend the WebLogic Domain at this location. You must specify the absolute path to the WebLogic Domain.
<code>-mw_home MW_HOME</code>	Optional - list only the Oracle homes registered with the machine's central inventory that are located in this Middleware home.  You must specify the absolute path to the Middleware home directory; this value supersedes the <code>MW_HOME</code> environment variable. If neither is available, the Middleware home from which the command is executed will be used.
<code>-invPtrLoc path_to_oraInst.loc</code>	Optional - absolute path to the location of your <code>oraInst.loc</code> file; this option is needed if the installation was performed using the <code>-invPtrLoc</code> option.

Below is an example of the `opatch lshomes` command on a UNIX operating system:

```
[aime@stadvn41 Oracle_SOA1]$ ./OPatch/opatch lshomes
-domain MySOAWebCenterDist
Invoking OPatch 11.1.0.6.9

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

UTIL session

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
                  from          : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version     : 11.1.0.7.0
OUI location    : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/cfgtoollogs/opatch/opatch2009-12-06_10-57-49AM.log

Patch history file: /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/cfgtoollogs/opatch/opatch_history.txt

OPatch detects the Middleware Home as "/OracleFMW/Middleware_PS1_RC2"

Invoking utility "lshomes"
Home path = "/OracleFMW/Middleware_PS1_RC2/oracle_common"
Home path = "/OracleFMW/Middleware_PS1_RC2/Oracle_SOA1"
Home path = "/OracleFMW/Middleware_PS1_RC2/Oracle_WC1"
OPatch command 'lshomes' done.

OPatch succeeded.
```

## 2.4.5 Listing the Domains Created from the Middleware Home or Oracle Home

The `lsdomains` command lists all the WebLogic Domains that have been created from a certain Oracle home:

- If the Oracle home is specified, then only those domains created from the specified Oracle home are listed. If no Oracle home is specified, OPatch will list the domains created from the Oracle home as defined by the *ORACLE\_HOME* environment variable. If neither is available, then OPatch will use the Oracle home directory from which the command is run.
- If a Middleware home is specified, all domains created from all Oracle homes within the specified Middleware home are listed.
- If neither is specified, and neither the *MW\_HOME* or *ORACLE\_HOME* environment variable is defined, then OPatch will run the command for the Middleware home from where the command was run.

The syntax for the `lsdomains` command is shown below:

```
opatch lsdomains
  [-oh ORACLE_HOME]
  [-mw_home MW_HOME]
  [-invPtrLoc path_to_oraInst.loc]
```

A summary of the options for the `lsdomains` command are described in Table 2–7.

**Table 2–7 Options for the OPatch *lsdomains* Command**

Option	Description
<code>-oh ORACLE_HOME</code>	Optional - absolute path to the Oracle home directory.
<code>-mw_home MW_HOME</code>	Optional - absolute path to the Middleware home directory.
<code>-invPtrLoc path_to_oraInst.loc</code>	Optional - absolute path to the location of your <code>oraInst.loc</code> file; this option is needed if the installation was performed using the <code>-invPtrLoc</code> option.

Below is an example of the `opatch lsdomains` command on a UNIX operating system:

```
[aime@stadm41 Oracle_SOA1]$ ./OPatch/opatch lsdomains
-oh /OracleFMW/Middleware_PS1_RC2/oracle_common
Invoking OPatch 11.1.0.6.9

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

UTIL session

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/oracle_common
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
                  from      : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version      : 11.1.0.7.0
OUI location     : /OracleFMW/Middleware_PS1_RC2/oracle_common/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/oracle_
common/cfgtoollogs/opatch/opatch2009-12-06_11-04-41AM.log

Patch history file: /OracleFMW/Middleware_PS1_RC2/oracle_
common/cfgtoollogs/opatch/opatch_history.txt
```

OPatch detects the Middleware Home as "/OracleFMW/Middleware\_PS1\_RC2"

```
Invoking utility "lsdomains"
Domain Name = "MySOAWebCenterDist" Path =
```

```

"/OracleFMW/MyDomains/domains/MySOAWebCenterDist"
Domain Name = "MyWebCenterOnly" Path =
"/OracleFMW/MyDomains/domains/MyWebCenterOnly"
OPatch command 'lsdomains' done.

OPatch succeeded.

```

## 2.4.6 Listing the Applicable Oracle Homes for a Patch

This checkApplicable command produces a list of Oracle homes to which the patch can be applied. For Fusion Middleware, this command is limited in scope to the top-level Middleware home:

- If only the Middleware home is specified, OPatch will check to see whether or not this patch can be applied to all Oracle homes within the specified Middleware home.
- If an Oracle home is specified in addition to the Middleware home, OPatch will check to see if the patch can be applied to the specified Oracle home in the specified Middleware home.
- If neither is specified, and neither the *MW\_HOME* or *ORACLE\_HOME* environment variable is defined, then OPatch will run the command for the Middleware home from where the command was run.

The syntax for the checkApplicable command is shown below:

```

opatch checkApplicable
[-ph patch_location]
[-mw_home MW_HOME]
[-oh ORACLE_HOME]
[-invPtrLoc path_to_oraInst.loc]

```

A summary of the options for the checkApplicable command are described in Table 2–8.

**Table 2–8 Options for the OPatch checkApplicable Command**

Option	Description
<code>-ph patch_location</code>	Optional - location of the patch for which you want to run the checkApplicable command. If not specified, then the patch in the current directory is used.
<code>-mw_home MW_HOME</code>	Optional - absolute path to the Middleware home directory.
<code>-oh ORACLE_HOME</code>	Optional - absolute path to the Oracle home directory.
<code>-invPtrLoc path_to_oraInst.loc</code>	Optional - absolute path to the location of your <code>oraInst.loc</code> file; this option is needed if the installation was performed using the <code>-invPtrLoc</code> option.

