Oracle Enterprise Manager Cloud Control 12c

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ORACLE
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Topics

- Enterprise Manager 12.1 Binaries Structure.
- New install of Enterprise Manager 12.1
- Types of installation method.
- Pre-requisites of Enterprise Manager 12.1 Install
- Step by Step process of Install on Linux x86_64
- Post install verification
- Log Files
- New Features
- Upgrade Paths
- Documentation

Enterprise Manager 12.1 Binaries Download.

- Binaries can be downloaded from www.oracle.com
- Downloads -> Enterprise Management -> Enterprise Manager -> Enterprise Manager Cloud Control 12c
- Click - for Linux x86-64 (64-bit)
- Download both files shown in following screenshot

Enterprise Manager Cloud Control 12c Release 1 (12.1.0.1) for Linux x86-64 New!

Download the complete files

em12_linux64_disk1of2.zip (2,561,176,217 bytes) (cksum - 3191988111)

em12_linux64_disk2of2.zip (3,057,842,914 bytes) (cksum - 4262173197)

Directions

1. All files are in the .zip format. There is an unzip utility for this platform here if you need one
2. Download all the zip files and unzip them into a same directory.
3. Installation guides and general Enterprise Manager documentation can be found here.

- After running checksum, unzip both files in same directory

Enterprise Manager 12.1 Binaries Structure

- Enterprise Manager 12c binaries are bigger than 11g

- Verify binaries are of correct platform by looking at file <Software_Location>/stage/shiphomeproperties.xml

- Enterprise Manager 12.1 binaries comes with WLS (10.3.5) and JDK(1.6 v24)

Enterprise Manager 12.1 Install

- Installer has much lesser no. of screens and needs lesser inputs than earlier releases.

	EM 12c 12.1	EM 11g 11.1	EM 10g 10.2.0.1+10.2.0.5
No. of Installer Screens	6	13	21
No. of Installer Inputs	12	30	36

- JDK, Weblogic & EM 12.1 are installed by single installer
- It's a full release and offers simple and adv. configuration
- Includes more plugins than earlier releases including exadata plugins

EM 12.1 Installer Enhancements

- Ability to auto fix for repository pre-requisite failure

- We can browse log files from Installer

- OMS 12.1 supports Oracle Management Agents at 12.1 Earlier agents are not supported.

- Installer installs WLS (10.3.5) and JDK along with OMS, Agent and Repository (in existing database)

- Software only install can be done with Graphical Installer

EM 12.1 Hardware & Software Requirements

- 12.1 needs more resources than 11.1 as shown below.

	12.1	12.1	11.1	11.1
OMS	4GB RAM	7GB Hard Disk	3GB RAM	1GB HDD + 6 GB WLS home
Agent	512 MB RAM	1GB Hard Disk	512 MB RAM	850 MB Hard Disk
Repository	2GB RAM	50GB HDD	2GB RAM	50GB HDD

- For more details look at chapter 2 in following document:

http://download.oracle.com/docs/cd/E24628_01/install.121/e22624.pdf

EM 12.1 Pre-requisites

- Check you are using a certified operating system on the host where you are going to install EM 12.1

- Make sure the existing database that you will use to host the repository for EM 12.1 is a certified database. Min. Certified Database is 10.2.0.5

- To check certification matrix do:

1. Log in to My Oracle Support, click the Certifications tab.
2. On the Certifications page, in the Certification Search area, from the Product list, select EM Cloud Control.
3. From the Release list, select 12.1.0.1.0, and click Search.

EM 12.1 Pre-requisites .....contd.

- Generally installed as user Oracle, make sure it is part of group oinstall, which owns Oracle Inventory

- Before starting install unset all oracle related environment variables like ORACLE_HOME,ORACLE_SID etc.

- Set unmask to 022 in the shell where you invoke runInstaller

- If you have multiple IP addresses on the host where you are installing, then hostname is derived from ORACLE_HOSTNAME variable that is passed to the runInstaller while invoking it.

  For example:

  ./runInstaller ORACLE_HOSTNAME=restart.rac.meditate.com

EM 12.1 Pre-requisites .....contd.

