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Preface

This guide describes how to apply Bundle Patch 1 (BP1) to your existing Oracle Enterprise Manager 12c Release 1 installation.

The preface covers the following:

- **Audience**
- **Documentation Accessibility**
- **Related Documents**
- **Conventions**

**Audience**

This document is intended for cloud administrators who want to apply Bundle Patch 1 (BP1) to an existing Oracle Enterprise Manager 12c Release 1 installation.

**Documentation Accessibility**


**Access to Oracle Support**


**Related Documents**

For more information, see the following documents in the Enterprise Manager documentation set:

- **Oracle Enterprise Manager Cloud Control Introduction**
- **Oracle Enterprise Manager Cloud Control Basic Installation Guide**
- **Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide**

For the latest releases of these and other Oracle documentation, check the Oracle Technology Network at:
Oracle Enterprise Manager also provides extensive Online Help. Click Help at the top of any Enterprise Manager page to display the online help window.

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Overview of Bundle Patch 1

This chapter provides an introduction to Bundle Patch 1 (BP1) and the prerequisites for installation. It contains the following sections:

- Overview
- Use Cases and Recommendations
- Bundle Patch 1 Compatibility Matrix

1.1 Overview

This document provides step by step instructions for applying Bundle Patch 1 (BP1) in to your existing Enterprise Manager Cloud Control 12.1.0.1 installation. Note BP1 is not an Enterprise Manager patch set release, and therefore does not change the Enterprise Manager version to 12.1.0.2.

1.2 Use Cases and Recommendations

The following sections provide recommendations on how to use BP1 under different use case scenarios. The scenarios are detailed under the following headings:

- General Use Case Recommendations
- Upgrading to the Current Release
- Performing an Additional OMS Installation

1.2.1 General Use Case Recommendations

General use cases and recommendations on the installation of BP1 are outlined in Table 1–1.

Table 1–1  General Use Case Recommendations

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you are new to Enterprise Manager</td>
<td>You will need to retrieve the new Enterprise Manager 12c binaries from the Oracle Technology Network (OTN) and carry out a fresh install. The installation should include BP1 and the latest plug-in releases.</td>
</tr>
</tbody>
</table>
Use Cases and Recommendations

1.2.2 Upgrading to the Current Release

Use cases and recommendations related to upgrading from an Enterprise Manager Grid Control Release 10.2.0.5 or 11.1.0.1 are discussed in Table 1–2.

Table 1–1 (Cont.) General Use Case Recommendations

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Enterprise Manager Cloud Control 12.1.0.1 release in a non-production test or sandbox environment</td>
<td>You should analyze how much configuration setup you have done in Enterprise Manager and the number of Management Agents you have deployed. Based on this analysis, you should uninstall the existing Cloud Control and do a fresh installation if this is feasible. This also means that you have to reinstall all your existing Management Agents. This is the simplest way to get to the benefits and features of the latest patched Cloud Control release, which includes BP1 and the latest plug-in releases. The Enterprise Manager uninstall instructions are available at the following location: <a href="http://docs.oracle.com/cd/E24628_01/install.121/e24089/part_deinstall_em.htm#sthref642">http://docs.oracle.com/cd/E24628_01/install.121/e24089/part_deinstall_em.htm#sthref642</a> You can get the updated Enterprise Manager binaries with BP1 from the following location: <a href="http://www.oracle.com/technetwork/oem/enterprise-manager/downloads/index.html?origref=http://www.oracle.com/technetwork/index.html">http://www.oracle.com/technetwork/oem/enterprise-manager/downloads/index.html?origref=http://www.oracle.com/technetwork/index.html</a></td>
</tr>
<tr>
<td>If you have already downloaded and installed 12.1.0.1 release in a Production environment</td>
<td>If you have already downloaded and installed Enterprise Manager 12c Release 12.1.0.1 in a production environment, complete the following steps: Skipping steps could result in potential issues. Oracle recommends that you open a proactive service request. 1. Back up your Oracle Inventory, Repository Database, Middleware Home, Instance Home, Software Library, and Management Agent. For more information on back up, refer to the backup instructions in the Oracle® Enterprise Manager Cloud Control Administrator’s Guide 12c Release 1 (12.1.0.1): <a href="http://docs.oracle.com/cd/E24628_01/doc.121/e24473/toc.htm">http://docs.oracle.com/cd/E24628_01/doc.121/e24473/toc.htm</a> 2. Apply BP1 on your Oracle Management Service (OMS) host. 3. Upgrade your plug-ins on OMS to the latest releases. 4. Apply BP1 on your Management Agents. 5. Upgrade your plug-ins on Management Agents to the latest releases. If you have additional OMS instances or a disaster recovery configuration, then follow the BP1 application instructions detailed in Section 2.1, “Applying Bundle Patch 1 on Oracle Management Service”.</td>
</tr>
</tbody>
</table>
### Table 1–2 Upgrading to the Current Release

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrading to the current release</td>
<td>You can upgrade directly from Enterprise Manager Grid Control 10.2.0.5 or 11.1.0.1 releases to the current release with BP1 included by completing the following:</td>
</tr>
<tr>
<td></td>
<td>1. Download the latest pre-upgrade console patch from OTN at the following location:</td>
</tr>
<tr>
<td></td>
<td>2. Download the Management Agent and 12.1.0.2 plug-in binaries from OTN at the following location:</td>
</tr>
<tr>
<td></td>
<td>3. Download the Enterprise Manager 12c binaries with BP1 included from OTN at the following location:</td>
</tr>
<tr>
<td></td>
<td>4. Follow the upgrade instructions provided in the Upgrade Guide (part of the Enterprise Manager Cloud Control Documentation), which can be found at the following location:</td>
</tr>
</tbody>
</table>
|                                         |   http://docs.oracle.com/cd/E24628_01/index.htm
If you have applied the pre-upgrade console patch, but have not upgraded Management Agent or OMS

1. Get the new pre-upgrade console patch from OTN at the following location:
   

   You can rollback the old patch or deploy the new patch on top of the existing one. You can also get the new pre-upgrade console patch from OTN (you can rollback the old patch, refer to the patch README file for rollback instructions).

2. Download the new Management Agent zip files from OTN at the following location:


3. Get the new 12.1.0.2 plug-in binaries from OTN at the following location:


4. Get the new Enterprise Manager 12c binaries with BP1 included from OTN.

   The new version of the pre-upgrade console patch will only work with EM12c binaries (with BP1 included) and Management Agent 12.1.0.1 binaries. To ensure that you get the latest patch from OTN, refer to the last updated date on the OTN download page.

   Follow the Instructions provided in the Upgrade Guide from here:

   http://docs.oracle.com/cd/E24628_01/index.htm

If you have applied the pre-upgrade console patch and upgraded the Management Agent or OMS

In this case you should finish your upgrade to Enterprise Manager 12c and complete the following instructions in the specified order:

1. Back up your Oracle Inventory, Repository Database, Middleware Home, Instance Home, Software Library, and Management Agent. For more information on back up, refer to the backup instructions in the Oracle® Enterprise Manager Cloud Control Administrator’s Guide 12c Release 1 (12.1.0.1):

   http://docs.oracle.com/cd/E24628_01/doc.121/e24473/toc.htm

2. Apply BP1 on your OMS.

3. Upgrade your plug-ins on OMS to the Enterprise Manager 12.1.0.2 releases.

4. Apply BP1 on your Management Agents.

5. Upgrade your plug-ins on Management Agents to the Enterprise Manager 12.1.0.2 releases.

Oracle recommends that you open a proactive Service Request (SR) with Oracle Support.
1.2.3 Performing an Additional OMS Installation

Use cases and recommendations related to performing an additional OMS installation are discussed in Table 1-3.

**Table 1–3 Performing an Additional OMS Installation**

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>If your first OMS is deployed with new Enterprise Manager binaries with BP1 included or if you have applied the BP1 manually</td>
<td>You can proceed with the additional OMS installations. The deployment procedure will clone the first OMS, so there will be no need to apply BP1 on the second OMS once the install is done. As a part of the additional OMS installation, you will be required to deploy the Management Agent on the host where you plan to have the additional OMS. Get the latest Management Agent binaries from the Self Update feature, which have BP1 included for Management Agent deployment.</td>
</tr>
<tr>
<td>If your first OMS has not been updated with the new Enterprise Manager binaries, or if you have not applied the BP1 manually to the OMS</td>
<td>Select one of the following two options: Option 1: 1. Follow the BP1 application process on the first OMS and Management Agents. 2. Complete the additional OMS install. Option 2: 1. Complete the additional OMS install. 2. Follow the BP1 application process on the first OMS and additional OMS together.</td>
</tr>
</tbody>
</table>

1.3 Bundle Patch 1 Compatibility Matrix

Refer to Table 1–4, "Bundle Patch 1 Compatibility Matrix" to understand the valid patches and version combinations of OMS, plug-ins, and Management Agents.

**Table 1–4 Bundle Patch 1 Compatibility Matrix**

<table>
<thead>
<tr>
<th>Target Agent without Bundle Patch 1 applied and 12.1.0.1 plug-in on target Management Agent</th>
<th>Target Agent with BP1 and 12.1.0.1 plug-in on target Management Agent</th>
<th>Target Agent without BP1 and 12.1.0.2 plug-in on target Management Agent</th>
<th>Target Agent with BP1 applied and 12.1.0.2 plug-in on target Management Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1.0.1 OMS without BP1 applied</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>12.1.0.1 OMS with BP1 Applied and 12.1.0.1 plug-in on OMS (no plug-in upgrade)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
 Mandatory Pre-Requisites for installing Bundle Patch 1

The following are the mandatory prerequisites for installing BP1:

1. Software Library Configured.
2. All Enterprise Manager components backed up.
3. The Agent Patching Infrastructure set up correctly (differs for offline versus online modes).
4. The My Oracle Support (MOS) connection configured for Management Agent patching or the download of patches from MOS and upload to Enterprise Manager.

Make sure that you go through all of the prerequisites described in the following sections before applying Bundle Patch 1.

1.4.1 Oracle Software Library Configured

You need to verify whether you already have the Software Library configured. If not, complete the following:

1. From the Enterprise menu, select Provisioning and Patching, then click Software Library.
2. From the Actions list, select Administration, then select Add if nothing has yet been configured.
3. Select the OMS Shared Filesystem location.

An example for this use case is that you have Solaris Management Agents without BP1 applied, 12.1.0.1 plug-ins on agents pointing to Linux 32-bit OMS with BP1 applied, and 12.1.0.2 plug-ins on the OMS.

This is a fresh install of Enterprise Manager 12c binaries with BP1 included.
Figure 1-1  Add OMS Shared Filesystem Location

Note:  This is a location on a shared filesystem that is visible to all OMS instances. For example, this could be an NFS mounted location and should have read/write access from all of the OMS instances.

Upon addition of the location, a job executes to configure the Software Library. Under this location, all required entities for Enterprise Manager, such as Provisioning, Patching, and Cloud Management, are populated.

Once the job is successful, you will see the components configured in the Software Library.

4. From the Enterprise Manager menu, select Patching and Provisioning, then click Software Library to view the Software Library.
1.4.2 Backing Up Enterprise Manager Components

Before you apply BP1, be sure that you back up the following components:

- Oracle Inventory
- Management Repository Database
- Middleware Home and Enterprise Manager domains
- Instance Home where OMS is installed
- Default Management Agent with OMS
- Software Library

You must back up all components listed above. A failure during any stage of the BP1 process may make it necessary to restore one or more of these components.

For more information, see the Backing Up Enterprise Manager chapter in the Oracle Enterprise Manager Cloud Control Administrator’s Guide. This can be found at the following location:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/ha_backup_recover.htm#BGBCCIJ

1.4.3 Using the Correct OPatch Version

Verify you have the right OPatch version under the OMS Oracle Home. The OPatch version required to install BP1 is 11.1.0.9.4 or higher.
Set ORACLE_HOME to OMS HOME and run the following command to verify the OPatch version:

```bash
$ opatch version
```

**Figure 1–3 Verifying OPatch Version**

If the OPatch version is less than 11.1.0.9.4, complete the following:

1. Download the latest OPatch patch (6880880) under release 11.1.0.x series from My Oracle Support ([https://support.oracle.com](https://support.oracle.com)).
   
   The Patch Number is 6880880. Select the platform that corresponds to your OMS platform.

   **Figure 1–4 Correct OPatch Version**

2. Click Search.

3. Select the Opatch 11.1.0.0.0 version and click **Download**.
4. Transfer the zip to the OMS Server.

5. Rename the existing OPatch folder under the OMS ORACLE HOME to OPatch_ old_MMYY

6. Unzip the new Opatch patch zip under the OMS ORACLE HOME. This creates an Opatch directory with the latest Opatch.

1.5 Troubleshooting

To learn more about troubleshooting tips and a list of known issues while applying Bundle Patch 1, refer to My Oracle Support note 1395640.1 at the following location:

https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=REFERENCE&id =1395640.1

Note: Do not select OPatch 11.2.0.x as this will result in failures during patch application.
Bundle Patch 1 for Linux x86 and Linux x86-64

The following sequence must be followed when applying BP1:

1. Apply Bundle Patch 1 on Oracle Management Service
2. Upgrade all deployed Plug-ins to the 12.1.0.2 releases on the OMS
3. Apply Bundle Patch 1 on all Management Agents
4. Upgrade all deployed Plug-ins to the 12.1.0.2 releases on the Agents

Important Notes

Read the following important notes before proceeding with the installation process:

■ Verify that you have first applied the OMS Patch 13242773 on all OMS instances before applying this Bundle Patch on Management Agents. If the OMS patch is not applied before applying the Bundle Patch, then the metadata version will not be registered with the OMS and the OMS will block the patched Management Agents from uploading data.

■ If you have configured Enterprise Manager for high availability by deploying one or more additional OMS and using a local Real Application Cluster or Data Guard database for the repository database, use the following patching sequence:
   a. Stop each OMS.
   b. Apply the patch to each OMS Oracle Home.
   c. Run the post deploy steps.

   There is no special consideration when using Data Guard because any changes to the repository that occur as part of the patching exercise are forwarded to the standby database repository as part of normal Data Guard operations.

■ If you have configured Enterprise Manager for Disaster Recovery by deploying one or more standby OMS and a standby database (RAC or single instance) at another site, patching of the standby site should be performed after all patches and plug-in updates have been deployed on the primary site.

   Once the primary site patches and updated plug-ins have been deployed, any changes to the repository made due to these updates will be forwarded to the standby database repository as part of normal Data Guard operations. Therefore, to patch the standby site use the following patching sequence:
   a. Apply the patches to the standby OMS Homes without performing the post deploy operations that update the repository.
b. Deploying the updated plug-ins without updating the repository.

2.1 Applying Bundle Patch 1 on Oracle Management Service

In a multi-OMS environment, ensure that the following prerequisites are met on each OMS host:

1. Verify that you have the latest version of OPatch 11.1.
   
   The minimum OPatch version required to install BP1 is 11.1.0.9.4. You must also check that the OPatch version is 11.1.0.9.4 or higher. Do not use OPatch 11.2.x.

   You can determine the current version of OPatch by running the command opatch version from the OMS Home/OPatch. For more information, see Section 1.4.3, "Using the Correct OPatch Version".

   To determine the latest version of OPatch, complete the following:
   b. Select Patches & Updates.
   c. Enter 6880880 in the search field and click Search.
   d. Select the latest OPatch version (11.1.0.9.4 or higher)

   The selected OPatch has a README with instructions to upgrade the OPATCH and also a download button to download the zip.