Below is an example of the `opatch checkApplicable` command on a UNIX operating system:

```

[aime@stadn41 Oracle_SOA1]$ ./OPatch/opatch checkapplicable
-ph /OracleFMW/Middleware_PS1_RC2/FMWPatches/9991008/
Invoking OPatch 11.1.0.6.9

```

```

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

```

UTIL session

```

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
                  from      : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version      : 11.1.0.7.0
OUI location     : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch2009-12-06_10-59-57AM.log

Patch history file: /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch_history.txt

OPatch detects the Middleware Home as "/OracleFMW/Middleware_PS1_RC2"

Invoking utility "checkapplicable"

"checkApplicable" passed for Patch "9991008" and Oracle Home
"/OracleFMW/Middleware_PS1_RC2/oracle_common".
"checkApplicable" failed for Patch "9991008" and Oracle Home
"/OracleFMW/Middleware_PS1_RC2/Oracle_SOA1".
The details are:
Patch 9991008: Required component(s) missing : [ oracle.jrf.j2ee, 11.1.1.2.0 ] , [
oracle.jrf.dms, 11.1.1.2.0 ]
"checkApplicable" failed for Patch "9991008" and Oracle Home
"/OracleFMW/Middleware_PS1_RC2/Oracle_WC1".
The details are:
Patch 9991008: Required component(s) missing : [ oracle.jrf.j2ee, 11.1.1.2.0 ] , [
oracle.jrf.dms, 11.1.1.2.0 ]
Some of the Oracle Homes under the Middleware Home "/OracleFMW/Middleware_PS1_RC2"
have failed this check.

OPatch command 'checkApplicable' done.
-----
The following warnings have occurred during OPatch execution:
1) OUI-67124:Some of the Oracle Homes under the Middleware Home
"/OracleFMW/Middleware_PS1_RC2" have failed this check.
-----
OPatch Session completed with warnings.

OPatch completed with warnings.

```

## 2.4.7 Listing Patches Applied to an Oracle Home or WebLogic Domain

The `checkInstalledOneOffs` command checks to see if the specified patch or patches have been applied to certain Oracle homes or WebLogic Domains:

- If a Middleware home is specified, OPatch checks all the Oracle homes within the specified Middleware home that are registered with the machine's central inventory. If not specified, then the `MW_HOME` environment variable is used.
- If an Oracle home is specified, OPatch checks the patch against the specified Oracle home only.
- If neither is specified, and neither the `MW_HOME` or `ORACLE_HOME` environment variable is defined, then OPatch will run the command for the Middleware home from where the command was run.
- If a WebLogic Domain is specified, OPatch checks against all the Oracle homes within the specified WebLogic Domain.

The syntax for the `checkInstalledOneOffs` command is shown below:

```
opatch checkInstalledOneOffs -id patch_IDs
  [-mw_home MW_HOME]
  [-oh ORACLE_HOME]
  [-domain domain_name]
  [-invPtrLoc path_to_oraInst.loc]
```

A summary of the options for the `checkInstalledOneOffs` command are described in Table 2-9.

**Table 2-9 Options for the OPatch checkInstalledOneOffs Command**

Option	Description
<code>-id patch_IDs</code>	ID of the patch or patches that you want to check. Separate multiple patch IDs with a comma (,) character.
<code>-mw_home MW_HOME</code>	Optional - absolute path to the Middleware home directory.
<code>-oh ORACLE_HOME</code>	Optional - absolute path to the Oracle home.
<code>-domain domain_name</code>	Optional - name of the WebLogic Domain.
<code>-invPtrLoc path_to_oraInst.loc</code>	Optional - absolute path to the location of your <code>oraInst.loc</code> file; this option is needed if the installation was performed using the <code>-invPtrLoc</code> option.

Below is an example of the `opatch checkInstalledOneOffs` command on a UNIX operating system. In this example, patch 8965224 is installed in the SOA Oracle home and patch 9991008 is installed in the Oracle Common Home:

```
[aime@stadn41 Oracle_SOA1]$ ./OPatch/opatch checkinstalledoneoffs
-id 8965224,9991008
Invoking OPatch 11.1.0.6.9

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

UTIL session

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
from            : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version     : 11.1.0.7.0
OUI location    : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/cfgtoollogs/opatch/opatch2009-12-06_09-40-41AM.log

Patch history file: /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/cfgtoollogs/opatch/opatch_history.txt

OPatch detects the Middleware Home as "/OracleFMW/Middleware_PS1_RC2"

Invoking utility "checkinstalledoneoffs"

"checkInstalledOneOffs" failed for Oracle Home "/OracleFMW/Middleware_PS1_RC2/oracle_common".
Not Installed Patch IDs: [8965224]

"checkInstalledOneOffs" failed for Oracle Home "/OracleFMW/Middleware_PS1_
```

```
RC2/Oracle_SOA1".
Not Installed Patch IDs: [9991008]

"checkInstalledOneOffs" failed for Oracle Home "/OracleFMW/Middleware_PS1_
RC2/Oracle_WC1".
Not Installed Patch IDs: [8965224, 9991008]

Some of the Oracle Homes under the Middleware Home "/OracleFMW/Middleware_PS1_RC2"
have failed this check.
OPatch command 'checkInstalledOneOffs' done.
-----
The following warnings have occurred during OPatch execution:
1) OUI-67124:Some of the Oracle Homes under the Middleware Home
"/OracleFMW/Middleware_PS1_RC2" have failed this check.
-----
OPatch Session completed with warnings.

OPatch completed with warnings.
```

## 2.4.8 Maintaining OPMN, Oracle HTTP Server, Fusion Middleware Control, and WebLogic Server

Oracle Process Management Notification (OPMN), Oracle HTTP Server, and Fusion Middleware Control are included in this release. These components, and any others installed within the Middleware home (including WebLogic Server 10.3.5), may be updated with any patch meant for these components (for example, a one-off patch applied via OPatch for OHS 11.1.1.5, or the WLS PSU 10.3.5.0.2). Note that some component versions may differ.

To determine the component versions installed in your environment, you can print a report using the following command from the ORACLE\_HOME/OPatch directory:

```
opatch lsinventory -detail
```

## 2.4.9 Maintaining Oracle Client, JDBC and Networking

Oracle Fusion Middleware 11g is installed with Oracle Client Networking libraries equivalent to an 11.1.0.7 version. This includes libraries required for SSL processing and JDBC drivers where the included libraries will support connections to all certified Oracle Database Server versions.

There are specific cases where you might be instructed to apply an Oracle Database one-off patch to an existing Oracle Fusion Middleware Oracle home. This is because some Oracle Fusion Middleware products include specialized components, such as application programming interfaces (APIs), software libraries, and other software code developed for Oracle Database products. 11.1.0.7 Database one-off patches (bundled patches on Windows) may be applied to the Oracle Fusion Middleware 11g (11.1.2.x) homes.

## 2.4.10 Starting or Stopping a Runtime Instance

The start and stop commands allow Fusion Middleware runtime entities to be started or stopped, respectively. Only entities of the same type can be started or stopped; if you need to start or stop entities of multiple types, you must run this command separately for each entity type.

In order to run this command:

- Node Manager must be configured and running on the target server machine.

