Enterprise Manager Cloud Control
12c Release 4 (12.1.0.4)

Covers:

a) Install
b) Upgrade
c) Agent Deployment
d) Plug-in Deployment
e) OMS Patching

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Program Agenda

1. EM 12.1.0.4 Overview
2. EM Deployment – What's New
3. EM Upgrade – What’s New
4. Agent Deployment – What’s New
5. Plug-in Deployment – What's New
6. EM OMS Patching
EM 12.1.0.4

Overview

• EM 12.1.0.4 will allow you:
  – Perform fresh Install of EM 12.1.0.4
  – Upgrade to EM 12.1.0.4 from (10.2.0.5, 11.1,12.1.0.2, 12.1.0.3)
    • Upgrade Not supported from 12.1.0.1 (with BP1) for OMS and Agent

• Versions supported: WLS -10.3.6 , JDK - 1.6.0.43.0/1.7,JRF - 11.1.1.7.0 , Webtier - 11.1.1.7.0

• OMS to Agent versions compatibility
Program Agenda with Highlight

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EM Deployment
What's New

R3
Download BIP (10GB) → Install BIP → Configure BIP → Run WLST script to assign BIP Roles to EM users

R4
Configure BIP → Run EMCLI verb to assign BIP Roles to EM users

Recurring Process

Significant reduction in setup time and footprint!

- BI Publisher bits 11.1.0.7 integrated with EM Installer with reduced footprint: 250mb Vs 10GB
- EMCTL option to start/stop BIP along with OMS
- High Availability - Add OMS procedure includes BIP configuration (Extend BIP cluster, configure ports, configure BIGIP, etc)
EM Deployment

What's New

- EM 12.1.0.4 installer applies patch 14482558, patch 13349651, patch 16080294, patch 16888501 on the Oracle WebLogic Server 10.3.6 that gets installed with EM 12.1.0.4 installer Recommended!
  - If you are using an existing WLS 10.3.6 then user has to make sure that you apply these patches manually (using wls smart utility) before starting the EM install.
Things to watch out for
Fresh Install of EM 12.1.0.4

(CRITICAL MANDATORY STEP) Make sure you apply the following patches on the database. If you do not apply these patches, you will run into install failures.

- If you use Oracle Database 11g Release 2 (11.2.0.1):
  - For Unix platforms, apply patch 12419378 (Patch Set Update 6). Then apply patch 9260085.

- If you use Oracle Database 11g Release 1 (11.1.0.7):
  - For Unix platforms, apply patch 17082366 (Patch Set Update 17). Then apply patch 18074855.
  - For Microsoft Windows platforms, apply patch 17363760 (Patch 54). Then apply patch 9012146.
EM Deployment

What's New

EM software only VM Templates to deploy EM on Oracle Database Appliance (ODA)

- Uses ODA database to house the EM repository
- Out of box multi OMS setup
- How to setup Oracle Enterprise Manager Solution-in-a-Box on Oracle Database Appliance (Doc ID 1673246.1)
- Use Oracle provided Oracle EM Software Only Template named as: Oracle VM Template for Deploying Oracle Enterprise Manager Cloud Control 12c Release 3 (12.1.0.3) plug-in update 1 on ODA to create a virtual machine to host OMS and do not use any other Oracle Enterprise Manager Cloud Control VM templates.
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EM Upgrade
Upgrade paths to EM 12.1.0.4

• Following are the upgrade paths supported:
  a) 10.2.0.5 / 11.1.0.1 → 12.1.0.4
  b) 12.1.0.2 /12.1.0.3 → 12.1.0.4
  c) 12.1.0.1 (with bp1 patches) → 12.1.0.2 /12.1.0.3 → 12.1.0.4

• Use case: While doing OMS upgrade, If you have any agents on 12.1.0.1 BP1 then installer throw an error

The following Management Agents, which communicate with the OMS instances you are trying to upgrade, are not compatible for upgrade. Upgrade them to the OMS version first, and then try again.
EM Upgrade

12.1.0.2 / 12.1.0.3 → 12.1.0.4

• Upgrading from 12.1.0.2 / 12.1.0.3 to 12.1.0.4 is an EM upgrade with downtime

• Upgrade options supported: 1-System only

• High level steps:

  Step 1: Bring down your 12.1.0.2 / 12.1.0.3 OMS and invoke EM 12.1.0.4 runInstaller

  Step 2: Upgrade your OMS and repository (Use 1-system option in Installer)

  Step 3: You will get Agent upgrade console (AUC) in the EM 12.1.0.4 console

  Step 4: Use AUC to upgrade your 12.1.0.2, 12.1.0.3 agents to 12.1.0.4
How to reduce the downtime?

