

Oracle Enterprise Manager 12c Administration Cookbook

Over 50 practical recipes to install, configure, and monitor your Oracle setup using Oracle Enterprise Manager

Foreword by Shashank Patwardhan, Head of Application Management Services, Europe, TechMahindra Limited

Dhananjay Papde Tushar Nath Vipul Patel



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Dhananjay Papde Tushar Nath Vipul Patel



BIRMINGHAM - MUMBAI

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First published: March 2013

Production Reference: 1080313

Published by Packt Publishing Ltd. Livery Place 35 Livery Street Birmingham B3 2PB, UK.

ISBN 978-1-84968-740-9

www.packtpub.com

Cover Image by Artie Ng (artherng@yahoo.com.au)

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Foreword

When I first became aware of Dhananjay Papde's intent to author a book on Oracle Enterprise Manager 12c, I sent him a congratulatory note. This is an important subject area, and I felt a special need to pass on my best wishes.

Oracle Enterprise Manager 12c is Oracle's integrated enterprise IT management product to manage an organization's entire IT infrastructure, from applications to Disk IT management, from a single console. With an increasing number of databases across the organization, significance of Oracle Enterprise Manager as a tool for effectively managing and optimizing resources is immense. This book has a very good style; on one hand, it has all the contents for a patient learner and on the other hand, for an impatient "go-getter" there are ready "recipes" in hand to get started on specific tasks.

This book uncovers various installation options—with simple configuration and with advanced options. It also covers various upgrade options. This book includes recipes on monitoring the infrastructure using the "Action Session History Analytics" and "Real Time ADDM" monitoring report. There are recipes for creating and cloning databases and creating templates.

The key differentiator for this book is it covers the integration of Oracle Fusion Middleware Data Integration products such as Oracle Business Intelligence, Oracle GoldenGate, Oracle Business Intelligence Publisher, and Oracle WebLogic using OEM 12c. Last but not the least, the book covers recipes on Incident and Problem Management using iPhone or iPad.

In a nutshell, this is an excellent book that can be utilized to learn the usage of OEM 12*c*, as well as to get specific "tips" through various "recipes", and is a must read book!

Shashank Patwardhan

Head of Application Management Services, Europe

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About the Authors

Dhananjay Papde has over 18 years of experience in the IT industry, out of which he has worked for over 10 years in UK. He is an experienced Oracle DBA and an Oracle eBusiness Suite Applications DBA, and has experience in Oracle Fusion Middleware Data Integration products such as Oracle GoldenGate, Oracle Business Intelligence, and Oracle Data Integrator. He also has strong experience in project and program management. He is a regular speaker at UK Oracle User Group and also at Oracle events/forums.

Currently, he is based in UK and works as an IT Principal Consultant/IT Operations Head for TechMahindra Ltd. He has worked as a Principal Consultant, Senior Manager, Oracle Production DBA, Oracle Applications DBA, Systems Administrator, and Technical Project Manager with Oracle Corporation, Cognizant Technology Solutions, and Mastech Corporation.

Dhananjay has won the Oracle Fusion Middleware Innovation Award presented at Oracle Open World 2011 in the US. He is an Oracle Certified Professional, Oracle Certified Expert, PMP, and MSP.

Dhananjay enjoys travelling around the world, watching cricket, and has recently started loving to play a bit of piano.

You can get in touch with Dhananjay at dpapde@gmail.com. You can also visit his blog at http://dhananjaypapde.blogspot.co.uk/.

I would like to thank my parents, wife, and my daughters for their love and enormous support. Without their understanding, this book would not have been possible.

I would like to thank the team at Packt Publishing for their help and support, especially James Keane, Leena Purkait, Mayur Hule and Kirti Pujari. It has been a year long process with a lot of work, but we are very happy with the result we have achieved! Also many thanks to my employer, TechMahindra, and all my colleagues and managers for their continued support.

I hope you like this book as much as I enjoyed writing it!

Tushar Nath is working as Senior Database Administrator in TechMahindra Ltd. , managing large scale mission critical production database and Fusion Middleware estate. Tushar has over 11 years of IT experience in administration of Oracle Database, Oracle Enterprise Manager and Fusion Middleware products such as Oracle WebLogic Server, Oracle Goldengate, Oracle Business Intelligence, Oracle Data Integrator, and Oracle Service Oriented Architecture with Unix Administration duties. He likes end-to-end troubleshooting involving Oracle Database and Oracle Fusion Middleware products. Tushar holds various Oracle certifications such as Oracle Service Oriented Architecture Infrastructure Implementation Certified Expert (11g), Oracle WebLogic Server 10g System Administrator Certified Expert, Oracle OCP DBA(11g) and Real Application Clusters Administrator Certified Expert (10g).

This is the first book I've co-authored. It appeared as an impossible mission at the early stage of writing this book. Unconditional support provided by my family transformed this impossible mission to a possible one at the end. I would like to say a big thank you to my wife Chinmayi, for understanding and motivating me throughout the process of writing, without which it would not have been possible to complete this book.

I would also like to thank to my parents, my son, and all of my colleagues from the bottom of my heart for their love and support.

Vipul Patel has been working in the IT industry for the past 20 years, and in the past 12 years mainly in the Telecommunications industry. He started with a brief brush with Oracle 5 and Oracle Forms.

He has been involved with the complete software delivery lifecycle to the present day as a DBA for a critical business application. The drive as an individual and philosopher is to be a proactive manager, to capture problems early to prevent them from impacting the system and the users of the system, and to stop them during testing cycles, to prevent the performance issue from reaching production. He was involved in all aspects of management of infrastructure, from commissioning to monitoring while in service, so he moved from the early days of writing bespoke scripts to having a single GUI with OEM.

Vipul is one of the award winners of the Oracle Fusion Middleware Innovation Award for 2011 presented at Oracle Open World 2011 in US. He is also a member of the Oracle Customer Advisory Board for Data Integration Products. To relax and get away from one form of technology to another, Vipul is an avid follower of F1 motor racing, spending weekends away in a field in Silverstone.

About the Reviewers

Gokhan Atil is an independent consultant who has been working in the IT industry since 2000. He worked as a Development and Production DBA, Trainer, and Software Developer. He has a strong background in Linux and Solaris systems. He's an Oracle Certified Professional (OCP) for Oracle Database 10g and 11g, and has hands-on experience in Oracle 11g/10g/9i/8i. He is an active member of the Oracle community who has written and presented papers at various conferences. He's also a founding member of the Turkish Oracle User Group (TROUG).

Gokhan Atil was honored with the Oracle ACE award in 2011. He has a blog on which he shares his experience about Oracle since 2008. You can get in touch with Gokhan at http://www.gokhanatil.com.

Bobby Pannapara is a Consultant specializing in Oracle Database and Java Middleware technologies. His experience comes from integrations at various Telcos using Oracle Databases, WebLogic, GoldenGate, Data Integrator, and OBIEE, with a focus on technical infrastructure, server-side solutions, and installing, administering, and configuring the Oracle stack. In his spare time he enjoys doing DIY, watching football, and spending time with his family.

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Preface

Oracle Enterprise Manager Cloud Control 12c (OEM 12c) is Oracle's integrated, enterprise-wide IT management product for managing applications, middleware, databases, operating systems, virtualization, and Oracle engineered systems, all from a single console. It helps discover and monitor targets in order to detect and resolve problems proactively.

Oracle Enterprise Manager 12c Administration Cookbook is a practical cookbook to manage and monitor databases and Oracle Fusion Middleware products.

This book will uncover various installation and upgrade options. Additionally, there are recipes on managing and monitoring Oracle Fusion Middleware products such as Oracle Business Intelligence, Oracle Golden Gate, Oracle Business Intelligence Publisher, and Oracle WebLogic using OEM 12c. It includes recipes on monitoring the infrastructure using Action Session History Analytics and using the Real-time ADDM monitoring sreport. There are recipes on creating and cloning databases, and creating templates.

Additionally, there are recipes on managing and monitoring Oracle Fusion Middleware Products such as Oracle Business Intelligence, Oracle Golden Gate, Oracle Business Intelligence Publisher, and Oracle WebLogic Using OEM 12c.

Last but not the least, there are recipes on incident and problem management using an iDevice (iPhone, iPod Touch, iPad).

What this book covers

Chapter 1, Prerequisites for Installation of OEM 12c Installation explains various pre-requisites for installing OEM 12c.

Chapter 2, Installation of OEM 12c describes the installation steps of OEM 12c and its agents, using various options.

Chapter 3, Upgrade to OEM 12c provides a step-by-step process to be followed in order to upgrade the OEM 11g release to OEM 12c for all three type of upgrade approaches: 1-System Upgrade, 2-System Upgrade, and 1-System Upgrade on a different host.

Preface -

Chapter 4, *Configuring OEM 12c* explains automatic discovery, adding host and non-host targets, and configuration of administration groups and the software library.

Chapter 5, Managing Oracle Database Using OEM 12c explores the various options available in Cloud Control console to configure, manage, and monitor the Oracle database by using Oracle Enterprise Manager 12c.

Chapter 6, Managing Database Performance Using OEM 12c explains the use of Active Session History analytics, Real-time ADDM, Comparing period ADDM, and comparing period reports.

Chapter 7, Middleware Management Using OEM 12c explains the configuration of OEM 12c to manage and monitor Oracle Fusion Middleware products such as Oracle WebLogic Server, Oracle Business Intelligence, Oracle Golden Gate, and Oracle Business Intelligence Publisher.

Chapter 8, Incident and Problem Management Using iDevice (iPhone, iPod touch, iPad) explains tracking and managing incidents from an iDevice. The incident and problem details can be viewed, acknowledged, assigned, prioritized, escalated, and annotated. This also provides the ability to connect to My Oracle Support in order to drill down to the service requests associated with a problem.

The Installing Oracle Management Agent using Cloning Management Agent recipe in Chapter 2 is available as a free download at http://www.packtpub.com/sites/default/files/downloads/Recipe_1.pdf.

The Upgrading using 1-system upgrade approach (on a different host) recipe in Chapter 3 is available as a free download at http://www.packtpub.com/sites/default/files/ downloads/Recipe_2.pdf.

What you need for this book

In order to implement the recipes, you need the Oracle Enterprise Manager Cloud Control 12c software for Oracle Enterprise Linux.

You will also need Oracle Database for the OEM repository.

Who this book is for

This book is primarily intended for Oracle Database administrators, System Administrators, Database Architects, Designers, and Oracle Fusion Middleware Administrators.



Preface

Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text are shown as follows: "We can include other contexts through the use of the include directive."

A block of code is set as follows:

```
# useradd -c "Oracle rdbms " -m -d /home/oracle -g oinstall -G
oper,dba -u 1000 -s /bin/bash oracle
# passwd oracle
Changing password for user oracle.
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
```

When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
[default]
# useradd -c "Oracle rdbms " -m -d /home/oracle -g oinstall -G
oper,dba -u 1000 -s /bin/bash oracle
# passwd oracle
Changing password for user oracle.
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
```

Any command-line input or output is written as follows:

[root ~]\$ /usr/sbin/groupadd oinstall

New terms and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "clicking the **Next** button moves you to the next screen".





Preface -

Reader feedback

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Prerequisites of OEM 12c Installation

In this chapter we will cover:

- Creating operating system groups and users
- Checking hardware requirements
- Checking OS requirements
- > Checking package, kernel parameters, and library requirements
- Meeting host file requirements
- ▶ Installing the Oracle 11gR2 RDBMS software for an OEM repository database
- Creating an OEM repository database
- > Setting up a listener and a local net service name configuration
- Meeting OEM repository database requirements

Introduction

Oracle Enterprise Manager (**OEM**) **12c** is a one-stop place for complete, integrated, and business-driven enterprise Cloud Management solutions. OEM is a monitoring and management software for all aspects of Oracle database, Fusion Middleware, and associated applications.

In this chapter, we will go through how to get started with the installation of OEM 12c. The objective of this chapter is to outline the prerequisites of the OEM 12c installation.

All of these recipes have been designed to work on a server running Oracle Enterprise Linux 5u3.

For the purpose of the installation, an SSH or a telnet client should be available. PuTTY client is used for this installation.

Prerequisites of OEM 12c Installation -

Creating operating system groups and users

In order to install Oracle Enterprise Manager 12c, operating system groups and users need to be created. These users are required in order to create the OEM repository database and also to create the OEM Oracle management software/agent.

Getting ready

Before you get started, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a root user or as a privileged user.

How to do it...

In a telnet PuTTY session, perform the following steps as a root user or as a privileged user having access to root:

- 1. Create an Oracle Inventory group named oinstall.
 - # /usr/sbin/groupadd oinstall
- 2. Create two supplementary groups named dba and oper.
 - # /usr/sbin/groupadd dba
 - # /usr/sbin/groupadd oper
- 3. Create a Unix user named oracle and set the password.

```
# useradd -c "Oracle rdbms " -m -d /home/oracle -g oinstall -G
oper,dba -u 1000 -s /bin/bash oracle
# passwd oracle
```

4. Create a user named oracem and set the password.

```
# useradd -c "Oracle Enterprise Manager " -m -d /home/oraoem -g
oinstall -G oper,dba -u 4050 -s /bin/bash oraoem
```

passwd oracem

How it works...

Two Unix users, oracle and oracem, are created in order to install an OEM repository and an OMS service respectively. Two distinct users are created to isolate the database and OMS software installations.



Users oracle and oracem should be part of the Oracle inventory group cinstall. Please note that supplementary groups such as dba and oper are optional groups to be created. However a single user can also be used to for this installation of OEM repository and OMS service.

There's more...

Unix users and groups can also be created by using proprietary GUI-based tools residing on the server.

Checking hardware requirements

In order to install Oracle Enterprise Manager 12c successfully, hardware requirements such as CPU, memory, and disk space need to be confirmed as per the Oracle recommended prerequisites.

Getting ready

Before you get started, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a root user or as a privileged user.

How to do it...

The following commands show how to identify the availability of CPU, RAM, heap size, and hard disk space on the server:

CPU count

cat /proc/cpuinfo|grep "physical id"|sort|uniq|wc -1

Cores

```
# cat /proc/cpuinfo | grep "cpu cores" | uniq
cpu cores
                : 4
# less /proc/cpuinfo|grep processor
processor
                : 0
                : 1
processor
processor
                : 2
processor
                : 3
processor
                : 4
                : 5
processor
```

Prerequisites of OEM 12c Installation -

processor : 6
processor : 7
RAM
cat /proc/meminfo|grep MemTotal
MemTotal: 12300176 kB

Hard disk space on Mountpoint

# df -h grep u01						
Filesystem	Size	Used	Avail	Use%	Mounted	on
/dev/sda7	46G	12G		32G	27% /u()1

How it works...

The preceding commands provide details about CPU, CPU cores, memory, and hard disk space on the server. They should be ratified against the minimum required prerequisites for the installation. In case the disk space is not adequate, then the required space should be added to the server for the target hardware as per Oracle documentation.

There's more...

The preceding commands will vary depending on the operating system being used. The above commands are valid for Oracle Enterprise Linux.

Checking OS requirements

In this recipe, we will check the operating system's (OS) requirements, including the OS packages that are required for the progress of the OEM installation.

Getting ready

Before you start, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a root user or as a privileged user.

How to do it...

Perform the following steps to check the operating system's requirements as a root or as a privileged user with root privileges:

- 1. Install the Oracle validated package.
 - # yum install oracle-validated

```
2. Check the contents of /etc/sysctl.conf.
   fs.file-max = 327679
   kernel.msgmni = 2878
   kernel.msgmax = 8192
   kernel.msgmnb = 65536
   kernel.sem = 250 32000 100 142
   kernel.shmmni = 4096
   kernel.shmall = 1073741824
   kernel.shmmax = 4398046511104
   net.core.rmem default = 262144
   # For 11g recommended value for net.core.rmem max is 4194304
   net.core.rmem max = 4194304
   # For 10g uncomment the following line, comment other entries for
   this parameter and re-run sysctl -p
   # net.core.rmem max=2097152
   net.core.wmem default = 262144
   net.core.wmem max = 262144
   fs.aio-max-nr = 3145728
   net.ipv4.ip local port range = 1024 65000
3. Add or amend the following entries in the sysctl.conf file located under /etc.
```

- □ fs.file-max = 6815744
 - net.ipv4.ip local port range = 9000 65500
 - □ net.core.wmem max = 1048576

```
# /sbin/sysctl -p
net.ipv4.ip forward = 0
net.ipv4.icmp_echo_ignore_broadcasts = 1
net.ipv4.conf.all.accept_source_route = 0
.....
kernel.sysrq = 1
net.ipv4.tcp_max_syn_backlog = 4096
fs.file-max = 6815744
kernel.msgmni = 2878
kernel.msgmax = 8192
kernel.msgmnb = 65536
kernel.sem = 250 32000 100 142
kernel.shmmni = 4096
kernel.shmall = 1073741824
kernel.shmmax = 4398046511104
```

Prerequisites of OEM 12c Installation -

```
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
fs.aio-max-nr = 3145728
net.ipv4.ip_local_port_range = 9000 65500
```

4. Include the following lines in the /etc/security/limits.conf file for Repository installation as the oracle user:

```
oracle soft nproc 2047
oracle hard nproc 16384
oracle soft nofile 4096
oracle hard nofile 65536
oracle soft stack 10240
```

5. Include the following entry in the file /etc/security/limits.conf for OMS installation as the oracem user:

oracem soft nofile 4096 oracem hard nofile 65536

How it works...

For the installation to complete successfully, the contents of the previously-listed files need to be included and amended. The preceding commands will vary depending on the operating system being used.

Checking package, kernel parameters, and library requirements

In order to install the Oracle Enterprise Manager 12c, operating system groups and users need to be created. These users are required in order to create the OEM repository database and also to install Oracle Management Server (OMS) and Oracle Management Agent.

Getting ready

Before you get started, make sure that you have access to the Unix server as a root user or as a privileged Unix user with root privileges.



How to do it...

Perform the following steps to check the operating system requirements:

1. Check the packages for OMS installation.

```
# rpm -qa --queryformat "%{NAME}-%{VERSION}-%{RELEASE}
(%{ARCH})\n" | grep glibc
glibc-common-2.5-34(x86_64)
glibc-devel-2.5-34(x86_64)
glibc-2.5-34(i686)
glibc-headers-2.5-34(x86 64)
glibc-devel-2.5-34(i386)
glibc-2.5-34(x86_64)
# rpm -qa --queryformat "%{NAME}-%{VERSION}-%{RELEASE}(%{ARCH})\n"
grep gcc
libgcc-4.1.2-44.el5(x86 64)
libgcc-4.1.2-44.el5(i386)
compat-gcc-34-3.4.6-4(x86_64)
gcc-4.1.2-44.el5(x86 64)
gcc-c++-4.1.2-44.el5(x86_64)
compat-gcc-34-c++-3.4.6-4(x86_64)
# rpm -ga make*
make-3.81-3.el5
# rpm -qa binutils*
binutils-2.17.50.0.6-9.el5
# rpm -ga libaio*
libaio-0.3.106-3.2
libaio-devel-0.3.106-3.2
libaio-0.3.106-3.2
# rpm -qa libstdc*
libstdc++-4.1.2-44.el5
libstdc++-devel-4.1.2-44.el5
libstdc++-4.1.2-44.el5
libstdc++-devel-4.1.2-44.el5
# rpm -qa setarch*
```

Prerequisites of OEM 12c Installation -

```
Installing setarch rpm.
# yum install setarch
# rpm -qa setarch*
setarch-2.0-1.1
# rpm -qa rng-utils*
rng-utils-2.0-1.14.1.fc6
```

2. Ensure that the following packages, which are required for the Repository Database installation, are installed:

```
# rpm -aq make binutils gcc libaio glib-common libstdc++ setarch
sysstat rng-utils glibc
binutils-2.17.50.0.6-9.el5
libaio-0.3.106-3.2
glibc-2.5-34
libstdc++-4.1.2-44.el5
make-3.81-3.el5
gcc-4.1.2-44.el5
sysstat-7.0.2-3.el5
rng-utils-2.0-1.14.1.fc6
setarch-2.0-1.1
glibc-2.5-34
libstdc++-4.1.2-44.el5
libaio-0.3.106-3.2
```

- 3. The installation of any missing packages can be done as shown in the following example:
 - □ libaio-devel-0.3.106
 - unixODBC-2.2.11
 - unixODBC-devel-2.2.11
 - # yum install libaio-devel-0.3.106
 - # yum install unixODBC-2.2.11
 - # yum install unixODBC-devel-2.2.11
- 4. Verify the kernel parameter's settings.

Verify the value assigned to the kernel.shmmax parameter to set to a minimum of 4294967295.

```
# cat /proc/sys/kernel/shmmax
4398046511104
```

In this particular case, the value set is higher than the required value. Therefore no change is required.

 For OMS, the glibc-2.5 library should be available. Check the availability of the glibc-devdel-2.5 library.

```
# rpm -qa --queryformat "%{NAME}-%{VERSION}-%{RELEASE}(%{ARCH})
\n" | grep glibc
glibc-common-2.5-34(x86_64)
glibc-devel-2.5-34(x86_64)
glibc-2.5-34(i686)
glibc-headers-2.5-34(x86_64)
glibc-devel-2.5-34(i386)
glibc-2.5-34(x86_64)
```

The preceding output implies that the library glibc-devdel-2.5 is not installed.

6. Download and install the correct library version.

Download the latest rpm files from the yum repository on the Oracle site, and then install the glibc-devdel-2.5 rpm package on the server, before proceeding with the installation of OEM; otherwise warning messages will arise during OMS prerequisite checks.

```
# cd /etc/yum.repos.d
wget http://public-yum.oracle.com/public-yum-el5.repo
Length: 3974 (3.9K) [text/plain]
Saving to: `public-yum-el5.repo'
========>] 3,974
                       --.-K/s
                                in Os
10:08:54 (158 MB/s) - `public-yum-el5.repo' saved [3974/3974]
 # yum install glibc-devel-2.5-81.x86 64
# rpm -qa --queryformat "%{NAME}-%{VERSION}-%{RELEASE}(%{ARCH})\n"
grep glibc
glibc-headers-2.5-81.el5_8.1(x86_64)
glibc-common-2.5-81.el5 8.1(x86 64)
glibc-devel-2.5-81.el5 8.1(x86 64)
glibc-devel-2.5-81.el5_8.1(i386)
glibc-2.5-81.el5 8.1(x86 64)
glibc-2.5-81.el5 8.1(i686)
```

7. Rename public-yum-el5.repo file to some other name to avoid download of OEL5u3.

```
# cd /etc/yum.repos.d
```

```
# mv public-yum-el5.repo public-yum-el5.repo.bkp
```



Prerequisites of OEM 12c Installation -

How it works...

The preceding steps ensure that all of the required Oracle libraries are installed for the installation to commence. These commands will vary depending on the operating system being used.

Meeting host file requirements

In order to install Oracle Enterprise Manager 12c, the hosts file needs to be correctly set.

Getting ready

Before you start, ensure that the server is connected to the network and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a root user or as a privileged user having root access.

How to do it...

Open the vi editor in a PuTTY session and include the following line in the /etc/hosts file. The details of the IP address and server name need to be specified, as follows:

999.999.99.999 servername.domain_name.com servername

How it works...

The hosts file is required for the installation to complete successfully. The location of the hosts file will vary depending on the operating system being used. The previous file location is valid for Oracle Enterprise Linux.



Downloading the code support files

You can download the code support files for all Packt books you have purchased from your account at http://www.packtpub.com. If you purchased this book elsewhere, you can visit http://www.packtpub. com/support and register to have the files e-mailed directly to you.

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Installing the Oracle 11gR2 RDBMS software for an OEM repository database

Assuming that all of the prerequisites are met for the OMS and management repository, this recipe describes the installation of the Oracle 11g software for the OEM repository database

Getting ready

Before you start, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a root user or as a privileged user and a Unix user.

To install the RDBMS software, the X Windows server needs to be started. X Windows helps in providing a graphical user interface from the Unix server. Xming is used in this example, although any Windows software, such as Hummingbird Exceed, can also be used.

How to do it...

1. Download the Oracle software.

The Oracle RDBMS version used for the installation is 11.2.0.2. The software can be downloaded from the Oracle's metalink site. 11.2.0.2.5 Patch Set Update (patch13343424) is OS-specific and will be used to patch the database to ensure no patch bundles.

```
p10098816_112020_Linux-x86-64_1of7.zip
p10098816_112020_Linux-x86-64_2of7.zip
p10098816_112020_Linux-x86-64_3of7.zip
p10098816_112020_Linux-x86-64_4of7.zip
p10098816_112020_Linux-x86-64_5of7.zip
p10098816_112020_Linux-x86-64_6of7.zip
p10098816_112020_Linux-x86-64_7of7.zip
p13343424_112020_Linux-x86-64.zip
```

 After downloading the software, copy the software to a staging directory on the server using scp. Unzip the software in the staging directory. In this example mount point/ spare is created to be used as a staging directory.

```
cd /spare
unzip p10098816_112020_Linux-x86-64_10f7.zip
unzip p10098816_112020_Linux-x86-64_20f7.zip
chown -R oracle:oinstall /spare/database
```

Prerequisites of OEM 12c Installation -

- 3. Create the oraInventory directory if it does not alredy exist on the server.
 - # mkdir -p /home/oraInventory
 - # chown -R oracle:oinstall /home/oraInventory
- 4. Change the ownership of the ORACLE_BASE directory (in this example, /dboracle) to user oracle.

```
# chown -R oracle:oinstall /dboracle
```

- 5. Now, start a new session with SSH and connect as user oracle. In this example the user has used oracle.
 - cd /spare/database
 - \$ export ORACLE_BASE=/dboracle
 - \$ export TEMP=/u01/tmp
 - \$./runInstaller
- 6. Select the **I** wish to receive security updates via My Oracle Support checkbox if you wish to receive security updates. In this example, we have left the option unchecked.





- 7. Click on the Next button.
- 8. Select the **Skip software updates** button on the next screen. Other options available are Use My Oracle Support Credentials for download or Use pre-downloaded software updates. Choose one of the options as per the requirement.
- 9. Click on the Next button.
- 10. Select the Install database software only option.



11. Click on the Next button.

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Prerequisites of OEM 12c Installation -

12. Select the **Single instance database installation** option. Other options available for high availability are **Oracle Real Application Cluster database installation** and **Oracle RAC One Node database installation**.



- 13. Click on the Next button.
- 14. Select the default language as **English**, and then click on the **Next** button.
- 15. Select Enterprise Edition.

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16. Click on the Next button.
17. The Oracle base location is selected automatically, as Oracle base is set in the Unix environment before installation. Specify or review the **Oracle Base** field and the **Software Location** field.

X Oracle Database 11g Release 2 Ins	taller - Installing database - Step 7 of 12
Specify Installation Locatio	
Configure Security Updates	Specify a path to place all Oracle software and configuration-related files installed by this installation owner. This location is the Oracle base directory for the installation owner.
Notallation Option	Oracle Base: //dboracle Browse Browse
Grid Installation Options Product Languages	Specify a location for storing Oracle database software files separate from database configuration files in the Oracle base directory. This software directory is the Oracle database home directory.
Installation Location	Software Location: //dboracle/product/11.2.0/dbhome_1 Browse
Operating System Groups Prerequisite Checks Summary Install Product Finish	
	<back next=""> Install Cancel</back>

18. Click on the **Next** button.

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19. The Oracle Inventory path will be detected by the installer automatically if any previous installation exists. In this example, it's a new installation, so you need to specify the **Inventory Directory** field.

The Oracle inventory group install will be selected by default.

X Oracle Database 11g Release 2 In	staller - Installing database - Step 8 of 12
Create Inventory	
Configure Security Updates Download Software Updates Installation Option Grid Installation Options Product Languages Database Edition Installation Location Create Inventory Prerequisite Checks Summary Install Product Finish	You are starting your first installation on this host. Specify a directory for installation files. This directory is called the "inventory directory". The installer automatically sets up subdirectories for each product to contain inventory data. The subdirectory for each product typically requires 150 kilobytes of disk space. Inventory Directory? //home/oralnventory Browse Specify an operating system group whose members have write permission to the inventory directory (oralnventory). oralnventory Group Name: oinstall *
Help	< <u>Back</u> Next > Install Cancel

20. Click on the **Next** button.

Database Administrator Group ${\tt dba}$ and Database Operator group ${\tt oper}$ are chosen by default.

X Oracle Database 11g Release 2 In:	staller - Installing database - Step 9 of 13
Privileged Operating System	
Configure Security Updates Download Software Updates Installation Option Grid Installation Options Product Languages Database Edition Installation Location <u>Create Inventory</u> Operating System Groups Prerequisite Checks Summary Install Product Finish	SYSDBA and SYSOPER privileges are required to create a database using operating system (OS) authentication. Membership in OSDBA grants the SYSDBA privilege, and membership in OSOPER grants the SYSOPER privilege. Which is a subset of SYSDBA privileges. Select the name of the OSDBA group to grant the SYSDBA privilege. The user account you are using to run this install must be a member of this group. Database Administrator (OSDBA) Group: Database Operator (OSOPER) Group (Optional): Oper •
Help	< <u>Back</u> Next > Install Cancel

21. Click on the Next button.

Pre-requisites Checks screen is displayed. If any of the checks appear as failed (for example, if the minimum swap space available is 16 GB and the server has only, say, 12 GB), then resolve the issue before proceeding.

- 22. Click on the Next button.
- 23. Review the **Summary** screen of the software installation.



24. Click on the Install button.

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25. The installation begins and will take some time to complete. The following screen is displayed. Log in to the server in another telnet session and execute the script as a root user or a privileged user with root privileges.

3	🖌 Execute	Configuration scripts		×		
	The following configuration scripts need to be executed as the "root" user.					
	Scripts to	be executed:				
	Number	Script Location				
	1	/home/oralnventory/orainstRoot.sh				
	2	/dboracle/product/11.2.0/dbhome_1/root.sh				
	4					
	To oxocut	to the configuration scripts:				
	1. Ope	en a terminal window				
	2. Log in as "root"					
	3. Run the scripts					
	4. Reti	Return to this window and click "OK" to continue				
	н	tein		ОК		
	<u> </u>	7-1P				

The following script appears in the preceding screenshot:

- # . /home/oraInventory/orainstRoot.sh
- #. /dboracle/product/11.2.0/dbhome_1/root.sh
- 26. Click on **OK** after the execution of the script as a root user.

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X Oracle Database 11g Release 2 Ir	staller - Installing database - Step 13 of 13	
Finish		
Configure Security Updates Download Software Updates Installation Option Grid Installation Options Product Languages Database Edition Installation Location Create Inventory Operating System Groups Prerequisite Checks Summary	The installation of Oracle Database was successful.	
Finish		
Help		Next > Install Close

- 27. Click on the **Close** button. This marks the completion of the Oracle RDBMS 11gR2 installation.
- 28. Apply required patch set update.

The patch set update compatible with the Oracle 11.2.0.2 RDBMS software for the OEM repository database is 11.2.0.2.5 and needs to be installed. Also, ensure that you use the OPatch utility Version 11.2.0.1.3 or later.

If 11.2.0.3 is being installed, then apply the latest compatible patch set update.

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How it works...

The preceding steps are used to install Oracle 11gR2 database software/binaries. This will be used to create an OEM repository database.

Creating an OEM repository database

An OEM repository is required to store information related to various hosts and targets that need to be monitored via OEM. This recipe describes the steps to create an OEM repository database.

Getting ready

Before you start, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a privileged user.

How to do it...

To create an OEM repository database, perform the following steps:

- 1. Connect to the server as the oracle user and invoke the Oracle utility **Database Configuration Assistant (DBCA**).
 - \$ cd /dboracle/product/11.2.0/dbhome_1/bin
 - \$ TEMP=/u01/tmp
 - \$ export TEMP

./dbca

The following window appears after performing the preceding step:

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Database Configuration Assist	ant : Welcome
	Welcome to Database Configuration Assistant for Oracle database. The Database Configuration Assistant enables you to create a database, configure database options in an existing database, delete a database, and manage database templates.
Cancel Help	S Back Next >>

- 2. Click on the **Next** button to continue.
- 3. Select the **Create a Database** option and then click on the **Next** button.

B Database Configuration Assist	Template new data only when cannot be	of 12 : Database Templates es that include datafiles contain pre-created databases. They base in minutes, as opposed to an hour or more. Use templa n necessary, such as when you need to change attributes like e altered after database creation.	allow you to create a tes without datafiles block size, which
	Select	Template	Includes Datafiles
	Q	General Purpose or Transaction Processing	Yes
	0	Custom Database	No
Thornty advertise Thornty advertise	0	Data Warehouse	Yes
Hannahanna Bergananna Bergananna Bergananna Hannahannah			
			Show Details)
Cancel Help		<u> </u>	xt »

4. Select the General Purpose or Transaction Processing option and click on Next.

5. Enter a fully-qualified domain name value in the **Global Database Name** field and the **SID** field, and then click on **Next**.

In this example, oem12c is used as the Global Database Name and the SID.

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6. Uncheck the Configure Enterprise Manager checkbox, and then click on Next.

	Enterprise Manager	Automatic Maintenance Tasks
	Configure Enterprise Man	ager
	O Register with Grid Contr	ol for centralized management
	Management Service	No Agents Found
	Configure Database Co	itrol for local management
	🗆 Enable Alert Notificati	ons
	Outgoing Mail (SMTP) S	ierver:
	Recipient Email Addre	55:
	🗆 Enable Daily Disk Bac	kup to Recovery Area
	Backup Start Time:	02 · 00 · 0 AM C PM
	OS Username:	
	OS Password:	
Help		2 Back Nevt S

7. Set up a password for the database, and then click on the **Next** button.



Note: The password should be a minimum of eight characters in length. In addition, the password must contain at least one uppercase character, one lowercase character, and one digit.



8. Select the **Storage Type** field as File System from the drop-down list, and then select the **Use Common location for All Database Files** checkbox. Also, specify the **Database Files Location** field as /dborafiles.

Database Configuration Ass	istant, Step 6 of 12 : Database File	Locations	- 0 X
	Specify storage type and loc	ations for database files.	
	Storage Type:	File System 👻	
	Storage Locations:		
	O Use Database File Locat	ions from Template	
	Use Common Location for a second s	or All Database Files	
Napategalantan Napategalantan Napategalantan	Database Files Location:	/dborafiles	Browse
Nogenzigheidensten Nogenzigheidensten	O Use Oracle-Managed Fil	les	
Montestantes Montesta Martista	Database Area:		Browse)
Average Averag	Multiplex Redo Logs ar	nd Control Files)	
Kapar Späternen Kapar Späternen Kapar Späternen	If you want to specify options except Oracl each file location. If y the names for datab	/ different locations for any database files, pick any o le-Managed Files and use the Storage page later to cr you use Oracle-Managed Files, Oracle automatically g ase files, which can not be changed on the Storage page	f the above ustomize Ienerates age.
		File Location	Variables)
Cancel Help)	(<u> ∂</u> ack <u>N</u> ext ≫) (Einish

- 9. Click on the **Next** button.
- 10. Select the Flash Recovery Area option, and then click on the Next button.



Note: Archiving can be enabled later, once the database creation is done. If you want dbca to enable the archive, then select the **Enable Archiving** option and proceed. In this example, we ignore archive settings by dbca.

- 11. No sample schemas or custom scripts are required. Click on Next.
- 12. Select the **Custom** option and set **SGA size** and **PGA size**. Set **SGA Size** to, say, 2048 MB and **PGA Size** to 1024 MB. Then click on the **Character Sets** tab.



- 13. Select Use Unicode (AL32UTF8) and choose a National Character Set of UTF8, and then click on the Next button.
- 14. Review the control files' locations on the **Database Storage** screen, and then click on the **Datafiles** tab in the left-hand side pane.
- 15. Review the data's filename and location, and then click on **Redo Log Groups** on the left-hand side pane.
- 16. The Redo logfile's size should be a minimum of 300 MB for an OEM12C repository. Set the redo log's **File Size** to 300 MB for all three redo log groups.

Controlfile Cont	Step 10 of 11 : Database Stor	rage
	File Name	File Directory
	redo01.log	/dborafiles/{DB_UNIQUE_NAME}/
	1	
Create Delete		(File Location Variables)
Cancel		<u>Back</u> <u>N</u> ext <u>S</u> Einish

17. Click on the Next button.

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18. To create the database, click on Finish.

Select the **Save as a Database Template** and **Generate Database Creation scripts** checkboxes if you wish to take this template and create the database with the same configuration, by SQL scripts on another server. This is an optional selection.

Database Configuration Assistan	t, Step 11 of 11 : Creation Options	
	Select the database creation options: ✓ Create Database Save as a Database Template Name: oem12c Description: Generate Database Creation Scripts Destination Directory. /dboracle/admin/oem12c/scripts	Browse
Cancel Help	🔇 Back 🛛 Next 📎	Einish

19. Review the database configuration summary, and then click on **OK** to start the database creationonce it is complete, click on **Exit**. The repository database is now created.

How it works...

The preceding steps are used to create a repository database, which is required for the complete installation of OEM 12c. This repository database is used to store the information of various servers/databases and so on, which need to be managed and monitored.



Setting up a Listener and a Local Net Service name configuration

The Listener is required to be configured in order to enable connectivity for the OEM repository database using SQL*Net. The Network Configuration Assistant (Netca) utility is used to do the network-related configuration for Oracle databases.

Getting ready

Before you start, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server.

How to do it...

- 1. Invoke the **netca** utility in order to configure the listener as an oracle user.
 - \$./netca
- 2. Select the Listener configuration checkbox, and then click on Next.





- 3. Select Add, and then click on Next.
- 4. Use the default **Listener name** as LISTENER, and then click on **Next**.
- 5. Use the default TCP protocol, and then click on Next.
- 6. Select the Use the standard port number of 1521 option, and then click on Next.
- 7. Select No, and then click on Next.

X Oracle Net Configuration Assistant: Listener Configuration Done	
Listener configuration complete!	
Cancel Help Sack Next S	

- 8. Click on Next to complete the listener's configuration.
- 9. Create the tnsnames.ora file manually, or use netca to create a service name.

The following entry is added to the <code>\$ORACLE_HOME/network/admin/tnsnames.</code> or a file in order to create a service name. Host name to be specified is where the OEM repository database resides.

```
oeml2c =
 (DESCRIPTION =
 (ADDRESS_LIST =
    (ADDRESS =
    (COMMUNITY = SVMUSER.world)
    (PROTOCOL = TCP)
```

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```
(Host = servername.domain_name.com)
  (Port = 1521)
  )
)
(CONNECT_DATA =
  (SID = oem12c)
  (GLOBAL_NAME = oem12c)
)
)
```

- 10. Check whether the listener has been created successfully and has been registered with the listener.
 - \$ lsnrctl status
- 11. Check whether the database is reachable using the Net service name. The following command's output shows that the database is reachable.

[\$ tnsping oem12c

How it works...

The preceding steps complete the listener connectivity details, which are required to establish connectivity to the OEM repository database.

Meeting OEM repository database requirements

There are some additional configuration requirements for an OEM repository database, namely some table spaces should be autoextensible, have a minimum shared_pool_ size, a specific number of job_queue_processes, and so on, before the database can be used as a repository for OEM.

Getting ready

Before you start, ensure that the server is connected to the network and an SSH or telnet client is available. Also, make sure you have access to the Unix server as a privileged user.

How to do it...