- The *WebLogic\_Home*/common/nodemanager/nodemanager.domains (on UNIX operating systems) or *WebLogic\_Home\common\nodemanager\nodemanager.domains* (on Windows operating systems) must be populated.
- You must be able to connect to the Administration Server, which must be up and running.

The syntax for the start and stop commands is shown below:

```
opatch start|stop
  -domain domain_name
  -targets product_entity_name
  -target_type product_entity_type
  [-oh ORACLE_HOME]
```

A summary of the options for the start and stop commands are described in Table 2-10.

**Table 2–10 Options for the OPatch start and stop Commands**

Option	Description
-domain <i>domain_name</i>	The name of the domain in which the specified targets will be started or stopped.
-targets <i>product_entity_name</i>	The name of the WebLogic or Fusion Middleware entity you want to start or stop. Only entities of the same type can be specified; multiple entities should be separated by a comma.
-target_type <i>target_type</i>	<p>The type of WebLogic or Fusion Middleware entity you want to start. Valid values are:</p> <ul style="list-style-type: none"> <li>■ fmwApplication</li> <li>■ fmwServer</li> <li>■ fmwCluster</li> <li>■ fmwContainer</li> </ul> <p>The fmwContainer option starts or stops the container (for example, the WebLogic Server) hosting the application.</p> <p>The fmwServer option starts or stops the actual java process that is running (for example, a Managed Server).</p>
-oh <i>ORACLE_HOME</i>	Optional - the absolute path to the Oracle home directory. If this is not specified, the value in the <i>ORACLE_HOME</i> environment variable is used. If neither is available, then the Oracle home from which the command is executed is used.

Below is an example of the opatch start command on a UNIX operating system:

```
[aime@stadm41 Oracle_SOA1]$ ./OPatch/opatch start
-targets soa_server1
-target_type fmwserver
-domain MySOAWebCenterDist

Invoking OPatch 11.1.0.6.9

Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.

UTIL session

Oracle Home      : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1
```

```
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
      from       : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version     : 11.1.0.7.0
OUI location    : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch2009-12-06_12-30-31PM.log
```

```
Patch history file: /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch_history.txt
```

```
OPatch detects the Middleware Home as "/OracleFMW/Middleware_PS1_RC2"
```

```
Invoking utility "start"
Please enter the WebLogic Admin Server username:> weblogic
Please enter the WebLogic Admin Server password:>
Please enter the WebLogic Admin Server URL(t3://stadm41:7011):>
[FMW] Performing Start Actions
[FMW] Finished Start Actions
OPatch command 'start' done.
```

```
OPatch succeeded.
```

Below is an example of the opatch stop command on a UNIX operating system:

```
[aime@stadm41 Oracle_SOA1]$ ./OPatch/opatch stop -targets soa_server1 -target_type
fmwserver -domain MySOAWebCenterDist
Invoking OPatch 11.1.0.6.9
```

```
Oracle Interim Patch Installer version 11.1.0.6.9
Copyright (c) 2009, Oracle Corporation. All rights reserved.
```

```
UTIL session
```

```
Oracle Home       : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1
Central Inventory : /ade/aime_dte6989/oracle/work/EM_SH_1/oraInventory
      from       : /etc/oraInst.loc
OPatch version   : 11.1.0.6.9
OUI version     : 11.1.0.7.0
OUI location    : /OracleFMW/Middleware_PS1_RC2/Oracle_SOA1/oui
Log file location : /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch2009-12-06_11-13-59AM.log
```

```
Patch history file: /OracleFMW/Middleware_PS1_RC2/Oracle_
SOA1/cfgtoollogs/opatch/opatch_history.txt
```

```
OPatch detects the Middleware Home as "/OracleFMW/Middleware_PS1_RC2"
```

```
Invoking utility "stop"
Please enter the WebLogic Admin Server username:> weblogic
Please enter the WebLogic Admin Server password:>
Please enter the WebLogic Admin Server URL(t3://stadm41:7011):>
[FMW] Performing Stop Actions
[FMW] Finished Stop Actions
OPatch command 'stop' done.
```

```
OPatch succeeded.
```

## 2.5 Troubleshooting OPatch in a Fusion Middleware Environment

This section describes common issues you may encounter when running the OPatch utility in a Fusion Middleware environment.

### 2.5.1 Notes About Patching the MDS Repository

For special information about patching the MDS repository, refer to "Understanding the MDS Repository" in the *Oracle Fusion Middleware Administrator's Guide*.

### 2.5.2 Setting the Machine Name and Listen Address

The machine name of the Administration Server and Managed Servers must be set to a valid value. It cannot be set to blank or None.

The listen address of the Administration and Managed Servers must be set to the real physical host's address (hostname, FQDN, or IP address). It cannot be set to blank or localhost.

These values need to be properly set only once; you will not need to reset them should you ever need to patch your software.

To set the machine name and listed address of the Managed Servers:

1. Open the Administration Console.
2. In the Domain Structure, navigate to *domain\_name* > **Environments** > **Machines**.
3. If your WebLogic Server is running in Production Mode, click the **Lock & Edit** button on the left hand side. If your WebLogic Server is running in Development Mode, this step is not needed.
4. Click the **New** button to create a new machine. Specify a name and select the operating system.
5. Select the machine you just created, go to **Configuration** > **Node Manager** and change the Listen Address to the host on which the Node Manager is listening, then click the **Save** button.
6. In the Domain Structure, navigate to *domain\_name* > **Environments** > **Servers**.
7. For each Managed Server, assign the machine you just created. In the Listen Address field, specify the name of the host on which the Node Manager is listening. Click **Save** when you are finished.
8. If your WebLogic Server is running in Production Mode, click the **Activate Changes** button on the left hand side. If your WebLogic Server is running in Development Mode, this step is not needed.

To set the machine name and listen address of the Administration Server:

1. Stop the Administration Server and all Managed Servers.
2. Back up the `config.xml` file in the domain.

The default location of this file is the `config` directory inside your Domain home.

3. Modify the existing `config.xml` file as follows:
  - a. Find the following line:  
`<name>AdminServer</name>`
  - b. Add the following lines:  
`<name>AdminServer</name>`  
`<listenAddress>[host name or IP address]</listenAddress>`

```
<machine>host_name</machine>
<listen-address>host_name</listen-address>
```

- c.** Save the file.
- 4.** Restart the Administration Server and all the Managed Servers.  
If you encounter any problems, revert back to the saved version of the config.xml file and contact Oracle Support.

# 3

---

## Applying the Latest Oracle Fusion Middleware Patch Set

This chapter describes the tools and procedures required for you to patch your existing Oracle Forms and Reports 11g Release 2 (11.1.2).