2. Set the ORACLE_HOME environment variable to the OMS Home, which is MIDDLEWARE_HOME/oms.

3. Verify that ORACLE_HOME/bin and ORACLE_HOME/OPatch are included in the path.

   Set the environment variable using the following command:

   setenv PATH $ORACLE_HOME/bin:$ORACLE_HOME/OPatch:$PATH

   Check if the PATH variable is set by running the following command:

   echo $PATH

4. Verify the state of Oracle Inventory used by OPatch to install the patches by running the following command:

   <MIDDLEWARE_HOME>/oms/opatch lsinventory
Figure 2–1  OPatch Inventory

$ opatch lsinventory

Sample Output:-
[oracle@middle120ca ~]$ opatch lsinventory
Oracle interim Patch Installer version 11.1.0.9.4
Copyright (c) 2011, Oracle Corporation. All rights reserved.

Oracle Home : /u01/appMiddleware12ofa/cms
Central Inventory : /u01/app/orainventory
from : /u01/app/Middleware12ofa/cms/orainst.loc
OPatch version : 11.1.0.9.4
OUI version : 11.1.0.9.0
Log file location : /u01/app/Middleware12ofa/cms/cfgtoollogs/opatch/opatch2013-02-28_12-28-17

OPatch detects the Middleware Home as "/u01/app/Middleware12ofa"

lsinventory output file location : /u01/app/Middleware12ofa/cms/cfgtoollogs/opatch/lsinventory

---------------------------------------------------------------

Installed Top-level Products (1):
  EM Platform (OMS) 12.1.0.1.0
There are 1 products installed in this Oracle Home.

There are no interim patches installed in this Oracle Home.

---------------------------------------------------------------

OPatch succeeded.

5. Check that the Oracle Database, which contains the Management Repository, and its listener are up and running.

6. Download OMS BP1 13242773 from My Oracle Support, as described earlier in step 1.
   The zip files are stored under a location that will be referred to as PATCH_Top_DIR in this document.

7. Download the JDeveloper (13470978) and Web Services Manager (12321965) patches from My Oracle Support.
   You will be required to apply these patches after applying the 13242773 BP1 on the OMS.
   Download the patch 12321965 for Release 11.1.1.5.0 version.
Applying Bundle Patch 1 on Oracle Management Service

Figure 2–2   Patch 12321965

8. Select a location for storing the contents of the BP1 ZIP file.
9. Extract the contents of the BP1 ZIP file to the location you created in steps 6 and 7 by running the following command:

   $ unzip -d PATCH_TOP_DIR p13242773_121010_<platform>.zip

   Navigate to the PATCH_TOP_DIR/13242773 directory by running the command:

   $ cd PATCH_TOP_DIR/13242773

10. Shut down the OMS by running the following command:

    ORACLE_HOME/bin/emctl stop oms -all

    To verify that the OMS has completely stopped, run the following command:

    emctl status oms

    **Note:** In a multi-OMS environment, shut down all OMS instances.

11. Stop the following components if running within your Cloud Control domain before applying BP1 or updating any plug-in to the latest release:

    - Application Dependency and Performance (ADP) Manager.
    - JVM Diagnostics (JVMD) Manager.
    - BI Publisher Managed Server named "BIP".

12. Install BP1 by running the following command:

    <MIDDLEWARE_HOME>/oms/opatch apply

    Make sure to run this command on all OMS instances in a multi-OMS environment. Run opatch apply in parallel for all OMS instances in this step OR complete the BP1 application process on the first OMS, then do the same for the other OMS instances.
13. Select the appropriate script to automate the BP1 post installation process, depending on whether you have a **Single OMS Environment** or a **Multi-OMS Environment**.

**Note:** Ensure that you are in the BP1 location `PATCH_TOP_DIR`. Also, keep the Repository host name, SID, Listener port, and SYSMAN password ready before running the `post_deploy.sh` script.

- **Single OMS Environment**

  In a single OMS environment, run the following command from the BP1 directory:

  ```
  $ PATCH_TOP_DIR/13242773/post_deploy.sh
  ```

  The OMS will be started automatically after running the `post_deploy.sh` script.
Multi-OMS Environment

Complete the following:

a. Find the Administration Server by running the following command from $ORACLE_HOME/bin:

   ./emctl status oms

   Output similar to the following is displayed:

   ./emctl status oms

   Oracle Enterprise Manager Cloud Control 12c Release 12.1.0.1.0
   Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.
   WebTier is Up
   Oracle Management Server is Up

   ./emctl status oms -details

   Oracle Enterprise Manager Cloud Control 12c Release 12.1.0.1.0
   Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.
   Enter Enterprise Manager Root (SYSMAN) Password:
   Console Server Host: slc00tae.us.oracle.com
   HTTP Console Port: 7789
   HTTPS Console Port: 7801
   HTTP Upload Port: 4890
   HTTPS Upload Port: 4901
   OMS is not configured with SLB or virtual hostname
   Agent Upload is locked.
Applying Bundle Patch 1 on Oracle Management Service

OMS Console is locked.
Active CA ID: 1
Console URL: https://xxx.us.oracle.com:7801/em
Upload URL: https://xxx.us.oracle.com:4901/empbs/upload

WLS Domain Information
Domain Name : GCDomain
Admin Server Host: xxx.us.oracle.com

Managed Server Information
Managed Server Instance Name: EMGC_OMS1
Managed Server Instance Host: xxx.us.oracle.com

b. Run the following command on the Primary OMS of a multi-OMS setup:
The Primary OMS is the one co-located with the Admin server.
$ ./PATCH_TOP_DIR/13242773/post_deploy.sh
c. Run the following command on the other OMS environments (non-Primary):
$ ./PATCH_TOP_DIR/13242773/MultiOms_post_deploy.sh

You will be asked to enter the patch location. For example:
/scratch/xxx/PATCH_TOP_DIR/13242773

14. Apply the JDeveloper and Web Services Manager patches 13470978 and 12321965 to OMS.

**Note:** This must be applied to all of the OMS instances in a multi-OMS environment. Also, there is no specific sequence to apply these two patches.

If you have Enterprise Manager installed using the Enterprise Manager binaries with BP1, then this JDeveloper patch is automatically installed with no further work required.

If you are applying the BP1 on your existing Enterprise Manager installation, then you must apply the JDeveloper patch as an extra step. There are a variety of fixes in the patch, including functional issues and Google Chrome and Microsoft Internet Explorer 9 browser support. The JDeveloper patch should be applied after BP1. For instructions, refer to the README of the respective patch.

Apply the patches following the instructions in the README of the corresponding patch. When you search for patch 12321965, you will find two releases of the patch, namely, 11.1.1.5.0 and 11.1.1.4.0. Make sure that you select and apply the 11.1.1.5.0 release of the patch. Verify that you apply both the patches in the oracle_common directory that resides in the Middleware Home (MW_HOME/oracle_common/). Set environment variable ORACLE_HOME to your [MW_HOME]/oracle_common directory before applying patches 13470978 and 12321965 to the OMS.

15. Verify that BP1 was properly installed by running the following command to check that the patch is registered in the inventory:

<MIDDLEWARE_HOME>/oms/opatch lsinventory
To verify that all the patches are installed on the OMS, run the following commands:

a. Set the following environment variable on the OMS host:

   `setenv ORACLE_HOME <MIDDLEWARE_HOME>/oms`

b. Run the following verification commands to ensure the patch has been applied to the OMS:

   `<MIDDLEWARE_HOME>/oms/opatch lspatches -id 13242773 -verify`
   `<MIDDLEWARE_HOME>/oms/opatch lspatches -oh <MIDDLEWARE_HOME>/oracle_common -id 12321965 -verify`
   `<MIDDLEWARE_HOME>/oms/opatch lspatches -oh /<MIDDLEWARE_HOME>/oracle_common -id 13470978 -verify`

The results of the commands will show the patch number and its details if present in the OMS.

16. Apply BP1 patches and JDeveloper and Web Services Manager patches (13470978 and 12321965) to each standby OMS (if standby OMS instances have been deployed) by completing the following:

a. Shut down all standby OMS servers.

b. Using Opatch, apply the patches using the instructions provided here, but do not run the `post_deploy.sh` command (described in step 14).

c. Run the following for each standby OMS instance, where ORACLE_HOME is the Oracle Home of the OMS:

---

**Figure 2–5  Isinventory Sample Output**

```
Sample output:

lsinventory:
 Oracle Interim Patch Installer version 11.1.0.9.4

Copyright (c) 2011, Oracle Corporation. All rights reserved.

Oracle Home : /u01/app/Middleware12ce/oms
Central Inventory : /u01/app/orainventory
From : /u01/app/Middleware12ce/oms/orainst.loc
OUI version : 11.1.0.9.4
NM version : 11.1.0.9.0
Log file location : /u01/app/Middleware12ce/oms/cfgtoollogs/opatch/ops

OUI detects the Middleware Home as "/u01/app/Middleware12ce"

Isinventory Output file location : /u01/app/Middleware12ce/oms/cfgtool

--

Installed Top-level Products (1):
EM Platform (OMS) 11.1.0.1.0
There are 1 products installed in this Oracle Home.

Interim patches (1):

Patch 13242773 : applied on Wed Feb 15 15:40:54 IST 2012
Created on 10 Feb 2012, 05:21:29 hrs PDT
Dugs fixed:
19472265, 13016443, 13071823, 12999882, 11492366, 12987621, 13974975
13975992, 12957894, 12989621, 13016983, 13000770, 13370175, 13341994
13010262, 13095166, 13094971, 12920846, 13028935, 13062375, 13033078
13040527, 13039576, 12851038, 13058747, 12928959, 13100799, 13248773
13359765, 12865976, 13426972, 12857844, 11351964
```
$ ORACLE_HOME/perl/bin/perl 13242773_PATCH_TOP_DIR/apply12959056.pl
$ ORACLE_HOME/perl/bin/perl 13242773_PATCH_TOP_DIR/apply13479448.pl
$ sh $ORACLE_HOME/bin/exec_13651296_patch

These scripts can be found under:
13242773_PATCH_TOP_DIR/custom/scripts/

2.2 Setting up the Infrastructure for Agent Patching before doing Plug-in Upgrade

For patching Management Agents, the patches can be automatically downloaded during the patching flow if Enterprise Manager is configured to connect to My Oracle Support. If a connection to My Oracle Support is not possible, you can upload the patches manually to Enterprise Manager.

Based on your connectivity policy, complete the following to set up the necessary infrastructure in either online or offline mode.

2.2.1 Setting Up My Oracle Support Credentials

Complete the follow steps to set up the My Oracle Support credentials. If you have already set up your MOS credentials, then you can skip this section.

1. From the Setup menu, select My Oracle Support, then select Set Credentials.

![Figure 2–6  Set Credentials](image)

2. Supply your My Oracle Support credentials, click Apply to save this information, then click the Refresh From My Oracle Support link to see the job.

   This also triggers jobs to update Opatch and refresh MOS. You should check that these jobs complete successfully before proceeding. However, if these jobs have run successfully during the last 24 hours, they will not be triggered and you can just proceed.

2.2.2 About Infrastructure Set Up in Online Mode

This section describes the steps involved in setting up the infrastructure when using Management Agent patching in online mode.
Complete the following to setup the infrastructure if you are using Management Agent patching in online mode:

1. Check that the connection to My Oracle Support is set to Online.
   From the Setup menu, select Provisioning and Patching, then select Offline Patching.

   ![Figure 2–7 Provisioning and Patching](image)

2. Set the connection setting to Online and click Apply.

   ![Figure 2–8 Patching Setup](image)

3. Select the My Oracle Support and Proxy Connection tab.

   ![Figure 2–9 My Oracle Support and Proxy Connection](image)

4. If needed, configure your Proxy Connection to connect to My Oracle Support (MOS). If you choose Manual Proxy Configuration, provide the required Proxy Server and Port and Realm details, then click Apply.
5. Click **Test** to check that the connectivity works correctly when the configuration is complete.

If connectivity is not working, you can switch to offline mode. For more information, see Section 2.2.3, "Setting up the Infrastructure if you are using Agent Patching in Offline Mode".

6. Click **Apply** to save the configuration following a successful test.

The error message shown is for information proposes only. You can use the included link to set up MOS credentials. For more information, see Section 2.2.1, "Setting Up My Oracle Support Credentials".

---

**Figure 2–11  Proxy Settings Error**

<table>
<thead>
<tr>
<th>Proxy Setting</th>
<th>Error Message</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information</strong></td>
<td><a href="https://updates.oracle.com">https://updates.oracle.com</a> was tested successfully using the Proxy.</td>
</tr>
<tr>
<td><strong>Patch Search URL Error</strong></td>
<td>My Oracle Support Credentials Not Set - You have not set the My Oracle Support credentials. Click the link to supply the missing credentials.</td>
</tr>
</tbody>
</table>

### 2.2.3 Setting up the Infrastructure if you are using Agent Patching in Offline Mode

If you cannot use the online mode and configure connectivity to MOS, then you must use the offline patching method. Follow the steps below to set up the infrastructure to patch your Management Agents with the Bundle Patch.

1. Verify that the connection to My Oracle Support is set to "Offline".

   From the **Setup** menu, select **Provisioning and Patching**, then select **Offline Patching**.
2. From the Patching Setup page, select **Online and Offline Settings**, then select **Offline** and click **Apply**.

3. Update the Enterprise Manager metadata files by completing the following:
   a. Download metadata files from My Oracle Support from the following location:
      
      https://support.oracle.com

      You can download all of the required XMLs using a `wget` script. Execute the script as instructed in the My Oracle Support note 1436338.1 at the following location:

      https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=HOWTO&id=1436338.1

      You can also select and download the files manually. **Table 2–1, "Metadata Files"** provides a list of the files to be downloaded and their locations.

      **Table 2–1  Metadata Files**

      | Metadata XML File | Download Location |
      |-------------------|-------------------|
      | aru_products.xml  | https://updates.oracle.com/Orion/Services/metadata?table=aru_products |
Setting up the Infrastructure for Agent Patching before doing Plug-in Upgrade

Table 2–1 (Cont.) Metadata Files

<table>
<thead>
<tr>
<th>Metadata XML File</th>
<th>Download Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>aru_releases.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_releases">https://updates.oracle.com/Orion/Services/metadata?table=aru_releases</a></td>
</tr>
<tr>
<td>aru_platforms.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_platforms">https://updates.oracle.com/Orion/Services/metadata?table=aru_platforms</a></td>
</tr>
<tr>
<td>aru_languages.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_languages">https://updates.oracle.com/Orion/Services/metadata?table=aru_languages</a></td>
</tr>
<tr>
<td>aru_product_groups.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_product_groups">https://updates.oracle.com/Orion/Services/metadata?table=aru_product_groups</a></td>
</tr>
<tr>
<td>aru_component_releases.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_component_releases">https://updates.oracle.com/Orion/Services/metadata?table=aru_component_releases</a></td>
</tr>
<tr>
<td>aru_targets.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/metadata?table=aru_targets">https://updates.oracle.com/Orion/Services/metadata?table=aru_targets</a></td>
</tr>
<tr>
<td>patch_recommendations.xml</td>
<td><a href="https://updates.oracle.com/Orion/Services/search?language_id=0&amp;classification_group=recommended&amp;patch_type=all&amp;group_by=target_type&amp;group_by=release&amp;group_by=platform">https://updates.oracle.com/Orion/Services/search?language_id=0&amp;classification_group=recommended&amp;patch_type=all&amp;group_by=target_type&amp;group_by=release&amp;group_by=platform</a></td>
</tr>
</tbody>
</table>

b. Download the URLs and store them in the local system.
   Copy and paste the contents of every URL into a separate text file and save it with the proper name and the .xml extension (for example, save the file as aru_products.xml).
   The URL opens in the browser and the contents are copied into Notepad and the file is then saved as an XML.
c. Upload the metadata files to Enterprise Manager. From the Setup menu, select **Provisioning and Patching**, then select **Offline Patching**.

**Figure 2–15 Offline Patching**

![Offline Patching](image)


d. Click **Browse** in the Metadata Cache section to select the xml metadata files.

e. Click **Upload** to upload the metadata files

Following a successful upload, the Status column for the XML files will be Green. Other column information will also be updated.
f. From the Enterprise menu, select Job, then select Activity.

g. Select Refresh From My Oracle Support from the Create Job list and click Go.