- 1. UNDO and TEMP tablespaces should be autoextensible in the database. Also it is recommended to start with an UNDO tablespace of at least 256 MB. SQL> set lines 300 SQL> col tablespace_name form a16 SQL> col file name form a37 SQL> select tablespace_name, file_name, bytes/1024/1024 as SIZE_ MB, autoextensible from dba data files Union select tablespace_name, file_name, bytes/1024/1024 as SIZE_MB, autoextensible from dba temp files; 2 3 TABLESPACE NAME FILE NAME SIZE MB AUTO -----/dborafiles/oem12c/sysaux01.dbf 490 SYSAUX YES SYSTEM /dborafiles/oem12c/system01.dbf 700 YES /dborafiles/oem12c/temp01.dbf TEMP 29 YES UNDOTBS1 /dborafiles/oem12c/undotbs01.dbf 75 YES USERS /dborafiles/oem12c/users01.dbf 5 YES
- 2. The following database parameter changes need to be done before using the database as a repository:

SQL> alter database datafile '/dborafiles/oem12c/undotbs01.dbf'
resize 512M;
Database altered.
SQL> alter system set shared_pool_size=600m scope=spfile;
System altered.
SQL> alter system set processes=300 scope=spfile;
System altered.
SQL> alter system set job_queue_processes=20 scope=spfile;
System altered.

Chapter 1

```
SQL> alter system set session_cached_cursors=200 scope=spfile;
   System altered.
   SQL> shutdown immediate;
   Database closed.
   Database dismounted.
   ORACLE instance shut down.
   SQL> startup
   ORACLE instance started.
   Total System Global Area 2137886720 bytes
   Fixed Size
                                 2215064 bytes
   Variable Size
                               671089512 bytes
                              1459617792 bytes
   Database Buffers
   Redo Buffers
                                 4964352 bytes
   Database mounted.
   Database opened.
   SQL> create pfile from spfile;
   File created.
3. Although we explicitly specified not to configure the database with Enterprise
   Manager, this doesn't prevent the installation of a small part of some sysman object
   in the database. We have to remove these objects from the database before we can
   use it as an OEM repository database:
   Unlock sysman user and reset password.
   SQL> select USERNAME, ACCOUNT_STATUS from dba_users where username
   like 'SYSMAN%';
   SYSMAN
                                    EXPIRED & LOCKED
   SQL> alter user SYSMAN account unlock;
   SQL> alter user SYSMAN identified by xxxxxx;
   $ emca -deconfig dbcontrol db -repos drop
   STARTED EMCA at Apr 9, 2012 3:03:14 PM
   EM Configuration Assistant, Version 11.2.0.0.2 Production
   Copyright (c) 2003, 2005, Oracle. All rights reserved.
   Enter the following information:
   Database SID: oem12c
   Listener port number: 1521
```

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```
Prerequisites of OEM 12c Installation -
      Password for SYS user:
      Password for SYSMAN user:
      _____
      - - - -
      WARNING : While repository is dropped the database will be put in
      quiesce mode.
      _____
      ----
      Do you wish to continue? [yes(Y)/no(N)]: y
      Apr 9, 2012 3:04:23 PM oracle.sysman.emcp.EMConfig perform
      INFO: This operation is being logged at /dboracle/cfgtoollogs/
      emca/oem12c/emca_2012_04_09_15_03_14.log.
      Apr 9, 2012 3:04:24 PM oracle.sysman.emcp.EMDBPreConfig
      performDeconfiguration
      WARNING: EM is not configured for this database. No EM-specific
      actions can be performed. Some of the possible reasons may be:
       1) EM is configured with different hostname then physical host.
      Set environment variable ORACLE HOSTNAME=<hostname> and re-run
      EMCA script
       2) ORACLE HOSTNAME is set. Unset it and re-run EMCA script
      Apr 9, 2012 3:04:24 PM oracle.sysman.emcp.EMReposConfig invoke
      INFO: Dropping the EM repository (this may take a while) ...
      Apr 9, 2012 3:05:53 PM oracle.sysman.emcp.EMReposConfig invoke
      INFO: Repository successfully dropped
      Enterprise Manager configuration completed successfully
      FINISHED EMCA at Apr 9, 2012 3:05:53 PM
```

4. Update the /etc/oratab file by using the following command:

oem12c:/dboracle/product/11.2.0/dbhome_1:Y

How it works...

With the completion of the preceding steps, all of the prerequisites of the OEM 12c installation have been met.



In this chapter we will cover:

- ► Installing Enterprise Manager System with Simple configuration option
- ► Installing Enterprise Manager System with Advanced configuration option
- Understanding Advanced Installer options
- ► Installing Oracle Management Agent using the RPM file
- ► Installing Oracle Management Agent using the agentDeploy.sh script

Introduction

The objective of this chapter is to outline the actual installation steps of OEM 12c and its agents, using various options of OEM 12c.

All of these recipes have been developed to work on a server running Oracle Enterprise Linux 5u3 and Oracle Enterprise Manager Cloud Control 12c Version 12.1.0.1.0.

Installing Enterprise Manager System with Simple configuration option

There are two installation options for Enterprise Manager:

- ▶ Simple
- Advanced

The Simple installation option is a quick and easy method to install OEM 12*c*, typically with the default options chosen by the installer.

www.it-ebooks.info

With the Advanced installation option, you can choose custom options as per your specific requirements.

The following recipe describes installing OEM with the Simple configuration option.

Getting ready

Before you start, ensure that the server is connected to the network, and an SSH or a telnet client is available. Also, make sure that you have access to the Unix server as a root user or as a privileged user.

OEM 12c Release 1 software can be downloaded from https://edelivery.oracle.com/. The following files are available for download:

```
V30905-01.zip
V30906-01.zip
V30907-01.zip
```

Alternatively the latest version of this software can be downloaded from http://www.oracle.com/technetwork/oem/grid-control/downloads/index.html.

How to do it...

To install OEM 12c with the Simple configuration option, perform the following steps:

- 1. Change the user ownership of the software location and then extract the OEM 12c software as the root user.
 - # chown -R oracem:cinstall /u01/software
 - # su oracem
 - \$ cd /u01/software
 - \$ unzip V30905-01.zip
 - \$ unzip V30906-01.zip
 - \$ unzip V30907-01.zip
- 2. Create a Middleware directory as a root user, with the owner as oracem and the group as cinstall.

```
# mkdir -p /u01/app/Middleware
```

chown -R oracem:oinstall /u01/app/Middleware



- 3. Start the installation using the runInstaller command as user oracem. Please note that free space on the /tmp mountpoint on the server must be greater than 400 MB. If adequate space is not available in /tmp, then specify the TEMP environment variable to use a location where at least 400 MB is available. \$ cd /u01/software \$ TEMP=/u01/tmp \$ export TEMP \$./runInstaller Starting Oracle Universal Installer... Checking Temp space: must be greater than 400 MB. Actual 32194 MB Passed Checking swap space: must be greater than 150 MB. Actual 3320 MB Passed Checking monitor: must be configured to display at least 256 Actual 16777216 Passed colors. Preparing to launch Oracle Universal Installer from /u01/tmp/ OraInstall2012-03-27_12-14-10AM. Please wait .
- 4. Deselect the I wish to receive security updates via My Oracle Support checkbox and then click on Next.

/ Oracle Support Details		ORACLE Enterprise Manager Cloud Control 1
My Oracle Support Details	Provide your email add	ress to be informed of security issues, install the product
Software Updates	anu mitiate comigurati	un manager. <u>view details</u> .
Prerequisite Checks	E <u>m</u> ail:	
Install Types		address/username.
Configuration Details		
Review	🔲 l <u>w</u> ish to receive sec	urity updates via My Oracle Support.
Install Progress	My <u>O</u> racle Support P	assword:
Finish		
1	<u>M</u> essages:	



5. Select Skip and then click on Next.

Oracle Enterprise Manager Cloud	a Control 12c Installation - Step 2 of 8
Software Updates	ORACLE Enterprise Manager Cloud Control 12c
My Oracle Support Details	© Skip
Software Updates	Search for Updates (Prerequisites, Critical Patches, Interim Patches, etc.)
Prerequisite Checks	O Local Directory Browse
Install Types	My Oracle Support (Requires Internet Connection)
Configuration Details	<u>U</u> ser Name
Review	Password
Install Progress	Search for Updates
- Finish	
	<u>M</u> essages:
Help	Installed Products < Back Next > Install Cancel

6. Click on Next.



7. Select the **Create a New Enterprise Manager System** option and then select **Simple**. Enter the **Middleware Home Location** path. In this example, the middleware home is specified as /u01/app/Middleware. Now click on **Next**.

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 4 of 8
Install Types	ORACLE Enterprise Manager Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Configuration Details Review Install Progress Finish	 <u>Create a new Enterprise Manager System</u> Simple <u>Advanced</u> <u>Upgrade an existing Enterprise Manager System</u> <u>Two System Upgrade</u> <u>One System Upgrade</u> <u>Install software only</u> (Installs Software Bits now, configuration or upgrade can be done later)
	Midd]eware Home Location /u01/app/Middleware
Help	Installed Products < <u>Back</u> Next > Install Cancel

- Enter an administrator password, which will be used as a common password for OEM 12c configuration. Enter the details in the **Database Host Name** field of the OEM 12c repository database, along with **Port**, **Service/SID**, and **SYS Password** and then click on **Next**.
- 9. The automatic stats gathering job must be disabled.

Error	
The following prerequisite check failed becaus Repository will be configured, does not meet th installer fix the issue automatically, click Yes. T details check the logs: /dboracle/oralnventory	e the Oracle Database, where the Management ne configuration requirements. To let the To fix the issue yourself, click No. For more ylogs/emdbprereqs
Prereg Name	Recommendation
Check the CBO stats gathering job	Disable the stats gathering job
	Yes No



Installation of OEM 12c _____

- 10. Click on Yes so that the installer takes care of the installation.
- 11. Review the installation path of the binaries.

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 6 of 8
Review	ORACLE Enterprise Manager Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types	Review the information you have provided and click Install to begin the installation process.
Review Install Progress Finish	Install a new Enterprise Manager system Source: /u01/software/stage/products.xml Disk Space Available: 31.24CB Required: 7CB Installation Location WLS Home: /u01/app/Middleware/msserver_10.3 OMS Home: /u01/app/Middleware/oms Agent Home: /u01/app/Middleware/agent/core/12.1.0.1.0 Database Information Connect String: (DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST= WebLogic Server Information Domain Name: GCDomain Node Manager Username: nodemanager WebLogic Username: weblogic Ports Enterprise Manager Upload Http Port: 4890
	Installed Products

12. Click on Install.

13. The root.sh command needs to be run on a different telnet window.

Execute Cor	nfiguration scripts	×
The following c	onfiguration scripts need to be executed as the "root" user	
Scripts to be ex	recuted	
Number	Script Location	
1	/u01/app/Middleware/oms/allroot.sh	
To execute the	configuration scripts:	
1. Open a new	terminal window	
2. Login in as "	'root"	
3. Run the scri	pts	
4. Return to th	is window and click "OK" to continue	
	OK	



- 14. Open a new terminal and connect it as root.
 - # . /u01/app/Middleware/oms/allroot.sh
- 15. Click on **OK**.
- 16. Review the information on the screen and then click on **Close** to complete the OEM 12c installation.

Oracle Enterprise Manager Clou	d Control 12c Installation - Step 8 of 8	1.00 1.00		
Finish		ORACLE	Enterprise Manage	er Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types Configuration Details Review Install Progress Finish	This information is also available at: /u01/app/Middleware See below for information pertaining t Use the following URL to access: 1. Enterprise Manager 2. Admin Server URL: P The following details need to be provi 1. Admin Server Hostn 2. Admin Server Port: 7 NOTE: An encryption key has been generate is lost, all encrypted data in the Repos the Management Service configuratio emctl exportconfig oms - dir < backu	/oms/install/setupinfo.txt to your Enterprise Manager Cloud Control URL: https:/ https://nclvoem01. ided during the additional (ame: nclvoem01. 7102 ed to encrypt sensitive data sitory becomes unusable. P n including the emkey and p location>	r installation: '/nclvoem01 :7102/console OMS install: . in the Management Rep Yease run following com keep the backup on anot	ository. If this key mand to backup ther system:
Help	Installed <u>P</u> roducts	<u>< B</u> a	ick <u>N</u> ext > <u>I</u> ns	stall <u>C</u> lose

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17. Click on the OEM 12c URL and ensure that the URL is accessible.



How it works...

The preceding commands provide details about changing the owner of the software, creating a middleware directory, and the execution of the steps to install the OEM 12c system using the Simple configuration option. OEM 12c is used to manage and maintain various Oracle databases and Fusion Middleware.

There's more...

The preceding commands will vary depending on the operating system being used. This is valid for Oracle Enterprise Linux.

Installing Enterprise Manager System with Advanced configuration option

In the Advanced installation option, the user can choose custom options as per their specific business requirements.

The following recipe describes how to install OEM with the Advanced configuration option.



Getting ready

The OEM 12c Release 1 software can be downloaded from https://edelivery.oracle.com/.

Alternatively the software can be downloaded at http://www.oracle.com/ technetwork/oem/grid-control/downloads/index.html.

How to do it...

To install OEM 12c with the Advanced configuration option, perform the following steps:

- 1. Perform steps 1 to 6 of the preceding recipe Installing Enterprise Manager System with Simple configuration option.
- 2. Select the **Create a new Enterprise Manager System** option and then select **Advanced**. Enter the **Middleware Home Location** path. In this example, the middleware home location is specified as /u01/app/Middleware.



3. Click on Next.

4. Select the optional plugins as per your business requirements.

lect Plug-ins		ORACLE	Enterprise Manager Cloud Control
My Oracle Support Details Software Updates	Plugins typically manage	provide management capabilities tailored to specific types / have their own lifecycle independent of the Enterprise Ma ment plugins you wish to configure.	s of targets or solution areas and anager core platform. Select the
Prerequisite Checks	Select	Name	Version
Install Types		Oracle Database	12.1.0.2.0
	×	Oracle Exadata	12.1.0.2.0
Select Plug-ins	Image: A start and a start	Oracle Fusion Middleware	12.1.0.2.0
WebLogic Server Configuration	Image: A start and a start	Oracle MOS (My Oracle Support)	12.1.0.2.0
Detalage Connection Details		EMC CLARIION Array	12.1.0.2.0
Database Connection Details		EMC Celerra Storage	12.1.0.2.0
Repository Configuration Detai		EMC Symmetrix Array	12.1.0.2.0
Port Configuration Details		Exalogic Elastic Cloud Infrastructure	12.1.0.1.0
Fort Configuration Details		IBM DB2 Database	12.1.0.2.0
Review		Oracle Audit Vault	12.1.0.2.0
Install Progress		Oracle Chargeback and Capacity Planning	12.1.0.2.0
motantrogreos		Oracle Cloud Application	12.1.0.2.0
Finish		Oracle Exadata Healthchecks	12.1.0.2.0
		Oracle Fusion Applications	12.1.0.2.0
		Oracle Siebel	12.1.0.2.0
		Oracle Virtualization	12.1.0.2.0
		Sybase ASE Database	12.1.0.2.0
M	essages:		

- 5. Click on Next.
- 6. On the WebLogic Server Configuration Details screen, enter the credentials for the WebLogic User Name field and the required credentials for the Node Manager User Name field, and validate the path in the Oracle Management Service Instance Base Location field.

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Oracle Enterprise Manager Cloud	Control 12c Installation - Step 6 c	of 12	-	
WebLogic Server Configura	tion Details	ORACLE	Enterprise Mar	nager Cloud Control 12c
 My Oracle Support Details Software Updates Prerequisite Checks Install Types Select Plug-ins WebLogic Server Configuration Database Connection Details Repository Configuration Detail Review Install Progress Finish 	WebLogic Domain Name WebLogic <u>U</u> ser Name WebLogic Password <u>C</u> onfirm Password Node Manager User Name No <u>d</u> e Manager Password C <u>o</u> nfirm Password OMS <u>I</u> nstance Base Location	CCDomain weblogic 	(Browge
	<u>M</u> essages:			
Help	Installed Products	< <u>B</u>	ack <u>N</u> ext >	Install Cancel

- 7. Click on Next.
- 8. Enter the details of the OEM 12c repository database , and also specify the Database Host Name, **Port**, **SID**, and **SYS Password**, and then click on **Next**.
- 9. The automatic stats gathering job must be disabled. Click on **Yes** so that the installer takes care of this.



10. Set the password (a note of these) and then click on Next.

Ny Oracle Support Details Software Updates Prerequisite Checks Install Types Soleter Plug-ins WebLogic Server Configuration Database Connection Details Review Install Progress Finish	SySMAN Password Confirm Password Begistration Password Confirm Password Management Tablespace Configuration Data Tablespace	/dborafiles/oem12c/m /dborafiles/oem12c/m	gmt.dbf gmt_eem_depot1.dbf gmt_ad4j.dbf Reset to <u>D</u> efault	
Me	sages:			

11. On this screen, the user can amend the port number. In case the default port number is already in use by another application running on the server, then the user can select a new available port. The port must be greater than 1024 and less than 65535. In this example, default ports have been selected.

Oracle Enterprise Manager Cloud (Control 12c Installation - Step 9 of 12			
Port Configuration Details		ORACLE	Enterprise Manage	r Cloud Control 1
My Oracle Support Details Software Updates Prerequisite Checks Instant Threes	Configuration of the Enterprise Manager communication between system compon- table below contains the ports that will be component. By default, the first available	system requires the a ents as well as to prov allocated, along with port in the specified ;	location of several ports to ide access to the console a the recommended port ran port range has been chose	o facilitate interna ria a browser. The nges, for each n.
Select Plug-ins WebLogic Server Configuration		mport staticports.ini 1	ïle	
O Database Connection Details	Component Name		ecommonded Devit Dange	Devit
Panasitan Canfingentian Datai	Enterprise Manager Unload Http Port	488	9-4898	4889
Repository Configuration Detai	Enterprise Manager Upload Http SSL Port	119	9.4899-4908	4900
Port Configuration Details	Enterprise Manager Central Console Http	SSL Port 779	9-7809	7799
Review	Node Manager Http SSL Port	740	1-7500	7403
In section Descention	Managed Server Http Port	720	1-7300	7202
2 Install Progress	Enterprise Manager Central Console Http	Port 778	8-7798	7788
) Finish	Oracle Management Agent Port	387	2,1830-1849	3872
	Admin Server Http SSL Port	710	1-7200	7101
	Mariageu server nup ssc Port	730	1-7400	17301
N	dessages:			
Help	Installed Products	< 1	ack <u>N</u> ext > Inst	all Cancel

- 12. Click on Next.
- 13. Review the installation path of the binaries and then click on Install.



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- 14. Click on Next.
- 15. Open a new PuTTY terminal and execute the script as a root user, and then click on **OK**.
- 16. Review the information on the Installation Progress Details screen.

nstallation Progress Deta	ils ORACLE Enterprise Manager Cloud Control 1
My Oracle Support Details Software Updates Prerequisite Checks Instail Types Select Plug-ins WebLogic Server Configuration Database Connection Details Repository Configuration Details Port Configuration Details Review	This information is also available at: /u01/app/Middleware/oms/install/setupinfo.txt See belowfor information pertaining to your Enterprise Manager installation: Use the following URL to access: 1. Enterprise Manager Cloud Control URL: https://nctvoem02.starfleet.com:7799/em 2. Admin Server URL: https://nctvoem02.starfleet.com:7201/console The following details need to be provided during the additional OMS install: 1. Admin Server Hostname: nctvoem02.starfleet.com
Finish	2. Admin Server Port: 7101 NOTE: An encryption key has been generated to encrypt sensitive data in the Management Repository. If this key is lost, all encrypted data in the Repository becomes unusable. Please run following command to backup the Management Service configuration including the emkey and keep the backup on another system: emctl exportconfig oms -dir backup location>

17. Click on Close to complete the OEM 12c installation.

How it works...

This recipe provides details about changing the owner of the software, creating a middleware directory, and execution of the steps required to install the OEM 12c system using the Advanced configuration option. OEM 12c is used to manage and maintain various Oracle databases and Fusion middleware.

There's more...

The preceding commands will vary depending on the operating system being used. The commands used above are valid for Oracle Enterprise Linux.

Understanding Advanced Installer options

The following recipe describes the various options available during the OEM installation process. This is primarily to address user specific-customizations.

Getting ready

Connect to the OEM server as the same user as the one used for the installation of OEM 12c.

How to do it...

1. Change the WebLogic Domain Name.

During OEM 12c installation, the installer creates a default domain name of GCDomain. To change the domain name during the installation use the WLS_DOMAIN NAME command line argument, as shown below:

- \$ cd /u01/software
- \$ TEMP=/u01/tmp
- \$ export TEMP
- \$./runInstaller WLS_DOMAIN_NAME=OEMDomain
- 2. Change the Provisioning Advisor Framework (PAF) staging directory.

A **Provisioning Advisor Framework** (**PAF**) staging directory is created by default (/tmp) for copying the software library entities related to the deployment procedures. This location is used only for provisioning activities—entities are copied for the deployment procedure and then deleted once the deployment procedure ends.



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If you want to override this location and use a custom location then that installer need to invoke the EM STAGE DIR option, as shown below:

```
$ cd /u01/software
$ mkdir /spare/paf12c
$ ./runInstaller EM_STAGE_DIR=/spare/paf12c
```

3. Install the additional plugins.

The OEM 12c installation has various plugins that need to be installed for integration with other products, for example Oracle GoldenGate.

4. Download the required plugins from the OTN website at:

```
http://www.oracle.com/technetwork/oem/grid-control/downloads/
index.html
```

 Transfer the required plugin files to any staging directory on the server. The following command can be used to provide the plugin location during the OEM 12c installation.

```
$ cd /u01/software
```

```
$ ./runInstaller -pluginLocation /u01/software/
```

The plugin page will display additional plugins apart from the plugin specified in the custom location. Now the user can choose the plugins under the Advanced installation option, and complete the installation.

6. Use the options START_OMS and b_startAgent.

OMS and the Management Agent start automatically upon successful installation. If we do not want to start OMS or Management Agent then we can achieve that by invoking the runInstaller command with the START_OMS option and the b_startAgent option. The value can be set to TRUE or FALSE depending on the control we need to achieve.

 To prevent the automatic start of OMS after installation, use the following command:

```
$./runInstaller START_OMS=FALSE b_startAgent=TRUE
```

 To prevent the automatic start of Management Agent, use the following command:

```
$ ./runInstaller START_OMS=TRUE b_startAgent=FALSE
```



7. Configure the OEM with a different hostname other than the physical host.

OEM is configured with a different hostname other than the physical host. The following command explains how to invoke OEM installed using a different hostname other than the physical host typically specified in /etc/hosts. The hostname should not contain any underscores.

\$./runInstaller ORACLE_HOSTNAME=servername.com

How it works...

This recipe describes various Advanced installation options. This way users can create a customized Cloud Control WebLogic domain, install custom plugins as per your business requirements, configure automatic start/stop of OMS and Management Agent, and specify a different hostname other than the physical server.

There's more...

This recipe will vary depending on the operating system being used. The examples used here are valid for Oracle Enterprise Linux.

Installing Oracle Management Agent using the RPM file

Oracle Management Agent (Management Agent) is one of the core components of Enterprise Manager Cloud Control and enables you to convert an unmanaged host to a managed host in the Enterprise Manager System. The Management Agent works in conjunction with the plugins to monitor the targets running on a managed host.

This recipe describes the installation of Oracle Management Agent using the RPM file.

Getting ready

Installing a Management Agent by using its .rpm file is primarily a silent way of installing a Management Agent. Make sure that you have access to the Unix server as a root user or as a privileged user.

How to do it...

 Check the existence of the /usr/lib/oracle directory, and create it if it does not exist already.

```
# ls -lrt /usr/lib/oracle
```

ls: /usr/lib/oracle: No such file or directory

```
# mkdir /usr/lib/oracle
```

chmod 777 /usr/lib/oracle

Verify the existence of the rpm build package and install it on the OMS host, if required.

```
# rpm -qa rpm-build*
#
```

- # yum install rpm-build
- Connect to the OMS host as an OEM 12c installation owner and log in to OEM by using the emcli command.

```
$export OMS_HOME=/u01/app/Middleware/oms
$ $OMS_HOME/bin/emcli login -username=sysman -password=xxxxxxxx
Login successful
```

4. Synchronize emcli.

\$ \$OMS_HOME/bin/emcli sync Synchronized successfully

 Identify the platforms for which the Management Agent software is available on the OMS host.

```
$ $OMS_HOME/bin/emcli get_supported_platforms
Getting list of platforms ...
Check the logs at /u01/app/Middleware/oms/bin/agent.log
About to access self-update code path to retrieve the platforms
list..
Getting Platforms list ...
Version = 12.1.0.1.0
Platform = Linux x86-64
------
Platforms list displayed successfully.
```
Installation of OEM 12c -

 Download the .rpm file of the Management Agent from the Oracle software library to a temporary directory on the OMS host.

```
$ $OMS_HOME/oms/bin/emcli get_agentimage_rpm -destination=/u01/
software -platform=""Linux x86-64"" -version=12.1.0.1.0
Platform:Linux x86-64
Destination:/u01/software
 Checking for disk space requirements...
 === Partition Detail ===
Space free : 17 GB
Space required : 1 GB
RPM creation in progress ...
Check the logs at /u01/software/get agentimage rpm 2012-04-11 17-
18-26-PM.log
Copying agent image from software library to /u01/software
Setting property ORACLE HOME to:/u01/app/Middleware/oms
calling pulloneoffs with arguments:/u01/app/Middleware/oms/
u01/app/Middleware/oms/sysman/agent/12.1.0.1.0 AgentCore 226.
zip12.1.0.1.0Linux x86-64/u01/softwaretrue
Agent Image copied successfully...
Creation of RPM started...
RPM creation successful.
Agent image to rpm conversion completed successfully
Now we have the .rpm file oracle-agt-12.1.0.1.0-1.0.x86 64.rpm
available at /u01/software.
```

Copy the newly-created agent RPM file to the relevant target to install the OEM 12c Cloud Control Management Agent. Connect to the target server as a privileged user and start the installation.

- Create a user for the OEM 12c Management Agent installation. Ideally it should be the same as the OEM 12c installation user on the OMS server. In this example, oracem is used as the Unix user.
- 8. Create the home directory for the Management Agent installation.

```
$ mkdir -p /dboracle/product/agent12c
```

9. Enter the OMS server host domain name in the /etc/hosts file.



10. Run the .rpm file as a root user to install the Management Agent.

Follow these steps to complete the Management Agent rpm installation:

- 1. Edit the properties file /usr/lib/oracle/agent/agent.properties and enter the correct values.
- 2. Execute the /etc/init.d/config.pl command.
- 11. Edit the agent.properties file to provide the OMS host and target server details.

```
-----
#s_OMSHost:<String> OMS host info required to connect to OMS
#s_OMSPort:<String> OMS port info required to connect to OMS
#AGENT REGISTRATION PASSWORD:<String> Agent Registration Password
needed to
    establish a secure connection to the OMS.
#-----
-----
s_OMSHost=agent_servername.domainname.com
s OMSPort=7799
AGENT REGISTRATION PASSWORD=xxxxxxx
#-----
-----
#agentUserName:<String> User name with which the agent should be
installed.
#agentUserGroup:<String> Group to which the agent user belogs.
#-----
-----
agentUserName=oraoem
agentUserGroup=oinstall
```

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Installation of OEM 12c -

```
#-----
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  #OraInvLoc:<String> Absolute path of the inventory location where
  the agent user has write permissions.
  #Example : OraInvLoc=/usr/lib/oraInventory
  #-----
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  #OraInvLoc=#OraInvLoc#
  #-----
  -----
  #BASEDIR:<String> Location of the agent base directory.
  #Example: BASEDIR=/tmp/agentNG
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  BASEDIR=/dboracle/product/agent12c
  #ORACLE HOSTNAME:<String> Virtual hostname where the agent is
  deployed.
  #Example: ORACLE HOSTNAME=hostname.domain
  -----
  #ORACLE_HOSTNAME=#ORACLE_HOSTNAME#
12. Execute the /etc/init.d/config.pl script to complete the Management Agent
  installation.
   # . /etc/init.d/config.pl
  .....
  Agent Configuration completed successfully
  The following configuration scripts need to be executed as the
  ""root"" user.
  #!/bin/sh
  #Root script to run
   /dboracle/product/agent12c/core/12.1.0.1.0/root.sh
  To execute the configuration scripts:
  1. Open a terminal window
  2. Log in as ""root""
  3. Run the scripts
```

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```
Agent Deployment Successful.
   Agent deployment log location:
   /dboracle/product/agent12c/core/12.1.0.1.0/cfgtoollogs/
   agentDeploy/agentDeploy_<timestamp>.log
   Agent deployment completed successfully.
   The Agent is configured successful
   # . /dboracle/product/agent12c/core/12.1.0.1.0/root.sh
   Finished product-specific root actions.
   /etc exist
   Finished product-specific root actions.
13. Check the status of the Management Agent to see if it's up and running.
   $ export AGENT_HOME=/dboracle/product/agent12c/agent_inst
   $. $AGENT_HOME/bin/emctl status agent
   Oracle Enterprise Manager 12c Cloud Control 12.1.0.1.0
   Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.
   Agent Version
                    : 12.1.0.1.0
   OMS Version
                    : (unknown)
   Protocol Version : 12.1.0.1.0
   Agent Home
                    : /dboracle/product/agent12c/agent_inst
                    : /dboracle/product/agent12c/core/12.1.0.1.0
   Agent Binaries
   Agent Process ID : 2517
   Parent Process ID : 2392
   Agent URL
                    : http://targetservername:1830/emd/main/
   Repository URL
                    : https://OMSservername.domainname.com:7799/
   empbs/upload/
   Started at
                    : 2012-04-11 23:28:52
   Started by user
                    : oracem
   Last Reload
                    : (none)
   Last successful upload
                                               : (none)
   Last attempted upload
                                               : (none)
   Total Megabytes of XML files uploaded so far : 0
   Number of XML files pending upload
                                               : 1
   Size of XML files pending upload(MB)
                                               : 0
   Available disk space on upload filesystem
                                               : 55.31%
```

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```
Collection Status : Collections enabled
Last attempted heartbeat to OMS : 2012-04-11 23:28:57
Last successful heartbeat to OMS : (none)
Agent is Running and Ready
```

The OMS version is unknown, as seen previously, as the Management Agent is not securely connected to the OMS.

14. Secure the Management Agent to ensure that the OMS version is clearly seen.

```
$ . $AGENT_HOME/bin/emctl secure agent
Oracle Enterprise Manager 12c Cloud Control 12.1.0.1.0
Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.
Agent successfully stopped... Done.
Securing agent... Started.
Enter Agent Registration Password :
Agent successfully restarted... Done.
EMD gensudoprops completed successfully
Securing agent... Successful.
```

15. Check the status of the Management Agent by using the following command:

```
$ . $AGENT HOME/bin/emctl status agent
Oracle Enterprise Manager 12c Cloud Control 12.1.0.1.0
Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.
_____
Agent Version
               : 12.1.0.1.0
              : 12.1.0.1.0
OMS Version
Protocol Version : 12.1.0.1.0
              : /dboracle/product/agent12c/agent inst
Agent Home
Agent Binaries : /dboracle/product/agent12c/core/12.1.0.1.0
Agent Process ID : 20532
Parent Process ID : 20407
Agent URL
              : http://targetservername:1830/emd/main/
Repository URL : https://OMSservername.domainname.com:7799/
empbs/upload/
```



```
Chapter 2
Started at
                  : 2012-04-11 23:44:53
Started by user
                  : oracem
Last Reload
                  : (none)
Last successful upload
                                             : 2012-04-11 23:47:01
                                             : 2012-04-11 23:47:01
Last attempted upload
Total Megabytes of XML files uploaded so far : 0.01
Number of XML files pending upload
                                             : 0
Size of XML files pending upload(MB)
                                             : 0
Available disk space on upload filesystem : 55.31%
Collection Status
                                             : Collections enabled
Last attempted heartbeat to OMS
                                            : 2012-04-11 23:46:56
                                             : 2012-04-11 23:46:56
Last successful heartbeat to OMS
```

Agent is Running and Ready

How it works...

The preceding commands provide details about how to create the Management Agent binary in the form of an RPM file from the OMS software library, and then install and configure this agent RPM file on any Linux target server for managing and monitoring the target server and its applications.

Installing Oracle Management Agent using the agentDeploy.sh script

The following recipe describes how to install Oracle Management Agent using the agentDeploy.sh script.

Getting ready

Installing a Management Agent by using the agentDeploy.sh script is another alternative way to install Management Agent on a target host. Before you start, ensure that the server is connected to the network and that an SSH or a telnet client is available. Also, make sure that you have access to the Unix server as a root user or as a privileged user.

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Installation of OEM 12c -

How to do it...

In this example, we will install OEM Management Agent on a Solaris server.

 Download the following Agent software for Solaris sparc by using an offline selfupdate connection mode:

12.1.0.1.0_AgentCore_23.zip

- 2. Copy the software to the target server for installation.
- 3. Create the AGENT_HOME directory on the target server to install the Management Agent software as an oracem user.

mkdir /export/home/oracle/product/agent12c

- 4. Add the OMS server host's domain name to the /etc/hosts file.
- 5. Extract the zip file as user oracem.

\$ cd /export/home/oracle

- \$ unzip 12.1.0.1.0_AgentCore_23.zip
- 6. Install the Management Agent.

```
: $ ./agentDeploy.sh AGENT_BASE_DIR=/export/home/oracle/
product/agent12c OMS_HOST=omsservername.domainname.com EM_
UPLOAD_PORT=7799 AGENT_REGISTRATION_PASSWORD=xxxxxxx ORACLE_
HOSTNAME=targetservername
```

AGENT BASE DIR=/export/home/oracle/product/agent12c

-e Validating the OMS_HOST & EM_UPLOAD_PORT

```
Executing command : /export/home/oracle/product/agent12c/
core/12.1.0.1.0/jdk/bin/java -classpath /export/home/oracle/
product/agent12c/core/12.1.0.1.0/jlib/agentInstaller.jar:/
export/home/oracle/product/agent12c/core/12.1.0.1.0/oui/jlib/
OraInstaller.jar
```

```
Configuration Log Location:/export/home/oracle/product/agent12c/
core/12.1.0.1.0/cfgtoollogs/cfgfw/CfmLogger<timestamp>.log
```

Agent Configuration completed successfully

```
The following configuration scripts need to be executed as the ""root"" user.
```

#!/bin/sh

.....

#Root script to run

/export/home/oracle/product/agent12c/core/12.1.0.1.0/root.sh



To execute the configuration scripts: 1. Open a terminal window 2. Log in as ""root"" 3. Run the scripts Agent Deployment Successful. Agent deployment log location: /export/home/oracle/product/agent12c/core/12.1.0.1.0/cfgtoollogs/ agentDeploy/agentDeploy_<timestamp>.log Agent deployment completed successfully. 7. Run the agentDeploy.sh script as root. # /export/home/oracle/product/agent12c/core/12.1.0.1.0/root.sh Finished product-specific root actions. /var/opt/oracle exist Creating /var/opt/oracle/oragchomelist file... Finished product-specific root actions. 8. Check whether Management Agent is up and running. \$ \$AGENT_HOME/core/12.1.0.1.0/bin/emctl status agent Oracle Enterprise Manager 12c Cloud Control 12.1.0.1.0 Copyright (c) 1996, 2011 Oracle Corporation. All rights reserved. Agent Version : 12.1.0.1.0 OMS Version : 12.1.0.1.0 Protocol Version : 12.1.0.1.0 Agent Home : /export/home/oracle/product/agent12c/agent_ inst Agent Binaries : /export/home/oracle/product/agent12c/ core/12.1.0.1.0 Agent Process ID : 27083 Parent Process ID : 27071 Agent URL : https://targetservername:1830/emd/main/ : https://omsservername.domainname.com:4900/ Repository URL empbs/upload : 2012-04-12 23:38:16 Started at Started by user : oracem Last Reload : (none) Last successful upload : 2012-04-12 23:39:11



Installation of OEM 12c -

Last attempted upload	:	2012-04-12 23:39:11
Total Megabytes of XML files uploaded so far	:	0
Number of XML files pending upload	:	0
Size of XML files pending upload(MB)	:	0
Available disk space on upload filesystem	:	51.89%
Collection Status	:	Collections enabled
Last attempted heartbeat to OMS	:	2012-04-12 23:47:40
Last successful heartbeat to OMS	:	2012-04-12 23:47:40

Agent is Running and Ready

How it works...

This recipe provides details about Oracle Management Agent using the agentDeploy.sh script. The OEM Agent is used to retrieve and pass the data to OEM and the targets. Agent cloning is another method of installing one or more OEM Management Agent on a target server from the OMS server.

There's more...

The preceding commands will vary depending on the operating system being used. The examples above are valid for Oracle Enterprise Linux.



Downloading the Bonus recipe of the book

The Installing Oracle Management Agent using Cloning Management Agent recipe is available as a free download at http://www.packtpub.com/sites/default/files/downloads/Recipe_1.pdf.

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In this chapter we will cover:

- Performing pre-upgrade tasks
- Upgrading using the 1-system upgrade approach (on the same host)
- Upgrading using the 2-system upgrade approach (on a different host)

Introduction

This chapter focuses on various options available to upgrade Enterprise Manager 11g to Oracle Enterprise Manager 12c (OEM 12c).

Upgrading the OEM is a complex activity as it involves updating the underlying software and configurations in different files and possibly residing on various hosts.

There are key challenges of upgrading the OEM environment with minimal downtime. In order to circumvent these challenges, Oracle has provided a few options to be chosen based on user requirements.

This chapter provides a step-by-step process to be followed to upgrade the OEM 11g release to OEM 12c for two types of upgrade approaches such as the 1-system upgrade approach and the 2-system upgrade approach.

Please note that a direct upgrade to OEM 12c is possible from OEM Version 10.2.0.5 or 11.1.0.0. In the following recipes, we have upgraded OEM 11g to OEM 12c.

Performing pre-upgrade tasks

The following pre-upgrade tasks should be performed to upgrade to OEM 12c:

Getting ready

Before you start, ensure the server is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as a privileged user (OEM software owner).

How to do it...

To install the OPatch update on OMS home, perform the following steps:

- 1. Download the latest OPatch Version 11.1.0.9.6 from *My Oracle support* available at https://support.oracle.com/ to upgrade the OPatch version. The patch number to be checked is 6880880.
- 2. Set the OMS HOME path using the following command:

```
$ export OMS_HOME=/u01/app/Middleware/oms11g
```

3. Take a backup of the current OPatch directory structure using the following command:

```
$cd $OMS_HOME
```

```
$cp -rf OPatch OPatch_bkp
```

4. Check the current OPatch version using the following command:

```
$ $OMS_HOME/OPatch/opatch version
Invoking OPatch 11.1.0.8.0
OPatch Version: 11.1.0.8.0
OPatch succeeded.
```

5. Delete the current OPatch directory and then install the latest OPatch version:

```
$ rm -rf OPatch
```

- \$ unzip p6880880_111000_Linux-x86-64.zip
- 6. Check the latest OPatch version using the following command:

```
$ /u01/app/Middleware/oms11g/OPatch/opatch version
OPatch Version: 11.1.0.9.6
OPatch succeeded.
```



To install PSU1 (patchset) of Grid Control 11g, perform the following steps:

- 1. Download Enterprise Manager OMS 11.1.0.1.1GC PSU (patch) from the *My Oracle support* website available at https://support.oracle.com/, to apply the patch on OMS home.
- 2. Extract the patch p10065631_111010_Generic.zip under OMS home.

Please check the *My Oracle Support* website for the latest updated patch using the following command:

```
$ cd $OMS_HOME
```

\$ unzip p10065631_111010_Generic.zip

3. Check the current PSU to avoid any conflicts with the existing one-off patches.

\$ \$OMS_HOME/OPatch/opatch prereq CheckConflictAgainstOHWithDetail
-phBaseDir ./10065631

- To stop OMS use the following command: \$\$0MS HOME/bin/emctl stop oms -all
- 5. Apply the patch using the following command:
 - \$ cd \$OMS_HOME/10065631
 - \$ \$OMS_HOME/OPatch/opatch apply
- Connect to rcuJDBCEngine as a SYS user and run the script post_install_ script.sql using the following command:

```
post_install_script.sql
```

\$export ORACLE_HOME=\$OMS_HOME

```
$ cd $ORACLE_HOME/10065631
```

```
$ORACLE_HOME/bin/rcuJDBCEngine sys/xxxx@server_name:1521:oem
JDBC_SCRIPT post_install_script.sql $$ORACLE_HOME/10065631
$ORACLE_HOME
```

7. Run the post_install_patch.sql script using following command:

```
$ $ORACLE_HOME/bin/rcuJDBCEngine sys/xxxx@server_name:1521:oem
JDBC_SCRIPT post_install_patch.sql $ORACLE_HOME/10065631 $ORACLE_
HOME
```

8. Start OMS using the following command:

\$\$OMS_HOME/bin/emctl start oms



To install the Oracle Grid Control 12c pre-upgrade patch, perform the following steps:

- Download Oracle patch 13597150 from My Oracle support available at https://support.oracle.com/, and copy it to the server. This patch needs to be applied on OMS 11g home in order to enable the pre-upgrade console functionality to upgrade OEM 12c. Extract the patch p13597150_111010_ Generic.zip under OMS 11g Home.
 - \$cd \$OMS HOME
 - \$ unzip p13597150_111010_Generic.zip
- Stop OMS by using the following command: \$\$OMS HOME/bin/emctl stop oms -all
- 3. Apply the patch using the following command:
 - \$ export ORACLE_HOME=\$OMS_HOME
 - \$ cd \$OMS_HOME/13597150
 - \$ \$OMS_HOME/OPatch/opatch apply
- 4. Connect to rcuJDBCEngine as a SYS user and run the post-upgrade SQL scripts. To do so, run the following two commands in sequence:

```
$ORACLE_HOME/bin/rcuJDBCEngine sys/<sys password>@${EM_REPOS_
HOST}:${EM_REPOS_PORT}:${EM_REPOS_SID} JDBC_SCRIPT
```

\$ORACLE_HOME/sysman/preupgc/puc_dblink_pkgdef.sql

\$ORACLE_HOME/bin/rcuJDBCEngine sys/<sys password>@\${EM_REPOS_ HOST}:\${EM_REPOS_PORT}:\${EM_REPOS_SID} JDBC_SCRIPT

\$ORACLE_HOME/sysman/preupgc/puc_dblink_pkgbody.sql

\$ \$ORACLE_HOME/bin/rcuJDBCEngine sys/xxxxx@oem_repository_ server:1521:oem JDBC_SCRIPT \$ORACLE_HOME/sysman/preupgc/puc_ dblink_pkgdef.sql

\$ \$ORACLE_HOME/bin/rcuJDBCEngine sys/xxxxx@oem_repository_ server:1521:oem JDBC_SCRIPT \$ORACLE_HOME/sysman/preupgc/puc_ dblink_pkgbody.sql

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5. Connect to rcuJDBCEngine as a SYSMAN user and execute the script pre_upg_ console.sql. To do so run the following command:

\$ORACLE_HOME/bin/rcuJDBCEngine sysman/<sysman password>@\${EM_ REPOS_HOST}:\${EM_REPOS_PORT}:\${EM_REPOS_SID} JDBC_SCRIPT \$ORACLE_ HOME/sysman/preupgc/pre_upg_console.sql

```
$ORACLE_HOME/bin/rcuJDBCEngine sysman/xxxxxx@oem_repository_
server:1521:oem JDBC_SCRIPT $ORACLE_HOME/sysman/preupgc/pre_upg_
console.sql
```

6. Start OMS by using the following command:

\$\$OMS_HOME/bin/emctl start oms

Check the OEM 11g console to see if **Enterprise Manager 12c Upgrade Console** is available on the **Deployments** screen.

	Home Targets
	Home Fargeo
e not available. re required.	
	Collection Problems
Targets	Installations Patches Applied
<u>1</u>	<u>1 Yes</u>
	e not a vailable. re required. Targets 1

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7. Click on the Enterprise Manager 12c Upgrade Console link under the Upgrade section.

RACLE Enterprise Manager					Se	tup Preferences Help Lozou
rid Control 11g		Home Targets	Deployments Ale	rts Compliance	Jobs Reports	My Oracle Support
General Provisioning Patches & Update:						
Upgrade Console						
Upgrade Console is the primary user interface upgrade approach that best suits your require	and the starting point ment and upgrade yo	for upgrading your Enterprise Manager 10g Grid Control Release 5 ur existing Enterprise Manager system in a smooth and seamless ma	(10.2.0.5.0) to Enterp inner.	orise Manager 12c Clou	d Control Release 1 (2.1.0.1.0). Select an
Agent Upgrade Status		Other Links	Other Li	nks		
Success	ful o	Agent Upgrade Status	Agents	with Missing Core Soft	ware for Enterprise M	anager
Fal	ed 0	Targets Upgradability Status	120			
In Progr	55 0	Problematic Agents	Agents	Not Supported in Ent	erprise Manager 12c	
Not Start	ed 1	Agents Needing Reconfiguration	Targets	with Missing Agent/P	ug-In Software for En	terprise
Not Support	ed 0		Manage	<u>r 12c</u>		
Agents with Valid Invento	v 1		Targets	Not Supported in Ent	erprise Manager 12c	
Agents with Invalid Invento	ry 0					
Refresh Agents and Targets Lis	j -					
1-System 2-System 1-System 1-System 1-System on a Different Host Proupgrade Steps Perform the following steps before upgrade	TIP Shuts down TIP Installs a new TIP Shuts down	the existing Enterprise Manager system and upgrades it on the sam Enterprise Manager system on a different host while the existing the existing Enterprise Manager system and upgrades it on a different ints.	e host. Enterprise Manager sys int host.	tem continues to run	until you switch over	to the new system.
Phase Name		Description				
Overview		Get an overview of the upgrade process.				
Identify Host and Port for New Enterprise	Manager System	Enter the port and host on which you want to install the new Er	iterprise Manager syste	em.		
Manage Software		Manage the software required for upgrading the Enterprise Mana	ger system.			
Agent Upgrade Steps						
Perform the following steps to upgrade yo you can repeat the following steps for eac	ur agents. If you have h attempt.	a a large number of agents, then you can choose to upgrade one s	et of agents in one at	tempt, and the next s	set in the subsequent	attempt. In this case,
Phase Name	Description		Not Started	In Progress	Failed	Successful
Deploy and Configure Agents	Instal and configure managed hosts.	Oracle Management Agents 12c Release 1(12.1.0.1.0) on all	1	Q	٥	Q
Generate Health Report of Deployed Agents	Generate health rep new Enterprise Man	orts for the deployed agents before switching them over to the ager system.	1	Q	<u>0</u>	<u>0</u>
Sign Off Health Report of Deployed Agent	s Verify and sign off t	he health reports generated for the deployed agents.	Q	N/A	N/A	Q
Switch Agents	Switch over the de	ployed agents to the new Enterprise Manager system.	1	0	Q	Q
OMS and Repository Upgrade Steps						
Perform the following steps to upgrade vo	ur OMS and repositor	<i>i</i> .				
and the second s						
Phase Name		Description				
Phase Name Back Up Repository		Description Back up your Management Repository				

To download Management Agent and the binary plugins, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the **Manage Software** link in the **Preupgrade Steps** section.
- 4. View the required plugins in the **Plug-In Software** window.

Plug-In Software Agents without the plug-in software cann	ot be upgraded. However, if selected, the	targets monitored by that plug-in will be de	leted from the upgraded Enterprise Manager system.	
Plug-In Name	Plug-In Description	Platform	Available in Software Location (OMS)	Targets in System
oracle.sysman.beacon	Oracle Beacon Plugin	Generic Platform	Not Available	0
oracle.sysman.oh	Oracle OracleHome	Generic Platform	Not Available	0
oracle.sysman.csa	Oracle Client System Analyzer	Generic Platform	Not Available	1
oracle.sysman.emas	Oracle Fusion Middleware Plugin	Generic Platform	Not Available	8
oracle.sysman.emrep	Oracle Management And Repository Plugin	Generic Platform	Not Available	1
oracle.sysman.db	Oracle Database Plugin	Generic Platform	Not Available	2

5. From the following Oracle Technology Network (OTN) link, download the Management Agent software and plugins to a directory accessible by the OMS:

http://www.oracle.com/technetwork/oem/grid-control/downloads/ oem-upgrade-console-502238.html



- 6. Download the following files from the OTN site for the Linux X86-64 operating system:
 - 12.1.0.1.0_AgentCore_226.zip
 - 12.1.0.1.0_oracle.sysman.beacon_2000_0.opar
 - 12.1.0.1.0_oracle.sysman.csa_2000_0.opar
 - 12.1.0.1.0_oracle.sysman.emrep_2000_20120427.opar
 - 12.1.0.1.0_oracle.sysman.oh_2000_20120211.opar
 - □ 12.1.0.2.0_oracle.sysman.db_2000_20120427.opar
 - 12.1.0.2.0_oracle.sysman.emas_2000_20120427.opar

There's more...

The preceding steps are valid for Oracle Enterprise Linux and will vary depending on the operating system being used.

Upgrading using the 1-system upgrade approach (on the same host)

Enterprise Manager Cloud Control is upgraded on the same host by the 1-system upgrade approach. This upgrade method involves downtime as the OMS on the same host and the repository in the existing database are upgraded.

Getting ready

Before you start, ensure that the server where the previous version of OEM is running is connected to the network, and an SSH or a telnet client is available. Also, make sure you have access to the Unix server as rootuser, owner of Oracle repository database, and OEM.

The following environment details are used to demonstrate the 1-system upgrade approach in this example:

- ▶ Operating system: Oracle Enterprise Linux 5 Update 3
- Repository database 11g release 2 is installed at /dboracle/product/11.2.0/ dbhome_1 as a repository owner
- Oracle Grid Control 11g release 1 is installed at /u01/app/Middleware/oms11g as an OEM owner
- Oracle Grid Control 11g Agent is installed at /u01/app/Middleware/agent11g as an OEM owner
- Oracle Weblogic server 10.3.2.0 is installed at /u01/app/Middleware/ wlserver_10.3 as an OEM owner



How to do it...

To install plugins and Oracle Management Agent 12c using **Manage Software**, perform the following steps:

- 1. Provide the location where the agent software and the related plugin software are present on the **Upgrade Console** screen.
- 2. The path shared in this example is /u01/software/preupgrade/ agentsplugin/.
- 3. Check in the OEM 11g console to see if **Enterprise Manager 12c Upgrade Console** is available on the **Deployments** screen.

ORACLE Enterprise Manager Grid Control 11g	Home Targets Deployments Alerts Compliance Jobs Reports My Oracle Support
Manage Software	(Bark)
Agent Upgradability	Target Upgradability
1000 Missing Agent Software [1]	92%
Provide Software Location	
Enter and valdate the location where the agent software and the related plug-in software are pres required plutforms. • Software Location //u01/software/preupgrade/agentsplugn/ @ TIP For multi-oms environment, enter a location that is shared by all the OMSes. @ TIP If any software was added or removed from this location, revalidate all the software by click Validate.	Note: While copying the software to the software location, follow these rules Sent for the Copy the core agent software as well as the plug-in software at the root level of the software brackion. Validate Copy the software as procured via the DVD or via MOS. Do not extract the contents of the software plug-in Software is 12.1.0.0.0_AgentCore_46.zp, 12.1.0.0.0_arded system.db_2000_0.opart ting It is recommended that you go through the certification metric before installing the Grid control in your environment. Refer to the certifications from My Oracle Support. To procure all the required software, cick here, To procure all the required software, cick here,

4. Click on the **Validate** button.

Grid Control 11g	Home Targets Deployments	Alerts Compliance Jobs	Setup Preferences Help Lopost Reports My Oracle Support
General Provisioning Patches & Updates			
Upgrade Console >			
Manage Software			
			Back
① Information			
 Successfully validated and stored software information for the agent software : /u01 The Management Agent software 12.1.0.1.0_AgentCore_226.zip you have provided r Successfully extracted the plug in software and stored it in the directory "/u01/softw /preupgrade/agentsplugin/plugin_bin" 	/software/preupgrade/agentsplugin equires patch# ^{***} to be applied on t vare/preupgrade/agentsplugin/plugi	/12.1.0.1.0_AgentCore_226.zip ne 12c upgraded OMS. n_bin". For more details check log	at location "/u01/software
Confirmation			
Job Submitted RefreshAndValidateTargets 2012 05 31 15 34 37 355			

5. Wait until the upload activities are completed.



Chapter 3

ral Provisioning Patches & (Jpdates			
ano Softwaro				
lage Software				(
				Back
Agent Upgradability		Target	Upgradability	
1002	aradable.(1)		100x Upgredable (13)	
rovide Software Location			/ Note:	
			While conving the coffusion to the coffusion location, follow there a	lar
inter and validate the location wh	ere the agent software and the related plug-in softw	ware are present for the	 Come the core peept coffware or well as the plus is coffware. 	at the reat level of
equired platforms.			 Copy the core agent sortware as wer as the plug-in sortware the software location. 	ac one root level of
 Software Location /u01/software 	ware/preupgrade/agentsplugin/	Validate	 Copy the software as procured via the DVD or via MOS. Do n 	ot extract the
TTO For multi-ome environment	enter a location that is shared by all the ONFer		contents of the software zip file. For example: 12.1.0.0.0_Ag	jentCore_46.zip,
Come to molecons environment	g encer a sociation that is shared by an the OMSes.		12.1.0.0.0_oracle.sysman.db_2000_0.opar	
TIP If any software was added Validate.	I or removed from this location, revalidate all the soft	ware by clicking	 It is recommended that you go through the certification met 	ric before installing the
T BROCCI			Grid Control in your environment. Refer to the certifications in Support	rom My Oracle
			 To process all the required coffware, dick here 	
			 To procure at the required software, click here. 	
oftware Required for Upgrad pgrade Console computes the ava Agent Software Note : Management Agents wit	le Mability of the required agent and plug-In software b chout their core software cannot be upgraded.	ased on the binaries available in	Software Location provided above.	
Core Agent Image	Platform	Version	Available in Software Location (OMS)	
Agent Core Software	Linux x86-64	12.1.0.1.0	/u01/software/preupgrade/agentsplugin /12.1.0.1.0_AgentCore_226.zip	
Plug-In Software Agents without the plug-in soft Plug-In Name oracle.sysman.emrep	ware cannot be upgraded. However, if selected, th Plug-In Description Oracie Management And Repository Plug	e targets monitored by that plu Platform in Generic Platform	g-h wil be deleted from the upgraded Enterprise Manager system. Available in Software Location (OHS) //u1/software/preupgrade/agents/upgn/plugn_bin	Targets in Syste
			/oracle.sysman.emrep/12.1.0.1.0 /12.1.0.1.0 Agent 2000 20120427.zip	
oracle.sysman.oh	Oracle OracleHome	Generic Phtform	/u01/software/preupgrade/agentsplugin/plugin_bin /orade.sysman.oh/12.1.0.1.0 /12.1.0.1.0 Agent 2000 20120211.zin	0

To identify Management Agent with a valid inventory, perform the following steps:

- 1. Click on the **Deployments** tab in the grid control.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. In the **Agent Upgrade Status** section, check the numbers displayed against **Agents** with Valid Inventory.

GRACLE Enterprise Manager		Home Targets Deplo	yments Alerts Compliance Job	Setup Preferences Helo Locout os Reports My Oracle Support
General Provisioning Patches & Updates				
Upgrade Console Upgrade Console is the primary user interface and upgrade approach that best suits your requirement	the starting point for upgrading your Enterprise Ma t and upgrade your existing Enterprise Manager sys	nager 10g Grid Control Release 5 (10.2.0 cern in a smooth and seamless manner.	0.5.0) to Enterprise Manager 12c Cloud Col	ntrol Release 1 (12.1.0.1.0). Select an
Agent Upgrade Status Successful Failed In Brongese	Other Links 0 Agent Upgrade Si 0 Targets Upgrade Si 0 Targets Ingrade Si	atus iity Status	Other Links Agents with Missing Core Software 12c Agents Not Supported in Enterpris	e for Enterprise Manager
An Progress Not Started Not Supported Agents with Valid Inventory Agents with Invalid Inventory Refresh Agents and Targets List	2 From task right 1 Agents Needing F 2 2	≝ econfiguration	Targets with Missing Agent/Plug-In Manager 12c Targets Not Supported in Enterpri	<u>n Software for Enterprise</u> s <u>e Manager 12c</u>



The agent with a valid inventory count in the current example is **1**, as only one agent resides on the OMS server, which needs to be upgraded, and there are no agents with an invalid inventory.

To check the upgradability status of the Management Agent, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the Manage Software link in the Preupgrade Steps section.
- 4. View Agent Upgradability on the Manage Software page.



In this example, we have one agent that can be upgraded.

To deploy and configure the software binaries of Oracle Management Agent 12c, perform the following steps:

- 1. Click on the **Deployments** tab in the grid control.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Select the **1-System** option in the **Select Upgrade Type** section.

rade Console is the primary user interface and rade approach that best suits your requireme	the starting point fi	or upgrading your Enterprise Manager 10g Grid Control Release	5 (10.2.0.5.0) to Enterprise Manager 12r Cloud Control Release 1 (12.1.0.1.0). Sel
	ic and upgrade your	existing Enterprise Manager system in a smooth and seamless	manner.
Agent Upgrade Status		Other Links	Other Links
Successful	Q	Agent Upgrade Status	Agents with Missing Core Software for Enterprise Manager
Failed	Q	Targets Upgradability Status	Acoust Not Supported in Enterprise Manager 12c
In Progress	0	Problematic Agents	Tyraets with Missing Agent/Olym. In Software for Esterorise
Not Started	1	Agents Needing Reconfiguration	Manager 12c
Not Supported	0		Targets Not Supported in Enterprise Manager 12c
Agents with Valid Inventory	1		
Agents with Invalid Inventory	2		
(Refresh Agents and Targets List)			
Select Upgrade Type			
1-System G	TIP Shuts down th	e existing Enterprise Manager system and upgrades it on the si	ame host.
Select Upgrade Type			

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- 4. Click on the **Deploy and Configure Agents** link.
- 5. Enter the distinct **Operation Name**.
- 6. In the **Select Operation Type** section, select the operation type. In this example, both the options **Deploy Agent and Plug-In Software** and **Configure Agent and Plug-In Software** are selected.
- 7. Select the **Platform** type as applicable in the **Search Agents** section, and click on **Search**, which will discover the Management Agent in the environment.
- 8. In the **Select Agent** section, review the **Agent Base Directory** and the **Agent Instance Home** path, and amend these settings if required. Select the required agent.
- The Override Oracle Home Preferred Credentials option is chosen by default in the Agent Credentials section. Enter the user credentials, which can be used for all Oracle homes.

DRACLE Enterprise Manager			Home Targets Deployments	Alerts Compliance Jobs CReports	My Oracle Support
General Provisioning Patches & Upda	tes				
Ubgrade Console >					
Deploy and Configure Agents					
					Back Next
Operation Name Deploy_Agents_3	052012				
Erter a unque name for t	na operation.				
Select Operation Type	and the state of t	and the stand stands at the stand stands	d an Browne Marcolan		
Select the operation type to only depic	y, or both depioy and config	are, or only configure the aready deploye	ed software binaries.		
Configure Agent and Plug-In Softwa	re				
Search Agents					
Search and select the Management Age	ents for which you want to p	erform this operation. Management Ager	its qualifying to run this operation only will b	e isted.	
Agent	Platform All	•			
Group Select Group	- Version Al	+ (Search)			
and and and					
(Add) (Add Related Agents)	Remove) Use Same	Paths for Al Agents Overwrite Ar	v Existing Directories		
Select All Select None					
Select Agent		Old Agent Home	Agent Base Directory	Agent Instance Home	Status
nclvoem03.starfleet.com:3872		/u01/app/Middleware/agent11g	/u01/app/Middleware/agent12/	/u01/app/Middleware/agent12	4
Select the type of credentials to be us set of credentials that can be used for	ed for this operation. Ensure all Oracle homes. ntials	that you use the same credentials that y Override Oracle Home Preferred Crede	rou used for the existing, earlier release of t ntials	he agent. When you choose to override the	credentials, enter one
a Lines Nome		_			
User Name	oraoem				
Confirm Reserved					
- Contain Pathword					
Run Privilege					
None					
SUDO + Run As					
(example) or	(magent)				
Power Broker * Run As	Profile				
TIP If you select SUDO or Power Bro	ker, then ensure that the n	n when settings are already set for the bo	& tarnets Manage Privilege Delegation Setti	nos	
• • • • • • • • • • • • • • • • • • • •			THE REPORT OF TH	() and	
					Back Next
Hor	ne Targets Deployme	nts Alerts Compliance Jobs B	eports My Oracle Support Setup P	references Help Logout	
Copyright @ 1996, 2010, Oracle and/or its affiliates. All n	ghts reserved.				
Drace is a registered trademark of Oracle Corporation an Other names may be trademarks of their respective own	d/or its affiliates. ers.				
About Oracle Enterprise Manager					

10. Click on Next.

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11. Under the **Root Credentials** section of the **Upgrade Console** screen, provide the **User Name** and **Password** to allow execution of the root.sh Unix script at the end of the agent deployment.

GracLe Enterprise Manager	Home Targets Deployments Alerts Compliance Jobs Reports My Oracle Support
General Provisioning Patches & Lindates	
Upgrade Console >	
	(Back) (Submit)
Bra-Dapley Onlines (Onlineal)	
Enable this option if you want to run a command or a script before deploying the software binaries of t	the Management Agents.
Run Pre-Command/Script	
Post-Config Options (Optional)	
Enable this option if you want to run a command or a script after configuring the deployed Management	nt Agents.
Run Post-Command/Scrint	
Post Cerdentials	
Enter the root user account credentials to run the root sh. This is optional if you have chosen to upon	ade only Windows Agents. If you do not have the projects to run these commands or scripts, then select a third-party
authentication tool and enter the required details to switch over to another user account that has the	privleges.
* User Name root	
Password	
Confirm Password	
@ None	
Supo + Bun As root	
(example: odmapent)	
Power Broker * Run As root Profile	
(example: odmagent) (example: admin)	
	the host targets. <u>Manage Privilege Delegation Settings</u>
	(Park) (Submat)
	(Back) (Subrin)
Home Targets Deployments Alerts Compliance	Jobs Reports My Oracle Support Setup Preferences Heb Logout

12. Click on Submit.



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13. Click on the Job Submitted hyperlink to view the progress of the agent's installation.

Summary Status Succeeded Schedule Status Succeeded Schedule Status Succeeded Schedule Stated Stat+May-2012 18:03:54 GMT+01:00 Engest Tms 13 minutes,54 seconds Notification No Targets Status AI Co Previous Targets Co Previous	Status taffeet.com:3072 Succeeded	Page Refreshed 31-1 Type PreDeployA Owner SYSHAN Description Pre Deploy A	May-2012 18:25:09 BST (Delete Run) (Ed gentSW Agent Software	it) (View Definition)
ob Run: DEPLOY_AGENTS_31052012 Summary Status_States_31.1+9ay-2012_18:003:54 GMT+01:00 Ended 31+Hay-2012_18:03:54 GMT+01:00 Ended 31+Hay-2012_18:17:52 GMT+01:00 Ended 31+Hay-2012_18:17:52 GMT+01:00 Ended 31+Hay-2012_18:17:52 GMT+01:00 Ended 31-Hay-2012_18:17:52 Ende3	Status taffeet.com:3072 Succeeded	Page Refreshed 31-1 Type PreDeployA Owner SYSHAN Description Pre Deploy A	May-2012 18:25:09 BST (Delete Run) (Ed gentSW Agent Software	it) (View Definition)
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⊘ Previous		31-May-2012 18:03:58 GMT+01:00	31-May-2012 18:17:52 GMT+01:00	13.9 minutes
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Step: performPreReg nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:04:08 GMT+01:00	31-May-2012 18:04:09 GMT+01:00	1 second
Step: copySwArchiveToHost nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:04:13 GMT+01:00	31-May-2012 18:04:20 GMT+01:00	7 second
Step: unzipAndDeploySoftware nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:04:23 GMT+01:00	31-May-2012 18:06:17 GMT+01:00	1.9 minute
Step: copyPluginArchiveToHost nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:06:19 GMT+01:00	31-May-2012 18:06:22 GMT+01:00	3 second
Step: deployPluginArchiveToHost nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:06:24 GMT+01:00	31-May-2012 18:06:26 GMT+01:00	2 second
Step: copyDependentJars nclvoem03.st	tarfleet.com:3872 Succeeded	31-May-2012 18:06:29 GMT+01:00	31-May-2012 18:06:29 GMT+01:00	0 second
Step: updateStatusDeploySuccess	Succeeded	31-May-2012 18:06:34 GMT+01:00	31-May-2012 18:06:34 GMT+01:00	0 second
Step: checkIfDeploySuccess	Succeeded	31-May-2012 18:06:39 GMT+01:00	31-May-2012 18:06:39 GMT+01:00	0 second
Step: updateStatusConfigureInProgress	Succeeded	31-May-2012 18:06:44 GMT+01:00	31-May-2012 18:06:44 GMT+01:00	0 second
Next 11 - 19 of 19				

To generate a health report of the deployed Management Agent, perform the following steps:

- 1. Click on the **Deployments** tab in the grid control.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the **Generate Health Report of Deployed Agents** link in the **Agent Upgrade Steps** section.
- 4. Enter the distinct **Operation Name**.
- 5. In the **Search Agents** section, select the **Platform** type as applicable and click on **Search**, which will discover the Management Agent in the environment.
- 6. In the Select Agent section, review the Agent Base Directory and the Agent Instance Home path, and amend these values if required. Select the required Agent.

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7. **Override Oracle Home Preferred Credentials** is chosen by default in the **Agent Credentials** section. Enter the user credentials, which can be used for all Oracle homes.

ACLE Enternrise Manager				anio Disferences Idalo
Control 11g	(F	tome Targets Deployments A	erts Compliance Jobs Reports	My Oracle Supp
ieral Provisioning Patches & Updates				All March 199-400
arade Console >				
enerate Health Report of Deployed Agents				
				(Back) (Subm
ck the health of the deployed agents before switching them	over to the new Enterprise Manager system.			
Provide Inputs				
Operation Name HealthCheck_Agent_31052012 Enter a unique name for this operation.				
Load Agents from the previous operations.	d (Go)			
Search Agents				
search and select the Management Agents for which you wa	nt to perform this operation. Management Agen	its qualifying to run this operation only will	be listed.	
Agent Platform Linux	x86-64 •			
Group Select Group - Version Al	(Search)			
(Add) (Add Related Agents) (Remove)				
Select Al Select None				
Select Agent	Old Oracle Home	New Oracle Home	New Instance Home	Status
nctvoem03.starfleet.com:3872	/u01/app/Middleware/agent11g	/u01/app/Middleware/agent12g	/u01/app/Middleware/agent12g /agent_inst	Û
Agent Credentials				
Agent Credentials Select the type of credentials to be used for this operation. one set of credentials that can be used for all Oracle homes.	Ensure that you use the same credentials that y	you used for the existing, earlier release of	the agent. When you choose to override th	ne credentials, enter
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- 8. Click on Submit.
- 9. Click on the **Job Submitted** hyperlink to view the progress of the health check report generation job. This will take some time.

DRACLE Enterprise Manager			ie ie	up Preferences Help Lopoyd
srid Control 11g		Home Targets Deployments	Alerts Compliance 1005 Reports	My Oracle Support
Job Activity Job Library				
Job Activity >				
Job Run: HEALTHCHECK_AGENT_310520	012			
		Page Refreshed 31-M	vy-2012 18:54:15 BST Delete Run Edit	View Definition
Summary				
Status Succeeded Schedule 31:Hery-2012 18:53:24 Stated 31:Hery-2012 18:53:24 Ended 31:Hery-2012 18:53:24 Ebseed Time 1 minutes, 1 seconds Notification No Targets Al Status Co	SHT+01:00 SHT+01:00 SHT+01:00	Type HealthChe Owner SYSHAR Description Agent Rev	cksJob diness Check	
Expand Al Colapse Al				
Rame	Targets Status	Started	Ended	Elapsed Time
Execution: nclvoem03.starfleet.com:3872	ncvoem03.starfleet.com:3872 Succeeded	31-May-2012 18:52:24 GMT+01:00	31-May-2012 18:53:25 GMT+01:00	1.0 minutes
Step: updateStatusInProgress	Succeeded	31-May-2012 18:52:29 GMT+01:00	31-May-2012 18:52:29 GMT+01:00	0 seconds
Step: generateHeathReport	nclvoem03.starfleet.com:3872 Succeeded	31-May-2012 18:52:34 GMT+01:00	31-May-2012 18:53:19 GMT+01:00	45 seconds
Step: uploadHeathReport	nclvoem03.starfleet.com:3872 Succeeded	31-May-2012 18:53:20 GMT+01:00	31-May-2012 18:53:21 GMT+01:00	1 seconds
Step: updateStatusSuccess	Succeeded	31-May-2012 18:53:25 GMT+01:00	31-May-2012 18:53:25 GMT+01:00	0 seconds
Home Tacots Carright © 1995, 2010, Conde antice to atticents, Al repto respond.	Deployments Alerta Compliance Jobs	Reports My Oracle Support Setup	(Delete Run) (Edit Preferences Helz Lozout	View Definition



To verify and sign off the health check report, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the **Sign Off Health Report for Deployed Agents** link in the **Agent Upgrade Steps** section.
- 4. Select the Management Agent from the **Sign Off Health Report of Deployed Agents** page.

ORACLE Enterprise Manager			Home	argets Deploym	ents Alerts Compliance	Jobs Reports	My Oracle Suppor
General Provisioning Patches & Update	es.						
Upgrade Console >							
Sign off Health Report of Depl	oyed Agents						
Verify and sign off the health report of the d	leployed agents.						
(View Detailed Report) Verify and Sign C	Off Report						
Select Al Select None							
Select Agent	Report Time	Ping Test	Broken Targets	Failed Metrics	Free Space in State Dir (GB)	Sign-Off User	User Verified
nchoem03.starfeet.com/3872	2012-05-31 18:52:58	N/A	0	0	16.256844		

5. Click on the Verify and Sign Off Report button.

GRACLE Enterprise Manager			Home Ta	rgets 👔 Deploymen	ts Alerts Compliance	Jobs Reports	My Oracle Support
General Provisioning Patches & Updates							
Upgrade Console >							
Sign off Health Report of Deployed	i Agents						
Verify and sign off the health report of the deploye	ed agents.						
View Detailed Report Verify and Sign Off Rep	noc						
Select Al Select None							
Select Agent	Report Time	Ping Test	Broken Targets	Failed Metrics	Free Space in State Dir (GB)	Sign-Off User	User Verified
nclvoem03.starfleet.com:3872	2012-05-31 18:52:58	N/A	0	0	16.256844	SYSMAN	~

6. Review the data in the **Ping Test** column. It indicates whether or not the deployed OEM 12c agent will be able to communicate to the upgraded OMS. In the current example, Ping Test is **N/A** as it is a 1-system upgrade.

To switch over to Oracle Management Agent 12c, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. In the Agent Upgrade Steps section, click on the Switch Agents link.
- 4. Enter a distinct name for the **Switch Agents** operation in the **Provide Inputs** section.
- 5. In the **Search Agents** section, select a **Platform** type and click on **Search**. The search result discovered Management Agents in the environment.
- 6. Select the agent under the **Select Agent** section.



 The Override Oracle Home Preferred Credentials option is chosen by default in the Agent Credentials section. Enter the user credentials, which can be used for all Oracle homes.

DRACLE' Enterprise Manager				Serve	Preferences Help Loppy
srid Control 11g		Home	e l'largets Deployments Alerts	Compliance Jobs Reports	My Uracle Support
General Provisioning Patches & Updates					
Upgrade Console >					
Switch Agents					
				(Back) (Submit)
Switch over the deployed agents to the new E	Interprise Manager system.				
Provide Inputs					
·					
* Operation Name SwitchAgents_11G_12	2C_3105:				
Enter a unique name for this of	iperation.				
Load Agents from the previous operations.		💰 (Go)			
Search Agents					
Search and select the Management Agents	for which you want to perfo	rm this operation. Management Agents q	ualifying to run this operation only will be li	sted.	
Agent	Platform Linux x86-64 +	-			
Constant Constant		(Faanuth)			
Group Select Group +	Version All -	Search			
(Add) (Add Related Agents) (Re	move				
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nctvoem03.staffeet.com:3872	/	/u01/app/Middleware/agent11g	/u01/app/Middleware/agent12g	/u01/app/Middleware/agent12g	Û
				/agenc_nsc	
Agent Credentials					
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one set of credentials that can be used for	r all Oracle homes.	c you use the same credendas that you t	used for the existing, earlier release of the	agent. When you choose to overlide the ti	eventions, enter
C Use Oracle Home Preferred Credential	k Oo	verside Oracle Home Preferred Credentiak			
0		Tende Glace Home Preferred Greatings			
User Name or	aoem	1			
Password		1			
Confirm Password		1			
Run Privilege					
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Course - Dun As	_				
USUDO * KUN AS					
Competition + Pup Ac	Drofile	1			
Wer Broker * Kun As	ent) (example: admin)	1			
STIP If you select SUDO or Power Broker.					
,	then ensure that the priviles	ge settings are already set for the host ta	rgets.Manage Privilege Delegation Settings		
	, then ensure that the privile	ge settings are already set for the host ta	irgets.Manage Privilege Delegation Settings	6	

- 8. Click on Submit.
- 9. Click on the **Job Submitted** hyperlink to view the progress of switching agents from 11g to 12c.

ACLCE Enterprise Manager d Control 11g Active (Job Library			Home Targets Deployme	nts Alerts Compliance lobs Reports	My Oracle Suppor		
			CONTRACTOR CONTRACTOR CONTRACTOR	and a second state of the			
Activity >	and the second						
b Run: S	WITCHAGE	NTS 11G 12C	31052012				
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Summary							
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Targets Status Al Expand Al Name V Executio Step: Step: Step:	Elapsed Time Notification All Go Collapse Al I Collapse Al I Collapse Al in: notwoem03.st : updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin :: updateStatusin	36 seconds No tarfleet.com:3872 IProgress	Targets ndvoem03.starfleet. ndvoem03.starfleet.	Status com:3872 Succeeded Succeeded com:3872 Succeeded com:3872 Succeeded	Started 31-4by-2012 19:19:40 GMT+01:1 31-4by-2012 19:19:45 GMT+01:3 31-4by-2012 19:19:55 GMT+01:1 31-4by-2012 19:19:155 GMT+01:1	Ended 00 31-48y-2012 19-20:16 GMT+01:00 01 31-48y-2012 19-19-45 GMT+01:00 01 31-48y-2012 19-19-55 GMT+01:00 01 31-48y-2012 19-19-55 GMT+01:00	Elapsed Tim 36 second 0 second 1 second 0 second
Targets Status Al Expand Al Name V Executio Step: Step: Step: Step:	Elapsed Time Notification Al Go Collapse Al ion: nclvoem03.st :: updateStatusin :: pedramPreReg :: copySNtchAge :: copySNtchAge	No tarfleet.com:3972 Progress entsEleToHost ref	Tarpets nchoem03.starfiset. nchoem03.starfiset. nchoem03.starfiset.	Status com:3872 Succeeded Succeeded com:3872 Succeeded com:3872 Succeeded com:3872 Succeeded	Started 31-May-2012 19:19:40 GMT+011: 31-May-2012 19:19:45 GMT+011: 31-May-2012 19:19:55 GMT+011: 31-May-2012 19:20:00 GMT+011: 31-May-2012 19:20:200 GMT+011:	Ended 114ay-2012 19-20:16 GMT+01100 0314ay-2012 19:19:45 GMT+01:00 0314ay-2012 19:19:45 GMT+01:00 0314ay-2012 19:19:55 GMT+01:00 0314ay-2012 19:20:10 GMT+01:00	Elapsed Tim 36 second 0 second 0 second 1 second 1 second
Targets Status Al Expand Al Name V Executio Step: Step: Step: Step: Step: Step: Step: Step:	Elapsed Time Notification Al Go) I Colapse Al ion: nclvoem03.st 2: updateStatusin 2: copvSwtchAge 2: copvSwtchAge 2: copvBuckOutX0	36 seconds No Tarfleet.comc3872 Progress entsEleToHost mi	Targets nckvem03.starfieet. nckvem03.starfieet. nckvem03.starfieet. nckvem03.starfieet.	Status com:3872 Succeeded Succeeded com:3872 Succeeded com:3872 Succeeded com:3872 Succeeded	Started 31-4ky-2012 19:19:40 GMT+01:1 31-4ky-2012 19:19:45 GMT+01:3 31-4ky-2012 19:19:55 GMT+01:1 31-4ky-2012 19:19:19:55 GMT+01:1 31-4ky-2012 19:20:05 GMT+01:1 31-4ky-2012 19:20:0	Ended 31-48y-2012 19:20:16 GMT+01:00 31-48y-2012 19:19:45 GMT+01:00 31-48y-2012 19:19:51 GMT+01:00 31-48y-2012 19:19:55 GMT+01:00 31-48y-2012 19:20:05 GMT+01:00 31-48y-2012 19:20:05 GMT+01:00	Elapsed Tim 36 second 0 second 0 second 1 second 3 second 3 second
Targets Status Al C Expand Al Name V Executio Step: Step: Step: Step: Step: Step: Step: Step: Step: Step:	Ebpsed Trme Notification Al Go Colapse Al Colapse Al Co	36 seconds No Tarfleet.com:3872 Progress entsFileToHost mi	Tarpets nclvoem03.starfleet. nclvoem03.starfleet. nclvoem03.starfleet. nclvoem03.starfleet.	Status corres22 Succeeded succeeded corres3272 Succeeded corres3272 Succeeded corres3727 Succeeded Succeeded	Started 31-May-2012 19:19:40 GMT+01:1 31-May-2012 19:19:45 GMT+01:3 31-May-2012 19:19:55 GMT+01:1 31-May-2012 19:20:10 GMT+01:1 31-May-2012 19:20:00 GMT+01:1 31-May-2012 19:20 GMT+01:1 31-May-2012	Ended 11-4ay-2012 19-20:16 GMT+01:00 21-4ay-2012 19:19:45 GMT+01:00 21-4ay-2012 19:19:45 GMT+01:00 21-4ay-2012 19:20:55 GMT+01:00 21-4ay-2012 19:20:06 GMT+01:00 21-4ay-2012 19:20:06 GMT+01:00 21-4ay-2012 19:20:06 GMT+01:00	Elapsed Tim 36 second 0 second 0 second 1 second 3 second 0 second

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To upgrade Oracle Management Service and Oracle Management Repository, perform the following steps:

- 1. Ensure that the prerequisites of Oracle Enterprise Management 12c are met. Refer to Chapter 1, Prerequisites of OEM 12c Installation for details.
- Stop all of the scheduled deployment tasks that are running in the existing enterprise manager system.
- 3. Copy emkey from the OMS to the Management Repository.

The following command needs to be used for upgrading from the Enterprise Manager 11g grid control.

```
$<OMS_HOME>/bin/emctl config emkey -copy_to_repos_from_file
-repos_host
<repository host> -repos port <port> -repos sid <sid> -repos user
```

<username>

```
[-repos_pwd <pwd>] [-admin_pwd <pwd>] -emkey_file <OMS_HOME>/
sysman/config/emkey.ora
```

\$ export OMS_HOME=/u01/app/Middleware/oms11g

```
$ $OMS_HOME/bin/emctl config emkey -copy_to_repos_from_file
-repos_host oem_repository_server -repos_port 1521 -repos_sid oem
-repos_user sysman -repos_pwd xxxxx -emkey_file $OMS_HOME/sysman/
config/emkey.ora
```

4. Stop the OMS, which is about to be upgraded.