- [Section 3.1, "Summary of the Oracle Fusion Middleware Patching Process"](#)
- [Section 3.2, "General Pre-Patching Tasks"](#)
- [Section 3.3, "Downloading and Starting the Installer"](#)
- [Section 3.4, "Applying the Patch Set"](#)
- [Section 3.5, "Starting the Servers and Processes"](#)
- [Section 3.6, "Verifying Your Patch Set Installation"](#)

### 3.1 Summary of the Oracle Fusion Middleware Patching Process

[Table 3-1](#) provides links to additional information for each of the patching steps.

**Table 3-1 Summary of Patching Procedures and Links to Documentation**

Step	Description
1	Perform the following general pre-patching tasks: <ol style="list-style-type: none"><li>1. <a href="#">Section 3.2.1, "Reviewing System Requirement, Certification and Interoperability Information"</a></li><li>2. <a href="#">Section 3.2.2, "Stopping the Servers and Processes"</a></li><li>3. <a href="#">Section 3.2.3, "Backing Up Your Middleware Home, Domain Home and Oracle Instances"</a></li><li>4. <a href="#">Section 3.2.4, "Backing Up Your Database and Database Schemas"</a></li></ol> If you are patching in silent mode, see <a href="#">Section 3.2.5, "Renaming the emCCR File for Silent Patching"</a> .
2	Download and start the appropriate installer for your product: For details, see <a href="#">Section 3.3, "Downloading and Starting the Installer"</a> .
3	Update the software in your Oracle home using the downloaded Installer.
4	Perform any necessary post-patching tasks (for example, starting the servers and processes in a domain, starting Oracle instances, running scripts or modifying configuration files). The tasks that need to be performed will vary depending on the version of your existing software and components configured in your environment.
5	Start the servers and processes. For more information, see <a href="#">Section 3.5, "Starting the Servers and Processes"</a> .
6	Verify that your patch installation is complete. For more information, see <a href="#">Section 3.6, "Verifying Your Patch Set Installation"</a> .

If you are running your products in a distributed environment (for example, you have Managed Servers running in multiple domains on multiple systems) and you have set up a shared Middleware home on a shared network drive mounted to each machine that is part of your domain, then this patching procedure only needs to be done once (see [Section 2.3.3, "Patching in a Distributed Environment"](#)).

If your distributed environment has a separate Middleware home on each system, then this patching procedure must be repeated for each domain on each system.

More information about distributed topologies can be found in the Enterprise Deployment Guide for your specific product.

## 3.2 General Pre-Patching Tasks

This section describes tasks that should be completed before you patch your software:

- [Section 3.2.1, "Reviewing System Requirement, Certification and Interoperability Information"](#)
- [Section 3.2.2, "Stopping the Servers and Processes"](#)
- [Section 3.2.3, "Backing Up Your Middleware Home, Domain Home and Oracle Instances"](#)
- [Section 3.2.4, "Backing Up Your Database and Database Schemas"](#)
- [Section 3.2.5, "Renaming the emCCR File for Silent Patching"](#)

### 3.2.1 Reviewing System Requirement, Certification and Interoperability Information

Before you begin to update your software, you should make sure that your system environment and configuration meet the minimum requirements for the software you want to install in order to perform the update. This section contains links to several key pieces of documentation you should review:

- [System Requirements and Specifications](#)
- [Certification and Supported Platforms for Oracle Forms and Reports](#)
- [Interoperability and Compatibility](#)

#### 3.2.1.1 System Requirements and Specifications

For certification information, refer to the System Requirements and Supported Platforms for Oracle Fusion Middleware 11gR1 document on the Oracle Fusion Middleware Supported System Configurations page at the following URL:

<http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html>

This document contains information related to hardware and software requirements, minimum disk space and memory requirements, database schema requirements, and required system libraries, packages, or patches.

#### 3.2.1.2 Certification and Supported Platforms for Oracle Forms and Reports

Read the *System Requirements and Supported Platforms for Oracle Forms and Reports 11g Release 2 (11.1.2.x)* Certification Matrix document. This document contains certification information related to supported 32-bit and 64-bit operating systems, databases, web servers, LDAP servers, adapters, IPv6, JDKs, and third-party products.

### 3.2.1.3 Interoperability and Compatibility

Read *Oracle Fusion Middleware Interoperability and Compatibility Guide for Oracle Forms and Reports*. This document contains important information regarding the ability of Oracle Fusion Middleware products to function with previous versions of other Oracle Fusion Middleware, Oracle, or third-party products. This information is applicable to both new Oracle Fusion Middleware users and existing users who are upgrading their existing environment.

## 3.2.2 Stopping the Servers and Processes

Before you run the installer to update your software, you should stop all servers and processes (including OPMN) on all machines which are part of any domain used from the Middleware home.

Instructions for stopping an Oracle Fusion Middleware environment are provided in "Stopping an Oracle Fusion Middleware Environment" in *Oracle Fusion Middleware Administrator's Guide*.

If your environment is running Oracle Process Manager and Notification Server (OPMN), you should also stop OPMN with the `opmnctl stopall` command.

If you are running Node Manager, you should also stop Node Manager. You can do this by closing the console window in which Node Manager is running, or by using the `stopNodeManager WLST` command.

---

**Note:** In order for the `stopNodeManager` command to work, Node Manager must be configured with `QuitEnabled=true`.

See "stopNodeManager" in *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference* for more information.

---

## 3.2.3 Backing Up Your Middleware Home, Domain Home and Oracle Instances

After stopping the servers and processes, back up your Middleware home directory (including the Oracle home directories inside the Middleware home), your local Domain home directory, your local Oracle instances, and also the Domain home and Oracle instances on any remote systems that use the Middleware home.

If your patch set installation is unexpectedly interrupted, or if you choose to cancel out of the installation before it is complete, you may not be able to install the patch unless you restore your environment to the previous configuration before running the Installer again.

---

**Note:** There is no patch set deinstallation procedure. The `-deinstall` procedure that you would use for a typical installation will not remove the patch set.

---

## 3.2.4 Backing Up Your Database and Database Schemas

If the product you are installing has associated database schemas, you should also back up your database before you begin the patching procedure. Make sure this back up includes the schema version registry table, as each Fusion Middleware schema has a row in this table. The name of the schema version registry table is `SYSTEM.SCHEMA_VERSION_REGISTRY$`. Refer to your database documentation for instructions on how to do this.

If you run the Patch Set Assistant to update an existing schema and it does not succeed, you must restore the original schema before you can try again. Make sure you backup your existing database schemas before you run the Patch Set Assistant.