Oracle Enterprise Manager Cloud Control 12c Installation - Step 3 of 8

Prerequisite Checks

ORACLE **Enterprise Manager** Cloud Control 12c

- My Oracle Support Details
- Software Updates
- **Prerequisite Checks**
- Install Types
- Configuration Details
- Review
- Install Progress
- Finish

Prerequisite checks verify that your environment meets all minimum requirements for installing and configuring your selected product

Rerun | Ignore

Prerequisite Name	Status
Checking if Oracle software certified on the current O/S...	Succeeded
Checking for required packages installed on the system	Succeeded
Checking whether required GLIBC installed on the system	Succeeded
Checking for sufficient diskspace in TEMP location...	Succeeded
Checking for sufficient disk space in Inventory location...	Succeeded
Checking whether the software is compatible for current O/S...	Succeeded
Checking TimeZone settings...	Succeeded
Checking for sufficient physical memory...	Succeeded
Checking for sufficient swap space...	Succeeded
Checking for required ulimit value...	Succeeded
Checking for the Hostname...	Succeeded
Checking for LD_ASSUME_KERNEL environment variable...	Succeeded

```
Expected result: should be a valid Host Name.
Actual Result: restart.rac.meditate.com
Check complete. The overall result of this check is: Passed

Checking for LD_ASSUME_KERNEL environment variable...
Description:
Check for LD_ASSUME_KERNEL

Expected result: LD_ASSUME_KERNEL environment variable is not set to 2.4.19
Actual Result: Variable Not set
Check complete. The overall result of this check is: Passed
```

Help | Installed Products | < Back | Next > | Install | Cancel

EM 12.1 Pre-requisites .....contd.

System Hardware and Software pre-requisites	EM 12.1	EM 11g
Checking if Oracle software certified on the current O/S	X	X
Checking for required packages installed on the system	X	X
Checking whether required GLIBC installed on the system	X	X
Checking for sufficient diskspace in TEMP location	X	X
Checking for sufficient diskspace in Inventory location	X	X
Checking whether the software is compatible for current O/S	X	X
Checking for TZ region	X	-
Checking for sufficient physical memory	X	X
Checking for sufficient swap space	X	-
Checking for required ulimit value	X	X
Checking for the Hostname	X	X
Checking for LD_ASSUME_KERNEL environment variable	X	-

EM 12.1 Pre-requisites .....related to WLS

- Supported version of WLS is only 10.3.5

- Though EM 12.1 installer installs WLS 10.3.5 but you can also use the existing WLS 10.3.5 install for GC domain

- EM 12.1 install user and Existing WLS install user should be same

- EM 12.1 supports only Typical WLS installs

EM 12.1 Pre-requisites .....related to WLS

- EM 12.1 and Oracle SOA Suite cannot co-exist because the ORACLE_COMMON property is used by both the Enterprise Manager Administration Server and the SOA Suite Administration Server. So, don`t install Cloud Control on an Oracle WebLogic Server instance that already has Oracle SOA Suite 11.1.1.2.0 installed.

- WLS 10.3.5 needs no patch on top of it.

- JDK 1.6 v24 is installed by the Cloud Control Installer

EM 12.1 Installation Types ..... Simple Install

Simple Installation

- Installs with typical, default configuration

- Prompted to enter only the administrator password and the database connection details.

- Administrator password is used as a common password for SYSMAN user account, WebLogic user account, node manager user account, and also for authenticating new Oracle Management Agents that join the Enterprise Manager system

EM 12.1 Installation Types .....Advanced Install

Advanced Installation

- Advanced install is more flexible

- Prompted to enter WebLogic Server details, database connection details, data file locations for tablespaces, a password for creating the SYSMAN user account.

- Also customize ports according to your environment.

Installation Methods

Graphical and Silent

- Silent

Use response file locations:

- In 11g we had
  <Software_Location>/response/em_using_existing_db.rsp
- In 12.1 we have
  <Software_Location>/Disk1/response/new_install.rsp

- Software only install in graphical and silent mode is also available

Install OEM Cloud Control 12.1.....Install Demo

Oracle Demo On Simple Install of OEM Cloud Control 12c.

https://apex.oracle.com/pls/apex/f?p=44785:24:3098601691451 02::NO:24:P24_CONTENT_ID,P24_PREV_PAGE:5789,2

- Screen shots and steps for Advanced Install:

http://gurpartapblog.blogspot.com/search?updated-min=2011-01-01T00%3A00%3A00-08%3A00&updated-max=2012-01-01T00%3A00%3A00-08%3A00&max-results=10

Binaries Structure

Installs following components in the middleware home you enter in the installation wizard:

- Java Development Kit (JDK) 1.6 v24
- Oracle WebLogic Server 11g Release 1 (10.3.5)
- Oracle Management Service 12c Release 1 (12.1.0.1)
- Oracle Management Agent 12c Release 1 (12.1.0.1)
- Oracle JRF 11g Release (11.1.1.4.0), which includes oracle_common directory
- Oracle Web Tier 11g Release (11.1.1.4.0), which includes Oracle_WT directory
- Oracle Management Plug-Ins

Binaries Structure.....contd

- Creates an Oracle WebLogic domain called GCDomain. For this WebLogic Domain, a default user account, weblogic, is used as the administrative user

- Creates a Node Manager user account called nodemanager. A Node Manager enables you to start, shut down, or restart an Oracle WebLogic Server instance remotely, is recommended for applications with high availability

- Configures an Oracle Management Service Instance Base location (gc_inst) in the Oracle Middleware Home (middleware home), for storing all configuration

details related to Oracle Management Service 12c.