```
$ $OMS_HOME/bin/emctl stop oms -all
```

- Extract the following OEM 12c software to a staging directroy on the server to invoke runInstaller. The following example is referring to the OEM 12c release 1 software:
 - □ V30905-01.zip
 - □ V30906-01.zip
 - □ V30907-01.zip
- 6. Invoke the EM Cloud Control Installation wizard on the host using the following command:
 - \$ export TEMP=/u01/tmp

```
$ runInstaller -pluginlocation /u01/software/preupgrade/
agentsplugin
```

7. Deselect I wish to receive security updates via My Oracle Support.



- 8. Click on Next.
- 9. Click on Yes on the You have not provided an email address. Do you wish to remain uninformed of critical security issues in your configuration screen and then select Skip.
- 10. Click on Next.

erequisite Checks	ORACLE Ente	rprise Manager Cloud Control
My Oracle Support Details	Prerequisite checks verify that your environment meets all minimum r configuring your selected product	equirements for installing and
Prerequisite Checks	<u>R</u> erun l <u>a</u> nore	
<u>Install Types</u>		
Configuration Details	Prerequisite Name	Status
	Checking if Oracle software certified on the current O/S	Succeeded
Review	Checking for required packages installed on the system	Succeeded
Install Progress	Checking whether required GLIBC installed on the system	Succeeded
The isla	Checking for sufficient diskspace in TEMP location	Succeeded
Finish	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
	Expecteu result, snoulu pe a valiu nost ivame.	
	Actual Result: nclvoem03.starfleet.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	
Hala	La stalla d Des dusta	

- 11. Click on Next.
- 12. Select Upgrade an existing Enterprise manager system.

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13. Select One System Upgrade.

14. Enter the absolute path for weblogic installation in the **Middleware Home Location**.

Oracle Enterprise Manager Cloud (Control 12c Installation - Step 3 of 10	
Install Types		Manager Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details Select Plug-ins WebLogic Server Configuration	 <u>C</u>reate a new Enterprise Manager System Simple <u>Advanced</u> <u>Upgrade an existing Enterprise Manager System</u> <u>Two System Upgrade</u> <u>O</u>ne System Upgrade Following are the Enterprise Management servers detected, select Mato upgrade 	nagement server you want
install Progress	Select Installed Oracle Homes /u01/app/Middleware Install software only (Install software Bits now, configuration or upgrade can be done later)	Version 11.1.0.1.0
	Middleware Home Location //u01/app/Middleware/wls_10.3.5 fessages: Installed <u>P</u> roducts	Browse Install Cancel

15. Click on Next.

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Upgrade to OEM 12c _____

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Oracle Enterprise Manager Cloud Co	ntrol 12c Installation - Step	5 of 10		-	
Database Connection Details		0	RACLE	Enterprise Mar	nager Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details Select Plug-ins WebLogic Server Configuration Review Install Progress Finish	Connect Descriptor (DES)(F YS Password SYSMAN Password ••••	CRIPTION=(ADDRESS_ ORT=1521)))(CONNE	LIST=(ADDRESS- CT_DATA=(SID=	=(PROTOCOL=TCF	ን(HOST=
	Installed <u>P</u> roducts		< <u>B</u> ac	k <u>N</u> ext >	Install Cancel

17. Click on Next.

T F ii	The f Repo nsta detai	following prerequisite check failed becau ository will be configured, does not meet uller fix the issue automatically, click Yes ils check the logs: /u01/app/oralnvento	use the Oracle Database, where the Manag the configuration requirements. To let th . To fix the issue yourself, click No. For m y/logs/emdbprereqs	ement e ore
		Prereg Name	Recommendation	
		Check the CBO stats gathering job	Disable the stats gathering job	
		Check the job_queue_processes instance parameter value.	The job_queue_processes instance parameter will be set to 0 by the EM upgrade process. After the upgrade is complete, job_queue_processes will be restored to its prior value. The job_queue_processes instance	·/////
			Yes	<u>N</u> o



- 18. Click on Yes.
- 19. Connect to the OEM repository's RDBMS database and run the following commands:

```
SQL> grant execute on dbms_random to dbsnmp;
Grant succeeded.
SQL> grant execute on dbms_random to sysman;
Grant succeeded.
SQL> alter user ORACLE_OCM account unlock;
User altered.
```

20. Select the additional plugins as per your requirement.

Oracle Enterprise Manager Cloud C	Control 12	: Installation - Step 6 of 10	
Select Plug-ins			Manager Cloud Control 12c
 My Oracle Support Details Software Updates 	Plugins typically manage	provide management capabilities tailored to specific types of targets have their own lifecycle independent of the Enterprise Manager core ment plugins you wish to configure.	or solution areas and platform. Select the
Prerequisite Checks	Select	Name	Version
Q Install Types		Oracle Database	12.1.0.2.0
	Image: A start of the start	Oracle Exadata	12.1.0.2.0
Database Connection Details	Image: A start of the start	Oracle Fusion Middleware	12.1.0.2.0
🧅 Select Plug-ins	~	Oracle MOS (My Oracle Support)	12.1.0.2.0
Extend WebLogic Server Domai	✓	EMC CLARIION Array	12.1.0.2.0
Extend webbogic server Domai		EMC Celerra Storage	12.1.0.2.0
Ϋ́ Review		EMC Symmetrix Array	12.1.0.2.0
O Install Progress	✓	Exalogic Elastic Cloud Infrastructure	12.1.0.1.0
Y Instan Progress		IBM DB2 Database	12.1.0.2.0
Ó Finish		Oracle Audit Vault	12.1.0.2.0
	✓	Oracle Chargeback and Capacity Planning	12.1.0.2.0
	✓	Oracle Cloud Application	12.1.0.2.0
	✓	Oracle Exadata Healthchecks	12.1.0.2.0
	~	Oracle Fusion Applications	12.1.0.2.0
		Oracle Siebel	12.1.0.2.0
	~	Oracle Virtualization	12.1.0.2.0
		Sybase ASE Database	12.1.0.2.0
	lessages:		
Help	lne	talled Products	> Install Cancel
			Cancer

21. Click on Next.

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Oracle Enterprise Manager Cloud	Control 12c Installation - Step 7	7 of 10	
Extend WebLogic Server Do	main	ORACLE	Enterprise Manager Cloud Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details Select Plua-ins Extend WebLogic Server Doms Review Unstall Progress D Finish	Admin Server Host Agmin Server Port WebLogic ∐ser Name WebLogic Password OMS Instance Base Location	nckvoem03.starfleet.com 7101 weblogic ••••••• /u01/app/Middleware/oms12c	Browse
 ✓ ✓ 	Messages:	<68	ck Next > Install Cancel

22. Enter WebLogic Password and OMS Instance Base Location.

- 23. Click on Next.
- 24. Review the information provided and then click on Install.
- 25. Execute the script as a root when prompted during the installation process using the following command:
 - # . /u01/app/Middleware/wls_10.3.5/oms/allroot.sh
- 26. Click on **OK**.
- 27. Click on Close.

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Chapter 3



To delete the unwanted Fusion Middleware target of earlier versions of the Enterprise Manager 11g Grid Control release 1 (11.1.0.1), perform the following steps:

- 1. After the upgrade of Enterprise Manager, some of the targets under the top-level farm target secFarm_GCDomain appear as up and running. This status is incorrect. Delete the targets manually, as they are no longer required in OEM 12c.
- 2. Select **Middleware** from the drop-down list of **Targets** in Enterprise Manager Cloud Control.

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3. Select secFarm_GCDomain.

DRACLE Enterprise Manager Cloud Control 120		Setup + Help +	1 SYSMAN -	Log Out
🤹 Enterprise 🕶 🧃 Tarpeta 👻 🌟 Envorites 👻 🥝 Hatory 🕶		Search Target Name +		
Middleware III Midleware Features •		Page Refreshed 1	18-Jun-2012 16:0	9:33 851 🤇
Search Prod Name 💌 💽 Advanced Search				
Vew + 💠 Add + 💥 Remove 🍃 Configure				
Tara Carlo	Туре	Status Summary Com	plance Score (%)	Target Version
> BE BMSC_SCDoniain	Oracle Fusion Middleware Farm	n/a 0 4 0 0	n/a	10.3.5.0
C Estern COonen	Drade Fusion Middeware Farm	min 1 1 0 0	nia.	10.3.2.9

4. Click on **Remove**.

	Manager Cloud Control 12c Setup - 1840 - 1 👥 513444 - 1	.og Out 📿
🤹 Enterprise 🕶 👩 Targets 🔹 🌪	Sourches 👻 🙆 Hatgy + Search Target Name +	*
Target Navigation	secfarm_GCDomain @indowen03.a	itarfleet.com
V H secFarm GCDomain > Application Deployments > WebLogic Domain > Metadata Repositories	Warning You have drawn to remove softwm_SCDomin (Drade Fusion Moldeware Farm). Do you want to proceed? When Chade Fusion Moldeware Farm removed from Cloud Cardor), then Cade Fusion Moldeware Farm and all largets associated with it will also be removed. To trads progress of target removal, refer to the Pending Deleted Targets pay accessible than the Setup 3 Amagement Services and Reporting more.	9°
		to Tes

5. Click on Yes.

ORACLE Enterprise Manager Cloud Control 12c	Setup + Help + 👥 SYSHAN + Log Out
🖧 Enterprise 👻 💼 Eargets 👻 🌟 Eavonites 👻 🎯 History 👻	Search Target Hane +
Middleware 19 Middeware Features •	Page Refreshed 18-Jun 2012 16:36:53 857
Search Trid Rame () Advanced Search	
Yeer - 🔹 Add - 💥 Ramore 🖉 Configure	Type Status Camplianon Score (N) Target Weapon
> EMGC_GCDoman	Oracle Fusion Middlemare Farm n/a 0 4 0 0 n/a 10.3.5.0

How it works...

This recipe describes the 1-system upgrade approach on the same host. This upgrade method involves downtime, as the OMS on the same host and the repository in the existing database are upgraded.

There's more...

The preceding steps are valid for Oracle Enterprise Linux and will vary depending on the operating system being used. The preceding steps will remain identical for the upgrade of OEM from Version 10.2.0.5 to OEM 12c.



Upgrading using the 2-system upgrade approach (on a different host)

In this upgrade approach, the EM Cloud Control installation is carried out on a host that is different from the host where the existing EM is already running. It does not upgrade the existing Management Repository database, but upgrades the one on a different target, typically from a backed-up database, hence enabling the two EM systems to coexist. Minimal downtime is involved as a part of this upgrade approach.

Getting ready

Before you start, ensure that the server where the previous version of OEM is running is connected to the network, and an SSH or a telnet client is available. Also make sure you have access to the Unix server as rootuser, owner of Oracle repository database, and OEM.

The following environment details are used to demonstrate the 2-system upgrade approach in this example:

- Operating system: Oracle Enterprise Linux 5 Update 3
- Repository Database 11g release 2 is installed at /dboracle/product/11.2.0/ dbhome_1 as a repository owner
- Oracle Grid Control 11g release 1 is installed at /u01/app/Middleware/oms11g as an OEM owner
- Oracle Grid Control 11g Agent is installed at /u01/app/Middleware/agent11g as an OEM owner
- Oracle Weblogic server 10.3.2.0 is installed at /u01/app/Middleware/ wlserver 10.3 as an OEM owner

The following details are required to upgrade the host:

- ▶ Operating system: Oracle Enterprise Linux 5 U3
- Repository Database 11g release 2 is installed at /dboracle/product/11.2.0/ dbhome 1 as a repository owner

How to do it...

To identify and provide information about the host where you plan to install EM Cloud Control, follow these steps:

1. Add the target server host details in the /etc/hosts file of the existing OEM 11g server.

***.999.999.xx servername.starfleet.com servername



2. Click on the **Deployments** tab on the **Grid Control 11g** screen.

ORACLE Enterprise Manager		Home Targets
General Provisioning Patches & Updates		
Deployments		
Recommended Security Patches		
Security Recommendations Unavailable		
My Oracle Support Credentials Not Set		
Patch Recommendations an My Oracle Support credentials an	e not available. e required.	
Deployments Summary		
View Database Installations -		
		Collection Problems 📷
Database Installations 🛆	Targets	Installations Patches Applied
Oracle Database 11g 11.2.0.2.0	1	<u>1 Yes</u>
Ungrado		
Enternrise Manager 12c Ungrade Console		
Enterprise Manager 12e opgrade console		

- 3. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 4. Select the 2-System option from the Select Upgrade Type section.

ORACLE Enterprise Manager		Home Targets	Setup Bufferences Helo Loopo Deployments Alerts Compliance Jobs Reports My Oracle Support
General Provisioning Patches & Updates			
Upgrade Console Upgrade Console is the primary user interface and the suits your requirement and upgrade your existing Enti	starting point for upgrading your Er erprise Manager system in a smooth	nterprise Manager 10g Grid Control Release 5 (10.2.0.5.0) to Enterprise Ma	fanager 12c Cloud Control Release 1 (12.1.0.1.0). Select an upgrade approach that best
Agent Upgrade Status	4 0	Other Links	Other Links
Fale	d Q	Targets Upgradability Status	Agents Not Supported in Enterprise Manager 12c
In Progres	8 <u>Q</u>	Problematic Agents	Targets with Missing Agent/Plug-In Software for Enterprise Manager
Not Starter	d <u>1</u>	Agents Needing Reconfiguration	Targets Not Supported in Enterprise Manager 12c
Agents with Valid Inventor	v 1		
Agents with Invalid Inventor	y Q		
Refresh Agents and Targets List)		
Select Upgrade Type			
 1-System 2-System 1-System on a Different Host 	STIP Shuts down the existing Enter TIP Installs a new Enterprise Mans TIP Shuts down the existing Ent	arprise Manager system and upgrades it on the same host, ager system on a different host while the existing Enterprise Manager system erprise Manager system and upgrades it on a different host.	item continues to run until you switch over to the new system.

EM Grid Control refreshes the page and then displays a table with a list of tasks required to perform the 2-system upgrade approach.

- 5. Click on the **Identify Host and Port for New Enterprise Manager System** link in the **Preupgrade Steps** section from the table.
- 6. Enter the details in the OMS HTTPS Upload Port and OMS HTTP Upload Port fields on the Identify Host and Port for New Enterprise Manager System screen.



Chapter 3 RACLE Enterprise Manager Setup Preferences Help Home Targets Deployments Alerts Com Ubscale Consule > Identify Host and Port for New Enterprise Manager System Back Save Click if you wish to have Server Load Balancer (SLB) configured for your Oracle Management Service 12c Release 1 (12.1.0.1.0) 6 04.starfleet.com by qualified name of the host where yo OMS Host OMS HTTPS Upload Port e Manager Upload Http SSL Port you plan to assign for the En c Release 1 (12.1.0.1.0). OMS HTTP Upload Port prise Manager Upi tupgrade Tasks soon after the upgrade, Enterprise Manager Could Control automatically runs the deferred data migration process (DDMP) jobs. These jobs migrate historical data such as metrics, configuration en d'Enterprise Manager to the format compatible with Enterprise Manager Claud Control. Depending on the size of your Enterprise Manager system, these jobs consume a high annuurt of Ma to complete. In particular, when you upgrade using the 1-system upgrade agronacy, you might face resource contentions at the Managerrent Angel using the 1-system upgrade agronacy, you might face resource to the source at the Managerent Angel using the 1-system upgrade agronacy, you might face resource to the source at the Managerent Angel using the 1-system upgrade agronacy, you might face resource to the source at the Managerent Angel using the 1-system upgrade agronacy the 1-system upgrade agronacy, you might face managered the source to the source of the source of the temperature and the Managerent Angel using the 1-system upgrade agronacy than the source on the source of the source of the 1-system with the Enterprise Manager Cloud Control console. and tak disable the DDMP jobs, the ADMP jobs are also disabled by default. Disable automatic DDMP jobs hen you wetch over the Management, Agents, Enterprise Manager Guid Control automitologi runs the accound data mynitism porcess (MMP) jobs. These jobs mynite the acround data from the old Management Angement Resources, Accound data from to the data that was calculated from the mith Management Resource year tabulary of the stress of Management Angenetic was accounted from the old Management account at three and affect the normal business active. For better control on these jobs, you may choose to deable the auto-run of these ADMP jobs. If you do so, you must run these jobs biter exploitly from the for Enterprese Manager Cloud Control console. agement Upgrade Tasks Disable automatic ADMP jobs Back Save

7. Click on Save.

To install plugins and Oracle Management Agent 12c using the **Manage Software** option, perform the following steps:

1. Provide the location where the Agent software and the related plugin software are present, on the **Upgrade Console** screen.

The path shared in this example is /u01/software/preupgrade/ agentsplugin/.

Control 11n Home	Targets Deployments Alerts Compliance Jobs Reports My Oracle Suppo
eral Provisioning Patches & Updates	rages of populating were compliance just reports wy orace suppo
grade Console >	
anage Software	
	Bac
Agent Upgradability Targe	t Upgradability
100% Missing Agent Software [1]	Mosing Agent Software (1) Missing Plug-In Software (12)
Provkle Software Location	
Provide Software Location	Note:
Provide Software Location	Note: While copying the software to the software location, follow these rules
Provide Software Location Enter and validate the location where the agent software and the related plug-in software are present for the required plutforms.	Note: While copying the software to the software location, follow these rules • Copy the core agent software as well as the play-in software at the root level of
Provide Software Location Enter and validate the location where the agent software and the related plug-in software are present for the required platforms. * Software Location /ju01/software/preupgrade/sgentsplugn/ (Validate)	Note: While copying the software to the software locaton, follow these nules • Copy the core agent software as well as the plug-in software at the root level of the software locaton. • Corp the software as ensured via the DVD or via MDS. Do not extract the
Provide Software Location Enter and validate the location where the agent software and the related plug-in software are present for the required pathoms. * Software Location //J01/software/preupgrade/agentsplugn/ Validate	Note: While copying the software to the software location, follow these rules • Copy the core agent software as well as the plug-in software at the root level of the software location. • Copy the software as procured via the DVD or via NOS. Do not extract the contents of the software zp file. For example: 12.1.8.0.0. AgentCore_46.zp,


Upgrade to OEM 12c -

2. Click on Validate.

GRACLE Enterprise Manager	Home Targets	Deployments	Alerts Co	ompliance Jobs	Reports	Preferences Help Losout My Oracle Support
General Provisioning Patches & Updates						
Upprade Console >						
Manage Software						
						Back
D Information						
 Successfully validated and stored software information for the agent software : /u01/software/PretIpgrade/ The Hanagement Agent software 12.1.0.1.0. AgentCore_226.zip you have provided requires patch# " to be Successfully extracted the plug-in software and stored it in the directory "/u01/software/PretIpgrade/agent /agentsplugin/plugin_bin" 	agentsplugin/12.1.0 applied on the 12c u splugin/plugin_bin".	1.0_AgentCore_2 pgraded OMS. For more details cl	26.zip ieck log at loc	ation "/u01/softv	rare/PreUpgra	ude -
Confirmation						
Job Submitted RefreshAndValidateTargets 2012 06 25 16 38 21 671						

3. Wait until the upload activities are completed.

To identify the Management Agent with a valid inventory, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. In the **Agent Upgrade Status** section, check the number displayed against the **Agents with Valid Inventory** field.

ORACLE: Enterprise Manager Grid Control 11g		Home Vargets Deployments Alerts Compliance Jobs Reports My Oracle Support
General Provisioning Patches & Updates Upgrade Console Upgrade Console is the primary user interface and t upgrade approach that best suits your requirement	the starting point for upgrading your Enterprise Manager 10 t and upgrade your existing Enterprise Manager system in a	3g Grid Control Release 5 (10.2.0.5.0) to Enterprise Manager 12c Cloud Control Release 1 (12.1.0.1.0). Select an smooth and seamless manner.
Agent Upgrade Status Successful Failed In Progress Not Started Not Started Not Started Agents with Valid Inventory Agents with Invalid Inventory (Refresh Agents and Targets List)	Other Links 0 Agent Upgrade Status 0 Targets Upgrade Status 0 Problematic Agents 1 Agents Heeding Reconflag 1 0	Other Links Agents with Missing Core Software for Enterprise Manager 125 125 126 Interstand Missing Agent/Ducch Software for Enterprise Wration Transits with Missing Agent/Ducch Software for Enterprise Wration Manager 125 Targets with Missing Agent/Ducch Software for Enterprise

The agent with a valid inventory count in the current example is $\mathbf{1}$. There are no agents with an invalid inventory.

To check the upgradability status of the Management Agent, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the Manage Software link in the Preupgrade Steps section.



4. View the Agent Upgradability section on the Manage Software page.



In the previous example, there is one upgradeable agent and 13 upgrade targets.

To deploy and configure the software binaries of Oracle Management Agent 12c, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Select the **2-System** option in the **Select Upgrade Type** section.

GRACLE Enterprise Manager Grid Control 11g General Provisioning Patches & Updates		Home Targets Deployment	Sense Perferences Hele Lease Alerts V Alerts V Compliance V Jobs V Reports V My Oracle Support
Upgrade Console Upgrade Console is the primary user interface an- upgrade approach that best suits your requirement	d the starting point for upgrading ent and upgrade your existing Ent	your Enterprise Manager 10g Grid Control Release 5 (10.2.0.5. exprise Manager system in a smooth and seamless manner.	0) to Enterprise Manager 12c Cloud Control Release 1 (12.1.0.1.0). Select an
Agent Upgrade Status Successful Faled In Progress Not Started Not Supported Agents with Invalid Inventory Agents with Invalid Inventory (Refresh Agents and Targets List)		Other Links Agent Upgrade Status Targets Upgradabliky Status Problematic Agents Agents Needing Reconfiguration	Other Links Agents with Missing Core Software for Enterprise Manager 122 Agents Net Supported in Enterprise Manager 12c Targets With Missing Agent/Plue-In Software for Enterprise Manager 12c Targets Not Supported in Enterprise Manager 12c
Select Upgrade Type © 1-System © © 2-System © © 1-System on a Different Host ©	Ø TIP Shuts down the existing Er Ø TIP Instals a new Enterprise № Ø TIP Shuts down the existing Er	iterprise Manager system and upgrades it on the same host, mager system on a different host while the existing Enterprise iterprise Manager system and upgrades it on a different host.	Nanager system continues to run until you switch over to the new system.

- 4. Click on the Deploy and Configure Agents link.
- 5. Enter a distinct option name in the **Operation Name** field.



- 6. In the Select Operation Type section, select the operation type. In this example, both the options Deploy Agent and Plug-In Software and Configure Agent and Plug-In Software are selected.
- 7. In the **Search Agents** section, select the **Platform** type as applicable and click on **Search**, which will discover the Management Agent in the environment.
- 8. In the **Select Agent** section, review the **Agent Base Directory** and **Agent Instance Home** path, and amend these fields if required. Also, select the Agent.
- 9. In the **Agent Credentials** section, the **Override Oracle Home Preferred Credentials** option is chosen by default. Enter the credentials, which can be used for all Oracle homes.

Contraction Manager					Cate Automatication and
Srid Control 11g			Home Taroets Deploy	ments Alerts Compliance lobs Repor	ts My Oracle Support
General Provisioning Patches & Update					
Upgrade Console >					
Deploy and Configure Agents					
					(Back) (Next)
Operation Name Deploy_Agents_2500 Entry & unsue name for the	52012				
	characteristics and the second				
Select Operation Type Select the operation type to only deploy.	or both deploy and configure.	a only configure the already deployed software	binaries.		
Deploy Agent and Plug-In Software	te bear asper) and terrigary a				
Configure Agent and Plug-In Software					
Search Agents	te far which you want to medar	m this assertion. Hassanment Asserts sublime	to sup the apartics only sell he let ad		
search and seecc the Hanagement Agen	a for which you want to perion	in the operation. Hanagement Agents quarying	to full this operation only we be acted.		
Agent	Platform Linux x86-64 +				
Group Select Group +	Version All 👻	(Search)			
(Add) (Add Related Agents) (R	emove) 📰 Use Same Path	s for All Agents 🛛 Overwrite Any Existing D	irectories		
Select All Select None					
Select Agent		Old Agent Home	Agent Base Directory	Agent Instance Home	Status
nclvoem03.starfleet.com:3872		/u01/app/Middleware/agent11g	/u01/app/Middleware/agent12/	/u01/app/Middleware/agent12	Q
Agent Credentials					
Select the type of credentials to be used	for this operation. Ensure that	you use the same credentials that you used for	the existing, earlier release of the agent. Wh	en you choose to override the credentials, enter one :	set of credentials that
Use Oracle Home Preferred Credent	ials .	Override Oracle Home Preferred Credential			
+ Liser Name	manam				
• Password					
Confirm Password					
Run Privilene					
a norther states of the states					
e note	-				
W SUDO • Kun As (example: odma	(perc)				
Power Broker Run As	Profie				
(example: odma	(example: admin)				
If you select SUDO or Power Broke	r, then ensure that the privleg-	e settings are already set for the host targets.M	anage Privilege Delegation Settings		

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- 10. Click on Next.
- 11. Under the **Root Credentials** section of the **Upgrade Console** screen, provide the root username and password to allow execution of the root.sh Unix script at the end of the Agent's deployment.

ORACLE Enterprise Manager Stude Enterprise Man
General Provisioning Patches & Updates
Locat Crost > (Back Scient)
Pre-Deploy Options (Optional)
Enable this option if you want to run a command or a script before deploying the software binaries of the Management Agents.
Run Pre-Command/Script
Post-Config Options (Optional)
Enable this option if you want to run a command or a script after configuring the deployed Management Agents.
E Run Post-Command/Script
Root Credentials
Enter the not user account oredential to nut the not.sh. This is optional if you have chosen to upgrade only Windows Agents. If you do not have the preferes to run these commands or scripts, then select a third-party authentication tool and enter the required defaults to setch over to another user account of the has the prefere.
+ User Name root
+ Password
Confirm Password
@ None
© SUDO • Run As [root (searchic colongent)
Power Broker * Run As (not percent interpretation) Power Broker * Run As (not percent interpretation)
ITP If you select SUDO or Power Broker, then ensure that the privilege settings are already set for the host targets. Manage Privilege Delegation Settings
(Back) (Submit

12. Click on Submit.





Upgrade to OEM 12c -

13. Click on the Job Submitted hyperlink to view the progress of the Agent's installation.

This will take some time.

ACLE Enterprise Manager d Control 11g			Home Targets Depk	oyments Alerts Compliance Jobs Repo	Setup Preferences Help Loop rts My Oracle Support
n Activity >					
ab Duny DEDLOV ACENTE 35063013					
30 Run. DEPEOT_AGENT3_23002012			Data Belev	1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	
			Page Kelle	Delete Run	Edit View Definition
Summary					
Status Succeeded Scheduled 25-Jun-2012 21:31:10 GMT+01 Started 25-Jun-2012 21:31:13 GMT+01 Ended 25-Jun-2012 21:45:07 GMT+01 Elassed Time 13 minutes, 54 seconds Notificition No	:00 :00 :00		Type PreDeployAge Owner SYSMAN Description Pre Deploy Ag	ntSW ent Software	
Tarpets Status AJ • Go					
Expand All Collapse All		-	-		
Name	rangets	Status	Started	25 hrs 2012 21:45:07 CMT-01:00	Lapsed Time
Execution: novoenos.scaneec.com/se/2	hovoemos.scaneec.com.s872	Succeeveu	23-Jun-2012 21:31:13 GM1401:00	23-301-2012 21:43:07 0#1401:00	13.9 milutes
Orienda					
Step: updateStatusinProgress		Succeeded	25-Jun-2012 21:31:18 GMT+01:00	25-Jun-2012 21:31:18 GMT+01:00	0 seconds
Step: performPreKeg	ncvoem03.starfleet.com:3872	Succeeded	25-Jun-2012 21:31:23 GMT+01:00	25 Jun-2012 21:31:24 GMT+01:00	1 seconds
Step: copyswArchiveToHost	ncvoem03.starfeet.com:3872	Succeeded	25-Jun-2012 21:31:28 GMT+01:00	25-Jun-2012 21:31:35 GMT+01:00	7 seconds
Step: unzbAndbepioysortware	ncvoemu3.scameet.com:3872	Succeeded	25-Jun-2012 21:31:38 GM1+01:00	25-Jun-2012 21:33:24 GMT+01:00	1.8 mnuces
Step: copyrugnArchiveToHost	newoem03.stameet.com:3872	Succeeded	25-Jun-2012 21:33:29 GMT+01:00	25-Jun-2012 21:33:32 GMT+01:00	3 seconds
Step: deploy/ugitArchiveToHost	newoemu3.scameet.com:3872	Succeeded	25-JUR-2012 21:33:34 GMT+01:00	25-JUN-2012 21:33:36 GMT+01:00	2 seconds
Step: copybependenturs	newoemus.scameet.com:3872	Succeeded	25-Jun-2012 21:33:39 GMT+01:00	25-301-2012 21:33:39 GMT+01:00	U seconds
Step, doubleSurgersurgSuccess		Succeeded	25-Jun 2012 21:53:44 0MT+01:00	25-Jun-2012 21:33:44 GMT+01:00	0 seconds
Steer undstaffet uConfigure Infrastrets		Succeeded	25-001-2012 21:33/99 GMT+01:00	25-001-2012 21:33:49 GMT+01:00	0 seconds
Next 11 - 10 of 10		SALLEENED	23-34-2012 21:33:34 GM1+01:00	2010012012 21:00:04 GM1+01:00	U seconds
Numeral - 12 Al 12					
				(Delete Run) (Edit View Definition

To copy the emkey from the OMS to the Management Repository, follow these steps:

1. Use the following command to upgrade from Enterprise Manager 11g Grid Control:

```
$<OMS_HOME>/bin/emctl config emkey -copy_to_repos_from_file
-repos_host
<repository_host> -repos_port <port> -repos_sid <sid> -repos_user
<username>
[-repos_pwd <pwd>] [-admin_pwd <pwd>] -emkey_file <OMS_HOME>/
sysman/config/emkey.ora
$export OMS_HOME=/u01/app/Middleware/oms11g
$ $OMS_HOME/bin/emctl config emkey -copy_to_repos_from_file
-repos_host 11gservername -repos_port 1521 -repos_sid oem -repos_
user sysman -repos_pwd xxxxx -emkey_file $OMS_HOME/sysman/config/
emkey.ora
```

- 3. Before backing up the 11g OEM Repository database, ensure that all of the running and scheduled/planned deployment procedures in the existing Enterprise Manager system are stopped.
- 4. The 11g OEM Repository database backup can be done by using RMAN or conventional backup methods such as expdp, cold, and hot back, and we can restore the backup on the OEM 12c host for the repository database.





Note: Do not perform a backup of the repository database using the DB cloning feature in the Enterprise Manager console as it will not be able to view the cloned database discovered in the EM console.

To remove emkey from the Management Repository, execute the following command from the old OMS home:

```
$ $OMS_HOME/bin/emctl config emkey -remove_from_repos -sysman_pwd
sysman11
```

To provide the repository backup detail, perform the following steps in the OEM 11g Grid Control release:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.

neral Provisioning Patches & Updates						
grade Console	ha starting point fo	u unarredina una Enterraire Mansara 16a Guid Cantral Balance E /16 2.6 E 63 in Fr	hamming Managar 12s /	Saud Cantral Balance 1 /13	1010) Calestan un	anda sancasah that
your requirement and upgrade your existing E	te starting point to terprise Manager r	ir upgrading your Enterprise Manager 10g Grid Control Kelease 5 (10.2.0.5.0) to En aistem in a smooth and seamless manner.	terprise Manager 12c C	aoud control kelease 1 (12	.1.0.1.0). Select an up	grade approach that
the reduction are shared by course of a	and the second					
Agent Upgrade Status		Other Links	Other Lin	iles		
Succes	ful 0	Agent Upgrade Status	Agents	with Missing Core Software	for Enterprise Manage	120
Fa	ed 0	Taroets Upgradability Status	Agents	Not Supported in Enterpris	e Manager 12c	1000
In Progr	855 1	Problematic Agents	Targets	with Missing Agent/Plug-In	Software for Enterpris	e Manager
Not Star	ed 0	Agents Needing Reconfiguration	120			
Not Support	ed 0		Targets	Not Supported in Enterpris	se Manager 12c	
Agents with Valid Invent	y 1					
Agents with Invalid Invento	NY Q					
(Refresh Agents and Targets Li	(E					
I-System on a Different Host reupgrade Steps	& TIP Shuts dow	on the existing Enterprise Manager system and upgrades it on a different host.				
erform the following steps before upgrading y	our OMS and agent	x				
Phase Name		Description				
Dverview		Get an overview of the upgrade process.				
Identify Host and Port for New Enterprise Mana	ger System	Enter the port and host on which you want to install the new Enterprise N	lanager system.			
Manage Software		Manage the software required for upgrading the Enterprise Manager system	n.			
NIC and Reportant Upgrade Stops						
erform the following steps to upgrade your Of porading your OMS and repository.	tS and repository. (Optionally, you can choose to deploy and configure the agents before upgrading yo	our OMS and repository	. In this case, perform the	"Deploy and Configure	Agents" step befor
Phase Name		Description				
lack Up Repository		Back up your Management Repository				
rovide Repository Backup Details		Provide information on when you backed up your Management Repository.				
Ipgrade OMS and Repository Manually		Manually upgrade your existing OM5 and Management Repository.				
Yeate Link to Upgraded Repository		Create a link between the earlier release of your Management Repository a	nd the upgraded Mana	gement Repository		
Meent Ungrade Steps						
erform the following steps to upgrade your ag slowing steps for each attempt.	ents. If you have a	large number of agents, then you can choose to upgrade one set of agents in on	e attempt, and the ne	xt set in the subsequent a	ttempt. In this case, yo	su can repeat the
Phase Name	Description		Not Started	In Progress	Failed	Successful
eploy and Configure Agents	Instal and config	ure Oracle Management Agents 12c Release 1(12.1.0.1.0) on all managed hosts.	0	0	0	1
Senerate Health Report of Deployed Agents	Generate health	reports for the deployed spents before switching them over to the new	1	0	0	0

3. In the Select Upgrade Type section, select the 2-System option.

- 4. Click on the Provide Repository Backup Details link.
- 5. Specify the date and time when the Oracle Management Repository was backed up.



Upgrade to OEM 12c -

6. Specify the time when the OMS Repository was backed up.

ORACLE Enterprise Manager	Home Targets Deployments Alerts Compliance Jobs Reports MyOracle Support
General Provisioning Patches & Updates	
Upprade Console >	
Provide Repository Backup Details	
	(Back) (Save)
Backup Date 2012/06/25	
Backup Time (hhmmrcss) 23 + : 21 + : 00 +	
	(Back) (Save)

7. Click on Save.

To install the 12c Grid Control software, perform the following steps:

- 1. Extract the following OEM 12c software to a staging directory on the server, to invoke runInstaller. The following example is referring to the OEM 12c release 1 software.
 - □ V30905-01.zip
 - □ V30906-01.zip
 - □ V30907-01.zip
- 2. Invoke the EM Cloud Control installation wizard on the host.