### 3.2.5 Renaming the emCCR File for Silent Patching

If you are patching your software in silent mode, you may encounter the following error messages:

```
"SEVERE:Values for the following variables could not be obtained from the command  
line or response file(s):  
MYORACLE_SUPPORT_USERNAME(MyOracleSupportUsername) "
```

To work around this issue, rename the *ORACLE\_HOME/CCR/bin/emCCR* (on UNIX operating systems) or *ORACLE\_HOME\CCR\bin\emCCR* (on Windows operating systems) file.

---

**Caution:** Be sure to change the name back after the patching process has completed or you may encounter errors with other operations (such as My Oracle Support or other installers.)

---

For example, on a UNIX operating system:

```
cd ORACLE_HOME/CCR/bin  
mv emCCR emCCR_LAST
```

On a Windows operating system:

```
cd ORACLE_HOME\CCR\bin  
mv emCCR emCCR_LAST
```

See "Silent Oracle Fusion Middleware Installation and Deinstallation" in *Oracle Fusion Middleware Installation Planning Guide* for more details about silent installation.

## 3.3 Downloading and Starting the Installer

The following sections contain instructions on how to obtain the proper installer required to patch your product:

- [Section 3.3.1, "About the Installers Used for Patching"](#)
- [Section 3.3.2, "Downloading the Required Installer"](#)
- [Section 3.3.3, "Starting the Installer"](#)

### 3.3.1 About the Installers Used for Patching

The installers you use to apply the latest Oracle Fusion Middleware patch sets vary in their behavior and capabilities, depending upon the product you are using. The installer for Oracle Forms and Reports is a full installer that can also function as an update installer. You can use it to update an existing Oracle Forms and Reports home, or you can use it to install a new, complete Oracle Forms and Reports home.

### 3.3.2 Downloading the Required Installer

To download and unpack the Installer files for your product:

1. Download the installer from the Oracle Technology Network, My Oracle Support, or Oracle Software Delivery Cloud (formerly E-Delivery).

For more information, see "Select an Oracle Fusion Middleware Software Download Site" and "Download the Software Required for Your Starting Point" in *Oracle Fusion Middleware Download, Installation, and Configuration ReadMe Files*.

2. Unpack the downloaded archive that contains the installer and software that you want to install into a directory on the target computer.

### 3.3.3 Starting the Installer

To start the installer you just downloaded and unpacked:

1. Change directory to the Disk1 folder inside the unpacked archive folder.
2. Start the Installer:

On UNIX operating systems:

```
./runInstaller
```

On Windows operating systems run the following:

```
setup.exe
```

Depending on your system environment and product you are updating, you may be prompted to provide the location of a JRE/JDK on your system when you start the installer. When you installed Oracle WebLogic Server, a JRE was installed in the `jdk160_version` directory inside the Middleware home; you can use this location to start the installer.

If you do not have Oracle WebLogic Server installed on your system, you can use the JDK in the `jdk` directory inside the Oracle home.

Make sure you specify the absolute path to your JRE/JDK location; relative paths are not supported.

The Installer can also be run in silent mode. See "Silent Oracle Fusion Middleware Installation and Deinstallation" in *Oracle Fusion Middleware Installation Planning Guide* for more details.

## 3.4 Applying the Patch Set

After you have started the Installer, follow the instructions on the screen to apply the patch set to your existing Middleware home.

---

**Note:** If your domain includes multiple host computers, you must run the Installer separately on each host to update the software on that host.

---

As you review each screen of the installer, note that there are two significant differences between applying a patch set and installing software for the first time:

---

**Note:** When you are applying a patch set, you must identify an existing Middleware home on the Specify Installation Location screen.

---

**Table 3–2** provides a summary of the typical installation screens you will see when you are applying a patch set to an existing Middleware home.

If you need additional help with any of the installation screens click **Help** to access the online help.

**Table 3–2 Typical Installation Flow For Installing a Patch Set**

Screen	When Does This Screen Appear?	Description
Welcome	Always.	This page introduces you to the Oracle Fusion Middleware Installer.
Software Updates	Always.	Select the method you want to use for obtaining software updates, or select <b>Skip Software Updates</b> if you do not want to get updates.  If updates are found, the installer will automatically attempt to apply them at this point; make sure that the server you are using to perform the installation is connected to the Internet.
Installation Type	Always.	Select an install type: <ul style="list-style-type: none"> <li>▪ <b>Install and Configure</b> Use only for new installations.</li> <li>▪ <b>Install Software - Do not configure</b> Use this option to update your existing Oracle Forms and Reports installation.</li> </ul>
Prerequisite Checks	Always.	Verify that your system meets all necessary prerequisites.
Specify Installation Location	Always.	Specify your existing Oracle Middleware home and product Oracle home locations.
Specify Security Updates	Only if you have not previously registered for security updates for your products.	Enter your E-mail address if you want to receive the latest product information and security updates. If you have a My Oracle account and wish to receive updates via this mechanism, select <b>I wish to receive security updates via My Oracle Support</b> , then enter your account password.  If you do not wish to register for security updates, leave all the fields on this screen blank.
Installation Summary	Always.	Verify the information on this screen, then click <b>Install</b> to begin the installation.
Installation Progress	Always.	This screen shows the progress of the installation. Click <b>Next</b> when the installation is 100% complete.
Installation Complete	Always.	Click <b>Save</b> to save your configuration information to a file. This information includes port numbers, installation directories, URLs, and component names which you may need to access at a later time.  After saving your configuration information, click <b>Finish</b> to dismiss the installer.

## 3.5 Starting the Servers and Processes

After you have finished patching your software and performing any necessary post-patching tasks, you are ready to start the servers and processes.

Instructions for starting an Oracle Fusion Middleware environment are provided in "Starting an Oracle Fusion Middleware Environment" in *Oracle Fusion Middleware Administrator's Guide*.

You can start Node Manager as described in "Starting Node Manager" in *Oracle Fusion Middleware Node Manager Administrator's Guide for Oracle WebLogic Server*.

## 3.6 Verifying Your Patch Set Installation

To verify the installation after applying the patch set, start your browser and enter the following URLs:

- To access the Administration Server console:

`http://host:admin_server_port/console`

You can verify that both Forms and Reports appear in various locations on this screen. For more information about using Fusion Middleware Control with Oracle Forms and Reports, see "Getting Started Using Oracle Enterprise Manager Fusion Middleware Control" in *Oracle Fusion Middleware Administrator's Guide*.