12.1.0.2 /12.1.0.3 → 12.1.0.4

**EM Upgrade - runInstaller (OUI)**

**Step 1:** Bring down your 12.1.0.2 /12.1.0.3 OMS and invoke EM 12.1.0.4 runInstaller

**Step 2:** Upgrade your OMS and repository (Use 1-system option in Installer)
- Copying the bits and creating new homes
- Start the configuration assistants

**Step 3:** You will get Agent upgrade console (AUC) in the EM 12.1.0.4 console

**Step 4:** Use AUC to upgrade your 12.1.0.2 /12.1.0.3 agents to 12.1.0.4

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**EM Upgrade - Software only Install**

**Step 1:** Invoke EM 12.1.0.4 runInstaller and choose option: Install software only
- Copying the bits and creating new homes

**Step 2:** Bring down your 12.1.0.2 /12.1.0.3 OMS. Start the configuration and Upgrade your OMS and repository (Use 1-system option in Installer)

Run $<MIDDLEWARE_HOME>/oms/sysman/install/ConfigureGC.sh

**Step 3:** You will get Agent upgrade console (AUC) in the EM 12.1.0.4 console

**Step 4:** Use AUC to upgrade your 12.1.0.2 /12.1.0.3 agents to 12.1.0.4

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**Downtime reduced**
Things to watch out for
12.1.0.2 /12.1.0.3 → 12.1.0.4

(CRITICAL MANDATORY STEP) If you do not apply these patches, you will run into upgrade failures.

• For Oracle Database 11 Release 1 (11.1.0.7)
  – On Unix platforms, apply patch 17082366 (Patch Set Update 17). Then apply patch 9577583 and patch 8405205.
  – On Microsoft Windows (32 bit and 64 bit) platforms, apply patch 17363760 (Patch 54).

• For Oracle Database 11g Release 2 (11.2.0.1)
  – On Unix platforms, apply patch 12419378 (Patch Set Update 6).
  – On Microsoft Windows (32 bit and 64 bit) platforms, apply patch 13423278 (Patch 16).

• For Oracle Database 11g Release 2 (11.2.0.2)
  – On Unix platforms, apply patch 11061801 and patch 9748749.
  – On Microsoft Windows (32 bit) platforms, apply patch 11061801 and patch 12429530. On Microsoft Windows (64-bit) platforms, apply patch 11061801 and patch 12429531.

• For Oracle Database 11g Release 2 (11.2.0.3), 10g Release 2 (10.2.0.5) - On Unix as well as Microsoft Windows platforms, apply the patch 11061801.

Refer Upgrade Guide: http://docs.oracle.com/cd/E24628_01/index.htm
Upgrade Recommendations

12.1.0.2 /12.1.0.3 \(\rightarrow\) 12.1.0.4

1. You perform Software only Upgrade of EM to reduce the downtime. Follow instructions from upgrade guide-
   http://docs.oracle.com/html/E22625_25/upgrading_12101_PS1_oms.htm#CJAFCHGG

2. Go through the Upgrade checklist: MOS:1682332.1- EM 12c R4: Checklist for Upgrading Enterprise Manager Cloud Control from 12.1.0.2 / 12.1.0.3 to 12.1.0.4

3. Make use of Auto update feature in EM installer. This feature will download few patches and will save you from running into know issues. To know more about this: http://docs.oracle.com/html/E24089_27/getstrtd_things_to_know.htm#BACBGCDA

4. Apply the OMS 12.1.0.4 Bundle patch once you are done with your upgrade. Refer to MOS note for the latest patches doc ID 1900943.1 Output of below command will show plug-ins version/revisions deployed on OMSes, based on the output you can decide what OMS plug-in patches you need to apply : `<OMS_HOME>/bin>emcli list_plugins_on_server`

Follow the whitepaper to reduce the OMS patching downtime - http://www.oracle.com/technetwork/oem/install-upgrade/index.html

5. Apply Agent Bundle patches along with agent upgrades to reduce the downtime and ease the agent lifecycle operations. Refer MOS note for latest agent bundle patches : Doc ID 1901185.1. You can place the agent patches in the OMS 12.1.0.4 home and then after that point, any agent install or upgrades will pick the patches from that location and you will get patches 12.1.0.4 agents. Placing the patches under the 12.1.0.4 OMS is one time activity and you can place both generic or platform specific patches. Follow the instructions:
   http://docs.oracle.com/cd/E24628_01/install.121/e24089/appdx_agent_patching.htm#BCGFBFHA

6. Post Upgrade - EM 12c R4: Custom Roles missing after Upgrade (Doc ID 1905392.1)
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Agent Deployment – What’s New

• Alternate for cygwin requirement : PSExec software
• Time taken to deploy PSExec software <2 min
• Requirement : Need a staging Windows server
• Tested with 12.1.0.3 /12.1.0.4 OMS
• Script to deploy agents using PSExec (agentDeployPsExec.bat) available: MOS 1636851.1
• Instructions outlined in Install guide
• Support response file
Agent Deployment – What’s New

Alternate to Cygwin software - PsExec for windows agent deployment

- Need windows staging server for non-windows OMS to deploy PsExec *(One time activity)*
- PsExec not required on target windows host
- Get agent bits on windows staging server through emcli *(emcli get_agentimage)* *(One time activity)*
  - EMCLI is configured by default on OMS host
- To deploy agents execute agentDeployPsExec.bat with rsp file from staging server
- Allows agent deployment on multiple hosts
- Time taken to deploy PsExec + agent deployment < Cygwin setup + agent deployment
Agent Deployment – What’s New