Figure 2–16  Refresh From My Oracle Support

h. Specify a name for the job and click Submit.

Figure 2–17  Specifying a Job Name

When the job is created and submitted, a confirmation screen is presented.

Figure 2–18  Confirmation Screen

i. Click the link to track the status of the job.

Ensure that the job succeeds. You might have to refresh the page or set up the refresh to be every 30 seconds.

Note: If the job fails, refer to the trouble shooting section at the end of the document or call Oracle Support.
Figure 2–19  Job Activity Status

![Job Activity Status]

4. Download the required Management Agent patches and OPatch patches from My Oracle Support (https://support.oracle.com) by completing the following:

a. Download the Management Agent patches by specifying the four patch numbers 13242776, 13491785, 13550565, and 13550561 as comma-separated entries in the Patch Search region of the Patches & Updates page, then click Search.

Make sure you select the right platform, for example, Linux x86-64.

Figure 2–20  Patch Search Screen

![Patch Search Screen]

b. Click Search.
c. Download the patch zip files and the patch metadata files for the patches.

To download the patch metadata, click **Download Patch Metadata**, then click **Download**.

Click the patch zip file to download the zip file.

**Note:** Make sure you download both.
d. Download the required OPatch patches from My Oracle Support (https://support.oracle.com).

Search for patch "6880880" for the appropriate platform for the Management Agent target. For example, if your target is Linux x86-64, pick platform Linux x86-64.

Figure 2–24  Patch Search

![Patch Search](image)

Figure 2–24  Patch Search

```
<table>
<thead>
<tr>
<th>Patch Name or Number</th>
<th>6880880</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform</td>
<td>Linux x86-64</td>
</tr>
</tbody>
</table>
```

Click Search.

Download the patch for the version 11.1.0.0.0 series only.

Figure 2–25  Patch Search Results

```
<table>
<thead>
<tr>
<th>Patch Name</th>
<th>Description</th>
<th>Release</th>
<th>Platform (Language)</th>
<th>Classification</th>
<th>Prod</th>
</tr>
</thead>
<tbody>
<tr>
<td>6880880</td>
<td>OPatch patch of version 11.2.0.4.9 for Oracle software release 11.2.0.4.9 (NOW 2011) (Patch)</td>
<td>11.2.0.4.9</td>
<td>Linux x86-64 (American English)</td>
<td>General</td>
<td>Unix</td>
</tr>
<tr>
<td>6880880</td>
<td>OPatch patch of version 11.1.0.0.0 for Oracle software release 11.1.0.0.0 (Patch)</td>
<td>11.1.0.0.0</td>
<td>Linux x86-64 (American English)</td>
<td>General</td>
<td>Unix</td>
</tr>
<tr>
<td>6880880</td>
<td>OPatch 1.0 (Patch)</td>
<td>1.0.0.0</td>
<td>Linux x86-64 (American English)</td>
<td>General</td>
<td>Unix</td>
</tr>
<tr>
<td>5880630</td>
<td>OPatch 5.1 (Patch)</td>
<td>5.1.0.0</td>
<td>Linux x86-64 (American English)</td>
<td>General</td>
<td>Unix</td>
</tr>
</tbody>
</table>
```

Click Download.

Figure 2–26  File Download

```
File Download (1 file, 1 patch)

Select any or all the checked files. The checked file will be downloaded.

- Include Previous Patches
- Show Details

| 6880880_111000_linux-x86-64.zip | 30.4 MB |
```

f. Download both the patch zip file and the patch metadata.

To download the patch metadata file, click Download Patch Metadata, then click Download.
5. Upload the Management Agent patches to the Software Library.
   a. From the Enterprise menu, select Provisioning and Patching, then select Saved Patches.

b. Click Upload to open the Upload Patches to Software Library page.
Of the four patches for Management Agents, two are for "Base platform" (13242776 and 13491785) and the other two are for "Oracle Home plug-in" (13550561 and 13550565).

c. Set the Basic Information as shown.

d. For patches 13242776 and 13491785, select the patch metadata file and patch zip file from the local directory on the system and click **Upload**.

e. Upload patches 13550561 and 13550565 by selecting their patch metadata and the patch zip file.

f. Reset the Basic Information attributes as shown.

g. Select the patch metadata and the patch zip file and click **Upload**.

6. To upload OPatch 6880880 to the Software Library, specify the Basic Information attributes.

Select the patch metadata and patch zip file for the Opatch patch 6880880 and upload it. Ensure that you fill in all attributes required in the page:

- **Release**: Choose version as "11.1.0.0.0".
- **Created On**: Use today's date
- **Description**: Opatch for version 11.1.0.x
- **Platform**: Select the platform for which you downloaded the patch (for example, Linux x86-64)
Language: Select ‘American English’

7. Click **Upload**.

Upon successful upload, all the patches will be visible in the Saved Patches page.

*Figure 2–33  Saved Patches in Software Library*

At the end of this process, all of the Agent patches and the Opatch patch should be listed in the Saved Patches in Software Library page.

### 2.3 Upgrading All Deployed Plug-ins to the 12.1.0.2 Releases on OMS

The following sections describe in detail the steps required to upgrade deployed plug-ins to their Enterprise Manager 12.1.0.2 releases. The following topics are addressed:

- **Prerequisites for Deploying Plug-ins**
- **Deploying Plug-ins in Online Mode on OMS**
- **Deploying Plug-ins in Offline Mode on OMS**

#### 2.3.1 Prerequisites for Deploying Plug-ins

Make sure that you upgrade all of your version 12.1.0.1 plug-ins to the 12.1.0.2 releases (with out revision) where available. Update all plug-ins on an OMS instance one after the other until all have been upgraded (plug-ins can only be updated one at a time).

To verify that your plug-ins are upgraded to the latest 12.1.0.2 release, complete the following:

1. Back up your Oracle Inventory, Repository Database, Middleware Home, Instance Home, Software Library, Management Agent. You can refer to the back up instruction from Enterprise Manager Cloud Control Administrator’s Guide available here:

   http://docs.oracle.com/cd/E24628_01/index.htm

2. Log in to your repository database as SYSMAN and recompile invalid objects using the following command:

   ```
   EXEC EMD_MAINT_UTIL.recompile_invalid_objects
   SQL> EXEC
   EMD_MAINT_UTIL.recompile_invalid_objects
   PL/SQL procedure successfully completed.
   ```
Make sure that you do not have any invalid objects in your repository. To check any invalid object, log in to the repository as a system user and run the following command:

```
SELECT object_name, object_type FROM ALL_OBJECTS WHERE owner='SYSMAN' and status <> 'VALID';
```

SQL> SELECT object_name, object_type
FROM ALL_OBJECTS
WHERE owner='SYSMAN' and status <> 'VALID';

no rows selected

If you find any invalid objects, run the first SQL again:

```
EXEC EMD_MAINT_UTIL.recompile_invalid_objects
```

3. Verify that DBMS jobs are running.

If they are not running, run the following package as sysman user:

```
EXEC EMD_MAINTENANCE.submit_em_dbms_jobs
```

To check if jobs are running, open the Enterprise Manager console and from the Setup menu, select Management Services and Repository, then select Repository Operations.

![Repository Operations](image.png)
4. Stop and start your Database and OMS before your start the plug-in upgrade. Do this on all the OMS instances of an multi-OMS environment.

5. Verify that the Target Management Agent (where you will be upgrading your plug-in) is up and running.

6. Follow the instructions in Section 2.7, "Upgrading ADP and JVMD (Optional)" if you are updating to the 12.1.0.2 release of the Oracle Fusion Middleware Plug-in and you already have Application Dependency and Performance (ADP) or JVM Diagnostics (JVMD) installed.

7. Stop the following components if they are running within your Cloud Control domain before updating any plug-in to the latest release:
   - Application Dependency and Performance (ADP) Manager
   - JVM Diagnostics (JVMD) Manager

**Note:** Upgrade all your 12.1.0.1 version plug-ins to 12.1.0.2 releases one after the other until all have been upgraded. This means downloading one 12.1.0.2.0 plug-in, deploying that plug-in, then downloading another 12.1.0.2.0 plug-in and deploying that one, and so on.
2.3.2 Deploying Plug-ins in Online Mode on OMS

To deploy plug-ins in an online mode, complete the following:

1. From the Setup menu, select Extensibility, then select Self Update to get the complete list of available updates.

   Figure 2–36   Self Update

   ![Self Update Figure](image)

2. From the Plug-ins home page, select Actions, then select Check Updates.

   Figure 2–37   Check Updates

   ![Check Updates Figure](image)

A job gets triggered and updates the Available Update column. A confirmation screen is displayed when a job is successfully submitted.
3. Select Open from the Actions menu.

4. Select an update from the list of available updates and click Download.
   The Schedule Download dialog appears. In the example shown below, the Oracle Audit Vault plug-in is selected.
5. Select when you want to download the update (immediately or at some later specified time).
   
   Note that multiple downloads can be scheduled simultaneously.

6. Click Select.

   An Enterprise Manager job is created to download the update to the Software Library. Enterprise Manager starts downloading the archive from the Oracle Enterprise Manager store.

   **Note:** The page is not refreshed automatically. Click **Refresh** to view the updated download status.
Once an entity has been downloaded to the Software Library, it is ready to be applied to your installation.

7. Select an update from the list with a status of Downloaded, then click **Apply**.

**Figure 2–42  Plug-in Updates**

You are then redirected to the plug-in deployment page.
8. Select the plug-in and deploy it on OMS. Right click the plug-in name, select **Deploy On**, then select **Management Servers**.
9. Provide the Repository SYS Password and click **Continue**.

Plug-in upgrade prerequisites checks are executed.
10. Click Next.

11. Click **Deploy** when the prerequisite checks have completed successfully.
Upgrading All Deployed Plug-ins to the 12.1.0.2 Releases on OMS

Figure 2–49  Deploy Confirmation Screen

The OMS will be bounced automatically, so it is better to use $ emctl status oms -details to check for the plug-in deployment status.

12. From the Setup menu, select Extensibility, then select Plug-ins.

The plug-in version on OMS is now 12.1.0.2.0, as shown in the On Management Server column.

Figure 2–50  Plug-in Version

13. To deploy each updated plug-in on each Standby OMS, complete the following:
   a. Go to the Self Update page, click Plug-in, then select the required plug-in.
   b. From the Actions menu, select Export.

A pop-up window showing two possible export steps opens. Note the value of the -id parameter displayed in the pop-up window. You will need this value for the next step.
c. Before proceeding with the export steps, log in to OMS Home (OMSHOME/bin) and run the sync command, as shown below:

```bash
./emcli sync
```

The "Synchronized successfully" message should be displayed.

Run the following EM CLI command on one of the primary site OMS servers:

```bash
emcli export_update -id=<update id> -deep -host=<standby OMS host> -dir=<directory to export archives> <host credential options>
```

For example:

```bash
$ emcli export_update -id=725C4384A8D3AAB4BB1F672519378375 -deep -host=adc1140458.us.oracle.com -dir=/scratch/aime/plugins -credential_name=BDC -credential_owner=sysman
```

The command syntax contains the following options:

The `-id` option is taken from the pop up window.

The `-deep` option is required. In a multiple OMS setup, the request can be processed by any OMS. Therefore, the directory should be a valid path (ideally shared) for each OMS that can process the request.

The `-host` option identifies the target host to export the plug-in to.

The `-dir` option identifies the directory on the target host to export the plug-in to.

`<host credential options>` specifies the host credentials and can be one of the following:

- `credential_set_name`: The set name of the preferred credential stored in the repository for the host target. For example, HostCredsNormal (the default unprivileged credential set) or HostCredsPriv (the privileged credential set).
- `credential_name`: The name of a named credential stored in the repository. You must specify this option along with the `credential_owner` option.
- `credential_owner`: The owner of a named credential stored in the repository. You must specify this option along with the `credential_name` option.

The command generates multiple zip files in the specified directory on the standby OMS host. The zip file with the name of the form `version_OMS_platform_revision.zip`, is the one to be used in the following steps. If you have multiple standby OMS hosts, copy this file to each host.

d. Start the Standby Administration Server, if it is down, using the following command:
$ emctl start oms -admin_only

e. Install the OMS archive on the First Standby OMS Oracle Home using the following command:
$ pluginia -archives path to plugin archive

f. Configure the plug-in on the First Standby OMS Oracle Home using the following command:
pluginca -action deploy -isFirstOMS true -plugins plugin-list -oracleHome oms oracle home -middlewareHome wls middleware home

where plugin-list is the plug-in name in the format plugin-id=plugin-version.

g. Copy the plug-in archive file to each Standby additional OMS.

h. Run the following commands from each Standby additional OMS Oracle Home:
$ pluginia -archives path to plugin archive

$ pluginca -action deploy -isFirstOMS false -plugins plugin-list -oracleHome oms oracle home -middlewareHome wls middleware home

i. This completes the plug-in deployment on Standby site. Validate the plug-ins by going to the Self Update page.
Select a plug-in and view its information. All OMS servers should be listed.

2.3.3 Deploying Plug-ins in Offline Mode on OMS

To deploy plug-ins in an offline mode, complete the following:

1. From the Setup menu, select Extensibility, then select Self Update.

Figure 2–52 Self Update Menu
2. Click **Check Updates**.
   
The following message appears
   
   *Figure 2–54   Check Updates in Offline Mode*

   You must download the latest updates catalog using the link provided in the message.
   

   **Note:** Do not unzip the file.
Make sure that you have this ZIP file on the OMS host. The following examples use a directory called "plugupdate" on the OMS host to store this catalog ZIP file.

**Figure 2–55 plugupdate Directory**

```
[asheoran@cl01mnt bin]$ cd plugupdate/
[asheoran@cl01mnt plugupdate]$ ls
p9348486_112000_Generic.zip
[asheoran@cl01mnt plugupdate]$ ls -ltr
total 48
-rw-r--r-- 1 asheoran dba 46288 Mar 21 14:12 p9348486_112000_Generic
[asheoran@cl01mnt plugupdate]$ 
```

3. Go to the <OMS home>/bin directory and log in into the EM CLI by running the following command as the install user:

   ```
   ./emcli login -username=sysman
   ```

**Figure 2–56 Login Screen**

```
[asheoran@cl01mnt bin]$ pwd
/scratch/mwhome/oms/bin
[asheoran@cl01mnt bin]$ ./emcli login -username=sysman
Enter password
Login successful
[asheoran@cl01mnt bin]$ 
```

4. Execute `emcli synchronize` (mandatory) using the following command, as shown in the figure below:

   ```
   $OMS_OracleHome/emcli sync
   ```

**Figure 2–57 Synchronizing**

```
[asheoran@cl01mnt bin]$ ./emcli sync
Synchronized successfully
[asheoran@cl01mnt bin]$ 
```

5. Import the catalog file by executing the following command:

   ```
   $OMS_OracleHome/emcli import_update_catalog -omslocal -file=<absolute location of the zip file>
   ```

   For example:

   ```
   $OMS_OracleHome/emcli import_update_catalog -omslocal -file=/scratch/pluginupdate/p9348486_112000_Generic.zip
   ```

   Note: Run the above command on all of the other additional OMS servers incase of an multi-OMS environment.
6. Return to the Self Update page and refresh the page.
You will see the Available Updates count updated.
Figure 2–60  Count of New Updates

![Oracle Enterprise Manager Cloud Control 12c Self Update]

Oracle periodically provides new functionality and updates for existing features in Enterprise Manager. The Self Update home page automatically, a manual check can be made at any time.