- If you configured your Administration Server to accept SSL connection, use the following URL to access the Administration Server console in secure mode:

`https://host:secure_admin_server_port/console`

- To access Enterprise Manager:

`http://host:admin_server_port/em`

- To access the Enterprise Manager Agent:

`http://host:port/emd/main`

- To access Oracle Forms:

`http://host:port/forms/frm servlet`

- To access Oracle Reports:

`http://host:port/reports/rw servlet`

You should receive a login screen. Enter your Administration Server user name and password to access the site.

For more information about the Administration Console, see "Getting Started Using Oracle WebLogic Server Administration Console" in *Oracle Fusion Middleware Administrator's Guide*.

For more information about Enterprise Manager, see "Getting Started Using Oracle Enterprise Manager Fusion Middleware Control" in *Oracle Fusion Middleware Administrator's Guide*.



# 4

---

## Post-Patching Procedures

This chapter contains information about manual tasks that should be performed after you have completed patching your existing Oracle Forms and Reports 11g Release 2 (11.1.2). Some of the tasks may not apply to your environment as you may not be using the products in question.

The following section is included in this chapter:

- [Section 4.1, "Post-Patching Tasks for System Components"](#)

### 4.1 Post-Patching Tasks for System Components

A system component is a manageable process that is not deployed as a Java application. Instead, a system component is managed by Oracle Process Manager and Notification (OPMN). For more information, see "Understanding Key Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide*.

Oracle Fusion Middleware system components include the following:

- Products included with Oracle Web Tier, including Oracle HTTP Server and Oracle Web Cache.
- Products included with Oracle Identity Management, including Oracle Virtual Directory and Oracle Internet Directory.
- Products included with Oracle Portal, Forms, Reports and Discoverer.
- Products included with Oracle Business Intelligence, including BI Server, BI Scheduler and BI Presentation Services.
- Products included with Oracle Data Integrator.

If you have patched one or more of these components, the tasks in this section should be performed. For more information about system components, refer to "Understanding Key Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide*.

The following tasks should be performed:

- [Section 4.1.1, "Upgrading System Components"](#)
- [Section 4.1.2, "Upgrading Oracle Configuration Manager"](#)
- [Section 4.1.3, "Resolving JDBC Errors in Oracle Reports and Oracle Portal"](#)
- [Section 4.1.4, "Adding Datafiles to the OLTS\\_CT\\_STORE and OLTS\\_ATTRSTORE Tablespaces for Oracle Internet Directory"](#)
- [Section 4.1.5, "Generating the BASE64 Encoded Encryption Key for OPSS"](#)

- [Section 4.1.6, "Enabling Dynamic Audit Metadata Model for OPSS Running in JavaSE Mode"](#)
- [Section 4.1.7, "Configuring Diagnostic Framework Dump Sampling"](#)
- [Section 4.1.8, "Adding Batik Library Jar Files to the JRF Template for IBM WebSphere"](#)

## 4.1.1 Upgrading System Components

This step is required for any system component that is associated with a WebLogic domain. In some cases (for example, Oracle Web Tier and Oracle Internet Directory), you can choose to create standalone system components that are not associated with any domain; in these cases, you do not have to perform this procedure.

After you have patched your system component software that is associated with a WebLogic domain, you must run the *ORACLE\_HOME*/opmn/bin/upgradenonj2eeapp.sh (on UNIX operating systems) or *ORACLE\_HOME*\opmn\bin\upgradenonj2eeapp.bat (on Windows operating systems) script to upgrade your system components.

Before running this script, make sure:

1. The Administration Server is up and running.
2. The *ORACLE\_HOME* environment variable has been set to your product's Oracle home directory.
3. The OPMN instance in the bin directory in the Instance home is up and running.

On UNIX operating systems:

```
cd INSTANCE_HOME/bin  
./opmnctl start
```

On Windows operating systems:

```
cd INSTANCE_HOME\bin  
opmnctl start
```

To run the script on UNIX operating systems:

```
cd ORACLE_HOME/opmn/bin  
./upgradenonj2eeapp.sh  
-oracleInstance Instance_Home_Location  
-adminHost WebLogic_Server_Host_Name  
-adminPort administration_server_port_number  
-adminUsername administration_server_user
```

On Windows operating systems:

```
cd ORACLE_HOME\opmn\bin  
upgradenonj2eeapp.bat  
-oracleInstance Instance_Home_Location  
-adminHost WebLogic_Server_Host_Name  
-adminPort administration_server_port_number  
-adminUsername administration_server_user
```

### Troubleshooting

If you encounter the Command failed: NonJ2EEManagement Application deployment failed error while running the upgradenonj2eeapp script, perform the following steps to diagnose and correct the problem:

1. Review the provisioning.log to determine the root cause of the failure. The log file is located in the following directory:

`MW_HOME/instances/myinstance/diagnostics/logs/OPMN/opmn`

2. If the root cause of the failure is a locking issue, continue with the remaining steps.

If the error was not caused by a locking failure, you may need to simply redeploy and register your instance as described in Step 5.

3. Login to the Oracle WebLogic Server Administration console:

`http://localhost:7001/console`

Navigate to the Change Center and click **Release Configuration**.

The lock on the configuration will be removed, but you may also need to deploy re-register your instance.

4. Restart the upgradenonj2eeapp script as described above and review the provisioning.log.

If you see: "Failed to unregister instance *instance1*, does not exist on the adminserver", continue to the next step.

5. Redeploy and register the instance as shown in the following examples. Be sure to use the directory path and instance name for your environment.

```
./opmnctl redeploy -oracleInstance /Middleware/instances/instance1 -adminHost localhost -adminPort 7001 -adminUsername weblogic
```

Command requires login to weblogic admin server (localhost):  
 Username: weblogic  
 Password:

```
./opmnctl registerinstance
Command requires login to weblogic admin server (localhost):
Username: weblogic
Password:
```

6. Restart the upgradenonj2eeapp script as described above. You should see "Successfully upgraded NonJ2EEManagement.ear and the registration."

#### 4.1.2 Upgrading Oracle Configuration Manager

If you are patching Oracle Portal, Forms, Reports and Discoverer, you must run some emCCR commands after applying the latest patch set in order for the correct version to appear. emCCR is used by Oracle Configuration Manager, which is used to collect client configuration information and upload it to the Oracle repository:

1. Go to the `ORACLE_HOME\ccr\bin` directory.
2. Set the `ORACLE_CONFIG_HOME` environment variable to the Instance home that contains Oracle Configuration Manager.