```
$ export TEMP=/u01/tmp
```

```
$ ./runInstaller -pluginlocation /u01/software/preupgrade/
agentsplugin
```

Starting Oracle Universal Installer...

- 3. Uncheck the I wish to receive security updates via My Oracle Support option.
- 4. Click on Next.
- 5. Click on **Yes** on the **You have not provided an email address. Do you wish to remain uninformed of critical security issues in your configuration** screen, and then select **Skip**.

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6. Click on Next.

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 3 of 8	
Prerequisite Checks	ORACLE Enterprise Manager Cloud	d Control 12c
My Oracle Support Details Software Updates Prerequisite Checks Install Types	Prerequisite checks verify that your environment meets all minimum requirements for installing configuring your selected product Rerun Ignore	j and
Configuration Details Review Install Progress Finish	Prerequisite Name Status Checking if Oracle software certified on the current O/S Succeeded Checking for required packages installed on the system Succeeded Checking for required DLBC installed on the system Succeeded Checking for sufficient disk space in TEMP location Succeeded Checking whether the software is compatible for current O/S Succeeded Checking for sufficient disk space in Inventory location 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 the Hostname Succeeded Checking for L_ASSUME_KERNEL environment variable Succeeded Checking for LD_ASSUME_KERNEL environment variable Succeeded Checking for LD_ASSUME_KERNEL environment variable Succeeded Checking for LD_ASSUME_KERNEL Expected result: SubJASSUME_KERNEL Checking for LD_ASSUME_KERNEL Expected result: LD_ASSUME_KERNEL Expected result: LD_ASSUME_KERNEL Expected result: Variable Not set Checking for LD	
Help	Installed Products < Back Next > Install	Cancel

- 7. Click on Next.
- 8. Select the **Upgrade an existing Enterprise Manager System** option.
- 9. Select the **Two System Upgrade** option.



Upgrade to OEM 12c _____

10. Enter the absolute path of the middleware home in the **Middleware Home Location** field.

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 4 of 11
Install Types	ORACLE Enterprise Manager Cloud Control 12c
 My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details Select Plug-ins WebLogic Server Configuration Old Repository Details Review Install Progress Finish 	 Create a new Enterprise Manager System Simple Advanced Upgrade an existing Enterprise Manager System Two System Upgrade One System Upgrade Install software only (Installs Software only (Installs Software Bits now, configuration or upgrade can be done later) Middleware Home Location //u01/app/Middleware Browse
	Messages:
Help	Installed Products Cancel

11. Click on Next.

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12. Enter the OEM 12c Repository database connection details, such as **Database Host Name, Port, Service/SID, SYS Password**, and **SYSMAN Password**.

	Oracle Enterprise Manager Cloud	Control 12c Installation - Step !	5 of 11		
Da	itabase Connection Detai	ils	ORACLE	Enterprise Manag	er Cloud Control 12c
γ	My Oracle Support Details	Database H <u>o</u> st Name	nclvoem04.starfleet.com		
	Software Updates	Po <u>r</u> t	1521		
	Prerequisite Checks	S <u>e</u> rvice/SID	oem		
/	Install Types	<u>S</u> YS Password	•••••		
	Database Connection Details	S <u>Y</u> SMAN Password	•••••		
	Select Plug-ins				
0	WebLogic Server Configuration				
	Old Repository Details				
	Review				
	Install Progress				
6	Finish				
		Merraner:			
•					
	Help	Installed Products	< <u>B</u> a	ick <u>N</u> ext > In	stall Cancel

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Upgrade to OEM 12c -

13. Click on Next.



- 14. Click on Yes.
- 15. Connect to the OEM Repository RDBMS database and run the following commands:

SQL> grant execute on dbms_random to dbsnmp; SQL> grant execute on dbms_random to sysman; SQL> alter user ORACLE_OCM account unlock;

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16. Select additional plugins as per your requirement.

Oracle Enterprise Manager Cloud Co	ontrol 12c Installation	- Step 6 of 12	-	-	
Select Plug-ins		ORA	ACLE.	Enterprise M	anager Cloud Control 12c
 My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details Select Plug-ins WebLogic Server Configuration Old Repository Details Port Configuration Details Review Install Progress Finish 	Plugins provide mar typically have their management plugin Select Oracle Exac Oracle Exac Oracle Exac EMC CLARii EMC CLARii EMC Celerr EMC Symme Exalogic Eit IBM DB2 Dai Oracle Aud Oracle Aud Oracle Cha Oracle Cha Oracle Evas Oracle Evas Oracle Fusi Oracle Vise Oracle Vise Oracle Vise Oracle Vise Oracle Vise Oracle Vise Oracle Vise Oracle Vise Oracle Vise	agement capabilities tailored to wan lifecycle independent of the s you wish to configure. base lata an Middleware (My Oracle Support) ON Array 1 Storage trix Array stic Cloud Infrastructure abase t Vault rgeback and Capacity Planning d Application lata Healthchecks on Application sel alization Database	specific typ Enterprise b	es of targets or s fanager core pla 12 12 12 12 12 12 12 12 12 12 12 12 12	Solution areas and fform. Select the 21.0.2.0 21.0.2.
Me	ssages:				
Help	Installed Produ	cts	< <u>B</u> ac	k <u>N</u> ext >	Install Cancel

17. Click on Next.

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18. Enter WebLogic Password and Confirm Password, and enter Node Manager Password and Confirm Password.

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 7 c	of 12	
WebLogic Server Configura	tion Details	ORACL	Enterprise Manager Cloud Control 12c
 My Oracle Support Details Software Updates Prerequisite Checks Install Types Database Connection Details <u>Select Pluq-ins</u> <u>Old Repository Details</u> Port Configuration Details Review Install Progress Finish 	WebLogic Domain Name WebLogic User Name WebLogic Password Confirm Password Node Manager User Name Node Manager Password Confirm Password OMS Instance Base Location	GCDomain weblogic nodemanager /u01/app/Middleware/gc_in	nst Brow <u>s</u> e
Help	Installed <u>P</u> roducts		< <u>B</u> ack Next > Install Cancel

- 19. Click on Next.
- 20. Enter Old Repository Sysman Password.
- 21. Click on Next.
- 22. Review the **Port Configuration Details** screen, and change the port as applicable. Port numbers are left with their default values in this example.

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Chapter 3

Oracle Enterprise Manager Cloud	Control 12c Installation - Step 9 of 12		- 0 X
Port Configuration Details	OR	CLE Enterprise Manage	r Cloud Control 12
My Oracle Support Details Software Updates Prerequisite Checks Install Types Details	Configuration of the Enterprise Manager system requ communication between system components as well table below contains the ports that will be allocated, a component. By default, the first available port in the Import static	ires the allocation of several ports to as to provide access to the console v long with the recommended port rar specified port range has been choser ports.ini file	o facilitate internal ia a browser. The iges, for each 1.
Select Plug-ins	Component Name Enterprise Manager Upload Http Port	Recommended Port Range 4889-4898	Port 4889
WebLogic Server Configuration	Enterprise Manager Upload Http SSL Port Enterprise Manager Central Console Http SSL Port	1159,4899-4908 7799-7809	4900 7799
Port Configuration Details	Node Manager Http SSL Port Managed Server Http Port Enterprise Manager Central Console Http Port	7201-7300 7288-7788	7202
<u>Review</u> Install Progress	Oracle Manager Central Console http://ort Oracle Management Agent Port Admin Server Http:SSL Port Managed Server Http:SSL Port	3872,1830-1849 7101-7200 7301-7400	7700 3872 7101 7301
, Finish			
	<u>M</u> essages:		
Help	Installed Products	< <u>B</u> ack <u>N</u> ext > Inst	all Cancel

- 23. Please note that Enterprise Manager Upload Http Port and Enterprise Manager Upload Http SSL Port must be the same as shared in the previous step.
- 24. Click on Next.
- 25. Review the information provided, and then click on Install.
- 26. Execute the following script as root when prompted during the installation process:
 - # . /u01/app/Middleware/oms/allroot.sh

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Upgrade to OEM 12c

27. Click on OK.



28. Click on Close.

To create a link to the upgraded Oracle Management Repository, perform the following steps:

The new OEM 12c Management Repository needs to be linked to the earlier release of the Management Repository of OEM 11g.

- 1. Click on the Deployments tab on the Grid Control 11g screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Select the 2-System option in the Select Upgrade Type section.
- 4. Click on the **Create Link to Upgraded Repository** link in the **OMS Upgrade Steps** section.



- 5. On the Repository Link Details screen, enter the following:
 - The **Connect Descriptor for Upgraded Repository** value that will be the output of the following grep command on the OEM 12c OMS server:

\$ grep EM_REPOS_CONNECTDESCRIPTOR /u01/app/Middleware/gc_inst/em/ EMGC_OMS1/emgc.properties

- The SYSMAN Password for Upgraded Repository value that will be used by OEM 12c
- The SYS password for the Old Repository value

GRACLE Enterprise Manager	Home Targets Deployments Alerts Compliance Jobs Reports My Oracle Support
General Provisioning Patches & Updates	
Upgrade Console >	
	(Back) Create D8 Link, Re-create D8 Link,
Repository Link Details	
Connect Descriptor for Upgraded Repository SYSMAN Password for Upgraded Repository SYS Password for Old Repository	(DESCREPTION=(ADDRESS_LIST=(/ Inter the compact three to the uppediel reporter. The connect three is the use (which except durater for earlyis, '/') assigned to the DM_MEPOS_CONNECTORSCREPTOR parameter in the empty properties file. You can find the empty properties file in the DM_MEPOS_CONNECTORSCREPTOR parameter in the empty properties file. You can find the empty properties file. You can fil
	(Back) (Create DB Link) (Re-create DB Link)
	Home i Taroets i Deenkovments i Alerts i Complance i Jobs i Reports i My Oracle Support i Setup i Preferences i Helo i Loosut

6. Click on the **Create DB Link** button.

GRACLE Enterprise Manager	Home Targets Deployments Alerts Compliance Jobs Reports My Oracle Support
General Provisioning Patches & Updates	
Upgrade Console >	
	(Back) Create DB Link) (Re-create DB Link)
(1) Information	
DB link created successfully.	
Repository Link Details	
Connect Descriptor for Upgraded Repository SYSMAN Password for Upgraded Repository SYS Password for Old Repository	(DESCREPTION=(ADDRESS_LIST=() Come the commer amply for the upperfect quantum. The connect amply is the value (unthant assope devotes for example. Yr) assigned to the DM_REPOS_CONNECTIDESCREPTOR parameter in the engraphenese file. You can find the engraphenese file in the DEST and the STS ADDRESS of Oracle Management Service 12k Release 1 (12.1.8.1.6). Dest the STS parameter of Oracle Management Service 12k Release 1 (12.1.8.1.6).
	(Back) (Create DB Link) (Re-create DB Link)

To generate a health report of the deployed Management Agent perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. Click on the Generate Health Report of Deployed Agents link in the Agent Upgrade Steps section.
- 4. Enter the distinct **Operation Name**.
- 5. Select the **Platform** type as applicable in the **Search Agents** section, and then click on **Search**, which will discover Management Agent on the environment.
- 6. In the **Select Agent** section, review the **Agent Base Directory** and **Agent Instance Home** path, and amend if required. Then, select the Agent.



Upgrade to OEM 12c _____

7. In the **Agent Credentials** section, the **Override Oracle Home Preferred Credentials** option is chosen by default. Enter the user credentials, which can be used for all Oracle homes.

PACLE Enterprise Manager		N. 197		etup Preferences Help L
d Control 11g		Home Targets Deploys	nents Alerts Compliance Jobs Reports	My Oracle Suppo
neral Provisioning Patches & Updates				
parade Console >				
enerate Health Report of Deployed Agents				
				(Back) (Submit
eck the health of the deployed agents before switching them ove Provide Inputs	r to the new Enterprise Manager system.			
Operation Name HealthCheck_Agent_26062012 Enter a unique name for this operation.				
Load Agents from the previous operations.	<i>s</i> 60			
Search Agents				
Search and select the Management Agents for which you want t	o perform this operation. Management Agents qualifyin	ng to run this operation only will be listed.		
Agent Platform Linux x86	-64 -			
Group Select Group Version All	- (Search)			
(Add) (Add Balated Access) (Barran				
(Add Related Agents) (Remove)				
Select Al Select None	Other Provide Manage	Marrie Controls Marries	Marcon Management of Streement	Charles
Select pigent	6.01 (ma Middleway breakt to	hew oracle Home	1.01 loss (Hiddenson losset) 7 closest, just	status
Incoverno a carrier concept z	/001/app/Middleware/agenci1g	/uo1/app/Modeware/agenci2g	/out/app/Modeware/agencizg/agenc_nac	8
Agent Credentials				
Salect the type of credentials to be used for this operation. Ens	ure that you use the same credentials that you used fo	or the existing, earlier release of the agent, When	n you choose to override the credentiak, enter one set	of credentiak that
can be used for all Oracle homes.				
O Use Oracle Home Preferred Credentials	Override Oracle Home Preferred Credents	als		
a User Name				
Operation Orgonit				
Confirm Decound				
- some wante				
Run Privilege				
1 liona				
SUDO • Run As				

8. Click on the **Job Submitted** hyperlink to view the progress of the health report generation job.

Grid Control 11g			Home Targ	ets Deployment	Alerts Compliance	Jobs Reports	e Preferences Hele Loopyt My Oracle Support
Job Activity Job Library							
Job Activity >							
Job Run: HEALTHCHECK_AGENT_260620122012							
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To verify and sign off the health report, perform the following steps:

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.



- 3. Click on the **Sign Off Health Report of Deployed Agents** link in the **Agent Upgrade Steps** section.
- 4. Select the Management Agent from the **Sign Off Health Report for Deployed Agents** page.



5. Review **Ping Test** and **Broken targets** values and then click on the **Verify and Sign Off Report** button.

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To switch over to the Oracle Management Agent 12c, perform the following steps:

The switch over of the existing earlier release of Oracle Management Agent to the newly deployed Oracle Management Agent needs to be performed so that the Agent can communicate with the Enterprise Manager 12c Cloud Control.

- 1. Click on the **Deployments** tab on the **Grid Control 11g** screen.
- 2. Click on the Enterprise Manager 12c Upgrade Console link in the Upgrade section.
- 3. In the Agent Upgrade Steps section click on the Switch Agents link.
- 4. Enter a distinct name for the **Switch Agents** operation in the **Provide Inputs** section.
- Under the Search Agents section, select the Platform type and click on Search. The search result will discover Management Agent on the environment.
- 6. Select the Agent under the **Select Agent** section.



Upgrade to OEM 12c ----

7. In the **Agent Credentials** section, the **Override Oracle Home Preferred Credentials** option is chosen by default. Enter the user credentials, which can be used for all Oracle homes.

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- 8. Click on Submit.
- 9. Click on the **Job Submitted** hyperlink to view the progress of the health report generation job.

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To check the Agent upgradation status, perform the following steps:

10. Browse to the Upgrade Console section.

CRACLE Enterprise Manager Grid Control 11g General Provision] Patches & Updates Upgrade Console Upgrade Console is the primary user interface and the starting point for upgrading your bat's your reservement and upgrade your existing Enterprise Manager system in a smoot	Home Targets Enterprise Manager 10g Grid Control Release 5 (10.2.0.5.0) to Enterprise h and searries manner.	Deployments Alerts Compliance Jobs Reports My Oracle Support Manager 12c Cloud Control Release 1 (12.1.0.1.0). Select an upgrade approach that best
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Select Upgrade Type © 1-System @ TIP Shuts down the exeting Er @ 2-System @ TIP Instais a new Enterprise No @ 1-System on a Different Host @ TIP Shuts down the exeting Er	terprise Manager system and upgrades it on the same host. nager system on a offerent host while the existing Enterprise Manager s terprise Manager system and upgrades it on a different host.	ystem continues to run until you switch over to the new system.

11. Click on the Agent Upgrade Status link.

RACLE Enterprise Manage id Control 11g						Home Targe	ts Deployments	Alerts Compliance	e Jobs Reports	My Oracle Suppo
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nchoem03.starfleet.com	:3872 Linu	x x86-64	11.1.0.1.0	/u01/app/Middleware/agent11g	/u01/app/Middleware /agent12g	/u01/app/Middleware	Success	Success	Success	Success

When all the Agents have been upgraded, switching to OEM 12c is complete.

How it works...

This recipe describes the 2-system upgrade approach on different hosts. In this approach, installation of Enterprise Manager Cloud Control is done on a host that is different from the host where the existing Enterprise Manager system is already running. It does not upgrade the existing Management Repository database, but upgrades the one on a different target, typically from a backed-up database, thereby enabling two Enterprise Manager systems to coexist. Minimal downtime is involved as part of this upgrade approach.

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Upgrade to OEM 12c -

There's more...

The preceding steps are valid for Oracle Enterprise Linux and will vary depending on the operating system being used. The preceding steps will remain identical for the upgrade of OEM from Version 10.2.0.5 to OEM 12c.



Downloading the Bonus recipe of the book

The Upgrading using 1-system upgrade approach (on a different host) recipe is available as a free download at http://www.packtpub.com/sites/default/files/downloads/Recipe_2.pdf.



4 Configuring OEM 12c

In this chapter we will cover:

- Prerequisites for configuring automatic discovery
- Configuring automatic discovery of unmanaged host machines using IP Scan
- Configuring automatic discovery of targets on managed hosts
- Checking for and promoting discovered targets
- Adding host targets manually
- Adding non-host targets manually
- Configuring Administration Groups
- Creating template collections and associating them with Administration Groups
- ▶ Configuring a Software Library

Introduction

In this chapter, we will explore various configuration options available in the OEM 12c Cloud Control console for configuring Oracle Enterprise Manager 12c (OEM 12c), configuring automatic discovery of targets, adding hosts and non-host targets manually, creating template collections, and configuring a Software Library.

Configuring OEM 12c -

Prerequisites for configuring automatic discovery

The auto discovery option requires an active Management Agent to discover targets in the network. The agent internally uses Nmap for scanning the network. Nmap requires root privileges in order to use raw sockets for Syn scanning—a method that is used to detect open ports through firewalls.

The following recipe describes the prerequisite tasks to be performed to enable configuration of automatic discovery of hosts.

Getting ready

The following software packages need to be downloaded:

- openssl0.9.7a source code, available at http://openssl.org/source/ openssl-0.9.7a.tar.gz
- sudo-1.8.2 source code, available at http://www.sudo.ws/sudo/dist/sudo-1.8.2.tar.gz

How to do it...

In a telnet PuTTY session, perform the following steps:

- 1. Install the nmap module as a root or privileged user, if it is not installed on the box, by using the following command:
 - # rpm -qa nmap*
 - # yum install nmap*
- 2. We now need to configure the privilege delegation. Firstly, log on to OEM 12c Cloud Control and select **Setup** | **Security**.

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3. Click on **Privilege Delegation** and select the Management Agent.

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Security								
Manage Privilege Delegation Settings								
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In the current example, Oracle Management Agent on the OEM Cloud Control Server instance is selected to configure privilege delegation for it.

4. Click on Edit and then select Sudo.

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Chapter 4

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Configuring OEM 12c -

5. Enter /usr/bin/sudo -u %RUNAS% %COMMAND% as Sudo Command.



6. Click on Update.

	Setup • Help •	SYSMAN - Log Out	i O
🦓 Enterprise 🔹 🚳 Iargets 👻 🌟 Eavorites 👻 🥝 History 💌	Search Target Name 👻		•
Security			
ndvem2.starfiet.com > Manage Privlege Delegation Settings Confirmation Are you sure you want bu update SudojPoweBroker setting for this host ?			
		No Ye	es

7. Click on Yes.

ORACLE Enterprise Manager Cloud Control 12	DRACLE Enterprise Manager Cloud Control 12c Setup - Help -							
🦓 Enterprise 🔻 🎯 Targets 🕶 🌟 Eavorites 💌 🥝 History 💌 Search Target Name 💌								
Security								
Information Setting updated successfully. Manage Privilege Delegation Settings Both sudo and PowerForker are privilege delegation tools for UNIX-like You can configure the host with a Privilege Delegation setting, apply a Type AI Host Ga	environments, w Privilege Delegat	hich allow admini ion setting templ	strators to delegate administrative privileges and authorization ate or unconfigure the Privilege Delegation setting.	without disclosing the privileged a	ccount's password.			
Select Details Host V	Status	Туре	Agent	Agent Version	Operating System			
Show ndvoem02.starfleet.com	٢	Sudo	nclvoem02.starfleet.com:3872	12.1.0.1.0	Linux			

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We now need to configure sudo.

 Firstly, install the OS-dependent pam-dev package before installation of sudo. Connect as root user or as privileged user having access as root and issue the following commands:

```
# rpm -qa pam-dev*
# yum install pam-dev*
```

2. Check whether sudo is installed on the server; install it if not already installed. Connect as privileged user root and issue the following commands:

```
# which sudo
/usr/bin/which: no sudo in (/usr/local/bin:/bin:/usr/bin)
# yum install sudo*
# which sudo
/usr/bin/sudo
Install sudo-1.8.2
# cd /opt
# mv sudo-1.8.2.tar.tar sudo-1.8.2.tar.gz
# gunzip sudo-1.8.2.tar.gz
# tar xvf sudo-1.8.2.tar
# cd /opt/sudo-1.8.2
#./configure --prefix= --with-timeout=10 --without-lecture
--disable-root-sudo --disable-path-info
# make
# make install
# which sudo
/bin/sudo
```

3. We can now edit the sudcers file to allow OEM 12c to install a user to issue the sudc command. Connect as privileged user root and issue the following commands:

cd /sbin ./visudo

4. Add Defaults !env reset to avoid sudo from resetting the environment.

Also, add the following entry to enable sudo for the OEM 12c installation user. In this example, the oracem user is used:

```
oraoem ALL=(ALL) ALL
# more /etc/sudoers | grep -i oraoem
oraoem ALL=(ALL) ALL
```

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Configuring OEM 12c -

5. We now can install OpenSSL. Transfer the OpenSSL Version 0.9.7a software to /tmp on the server for installation and to avoid conflict with the system's pre-install version. Connect as privileged user root and issue the following commands to install OpenSSL:

```
# gunzip openssl-0.9.7a.tar.gz
# tar xvf openssl-0.9.7a.tar
#cd /tmp/openssl-0.9.7a
#./config shared --prefix=/tmp/openssl0.9.7a
#make
#make
#make install
#ln -s /tmp/openssl0.9.7a/lib/libssl.so.0.9.7 /tmp/openssl0.9.7a/
lib/libssl.so.4
# ln -s /tmp/openssl0.9.7a/lib/libcrypto.so.0.9.7 /tmp/
openssl0.9.7a/lib/libcrypto.so.4
```

- The newly installed OpenSSL lib path is not included in the default library paths. Specify LD_LIBRARY_PATH to include it, before restarting the Enterprise Manager Agent, as follows. Make a backup copy of /etc/profile as privileged root user.
 - # cd /etc/
 - # cp profile profile_bkp
- Add the following entry to the source library path of the temporary installed OpenSSL library:

```
LD_LIBRARY_PATH=/tmp/openssl0.9.7a/lib:$LD_LIBRARY_PATH
```

export LD_LIBRARY_PATH

8. Connect to the OEM 12c installation user and issue the following command to restart the service:

```
export AGENT_HOME=/u01/app/Middleware/agent/core/12.1.0.1.0
$AGENT_HOME/bin/emctl stop agent
$AGENT HOME/bin/emctl start agent
```

There's more...

The preceding commands will vary depending on the operating system being used. This is valid for Oracle Enterprise Linux.



Configuring automatic discovery of unmanaged host machines using IP Scan

Automatic discovery is the process that involves a scanning of host machines with Oracle components that can be managed and monitored by OEM 12c.

This process uses a single Oracle Management Agent that scans the entire network based on the IP address range specified for the scan. It returns a list of host machines that do not yet have a Management Agent installed on them.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To discover and configure hosts using IP Scan, perform the following steps:

1. Select Add Target from the Setup menu





Configuring OEM 12c -

2. Click on Configure Auto Discovery from the Add Target menu

				Setup + Help + 👥 SYSF
🤹 Enterprise 💌 👩 Targets 💌 🛧 Favorites 👻 🤗 History 💌				Search Target Name 💌
Configure Auto Discovery				Page Refreshed 08-Aug-20
■ Instruction Automatic discovery is a process that detects hosts, virtual servers and oth	her targets so that they can l	be monitored and manag	ed by Enterprise Manager. Use the fol	lowing options to configure and schedule automatic discovery.
Configure Auto Discovery - Setup discovery using IP Scan - Setup discovery on Multiple Hosts - Setup discovery on Multiple Hosts	Add Targets from Auto Discovery Results • Add Non-Host Targets • Add Discovered Hosts • Ignore Discovered Target	ts	Add Targets Hanalaly Add Targets Manalay • Add Targets Manalay • Use Discovery Modules	or Using
Host Discovery	Type	Configure		
Hosts and Virtual Server Discovery Using IP Scan	Agent-less	(Configure		
Discovery Module	Type	Configure		
Multiple Target-Type Discovery on Single Host	Agent-based	ß		
Oracle Audit Vault	Agent-based	S		
Oracle Cluster and High Availability Service	Agent-based	ß		
Oracle Database, Listener and Automatic Storage Management	Agent-based	S		
Orade Fusion Middleware	Agent-based	S		
Oracle Home Discovery	Agent-based	69		

3. In the **Configure Auto Discovery** table, click on the configure icon appearing in the **Configure Host Discovery** column next to the **Host and Oracle VM Manager Discovery using IP scan** entry in the **Host Discovery** column.

		Satura - Hale				
		2emb + ⊡et				
🦓 Enterprise 🔻 🔞 Targets 👻 🌟 Eavorites 👻 🥝 Hist <u>o</u> ry 🛩		Search Target Name 👻				
Host Discovery (Agentless)		Page Refres				
Use this page to search, browse, and create specifications for the discovery of hosts, virtual servers, and network devices using IP scan. Sc • Name • Parts • IP ranges to be scanned Once the specification is created it can be reused later to scan again. Search	edule the discovery on a configurable interval. to be scanned ntials and schedule for discovery to be run					
View 🗸 📑 Create 🥒 Edit 💥 Delete 🛛 🖓 Refresh IP Scan Results 🛛 6⁄8 View Discovered Targets						
Scans Latest Scan Results Summ	ary					
Name Owner Performed Status Number of Agents Start Time	End Time	Description				
Scan Statuc						
Latest Scan All Scans						
Search View → 6d View Job Details						
Agent that Performed Scan Status New Targets / Total Targets Discovered Start Time	End Time	IP Ranges Scanned				
No data to display.						

4. Click on the Create icon to create a host discovery specification.

Add a meaningful text in the **Description** field. In this example, Discover Hosts is written.



Chapter 4

ORACL	🧲 Enterprise Manager	Cloud Control 12c		
Host Disco	very Specification: Create	2		
* Name	Host Discovery 08/09/12 5:48:53			1
Description	Discover Hosts			
Owner	SYSMAN			
Scan Deta	ils Job Details			
IP Range	s for Scan			
Use this section example: host	n to select an agent that performs t name.com 192.168.0.1 128.16.10.0	he IP scan, and for each agent, specif)/24 10.0.0-255.1-250,254)	y the IP ranges for the scan. The following formats are suppo	orted: host name, IP address, I
≥ Advance	bd			
Ø To perform View →	host discovery scans, configure th Add 💥 Remove	e hosts of the scanning agents with Su	do Privilege Delegation, and use credentials that have Run A	s 'root' attribute set.
Agent to P	erform Scan	IP Ranges for Scan	Host Name	
	жау.			
Configure	Ports:			
Acontion dia	covery automatically econe for a list	of default ports to detect convices. To	extend each scap to other ports, specify service pame and	oort value(a). Liee dach conarat
View -	Add Se Remove	or deriduit ports to detect services. To	exterio eauriscari to outer ports, specify service name and p	uri valucija, use udstr-separat
Service N		Ports		
Select IP ran	anc. ae above.	roro		
Delect II Turi	ye abore.			

- 5. Click on the Add icon.
- 6. Select OMS Agent Home for this example.
- 7. Provide the host names and a range of IP addresses of the hosts to be discovered.
- 8. Accept the default port configuration for this agent.

Jerrerprise Manager (Cloud Control 12c	
ost Discovery Specification: Create		
* Name Host Discovery 08/09/12 5:48:53		
Description Discover Hosts		
Owner SYSMAN		
Scan Details Job Details		
P Ranges for Scan		
e this section to select an agent that performs the ample: hostname.com 192.168.0.1 128.16.10.0/2	IP scan, and for each agent, specify the IP ranges for 24 10.0.0-255.1-250,254)	the scan. The following formats are supported: host name, IP address, IP range (including CID
Advanced		
To perform host discovery scans, configure the	nosts of the scanning agents with Sudo Privilege Delega	ation, and use credentials that have Run As 'root' attribute set.
/iew - ♣ Add ¥ Remove	ioo of the beaming agents manoador milege belege	
Agont to Dorform Crop	ID Danage for Scan	Hest Name
Agent to Perform Scan ndvoem02.starfleet.com:3872	IP Ranges for Scan Indvoem03.starfleet.com ndvoem04.starfleet.d	Host Name ndvoem02.starfleet.com
Agent to Perform Scan nclvoem02.starfleet.com:3872 Configure Ports: nclvoem02.starfleet.cc gentiess discovery automatically scans for a list of	IP Ranges for Scan Indvoem03.starfleet.com ndvoem04.starfleet.c bm:3872 f default ports to detect services. To extend each scan	Host Name indvoem02.starfleet.com to other ports, specify service name and port value(s). Use dash-separated ranges separated to
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Agent to Perform Scan ndvoem02.starfleet.com/3872 Configure Ports: ndvoem02.starfleet.com/ gentless discovery automatically scans for a list of Vew マ ↓ Add & Remove Service Name	IP Ranges for Scan Indvoem03.starfleet.com ndvoem04.starfleet.d mm:3872 If default ports to detect services. To extend each scan Ports	Host Name ndvoem02.starfleet.com to other ports, specify service name and port value(s). Use dash-separated ranges separated to
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Agent to Perform Scan ndveen02.starfleet.com:3872 Configure Ports: nclvoen02.starfleet.com gentess discovery automatically scans for a list of View → ▲ Add Service Name Tehet SSH Orade KAS Control (OMS and Agent) Orade KAS Control (OMS and Agent) Orade Scure Backup Orade Scure Backup Orade Kgt.*NET Orade Kgt.*NET Orade Kgt.*NET	IP Ranges for Scan Indiversity of Scan Indiversity of Scan Indiversity of Scan Inditing Scan Indit Scan	host Name ndvoem02.starfleet.com
Agert to Perform Scan rdvoem02.starfieet.com:3872 Configure Ports: ndvoem02.starfieet.com gentiess discovery automatically scans for a list of View →	IP Ranges for Scan Indvoem03.starfieet.com ndvoem04.starfieet.com Starfieet.com ndvoem04.starfieet.com Starfieet.com Ports 23 23 25 5155,1156 7001,7003 400 66 8899 1521,8080	host Name ndvoem02.starfleet.com
Agert to Perform Scan rdvoem02.starfleet.com:3872 Configure Ports: nclvoem02.starfleet.co servers automatically scans for a last of view	IP Ranges for Scan Indiversity Starfleet.com ndiversityAstafleet.com Parts Parts 22 25,1156 7001,7003 400 66 8899 1521,8080 3938,1188	host Name ndvoem02.starfleet.com
Agent to Perform Scan rdvoem02.starfleet.com:3872 Configure Ports: nclvoem02.starfleet.com gentless discovery automatically scans for a list of Vew → ↓ Add ※ Remove Service Name Tehret SSH Orade ASC Control (CMS and Agent) Orade SQL *BET Orade SQL *BET Orade SQL *BET Orade SQL *BET Orade ASQL Solution Server Orade Database Control (CMS and Agent) Orade Agenton Server	IP Ranges for Scan Indvoem03.starfleet.com ndvoem04.starfleet.com Indvoem03.starfleet.com Indvoem03.starfleet.com Idefault ports Idefault ports 23 23 25 5155,1156 7001,7003 66 8899 1521,4080 3938,1188 4443,7443,7777	host Name ndvoem02.starfleet.com
Agent to Perform Scan ndvoem02.starfleet.com:3872 Configure Ports: ndvoem02.starfleet.co gentess discovery automatically scans for a list of View ↓	IP Ranges for Scan Indiverm03.starfleet.com ndiverm04.starfleet.com Ports Ports Ports 23 23 23 25 155,1156 700,1003 66 8899 1521,2080 3038,1158 4443,7443,7777 3306	host Name ndvoem02.starfleet.com
Agent to Perform Scan rdvoem02.starfleet.com:3872 Configure Ports: ndvoem02.starfleet.com gentless discovery automatically scans for a list of Wew → ▲ Add ※ Remove Service Name Tehet SSH Oracle KS Control (OMS and Agent) Oracle SQL*NET Oracke SQL*NET Oracke Database and Listener Oracke Database Control (OMS and Agent) Oracke Agent Database Control (OMS and Agent) Oracke Database Control (OMS and Agent) Oracke Agent Database Control (OMS and Agent) Oracke Agent Database South Server	IP Ranges for Scan Indiveem03.starfleet.com ndiveem04.starfleet.com om:3872 idefault ports to detect services. To extend each scan Ports 23 24 5155,1156 7001,7003 66 8899 1521,8080 9398,1158 4443,7443,7777 3366 3389	host Name ndvoem02.starfleet.com
Agent to Perform Scan ndvoem02.starfleet.com:3872 Configure Ports: ndvoem02.starfleet.co gentiess discovery automatically scans for a list of View → → Add Service Name Trainet SSH Orade BK Orade Scure Backup Orade SQL*NET Orade SQL*NET Orade Database Control (OMS and Agent) Orade Database Control (SMS GMS Everer Microsoft Terminal Service Microsoft Terminal Service	IP Ranges for Scan Indvoem03.starfleet.com ndvoem04.starfleet.com Indvoem03.starfleet.com Indvoem03.starfleet.com Indvoem03.starfleet.com Indvoem03.starfleet.com Indvoem04.starfleet.com Indvoem03.starfleet.com Indvoem04.starfleet.com Indvoem04.starfleet.com Indvoem04.starfleet.com Indvoem03.starfleet.com Indvoem04.starfleet.com Indvoem03.starfleet.com Indvoem04.starfleet.com Indvoem04.starfleet.com </td <td>host Name ndvoem02.starfleet.com</td>	host Name ndvoem02.starfleet.com
Agent to Perform Scan rdvoem02.starfleet.com:3872 Configure Ports: nclvoem02.starfleet.co gentless discovery automatically scans for a list of Wew → ▲ Add S& Remove Service Name Tehet Service Name Orade IAS Control (OMS and Agent) Orade SQL *NET Orade SQL *NET Orade Database and Listener Orade Application Server Microsoft Terminal Service Microsoft Terminal Service Microsoft SQL Server Database Orade Logia Service	IP Ranges for Scan Indiversity Starfleet.com ndiversityAstarfleet.com om:3872 default ports to detect services. To extend each scan Ports 23 24 5155,1156 7001,7003 000 66 8899 1521,0800 3398,1158 4443,7443,7777 336 3389 1433,1434 389,636	host Name ndvoem02:starfleet.com



Configuring OEM 12c _____

In this example two host DNS names are specified.

- 9. Click on the Job Details tab.
- 10. Under **Schedule** | **Start**, accept the default option of **Immediately** for this example, as shown in the following screenshot.
- 11. Select **New** as the **Credential** under the **Credentials** section and provide the credential input.
- 12. Select Sudo from the drop-down list for the Run Privilege field.
- 13. Accept the default settings for the name of this new credential.

ORACLE' Enterprise Manager Cloud Control 12c	Help + Q
Host Discovery Specification: Create	Save and Submit IP Scan Cancel
* Name Host Discovery 08/09/12 5:48:53	
Description Discover Hosts	
Owner SYSMAN	
Scan Details Job Details	
Schedule Start @ Immedately @ Later B ((UTC +00:00) London Repeat [Do not repeat w	
Creation Table Section (Creation of the section of	
Credential O Preferred Named New	
* UserName oraoem	
* Password	
* Confirm Password	
Run Privilege Sudo 💌 Run as root	
Save As NC_HOST_2012-08-09-174853	

14. Click on Save and Submit IP Scan.

	nager (Cloud Control	12c				
🐔 Enterprise 🔻 👩 Targets 👻 🐈 Ea	vorites 👻 🌔	⊘ Hist <u>o</u> ry ▼					Searc
Host Discovery (Agentless)							
Use this page to search, browse, and or Name IP ranges to be scanned Once the specification is created it can b Search	reate specifi be reused la	cations for the ter to scan aga	discovery of hosts ain.	, virtual servers, and netw	ork devices	using IP scan. Schedule the discovery on a configurable interval. • Ports to be scanned • Credentials and schedule for discovery to be run	
View 🗸 📑 Create 🥒 Edit 🔰	🕻 Delete	🝓 Refresh	IP Scan Results	60 View Discovered Tar	gets		
Name	Owner	Sca	ns		Latest S	ican Results Summary	Descri
Host Discovery 08/09/12 5:48:53	SYSMAN	Perform	1 Scheduled	Number of Agents Start 1 09-A	ug-2012 16	End Time 5:55:34 o'dock GMT+01:0	Disco
Scan Status: Host Discovery Latest Scan All Scans	08/09/12	2 5:48:53					
Search View → 6d View Job Details	Export	t Scan Results					
Agent that Performed Scan	Sta	atus	New Targets / Tota	al Targets Discovered Start	Time	End Time	IP Ra
ndvoem02.starfleet.com:3872	Sch	neduled		0/0 09-A	ug-2012 16	5:55:34 o'dock GMT+01:0	ndvo

15. Click on View Discovered Targets ... to view the hosts that have been discovered.



Chapter 4



In this example, two unmanaged hosts, nclvoem03.starfleet.com and nclvoem04. starfleet.com, have been discovered and are listed under the **Host** targets. A similar process can be followed to discover the range of IP addresses in a network.

How it works...

This recipe describes the steps to be taken in order to discover unmanaged hosts in a network by using hosts and virtual server discovery, using the IP Scan method. This process of discovery of hosts is also referred to as **host discovery** (**agentless**).

By looking at the list of services and ports, one is able to determine what types of Oracle components have been discovered.

In this example, the hosts nclvoem03.starfleet.com and nclvoem04.starfleet. com return port 1521. This signifies that the Oracle listener is running on port 1521 on these hosts. This Oracle component can then be promoted to manage target status, enabling targets to be managed and monitored by Cloud Control.

There's more...

The automatic discovery job can be scheduled to run once a day, or once a week, or a number of times a day, as appropriate, to discover any additional Oracle components added to the discovered hosts.

Automatic discovery should ideally be run by a network administrator who has an overview of what Oracle components are running on what port.

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Configuring OEM 12c

Configuring automatic discovery of targets on managed hosts

Automatic target discovery is the ideal method of discovering potential targets on managed hosts, as Oracle EM Cloud Control can search one or more hosts for multiple types of targets at the same time.

By default, automatic discovery is enabled for all supported target types, excluding Oracle Fusion Middleware, which needs a search parameter to be provided.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To configure automatic discovery on one or more managed hosts, perform the following steps:

1. Select Add Target, from the Setup menu, and then select Configure Auto Discovery.



2. In the **Multiple Target-type Discovery on Single Host** row in the **Discovery Module** table, click on the **Configure** icon.



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ORACLE Enterprise Manager Cloud Control 12c S								
🦓 Enterprise 🔻 🔞 Iargets 🗙 🌟 Eavorites 🕶 🤗 History 🕶 Search Ta								
Target Discovery (Agent Based)						P		
Use this page to search and browse target discovery settings on hosts managed by Enterprise Manager, configure discovery settings on one or more hosts, or view the latest results.								
≥ Search								
View 🗸 🖉 Configure 💟 Run Discovery Now 🛛 🍓 Refresh								
Agent Host Name △▼	Enabled Discovery Modules	Schedule	Discovered Targets	Managed Targets	Most Recent Ended On	Status		
ndvoem02.starfleet.com	Oracle Cluster and High Availability Service	Every 1 Day(s)	5	43				

3. Select an agent for the required host. The OEM 12c agent is selected in this example. **Oracle Fusion Middleware** under the **Discovery Module** row is not enabled in this example.

Cloud Control 12c							
Configure Target Discovery							
Use this page to configure target discovery and parameters	on this host.						
Agent Host Name ndvoem02.starfleet.com							
Frequency Every 1 Day(s)							
Martin i							
View - Celit Parameters							
Discovery Madula	Eashlad		Discovery Parameters				
Discovery Module	chabled	Target Types	Configuration Status V	/alues			
Oracle Audit Vault		Orade Audit Vault, Orade Audit Vault Agent					
Oracle Cluster and High Availability Service		Cluster, Oracle High Availability Service	No Parameters				
Oracle Database, Listener and Automatic Storage Manager 📝		Database Instance, Listener, Cluster ASM,	Specified or Option	inter Clusterware Home=null			
Orade Fusion Middleware		Oracle WebLogic Domain					
Oracle Home Discovery		Orade Home	No Parameters				
OradeSecureBackup		Orade Secure Backup Domain	No Parameters				

4. Select Oracle Fusion Middleware.

C	ORACLE Enterprise Manager Cloud Control 12c						
Configure Target Discovery Use this page to configure target discovery and parameters on this host. Agent Host Name Indvoem0.2starfleet.com Frequency Every 1 Day(s)							
	View 🗸 🧪 Edit Parameters						
	N			Discovery Parameters			
	Discovery Module	Enabled	larget lypes	Configuration Status	Values		
	Oracle Audit Vault		Oracle Audit Vault, Oracle Audit Vault Agent				
	Oracle Cluster and High Availability Service	V	Cluster, Oracle High Availability Service	V No Parameters			
	Oracle Database, Listener and Automatic Storage Manager 📝		Database Instance, Listener, Cluster ASM, 🖋 Specified or Optional		Enter Clusterware Home=null		
Γ	Oracle Fusion Middleware		Oracle WebLogic Domain	🙁 Required Parameters Not Specified	Enter value of Middleware Home(s)=		
	Oracle Home Discovery	V	Oracle Home	✓ No Parameters			
	OradeSecureBackup	V	Oracle Secure Backup Domain	✓ No Parameters			

- 5. Click on Edit Parameters.
- 6. Enter the appropriate value in the **Enter value of Middleware Home(s)** field in the **Edit Parameters** screen.

Edit Parameters		×
* Enter value of Middleware Home(s) /u01/a	pp/Middleware	
	OK Cance	

7. Click on **OK**.



Configuring OEM 12c -

ORACLE Enterprise Manager Cloud Control 12c Beb +							
Configure Target Discovery							
Use the page to confluxe target discovery and parameters on this host. Agent Host Name Indiversity of Conflict target discovery and parameters on this host. Frequency Reve 1 (Day(d))							
Vev - / Cdt Parameters							
Discovery Mark In	Enabled	Target Types	Discovery Parameters				
Uscovery module			Configuration Status	Values			
Oracle Audit Vault	(m)	Oracle Audit Vault, Oracle Audit Vault Agent					
Oracle Cluster and High Availability Service	V	Cluster, Orade High Availability Service	No Parameters				
Oracle Database, Listener and Automatic Storage Manage		Database Instance, Listener, Cluster ASM,	Specified or Optional	Enter Clusterware Home=null			
Orade Fusion Middleware	V	Oracle WebLogic Domain	Specified or Optional	Enter value of Middleware Home(s)=/u01/app/Middleware			
Oracle Home Discovery		Oracle Home	No Parameters				
OradeSecureBackup	V	Orade Secure Backup Domain	V No Parameters				

- 8. Leave the frequency at the default setting of once in a day, and then click on **OK**.
- 9. Select Agent Run Discovery Now on the Target Discovery (Agent Based) screen.



10. Click on Yes.



11. Click on Close.



- 12. Select **Add Target** from the **Setup** menu, and then select **Auto Discovery Results** to view discovered targets.
- 13. Click on the **Non-Host Targets** tab to view the discovered targets (GCDomain in this example).

ORACLE Enterprise Manager Cloud Control 12c Setup + Heb + 🛃 S							
🤹 Enterprise 🔻 🔞 Targets 👻 🌟 Eavorites 👻 🥝 Hist <u>o</u> ry 👻	Search Target Name 👻						
Auto Discovery Results Page Refresh							
✓ Instruction Review discovered urmanaged targets and promote targets to be managed by Enterprise Manager. ✓ Configure Auto Discovery • etup discovery using IP Stant • etup discovery on Rultiple Hosts • etup discovery Modules • etup discovery dis							
Target Name AV Target Type	Discovered On	Host	Agent				
+ASM1_nclblade02 Automatic Storage Management	12-Apr-2012 00:00:06 o'clock GMT+01:00 ndblade02 https://r		https://ndblade02:1830/emd/main/				
+ASM_nddustx Cluster ASM	12-Apr-2012 00:00:06 o'dock GMT+01:00	ndblade02	https://ndblade02:1830/emd/main/				
/Farm_GCDomain/GCDomain_nclvoem02.starfleet. Oracle WebLogic Domain	31-Jul-2012 16:34:22 o'dock GMT+01:00	ndvoem02.starfleet.com	https://ndvoem02.starfleet.com:3872/emd/main/				

How it works...

This recipe describes the steps to be taken to enable automatic discovery of targets on managed hosts.

In this example, Oracle Fusion Middleware is selected to demonstrate how it discovers Weblogic Domain after automatic discovery is enabled. Any new Weblogic Domain created hereafter under the same middleware home will be discovered automatically after execution of a scheduled job is done, which will discover targets.

Checking for and promoting discovered targets

After automatic discovery has been configured, new targets will automatically be discovered on a regular basis. Check the **Auto Discovery Results** page to see what targets have been discovered over time. You can then promote targets to managed status.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.


How to do it...

After the discovery job has completed, check for discovered hosts that may contain potential targets. This can be achieved in either of the following ways:

- On the Host Discovery page, select the job, and then click on View Discovered Targets
- Select Add Target from the Setup menu, and then select Auto Discovery Results

To promote discovered targets to managed status, perform the following steps:

1. Select a target to promote, and then click on **Promote**.

A wizard specific to the target type being promoted opens, and the required values need to be entered. This step is ignored for this example.

2. Click on the **Non-Host Targets** tab. One or several targets can be selected for promotion.

Note that the database instance named test is installed to demonstrate this example.

	ontrol 12c		
🚓 Enterprise 🔻 🔞 Iargets 👻 🌟 Eavorites 👻 🤗 Hist <u>o</u> r			Search
Auto Discovery Results			
✓ Instruction Review discovered unmanaged targets and promote targets	to be managed by Enterprise Manager.		
Setup discovery using IP Scan Setup discovery using IP Scan Setup discovery on Single Host Setup discovery on Multiple Hosts	Add Targets from Auto Discovery Results • Add Non-Nost Targets • Add Discovered Hosts • Ignore Discovered Targets	Add Targets Manually or Using Guided Process • Add Targets Manualy • Add Related Targets • Use Discovery Modules	
Host Targets (2) Non-Host Targets (36)	ignored Targets (0)		
View - Promote Prename X Delete P	Ignore 🙀 Refresh		
Target Name △▼ Target	Type Discovered On	Host	Agent

3. Click on **Promote** for the database instance (test in this example).

OR/	RACLE Enterprise Manager Cloud Control 12c 840 - Q									
Discov	Discovering Targets on Host: ndvoem02.starfleet.com									
Databa The folio specified Monitor p Select	at aboves In following disabless have been discovered on this host. Administrator can configure the database system name for each of the discovered databases. If user gending group, trintegrine Manager will add the discovered targets on the promotion of the default care through a system care with the add of database to integrine Manager. Additional properties can be privided for discovered databases by doing "Configure" button.									
Select	Select Name Database System Group Monitor Password Configure Metrics									
	Test test_sys									
Ci ana	and a star damage of the last of the damage of the last of the las	and the discount of the second s								

4. Click on **Configure**.



5. Provide a value for **Monitor Password**. Note that the dbsnmp account should be unlocked. The following commands can be used to unlock this user:

Sqlplus > Connect / as sysdba

Sqlplus > alter user dbsnmp account unlock;

ORACLE Enterprise Manager Cloud Control 12c	Beb + Q
Properties Instal Padages Ordentials Parameters Beview Configure Database Instance: Properties * Name test Type Database Instance * Database System test_sys	Cancel Sep 1 of 5 Next
Norma	Test Connection
Orade Home Path	/dborade.broduct/11.2.0/dbhome
Monitor Username	damo
Monitor Password	
Role	Normal
Listener Machine Name	ndvoem02.starfleet.com
Port	1521
Database SID	test
Preferred Connect String Enter the connection string that CMS should use when connecting to the target database. If blank, the CMS would automatically construct one using the host, port, SID provided above.	

6. Click on Test Connection.

ORACLE Enterprise Manager Cloud Control 12c		₩••• Q
	Cancel	Step 1 of 5 Negt
DSUCCESS The connection test was successful.		
B B B B B B B B B B		
Properties Install Padages Credentials Parameters Review Configure Database Instance: Properties		
* Name (last		

7. Click on Next.

ORACLE Enterprise Manager Cloud Control 12c		ttelp - 📿
Properties Instal Packages Credentials Parameters Review Configure Database Instance: Review Review The draps made telders for this database. Select "OK" when you are done, or select Tite Name test Name test.	xć" to edit the charges.	Cancel Back Step 5 of 5 OK
Properties		
Name	Value	
Orade Home Path	/dborade/product/11.2.0/dbhome_1	
Monitor Username	dosnip	
Monitor Password	•••••	
Role	•••••	
Listener Machine Name	ndvoem02.starfleet.com	
Port	1521	
Database SID	test	
Preferred Connect String		
ITIP Configuration changes will only take effect for those databases that are added as ta	rgebs.	



Configuring OEM 12c _____

8. Review the details under the **Configure Database Instance: Review** section, and then click on **OK**.

ORA	CLE Enterprise Manager Cloud Con	trol 12c					Help + 🧲			
Discow	Jiscovering Targets on Host: nclvoem02.starfleet.com									
Databa	585									
The follow specified	ving databases have been discovered on this host. Adn on following page for selected targets	ninistrator can configure the database system nam	e for each of the discovered databases	. If user specifies group, Enterprise Manager v	vil add the discovered	target(s) to the specified	group. Global target properties can be			
Nonitor password for default user 'abarma' can be specified and continue with the add of database to Enterprise Manager. Additional properties can be provided for discovered databases by diding 'Configure' button.										
Select	Name	Database System	Group	Monitor Password		Configure	Metrics			
	test	test_sys	Q			Å				
≪ π∎∙c	C TIP Configuration changes will only take effect for those databases that are added as targets.									
Listene	rs									
The follow	ving listeners have been discovered on this host.									
Select	Name	Listener Name	Orade Home	Group	Port	Listener Directory				
	No items found									
	indicates the Monitor User with SYSDBA role.									
							Test Connection Cancel Next Finish			

9. Click on Finish.

DRACLE Enterprise Manager Cloud	Beb - 🤤		
Discovering Targets on Host: nclvoem02.	starfleet.com		Cancel Back Promote
Summary Following Database systems will be created for the discove Database Systems	red databases and related targets. Rest of the targets in the second table will be saved bu	t will not be part of any database system.	
Expand Al Colaose Al			
Expand Al Collapse Al Name	Туре	Host	
Expand All Collapse All Name V Database Systems	Туре	Host	
Expand All Collapse All Name V Database Systems V test_sys	Type: Database System	Host	

10. Click on Promote.

ORACLE Enterprise Manager Cloud Control 12c	Help + Q
	ĸ
Target Configuration Results	
test: Properties for database target have been updated. Database System test_sys has been created	

11. Click on OK.

12. Verify that the target is promoted as an EM target on the target type home page. The management agent installed on the target host starts collecting metric data after the target has successfully been promoted.

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Chapter 4

DRACLE E	terpr	se Ma	nager	Cloud Contr	ol 12c				Şetup + Help +	SYSMAN +	Log Out
💲 Enterprise 👻 👩 Is	Enterprise + 🍘 Targets + 🌟 Eavorites + 🞯 History +								Search Target Name 💌		
Databases View ® Crade Load M	හ ලි Se	arch List							Page Refreshed	12-Aug-2012 10	:31:04 BST (
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Status				Subr	vitted To Any Target	2 Members 😭 2 Up					
Problem Executions (last 7 di 0					0	Host Affected Members (Last 24 Hours)					
Action Required Execu	tions (0	and a second sec	Time	Cash a	Sustable (9/)		
1	A					rearce	Type	Status	Avalaciety (%)		

The database instance named test is now promoted and is being discovered by the OEM 12c Agent installed on the host.

There's more...

The preceding steps are specialized for promoting a specific target type such as a database instance and demonstrate the general steps involved during promotion of a target. There are various types of targets present and that can be promoted on the hosts as per your requirements. The exact configuration for a target will vary depending on the type of target.

Adding host targets manually

EM Cloud Control allows the addition of hosts and various Oracle components and software as managed targets as well as providing automatic discovery features. Going through the process of discovery when targets are manually added is not required. The advantage of this method is that it eliminates resource consumption on the agent to perform discovery when it is not required.

The target type owner shows whether a target type can be manually added or not during the registration with the discovery framework.

Adding host targets manually refers to the installation of Oracle Management Agent in a new host.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.

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How to do it...

To add host targets manually, follow these steps:

The destination host must be accessible from the host where OMS is running. In this
example target server is added in the /etc/hosts file as shown in the following
code:

```
xxx.xxx.xx nclvoem03.starfleet.com nclvoem03
xxx.xxx.xx nclvoem02.starfleet.com nclvoem02
```

nclvoem03 is the target for Management Agent installation and nclvoem02 is the target for OMS HOST installation in this example.

Please note that xxx.xx.xx would be the actual TCP/IP address of the host and target servers.

Add the following entry in the /etc/hosts file of the OMS host server:

xxx.xxx.xx nclvoem03.starfleet.com nclvoem03

Create the installation directory on the target server by connecting as a privileged account

```
mkdir -p /u01/app/Middleware/agent12c
chown -R oracem:cinstall /u01/app
```

3. Install the sudo package on the target server if it's not already present.

Sudo privilege is required to invoke /bin/sh as root.

which sudo

```
/usr/bin/which: no sudo in (/usr/local/sbin:/usr/local/bin:/sbin:/
bin:/usr/sbin:/usr/bin)
```

```
# rpm -qa sudo
```

```
#
```

Sudo is not installed on the server. Installing sudo

- # yum install sudo
- # which sudo

/usr/bin/sudo



4. Edit the sudgers file to allow the OEM 12c installation user to issue the sudger command on the target host server. Connect as privileged user root and issue the following commands:

cd /sbin ./visudo

5. Add Defaults !env reset to avoid sudo from resetting the environment.

Also, add the following entry to enable sudo for the OEM 12c installation user. In this example, the user oracem is used.

```
oraoem ALL=(ALL) ALL
# more /etc/sudoers | grep -i oraoem
oraoem ALL=(ALL) ALL
```

6. Check whether the scp binary is accessible and whether the path is set for the user oracem, by using the following command:

```
$ echo $PATH
/usr/local/bin:/bin:/usr/bin
$ which scp
/usr/bin/scp
```

- 7. Log in to Enterprise Manager 12c Cloud Control.
- 8. Select Add Target from the Setup menu, and then click on Add Targets Manually.
- 9. Select the Add Hosts Targets option under Add Targets Manually.





Configuring OEM 12c _____

10. Click on the Add Host button.

ORACLE Enterprise Manager Cloud Control 12c	
Add Target	
Host and Platform Installation Details Review	
Add Host Targets : Host and Platform	
This wizard enables you to install Management Agents on unmanaged hosts, thereby converting them to managed hosts. Enter a session name, and validate (or add) the hosts and their platforms on which you want t	to install the Manag
* Session Name ADD_HOST_SYSMAN_23-Apr-2012_13:52:27_BST	
💠 Add 💥 Remove 🛛 🔂 Load from File 🔯 Add Discovered Hosts 🛛 Platform 🛛 Different for Each Host 🖵	
Host Platform	
Click Add and specify the host and platform details.	

- 11. Click on Add.
- 12. Enter the fully qualified target (hostname.domainame) in the **Host** and **Platform** fields for all hosts. One target host is shown in the following example:

		Help + 🔾
Add Target		
Host and Platform Installation Details Review		The second second second
Add Host Targets : Host and Platform This ward enables you to instal Management Agents on unmanaged hosts, thereby	converting them to managed hosts. Enter a session name, and validate	for add) the hosts and their platforms on which you want to install the Management Agent.
* Session Name ADD HOST SYSMAN 18-Apr-2012 17:23:15 BST		
💠 Add 💥 Remove 🛛 🔀 Load from File 🔂 Add Discovered Hosts	Platform Different for Each Host 📼	
Host	Platform]
ndvoem03.starfeet.com	Linux x86-64	
of TEP The target host's platform is defaulted based on a combination of factor	, including hints received from automated discovery and the platform of	1
the OMS host. The default is a suggestion, however, we recommend you	to check the platform details before processing to the next step.	
AS TEP If the platform name is appended with "Apent Software Linevalable". the	an download the software for that distform using Self Undate	

13. Click on Next.



14. Populate the target host server agent details, such as **Installation Base Directory**, **Instance Directory**, and **Named Credential**.

¢		e Manager Cloud Control 12c	1		wb- 👳
,	Add Target				
	Host and Pletform Installation Add Host Targets : Installation	Details Review Mation Details	nstallation details in the Installation Details section.	Back, Step 2 of 3 Heat	Cancel
1	2 Deployment Type				
	Platform	Agent Software Version	Hosts	Mandatory Inputs	
	Unux x86-64	12.1.0.1.0	ndvoem03.starffeet.com		
1	Linux x86-64 : Installation	Details			-
	Installation Base Directory Instance Directory Named Contential	A01/app/Mddeware/agent12z Sel A01/app/Mddeware/agent12z/ A01/app/Mddeware/agent12z/ Act unot cast/contained	lect the Named Credential that can be used for connecting the remote hosts using SSH and installing the Management ent.	1	

15. Click on Next.

ORACLE Enterprise	Manager Cloud Control 12c	Help + ⊆
Add Target		
and and the form the state form		
Add Host Targets : Review		Back Step 3 of 3 Next Deploy Agent Cancel
Review the details you have provide	- for this decloyment session and click Decloy Asent.	
Session Name A0D_HOST_SH3 Deployment Type Fresh Agent Ins OHS Host nchosen02.start OHS Uploed Port 4900	WAN, 22-Apr-2012_13:51:27_BST al Reec.com	
Host Information		
Linux x86-64		
Hots Agent Software Version Installation Base Directory Bristance Directory Port Named Credenski Privleged Delegation Setting Prenstallation Scrot Pestinstallation Scrot Addisonal Parameters Addisonal Parameters	ndruendistaufiete.com 121.0.1.0 Ad Uiepehddiswereigent122: Ad Uiepehddiswereigent123: Ad Uiepehddiswereigent124: 3872 Nac Johnskielen eigent124: 3872 Nac Johnskielen eigent125: Nac Jo	

16. Review the details and click on **Deploy Agent**.

	se Manager Cloud Control 12c				Şetup - Help	- I 👥 SYSMAN - Log Out 🤇
😘 Enterprise 🔹 🍓 Eurgets 🔹	👷 Envorites + 🙁 History +				Search Target Name +	
Add Host Status					Page Refresh	ed 23-Apr-2012 13(55(14 BST 🕻
Agent Deployment Su	mmary : ADD_HOST_SYSMAN_	23-Apr-2012_13:51:2	Initialization in Prop 7_0ST	ress	Refresh Prequency 3	0 seconds 💌 Refresh Cancel
Platform	Heat		_	Initialization	Renote Prerequisite Check	Agent Deployment
Linux x86-64	ndvoen03.starfeet.com			•	•	٢
Annat Dankumant Data	ik i ochroniti stadiost com					
V Initialization Details OHS Log Location Not Av	which is a second state of the second state of					
Svitelaston Phase Name	Status	Over	Cause	Recommendation	M	
No Data Found						
> Remote Prerequisite Ch > Agent Deployment Deta	eck Details ils					



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Wait for a while, as it takes time.

	A				And the second sec	
Distribute • 🚳 Twiders •	Carouses + O Headark +				Search Target Name •	
ld Host Status					Page Refreshed	23-Apr-2012 13:55:14 85T
lgent Deployment Su	mmary : ADD_HOST_SYSMAN		Agent Deployment Succe	reded		De
Platform	Host		_	Initialization	Remote Prerequisite Check	Agent Deployment
Linux x86-64	ockneer(3.starfeet.com			~	~	~
Agent Deployment Details > Initialization Details > Remote Prerequisite Ch V Agent Deployment Deta Off Sig Location noive	alls : nchvoem03.starfleet.com heck Details alls mic2.starfleet.com./J03/ko2/Mddeware/km	n/hysman/prov/kgentpush/2012-04	-23_13-51-27-#14/logs/hdvoem0	3.starfleet.com		
Agent Deployment Details > Initialization Details > Remote Prerequisite Ch // Agent Deployment Deta Off Ligg Leaston ndver Sho Deployment Shan Sizes	alls : nchroem03.starfleet.com heck Details alls m02.starfleet.com/u01/h05/esarc/un esh searcega and failzes	n/ryamar.grov.lagersp.ueh/2012-04	-23_13-51-27 <i>4</i> 44/logs/hdvoem0	3.starfeet.com		
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Agent Deployment Deta Initialization Details Remote Prorequisite Ch / Agent Deployment Detail (OFS top Location indrome) (OFS top Location indrome) (Deployment Phase Name Installation and Configures Secure Asset	alls : nchroem03.starfleet.com heck Dotals alls mit starfleet.com/.//0.jkpg/Mddeward/un starfleet.com/./0.jkpg/Mddeward/un starfleet.com/./0.jkpg/Mddeward/un starfleet.com	n/hysman.grov/kgentpuah/2012-04 Broar	-23_13-51-27#Mykoguhdveen0 Cause	3.dtarffeet.com Recommendatio	a	
Agent Deployment Deta > Initialization Detaffs > Remote Prerequisite Of / Agent Deployment Peac Off Log Location indres Deployment Phase Name Deployment Phase Name Detafastion and Configures Secure Agent Secure Agent	alls : nclvoem03.starfleet.com keck Details m02.starfleet.com.jul0 ;japp./kdde=are.jun or dry marrings and failures son Status	n,frysmar,fjoror,løgenspush/2012-04 förer	-23_13-51-274M/kgu/hd-vem0 Cause	3.starfleet.com Recommendatio	a	
Agent Deployment Deta > Initialization Details > Remote Prerequisite Ch OffS Log Location indive OffS Log Location indive Distance Name Dustation and Configurati Secure Agent Root.ah Collect Log	alls : nchroem03.starfleet.com heck Details als mo 24srfleet.com.j.60 j.lopp/Mddeware.jum mo rhy warmings and failures ton Status ton	n/hysman/prov/kopentpush/2012-04 Diror	-23_13-51-27#Moguhdweed Cause	3.starfleet.com /Recommendatio	n	

17. Click on **Done** to finish the Management Agent installation on the new hosts.

There's more...

The preceding commands will vary depending on the operating system being used. This is valid for Oracle Enterprise Linux.

Adding non-host targets manually

Cloud Control allows the addition of hosts and a wide variety of Oracle software and components as managed targets, as well as providing automatic discovery features. When you add a target manually to Cloud Control, there is no need to go through the process of discovery by adding the targets directly. The advantage of this method is that it eliminates the need to perform discovery when not needed.

A configuration page or wizard based on the target type metadata listing the entire instance properties required to manage the target is displayed.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.



How to do it...

To add non-host targets manually, follow these steps:

- Select Add Target from the Setup menu, and subsequently select Add Targets Manually from the drop-down menu. EM Cloud Control displays the Add Targets Manually page.
- 2. Go to the Add Targets Manually sub-section and choose the Add Non-Host Targets Using Guided Process (Also Adds Related Targets) option.
- 3. Choose one of the target types to add, **Oracle Fusion Middleware**. This process will also add related targets.
- Select Oracle Fusion Middleware in current example to demonstrate how to discover Weblogic Domain.



- 5. Click on Add Using Guided Discovery.
- 6. Select the administration server host agent. OMS agent is selected in this example.
- Enter the user-defined admin server port number, or it can be left at the default value of 7001. In this example, the port is set to 6000.
- 8. Provide a username and password to connect to Weblogic domain.

	ise Manager Cloud Control 12c	Setup = 198p =	🔬 SYSMAN 🔹 🛛 Log Out 🔤
🔩 Enterprise 👻 👩 Targets :	+ 🌟 Eavorites + 🤤 History +	Search Target Name 👻	+
Add Fusion Middlewar Enterprise Manager can be co 3400 Protocol.	te: Farm: Find Targets Infigured to manage additional Oracle WebLogic Domains. For adding a secured Oracle WebLogic Domain, select a secured JACI Prot	Page Refreshed 1	2-Aug-2012 14:45:16 BST C Continue Cancel ind then choose the proper
Administration Server Host Port	ndvoem02.starfieet.com		
Username Password	weblogc		
Unique Domain Identifier Discover down servers	Farm04		
* Agent	ndvoem02.starfeet.com:3872		
> Advanced			



Configuring OEM 12c _____

9. Click on **Continue**.

Confirmation	
Finding Targets - Completed Successfully	
Click Close to assign the agents.	
∑ Hide	
Targeth found: 2	
Click Close to assign the agents	
Circle Crose to assign the agents.	
	Close

- 10. Click on Close.
- 11. Select the host agent to discover targets. In this example the OEM 12c host agent is selected.

ORACLE Enterprise Manage	er Cloud Control 12c			Setup + Help + 🛛 🏦 SYSMAN + 🛛 Log Out 🥥
🖧 Enterprise 🕶 🍈 Targets 🕶 🏫 Eavorites	s 🕶 📀 History 🕶			Search Target Name 👻 💌
/Farm04_test_domain/test_dom	ain O			Page Refreshed 12-Aug-2012 14:58:01 BST 🕑
Add Fusion Middleware Farm: As	sign Agents			Cancel Back Add Targets
Targets Found 2 Targets Assigned To Local Agent 1				
You can optionally override any agent assignme column is left block. V Hide Targets And Agent Assignments	ent using the table below. All the agents used for mon	itoring the targets must be up. For the	e targets which require local agent, by default, o	only local agents are assigned. For such targets, if local agent is not found, the "Configured Agent"
Vew •		10000		
Target Name	Target Type	Host	Configured Agent	Status
12 test_domain	Oracle WebLogic Domain		ndvoem02.starfieet.com:3872	New Target
Save All Toront To The Asset Informati	00 studiest nor-107 Q. Assim Sensi 1			

-140-

12. Review the details, and then click on **Add Targets**.



13. Click on Close.

ORACLE Enterprise Manager Cloud Control 12c	Şetup • Help • 🔢 SYSMAN • Log Out 🧲
🦚 Enterprise + 🧕 Targets + 🌟 Envortes + 🥝 History +	Search Target Name 👻
test_domain @	📓 ndroem02.starReet.com Page Refreshed 12-Aug-2012 15:05:39 85T 💍
Add Fusion Middleware Farm: Results	OK.
2 targets have been successfully added to Enterprise Manager.	
There may be a delay before these targets are viable and monitored. This is because saving the targets is the agents involve target promotion job that may also include purpling the monitoring. If the targets of the firm or domain change in the future, use Reflech Hieldcog: Domain to add targets. If targets are later removed from the AM	plugin to the agent. All the agents used for monitoring the targets must be up.
> Show Targets Details	
V Hide Webckic Domain Global Properties Successfully set global properties on all the targets of firm. Comment	
Contact Cost Contar Cost Contar	
Uflexyde Status Line of Business	

14. Click on OK.

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There's more...

The use of the **Add Non-Host Targets Using Guided Process** option under the **Add Targets Manually** page is demonstrated for the target type Weblogic Domain. The same option can be used for other target types, such as Oracle Cluster and HA (High Availability) Service, and Oracle Database Machine.

The other option, **Add Non-Host Targets**, needs to be selected for target types Applications Utilities, Fusion J2EE Application, and so on, by specifying target monitoring properties.

Configuring Administration Groups

Administration Groups simplify the process of setting up targets for management in Enterprise Manager by automating the application of management settings such as monitoring settings, compliance standards, and cloud policies. By defining Administration Groups, Enterprise Manager uses some specific target properties to direct the target to the required Administration Group and then automatically apply the requisite monitoring and management settings.

A target can belong to only one Administration Group. This prevents any conflict due to joining of multiple Administration Groups that potentially have different monitoring settings. To ensure that a target belongs to only one Administration Group, only a single Administration Groups hierarchy can be created, and a target can join only one group in the hierarchy.

Properties that can be used to manage hierarchy are global target properties such as Contact, Lifecycle Status, Location, Line of Business, and Department.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To plan a group hierarchy, follow these steps:

- 1. First decide on the number of Administration Groups to be created for the group hierarchy.
- 2. In the current example, two Administration Groups are planned to be created: Production and Test. This group's membership criteria is based on the Life Cycle Status target property.
- 3. Create additional levels in the Administration Group hierarchy. Based on other target properties, additional levels in the Administration Group hierarchy can be added.



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For our example, in the Production group, there could be additional monitoring settings for targets in the **TELECOM** line of business that are different from targets in the **RETAIL** line of business. In this case, an additional level based on the **Line of Business** target property level would be added.

The outcome of the hierarchy planning exercise for this example is summarized in the following table:

Tree Root level	Level 1 Target Property Lifecycle Status	Level 2 Target Property Line of Business
All Targets	Production, Mission Critical	RETAIL
		TELECOM
	Stage, Development, Stage	RETAIL
		TELECOM

To assign target properties, follow these steps:

1. Select Targets | Hosts.

ORACLE Enterprise Manager Cloud Control 12	5						Set	tup = Help = 👥 S	SYSMAN 🗸 Log Out 👤
🖧 Enterprise 🛩 👩 Targets 🛩 🌟 Eavorites 🛩 🥝 History 🛩							Search Target Na	me 🛩	*
Hosts Search Go Advanced Search	Page Refreshed 15-Aug-2012 18:32:57 BST C				012 18:32:57 BST 🗘				
Configure Remove Add		D	ncidents						
Select Name 📥 Status	Pending Activation	0	8	•	Compliance Violations	Average Compliance score	CPU USI %	Mem Util %	Total IO/sec
nclvoem02.starfleet.com		0	0 0	0	0 0 0	-	3.51	81.94 🛕	24.26

OMS Host is selected to demonstrate this example.

- 2. Click on the identified hostname.
- 3. Select Target Setup | Properties option under the Host tab's drop-down list.



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- 4. Click on **Properties**.
- 5. Click on the Edit Target Properties tab.
- 6. Select a value for the Lifecycle Status field from the drop-down list.
- 7. Enter the Line of Business.

Edit Target Properties		
Name	Value	
Comment		
Contact		
Cost Center		
Customer Support Identifier		
Department		
Lifecyde Status	Test	
Line of Business	TELECOM	
Location		
Target Version	53000	

Lifecycle Status is set to Test and Line of Business to TELECOM in this example for demonstration of a host type target.

8. Click on **OK**.

host - Host -							
Host: ndvoem02.starfleet.com > Target Properties Farget Properties							
Name	Value						
Comment							
Contact							
Cost Center							
Customer Support Identifier							
Department							
Lifecyde Status	Test						
Line of Business	TELECOM						
Location							
Target Version	5.3.0.0.0						

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9. Select another target type, say databases, and follow the preceding steps to edit the target properties.

○ oem12c ③ Orade Database Performance	e → Availability → Schema → Administration →				
Database Instance: oem 12c > Target Properties Target Properties					
Name	Value				
Comment					
Contact					
Cost Center					
Customer Support Identifier					
Department					
Lifecyde Status	Production				
Line of Business	RETAIL				
Location					
Target Version	11.2.0.2.0				

Lifecycle Status is set to **Production** and **Line of Business** to **RETAIL** in this example for demonstration of a host type target.

To set up Administrative Groups, follow these steps:

1. Go to Setup | Add Target.





2. At the Add Target option, click on Administration Groups.



3. Select the **Hierarchy** tab or click on the **Setup the Administration Groups Hierarchy** link.



4. Next, click on the Add icon on the Hierarchy Levels screen.





5. Click on Lifecycle Status. The Hierarchy is automatically created based on the five predefined lifecycle statuses—that is, Development, Mission Critical, Production, Staging, and Test.



- 6. Merge the **Development**, **Staging**, and **Test** groups, as these groups will be monitored in a similar way.
- 7. Hold down the *Ctrl* key and select **Development**, **Staging**, and **Test** on the **Hierarchy Nodes: Lifecycle Status** screen.

Hierarchy Nodes: Lifecycle Status							
🕂 Add 🥢 Ed	lit »						
Property Value for Membership Criteria	Short Value						
Development	Deve						
Mission Critical	MC						
Production	Prod						
Staging	Stag						
Test	Test						



Chapter 4

- 8. Select Edit | Merge.
- Hierarchy Nodes: Lifecycle Status Property Value Membership Cri Development Mission Critical Production Staging Stag Test Test
- 9. Merge the **Production** and **Mission Critical** groups, as these groups will be monitored in a similar way. Hold down *Ctrl* + *Tab* and select **Production** and **Mission Critical** on the **Hierarchy Nodes: Lifecycle Status** screen.



10. Select Edit | Merge.

Hierarchy Nodes: Lifecycle Status						
	🗣 Add 🏼 🥖	P Edit	*			
Pr	operty Value embership Cri	X Remove	J			
D	evelopment o	首 Merge	T			
м	ission Critical	fif Split				
Pr	oduction	00 -				

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11. Select Deve_Grp.



12. Change its name from ${\tt Deve-Grp}$ to ${\tt TEST}$ on the Administrative Group Details window.

Administ	ration	Grou	ıp Det	ails	×
* Name	TEST				
				ОК	Cancel

- 13. Click on OK.
- 14. Select MC_Grp.
- 15. Change its name from $\texttt{MC}_\texttt{Grp}$ to <code>PRODUCTION</code> on the Administrative Group Details screen.





16. Click on **OK**.



- 17. Click on the **+ Add** icon on the **Hierarchy Levels** screen to extend the hierarchy with the Line of Business.
- 18. Click on Line of Business.



19. Click on Create.





20. Click on **Continue** to create an Administration Group.

An Administration Group is created with the target types attached.



21. Select Targets.

🎯 Targets 👻 📩	Eavorites 👻 📀 His
All Targets	Ctrl+Shift+T
Groups	
Systems	
Services	
Hosts	
Databases	
Middleware	
Composite Applic	ations
Fusion Applicatio	ns
Siebel	

22. Click on Groups.

View - [Create	- 190	reate Like 🥒 Edit	💢 Remove 🛛 🔄 View Members 🔄 Customize Page 🔰 💠 Associate Template Collection 💥 Disassociate Template Collection		
Name	▲ ∨	Group Type	Template Collection	Members	Member Status Summary	D O A P
> ADMGRE	*0	6	n/a	Group(n), Host(1), Gatabase Instance(1)	- 2	



23. Click on **ADMGRP0** to see a console view of all of the members of the Administration Group.

DRACLE E	terp	rise Ma	nager	Cloud Control	t2c				Setup + Help	+ 1 SYSMAN +	Log Out
🖁 Enterprise 🗝 🁩 🖸	argete -	• 🛨 EA	voribes +	😔 Hetgry 🛩					Search Target Name +		
ADMGRP0 @											
🔄 Group 🔹									Page Refreshed 21-A	ug-2012 00:50:00 G	MT+01:00 C
										View By All Tar	get Types
General Owner Group Type Privilege Propagation	Cemeral Owner STSHAN Group Type Administration Group Phyloge Propagation: Enabled				0.	∑ Status 8 Hembers ① 2 Up 6 n/a Host Affected Hembers (Last 24 Hours) ③			0.		
						Name	Type	Status	Availability (%)		
Overview of inv Incidents	ident	and pro	blems		0.	cem 3c C C C C C C C C C C C C C C C C C C				100	
Open 0											
Category	•	0		P							
Availability	-	-	-								1
Performance											
Security			-		Synchronization status						
Others						Each target in the Administration Group is synchronized with the items in the Template Collection where applicable. If an error occured during synchronization, the value in the error column provides details.					
Problems						Last Synchronization N/A Next Synchronization N/A					

How it works...

This recipe describes the steps to be taken to create an Administration Group.

It is only possible to have one Administration Group hierarchy in Enterprise Manager, thereby ensuring that Administration Group member targets can only directly belong to one Administration Group.

A target can be part of a hierarchy only if its property values are similar to the criteria at both the levels. A target with the same values for lifecycle status can never become a member of the Administration Group at the first level.

The criteria for group membership is cumulative. For example, for the **RETAIL** group under the **Production** or **Mission Critical** groups, a target must have its **Lifecycle Status** set to **Production** or **Mission Critical** and its **Line of Business** set to **RETAIL** before it can join the group.

There's more...

New target types created with line of business and lifecycle status will automatically be added to the already-created Administration Group.

The next step is to create template collections and associate the monitoring template collections to the Administration Groups created as a part of this recipe.

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Creating template collections and associating them with Administration Groups

A template collection is an assembly of monitoring/management settings that is designed to apply to targets in the Administration Group. There exists only one monitoring template for a particular target type in a template collection.

For example, there is the possibility of having a template collection containing a template for a database and a template for a host, but there is no possibility of having a template collection containing two templates for databases.

Template collections may consist of the following three types of categories:

- Monitoring templates (monitoring settings)
- Compliance standards (compliance policy rules)
- Cloud policies (cloud policies such as determining when to start virtual machines or scale out clusters)

Getting ready

Log in to the OEM 12c Cloud Control console.

How to do it...

To create templates, follow these steps:

1. Select the Monitoring option under the Enterprise tab.





- 2. Click on Monitoring Templates.
- 3. Select **Host** as the **Target Type** for this example.
- 4. Select the checkbox on the left-hand side of the **Display Oracle provided templates** and **Oracle Certified templates** option.

Monitoring T	emplates					
Monitoring Templates can be used to apply a subset of monitoring settings to multiple targets. This allows you to standardize monit template is applied to a target, any monitoring settings not specified in the template remain unaffected on the target.						
Search						
Template Name	Go					
Target Type	Host					
	Display Oracle provided templates and Oracle Certified templates					

- 5. Click on Go.
- 6. Select Oracle provided Host template.

Apply	View Edit Create Like Delete Compare Settings Export Create Set Default Template	s Import					
Select	Name 🔻	Target Type					
۲	Oracle provided Host template	Host					
0	Orade Certified Template for Host targets						
	Orade Certified Fusion Apps Template for Host						
۲	Oracle Certified FMW Template for Host	Host					

- 7. Click on the Create Like tab.
- Provide a name for the monitoring template under the General tab.
 Test Host Template is the name used in this example.
- 9. Click on the **Metric Thresholds** tab and override the Oracle-supplied template to suit the monitoring requirement.

Default settings are used in this example.



Chapter 4

Monitorin	Ionitoring Templates								
Monitoring Create M	ionitoring Temp	Kontaning Template diate	Cancel OK						
General	Metric Thresholds	Other Collected Items							
	• Name	Test Host Template							
	Target Type Owner	Host SYSHAN							
	Description	The is a Public Hontomy Template. The is a Crade Honded Template for Host target type.							
	Default Template	Hake this the default template for this target type ITTP If decked, this template will be applied automatically to newly discovered Host targets, completely replacing Oracle provided out-of-box settings.							

- 10. Click on **OK**.
- 11. Repeat the same process to create another template for production host monitoring and name it **Production Host Template**.

Apply	View Edit Create Like Delete Compare Settings Export Create Set Default Templates Import								
Select	Name 🔻	Target Type							
۲	Test Host Template Host								
۲	Production Host Template Host								

- 12. Select another value for Target Type; use Database Instance for this example.
- 13. Select the checkbox on the left-hand side of the **Display Oracle provided templates** and **Oracle Certified templates** option.
- 14. Select Oracle provided Database Instance template.

Monito	Ionitoring Templates										
Monitorir template	Monitoring Templates can be used to apply a subset of monitoring settings to multiple targets. This allows you to standardize monitoring across your enterprise. When a template is applied to a target, any monitoring settings not specified in the template remain unaffected on the target.										
Searcl Template Targe Pending	Search Template Name Database Instance Database										
Apply	View	Edit	Create Like	Delete	Compare Settings	Export	Create	Set Default Templates	Import		
Select	Name	•								Target Type	
۲	Or	ade pro	ovided Databa	ise Instan	ce template					Database Instance	
0	Or	ade Ce	rtified-Enable	Database	Security Configura	tion Metrics				Database Instance	
0	Or	ade Ce	rtified-Disable	Database	Security Configura	tion Metrics				Database Instance	
0	Oracle Certified - Enable Streams/XStream/GG Metrics Database Instance										
0	Oracle Certified - Enable AQ Metrics for SI Database Database Instance										
0	Oracle Certified - Disable Streams/XStream/GG Metrics Database Instance										
0	Or	ade Ce	rtified - Disabl	e AQ Met	rics for SI Database					Database Instance	
0	Or	ade Ce	rtified - Defau	lt thresho	lds for Streams/XSt	ream/GG				Database Instance	



- 15. Click on the Create Like tab.
- 16. Provide a name for the monitoring template under the **General** tab.

Test Database Template is the name used in this example.

17. Click on the **Metric Thresholds** tab, and override the Oracle supplied template to suit the monitoring requirement.

Default settings are used in this example.

Monitoring Templates	
Monitoring Templates > Greate M Create Monitoring Temp	Ionstang Tenglate ate
General Metric Thresholds	Other Collected Items
* Name	Test Database Template
Target Type Owner	Database Instance SYSHAN
Description	This is a Public Honitoring Template. This is a Oracle Provided Template for Database Instance target type.
Default Template	Make this the default template for this target type If the default template will be appled automatically to newly discovered Database Instance targets, completely replacing Oracle provided out-of-box settings.

- 18. Click on **OK**.
- 19. Repeat the same process to create another template for production database instance monitoring, and name it **Production Database Template**.

Apply	View Edit Create Like Delete Compare Settings Export Create Set Default Templates Imp	ort				
Select	Name 🔻	Target Type				
۲	Test Database Template Database Instance					
۲	Production Database Template Database Instance					

The following template collection groups are created in this example to demonstrate the steps involved in completing this configuration:

- ► Test Template Collection
- Production Template Collection

To create a template collection group, follow these steps:

1. Click on Setup | Add Targets | Administration Groups.



2. Click on the Template Collections tab.

Administration Groups and Template Collections								
Overview Hierar	chy Ter	nplate Collections	Associati	ons				
Template Collections								
Template Collections are sets of Monitoring Template, Compliance Standard and/or Cloud Policies that are applied to targets. So before you created								
Library		Details						
View 🗸 🏼 🗳 Create	💥 Delete	Nan	e					
Name	Associat	tions Description	n					
No data to display.								
		Monito	ing Template	Compliance	e Standard	Cloud Policies		
		View 🗸	-ල Add	🦉 Remove				
		Name				Target Type	Description	
		No Monito	ring Template	included				

- 3. Click on Create.
- 4. Provide a name and description under **Details**.

Test Template Collection is used as the name for the template collection in this example.

Details							
* Name	Test Tem]					
Description	Monitroing Settings of Test, Devlopment Targets						
					:		
Monitori	ing Temp	late (0) 🔪	Compliance Stand	lard (0)	Cloud P	Policies (0)	
View 🗸	👍 Add	🖉 Remove	🗟 Go To Monito	ring Template	Home		
Name				Target Type		Description	
No Monitorin	ng Template	e induded					

5. Click on Add.



Configuring OEM 12c _____

6. Select all associated templates created in the template collection groups.

In this example, Test Host Template and Test Database Template are selected.

Add Monitoring Template to Template Collection Test Template Collection									
Name Display Out of Box									
Target Type All	Sei	arch							
Name	Target Type	Description							
Production Database Template	Database Instance	This is a Public Monitoring Template. This is a Oracle Provided Template for Database Instance target type.							
Production Host Template	Host	This is a Public Monitoring Template. This is a Oracle Provided Template for Host target type.							
Test Database Template	Database Instance	This is a Public Monitoring Template. This is a Oracle Provided Template for Database Instance target type.							
Test Host Template	Host	This is a Public Monitoring Template. This is a Oracle Provided Template for Host target type.							
Any User-Defined Metric in the template will be excluded from template sync operations. Explain the reason.									
- · · · · · · · · · · · · · · · · · · ·		or cred							
		OK Cancel							

7. Click on **OK**.

Details			Save Revert
* Name	Test Template Collection		
Description	Monitroing Settings of Test, Devlopment Ta	argets	
Monito	ring Template (2) Compliance Stan	dard (0) Cloud F	Policies (0)
View 🗸	🕂 Add 🧪 Remove 📓 Go To Monit	oring Template Home	
Name		Target Type	Description
Test Ho	st Template	Host	This is a Public Monitoring Template. This is a Orade Provided Template for Host target type.
Test Da	tabase Template	Database Instance	This is a Public Monitoring Template. This is a Oracle Provided Template for Database Instance target type.

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8. Click on Save.



9. Follow the preceding steps to create another template collection group for production database and host monitoring by selecting the production-related templates, and name it **Production Template Collection**.



Test Template Collection and Production Template Collection are two template collection groups created in the preceding steps.

To associate a template collection with the Administration Groups, follow these steps:

- 1. Click on Setup | Add Targets | Administration Groups.
- 2. Click on the Associations tab.





3. Select the **PRODUCTION** group in the Administration Groups hierarchy.



- 4. Click on the Associate Template Collection tab.
- 5. Select the template collection from the drop-down list.

Production Template Collection is selected in this example.

ioose a Template C	ollection						
Name	Owner	Description					
22 Production Temple	SYSMAN	Monitoring Produ critical targets	uction , Mis	sion			
BB Test Template Co	SYSMAN	Monitroing Settin Test,Devlopmen	ngs of t Targets				
			Select	Cance			

- 6. Click on Select.
- 7. Select the **TEST** group in the Administration Groups hierarchy.
- 8. Click on the Associate Template Collection tab.



9. Select the template collection from the drop-down list.

Administration Groups and Template Collections						
Confirmation Association is successful						
Overview Hierarchy	Template Collections Associations					
Actions 🗸 🛛 🖨 Associate Ten	nplate Collection 🔀 Disassociate Template Collection	n 🏾 🔀 View Aggregate Settings 🛛 📆 Synd	hronization Schedule 🔰 🏠 Goto Gro	oup Homepage 🛛 📃 View Members		
•						
		All Admi	nistration Groups			
		Adminis	tration Group Details			
		Member	Name: AUMGRPU s Count: 8			
		ſ				
	Mission Critical Administration (Name Members Count Template Colles Name Pr	x Production aroup Dealais = RRODUCTION = 3 ston solution Template Coll v		Development or Staging or Test Administration Group Details Name: TEST Members Count: 3 Template Collection Name: Test Template Collection		
	TELECOM Administration Group Details Name: MC-TELE-Grp Members Count: 0	RETAIL Administration Group Details Name: MC-RETA-Grp Members Count: 1	RETAIL Administration Grou Name: 1 Members Count: (up Details Deve-RETA-Grp Deve-RETA-Grp Members Count: 1		

10. Click on the Administration Group **ADMGRP0** to see an overall view of the console.

ADMGRP0 😟							
🚷 Group +					🗃 Page Refre	thed 23-Aug-2012 00:	30:17 GMT+01:00
						View By	All Target Types
General Owner STS Group Type Adm Privlege Propagation Enal	MNN Instration Group Bied	cr Status © 8 Henders பி 2 Up 6 n/s Host Alfected Henders (Last 24 Hours)) المعبد المعادي الم المعادي المعادي الم المعادي المعادي ال				0.	
-		oem12c	0	Û	[100	
Toridents	ts and problems	ndvoem02.starfleet.com	8	0		100	
Cottopry V Availability - Performance - Security - Others - Problems Open 0		C Synchronization Status Each target in the Administration Group is synchronized with details. Last Synchronization N/A Next Synchronization N/A	the items in the Template Collection where applical	le. If an error occured	during synchronizati	on, the value in the error	O •
and an and a state of the state		View - BS Start Synchronization 1 Exclude from Syn	dwonization 📸 Go To Administration Groups and	Template Collections			
Job Activity	0-	Name	Synchronized Targets	Pending Targets	Failed Targets	Excluded Targets	N/A Targets
For jobs whose start date is	within the last 7 days.	Monitoring Template	0	2	0	0	0
Status	Submitted to Group Any Member	Coud Policies	0	0	0	0	2
Problem Executions Action Required Executions	0 0 0 0						
Subjectived Executions	0	S Compliance Summary					0+
Running Executions	0	General Menbers					

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11. Click on the **Start Synchronization** tab to synchronize two pending targets, in this example.

Synchronization Status								
Each target in the Administration Group is synchronized with the items in the Template Collection where applicable. If an error occured during synchronization, the value in the error column provides details.								
Last Synchronization 23-Aug-2012 00:36:02 GMT +01:00	Last Synchronization 23-Aug-2012 00:36:02 GMT+01:00 Next Synchronization N/A							
View 🗸 🔯 Start Synchronization 👔 Exclude from Synchronization 🔜 Go T	o Administration Groups and	Template Collections	»					
Name	Synchronized Targets	Pending Targets	Failed Targets	Excluded Targets	N/A Targets			
Monitoring Template	2	0	0	0	0			
Compliance Standard	0	0	0	0	2			
Cloud Policies	0	0	0	0	2			

Configuring a Software Library

Setting up a Software Library is key to uploading various templates, plug-ins, and so on for Enterprise Manager to refer to and is key to accomplishing various provisioning and patching tasks in Enterprise Manager Cloud Control.

Getting ready

Connect to Cloud Control OMS server, using a PuTTY session, as the Cloud Control software owner user.

How to do it...

To configure a Software Library location, follow these steps:

- Create a library directory (with write permissions) using the following command: mkdir /u01/app/Middleware/swlib1
- 2. Select Setup | Provisioning and Patching.
- 3. Click on the **Software Library** option.

In this example the **Upload File Locations** tab is selected on the **Software Library:** Administration screen.

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4. Select **OMS Shared Filesystem** as the **Storage Type**, because the path is created in the OMS server, in this example.

	nager Cloud Control	12c			<u>S</u> et	
🚓 Enterprise 🔻 🌀 Targets 👻 🐈 Ea	🖁 Enterprise 🔻 🌀 Iargets 👻 🃩 Favorites 👻 🥝 Hist <u>o</u> ry 👻					
Software Library: Administrat	ion				Pa	
Software Library > Software Library: Adm	inistration					
Warning Software Library does not have an	upload file location configu	red. At least	one upload file location should be configured.			
The administration console allows for con	figuring and administering s	Software Libra	ary storage locations.			
Upload File Locations Refer	renced File Locations					
Configure storage locations that can be Storage Type OMS Shared Filesystem	used for uploading files for	Software Lib	rary entities.			
Configure filesystem locations on OMS H from/to a location.	lost(s). These locations mu	st be locally a	ccessible by all the OMS instances, typically a mou	nted/shared location. You can optionally configure the common	n credential to be	
Actions 🗸 View 🖌 🕂 Add	/ Edit 💥 Migrate an	d Remove				
Name	Status	Location		Associated Entities	Total Space	
No location has been configured yet. Us	e Add button for configuris	na a new locat	tion			

- 5. Click on Add.
- 6. Specify the name and path on the OMS for the location of the Software Library.

Add OMS Shared Filesystem Location								
You are adding a Software Library location for the first time. Software Library entity metadata will be imported to Software Library from the Oracle Home.								
Provide a name and file system location. The location should be accessible from all the Oracle Management Server(OMS) instances.								
* Name	OMS_SOFTWARE_LIBRARY							
* Location	on /u01/app/Middleware/swlib1							
	OK Cance							

7. Click on **OK**.

Software Library: Administration	ftware Library: Administration Page Refreshed 29-Aug-2012 16:07:48 051								
oftware Library > Software Library: Administration									
The administration console allows for configuring and administering §	Software Library storage locations.								
Upload File Locations Referenced File Locations									
Configure storage locations that can be used for uploading files for Software Library entities. Storage Type ONS Stared Filesystem									
Configure Benychem locations on CMS Host(s). These locations must be locally accessible by all the CMS instances, typically a mounted/plured location. You can optionally configure the common credential to be used by Software Library for reading/milling form/to a location.									
Name Status	Location	Associated Entities	Total Space Available Space Last Refreshed						
OMS_SOFTWARE_LIBRARY Active	/u01/app/Middleware/swlib1/	Show	45.844 GB 8.814 GB Wed Aug 29 16:07:48 BST 2012						



How it works...

This recipe describes the steps to be taken to configure a Software Library, which can be used to store various templates, agent software, and so on for Enterprise Manager to refer to. The Software Library provides support provisioning and patching options for an Enterprise Manager Cloud Control environment.

There's more...

A referenced filesystem can be used to create a Software Library, which supports HTTP, NFS, and remote agent as storage type. In this case, Enterprise Manager keeps reference information of the physical location to support provisioning and patching options in Enterprise Manager Cloud Control.



5 Managing Oracle Database Using OEM 12c

In this chapter, we will cover:

- Configuring a database target
- Creating a single-instance database
- Cloning a single-instance database
- Creating database templates
- Uploading database templates to a software library
- Creating an Oracle database clone from a reference home
- Provisioning Oracle database software
- Removing a database target

Introduction

The Oracle DBA's tasks are made simpler by Oracle's database management functionality providing a full-lifecycle solution for encompassing change and configuration management, patching, testing , provisioning, performance management, and automatic tuning.

In this chapter, we will explore the various options available in the Cloud Control console to configure, manage, and monitor an Oracle database using Oracle Enterprise Manager 12c (OEM 12c).

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Configuring a database target

Oracle Enterprise Manager enables users to manage and monitor Oracle components such as Oracle database, Oracle Application Server, Oracle Business Intelligence, and Oracle WebLogic. These Oracle components are called **targets**.

An active management agent can discover a database instance as a target but it will not automatically add the target to be monitored and managed by OEM 12c.

The following recipe describes the steps involved to configure a database target on a host by using the Cloud Control console.

Getting ready

The agent needs to be up and running on a host where a database is installed. A test database named test is installed on the OEM cloud control server in this example.

How to do it...

To configure a database target, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control and do the following:
 - From the Setup screen, select Add Target, then select Add Targets Manually from the drop-down menu.
 - Enterprise Manager displays the Add Targets Manually page.
 - On the Add Targets Manually page, go to the Add Targets Manually subsection and select the Add Non-Host Targets Using Guided Process (Also Add Related Targets) option.
 - Select Target Types as Oracle Database, Listener, and Automatic Storage Management from the drop-down list, as shown in the following screenshot:

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2. Click on **Add Using Guided Discovery** and select **Host** for the database instance. The **OEM12c** host is selected in this example.

🔹 Gitterprise × 🍥 Targets × 🎓 Envanties × 💿 Halagy × Search Target Name ×	ORACLE Enterprise Manager Cloud Control 12c	Setup 👻 Help 👻 🕂 式 STSMAN 🕶 🕴 Log Out
	🐔 Enterprise 🕶 🥘 Targets 🕶 🌟 Enverites 🕶 🙁 History 🕶	Search Target Name 👻
Add Database Instance Target: Specify Host In order to add Largets to be monitored by Enterprise Manager, you must first specify the host on which those targets reside. Type the host number of dick fice not boatch the host. ** Host Inducemb2.starfeet.com @	Add Database Instance Target: Specify Host In order to add Largets to be monitored by Enterprise Manager, you must first specify the host on which those Largets reside. Type the host name or dick the icon to adject the host. * Host [molecular] satisfier.com	Cencel Continue Overview This process allows you to add databases, listeners, and Automated Storage Managers (ASM) as monitored largets. A monitored larget is an entity that you wait to monitor and administer using Enterprise Manager. Litterprise Manager will search for a larget of these types on the house that you specify

3. Click on **Continue**.

Disco	vering Targets on Host: nclvoem02.starfleet.	com			Test Co	united front burnt front
		Test Co	mecton Cancel Next Finan			
Datab The fol Global I Monitor Selec	ases owing databases have been discovered on this host. Administra arget properties can be specified on following page for selected password for default user 'downip' can be specified and contin All Select None	tor can configure the database system Largets ue with the add of database to Enterp	n name for each of the discovered dat vise Manager. Additional properties ca	abases. If user specifies group, Enterp in be provided for discovered database	rise Manager will add the discovered t is by clicking "Configure" button.	arget(s) to the specified group.
Selec	t Name	Database System	Group	Monitor Password	Configure	Metrics
V	test	test_sys	Q.		1	

- 4. Click on **Configure** and then connect to a target database from a putty session or any third-party client using a privileged account. Unlock the default monitoring user dbsnmp, if it is currently locked, and also reset the password, if it is unknown.
- 5. Specify the **Monitor Password**. Other values such as **Port** are left with their default values in this example, but can be configured as per your requirements.
- 6. Click on Test Connection and then click on Next.

ORACLE Enterprise Manager Cloud Control 12c		Beb + C
Properties Instal Padages Ordentials Parameters Review Configure Database Instance: Properties ***ume fest Type Database Instance		canool Step 1 of 5 Negt
* Database System (test_pys	Value	Test Connection
Orade Home Path	/dborade/product/11.2.0/dbhome	
Monitor Username	dosrmp	
Monitor Password		
Role	Normal 💌	
Listener Machine Name		
Port	1521	
Database SID	ltest	
Preferred Connect String Enter the connection string that OMS should use when connecting to the target database. If blank, the OMS would automatically construct one using the host, port, SID provided above.		
		Cancel Step 1 of 5 Next

7. Review the details under Configure Database Instance: Review, and then click on OK.

DRACLE Enterprise Manager Cloud Con	trol 12c	Heb + C
Propries Instal Padages Credentals Para Configure Database Instance: Review Review the drugse made below for this database. Select "Or" Name test	Inctors Review when you are done, or select "Back" to edit the changes.	Cancel Back Step S of 5 OK
Properties		
Name	Value	
Oracle Home Path	/dborade/product/11.2.0/dbhome_1	
Monitor Username	dosmp	
Monitor Password	45500	
Role	*****	
Listener Machine Name		
Port	1521	
Database SID	test	
Preferred Connect String		
CTIP Configuration changes will only take effect for those	databases that are added as targets.	
Install Monitor Objects		

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OK

8. Click on Finish and then click on Save.

Target Configuration Results
test:
prove ties for database target have been updated.
Database System test_sys has been created

- 9. Click on OK.
- 10. Select **Targets** | **Databases**. The following window is displayed:

Databases New @ Oracle Load Ma	p 🔿 Se	arch List									
verview of inc	idents	and prol	blems		0.	Oracle Load Map Total Active Sessions 0			Vew Levels	Database (C) To	• ©
Incidents									initiating (
Open 0						0.024					
Category	•	•	4			(Manual)					
Availability	-										
Performance											E
Others	-			1							
Problems											
Open 0											4
Job Activities	-	-	-		0-	_ Status					0.
Status				Submitted	To Any Target	2 Hembers 💮 2 Up					
Problem Executions (la	st 7 de				0	Host Affected Hembers (Last 24 Hours)					
Action Required Execu	tions (0	Name	Ture	Stahw	Availability (%)		-
Suspended Executions	(last '				0	non 12r	i yye	- Change	(10)		_
Scheduled Executions	last 7					been Loc	0	Y.	100		
Renard Executions (a	90 7 Di					1854	U	<u> </u>	100		

A new database instance test has now been added to **oem12c** cloud control monitoring. The OEM 12c agent installed on the OEM 12c host has started monitoring the database.

How it works...

This recipe describes the configuration steps to be followed in order to add a newly created database so that it is managed and monitored by Oracle Cloud Control 12c console.

There's more...

The preceding steps are applicable for standalone database discovery through OEM 12c. Different target types, such as Oracle Cluster and High Availability Service under the **Add Targets Manually** screen, can be selected for Oracle Clusterware monitoring.

Creating a single instance database

Enterprise Manager Cloud Control can be used to create a database on a host that is monitored by an active management agent. This recipe provides details of how to do this and the various options available.



Getting ready

This recipe assumes that an Oracle Home directory is available and the Oracle database software is already installed on the server. The OEM 12c Cloud Control host is used in this example to create a single instance database.

How to do it...

To create a database on a target, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control. From the Enterprise menu, select Provisioning and Patching.
- 2. Click on Database Provisioning as shown in the following screenshot:



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3. In the **Database Provisioning** window, select **Create Oracle Database**, as shown in the following screenshot:

Database Provisioning		Page Refreshed 29-Aug-2012 16:35:24 BST C
🖂 Setup	Profiles	
Logged in as Designer "Software Library & Done Setup CVU Setup Operators Create/Grant Credentals Setup	Create Constr Constr	
Add Host Privilege Delegation		
✓ Current Status		
Procedure Activity		
🖾 Related Links		
Incident Manager Self Update My Oracle Support Credentials Note 737939.1 Deploy single instance database	Deployment Procedures Image: Control Like Image: Edit Demissions 38 Delete	
v9.2	Procedure Name	Owner
Getting Started	Provision Oracle Database Client	ORACLE
Key Concepts	Upgrade Orade Database	ORACLE
Designer vs Operator Provisioning Profiles Database Gold Images	Deleta Goale down Orade Real Application Clusters Extend/Scale up Orade Real Application Clusters Provision Crede RAC Database	ORACLE ORACLE ORACLE
 Procedures Privileges 	Provision Oracle Clusterware / RAC for UNIX and RDBMS versions 10g/11g	ORACLE
Se Common Tasks	Provision Oracle Ousterware / RAC for Windows and RDBMS versions 10g/11g	ORACLE
Setup Software Library Track Procedure Activity Enable Status Events Setup Notifications with Rules Change User Phylioges Execute Procedures via EMCLI Create Provisioning Profile		

- 4. Click on Launch, in the Deployment Procedures section.
- 5. Select the database version as **11.2.0.2.0** to create a single instance database in this example.
- 6. Select the database type as **Oracle Single Instance Database**. Click on **Add Hosts** and select the host on which you want the database to be created. The OEM 12c host is selected as the host in this example.



 Select the named Host Credentials if they have already created as an Oracle user; otherwise create new host credentials by clicking on the + button. Then, select Oracle Home, as shown in the following screenshot:



8. Click on Next. In the Specify Template window, select a value of Custom Database Template in the Select Template From Oracle Home option, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Control	12c	Help +
Database Version and Type Database Template Identification	and Placement Storage Locations Initialization Paras	ters Additional Confouration Distoral Schedule Review
Create Database : Database Template		Save Back Step 2 of 8 Next Cancel
Specify Template		
want to customize parameters such as calaboase block size, calable Select Template from Software Library Template. Ho template Temporary Storage Location on Managed Host(s) Select Template From Crade Home	, solespace attributes, and database oppons when a	any Tre Galabase.
Template	Includes Data	
General Purpose or Transaction Processing	2	
Custom Database		
	1	
Data Warehouse	*	

9. Click on Next. Populate Global Database Name and SID under the Identification section.



10. Select Use the same administrative password for all accounts in the Database Credential subsection. In this example we use the same password for the SYS, SYSTEM, and DBSNMP accounts. Complete the Password and Confirm Password fields in the Database Credentials subsection, and then click on Next, as shown in the following screenshot:

tabase Version and Type	Database Template Ide	tification and Placement Storage Locations Intelization Parameters Additional Configuration	on Options: Schedule: Review
eate Database : Io	dentification and Pla	cement	Save Back Step 3 of 8 Next Cancel
lentification 🛅			
pecify Global Database Na Instituted by STD	ame and System Identifier (S	ID) for the new database. A database is uniquely identified by a Global Database Name, typical of t	the form "name.domain". A database is referenced by at least one Orade instance which is uniquely
enumenoy and			
Global Database Name t	est2		
SID b	est2		
atabase Credentials	niterina administrativa area	intri in the new detabase	
atabase Credentials	following administrative acco	unts in the new database.	
atabase Credentials 7 peofy passwords for the f	following administrative acco	unts in the new database.	
atabase Credentials 7 pecify passwords for the f © Use different administr User Name	following administrative acco native passwords Password	unts in the new database.	
atabase Credentials 7 pecify passwords for the f Use different administr User Name SYS	following administrative acco rative passwords Password	Confirm Pessivord	
atabase Credentials of peofy passwords for the f	following administrative accorrative passwords Password	Confirm Reservord	
atabase Credentials ? peofy pessivords for the f Use different administr User Name SYS SYSTEM DBSWIP	billowing administrative acco rative passwords Password	Confirm Password	
atabase Credentials (peofy passwords for the f Use different administ User Name SrS SrSTEM DBSNMP	folowing administrative acco rative passwords Password	Confirm Password	

- 11. Select the appropriate Storage Type. File system is selected for this example.
- 12. Select the **Database File Location**. A user-defined path is selected for the datafile creation in this example.
- 13. Select the appropriate path for the recovery file location. Uncheck the Use Fast Recovery Area and Enable Archiving options in this example, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Co	ntrol 12c	Help +
Database Version and Type Database Template Identificati	n and Placement Storage Locations Initialization Parameters Additional Configuration Options Schedule Review	
Create Database : Storage Locations Specify storage type and file locations. You can parameterize fi	e locations using variables. New Variables	Save Back Step 4 of 8 Next Cancel
Storage Type 🛅		
File System Outomatic Storage Management (ASM)		
Database Files Location Specify the location where datafiles, tempfiles, redo log files,	and control files will be created.	
O Use Database File Locations From Template		
Use Common Location For Database Files		
Location //oracrs/hest1	Q	
Use Oracle Managed Files (OMF)		
Multiplex Redo Logs and Control Files		
Recovery Files Location		
By default the the storage type of recovery files location is s	me as database files location (File System). You can choose to specify a different storage type (ASPI).	
Use same storage type as database files location		
Lise Fast Recovery Area		
Specify the location where recovery related files (ard	ived redo logs, RMAN backups, and other related files) will be created.	
Recovery Area Location (ORACLE BASE	ifast recovery area	
Fast Recovery Area Size (MB) 4575		
Enable Archiving		
Specify Archive Log Locations		



- 14. Click on Next.
- 15. In the **Initialization Parameters** section, select **Automatic Memory Management** from the **Memory Management** drop-down menu. Uncheck **Specify Memory Settings as Percentage of Available Memory**. This is unchecked in this example; by default it is always checked.
- 16. Allocate Total Memory of Oracle (MB) as per SGA memory requirements.
- 17. Select the required **Database Character Set** and **National Character Set** from the respective drop-down lists, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Control 12c	Help -
Database Version and Type. Database Terrefait: Identification and Pacement. Structor Locations. Taitialization Parameters. Additional Configuration Options. School & Brainw	
Create Database : Initialization Parameters	Save Back Step S of 8 Next Cancel
Memory Parameters	
Nemory Management Automatic Memory Management	
Specify Memory Settings as Percentage of Available Memory	
Total Memory for Oracle (MB) 3000	
Database Skring 눱	
Speafy block size and processes parameters.	
Block Cine (Buster) 8102	
Processes 150	
Host CPU count 🔞 Specify the quarcant to be used by Oracle database. If quarcant is 0 (the default setting) then database continuously monitors the number of CPUs reported by the operating system and use Host CPU count 🛛 👔	is the current count.
Character Sets 10	
Database Character Set (AL32UTI'9 - Luncode UTI'-9 Linversal character set (Lincode) Setting character set to Lincode allows you to store information from multiple lunguages	
National Character Set AL16UTF16 - Unicode UTF-16 Universal Character Set	
🗵 Database Connection Hode 🔞	
Select the mode in which you want your database to operate by default.	
Dedicated Server Mode	
🗇 Shared Server Mode	
Shared Servers 1	

18. Click on Next.

19. In Additional Configuration Options, Uncheck those Database Features that are not required to be configured as per your requirements. Oracle JVM and Oracle XML DB are selected in this example, as shown in the following screenshot:

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	terprise Manager Cloud Control	120	Help - C
Database Version and T Create Database Listener Configuration The table below lists a	pe Database Template Identification an Additional Configuration Opti m to il avalable listeners. Select the listeners yo	d Placement Storage Locations Initi ONS u want to register the database with.	Additional Configuration Options Schedule Review Save Back Step 6 of 8 Next Cancel You can also choose to create a new listener in the database home by specifying the Name and Port Number in the editable row. Save Back Step 6 of 8 Next Cancel
Listener Name	Port	Listener Status	
LISTENER	1521	Û	
		n/a	
Databara Easturar			
Select the components	you want to configure for use in your datab	ase. Components which appear disabl	ed are either not installed or depend on components which are not selected.
Crade JVM	Crade Application Express		
Cracle Text	Crade Olar		
Crade Spatial	Oracle Label Security		
Cracle Multimedia			
Custom Scripts			
Specify a custom SQL s	cript to be executed after the database cre are Library	ation. Optionally, you may select the o	components from Software Library that contain the custom scripts.
Reset			

20. Click on Next. On the Create Database: Schedule screen, select Immediately under the Start field, as shown in the following screenshot:

	Help + 🤦
Database Version and Type Database Template Identification and Placement Storage Locations Initiatization Parameters Additional Configuration Options Schedule: Create Database : Schedule Deployment Rocedure Instance Name CreateSDatabase_1346360876	Save Back Step 7 of 8 Next Cancel
Schedule Start @ Immediately @ Later Gibs (UTC +00:00) London Gräce Period Do not run if it cannot start within 1 hours of the scheduled start time	

21. Click on **Next**. Review all of the database parameters, as shown in the following screenshot:

DRACLE Enterpr	rise Manager Cloud Control 12c			Help •
Database Version and Type D	atabase Termilate Infertification and Placement	Storage Locations Initialization P	arameters Additional Conference Scheduler Review	
reate Database : Revi	iew .	ounder recenter and and and		Save Back Step 8 of 8 Analyze Submit Cance
Jeneral				
Database Configuration Type Storage Type Template Memory Management Enable Archiving	e Single Instance Database e File System e New Database.dbt t Automatic Memory Management g No			
Hosts				
Hostname	Oracle Home	Oracle Base	Host Credentials	
ndvoem02.starfleet.com	/dboracle/product/11.2.0/dbhome_1	/dborade	NC_HOST_ORACLE	
dentification and Placeme	ent		Initialization Parameters	
Gobal Database Name test	2		Total Memory for Oracle (MB) 3000	
Database Name test	2		Block Size (Bytes) 8192	
SID test	2		Processes 150	
			National Character Set: AL16UTF 16	
istener Configuration			Storage Locations	
Selected Listeners			Location (practicity)	
Listener Name Por	t		Like Oracle Managed Files (CMF) No	
LISTENER 152	21			
atabase Features				
0000 00	24.14.10			
Orade JVM	Orade Application Express			
Orade XML DB	J Oracle OLAP			
Orade Text	J Orade Warehouse Builder			
Conde Spatial	J Oracle Label Security			
La Grace Autoredia				



22. Click on **Submit**. In the **Confirmation** window, click on **OK**, as shown in the following screenshot:

Confirmation							
Deployment Procedure "CreateSIDatabase_1346260876" to create database has been submitted successfully							
	View Execution Details OK						

The database is created on completion of the job.

How it works...

This recipe describes the configuration steps that need to be followed to create a new database that is to be managed and monitored by the Oracle Cloud Control 12c console.

There's more...

The preceding steps are applicable to a standalone database through OEM 12c. Different target types, such as Oracle Cluster and High Availability Service under the **Add Targets Manually** screen, can be selected for the Oracle Clusterware setup.

Cloning a single instance database

Enterprise Manager Cloud Control can be used to clone the database on a host to another host that is being monitored by an active management agent. Cloning of databases can ensure identical processes for database creation and will also eliminate user errors.

Getting ready

This recipe assumes that an Oracle Home directory is available, the Oracle database software is installed at the target server, and the source database is running in the archive-log mode.

A single-instance database created in OEM 12c Cloud Control host will be cloned to another host in the same network in this example.



How to do it...

1. Select **Targets** | **Databases**. Under **Databases**, select the database instance to be cloned from the listed databases that are being monitored by OEM12c Cloud Control. The database instance named **test** is selected for this example.

ORACLE Enterp	rise Manager Cl	oud Contro	ol 12c								Şetup + Help + 🔝	SYSMAN + Log Out
🚓 Unterprise - 🧑 Iargets	- 🐈 Eavorites - 🧕	History -	ł.							Search Targ	etName -	
Databases View Orade Load Map () Search	Search List Go Advanced	Search									Page Refreshed 02-Sep-2)12 15042:30 BST 🖒
Calart Name &	Oaha		Incid	lents		Compliance Violations		Varana	Samore (D)	Cattorner 147	Samone Other	Instance (2010)
© oem12c		0	0	0	0	0 0 0	we age contraste store	11.2.0.2.0	0.02	0 🖌	0.01	0.9
e test	Ŷ	0	0		0	0 0 0		11.2.0.2.0	0 🥪	0 🥪	0 🥪	0 🥪
@ test2	Ŷ	0	0	0	0	0 0 0		11.2.0.2.0	0 🥜	0 🖌		0.05 🥪

- 2. Click on the selected database instance to display the database's home page.
- 3. Select **Oracle Database** | **Provisioning** and click on **Clone Database**, as shown in the following screenshot:

ORACLE Enterprise M	Manager Cloud Control 12c
🖧 Enterprise 🕶 👩 Targets 🕶 🐈	Eavorites 👻 📀 History 🕶
Crade Database Performance	Availability + Schema + Administration +
Home	
Monitoring +	0.
Diagnostics +	
Control +	
Job Activity	
Information Publisher Reports	tive sessions
Logs +	
Provisioning +	Create Provisioning Profile
Configuration +	Create Database Template
Compliance +	Clone Database Home
Target Setup +	Clone Database
Target Information	Upgrade Oracle Home & Database
	Upgrade Database
	Activity



- 4. Under Database Login, specify the Database Login details, as follows:
 - Provide sys as **Username** and your password.
 - Select **SYSDBA** as the **Role**, and then click on **Login**.

🔓 test 🛈	
Orade Database 👻 Performanc	e 🗸 Availability 🗣 Schema 🗣 Administration 🗣
Database Login	
* Username	sys
* Password	•••••
Role	SYSDBA
	Save As NC_TEST_2012-09-02-143956
	Set As Preferred Credentials
	Login Cancel

5. Select the **Use Recovery Manager (RMAN) to copy database files** option under **Online Backup**, and then click on **Continue**, as shown in the following screenshot:



 Select the Named credential of the user who owns the source database software if it has been already created in cloud control, or use the New option to provide details. As shown in the following screenshot, a named credential is selected in this example.

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ORACLE" EI	nterprise Manage	r Cloud Control 12c				Heb + 🤤			
Source Options	Select Destination	Destination Options	Database Configuration	Stredule					
Clone Database:	Source Options	Source Database te Source Host	st			Cancel Step 1 of 6 Ne <u>u</u> t			
The source database will	The source database will be duplicated directly to the specified destination Oracle Home. No staging areas are required. Degree of Parallelism 2 The number of parallel downels used by Recovery Manager (RMAN) to copy the database Rise. Increased parallelism may speed the process if sufficient network bandwidth is available.								
Source Host Crede Enter the credentials of Cred	ntials ithe user who owns the s Credential () Name Iential Name () NC_HOST	source database Oracle s d () New _ORACLE	erver installation.						

- 7. Click on Next.
- 8. Provide the target details in the subsections **Destination Oracle Home**, **Destination Host Credentials**, and **Destination Database in Clone Database** as follows:
 - Select the **Destination** home page
 - Select the target server Host and Oracle Home under Destination Oracle Home
 - Select the Named host credentials
 - Specify the Global Database Name and Instance Name, and select the Database Storage type based on the source database storage type, as shown in the following screenshot:

	prise Manager	Cloud Control 12c						Help +
0		0	0					
Source Options Sel	ect Destination	Destination Options	Database Config	uration Sched.	le Review			
Clone Database: Sele	ct Destination Soc	rce Database test Source Host						Cancel Bady Step 2 of 6 Neg
Destination Oracle Hon	10 M							
Specify the host and Oracle H database.	ione where the don	ed database will be created	The host should Host Oracle Home	be a discovered Enf	terprise Manager ta 2.0/dbhome_1	rget and matc	i the operating system of the source database. The Oracle Ho	ne should exist on the specified host and match the version of the source
Destination Host Crede	intials							
Enter the credentals of the u	ser who owns the O	ade Home selected above.						
Cree	iential 🕒 Preferre	ed 🗿 Named 🕥 New						
Credential	Name NC_HOST_	DRACLE .						
	Attribute						Value	
Credential	Details UserName						orasdh	
	Password							
	More Details							
Destination Database								
		* Global De	tabase Name te	st				
			Typ	pical format : name.do	rain			
		l'	stance Name te	st				
		Data	base Storage FI	le System		¥.		
								Cancel Back Step 2 of 6 Next



- 9. Click on Next.
- 10. Select the **Database File locations** of the target server as follows:
 - Keep file names and locations identical to those of the source database is selected in this example
 - The Customize option can be used to customize location of the database files, online redo logs, and so on

ORACLE Enterprise Manager Cloud Control 12c	Help + 💆
Source Options Select Destination Options Database Configuration Schedule Review	
Clone Database: Destination Options Source Database test Source Host Destruction Host	Cancel Back Step Sold Negl
Database File Locations Total Dick Space Required 1570 MB () Use Oracle Optimal Fielde Architecture compliant directory structure (OFA) 100 Kep file names and locators derical to those of the source database () Use Database Area and Fast Recover yr Rea Evaluations and locators derical to those of the source database () Use Database Area and Fast Recover yr Rea Evaluations derical to the source database () Use Database Area (Adoracle/oradata Fast Recover y Area (Adoracle/oradata Fast Recover y Area (Adoracle/fast_recovery_area	Custome Cavel Radi Sten 1.6/6 Hard

11. Click on Next.

- 12. Under Database Configuration, provide the Listener Name and Port as follows:
 - The **Listener** name LISTENER and port 1521 are kept as defaults in this example
 - Specify the Target Database Name for Database Registration. The remaining fields are left blank in this example. If any script needs to be executed post cloning, then the script file's details need to be provided in the Post Cloning Script section

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DRACLE D	nterprise Manag	ger Cloud Control 12c						Help +
(p)				-	-0			
Source Options	Select Destination	Destination Options	Database Configuration	Schedule	Review			
Jone Database:	Database Confi	guration Source Database test Source Host Destination Host					Cancel Back	Step 4 of 6 Negt
Listener Configura	tion							
Specify the name and p	ort of the listener that	will be used for the doned of Configuration File Locatio * Listener Nam * Po Source Database Po	latabase. If a new name and p n /dborade/product/11.2.0/d e LISTENER Click the flashight to show the I Click the flashight to show the I 1521 rt 1521	ort are specified t bhome_linetwork	that are not in k/admin rs.	existing listener, a new listener using the specified port will be created.		
Post Cloning Scrip	t							
El Kun Yos Cumbase a Bine daned database a Bin SQL smi Run SQL smi	area in be austomized by ex it from file at specified in the text	ecuting the specified SQL so SQL Script File Nam arros SQL Scrip	npt. (The script will be run as 5 e 5 5 select name from visionafie	77500A.) N		4		
Masking Definition	1							
Execute masking st	eps after doning the d	latabase						
Masking steps can be o	ptionally run to ensure	the cloned database is auto	matically masked.				Later a series	ADD
Select Masking Deh	afeiting added				Creation Dat		Ready to Mask	
Datast SOL Blas Ch	anner Des To Mark	ina			L			
Run SQL Performan Task Nar SQL Tuning S	ice Analyzer to compare iee	re SQL execution plans befo	e and after masking. Plan chan	ges may be cause	ed by the data	d, and statistics changes made by the masking script.		
Database Registra	tion				-			
Register the dones	database as an Enter	prise Manager target monito	red by user DBSNMP					

13. Click on **Next**. If a warning message is shown, click on **Yes**, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Control 12:	Help -	
Clone Database: Warning	No Ye	
Charactering Examine the following summo(s), then continue the operation. I. <u>indextors</u> - Configuration file subjectors allows not exist at the specified location and will be created. I. <u>Summersum</u> - Configuration file thromases and allows not exist at the specified location and will be created.		
	No Yes	1

14. Under Schedule, select the Start time as Immediately.

15. Specify the **Job Name** in the **Job Name and Description** section, as shown in the following screenshot:

DRACLE B	nterprise Manag	er Cloud Control 12	:			
0	-0	0			-0	
Source Options	Select Destination	Destination Options	Database Configuration	Schedule	Review	
Clone Database:	Schedule	Source Database Lest Source Host Destination Host				Cancel Book Step 5
pecify a name and des	cription for the clone job	b. Specify a date to start	the job.			
Job Name and De	scription					
	 Job Name 	U8Clone_test				
	Description	1				
Start						
o Immediately						
Olater						
Delte 024	Sep-2012 ngle: 02-Sep-2012)	B.				
Time 4	💌 55 💌 () AM (e PM				
Time Zone (UTC-11:	00) Pago Pago					
		_				
						Cancel Bady Step 5

16. Click on **Next**. Review the source and target database on the review screen, as shown in the following screenshot:

	se Manager Cloud Control 12c			Heb 🕶 🤤
Revious Schedule I Clone Database: Review The database TEST on host	Review will be doned to database test on host	in Orade Hom Inh Name DRC Jone_Inst Scheduled Immediately	e/dboracle/product/11.2.0/dbhome_1.	Cancel Body Step 6 of 6 (submit tob
Details		Source Type: Online Deckup		
Source Database	Gobal Dotabase Name EEST Instance Name Lest Dockare (Hoson 112.0.2.0 Oracle home (diboracle) product/112.0/dibhome j Host Uname oracid) Doladone Ubername oracid) Doladone Ubername oracid) Doladone Ubername oracid) Doladone Ubername oracid) Doladone Ubername oracid) Archiving Mode ARCHIVELOG	1 Carthage) 26.18	Destination Database Global Database Name Orack Server Yerskin Orack Server Heat Operating System Heat Database Usernam Hei Traiter Nethol Target Database Configuration Hei Location Userbane Strange Massimo Dehition	test test 11.2.0.2.0 /dborade /dborade/product/11.2.0/dbhome_1 Enterprise Linux Server release 5.3 (Carthage) 2.6.18 orasdh sys RVMA duplicate test_chone /dborade/product/11.2.0/dbhome_1/network/admin ride system - same As Source Not specified
⊳ Database Storage				
				Cancel Back Step 6 of 6 Submit Job

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17. Click on **Submit Job**. On **Confirmation**, click on **OK**. The clone process may take some time, depending on the size of the cloned database.



18. Select **Enterprise** | **Job** | **Activity** in order to monitor the cloning database job operation as shown in the following screenshot:

Job A	ctivity						
Status	Al Name	G	Advanced Search				
	TIP By default, results for the l	ast 24 hours are displayed. Use	Advanced Search' for more options.				
View	Results Edit Create Like Copy To	Library Suspend Resume	Retry Stop Delete Run View Executions Create Job OS Comm	and	G 0		
Select	Name	Status	Scheduled V	Targets	Target Type	Owner	Job Type
۲	DBCLONE_TEST	Succeeded	02-Sep-2012 17:02:47 GMT+01:00	2	Mixed	SYSMAN	Clone Database

19. Select **Targets** | **Databases** to check the cloned database in Cloud Control as shown in the following screenshot:

DRA	ACLE Enterp	prise Manager Ci	oud Contro	N 12c								Setup + Help +	SYSMAN + Log Out
Criber	prise 🕶 🎒 Targets	• 🐈 Eavorites • 🥝	History +								Search Targ	et Name 🕶	
Databa	ases Oracle Load Map (a Search List										Page Refreshed 02-Sep-20	012 17:13:52 BST 🖒
Search	and an and the	Go Advanced	Search										
Select	Name W	Status		Incide	ents		Compliance Violations	Average Consilance score	Version	Settions: CRU	Sections: 1/0	Sessors: Other	Instance CRU (%)
	test_done	Ŷ	0	0	0	0	0 0 0		11.2.0.2.0				
-													
0	test2	€°	0	0	.0	0	0 0 0		11.2.0.2.0	0 🖋	0 🛷	- 🛷	0.05 🥜
0	test2 test1	0 0	0	0	0	0	000		11.2.0.2.0	0 *	0 🥩		0.05 🥜
0 0 0	test2 test1 test	ନ ଜ ଜ	0	0	0	0	0000		11.2.0.2.0 11.2.0.2.0 11.2.0.2.0	° •	0 🧈 0 🚽 0 🚽		0.05 🕜 0.05 🛷 0.05 🛷

How it works...

This recipe describes the configuration steps to be followed in order to clone a database instance from one host to another host.

There's more...

The preceding steps are applicable to a standalone instance database clone using the RMAN option to copy database files. These steps are used to avoid the staging directory requirement to copy database backup files. There is an option to create a staging directory and use this option as an online backup to create a clone database. The clone database can be created by using an existing database of a source database by the selection of **Existing Backup** in the **Clone Database: Source Type** screen.

Creating database templates

Database templates can be created by using Oracle Enterprise Cloud Control. These templates can then be used for cloning or creating additional databases.

Getting ready

This recipe assumes that the Oracle Home directory is available, the Oracle database software is installed, and the database is up and running. Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To create a database template, perform the following steps:

- 1. Select Databases from the Targets menu.
- 2. Select the database for which the template needs to be created from the Database page. The database instance **test** is selected in this example, as shown in the following screenshot:

Datab	ases											1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 -	
New C	Oracle Load Map	e Search List											
search		Go Advanced	Search										
Confe	are Remove A	udd											
-		1000	1	Incide	ents					1 1	0	1	
Select	Name 📥	Status	•	0	4	-	Compliance Violations	Average Compliance score	Version	Sessions: CPU	Sessions: 1/0	Sessions: Other	Instance CPU (%)
0	oem12c	Û	0	0	Q	0	0 0 0	1	11.2.0,2.0	0.02 🛷	0 🛷	0.01 💊	1.05 🕜
	test	Ŷ	0	0	0	0	0 0 0	1	11.2.0.2.0	0 🥜	0 🥜	0 🥪	0 🥜
10	test?	0	0	0	0	0	0.0.0		112020	0 🥔	0 🥔	- 4	0.05 🥔

3. Click on the selected database.



4. From the **Oracle Database** menu, select **Provisioning**. Click on **Create Database Template** from the drop-down list under **Provisioning**, as shown in the following screenshot:

test 🖲		
acle Database Performa	ance - A	vailability 🗸 Schema 🖌 Administration
Monitoring		
Diagnostics		
Control	•	
Job Activity	-	
Information Publisher Rep	orts	
Logs	, 6	ive sessions
Provisioning	•	Create Provisioning Profile
Configuration		Create Database Template
Compliance	,	Clone Database Home
		Clone Database
Target Setup	,	
Target Information	_	Upgrade Oracle Home & Database
		Upgrade Database

- 5. Select the **Named** credential on the database login page if the database credential is already set, or use the **New** option to log in to the database.
- 6. Click on Login.
- 7. Under **Template Type**, select your desired template type. The **Structure and Data** template type is selected in this example.

8. Select **Host Credentials**. The **Named** credential is selected in this example, as shown in the following screenshot:



- 9. Click on Next.
- 10. On the Template Options page, specify Template Name and Description.
- 11. Select **Template Location**. **Store Template in the Software Library** is selected in this example.
- 12. Select **Database File Locations**. **Maintain File Locations** is selected in this example, as shown in the following screenshot:.

ORACLE Enterprise Manager Cloud Control 12c	14b - 🖸
🗘 test 👔	
Template Type Template Options Schedule Harview	
Create Database Template : Template Options	Back Step 2 of 4 Next Cancel
Template Identification	
Specify the name and description to identify template.	
* Template Name Database_test_Template	
Description Template created from database - test	
Template Location Tohythy where the template will be stored, on numsged host or in software library.	
Store Template in the Software Library	
Software Library serves as the central location to save database templates.	
Storage Type OMS Shared Filesystem 🝙 Storage Location OMS_SOFTWARE_LIBRARY-/JO1/app/Mddleware/swilb1/ 🝙	
China Template on the Managed Next	
The template will be stored under /dborade/product/11.2.0/dbhome_L/assistants/dbca/templates directory.	
Database File Locations	
Specify whether template will convert database file paths to Oracle Flexible Architecture (OFA) or maintain database file paths of source database.	
Use Oracle Flexible Architecture (OFA)	
The location of Res in the template will be converted to Grade Flexible Architecture (OFA).	
Maintain File Locations	
The location of database files will be identical to source database.	

13. Click on Next.

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14. Specify **Job Name**, **Job Description**, and **Schedule** in the **Schedule** page. In this example, **Schedule** is set to start immediately, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Control 12c	Heb + 🖸
O test @	
Create Database Template : Schedule	Back Step 3 of 4 Next Cancel
Job Details	
Job Name: Creats/Template_1346375403	
3db Description Oreale Template Database_test_Template from distabase target - test	
Schedule	
Start @ Immediately () Later 🖓 (JTC +00.00) London	
Grace Period Do not run if it cannot start within	
Blackout Database will be shut down during template creation. Choose blackout option to suspend monitoring of database target test for the duration of template creation job.	
I Blackout the database target during template creation	

- 15. Click on Next.
- 16. Review the details that you have provided for the job, on the **Review** page. The **Back** button can be used to go back to the previous screen to rectify any changes to the template selection, if necessary.

DRACLE Enterprise Manager Cloud Control 12c	Meip + 🔘
P test @ Terplat Type Terplat Options Schulle Review Create Database Template : Nerview	Back Step 4 of 4 Submit 20b Gancel
Review the template related information before submitting the job.	
Template Details	
Template Type Structure and Data	
Template Name Database_test_Template	
Template Description Template created from database - test	
Template Location Store Template in the Software Library	
Storage Type OMS Shared Fleoyatem	
Storage Location OM5_SOFTWARE_LIBRARY-(U01/app,Middleware/swilb1/	
Database File Locations. The location of database files will be identical to source database.	
Backout Blackout the database target during template creation	

- 17. Click on **Submit Job**, and then click on **OK**.
- 18. Verify whether the template job has been created, from the **Job Activity** page, and check that the template has been created as specified:

Job Activity							
Status Al 💌 Name	Go Advanced	l Search					
TIP By default, results for the last 24 hours are disp	ayed. Use 'Advanced Sea	arch' for more options.					
View Results Edit Create Like Copy To Library Suspen	d Resume Retry Sto	ap Delete Run View Executions 💌 Greate Job O	Command	💌 Go			
Select Name	Status	Scheduled 🐨	Targets	Target Type	Owner	Job Type	
CREATETEMPLATE_1346875483	Succeeded	05-Sep-2012 21:34:35 GMT+01:00	test	Database Instance	SYSMAN	Database Configuration	

How it works...

This recipe describes the steps to be taken in order to create a database template using Cloud Control.

There's more...

The **Database Configuration Assistant** (**DBCA**) can also be used to create database templates.

Uploading database templates to the Software Library

Database templates can be edited, customized, and then uploaded to the software library by using Enterprise Manager Cloud Control.

Getting ready

This recipe assumes that the database template is already created. Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To upload a database template, follow these steps:

1. Select **Provisioning and Patching** from the **Enterprise** menu. Click on **Software Library** under **Provisioning and Patching**, as shown in the following screenshot:

Enterprise 👻 🎯 Targets	- 📩	Eavorites 👻 🥝 History 👻	
Summary			
Monitoring		Availability - Schema - Admini	stration -
Job			
Reports	•		
Configuration	,		0.
Compliance			
Provisioning and Patching		Procedure Activity	
Quality Management		Procedure Library	
My Oracle Support	•	Software Library	
Infrastructure Cloud		Bare Metal Provisioning	
Database Cloud		Database Provisioning	
Chargeback		Middleware Provisioning	
Consolidation Planner			
ADDM Findings 0		Patches & Updates	
Incidents 🔵 0	8	Saved Patches	
		Linux Patching	

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- 2. Select the folder from where the database template will be uploaded, on the **Software Library** home page. The **Component** folder is selected in this example.
- 3. From the **Actions** menu, select **Create Entity**, and then select **Component**, as shown in the following screenshot:

oftware Library				
				_
Software Library maintain hese reusable entities ca	s entities n be refe	that represent renced from a	nt software patch Deployment Pro	nes, vi
Actions - View -	6d View	/ Edit	S Delete	Find
Create Entity	,	Compon	ent	1
Create Folder		Directive	5	L
X Delete Folder		Bare Me	-	
Change Maturity		Virtualiza		
Create Like				-
Grant/Revoke Privile	eges	visioning		
Move Entity		Utilities		
💠 Add Notes				
💠 Add Attachments				
Import		_		
Export				
Administration				

- 4. Click on Component.
- 5. Select **Database Template** in the **Create Entity: Component** dialog box, as shown in the following screenshot:

Create E	ntity: Compone	nt	×
Select Subtype	Database Templ	ate	•
		Continue	Cancel



- 6. Click on Continue.
- 7. On the **Describe** page, enter the appropriate values in the **Name**, **Description**, and **Other Attributes** fields, to describe the entity.

Ensure that the component's name is unique to the parent folder.

8. Click on **+ADD** to attach the database template. In the **Notes** field, include information related to the entity, if anything is to be added, as shown in the following screenshot:

Software Library			
Describe Select Files Review			manufacture of the second s
Create Database Template : Describe			flack Step 1 of 3 Next Save Cano
Parent Directory Components			
Subtype Database Template			
rands and descention and allow allow has that does	an the weble. These eligibules are showed by all environment this webby distributes by which are descentished by		
appeary needs, deputy with and other averagines that deput	de die energy, indee erweidungs and anarea of an revisiona of and energy, waaravelang, avaan ang oodamenia and ree	provina-	
* Nome Repository Database Template			
Description Test Template			
Other Attributes			
Name	Value		
PRODUCT_VERSION	11.2.0		
PLATFORM	Linux x86_64		
TEMPLATE_TYPE	Structure and Data		
PRODUCT	Orade Database +		
Attachments			
Add 3% Remove			
File Name Size(90) Mine T	pe		
repositorydbtemplate 4, 200 1953 125 Application	ion/octet-stream		
and white the			
Notes			
New Note	💠 Add		
Note	1	Added By	Date
repository template		INSMAN	05-Sep-2012 23:04:24 8ST
GTTP Notes once added cannot be deleted or edited			

- 9. Click on Next.
- 10. Under **Select Files**, select **Upload Files** to upload all of the database template related files.
- 11. Choose the software library's location in the **Specify Destination** section.
- 12. Click on +Add to upload the database template files.

Only one file is added here, for demonstration, with the **File Source** set as the **Local Machine**. For a structure and data template, files with extensions of . dbc and . dfb need to be uploaded.

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ORACLE Enterprise Manager Cloud	Control 12c		Help + 🧲
Software Library			
G			
Describe Select Files Review			
Create Database Template : Select Files			Back Step 2 of 3 Next Save Cancel
Parent Directory Components			
Subtype Database Template			
Select one or more files to be associated with the entity. File Upload Files Refer Files	es can either be uploaded to or refe	erred from a Software Library storage location.	
Specify Destination			
Choose a Software Library upload files storage location for	or uploading the specified files.		
Upload Location OMS_SOFTWARE_LIBRARY	Q		
Storage Type OMS Shared Filesystem Location Path (u01/app/Middleware/swilb1/			
Specify Source			
Files can be uploaded from either the local filesystem or fi the file size is limited to 2MS.	rom a remote filesystem monitored b	by an Enterprise Manager Agent. The 'Save and Upload' action will submit a file transfer job for uploading the remote	e files to the specified upload location. For files uploaded from the local file system,
File Source Local Machine +			
Add 32 Remove Main File repositorydotene	plate_dbc 💌		
Name		Size Mme Type	Status
repositorydbtemplate_dbc		4.7 KB application/loctet-stream	New

- 13. Click on Next.
- 14. On the review page, review the datafiles and then click on **Save and Upload** to upload the files to the **Software Library**.



How it works...

This recipe describes the steps to be taken to upload a database template to the Software Library in Cloud Control.

There's more...

Only one file out of several database template files was added to Software Library in this recipe. All other template files can be added by following the same process.

Creating an Oracle Database Clone from a reference home

It is possible to create and store provisioning entities in the Software Library to be used for provisioning Oracle databases. Cloud Control allows the creation of database entities such as an Oracle database clone or a Oracle Clusterware Clone.

Getting ready

Oracle Enterprise Repository database home is cloned in this example. Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To add host targets manually, follow these steps:

- 1. Select Provisioning and Patching from the Enterprise menu.
- 2. Click on Software Library under Provisioning and Patching.
- 3. On the Software Library's home page, select the folder from where the database template needs to be uploaded. The **Components** folder is selected in this example.
- 4. From the Actions menu, select Create Entity and then select Component.
- 5. Click on Component.
- 6. Select **Oracle Database Software Clone** from the **Create Entity: Component** dialog box, as shown in the following screenshot:





- 7. Click on **Continue**.
- 8. On the **Describe** page, enter values in the **Name**, **Description**, and **Other Attributes** fields that describe the entity. Ensure that the component name is unique to the parent folder.
- 9. Click on **+ADD** to attach the database template. The size of the file should be less than 2 MB. In the **Notes** field, include any information related to the entity that needs to be added.

	Manager Cloud Control 12c		Help + C
Software Library			
Describe Configure Review			
Create Oracle Database S	oftware Clone : Describe		Back Step 1 of 3 Next Save Cancel
Parent Directory Components Subtype Oracle Database	Software Clone		
Specify name, description and other	attributes that describe the entity. These attributes are shared by all revisions of this entity. Additionally, attach any documents and k	p notes.	
* Name Repository Database 5	loftware		
Description Repository Database 5	ioftwwe		
Other Attributes	Repository Database Software		
Name	Value		
PRODUCT_VERSION	11.2.0		
PRODUCT	Oracle Software		
VENDOR	Orade		
Attachments			
Add M Remove			
The bigger	Mana Turne		1
No attachment has been added ve	prese type		
Notes			
New Note	Add		
Ingene		uddad By Date	1
100		NAME OF DATE	

- 10. Click on Next.
- 11. Under **Configure**, select **Reference Oracle Home** from the **Create Component from** menu.
- 12. Click on the magnifier icon to select the desired database, Oracle home, under the **Reference Oracle Home** section.
- 13. Select Oracle Home Credentials. The Named credential is used in this example.

14. Enter the path of a **Working Directory** that exists on the host and has write permissions, so that a cloned zip file can be created and placed there temporarily.

ORACLE E	terpris	e Manager Cloud C	Control 12c	Heb. C
Software Library				
Destrike Configure	Dautan			
Create Oracle Dat	abase	Software Clone : C	onfigure	Badx Step 2 of 3 Next Save Cancel
Parent Directory Comp Subtype Orad	onents e Databas	e Software Clone		
Create Component from	Referen	ice Orade Home 🛛 💌		
× Reference Oracle	Home			
* Oracle Home Locato	n /dbora	de/product/11.2.0/dbhom	e Q	
* Host Nam	e			
🗴 Oracle Home Cres	lentials			
Select Credential				
Credenta	dential I Nome	Preferred No_HOST_ORAGLE	New	
Credental	Details	Attribute	Value	
		UserName Password	orasdh	
		More Details		
🕙 Working Director	& Hies	to Exclude		
· Working Directory	U01//tmp		Select Directory	
Files to exclude	".log, ".db i,sqinet.or ora,orata	f, ".trc,EHStagedPatche a, trsnames.ora, listener b, rdbms/audit		
≥ Software Library	Upload L	ocation	_	
Software Library Loca	tion Type	OHS Shared Filesystem	*	
Software Library Local	ton Name	OMS_SOFTWARE_LIBRA	RY 💌	

15. Click on Next.

16. On the review page, review the specified details, and then click on **Save and Close**.

ORACLE Enterprise Manager Cloud Control 12c
🚓 Enterprise 🔻 🎯 Ilargets 🔻 🃩 Eavorites 👻 🕙 History 🕶
Software Library
Confirmation The entity Repository Database Software' has been created successfully in 'Components' folder. A job 'Create Clone DB Component_2012-09-05_23-59-00-669' has been submitted for uploading the files.

17. Verify the **Create Clone DB Component** job execution in the **Job Activity** page, as shown in the following screenshot:

j	Job Activity									
S	Status Al 🔍 Name 🕼 Advanced Search									
	Imp By default, results for the last 24 hours are displayed. Use Movanced Search' for more options.									
			1.			_				
	View R	tesults Edit Create Like Copy To Library Suspend Resume Retry Stop	Delete Run Vie	w Executions 💌 Create Job OS Command		▼ Go				
	Select	Name	Status	Scheduled 🔻	Targets	Target Type	Owner	Job Type		
	٥	CREATE CLONE DB COMPONENT_2012-09-05_23-59-00-669	Succeeded	06-Sep-2012 00:01:15 GMT +01:00		Host	SYSMAN	NGCreateDBCloneComponent		



How it works...

This recipe describes the steps to be followed in order to create an Oracle Database Software Clone from a reference home, and then upload this to the Software Library.

There's more...

The Oracle Database Software Clone can be done from an external storage by following the preceding steps. The same process can be further extended to perform Oracle Clusterware cloning from a reference home, and from an external storage, by following the Oracle Clusterware clone from the **Create Entity: Component** dialog box.

Provisioning Oracle Database software

Oracle Cloud Control facilitates the provisioning of Oracle Databases and Oracle Real Application Cluster databases, extending or deleting Oracle Real Application Cluster nodes, and upgrading Oracle single-instance databases in a scalable and automated manner.

The provisioning of Oracle Databases, Real Application Cluster's databases, and Oracle RAC One Node Databases using database templates helps in standardizing deployments.

This recipe focuses on provisioning single-instance database software in order to demonstrate one of the various database provisioning options available in Enterprise Manager Cloud Control.

Getting ready

The assumption is that the Oracle Management Agent is already installed on the target host without the Oracle software that is required for for the provisioning of Oracle Database Software.

How to do it...

To provision the Oracle software using provisioning profiles, follow these steps:

- 1. Select **Provisioning and Patching** from the **Enterprise** menu.
- 2. Select Database Provisioning from the drop-down list of Provisioning and Patching.



3. Select the **Provision Oracle Database** procedure on the **Deployment Procedures** page, as shown in the following screenshot:

Deployment Procedures	
🛛 🔯 Create Like 🧷 Edit 🐍 Edit Permissions 💥 Delete	
Procedure Name	Owner
Provision Orade Database Client	ORACLE
Provision Orade Database	ORACLE
Upgrade Oracle Database	ORACLE
Delete/Scale down Oracle Real Application Clusters	ORACLE
Extend/Scale up Orade Real Application Clusters	ORACLE
Provision Oracle RAC Database	ORACLE
Provision Oracle Clusterware / RAC for UNIX and RDBMS versions 10g/11g	ORACLE
Provision Orade Clusterware / RAC for Windows and RDBMS versions 10g/11g	ORACLE
Create Orade Database	ORACLE

- 4. Click on Launch in the Deployment Procedures section.
- 5. Select the desired provisioning profile under the **Select provisioning profile** section, if the provisioning profile is to be used.
- 6. Select **Deploy Database software** under the **Select Tasks to Perform** section, in order to provision single-instance databases.
- 7. Click on **+Add** to select the desired destination host, in the **Select destination hosts** section, as shown in the following screenshot:

	er Cloud Control 12c		Help	, (
Select Hosts Configure Custom properties	Schedule Review			
Provision Oracle Database : Select	Hosts		Save Back Step 1 of 5 Next (Cance
Select provisioning profile				
Provisioning profiles allows you to record inputs parameters.	s and use them later while performing depl	oyments using standard values. Selecting a profile at this st	age allows you to pre-populate the interview with previously saved values of deployment and configure	stion
Do not use a Provisioning Profile Oselect a Provisioning Profile				
Name	Description			
Profile for Single Instance on ASM	This is a reference profile created	for provisioning database on ASM		
Profile for Single Instance on File System	This is a reference profile created	for provisioning database on file system		
	4			
Select tasks to perform Specify the tasks to perform the pro Deploy software Deploy Detabase software Configure software Configure Grid Infrastructure	visioning process. server			
Select destination hosts	íresh Husis			
Tarnet Name	Last Collection	Host Name	Operation System	_
			Entermice Linux Server release 5.3 (Carthana)	



- 8. Click on Next.
- 9. Click on the setup hosts link on the **Configure** page.
- 10. Specify the operating system user under **Normal user** and **Privileged user** for the Oracle Home of the database. **Override preferred credentials** is selected in this example.

Configure			
Configure Specify 05 users Spe	afy OS groups Configure		
Provision Oracle Database	: Specify OS users		Save Back Step 1 of 2 Next Cancel
Operating system users Specify the operating system users If you choose Preferred Credentias used for all targets of each type. If	s required to provision the software. Is, the job will use your preferred credentials for each tat he normal credentials are the host operating system cred	get at the time job runs, and therefore requires cred	entials for all targets to be set. If you choose to override the preferred credentials, one set of credentials will be dentials are the bast scenarios overan credentials used to perform providend actions like executors a not error.
🗇 Use Preferred Credentials 🧕	Override Preferred Credentials		
Orade Home User	Normal user	Privileged user	
Orade Database	NC_HOST_ORACLE(SYSMAN) 🐷 💠	NC_HOST_ORACLE(STSMAN) 💌 💠	

- 11. Click on Next.
- 12. Specify the OS groups to use for operating system authentication.
- 13. Note that the oinstall, dba, and oper groups are already present on the target server. If these groups do not exist, then either specify alternative groups that exist on the host or create these groups on the target host.

Configure			
Configure Specify OS users Specify OS g	J" roups Configure		Save Back Step 7 of 7 Next Cancel
Operating system groups a	ed to provision the software. Local group	is will be automatically created if they do not exist on the system. The primary group of the u	sers will also be changed to the 'Inventory group (ODI/STALL)' if necessary. If you
Group label	you may choose to only perform prerequi	aute checks as part of the provisioning procedure.	
Inventory Group (OINSTALL)	oinstall		
Database Administrator (OSDBA)	dba		
Database Operator (OSOPER)	oper		

- 14. Click on Next.
- 15. Click on the **Deploy Software** link.
- 16. Specify the **Source** and **Destination** locations for the software binaries of the Oracle databases on the **Select software locations** page.
- 17. Select the Software Library location for the Oracle Database binaries.
- 18. Specify Oracle Base for Database and Database Oracle home, in the **Destination** section.
- 19. Specify the **Working Directory** on the destination host where the files related to cloning can be staged temporarily. Ensure that approximately 7 GB disk space is available in the working directory.



20. Specify any additional Oracle Universal Installer (OUI) parameters in Installer Parameters.

Configure			
Configure Select software loca	je tions Configure		
Provision Oracle Databas	e : Select software locations		Save Back Step 1 of 1 Next Cancel
Select software source and specify	destination settings for all hosts		
Select the software library loca * Oracle Database Compon Destination	tion from where the Oracle Girld Infrastructure and/or Oracle Database software must be provisioned. IntroResonatory Database Software: Oracle Circle Oracle Software:		
Oracle Base for Database	/u01/app/orade	20	
Database Orade home	%CRACLE_BASE%/app/product/11.2.0/db		
Additional Parameters			
* Working Directory /u01	mp	0	
Installer Parameters		6	

21. Click on **Next**. A new **Configure** page is displayed; click on **Next** as shown in the following screenshot:

Select Hosts Config	ure Custom properties Schedule R	eview							
rovision Oracle	Database : Configure				Save	Back	Step 2 of 5	Next	Cancel
Configure									
the the filming on	tions to provide cooks watton datals for	the various tasks that will be needed							
Use the toloviling set	corris to provide contrigational details to	the vacious casiva unar num pe benion	rmed as part of this provisionin	g operation.					
Use the following set	coris to provide contriguiation details to	tele various tasks trat init be perfor	rmed as part of this provisionin	g operation.					
Ta	ik No. Task	Status	rmed as part of this provisionin	g operation.					
Ta	ik No. Task 1 Setup hosts	Status	rmed as part of this provisionin	g operation.					

22. Under **Schedule**, specify a **Deployment Instance** name. Specify the **Schedule**. In this example, **Schedule** is set to start **Immediately**, as shown in the following screenshot:

Select Hosts Configure Oustan processes Schedule Review							
Provision Oracle Database : Schedule	Save Dack Step 4 of 5 Next Car						
Deployment Instance Details							
* Deployment Instance Provision Orade Database_STSMAN_TEST							
Schedule Start @ Immedately @ Later By (JTC +00:00) London							
Notification Status for Notification Running Acton Required Supported Supported Problems							
Prerequisite only mode							

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23. Click on **Next**. Review the details on the **Review** page, as shown in the following screenshot:

ovision Oracle Data	abase : Review		Save Back Step S of S Submit Can
iew the information below	and submit the procedure.		
Hosts			
Linet Name	Charatine Suptam		
ndvoem04.starfleet.com	Enterprise Linux Server n	elease 5.3 (Carthage)	
Destination locations	5		
Product	Oracle Rase	Oracle Home	Normal user Privileged user
Oracle Database	/u01/app/oracle	/u01/app/oracle/app/product/11.2.0/db	NC_HOST_ORACLE:SYSMINC_HOST_ORACLE:SYSM
Installer Parameters Working Directory (U01/	'tmp/		
Operating System Gr	oups		
Group label	OS Group	name	
Inventory Group (OBNSTALL) oinstall			
Database Administrator (OSDBA) doa Database Operator (OSOPER) oper			
Software Images			
Product	Software library location		
Orade Database	Components/Repository	Database Software	
Schedule			
Perredicite			
Start Immediately			
Start Immediately Repeat Do not repeat	t		
Start Immediately Repeat Do not repeat Duration Indefinitely	t		
Start Immediately Repeat Do not repear Duration Indefinitely Prerequisite only mo	de		

- 24. Click on **Save** to save the deployment procedure for future deployment. Then click on **Submit**.
- 25. On the **Procedure Activity** page, check the status of the execution of the job and the steps in the deployment procedure:
 - Click on the Status link for each step to display the details of the execution of each step
 - Click on **Debug** to set the logging level to Debug
 - Click on **Stop** to stop the procedure's execution
- 26. Click on the **Targets** menu and select **All targets** in order to navigate to the **All Targets** page, and verify that the newly created database appears as a Cloud Control target.

How it works...

This recipe describes the steps to be followed in order to provision the Oracle Software to the target server by using the Software Library as a source of having a cloned Oracle Software.

There's more...

The provisioning of the Oracle Software Database can be extended to configure the database, and also to install and configure Grid Infrastructure, by selecting the relevant boxes on the **Provision Oracle Database: Select Hosts** screen.

Removing a database target

Removal of an already configured database is possible through Enterprise Manager Cloud Control.

Getting ready

Log in to Oracle Enterprise Manager Cloud Control 12c.

How to do it...

To remove a database target, follow these steps:

- 1. Select Targets from the Enterprise menu.
- 2. Select Databases from the drop-down list of Targets.
- Select the database from the listed databases under the Databases screen. The test2 database instance is selected in this example, as shown in the following screenshot:

ORACLE Enterprise Manager Cloud Control 12c					
🚓 Enterprise 👻 🎯	Targets 👻 📩 Eavorites 👻 📀 Hist <u>o</u> ry 👻				
test2 ③ Oracle Database ▼	Performance 🕶 Availability 🕶 Schema 🕶 Administration				
✓ Summary Status	◎ •				
Up Time	7 days, 23 hrs				
Version	11.2.0.2.0				
Load	0.00 average active sessions				
Total Sessions	40				
Last Backup	N/A				
Available Space	0.53 GB				
Total SGA	2,994.56 MB				

200

4. Select **Targets Setup** from the **Oracle Database** drop-down list. Click on **Remove Target**, as shown in the following screenshot:

DRACLE Enterpr	ise Ma	anager Cloud Control 12c
🖁 Enterprise 👻 🌀 Iargets 🤜	🛨 Ex	worites 👻 🌝 Hist <u>o</u> ry 👻
test2 💿		
Vade Database 🤝 Performan	ce • A	vallability • Schema • Administrat
Home		
Monitoring		0.
Diagnostics		
Control	- + I	
Job Activity	- 1	
Information Publisher Repor	ts p	ve sessions
Logs	•	
Provisioning	•	
Configuration		
Compliance		
Target Setup		Enterprise Manager Users
Target Information		Monitoring Configuration
		Administrator Access
		Remove Target
		Add to Group
		Properties
 Compliance Summary 	ri -	Metric and Collection Settings

5. Click on **Yes** to remove the target.

How it works...

This recipe describes the steps to be taken to remove the already discovered database instance in Cloud Control. This target is removed from the OEM Cloud Control Repository, and subsequently this target will no longer be available for any monitoring via OEM.

There's more...

The steps used to remove a database instance target from Cloud Control can be followed to remove other target types discovered by Cloud Control.

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6 Managing Database Performance Using OEM 12c

In this chapter we will cover:

- Using Active Session History Analytics
- ▶ Using the Real-Time Automatic Database Diagnostics Monitor (ADDM) feature
- ▶ Using the Compare Period Automatic Database Diagnostics Monitor (ADDM) feature
- Comparing period reports

Introduction

In this chapter, we will explore various options available in the Cloud Control console for performance troubleshooting using Oracle Enterprise Manager 12c (OEM 12c).

Diagnosing a slow-performing system is a very time-consuming task and also needs skilled resources to identify the issues.

Oracle Diagnostics Pack provides a complete set of real-time and automatic performance diagnostics and monitoring functionality built into the database and Oracle Enterprise Manager Cloud Control 12c.

Oracle Diagnostics Pack, when used in conjunction with OEM 12c, provides enterprisewide performance and availability reporting, a centralized performance repository, and also simplifies the task of managing large sets of databases.

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Managing Database Performance using OEM 12c

Using Active Session History Analytics

Active Session History (ASH) Analytics is a new built-in functionality in OEM 12c that can be used to monitor a database by providing an enhanced version of database top activity graphics.

The following recipe describes the steps to access Active Session History Analytics in OEM 12C Cloud Control console.

Getting ready

The agent needs to be up and running on a host where a database is installed.

In this example, a sample database called as OEM12c is used to demonstrate ASH Analytics using OEM12c Cloud Control.

How to do it...

To access ASH Analytics of a database target, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. From the Targets option, select Databases from the drop-down menu.
- 3. Select the database instance's name from the database's screen.

The oem12C database instance is selected in this example.

4. From the database instance's home page, select the **Performance** menu tab.





- 5. Select ASH Analytics from the drop-down list.
- 6. Populate the Database Login credentials screen in order to connect to the database.

In this example, the username is ${\bf sys}$ and the corresponding ${\bf Role}$ is selected as ${\tt SYSDBA}$ and given a meaningful name.

	se Manager Cloud Control 12c
🚓 Enterprise 👻 🌀 Targets 👻	🐈 Eavorites ▾ 🥑 Hist <u>o</u> ry ▾
∂ oem12c ③ Orade Database ▼ Performance	e 🕶 Availability 👻 Schema 👻 Administration 👻
Database Login	
* Username	sys
* Password	•••••
Role	SYSDBA 💌
	Save As NC_OEM12C_SYSDBA
	Set As Preferred Credentials
	Login Cancel

- 7. Click on the **Login** button.
- 8. Select the appropriate Installation type in Package Deployment.

Simple Installation is selected in this example, as we want to install the package immediately.

The **Named** credential is selected in this example, as we have created a named credential with SYSDBA privilege.

Oracle Database + Performance	 Availability - Schema - 	Administration +	Page Refreshed 07-Oct-2012 11:08:06 BST
Package Deployment To be able to use this feature son The Single Installation mode will a a credential for the DBSNPP user . • CORRECT • CREATE TYPE • CREATE PROCEDURE	e PL/SQL packages need to b utomatically submit a deploym In case you use a DBSNAMP cr	e loaded into the targ ent job for this target edential, the DRST#9	t distabase's monitoring schema, DBORPM- mediately. The Advanced Partialistics mode allows scheduling the deployment job at a later time as well as running on multiple targets. In both cases, you will need to provide a credential with the DBA role o user must have the following privilegen:
Note that this package deployment Simple Installation This is a one-time operation. A jo Credential Credential Name	t will enable the following data b will be submitted automatics Preferred @ Named @ NC_OEM12C_SYSDBA	ibase management fe ily immediately for thi). New	tares: Compare Period ACOM, Real-Time ACOM, and ASH Analytics.
Credential Details	Attribute Username Password Role More Details	Value Sys sysdba	
Advanced Installation Use the Advanced Installation m Schedule Installation	ode to install the packages on	multiple targets or to	chedde it for a later time.

Managing Database Performance using OEM 12c -

9. Click on the Install button.

The DATABASE MANAGEMENT PL/SQL DEPLOYMENT JOB is submitted. After some time the job status indicates that this was successful.

10. Access the database instance's home page and select **ASH Analytics** from the **Performance** tab, in order to access the **ASH Analytics** page.



11. Click on **Day**, **Week**, **Month**, or other tabs as appropriate under the **ASH Analytics** section, in order to get an overall view of the database. It is possible to drag the bar to the left or right to see a more detailed activity for analysis under the **Activity** or **Load Map** section.

There are a number of selection criteria available under the activity menu, which can be used to analyze the performance in detail.

In this example, selection is done for a day in the **ASH Analytics** section. The time slot chosen is of 3 hours, from 06:00 PM to 09:00 PM.

The slider bar can be moved to the required time slot, and the corresponding information will be displayed accordingly.



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12. Click on the **Load Map** button to view the top activity in a two-dimension view, in rectangular blocks.

How it works...

The preceding recipe describes the new feature that can be used to assist in analyzing database performance by using ASH Analytics for various combinations of database wait events and selection criteria.

There's more...

ASH Analytics is a new tool for exploring the ASH data which allows the administrator to roll up, drill down, and slice the performance data across various performance dimensions. The ability to create filters on various dimensions and to identify performance issues has never been easier. The built-in tree map view allows administrators to explore performance data using predefined performance dimension hierarchies.

Managing Database Performance using OEM 12c -

Using the Real-Time Automatic Database Diagnostics Monitor (ADDM) feature

Real-Time ADDM is a feature that facilitates a completely new way to analyze problems in too slow or hung databases. Real-Time ADDM identifies the source of severe contention in global resources.

The following recipe describes the use of real-time ADDM during a database connection failure, using the OEM 12C Cloud Control console.

Getting ready

The agent needs to be up and running on a host where a database is installed.

In this example, a database instance named test is used. In order to simulate a condition where the database is not responding (it is hung), a logon trigger is written to insert a row into a table that is already locked. In this example, we connect to the database instance named test using sqlplus.

\$ export ORACLE_SID=test \$ sqlplus / as sysdba SQL*Plus: Release 11.2.0.2.0 Production on Sun Oct 7 14:36:07 2012 Copyright (c) 1982, 2010, Oracle. All rights reserved.

The sqlplus session, in this case, is not responding and needs investigation to find the root cause of the database performance issues.

How to do it...

To verify the performance issues by using the Real-Time ADDM of a database target that is not accessible, perform the following steps:

- 1. Login to Enterprise Manager Cloud Control.
- 2. From the Targets option, select Databases from the drop-down menu.



3. Select the name of the database instance that is hung or not responding, and, needs to be verified from the databases screen.

The database instance name test is selected in this example.



4. From the database instance's home page, select the **Performance** menu tab.

ORACLE E	nterprise Manager	r (cloud Control 12c				
🔏 Enterprise 👻 👩	Targets 👻 🏫 Eavorites 🔹	•	o) Hist <u>o</u> ry ▼				
Crade Database + P	erformance 🗸 Availability	•	Schema + Administration	•			
Information Faled to connect to Compliance	Performance Home Top Activity ASH Analytics		tch real-time data from tar	get databa	ise will no	t be displ	ayed.
	SQL Monitoring	_		_	 Incid 	lents an	d Problems
Compliance 5	SQL	•			View +	Target	Local target
View -	AWR. • Advisors Home Memory Advisors	•			Summar	v	
Name No data to display			verage Score	-	No matching incidents or pr		
a business and be been	Emergency Monitoring Real-Time ADDM						
	Adaptive Thresholds Search Sessions Blocking Sessions						
	Database Replay						

Managing Database Performance using OEM 12c -

5. Click on **Real-Time ADDM**.

In the Provide Credential section, connect as a $_{\rm SYS}$ privileged user and then click on the **Submit** button.

al-Time ADDM	
op Activity - Last Hour	- 🗆
	Chers Cluster Queueing Network Administrative Configuration Concurrency System 1/O User 1/O
	CPU
sal Time ADOM Results	- 0
Bart 200 anter	Seve Mai

6. Click on **Start** to start the Real-Time ADDM analysis.

Click on **Findings** to display the details of the session which causes the database to hang or slow down, and then click on **Stop** to stop the Real-Time ADDM analysis.

Real-Time ADDM	Resu	its] Reduct]	- 10	- 🗖
Priority 1	indings	Performance Impact	Nery Case 3 Satisfies	12
Hal	100	The problem's impact as a percent of d	addee weakin activity. Jeenion wait thains Recommendation 1 Nol the session with 10 [1,19,701] (Initiance number, 500, serial number). The session runs as operating system process 2098.	

7. The finding section advises you to kill the system process' id.

Use a telnet session to connect to the database instance with the owner of the Oracle database instance.

Verify the process ID and kill the session as a database user, in order to get access to the database.

\$ kill -9 30988

Move back to the original sqlplus session to check whether the same session is able to connect to the database or not.