<table>
<thead>
<tr>
<th>Type</th>
<th>Available Updates</th>
<th>Downloaded Updates</th>
<th>Applied Updates</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent Software</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Compliance Content</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Comm</td>
</tr>
<tr>
<td>Diagnostic Checks</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Targ</td>
</tr>
<tr>
<td>EM Deployment Prerequisite Resources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>EM</td>
</tr>
<tr>
<td>Management Connector</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>Moni</td>
</tr>
<tr>
<td>Middleware Profiles and Gold Images</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>A col</td>
</tr>
<tr>
<td>Oracle Database Provisioning Profiles and Gold Images</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>A col</td>
</tr>
<tr>
<td><strong>Plug-in</strong></td>
<td><strong>28</strong></td>
<td><strong>8</strong></td>
<td><strong>8</strong></td>
<td>Plug</td>
</tr>
<tr>
<td>Provisioning Bundle</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Provi</td>
</tr>
</tbody>
</table>

7. Select the Plug-in folder to see a list of the available new plug-ins.
8. Select the plug-in and click **Download**.
9. Follow the instructions provided in the message. Download the update file for the selected plug-in and make sure that it is on the OMS host.

   **Note:** Do not unzip the file. You must download the update file for all the plug-ins separately, one after the other.

10. Go to the `<OMS home>/bin` directory and import the update file you downloaded in the previous step by executing the following command:

```
./emcli import_update -omslocal -file=<absolute location of the zip file>
```
For example:

```
./emcli import_update -omslocal -file=/scratch/pluginupdate/p13789099_112000_Generic.zip
```

**Note:** If your session has expired, you might be prompted to log in again. You can do this using the following command:

```
$ORACLE_HOME/bin/emcli login -username=sysman
```

This command will make the update show up in "Downloaded" state in the Self Update Home page and can be "Applied" from the user interface.

**Figure 2–64  Import Update**

```
[aschevango@alcmw bin]$ pwd
/scratch/mwhome/oms/bin
[aschevango@alcmw bin]$ ./emcli sync
Synchronized successfully
[aschevango@alcmw bin]$ cd /scratch/pluginupdate/
[aschevango@alcmw pluginupdate]$ ls
p13789099_112000_Generic.zip  p9348486_112000_Generic.zip
[aschevango@alcmw pluginupdate]$ cd /scratch/mwhome/oms/bin
[aschevango@alcmw bin]$ ./emcli import_update -omslocal -file=/scratch/pluginupdate/p13789099_112000_Generic.zip
Processing update: Plug-in - Oracle MOS plugin provides support for new features such as Knowledge, Service Requests and Patching and Operation completed successfully. Update has been uploaded to Enterprise. Please use the Self Update Home to manage this update.
[aschevango@alcmw bin]$ 
```


You will see the status has changed for the MOS plug-in from *Available* to *Downloaded*.
12. Select the plug-in and click Apply.

13. Repeat steps 4 to 8 in Section 2.3.2, "Deploying Plug-ins in Online Mode on OMS" to deploy the plug-in on OMS

2.4 Applying Bundle Patch 1 on Management Agents

This following section describes in detail the steps required to apply BP1 on Management Agents.

1. Ensure that the OMS patches are applied before starting to patch the Management Agents.

2. Ensure that all plug-ins have been upgraded to the 12.1.0.2 releases.

Note: You can also refer to My Oracle Support note 1359221.1 for details on how to apply patches on 12c Management Agents using the Cloud Control console.

3. From the Enterprise Menu, select Provisioning and Patching, then select Patches & Updates as shown in the following image.
Applying Bundle Patch 1 on Management Agents

**Figure 2-66   Patches & Updates Menu**

4. In the Patch Search Region of the Patches & Updates page, enter the Patch numbers 13242776, 13491785, 13550565, and 13550561, choose the platform, then click **Search**.

If Enterprise Manager is in offline patching mode, you will need to specify one patch at a time in the search field rather than a comma separated list (for example, 13242776 individually rather than all in a list 13242776, 13491785, 13550565, 13550561).

**Figure 2-67   Patch Search**

5. Select all the patches, click **Add to Plan**, then select **Add to New**, as shown below.

Based on the connectivity setting to My Oracle Support, the patch will be either searched directly from My Oracle Support or from the pre-staged Software Library list.
6. Specify a name for the plan in the **Plan Name** field.
7. Set the target type to "Agent".
8. Click **Search** and select the agents you want to patch.
   You can also search for agents by specifying the Group name, if you have any created.
9. Click **Create Plan**.

**Figure 2–69 Add Patch to Plan**

10. Click **View Plan** at the top of the page to view the newly created patch plan.
Applying Bundle Patch 1 on Management Agents

11. Click Next or click Deployment Options, as shown below.

**Figure 2–71  Deployment Options**

12. From the Deployment Options, specify the credentials of the target Management Agents, as shown below.

**Figure 2–72  Oracle Home Credentials**
If Oracle Home Preferred Credentials are not set, select **Overwrite Oracle Home Preferred Credentials** for the Agent Oracle Home and use Normal Oracle Home Credentials/Privilege Oracle Home Credentials.

**Note:** If you do not have direct access to ‘ORACLE’ credentials and have to setup Privilege credentials as ‘root’, configure Enterprise Manager to use SUDO or PBRUN.

Follow the instructions provided in the chapter "Setting up Credentials in the Lifecycle Management Guide", which can be found at the following location:

http://docs.oracle.com/cd/E24628_01/em.121/e27046/infrastructure_setup.htm#BABGGJB

13. Click **Next** or **Validation** on the left-hand panel, as shown below.

**Figure 2–73 Validation**

14. Click **Analyze** on the Validation page as shown below.

   The analysis process runs prerequisite checks and also checks for patch conflicts. The analysis process takes close to 10 minutes to complete.
15. Click **Next** on successful completion of the analysis.

16. Click **Deploy** on the Review page.
This process takes time to complete (based on the number of agents being patched), but it can be tracked using the Show Detailed Progress link, as shown below.
2.5 Upgrading All Downloaded Plug-ins to the 12.1.0.2 Releases on Management Agent

This section explains the steps involved in upgrading all the downloaded plug-ins to the 12.1.0.2 releases on a Management Agent. The following topics are covered:

- Deploying a Plug-in in Online Mode on a Management Agent
- Deploying a Plug-in in Offline Mode on a Management Agent

2.5.1 Deploying a Plug-in in Online Mode on a Management Agent

Next you will select plug-ins that were already upgraded on Oracle Management Service and upgrade the plug-ins on existing Management Agents. To deploy a plug-in in online mode on a Management Agent, complete the following:

1. From the Setup menu, select Extensibility, then select Self Update.
2. Select Plug-in and from the Actions menu, select Open.

3. Click the Plug-in link.
4. Right-click the plug-in, select **Deploy On**, then select **Management Agent**, as shown below.

*Figure 2–79  Deploy On Management Agent*

5. Click **Add** to add the Management Agent where the plug-in will be deployed, as shown below.

*Figure 2–80  Add the Management Agent*
6. Choose the required agent and click **Select**.
   You can select multiple agents in a single window.

*Figure 2–81  Search and Select: Targets*

7. Click **Continue**, as shown below.

*Figure 2–82  Click Continue*

8. Run the plug-in upgrade prerequisites checks and click **Next**, as shown below.
9. Click **Deploy** on the Review page to deploy the plug-in on the Agents.

You can monitor the plug-in deployment by clicking **Show Status**.

Make sure that the plug-ins are deployed successfully before moving forward.

### 2.5.2 Deploying a Plug-in in Offline Mode on a Management Agent

As plug-ins are readily available from the plug-in deployment to OMS, you can directly deploy the plug-ins to the agents. To deploy a plug-in in offline mode on a management agent, complete the following:

1. From the **Setup** menu, select **Extensibility**, then select **Plug-ins**

2. Right-click the plug-in, select **Deploy On**, then select **Management Agent** to deploy the plug-in on the Management Agent.
2.6 Upgrading BI Publisher Reports Shipped with the Plug-ins

This section provides detailed information on the steps needed to upgrade the Oracle Business Intelligence Publisher (BI Publisher) reports that shipped with the plug-ins. However, you should only run these steps if BI Publisher was previously installed and configured to work with Oracle Enterprise Manager Cloud Control 12c.

If BI Publisher is not installed and configured, this step will occur automatically when BI Publisher is configured at a later time.

To upgrade the BI Publisher reports, complete the following:

1. Start the BI Publisher Managed Server named “BIP”.
2. Navigate to <MIDDLEWARE_HOME>/oms/bin
3. Run the following commands at the command line of the account that owns the Middleware Home:
   
   ```
   emcli login -username=sysman
   Enter the SYSMAN password at the prompt (the prompt will not echo).
   emcli sync
   emcli deploy_bipublisher_reports -force
   ```

   It is very important that you use the "-force" option, otherwise the reports will not be updated.

3. Complete the remaining steps as described in Section 2.5.1, "Deploying a Plug-in in Online Mode on a Management Agent".
You should receive confirmation of success. The message, which will be in your native language, will translate to the following in English:

The Enterprise Manager Oracle-provided Reports have been deployed to the Enterprise Manager Shared folder 'Enterprise Manager Cloud Control' on the previously registered BI Publisher 'http[s]://{biphost}:{bipport}/xmlpserver'.

### 2.7 Upgrading ADP and JVMD (Optional)

This section provides detailed instructions on upgrading Application Dependency and Performance (ADP) and JVM Diagnostics (JVMD). The instructions provided are valid for the following conditions only:

- You already have ADP or JVMD installed.
- You have updated both Oracle Management Service and Management Agent on the target servers to the 12.1.0.2 release of the Oracle Fusion Middleware Plug-in.

---

**Note:** The following instructions supersede any other instructions on ADP or JVMD patching contained in the OMS Patch (13242773) README document.

---

### 2.7.1 Upgrading Application Dependency and Performance

To upgrade ADP, complete the following:

1. Unzip the ADPManager.zip archive, which is in the following location:
   
   \$MIDDLEWARE_HOME/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0/archives/ocamm/
   
   This will create a folder called ADPManager.ear within the same directory.

2. Log in to the Oracle WebLogic Server Administration Console of the EMGC Domain and click Servers.

3. Locate all deployed ADP Managers.
   
   These will be managed servers that contain "EMGC_ADPMANAGER" in the server name. For example, "EMGC_ADPMANAGER1". Perform the steps below for each ADP Manager. For illustration purposes, the server name "EMGC_ADPMANAGER1" is used.

4. Shut down EMGC_ADPMANAGER1 using the Oracle WebLogic Server Administration Console.
5. Use the `mv` command to rename the existing `ADPManager.ear` folder in the `EMGC_ADPMANAGER1` directory to `ADPManager.ear_12cc01978`:

```
mv $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/EMGC_ADPMANAGER1/ADPManager.ear $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/EMGC_ADPMANAGER1/ADPManager.ear_12cc01978
```

6. Use the `mv` command to move the `ADPManager.ear` folder you created to `EMGC_ADPMANAGER1`:

```
mv $MIDDLEWARE_HOME/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0/archives/ocamm/ADPManager.ear $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/EMGC_ADPMANAGER1/
```

7. Change directory to the config directory under the `ADPManager.ear_12cc01978` folder using the following command:

```
cd $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/EMGC_ADPMANAGER1/ADPManager.ear_12cc01978/ADPManager.war/config/
```