Alternate to Cygwin software - PsExec for windows agent deployment

• Usecase A : Non Windows OMS to deploy agents on windows target
  – Windows staging server can be a test host OR any target windows host
  – Psexec is required only on staging server

• Usecase B : Windows OMS to deploy agents on windows target
  – Windows staging server can be OMS host OR any target windows host
  – Psexec is required only on staging server
Agent Deployment – What’s New

Deploy the agent on Windows target host by running the command from the OMS host machine:

C:/<location of the script>/agentDeployPsExec.bat PROPERTIES_FILE=<absolute location of the rsp file>
Example: C:/stage> agentDeployPsExec.bat PROPERTIES_FILE=C:\stage\input.txt
Agent Deployment – What’s New

• Ability to customize /tmp directory location while deploying agent
• Platform mismatch validation when user selects a wrong platform
Agent Deployment – What’s New

- Up front error for missing plug-ins or software library issues
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EM 12.1.0.4 Plug-in Deployment – What’s new

- Multiple Plug-in deployment on OMS from Plug-in Manager UI to reduce number of OMS bounces
- Identifies Plug-ins that require an OMS restart
- Integrated with named credentials
- Detailed job output
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EM OMS Patching – What's New

- Reduction in multi-OMS patching steps
- Dynamically generate bash scripts (one per OMS)
  - Number of steps: 1 (opatchauto) + n scripts (n is the no of OMSes)
- Resume on failure: rectify the cause of failure and run the script to resume from the failure point
- Bundled System patch: Single patch for multiple sub-patch for OMS and Plug-in

OPatchauto version : 11.1.0.10.4
OUI version : 11.1.0.12.0
Running from : /scratch/hkumars/oms_install_dir/middleware/oms

OPatchauto log file:
Configuration Validation: Success

WARNING: OPatchauto cannot run patching steps in multi-OMS environment.
Please perform the following steps to complete patching operations.

1. Please copy the script
   "/scratch/hkumars/oms_install_dir/middleware/oms/.opatchauto_patch_storage/oms_session/scripts_2014-05-02_11-05-17/run_script#1_on_host_slc07jif_us_oracle_com_as_user_hkumars.sh" to "slc07jif.us.oracle.com" and execute the script.
2. Please execute the script
   "/scratch/hkumars/oms_install_dir/middleware/oms/.opatchauto_patch_storage/oms_session/scripts_2014-05-02_11-05-17/run_script#2_on_host_slc06xlv_us_oracle_com_as_user_hkumars.sh" on local host.

The following warnings have occurred during OPatchauto execution:
1) OPatchauto cannot run patching steps in multi-OMS environment.
Example: Apply patch 1111115 on 2node OMSes (dummy patch)

Note: This patch has no repository update

12.1.0.3

• Shutdown your OMSes
• Run command: $ORACLE_HOME/Opatch/optachauto apply
• Run a series of 8 sequence steps on 2 OMSes
  – Based on the patch, you are required to run sqls on repository DB with sysman password

Total Steps: Opatchauto apply + 8

12.1.0.4

• Run command: $ORACLE_HOME/Opatch/optachauto apply
  – OMSes are up and running
  – Generates a script per OMS that includes all the sub steps (host name, username embedded in name of the script)
  – Script will have repository (MRS, SQL) update steps
  – Just one script will do binary + deployment, will require sysman password
• Stop the Primary OMS, run the script. Stop the Second OMS and run the script
  – You can also run this script in parallel to save time

Total Steps: Opatchauto apply + 2(script execution)
In this example failure has happened because of incorrect password, So when User re-runs the script by providing right passwords, script is executed successfully by skipping all the earlier executed steps and continuing from the failure point.
EM OMS Patching – What's New

• New master log file creation

```
[hkumars@slc06xlv oms]$ /scratch/hkumars/oms_install_dir/middleware/oms/.opatchauto_patch_storage/oms_session/scripts_2014-05-02_11-05-17/run_script#2 on host slc06xlv.us.oracle.com as user hkumars.sh
```

Please provide credential for OMS repository SYSMAN user:

```
Command to execute (Step 2): /scratch/hkumars/oms_install_dir/middleware/oms/OPatch/opatchauto checkApplicable -ph
/net/adc2100679/scratch/opack_system_patch/ps2Convertedps3/targetPatchingImplRegistration/1111118 -oh 
/scratch/hkumars/oms_install_dir/middleware/oms -invPtrLoc /scratch/hkumars/oms_install_dir/middleware/oms/oraInst.loc
OPatch Automation Tool
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```
EM OMS Patching – What's New

Whitepaper : Reducing Downtime While Patching Multi-OMS Environments

Documentation

- Install and Upgrade guide are single source of truth
- EM 12.1.0.4 Install and Upgrade guide
  http://docs.oracle.com/cd/E24628_01/index.htm
- EM 12.1.0.4 Install and Upgrade collateral page(PPT, Recorded demo, Whitepapers) on OTN:
- MOS:1682332.1- EM 12c R4: Checklist for Upgrading Enterprise Manager Cloud Control from 12.1.0.2 / 12.1.0.3 to 12.1.0.4