Binaries Structure.....contd

```
<middleware_home>
|_____wlserver_10.3
|_____jdk16
|_____oms
|_____plugins
      |_____oracle.sysman.db.oms.plugin_12.1.0.1.0
      |_____oracle.sysman.emas.oms.plugin_12.1.0.1.0
      |_____oracle.sysman.mos.oms.plugin_12.1.0.1.0
|_____agent
      |_____plugins
      |_____oracle.sysman.db.agent.plugin_12.1.0.1.0
      |_____oracle.sysman.db.discovery.plugin_12.1.0.1.0
      |_____oracle.sysman.emas.agent.plugin_12.1.0.1.0
      |_____oracle.sysman.emas.discovery.plugin_12.1.0.1.0
      |_core
            |_____12.1.0.1.0
      |_____agent_inst
      |_____sbin
      |_____agentimage.properties
|_____gc_inst
|_____Oracle_WT
|_____oracle_common
|_____utils
|_____logs
|_____modules
|_____user_project
|_____ocm.rsp
|_____registry.dat
|_____domain-registry.xml
|_____registry.xml
```

OMS_INSTANCE_HOME	Contains configuration files for OMS home
OMS_INSTANCE_HOME/bin	Contains commands used to control the components of the Cloud Control installation.
OMS_INSTANCE_HOME/sysman	Has system management files associated with this Cloud Control installation.
OMS_INSTANCE_HOME/sysman/config	Contains Management Service configuration files.
ORACLE_HOME/logs	Contains logfiles.

- OMS and Agent entries are found in */etc/oragchomelist instead of /etc/oratab*

12.1 EM Post Install.....Verify Installation

- Navigate to the Oracle home of the OMS and run the following command to see a message that confirms that OMS is up and running.
$<ORACLE_HOME>/bin/emctl status oms

- Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that the Management Agent is up and running.
$<ORACLE_HOME>/bin/emctl status agent

- Login to the Grid control console through a browser

- Make sure that all the targets are showing up

12.1 EM Post Install.....Log Files

Installation Logs

$OMS_HOME/cfgtoollogs/oui/installActions<timestamp>.log

oraInventory/logs/installActions<timestamp>.log

OMS Config logs files

<OMS_ORACLE_HOME>/cfgtoollogs/omsca/*.*

<ORACLE_HOME>/cfgtoollogs/cfgfw

New Features

12.1 EM New Features .....DB Monitoring

Compare Period ADDM

- Pre-requisite:

1. Deploy PL/SQL packages (One time activity)
2. Use Compare period ADDM to see if the change is impacting database

- Database Home Page -> Performance -> AWR -> Compare Period ADDM -> supply begin time & end time of comparison period and base period (where system was fine)

Hit RUN.

- Shows two periods side by side.

12.1 EM New Features .....DB Monitoring

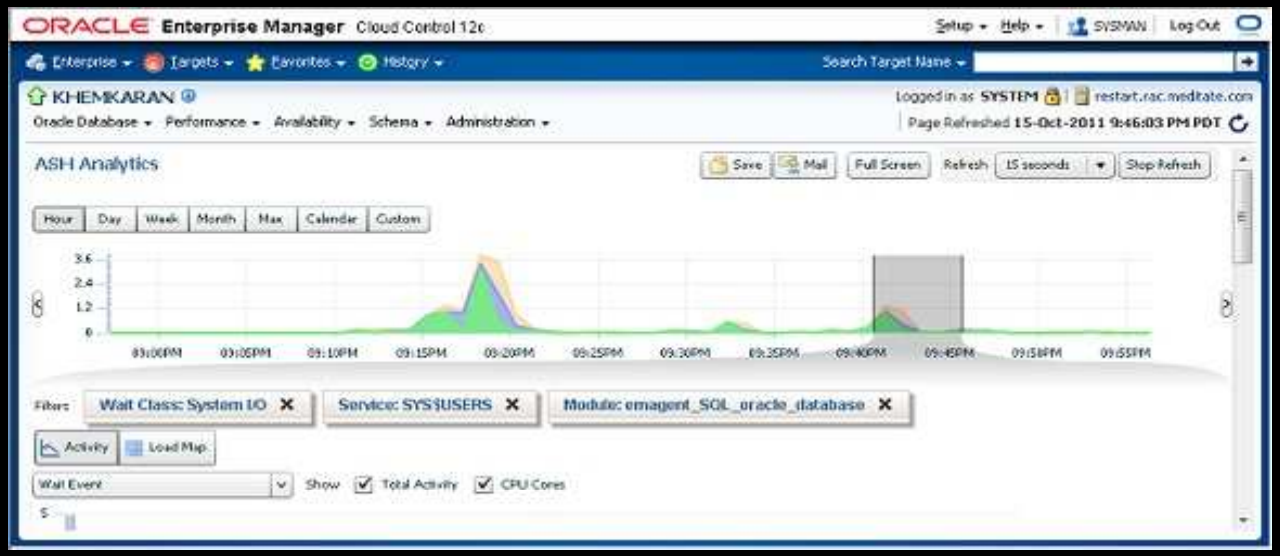
- 100% shows that the sql load is matching and we are comparing apples to apples.
- Shows report side by side.