8. Copy the `Acsera.properties` file as shown in the following command:

```
Note: If you have previously installed but never started the ADP manager, then the listed configuration files will not exist. In this case, you can safely skip steps 8 and 9.
```

```
cp -f configuration.xml Acsera.properties key $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/EMGC_```
9. Add the following properties at the end of the Acsera.properties files you just copied:

   JMXContainer.DisableComputeClassPaths = true
   DeployerClient.CoreAgentJars=lib/bcel.jar;
   lib/com.oracle.diagnostics.instrumentor_1.8.0.0-try-03.jar; lib/jManagement
   Agent1.5.jar
   DeployerClient.WLDFJar=com.oracle.diagnostics.instrumentor_1.8.0.0-try-03.jar

10. Start ADP Manager using the Oracle WebLogic Server Administration Console.

11. Redeploy all ADP Agents on the previously configured target servers. Note that you will essentially redeploy the Management Agents on top of the original Management Agents. For instructions, see the following:

   http://docs.oracle.com/cd/E24628_01/install.121/e22624/adp_installation.htm#CJHFFADD

12. Restart the target servers.

### 2.7.2 Upgrading JVM Diagnostics

**Note:** Before you begin upgrading JVM Diagnostics, ensure that you delete the existing JVM pool targets. To do so, log in to Enterprise Manager Cloud Console, and from Targets menu, select Middleware. On the Middleware page, select all the targets of type Java Virtual Machine Pool one by one and one, and click Remove.

To upgrade JVMD, complete the following:

1. Unzip the jvmd.zip archive, which is in the following location:

   $MIDDLEWARE_HOME/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0/archives/jvmd/

   This will create a set of files in the same directory, including jammanager.ear.

2. Log in to the Oracle WebLogic Server Administration Console of the EMGC Domain and click Servers.

3. Locate all deployed JVMD Managers.

   These will be managed servers that contain "EMGC_JVMDMANAGER" in the server name, such as "EMGC_JVMDMANAGER1". For each JVMD Manager, perform the steps below. For illustration purposes, the server name "EMGC_JVMDMANAGER1" will be used.

4. Start EMGC_JVMDMANAGER1, if it is not already running.

5. Click Lock & Edit in the Change Center on the Oracle WebLogic Server Administration Console.
Upgrading ADP and JVMD (Optional)

6. Select **Deployments**, then click the checkbox for **Enterprise Application for a JVMD Manager**.
   
   For example: *jammanagerEMGC_JVMDMANAGER1*

7. Click **Update**.

8. Note the source path to the existing *jammanager.ear*.
   
   For example:
   
   ```
   $MIDDLEWARE_HOME/gc_inst/user_projects/domains/GCDomain/servers/EMGC_ADMINSERVER/upload/jammanagerEMGC_JVMDMANAGER1/app/jammanager.ear
   ```

9. At the source path you noted in the previous step replace the existing *jammanager.ear* with the *jammanager.ear* from the following location:
   
   ```
   $MIDDLEWARE_HOME/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0/archives/jvmd/
   ```

10. Click **Next** to complete the update.

11. If you have Middleware Diagnostics Advisor (MDA) enabled, complete the following to disable it for every Oracle WebLogic Domain and Oracle WebLogic Server target it has been enabled for:

   a. In Cloud Control, navigate to the target home page for a WebLogic Server domain.

   b. From the **WebLogic Domain** menu, select **Diagnostics**, then select **Setup Middleware Diagnostics Advisor**.
c. Select each target that MDA has been enabled for, then click Disable, as shown below.

Figure 2–90  MDA Configuration (Enable / Disable)

12. Undeploy existing JVMD Management Agents from the target server. Management Agents will usually have names such as javadiagnosticManagementAgent_ServerName.

13. Remove the corresponding Java Virtual Machine targets using Enterprise Manager Cloud Control:
   a. From the Targets menu, select Middleware.
   b. Locate the Java Virtual Machine targets that correspond to the JVMD Management Agents you undeployed.
c. Select each Java Virtual Machine target in the table, then click **Remove**.

14. Redeploy all JVMD Management Agents.

   For more information, see the following:
   
   http://docs.oracle.com/cd/E24628_01/install.121/e22624/jvmd_installation.htm#CHDCFFGC

15. After all JVMD Management Agents have been redeployed, return to the Middleware Diagnostics Advisor Configuration page and re-enable MDA for each target it was previously enabled for.
This chapter describes how to update the existing downloaded Management Agent image in your environment to a Management Agent image with BP1 included. Once you update your image, you will not be required to apply any BP1 patches to the Management Agents that will be installed using this updated image.

At present, updated images with BP1 included are available for Linux32 and Linux 64 bit platforms only. When Management Agent binaries with BP1 included are released for other platforms, you just repeat the steps described in the following sections to update them.

The version of Management Agent binaries with BP1 included is the same as the earlier 12.1.0.1. release. The following topics are discussed:

- OMS and Target Management Agent Hosts are on the Same Platform
- OMS and Target Management Agent Hosts are on Different Platforms

### 3.1 OMS and Target Management Agent Hosts are on the Same Platform

When OMS and target Management Agent hosts are on the same platform, complete the following:

1. Download the Management Agent zip file from the Oracle Technology Network (OTN) at the following location:


2. Copy this file into the OMS_HOME/sysman/agent directory.

   For multi OMS cases, copy the file into the Oracle Homes of all OMS instances.

### 3.2 OMS and Target Management Agent Hosts are on Different Platforms

When OMS and target Management Agent hosts are on different platforms, complete the following:

1. Log into the Cloud Control console.

2. From the Setup menu, select Extensibility, then select Self Update.
3. Select the Agent Software entity and click **Open**.
OMS and Target Management Agent Hosts are on Different Platforms

Figure 3–2  Agent Software Entity

![Agent Software Entity Image]

This allows you to view the Agent Software Updates page, which shows the status of the Management Agent platform binaries.

Figure 3–3  Agent Software Updates Status

![Agent Software Updates Status Image]

4. Select the platform on which the binaries are to be updated.

For the purposes of this example, Linux x86 binaries are selected. Linux x86 Management Agent binaries with Bundle Patch 1 included are now available and
you want to update the existing Linux x86 Management Agent binaries with these new versions.

5. From the **Actions** list select **Remove**.

![Agent Software Updates Remove Icon](image)

6. Click **Remove** on the confirmation message.

![Remove Confirmation Message](image)

A job is triggered to remove the Management Agent binaries from the library. The figure below shows the confirmation message when this has been successfully completed.

![Job Submitted Successfully Message](image)
Once the job is done, the page is refreshed and the Management Agent binaries status is changed to Downloaded. The figure below shows that the Linux x86 binaries status is now changed to **Downloaded**.

**Figure 3–7  Status Changed to Downloaded**

![Status Changed to Downloaded](image)

7. Select the row with the status Downloaded and from the **Actions** list click **Delete**.

**Figure 3–8  Delete Row**

![Delete Row](image)

8. Click **Delete** on the confirmation message.
This generates the message shown below.

9. Refresh the page to verify that the selected Management Agent binaries are no longer in the library.

10. To delete Management Agent binaries in Available status, select the row and from the Actions list click Delete.

For the purposes of this example, Linux x86 Management Agent binaries are selected.
11. Click **Delete** on the confirmation message.

**Figure 3–13  Delete Update Confirmation Message**

This generates the message shown below.

**Figure 3–14  Delete Confirmation**

12. Refresh the page to verify that the selected Management Agent binaries are no longer in the library.

13. From the Self Update page, select the **Agent Software** entity, then click **Check Updates** to get the latest agent binaries.
A job is triggered and once it is done, you will see that the Available Updates column has been updated. A confirmation message is also displayed.
This chapter describes various use cases for Bundle Patch 1 for Windows 64 bit OMS and Management Agent, Windows 32 bit Management Agent only, and zLinux Management Agent only. The following scenarios are discussed:

- Installing Enterprise Manager Cloud Control 12c on Windows (64-bit)
- Managing Windows or zLinux Hosts from OMS on Linux with BP1
- Managing Windows or zLinux Hosts from OMS without BP1

4.1 Installing Enterprise Manager Cloud Control 12c on Windows (64-bit)

To install Enterprise Manager Cloud Control 12c on Windows, download the binaries from Oracle Technology Network. You can get the 12.1.0.1 installation software from the product DVD or from Oracle Technology Network (OTN) at:


For more information, refer to the Procuring Software section of the Oracle® Enterprise Manager Cloud Control Advanced Installation and Configuration Guide 12c Release 1 (12.1.0.1), which can be found at the following location:

http://docs.oracle.com/cd/E24628_01/install.121/e24089/getstrtd_proc_sw.htm#BACFD8C8

On the download page, select the Windows (64-bit) (With Bundle Patch 1) release. The Bundle Patch 1 binaries will be installed by default. Enterprise Manager binaries will have BP1 patches included by default. You do not need to follow the BP1 patch instructions outlined in this document.

The 12.1.0.2 versions of the Oracle Database and Oracle Fusion Middleware plug-ins will also be installed by default as part of the Windows installation process. You will have the option of installing additional available plug-ins, such as the Fusion Applications plug-in, during installation. Oracle recommends that you also install all the plug-ins that you think you may need.

When you invoke the Enterprise Manager Cloud Control Installation Wizard, you will be given a choice between two Install Types: Simple and Advanced. To install the additional plug-ins, you must perform an Advanced installation.

For more information, see "Installing with Advanced Configuration" in the Oracle® Enterprise Manager Cloud Control Basic Installation Guide 12c Release 1 (12.1.0.1), available at the following link:
4.2 Managing Windows or zLinux Hosts from OMS on Linux with BP1

This section discusses the management of Windows (32-bit or 64-bit) or zLinux Hosts from Oracle Management Service on Linux (32-bit or 64-bit) with BP1. The following assumes that you have an Oracle Management Service 12.1.0.1 instance running on a Linux host with BP1 applied, or a fresh installation that includes the BP1 binaries, and want to monitor Windows and/or zLinux host machines. The Oracle Management Service 12.1.0.1 instance must either be a fresh installation, as noted in the section above, or must be patched with BP1.

See Section 2.1, "Applying Bundle Patch 1 on Oracle Management Service" for instructions on applying BP1 on a Linux 32-bit or 64-bit Oracle Management Service host.

---

**Note:** A Linux OMS should have BP1 applied or included. This is a mandatory requirement for monitoring the Windows or zLinux agents.

---

Once these prerequisites have been met, you must complete the steps outlined in the following sections in the order specified:

- **Applying Patch 14040891 on Oracle Management Service (Required)**
- **Patching Database, Fusion Middleware, and Fusion Application Plug-ins**
- **Downloading the Management Agent Software**
- **Downloading and Upgrading Plug-ins to Windows-specific Revisions**
- **Deploying Management Agents to Windows or zLinux Host Targets**
- **Adding Targets to Monitor**

The processes described in the following sections are identical for Windows 32-bit, Windows 64-bit and zLinux Management Agents.

4.2.1 Applying Patch 14040891 on Oracle Management Service (Required)

You must apply patch 14040891 on your Oracle Management Service 12.1.0.1 on Linux 32-bit or 64-bit. To install the patch, complete the following:

---

**Note:** In the case of a multi-OMS environment, once you have performed these steps on the first OMS host, repeat the same steps for each of the other OMS hosts, except for steps (8), (9), (14), and (15).

---

1. Back up the following before beginning this process:
   - Oracle Inventory
Managing Windows or zLinux Hosts from OMS on Linux with BP1

- Management Repository database
- Middleware Home
- Instance Home
- Software Library
- Management Agent

For instructions, see "Backing Up Enterprise Manager" in the Enterprise Manager Cloud Control Administrator’s Guide available here:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/ha_backup_recover.htm#BGBPCCCIJC

2. Verify that the correct OPatch version is installed under the OMS Home. The OPatch version required for installing the Bundle Patch 1 is 11.1.0.9.4 or higher. **Do not** use OPatch 11.2.0.x. For more information on OPatch version, see Section 1.4.3, "Using the Correct OPatch Version".

3. Ensure that the Management Repository database and its listener are up and running.

4. Ensure that you set the ORACLE_HOME environment variable to the OMS Home, which is:

   `<%MIDDLEWARE_HOME%>/oms`

   This is the top-level directory of the Oracle Management Server installation.

5. Ensure that you set the PATH environment variable to include the location of the unzip executable, the ORACLE_HOME/bin, and the ORACLE_HOME/OPatch directories present in the Oracle home of the OMS with the following command:

   ```
   setenv PATH $ORACLE_HOME/bin:$ORACLE_HOME/OPatch:$PATH
   ```

   Run the following command to verify that the PATH variable is set:

   ```
   echo $PATH
   ```

6. Download patch 14040891 from My Oracle Support ([https://support.oracle.com](https://support.oracle.com))

7. Verify the Oracle Inventory by running the following command:

   ```
   $ opatch lsinventory
   ```

   This verification is needed because OPatch accesses the Oracle Inventory. If the command displays any errors, contact Oracle Support to resolve the issue.

8. Identify a location for storing the contents of the patch ZIP file.

   In the rest of this section, this location (absolute path) is referred to as `PATCH_TOP_DIR`.

9. Run the following command to extract the contents of the patch ZIP file to the location you created in the previous step:

   ```
   $ unzip -d PATCH_TOP_DIR p14040891_121010_Generic.zip
   ```

10. Run the following command from the patch directory to ensure that patch 14040891 does not conflict with existing one-off patches on the Linux OMS:

    ```
    $PATCH_TOP_DIR/opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir ./14040891
    ```
The command will generate a report that lists all conflicting patches. If you do not see any conflicting patches, then proceed with installing the patch.

If you see one or more conflicting patches, then follow these steps:

- Submit a request for Merge patches from Oracle Support.
- Download the Merge one-off patches from My Oracle Support.
- Manually deinstall the conflicting patches by following the instructions in the README file for each conflicting patch. Refer to My Oracle Support note 965556.1 for additional information.
- Apply patch 14040891 on the Linux OMS.
- Apply the Merge one-off patches.

11. Invite the following command to ensure that the OMS is not running:

```bash
<OMS_ORACLE_HOME>/bin emctl stop oms -all
```

Run the following command to verify that the OMS has completely stopped:

```bash
<OMS_ORACLE_HOME>/bin emctl status oms
```

Ideally, the OMS and its associated services will be down. Note: In a multi-OMS environment, these commands should be run on all OMS instances.

12. Use the following command to navigate to the `PATCH_TOP_DIR/14040891` directory:

```bash
$ cd PATCH_TOP_DIR/14040891
```

13. Run the following command to apply the patch:

This command should be run on each OMS instance in a multi-OMS environment.

```bash
$ opatch napply
```

The following messages may appear on screen:

- Do you want to proceed? [y/n]: (yes)
Managing Windows or zLinux Hosts from OMS on Linux with BP1

Bundle Patch 1 for Windows and zLinux Management Agents

Note: If you have any patches applied in your environment that are a superset of 13638422, you will get a message to rollback the existing patches. This is expected behavior and enter Y to proceed.

The following is an example of this message:

Conflicts/Supersets for each patch are:
Patch : 13824700
Bug Superset of 13638422
Super set bugs are:13638422
Patches [ 13638422 ] will be rolled back.

Do you want to proceed? [y|n]

- Oracle Support Email address/User Name: (provide your details or press Enter to continue)
- Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: (y)

Figure 4–2  Apply the Patch

14. Run the following command on the first OMS only (you will be prompted for the SYSMAN password):

```
$ [some commands]
```

```
Note: If you have any patches applied in your environment that are a superset of 13638422, you will get a message to rollback the existing patches. This is expected behavior and enter Y to proceed.

The following is an example of this message:

Conflicts/Supersets for each patch are:
Patch : 13824700
Bug Superset of 13638422
Super set bugs are:13638422
Patches [ 13638422 ] will be rolled back.

Do you want to proceed? [y|n]

- Oracle Support Email address/User Name: (provide your details or press Enter to continue)
- Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: (y)

Figure 4–2  Apply the Patch

14. Run the following command on the first OMS only (you will be prompted for the SYSMAN password):

```
$ [some commands]
```

```
```
$ ORACLE_HOME/bin/emctl applypatch repos -patchHome $PATCH_TOP_DIR/14040891/13653571

If the command succeeds, the following message is displayed:

PATCH APPLICATION HAS SUCCEEDED

15. Run the following commands on the first OMS only (you will be prompted for the SYSMAN password):

<command prompt> emctl register oms metadata -service swlib -file $ORACLE_HOME/sysman/metadata/swlib/multioms -core

Figure 4–3  Register OMS Data

<command prompt> emctl register oms metadata -service procedures -file $ORACLE_HOME/sysman/metadata/procedures/multioms/MultiOMS.xml -core

If the command succeeds, the following message is displayed:

Metadata registration successful

<command prompt> emctl register oms metadata -service derivedAssocs -file $ORACLE_HOME/sysman/metadata/derivedAssocs/emSystemAssocRules.xml -core

If the command succeeds, the following message is displayed:

Metadata registration successful

16. Start the OMS by running the following command on each OMS instance:

ORACLE_HOME/bin/emctl start oms

4.2.2 Patching Database, Fusion Middleware, and Fusion Application Plug-ins

Patches must be applied to the version 12.1.0.2 Oracle Database, Oracle Fusion Middleware, and Oracle Fusion Applications plug-ins deployed on the OMS host. A separate patch must be applied to the Oracle Home for each individual plug-in.

Installation instructions are provided for the following patches:

- Applying Oracle Database Plug-in Patch 13713877
- Applying Oracle Fusion Middleware Plug-in Patch 13715926
- Applying Oracle Fusion Applications Patch 13719833

To patch the plug-ins on OMS, download and apply the patches listed in Table 4–1 on the OMS host (one patch at a time in the order specified) in the respective plug-in Homes. The patches are available from My Oracle Support (https://support.oracle.com).
4.2.2.1 Applying Oracle Database Plug-in Patch 13713877

Apply Oracle Database Plug-in patch 13713877 on your Oracle Management Service. To apply the patch, ensure that all the prerequisites specified in the README are met and complete the following:

1. Shut down the OMS by running the following command:
   
   `<ORACLE_HOME>/bin emctl stop oms`

   Make sure to shut down all OMS instances in a multi-OMS environment.

2. Set the environment variable PLUGIN_HOME to:
   
   `<%MIDDLEWARE_HOME%>/plugins/oracle.sysman.db.oms.plugin_12.1.0.2.0`

   For example:

   ```bash
   setenv PLUGIN_HOME
   /example/work/midlwre6465/plugins/oracle.sysman.db.oms.plugin_12.1.0.2.0
   ```

3. Maintain a location for storing the contents of the patch ZIP file.

   In the rest of this section, this location (absolute path) is referred to as `PATCH_TOP_DIR`.

4. Run the following command to extract the contents of the patch ZIP file to the location you created in the previous step:

   ```bash
   $ unzip -d PATCH_TOP_DIR p13713877_121010_Generic.zip
   ```

5. Use the following command to navigate to the `PATCH_TOP_DIR/13713877` directory:

   ```bash
   $ cd PATCH_TOP_DIR/13713877
   ```

6. Run the following command on each OMS instance (in a multi-OMS environment) to apply the patch:

---

**Note:** You can reduce the downtime by stopping the OMS before applying the three patches listed below to the respective Oracle Homes, then re-starting once all patches have been successfully applied.

---

### Table 4–1 Plug-In Patches for Microsoft Windows

<table>
<thead>
<tr>
<th>Plug-In Name</th>
<th>Plug-In ID</th>
<th>Patch</th>
<th>Oracle Home to be Patched</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Database</td>
<td>oracle.sysman.db</td>
<td>13713877</td>
<td><code>%MIDDLEWARE_HOME%/plugins/oracle.sysman.db.oms.plugin_12.1.0.2.0</code></td>
</tr>
<tr>
<td>Oracle Fusion Middleware</td>
<td>oracle.sysman.emas</td>
<td>13715926</td>
<td><code>%MIDDLEWARE_HOME%/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0</code></td>
</tr>
<tr>
<td>Oracle Fusion Applications</td>
<td>oracle.sysman.emfa</td>
<td>13719833</td>
<td><code>%MIDDLEWARE_HOME%/plugins/oracle.sysman.emfa.oms.plugin_12.1.0.2.0</code></td>
</tr>
</tbody>
</table>
$ opatch napply -oh $PLUGIN_HOME

The following messages may appear on screen:

- Do you want to proceed? [y \ n]: (yes)
- Oracle Support Email address/User Name: (provide your details or press Enter to continue)
- Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: (y)

If the patch is applied successfully, the following message is displayed:

OPatch succeeded

7. Run the following four commands on the first OMS only (you will be prompted for the SYSMAN password):

If the commands succeed, the following message is displayed:

Metadata registration successful

---

**Note:** In the following commands, <command prompt> is OMS_ ORACLE_HOME/bin.

- a. `<command prompt>` emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib -pluginId oracle.sysman.db
- b. `<command prompt>` emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/ExtendClusterNG.xml -pluginId oracle.sysman.db
- c. `<command prompt>` emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/provsidb.xml -pluginId oracle.sysman.db
- d. `<command prompt>` emctl register oms metadata -service preNGProcedures -file $PLUGIN_HOME/metadata/preNGProcedures/RACProvisionWIN.xml -pluginId oracle.sysman.db

8. Start the OMS instance:

`<ORACLE_HOME>/bin emctl start oms`

---

### 4.2.2.2 Applying Oracle Fusion Middleware Plug-in Patch 13715926

This section describes how to apply the Oracle Fusion Middleware Plug-in patch 13715926 on your Oracle Management Service. To apply the patch, ensure that all the prerequisites specified in the README are met and then complete the following:

1. Shut down the OMS by running the following command:

`<ORACLE_HOME>/bin emctl stop oms`

   Make sure to shut down all OMS instances in a multi-OMS environment.