For example, on a Windows operating system:

```
set ORACLE_CONFIG_HOME=C:\Oracle\Middleware\Instances\asinst_ocmoc
```

Below is an example on a UNIX operating system:

```
setenv ORACLE_CONFIG_HOME /home/Oracle/Middleware/asinst_ocmoc
```

3. Run the following emCCR commands:

```
emccr collect  
emccr status
```

#### 4.1.3 Resolving JDBC Errors in Oracle Reports and Oracle Portal

If you have Oracle Reports or Oracle Portal configured in a domain and you apply the latest patch set, you will see the following error if you try to change the invalidation password:

```
Error. Check logs for details. [OK].
```

The following errors are seen in the portal\_wls.log and wls\_portal.out log files:

```
<Date and time> <Warning> <RMI> <BEA-080003>  
<RuntimeException thrown by rmi server:  
javax.management.remote.rmi.RMIClientImpl.invoke  
(Ljavax.management.ObjectName;Ljava.lang.String;Ljava.rmi.MarshalledObject;[Ljava.  
lang.String;Ljava.security.auth.Subject;)  
javax.management.RuntimeErrorException:  
oracle.jdbc.driver.T2CConnection.getLibraryVersionNumber()I javax.management.Runti  
meErrorException:  
oracle.jdbc.driver.T2CConnection.getLibraryVersionNumber()I  
at  
oracle.as.jmx.framework.standardbeans.spi.OracleStandardEmitterMBean.doInvoke(Or  
acleStandardEmitterMBean.java:991)  
at  
oracle.adf.mbean.share.AdfMBeanInterceptor.internalInvoke(AdfMBeanInterceptor.java  
:104)  
at  
oracle.as.jmx.framework.generic.spi.interceptors.AbstractMBeanInterceptor.doInvoke  
(AbstractMBeanInterceptor.java:252)  
....  
  
Caused By: java.lang.UnsatisfiedLinkError:  
oracle.jdbc.driver.T2CConnection.getLibraryVersionNumber()I  
at oracle.jdbc.driver.T2CConnection.getLibraryVersionNumber(Native  
Method)  
at oracle.jdbc.driver.T2CConnection$1.run(T2CConnection.java:3537)  
at java.security.AccessController.doPrivileged(Native Method)  
at oracle.jdbc.driver.T2CConnection.loadNativeLibrary  
(T2CConnection.java:3532)  
....
```

You must perform the following in order to avoid these JDBC error messages:

1. Go to the bin directory inside your *DOMAIN\_HOME* (*user\_projects* by default).
2. Edit the *setDomainEnv.sh* (on UNIX operating systems) or *setDomainEnv.cmd* (on Windows operating systems) file and search for *EXT\_PRE\_CLASSPATH*.
3. Change the definition to match the following:

On UNIX operating systems:

```
EXT_PRE_CLASSPATH=$ORACLE_HOME/jdbc/lib/ojdbc6.jar  
export EXT_PRE_CLASSPATH
```

For example:

```
if [ "${EXT_PRE_CLASSPATH}" != "" ] ; then  
  if [ "${PRE_CLASSPATH}" != "" ] ; then
```

```

EXT_PRE_CLASSPATH=$ORACLE_HOME/jdbc/lib/ojdbc6.jar // add this line
export EXT_PRE_CLASSPATH // add this line
PRE_CLASSPATH="${EXT_PRE_CLASSPATH}${CLASSPATHSEP}${PRE_CLASSPATH}"
export PRE_CLASSPATH
else
  EXT_PRE_CLASSPATH=$ORACLE_HOME/jdbc/lib/ojdbc6.jar // add this line
  export EXT_PRE_CLASSPATH // add this line
  PRE_CLASSPATH="${EXT_PRE_CLASSPATH}"
  export PRE_CLASSPATH
fi
fi

```

On Windows operating systems:

```

if NOT "%EXT_PRE_CLASSPATH%"=="" (
  if NOT "%PRE_CLASSPATH%"=="" (
    set EXT_PRE_CLASSPATH=%ORACLE_HOME%\jdbc\lib\ojdbc6.jar // add this line
    set PRE_CLASSPATH=%EXT_PRE_CLASSPATH%;%PRE_CLASSPATH%
  ) else (
    set EXT_PRE_CLASSPATH=%ORACLE_HOME%\jdbc\lib\ojdbc6.jar // add this line
    set PRE_CLASSPATH=%EXT_PRE_CLASSPATH%
  )
)

```

#### 4. Restart the Portal Managed Server.

### 4.1.4 Adding Datafiles to the OLTS\_CT\_STORE and OLTS\_ATTRSTORE Tablespaces for Oracle Internet Directory

If your Oracle Internet Directory schema was created during installation of a version prior to 11g Release 1 (11.1.1.6.0), you must add datafiles to the OLTS\_CT\_STORE and OLTS\_ATTRSTORE tablespaces if you intend to add more than a million entries to Oracle Internet Directory. Perform this step prior to the bulkload or ldapadd operation.

For details, see "Creating Data Files and Adding Data Files to a Tablespace" in *Oracle Database Administrator's Guide*.

### 4.1.5 Generating the BASE64 Encoded Encryption Key for OPSS

The upgradeOpss() command is used to add a new BASE64 encoded key for each encryption key already in the bootstrap wallet. This key is required when OBI C based code accesses DB credential store. This optional command can be used when starting from version 11.1.1.4.0, 11.1.1.5.0, or 11.1.1.6.0. If this step is not followed, OBI will be unable to access DB-based credential stores in 11.1.1.9.0.

For more information on running OPSS in JSE mode, see "Configuring DB-Based OPSS Security Stores" in *Oracle Fusion Middleware Security Guide*.

### 4.1.6 Enabling Dynamic Audit Metadata Model for OPSS Running in JavaSE Mode

To enable the dynamic audit metadata model in audit service for OPSS running in JavaSE mode, the upgradeOpss() command is used to modify jps-config-jse.xml with the additional audit service properties. This optional command can be used when starting from version 11.1.1.4.0, 11.1.1.5.0, or 11.1.1.6.0. If this step is not followed, 11.1.1.9.0 components registered to audit service with the new metadata model will not have audit service in JSE mode.

For more information on running OPSS in JSE mode, see "Configuring Policy and Credential Stores in Java SE Applications" in *Oracle Fusion Middleware Security Guide*.