12.1 EM New Features .....Ash Analytics

Active Session History (ASH) Analytics

- In previous releases called Top Activities.
- Targets -> databases -> DB of concern -> Performance -> ASH Analytics
- High level of monitoring period, by default last hour but you can go back in time with slider. Create filters, order by wait events, sessions, etc.
- Now we can dig more and with better graphics.

12.1 EM New Features .....Ash Analytics



- Added features with better graphics

- Here you can move slider around and create filters as tabs shown here

12.1 EM New Features .....TDM Operations

Deploy packages and functions to databases to perform Test Database Management Operations

Application Data Models (ADM)

Data Subsetting

Data Masking

12.1 EM New Features .....TDM Operations

Enterprise -> Job -> Activity -> Deploy test data management package -> Hit GO

General Tab -

Specify name of the job and select the specified database

Parameters –

Select application Type -> like Custom Application

Credentials –

Select named credentials and Submit the Job

12.1 EM New Features .....Create ADM

- Application data Models (ADM) are used to identify the relationships between schema objects and define sensitive columns.

- This can be used for data subsetting and data masking.
- Enterprise Menu-> Quality Management -> Data Discovery and Modeling
- Hit create -> Enter name and description and select Database
- Hit Continue -> select named credentials -> hit login and select schemas.
- Hit Continue and Submit

12.1 EM New Features .....Data Subsetting

Usage

- Provide subset of data to developers for testing in development environment to reduce infrastructure and storage cost

Pre-requisite

-Discover application relationship of data using application data models (ADM).

Execution

- Feed ADM to EM with few parameters and submit job
- Subset data is ready

12.1 EM New Features....Out of Place Patching

- On shared ORACLE_HOME upgrade the database that you want and has outage
- Provides more flexibility and lesser down time and with GUI
- Connects to Oracle Support and check if there are any conflicts
- Clones oracle home and patch it with no downtime.
- EM takes care of Blackouts and upgrades properties of targets in Grid Control.
- While it upgrades database during downtime, you can see the log of upgrade in GUI

Enterprise Manager 12c.....Upgrade Paths

Upgrade Paths

12.1 EM Cloud Control.....Upgrade Paths

1 - System Upgrade Approach:

- This approach enables you to upgrade to Enterprise Manager Cloud Control on the same host where your earlier release of Enterprise Manager is running.

- This approach also upgrades the Oracle Management Repository (Management Repository) in the existing database.

- Since the upgrade happens on the same host, there is a reasonable downtime involved.

12.1 EM Cloud Control.....Upgrade Paths

2-System Upgrade Approach:

- This approach enables you to install Enterprise Manager Cloud Control on a host that is different from the host where your existing Enterprise Manager system is running.
- This approach does not upgrade the Management Repository in the existing database, but upgrades the one in the backed up database, thus enabling two Enterprise Manager systems to exist.
- Since a new Enterprise Manager system coexists with the old one, there is no or near zero downtime involved.

12.1 EM Cloud Control.....Upgrade Paths

1-System Upgrade Approach on a Different Host

- This approach enables you to install Enterprise Manager Cloud Control on a host different from where the existing Enterprise Manager is running.

- This approach is similar to the 2-system upgrade approach, but unlike the 2-system upgrade approach, this approach upgrades the Management Repository in the existing database itself.

- Since only one Enterprise Manager system exists at any point, there is a reasonable downtime involved.

Enterprise Manager 12c.....Documentation

Documentation

12.1 EM Cloud Control.....Documentation

- Install Guide
http://download.oracle.com/docs/cd/E24628_01/install.121/e22624.pdf

- Upgrade Guide
http://download.oracle.com/docs/cd/E24628_01/upgrade.121/e22625.pdf

- Admin Guide
http://download.oracle.com/docs/cd/E24628_01/doc.121/e24473.pdf

- Full Documentation
http://download.oracle.com/docs/cd/E24628_01/index.htm

- 84 Videos for new features of this product from Oracle
https://apex.oracle.com/pls/apex/f?p=44785:2:2752320675921061:FORCE_QUERY::2,CIR,RIR:P2_TAGS:Enterprise%20Manager%20Cloud%20Control

12.1 EM Cloud Control.....Questions

QUESTIONS

"Failure is the opportunity to begin more intelligently"