2. Set the environment variable PLUGIN_HOME to:

   `<%MIDDLEWARE_HOME%>/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0`

   For example:
setenv PLUGIN_HOME
/example/work/midlwre6465/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0

3. Maintain a location for storing the contents of the patch ZIP file.
   In the rest of this section, this location (absolute path) is referred to as PATCH_TOP_DIR.

4. Run the following command to extract the contents of the patch ZIP file to the location you created in the previous step:
   $ unzip -d PATCH_TOP_DIR p13715926_121010_Generic.zip

5. Use the following command to navigate to the PATCH_TOP_DIR/13715926 directory:
   $ cd PATCH_TOP_DIR/13715926

6. Run the following command on each OMS (in a multi-OMS environment) to apply the patch:
   $ opatch napply -oh $PLUGIN_HOME

   The following messages may appear on screen:
   ■ Do you want to proceed? [y|n]: (yes)
   ■ Oracle Support Email address/User Name: (provide your details or press Enter to continue)
   ■ Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: (y)

7. Run the following eight commands on the first OMS only to register the job type. Enter the SYSMAN Password for each command when prompted.
   If the commands succeed, the following message is displayed:
   Metadata registration successful

   Note: In the following commands, <command prompt> is OMS_ORACLE_HOME/bin.

   a. <command prompt> emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib/coherenceprov -pluginId oracle.sysman.emas
   b. <command prompt> emctl register oms metadata -service swlib -pluginId oracle.sysman.emas -file $PLUGIN_HOME/metadata/swlib
   c. <command prompt> emctl register oms metadata -pluginId oracle.sysman.emas -service procedures -file $PLUGIN_HOME/metadata/procedures/FMWPROV.xml
   d. <command prompt> emctl register oms metadata -pluginId oracle.sysman.emas -service procedures -file $PLUGIN_HOME/metadata/procedures/DomainScaleUp.xml
   e. <command prompt> emctl register oms metadata -pluginId oracle.sysman.emas -service jobTypes -file $PLUGIN_HOME/metadata/jobTypes/CreateFMWBundle.xml
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f. `<command prompt> emctl register oms metadata -pluginId oracle.sysman.emas -service jobTypes -file $PLUGIN_HOME/metadata/jobTypes/CreateFMWGoldImage.xml`

g. `<command prompt> emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/WholeServerMigration.xml -pluginId oracle.sysman.emas`

h. `<command prompt> emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib/patch -pluginId oracle.sysman.emas`

8. Start the OMS instance:

   `<ORACLE_HOME>/bin emctl start oms`

4.2.2.3 Applying Oracle Fusion Applications Patch 13719833

This section describes how to apply the Oracle Fusion Applications patch 13719833 on your Oracle Management Service. To apply the patch, ensure that all the prerequisites specified in the README are met and complete the following:

---

**Note:** Do not perform these steps if you do not have a Fusion Application plug-in in your environment.

---

1. Shut down the OMS by running the following command:

   `<ORACLE_HOME>/bin emctl stop oms`

   Make sure to shut down all OMS instances in a multi-OMS environment.

2. Set the environment variable PLUGIN_HOME to:

   `<%MIDDLEWARE_HOME%>/plugins/oracle.sysman.emfa.oms.plugin_12.1.0.2.0`

   For example:

   ```
   setenv PLUGIN_HOME /example/work/midlwre6465/plugins/oracle.sysman.emfa.oms.plugin_12.1.0.2.0
   ```

3. Maintain a location for storing the contents of the patch ZIP file.

   In the rest of this section, this location (absolute path) is referred to as `PATCH_TOP_DIR`.

4. Run the following command to extract the contents of the patch ZIP file to the location you created in the previous step:

   ```
   $ unzip -d PATCH_TOP_DIR p13719833_121010_Generic.zip
   ```

5. Use the following command to navigate to the `PATCH_TOP_DIR/13719833` directory:

   ```
   $ cd PATCH_TOP_DIR/13719833
   ```

6. Run the following command to apply the patch:

   ```
   $ opatch napply -oh $PLUGIN_HOME
   ```

   The following messages may appear on screen:
   - Do you want to proceed? [y\n]: (yes)
Managing Windows or zLinux Hosts from OMS on Linux with BP1

4.2.3 Downloading the Management Agent Software

Management Agent software for the various platforms (operating systems) supported by Enterprise Manager Cloud Control can be downloaded to the Software Library using the Self Update console. Once an Agent is persisted to the Software Library, it can be installed on host machines that you want to bring under Cloud Control management using the Management Agent installation wizard.

Once the Management Agent has been downloaded, it will appear in the Self Update interface as shown below. To view this page, log in to the Cloud Control console and from the Setup menu, select Extensibility, then select Self Update, and then click Agent Software.

Steps for obtaining Agent software in both online and offline modes are discussed below.

- Acquiring Management Agent Software in Online Mode
- Acquiring Management Agent Software in Offline Mode
4.2.3.1 Acquiring Management Agent Software in Online Mode

Using Self Update in online mode requires Enterprise Manager to have access to My Oracle Support, which can be found at the following location:

https://support.oracle.com

1. From the Setup menu, choose Extensibility, then choose Self Update.
2. Select the entity type Agent Software and click Check Updates.

---

**Note:** Make sure that you have first set your My Oracle Support credentials. For more information see, Section 2.2.1, "Setting Up My Oracle Support Credentials".

---

3. Choose Open from the Action menu. The entity type page appears to show agent software for different platforms.
4. Select an update from the list of available updates.
5. Select the software that needs to be downloaded from the available list and click Download. The Schedule Download dialog opens.
6. Select when to download the update. The following options are available:
   - Immediately
   - Later (specified time)
   - Whether or not to send a notification when the download is complete
7. Click Select. An Enterprise Manager job is created to download the Agent software to the Software Library.

   Enterprise Manager starts downloading the archive from the Oracle Enterprise Manager store. Wait for the download to complete.

   When the job is submitted, Enterprise Manager displays the Confirmation page and the downloaded plug-in is shown in the local Oracle Enterprise Manager Store.
8. Once the download is complete, select the Agent, then click Apply. This step will stage the Agent software in the Software Library and make it available to the Add Targets wizard, which you will use to install the Agent on host machines.
9. Click Agent Software to launch the Add Targets/Agent Installation wizard.

   For more information, see Section 4.2.5, "Deploying Management Agents to Windows or zLinux Host Targets".

4.2.3.2 Acquiring Management Agent Software in Offline Mode

Follow this Self Update process only when Enterprise Manager is in offline mode.

1. Ensure Cloud Control is set to offline mode. From the Setup menu, select Provisioning and Patching, then select Offline Patching and click Apply.
2. Run the following command:

   $ <OMS_ORACLE_HOME>/emcli login -username=sysman

   Provide the password and you should see the following confirmation message:

   Login successful
3. Run the following command:

   ./emcli sync

   The following confirmation message is displayed:

   Synchronized successfully

4. From the Setup menu, select Extensibility, the select Self Update.

5. Click Check Updates on Self Update home page. A message is displayed that contains the URL to be accessed to download a catalog of all updates.

6. From an Internet-enabled computer, download the catalog file using the aforementioned URL mentioned in the message window.

7. Copy the downloaded file to either of the following:
   - To any host that has a Management Agent and EM CLI installed
   - To the Oracle Management Service host

8. Once the catalog is downloaded, it can be imported to Enterprise Manager in one of the following two ways:
   a. Transfer the catalog to the management server host and run the following command to import to Enterprise Manager:

      $ emcli import_update_catalog -file=<catalog file name with full path> -omslocal

   b. Transfer the catalog to any managed host in your environment and run the following command to import to Enterprise Manager:

      $ emcli import_update_catalog -file=<catalog file name with full path> -host=<host name> <host credential options>

9. Select the entity type Agent Software and choose Open from the Actions menu. The entity type page appears displaying agent software for different platforms.

10. Select an update from the list of available updates.

11. Click Download. A message is displayed with a URL and instructions.

12. From an Internet-enabled computer, download the file from the URL displayed in the message window. Do one of the following:
   - Copy the file to a Management Agent.
   - Copy the file to Oracle Management Service.

   Go to the 12.1 OMS home/bin directory and import the update file that you download in the previous step by executing the following command:

   $ OMS_ORACLE_HOME/emcli import_update  -omslocal  -file=<absolute location of the zip file>

   **Note:** if your session has expired, you might be prompted to log in again. Do so by running the following command:

   $ emcli login –username=sysman

   At this stage, the update will show up in downloaded state in the Self Update home page.
13. Once the download is complete, select the entity management agent, then click Apply. This step will stage the entity management agent software in the Software Library and make it available to the Add Targets wizard, which you will use to install the agent on host machines.

14. Click Agent Software to launch the Add Targets/Agent installation wizard.

For more information, see Section 4.2.5, "Deploying Management Agents to Windows or zLinux Host Targets".

4.2.4 Downloading and Upgrading Plug-ins to Windows-specific Revisions

Ensure that you obtain the Windows specific version- 12.1.0.2, and revision- 120427 of Oracle Database, Oracle Fusion Middleware, and Oracle Fusion Application plug-ins using the Self Update feature in either online or offline mode. The steps are similar to those outlined in Section 2.3, "Upgrading All Deployed Plug-ins to the 12.1.0.2 Releases on OMS".

To view the available revisions for the Oracle Database, Oracle Fusion Middleware, and Oracle Fusion Applications plug-ins, log in to the Cloud Control console and from the Setup menu, select Extensibility, then select Plug-ins.

4.2.5 Deploying Management Agents to Windows or zLinux Host Targets

After the plug-ins have been updated to their respective Windows revisions, you will deploy Management Agents to Microsoft Windows hosts or zLinux machines using Cloud Control.

1. Acquire the Management Agent binaries for the host target (Windows or zLinux).

2. From the Setup menu, select Add Target, and then, click Add Targets Manually. On the Add Targets Manually page, select Add Host Targets and click Add Host.

For more information, refer to the Add Host Wizard section in the Install Guide, which can be found at the following location:

http://docs.oracle.com/cd/E24628_01/install.121/e22624/install_agent.htm#CACJEPJI

4.2.6 Adding Targets to Monitor

Once plug-in revisions are deployed on a Windows or zLinux host, you are ready to discover Oracle Database, Oracle Fusion Middleware and Oracle Fusion Applications targets running on the host.

When a target is discovered on the Windows host, the required plug-in code needed to monitor the target types will be deployed to the Management Agent installed on the host. For example, if you discover an Oracle Database target, the required Oracle Database plug-in code will be pushed to the Management Agent installed on the database host machine.

Enterprise Manager offers two options for target discovery:

- Automatic target discovery: This feature scans host machines for Oracle components that can be managed and monitored by Enterprise Manager Cloud Control.

For instructions on configuring automatic discovery, see:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/discovery.htm#CBACIHEJ
- Manual target discovery: This feature guides you through the process of manually discovering targets on the Windows host.

For instructions on manually discovering targets, see:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/discovery.htm#CBAEIBCC

4.3 Managing Windows or zLinux Hosts from OMS without BP1

If you are planning to monitor a Windows 32 or 64 bit host or zLinux host from an OMS that does not have BP1 included or applied, this usecase is not supported. You need to wait until BP1 is released for the respective platform. Refer to the BP1 release schedule contained in My Oracle Support note 1395505.1 at the following location:

https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=ANNOUNCEMENT&id=1395505.1
This chapter describes various use cases to apply Bundle Patch 1 on Solaris (SPARC), Solaris (x86-64), and IBM AIX (64-bit) OMS and Management Agents. This chapter contains the following sections:

- **Before You Begin**
- **Installing Enterprise Manager Cloud Control 12c on Solaris (SPARC), Solaris (x86-64), or IBM AIX (64-bit)**
- **Applying Bundle Patch 1 on Solaris SPARC, Solaris (x86-64), or IBM AIX**
- **Managing New Management Agents Deployed on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, or HP-UX Itanium Hosts from OMS on Linux with BP1 or from OMS on Windows with Bundle Patch 1**
- **Managing Existing Management Agents Running on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, or HP-UX Itanium Hosts from OMS on Linux with BP1 or from OMS on Windows with Bundle Patch 1**

### 5.1 Before You Begin

Read the following important notes before proceeding with the installation process:

- If you have configured Enterprise Manager for high availability by deploying one or more additional OMS and using a local Real Application Cluster or Data Guard database for the repository database, use the following patching sequence:
  a. Stop each OMS.
  b. Apply the patch to each OMS home.
  c. Run the post deploy steps.

There is no special consideration when using Data Guard because any changes to the repository that occur as part of the patching exercise are forwarded to the standby database repository as part of normal Data Guard operations.

- If you have configured Enterprise Manager for Disaster Recovery by deploying one or more standby OMS and a standby database (Oracle RAC or single instance) at another site, patching of the standby site should be performed after all patches and plug-in updates have been deployed on the primary site.

Once the primary site patches and updated plug-ins have been deployed, any changes to the repository made due to these updates will be forwarded to the
standby database repository as part of normal Data Guard operations. Therefore, to patch the standby site use the following patching sequence:

a. Apply the patches to the standby OMS Homes without performing the post deploy operations that update the repository.

b. Deploying the updated plug-ins without updating the repository.

5.2 Installing Enterprise Manager Cloud Control 12c on Solaris (SPARC), Solaris (x86-64), or IBM AIX (64-bit)

To install Enterprise Manager Cloud Control 12c on Solaris (SPARC), Solaris (x86-64), or IBM AIX (64-bit) download the binaries from Oracle Technology Network. You can get the 12.1.0.1 installation software from the product DVD or from Oracle Technology Network (OTN) at:


For more information, refer to the Procuring Software section of the Oracle® Enterprise Manager Cloud Control Advanced Installation and Configuration Guide 12c Release 1 (12.1.0.1), which can be found at the following location:

http://docs.oracle.com/cd/E24628_01/install.121/e24089/getstrtd_proc_sw.htm#BACFDBCA

On the download page, select the Solaris (SPARC), or Solaris (x86-64), or IBM AIX (64-bit) (With Bundle Patch 1) release.

The Bundle Patch 1 binaries will be installed by default. Enterprise Manager binaries will have BP1 patches included by default. You do not need to follow the BP1 patch instructions outlined in this document.

The 12.1.0.2 versions of the Oracle Database, Oracle Fusion Middleware, My Oracle Support, and Exadata plug-ins will also be installed by default as part of the Solaris (SPARC), Solaris (x86-64), or IBM AIX (64-bit) installation process. You will have the option of installing additional available plug-ins, such as the Fusion Applications plug-in, during installation. Oracle recommends that you also install all the plug-ins that you think you may need.

When you invoke the Enterprise Manager Cloud Control Installation Wizard, you will be given a choice between two Install Types: Simple and Advanced. To install the additional plug-ins, you must perform an Advanced installation.