#### 4.1.7 Configuring Diagnostic Framework Dump Sampling

As of Release 11.1.1.7.0 a new dump sampling feature was added to Diagnostic Framework. To enable this optional feature, the following WLST command should be run while connected to the AdminServer:

```
wlst.sh <ORACLE_HOME>/common/scripts/wlst/upgradeDFWConfig.py --adminuser <admin user name> --password <admin password> --adminurl <admin url>
```

#### 4.1.8 Adding Batik Library Jar Files to the JRF Template for IBM WebSphere

This optional post-patching step enables you to provide printer-friendly renderings of certain DVT components such as treemap and sunburst by adding the Batik SVG libraries to the ADF View JRF classpath and the Apache JARs to the application classpath.

For more information, see "upgradeADFLibrary" in the *Administering Oracle ADF Applications*.

# A

---

## Oracle Forms and Reports Patch Set Installer Screens

This appendix contains screenshots and descriptions for the Oracle Forms and Reports Patch Set Installer screens.

The following screens are described:

- Welcome
- Software Updates
- Installation Type
- Prerequisite Checks
- Specify Installation Location
- Specify Security Updates
- Installation Summary
- Installation Progress
- Installation Complete

## A.1 Welcome



This page introduces you to the Oracle Fusion Middleware installer and provides two important pieces of information:

- A navigation pane on the left that summarizes the tasks the installer will help you complete. Each item in the navigation pane represents a specific installer screen that will prompt you for information required to install the software.
- Information about any prerequisites you might need to perform before continuing with the installation.

Review the information on this screen carefully to be sure you have performed all the necessary prerequisites.

## A.2 Software Updates



Use this screen to quickly and easily search for the latest software updates, including important security updates, via your My Oracle Support account.

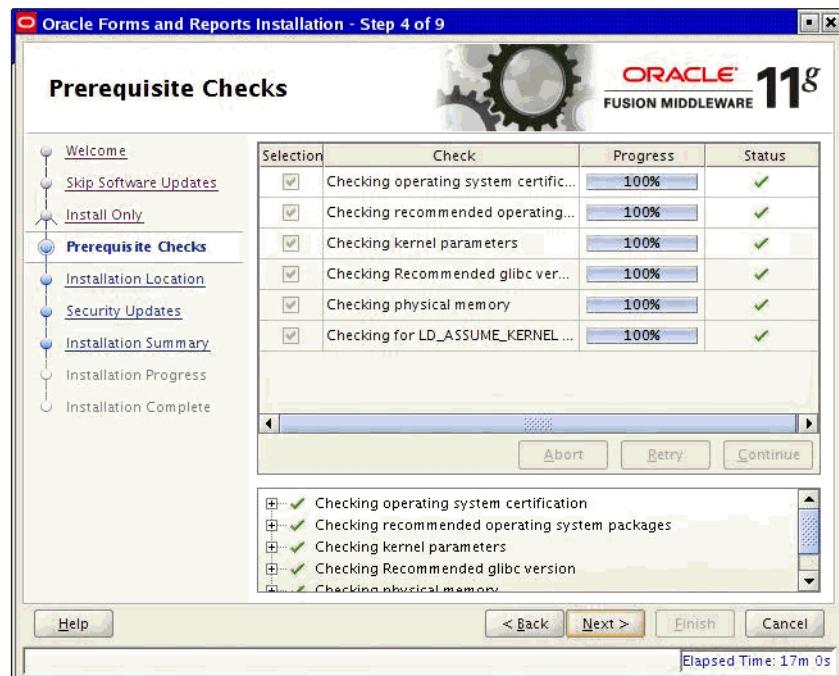
## A.3 Installation Type



The following table describes the options on this screen.

Option	Description
Install and Configure	This option is used during new installations only.
Install Software - Do Not Configure	Select this option to have the installer update an existing Oracle Home directory where the software will be installed. This is the option you will use when upgrading your existing installation.  If you did not configure your working instance in the previous release, then you will need to run the Configuration Tool after the patch is installed.

## A.4 Prerequisite Checks



This screen analyzes the host computer to ensure that specific operating system prerequisites have been met.

If any of the prerequisite checks fail, then a short error message appears in the bottom portion of the screen. Fix the error and click **Retry** to try again. If you want to ignore the error or warning messages and continue with the installation, click **Continue**.

Click **Abort** to stop prerequisite checking for all components.

## A.5 Specify Installation Location



Use this screen to identify the Oracle home directory you want to patch.

The following table describes the fields that appear on this page.

Field	Description
Oracle Middleware Home	Use this field to specify the absolute path to your existing Oracle Middleware home directory; this is the directory that was created when you installed Oracle WebLogic Server. If you do not know the full path to your Middleware home, you can click <b>Browse</b> to select an existing directory in your system.
Oracle Home Directory	Use this field to specify the existing product Oracle home directory inside the Oracle Middleware home. This is the directory that will be patched with this installation.  <b>NOTE:</b> If you are performing an installation on a Windows operating system, be sure that your directory paths are valid and do not contain double backslashes (\ \ ).  <b>NOTE:</b> If you specify an Oracle home directory that has already been patched, then you will receive an error message and the installation will not continue. Re-patching an Oracle home is not supported.

## A.6 Specify Security Updates



Use this screen to enter your My Oracle Support account information so you can receive the latest product information and security updates via your My Oracle Support account.

The following table describes the fields on this screen.

Element	Description
Email	Enter the email address you used to register with My Oracle support.
I wish to receive security updates via My Oracle Support	Select this check box to indicate that you have a My Oracle Support account and that you want to receive updates via My Oracle Support.
My Oracle Support Password	Enter the password for your My Oracle Support account.

If you do not want to register for security updates or if you do not have a My Oracle Support account, then leave all the fields on this screen empty. You will be prompted to confirm your selection; click **Yes** in the dialog box:

## A.7 Installation Summary



This screen summarizes the selections you have made during this session. It includes the following information:

- The location of the software that will be patched
- How much disk space will be used for the installation of the patch
- The applications that will be patched

Review information on this screen carefully, and take one of the following actions:

- If you want to make any changes to the configuration before starting the installation of the patch, use the navigation pane to select the Installer screen you want to return to and edit.
- If you are satisfied with the information, click **Install** to begin the installation procedure.
- If you want to save this configuration to a text file (called a response file), click **Save**. The resulting response file can be used later if you choose to perform the same installation from the command line.

## A.8 Installation Progress



This screen shows you the progress of the installation. An installation log file is automatically generated and saved in your /oraInventory/logs directory.

If you want to quit before the installation is completed, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

## A.9 Installation Complete



This screen summarizes the installation that was just completed. Your screen will show you specifically what was patched. The screen above is shown here as an example only.

If you want to save this summary information to a text file for future reference, click **Save**.

Click **Finish** to dismiss the screen.