For more information, see "Installing with Advanced Configuration" in the Oracle® Enterprise Manager Cloud Control Basic Installation Guide 12c Release 1 (12.1.0.1), available at the following link:

http://docs.oracle.com/cd/E24628_01/install.121/e22624/install_em_exist_db.htm#CHDECIFI

You can also find more installation information in the Oracle® Enterprise Manager Cloud Control Advanced Installation and Configuration Guide 12c Release 1 (12.1.0.1), available at the following location:

http://docs.oracle.com/cd/E24628_01/install.121/e24089/toc.htm
5.3 Applying Bundle Patch 1 on Solaris SPARC, Solaris (x86-64), or IBM AIX

To apply Bundle Patch 1 on Solaris SPARC or 64 bit or AIX, follow these steps:

- **Step 1: Applying Bundle Patch 1 on Oracle Management Service**
- **Step 2: Setting Up Infrastructure for Patching Management Agents**
- **Step 3: Downloading and Deploying Plug-ins on Oracle Management Service**
- **Step 4: Applying Patch 14158696 on Solaris x86-64 Management Agents Only**
- **Step 5: Applying Patches 13242776, 14041708, 13491785 on Management Agents**
- **Step 6: Deploying Plug-ins on Management Agents**
- **Step 7: Upgrading BI Publisher Reports Shipped with the Plug-ins**
- **Step 8: Upgrading ADP and JVM Diagnostics**
- **Step 9: Updating the Existing Agent Image to the Latest Agent Image with Bundle Patch 1**

5.3.1 Step 1: Applying Bundle Patch 1 on Oracle Management Service

To apply Bundle Patch 1 on Solaris (SPARC), Solaris (x86-64), or IBM AIX (64-bit) Oracle Management Service, follow these steps:

1. Ensure that the Oracle Management Service (OMS) on which you are installing the patch or from which you are rolling back the patch is Oracle Management Service 12c Release 1 (12.1.0.1.0).

2. Ensure that you have the latest version of OPatch. If you do not have the latest version, then follow the instructions outlined in the My Oracle Support note 224346.1 available at:
   
   https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=224346.1

3. Ensure that you set the ORACLE_HOME environment variable to OMS core home, which is `<%MIDDLEWARE_HOME%>/oms`.

   Where `<%MIDDLEWARE_HOME%>` refers to the location where Enterprise Manager Cloud Control is installed. For example, `/u01/app/Oracle/Middleware`.

4. Ensure that you set the PATH environment variable to include the location of the unzip executable, and the `<ORACLE_HOME>/bin` and the `<ORACLE_HOME>/OPatch` directories present in the Oracle home of the OMS.

5. Verify the Oracle Inventory because OPatch accesses it to install the patches. To verify the inventory, run the following command. If the command displays some errors, then contact Oracle Support and resolve the issue.

   `$ opatch lsinventory`

6. Check that the Oracle Database, which contains the Management Repository, and its listener are up and running.

7. Download OMS BP1 13242773 from My Oracle Support, and extract its contents to an accessible location, which is referred to as `<PATCH_TOP_DIR>` in this section.

8. Download the JDeveloper and Web Services Manager patches 13470978 and 12321965, respectively, from My Oracle Support. You will be required to apply
these patches after applying the 13242773 BP1 on the OMS. Download the patch 12321965 for Release 11.1.1.5.0 version.

9. Stop the OMS:

   $ emctl stop oms

   To verify that the OMS has stopped, run the following command:

   $ emctl status oms

   **Note:** In a multi-OMS environment, shut down all OMS instances.

10. Stop the following components if running within your Cloud Control domain before applying BP1 or updating any plug-in to the latest release:

   ■ Application Dependency and Performance (ADP) Manager.
   ■ JVM Diagnostics (JVMD) Manager.
   ■ BI Publisher Managed Server named "BIP".

11. Install OMS BP1 13242773 by running the following command:

   $ cd PATCH_TOP_DIR/13242773
   $ opatch apply

   **Note:** In a multi-OMS environment, run this command on all OMS instances. Run opatch apply in parallel for all OMS instances in this step OR complete the BP1 application process on the first OMS, then do the same for the other OMS instances.

12. Select the appropriate script to automate the BP1 postinstallation process, depending on whether you have a single-OMS environment or a multi-OMS environment.

   **Note:** Ensure that you are in the BP1 location PATCH_TOP_DIR. Also, keep the Repository host name, SID, Listener port, and SYSMAN password ready before running the post_deploy.sh script.

   ■ **Single OMS Environment**
   
   In a single-OMS environment, run the following command from the Bundle Patch 1 directory:

   $ PATCH_TOP_DIR/13242773/post_deploy.sh

   The post_deploy.sh script prompts for the following details: SYSMAN password, Enterprise Manager Repository Host, Enterprise Manager Repository Port, Enterprise Manager Repository SID, and the patch location.

   The OMS will be started automatically after running the post_deploy.sh script.

   ■ **Multi-OMS Environment**
   
   In a multi-OMS environment, do the following:
a. Find the Administration Server by running the following command from OMS home:

$ORACLE_HOME/bin/emctl status oms -details

Output similar to the following is displayed:

Oracle Enterprise Manager Cloud Control 12c Release 12.1.0.2.0
Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved
Enter Enterprise Manager Root (SYSMAN) Password :
Console Server Host : myhost.example.com
HTTP Console Port : 7788
HTTPS Console Port : 7799
HTTP Upload Port : 4889
HTTPS Upload Port : 4900
EM Instance Home : /scratch/userid/work/insthome914/em/EMGC_OMS1
OMS Log Directory Location : /scratch/userid/work/insthome914/em/EMGC_OMS1/sysman/log
OMS is not configured with SLB or virtual hostname
Agent Upload is locked.
OMS Console is locked.
Active CA ID: 1
Console URL: https://myhost.example.com:7799/em
Upload URL: https://myhost.example.com:4900/empbs/upload

WLS Domain Information
Domain Name : GCDomain
Admin Server Host: myhost.example.com

Managed Server Information
Managed Server Instance Name: EMGC_OMS1
Managed Server Instance Host: myhost.example.com
WebTier is Down
Oracle Management Server is Down

b. Run the following command on the Primary OMS of a multi-OMS setup:

The Primary OMS is the one co-located with the Admin server.

$ ./PATCH_TOP_DIR/13242773/post_deploy.sh

c. Run the following command on the other OMS environments (non-Primary):

$ ./PATCH_TOP_DIR/13242773/MultiOms_post_deploy.sh

You will be asked to enter the patch location. For example:

/scratch/xxx/PATCH_TOP_DIR/13242773

13. Apply the JDeveloper and Web Services Manager patches 13470978 and 12321965 to OMS.

Note: This must be applied to all of the OMS instances in a multi-OMS environment. Also, there is no specific sequence to apply these two patches.

If you have Enterprise Manager installed using the Enterprise Manager binaries with BP1, then this JDeveloper patch is automatically installed with no further work required.
Applying Bundle Patch 1 on Solaris SPARC, Solaris (x86-64), or IBM AIX

If you are applying the BP1 on your existing Enterprise Manager installation, then you must apply the JDeveloper patch as an extra step. There are a variety of fixes in the patch, including functional issues and Google Chrome and Microsoft Internet Explorer 9 browser support. The JDeveloper patch should be applied after BP1. For instructions, refer to the README of the respective patch.

Apply the patches following the instructions in the README of the corresponding patch. When you search for patch 12321965, you will find two releases of the patch, namely, 11.1.1.5.0 and 11.1.1.4.0. Make sure that you select and apply the 11.1.1.5.0 release of the patch. Verify that you apply both the patches in the oracle_common directory that resides in the Middleware Home (MW_HOME/oracle_common/). Set environment variable ORACLE_HOME to your [MW_HOME]/oracle_common directory before applying patches 13470978 and 12321965 to the OMS.

14. Verify that BP1 was properly installed by running the following command to check that the patch is registered in the inventory:

   $<MIDDLEWARE_HOME>/oms/OPatch/opatch lsinventory

To verify that all the patches are installed on the OMS, run the following commands:

   a. Set the following environment variable on the OMS host:

      setenv ORACLE_HOME <MIDDLEWARE_HOME>/oms

   b. Run the following verification commands to ensure the patch has been applied to the OMS:

      $<MIDDLEWARE_HOME>/oms/OPatch/opatch lspatches -id 13242773 -verify
      $<MIDDLEWARE_HOME>/oms/OPatch/opatch lspatches -oh <MIDDLEWARE_HOME>/oracle_common -id 12321965 -verify
      $<MIDDLEWARE_HOME>/oms/OPatch/opatch lspatches -oh /<MIDDLEWARE_HOME>/oracle_common -id 13470978 –verify

      The results of the commands will show the patch number and its details if present in the OMS.

15. Download OMS BP1 14040891 from My Oracle Support, and extract its contents to an accessible location, which is referred to as <PATCH_TOP_DIR2> in the rest of this section.

16. If the OMS is running, stop it. Otherwise, skip this step.

   $ emctl stop oms

   To verify that the OMS has stopped, run the following command:

   emctl status oms

   Note: In a multi-OMS environment, shut down all OMS instances.

17. Install OMS BP1 14040891:

   $ cd <PATCH_TOP_DIR2>/14040891

   $ opatch napply
Applying Bundle Patch 1 on Solaris SPARC, Solaris (x86-64), or IBM AIX

18. Run the following command:

$ emctl applypatch repos -patchHome <PATCH_TOP_DIR2>/14040891/13653571

If the command succeeds, the following message is displayed:

PATCH APPLICATION HAS SUCCEEDED

19. Run the following command:

$ emctl register oms metadata -service swlib -file $ORACLE_HOME/sysman/metadata/swlib/multioms -core

$ emctl register oms metadata -service procedures -file $ORACLE_HOME/sysman/metadata/procedures/multioms/multiOMS.xml -core

$ emctl register oms metadata -service derivedAssocs -file $ORACLE_HOME/sysman/metadata/derivedAssocs/emSystemAssocRules.xml -core

20. Start the OMS by running the following command:

$ emctl start oms

---

**Note:** In a multi-OMS environment, run this command on all OMS instances. Run `opatch napply` in parallel for all OMS instances in this step OR complete the BP1 application process on the first OMS, then do the same for the other OMS instances.

---

5.3.2 Step 2: Setting Up Infrastructure for Patching Management Agents

Follow the steps outlined in this section for setting up the infrastructure for patching Management Agents:

1. For setting up My Oracle Support Credentials, refer to Section 2.2.1.

2. For setting up infrastructure in Online Mode, refer to Section 2.2.2.
3. For setting up infrastructure in Offline Mode, follow these steps:
   a. Verify that the connection to My Oracle Support is set to "Offline".
      
      From the Setup menu, select Provisioning and Patching, then select Offline Patching.
   b. From the Patching Setup page, select Online and Offline Settings, then select Offline and click Apply.
   c. Log in to another host with internet connectivity, and perform the following steps:
      - Download Management Agent patches 13242776, 14041708, and 13491785, and OPatch patch 6880880 from My Oracle Support.
      - Upload these patches to Software Library.
   d. Go back to your infrastructure in the Offline mode, and perform the following steps:
      a. Download the Management Agent patches by specifying the patch numbers 13242776, 14041708, and 13491785 as comma-separated entries in the Patch Search region of the Patches & Updates page, then click Search.
         Make sure you select the right platform, for example, Solaris SPARC.
      b. Click Search.
      c. Download the patch zip files and the patch metadata files for the patches.
         To download the patch metadata, click Download Patch Metadata, then click Download.
         Click the patch zip file to download the zip file.
   e. Upload the Management Agent patches to the Software Library.
      a. From the Enterprise menu, select Provisioning and Patching, then select Saved Patches.
      b. Click Upload to open the Upload Patches to Software Library page.
      c. On the Upload Patches to Software Library page, in the Basic Information section, do the following:

---

**Note:** Make sure you download both.

---

d. Download the required OPatch patches from My Oracle Support (https://support.oracle.com).

Search for patch "6880880" for the appropriate platform for the Management Agent target. For example, if your target is Linux x86-64, pick platform Linux x86-64.

e. Click Search.

Download the patch for the version 11.1.0.0.0 series only.

f. Download both the patch zip file and the patch metadata.

To download the patch metadata file, click Download Patch Metadata, then click Download.

e. Upload the Management Agent patches to the Software Library.

a. From the Enterprise menu, select Provisioning and Patching, then select Saved Patches.

b. Click Upload to open the Upload Patches to Software Library page.

c. On the Upload Patches to Software Library page, in the Basic Information section, do the following:
Applying Bundle Patch 1 on Solaris SPARC, Solaris (x86-64), or IBM AIX

- From the **Product Family** list, select the product family for which you are uploading the patch. For example, for patches 13242776, 13491785, and 14041708 select **Oracle System Management Products**.

- From the **Product** list, select the product for which you are uploading the patch. For example, for patches 13242776, 13491785, and 14041708 select **Enterprise Manager Base Platform**.

- From the **Select Type of Patch**, select either **Patch** or **Patch Set** depending on the type of patch you are uploading. For example, for patches 13242776, 13491785, and 14041708 select **Patch** from the menu.

d. For patches 13242776, 14041708, and 13491785, select the patch metadata file and patch zip file from the local directory on the system and click **Upload**.

e. Upload patches 13242776, 14041708, and 13491785 by selecting their patch metadata and the patch zip file.

f. Reset the Basic Information attributes as shown.

g. Select the patch metadata and the patch zip file and click **Upload**.

f. To upload OPatch 6880880 to the Software Library, specify the Basic Information attributes.

Select the patch metadata and patch zip file for the Opatch patch 6880880 and upload it. Ensure that you fill in all attributes required in the page:

- **Product Family**: Oracle Systems Management Products
- **Product**: Universal Installer
- **Release**: Choose version as "11.1.0.0.0".
- **Created On**: Use today’s date
- **Description**: Opatch for version 11.1.0.x
- **Platform**: Select the platform for which you downloaded the patch (for example, Solaris SPARC)
- **Language**: Select ‘American English’

g. Click **Upload**.

Upon successful upload, all the patches will be visible in the Saved Patches page.

At the end of this process, all of the Agent patches and the Opatch patch should be listed in the Saved Patches in Software Library page.

**5.3.3 Step 3: Downloading and Deploying Plug-ins on Oracle Management Service**

To download and deploy the plug-ins on the OMS in graphical mode, refer to **Section 2.3.1** and **Section 2.3.2**.

To download the plug-ins in graphical mode, and to deploy them on the OMS, particularly multiple plug-ins at a time, in silent mode, follow these steps:

1. Meet the prerequisites in **Section 2.3.1**. Then, download the plug-ins following Step (1) to Step (6) in **Section 2.3.2**.

2. Log in to EM CLI as follows:

   ```bash
cd $ORACLE_HOME/bin/emcli login -username=sysman
   ```
3. Run the following command:

   $ORACLE_HOME/emcli sync

4. To deploy the plug-ins on the OMS, run the following command:

   emcli deploy_plugin_on_server
   -plugin="plug-in_id":"version"
   [-sys_password="sys_password"]
   [-prereq_check]

   For example,

   emcli deploy_plugin_on_server
   -plugin="oracle.sysman.db:12.1.0.2.0;oracle.sysman.emas:12.1.0.2.0"

5.3.4 Step 4: Applying Patch 14158696 on Solaris x86-64 Management Agents Only

To apply patch 14158696 on Management Agents, refer to Section 2.4.

**Note:** Ensure that you add the patch number 14158696 to the patch plan instead of the patches mentioned in Section 2.4. The instructions outlined in Section 2.4 is specific to Linux, consider that only an example and follow the instructions outlined in the section to apply 14158696 patch.

Do NOT add any other patch to this patch plan. This patch plan must have only this 14158696 patch.

5.3.5 Step 5: Applying Patches 13242776, 14041708, 13491785 on Management Agents

**Note:** If the Management Agents are running on a HP-PA RISC host or a HP-Itanium host, then ensure that you use the latest OPatch version 11.1.0.9.7. To upload the new OPatch 11.1.0.9.7 version to Software Library, perform the following steps:

1. Run the following steps to delete the current OPatch version as follows:
   - Log in to Enterprise Manager Cloud Control.
   - From Enterprise menu, select Provisioning and Patching, and click Saved Patches.
   - Click Remove.

2. To upload OPatch patches to Oracle Software Library, refer to Uploading OPatch Patches to Oracle Software Library.

To apply patches 13242776, 14041708, and 13491785 on Management Agents, refer to Section 2.4.
5.3.6 Step 6: Deploying Plug-ins on Management Agents

For deploying plug-ins on Management Agents, refer to Section 2.5.

5.3.7 Step 7: Upgrading BI Publisher Reports Shipped with the Plug-ins

To upgrade the Oracle Business Intelligence Publisher (BI Publisher) reports that are packaged with the plug-ins, refer to Section 2.6.

5.3.8 Step 8: Upgrading ADP and JVM Diagnostics

To upgrade ADP and JVM Diagnostics, refer to Section 2.7.

5.3.9 Step 9: Updating the Existing Agent Image to the Latest Agent Image with Bundle Patch 1

For updating the existing agent image present on your Oracle Management Service to the latest agent image with Bundle Patch 1, refer to Chapter 3.

5.4 Managing New Management Agents Deployed on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, or HP-UX Itanium Hosts from OMS on Linux with BP1 or from OMS on Windows with Bundle Patch 1

If you are planning to monitor a newly deployed Management Agent on Solaris SPARC, Solaris 64 bit, AIX, HP-UX, or HP-UX Itanium host from Oracle Management Service on Linux (32-bit or 64-bit) with BP1 or Oracle Management Service on Windows with BP1, then follow these steps:

- Step 1: Applying Patch 14040891 on Oracle Management Service
- Step 2: Applying Plug-In Patches on Plug-In Homes Deployed to Oracle Management Service
- Step 3: Downloading and Upgrading Plug-ins to 12.1.0.2 Release
- Step 4: Upgrading ADP and JVM Diagnostics
- Step 5: Updating the Existing Agent Image to the Latest Agent Image with Bundle Patch 1
- Step 6: Deploying Management Agents on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, and HP-UX Itanium

Note: Ensure that you add the patch numbers 13242776, 14041708, and 13491785 to the patch plan instead of the patches mentioned in Section 2.4. The instructions outlined in Section 2.4 is specific to Linux, consider that only an example and follow the instructions outlined in the section to apply these patches.

Note: Upgrade the BI Publisher reports only if BI Publisher was previously installed and configured to work with Oracle Enterprise Manager Cloud Control 12c. If it was not already installed and configured, then this step will automatically occur when BI Publisher is configured at a later time.
5.4.1 Step1: Applying Patch 14040891 on Oracle Management Service

To apply patch 14040891 on Oracle Management Service, follow these steps:

1. Ensure that the Oracle Management Service (OMS) on which you are installing the patch or from which you are rolling back the patch is Oracle Management Service 12c Release 1 (12.1.0.1.0).

2. Ensure that you have the latest version of OPatch. If you do not have the latest version, then follow the instructions outlined in the My Oracle Support note 224346.1 available at:
   https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=224346.1

3. Ensure that you set the ORACLE_HOME environment variable to OMS core home, which is `<%MIDDLEWARE_HOME%>/oms`.
   Where `<%MIDDLEWARE_HOME%>` refers to the location where Enterprise Manager Cloud Control is installed. For example, `/u01/app/Oracle/Middleware`.

4. Ensure that you set the PATH environment variable to include the location of the unzip executable, and the `<ORACLE_HOME>/bin` and the `<ORACLE_HOME>/OPatch` directories present in the Oracle home of the OMS.

5. Verify the Oracle Inventory because OPatch accesses it to install the patches. To verify the inventory, run the following command. If the command displays some errors, then contact Oracle Support and resolve the issue.
   $ opatch lsinventory

6. Check that the Oracle Database, which contains the Management Repository, and its listener are up and running.

7. Stop the OMS:
   $ emctl stop oms
   To verify that the OMS has stopped, run the following command:
   $ emctl status oms

   **Note:** In a multi-OMS environment, shut down all OMS instances.

8. Stop the following components if running within your Cloud Control domain before applying BP1 or updating any plug-in to the latest release:
   - Application Dependency and Performance (ADP) Manager.
   - JVM Diagnostics (JVMD) Manager.
   - BI Publisher Managed Server named "BIP".

9. Download OMS BP1 14040891 from My Oracle Support, and extract its contents to an accessible location, which is referred to as `<PATCH_TOP_DIR2>` in the rest of this section.

10. Install OMS BP1 14040891:
    $ cd `<PATCH_TOP_DIR2>/14040891`
    $ opatch napply
Managing New Management Agents Deployed on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, or HP-UX Itanium Hosts

11. Run the following command:

   `$ emctl applypatch repos -patchHome <PATCH_TOP_DIR2>/14040891/13653571`

12. Run the following command:

   `$ emctl register oms metadata -service swlib -file $ORACLE_HOME/sysman/metadata/swlib/multioms -core`
   `$ emctl register oms metadata -service procedures -file $ORACLE_HOME/sysman/metadata/procedures/multioms/MultiOMS.xml -core`
   `$ emctl register oms metadata -service derivedAssocs -file $ORACLE_HOME/sysman/metadata/derivedAssocs/emSystemAssocRules.xml -core`

13. Start the OMS by running the following command:

   `$ emctl start oms`

5.4.2 Step 2: Applying Plug-In Patches on Plug-In Homes Deployed to Oracle Management Service

The following sections describe the process of applying plug-in patches on plug-in homes deployed to Oracle Management Service:

- Applying Oracle Database Plug-In Patch 14089634
- Applying Oracle Fusion Applications Patch 13719833
- Applying Oracle Fusion Middleware Plug-in Patch 13963029

5.4.2.1 Applying Oracle Database Plug-In Patch 14089634

To apply Oracle Database Plug-in patch 14089634 on your Oracle Management, follow these steps:

1. Shut down the OMS by running the following command:

   `<ORACLE_HOME>/bin emctl stop oms`

   Make sure to shut down all OMS instances in a multi-OMS environment.

2. Set the environment variable PLUGIN_HOME to:

   `<%MIDDLEWARE_HOME%>/plugins/oracle.sysman.db.oms.plugin_12.1.0.2.0`

   For example:

   `setenv PLUGIN_HOME /example/work/midlwre6465/plugins/oracle.sysman.db.oms.plugin_12.1.0.2.0`

3. Maintain a location for storing the contents of the patch ZIP file.

   In the rest of this section, this location (absolute path) is referred to as `PATCH_TOP_DIR`.

---

**Note:** In a multi-OMS environment, run this command on all OMS instances. Run `opatch napply` in parallel for all OMS instances in this step OR complete the BP1 application process on the first OMS, then do the same for the other OMS instances.
4. Run the following command to extract the contents of the patch ZIP file to the location you created in the previous step:
   
   ```
   $ unzip -d PATCH_TOP_DIR p14089634_121010_Generic.zip
   ```

5. Use the following command to navigate to the `PATCH_TOP_DIR/14089634` directory:

   ```
   $ cd PATCH_TOP_DIR/14089634
   ```

6. Run the following command on each OMS instance (in a multi-OMS environment) to apply the patch:

   ```
   $ opatch napply -oh $PLUGIN_HOME
   ```

   The following messages appear on screen:
   - Do you want to proceed? [y\n]: (yes)
   - Oracle Support Email address/User Name: (provide your details or press Enter to continue)
   - Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: (y)

   If the patch is applied successfully, the following message is displayed:
   
   OPatch succeeded

7. Run the following four commands on the first OMS only (you will be prompted for the SYSMAN password):

   If the commands succeed, the following message is displayed:

   Metadata registration successful

   **Note:** In the following commands, `<command prompt>` is `ORACLE_HOME/bin`.

   a. `<command prompt>` emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib -pluginId oracle.sysman.db
   
   b. `<command prompt>` emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/ExtendClusterNG.xml -pluginId oracle.sysman.db
   
   c. `<command prompt>` emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/provsidb.xml -pluginId oracle.sysman.db
   
   d. `<command prompt>` emctl register oms metadata -service preNGProcedures -file $PLUGIN_HOME/metadata/preNGProcedures/RACProvisionWIN.xml -pluginId oracle.sysman.db

8. Start the OMS instance:

   `<ORACLE_HOME>/bin emctl start oms`

### 5.4.2.2 Applying Oracle Fusion Applications Patch 13719833

To apply Oracle Fusion Applications Patch 13719833, refer to Section 4.2.2.3.
5.4.2.3 Applying Oracle Fusion Middleware Plug-in Patch 13963029

To apply Oracle Fusion Middleware Plug-in patch 13963029, follow these steps:

1. Ensure that the Oracle Management Service (OMS) on which you are installing the patch or from which you are rolling back the patch is Oracle Management Service 12c Release 1 (12.1.0.1.0).

2. Ensure that you have the latest version of OPatch. If you do not have the latest version, then follow the instructions outlined in the My Oracle Support note 224346.1 available at:
   https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=224346.1

3. Ensure that you set the ORACLE_HOME environment variable to OMS Core home, which is `<%MIDDLEWARE_HOME%>/oms`.

4. Set the environment variable PLUGIN_HOME to `<%MIDDLEWARE_HOME%>/plugins/oracle.sysman.emas.oms.plugin_12.1.0.2.0`.

5. Ensure that you set the PATH environment variable to include the location of the unzip executable, and the `<ORACLE_HOME>/bin` and the `<ORACLE_HOME>/OPatch` directories present in the Oracle home of the OMS.

6. Verify the Oracle Inventory because OPatch accesses it to install the patches. To verify the inventory, run the following command. If the command displays some errors, then contact Oracle Support and resolve the issue.
   $ opatch lsinventory -oh $PLUGIN_HOME

7. Ensure that you shut down the OMS by running the following command:
   $ emctl stop oms

   **Note:** In case of a multi-OMS environment, shut down all the OMSes.

8. Ensure that the Oracle Database, which contains the Management Repository, and its listener are up and running.

9. Maintain a location for storing the contents of the patch ZIP file. In the rest of the document, this location (absolute path) is referred to as `<PATCH_TOP_DIR>`.

10. Extract the contents of the patch ZIP file to the location you created in Step (1). To do so, run the following command:
    $ unzip -d <PATCH_TOP_DIR> p13963029_121020_Generic.zip

11. Navigate to the `<PATCH_TOP_DIR>/13963029` directory:
    $ cd <PATCH_TOP_DIR>/13963029
12. Install the patch by running the following command:
   On Unix:
   ```bash
   $ opatch napply -oh $PLUGIN_HOME
   ```
   On Windows:
   ```bash
   opatch napply -oh %PLUGIN_HOME%
   ```

13. Register the JobType using the following command:
   Enter SYSMAN Password for each command when prompted.
   ```bash
   $ emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib/coherenceprov -pluginId oracle.sysman.emas
   $ emctl register oms metadata -service swlib -pluginId oracle.sysman.emas -file $PLUGIN_HOME/metadata/swlib
   $ emctl register oms metadata -pluginId oracle.sysman.emas -service procedures -file $PLUGIN_HOME/metadata/procedures/FMWPROV.xml
   $ emctl register oms metadata -pluginId oracle.sysman.emas -service procedures -file $PLUGIN_HOME/metadata/procedures/DomainScaleUp.xml
   $ emctl register oms metadata -pluginId oracle.sysman.emas -service jobTypes -file $PLUGIN_HOME/metadata/jobTypes/CreateFMWBundle.xml
   $ emctl register oms metadata -pluginId oracle.sysman.emas -service jobTypes -file $PLUGIN_HOME/metadata/jobTypes/CreateFMWGoldImage.xml
   $ emctl register oms metadata -service procedures -file $PLUGIN_HOME/metadata/procedures/WholeServerMigration.xml -pluginId oracle.sysman.emas
   $ emctl register oms metadata -service swlib -file $PLUGIN_HOME/metadata/swlib/patch -pluginId oracle.sysman.emas
   ```

14. Start the OMS instance:
   ```bash
   <ORACLE_HOME>/bin emctl start oms
   ```

5.4.3 Step 3: Downloading and Upgrading Plug-ins to 12.1.0.2 Release

You need to obtain the Solaris SPARC, Solaris (x86-64), IBM AIX-specific revisions of the plug-ins using Self Update in either online or offline mode. The plug-ins have been revised are for Database, Fusion Middleware, and Exadata components. The steps are similar to those outlined in Section 2.3.

To view the available revisions for the Oracle Database, Oracle Fusion Middleware, and Oracle Fusion Applications plug-ins, log in to the Cloud Control console and from the Setup menu, select Extensibility, then select Plug-ins.

5.4.4 Step 4: Upgrading ADP and JVM Diagnostics

To upgrade ADP and JVM Diagnostics, refer to Section 2.7.

5.4.5 Step 5: Updating the Existing Agent Image to the Latest Agent Image with Bundle Patch 1

For updating the existing agent image present on your Oracle Management Service to the latest agent image with Bundle Patch 1, refer to Chapter 3.
5.4.6  Step 6: Deploying Management Agents on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, and HP-UX Itanium

For deploying a fresh Management Agent on Solaris SPARC, Solaris 64 bit, AIX, HP-UX, or HP-UX Itanium, refer to "Installation Procedure" section in the Oracle® Enterprise Manager Cloud Control Basic Installation Guide 12c Release 1 (12.1.0.1), available at the following link: http://docs.oracle.com/cd/E24628_01/install.121/e22624/install_agent.htm#BABIHIAG

5.5  Managing Existing Management Agents Running on Solaris SPARC, Solaris (x86-64), IBM AIX, HP-UX, or HP-UX Itanium Hosts from OMS on Linux with BP1 or from OMS on Windows with Bundle Patch 1

If you are planning to monitor existing Management Agents running on Solaris SPARC, Solaris 64 bit, AIX, HP-UX, or HP-UX Itanium hosts from Oracle Management Service on Linux (32-bit or 64-bit) with BP1 or Oracle Management Service on Windows with BP1, then follow these steps:

■ Step 1: Applying Patch 14040891 on Oracle Management Service
■ Step 2: Applying Plug-In Patches on Plug-In Homes Deployed to Oracle Management Service
■ Step 3: Setting Up Infrastructure for Patching Management Agents Before Upgrading Plug-ins
■ Step 4: Applying Patch 14158696 on Solaris x86-64 Management Agents Only
■ Step 5: Applying Patches 13242776, 14041708, 13491785 on Management Agents
■ Step 6: Upgrading ADP and JVM Diagnostics
■ Step 7: Deploying Plug-ins on Management Agents

5.5.1  Step 1: Applying Patch 14040891 on Oracle Management Service

For information about applying patch 14040891 on Oracle Management Service, refer to Section 5.3.1.

5.5.2  Step 2: Applying Plug-In Patches on Plug-In Homes Deployed to Oracle Management Service

For information about applying Plug-in patches on Plug-in homes deployed to Oracle Management service, refer to Section 5.4.2.

5.5.3  Step 3: Setting Up Infrastructure for Patching Management Agents Before Upgrading Plug-ins

For information about setting up infrastructure for patching Management Agents before upgrading plug-ins, refer to Section 5.3.2.

5.5.4  Step 4: Applying Patch 14158696 on Solaris x86-64 Management Agents Only

To apply patch 14158696 on Management Agents, refer to Section 2.4.
Step 5: Applying Patches 13242776, 14041708, 13491785 on Management Agents

Note: Ensure that you add the patch number 14158696 to the patch plan instead of the patches mentioned in Section 2.4. The instructions outlined in Section 2.4 is specific to Linux, consider that only an example and follow the instructions outlined in the section to apply 14158696 patch.

Do NOT add any other patch to this patch plan. This patch plan must have only this 14158696 patch.

5.5.6 Step 6: Upgrading ADP and JVM Diagnostics

To upgrade ADP and JVM Diagnostics, refer to Section 2.7.

5.5.7 Step 7: Deploying Plug-ins on Management Agents

For deploying plug-ins on Management Agents, refer to Section 2.5.
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