```
$ sqlplus / as sysdba
SQL*Plus: Release 11.2.0.2.0 Production on Sun Oct 7 14:36:07 2012
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit
Production
```

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```
With the Partitioning, OLAP, Data Mining and Real Application
Testing options
SQL>
```

The database session is accessible after killing the process identified by the Real-ADDM analysis findings.

How it works...

The Real-Time ADDM uses the diagnostic connection mode to access ASH data in the SGA of the database instance by passing a normal connection path without using any global resources such as enqueue, latches, or an excessive amount of host resources. It is a very important feature that can be used by database administrators to identify the source of contention during severe database performance issues.

There's more...

Real-Time ADDM can be used to identify potential causes of performance issues that are caused by resource constraints such as memory paging and I/O Bound; hangs such as instance shutdown, unresponsive ASM, and top blocker analysis; memory issues such as excessive PGA growth, library cache issues; and resources limits reached such as sessions, processes, and deadlocks.

Using the Compare Period Automatic Database Diagnostics Monitor (ADDM) feature

The Compare Period ADDM feature performs an analysis of two AWR snapshot periods and detects causes, measures effects, and correlates them. It also makes actionable recommendations, and provides a quantified impact.

The following recipe describes the steps to use the Compare Period ADDM feature by using the OEM 12C Cloud Control console.

Getting ready

The agent needs to be up and running on a host where a database is installed.

In this example, the database instance called OEM12c is used to demonstrate the Compare Period ADDM feature using OEM12C Cloud Control.



Managing Database Performance using OEM 12c -

How to do it...

To access Compare Period ADDM, perform the following steps:

- 1. Login to Enterprise Manager Cloud Control.
- 2. From the **Targets** option, select **Databases** from the drop-down menu. Select the database instance's name of interest.

Select AWR under the Performance tab.



- 3. Select the Compare Period ADDM option from the drop-down menu of AWR.
- 4. Connect as sys privileged user credential on the **Database Login** page.

Click on Login.

Add the desired **Begin Time** and **End Time** values under the **Step 1: Select a Comparison Period** section on the **Run Compare Period ADDM** screen.

Select an appropriate option under Step-2: Select a Base Period.

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The **Customize** option is selected in this example in order to specify the desired time slot.



5. Click on **Run** to view the performance difference between the base period and the comparison period.

The comparison period is typically the time slot when the performance issues exist and the base period is when the system was working fine.

Compare Period ADDM Report						🎽 Save 🎽 Mail
Overview						- 🗆
SQL Commonality 7%						
Base Period			Comparison Pe	riod		
Database OEM12C Instanc	es 1		Database OE	M12C	Instances 1	
Begin Time 2012-10-08 14:00:20 Duratio	n 1.0h		Begin Time 201	2-10-07 14:00:00	Duration 1.0h	
0.3 0.24 0.12 0.12 0.66 02:01PM 02:07PM 02:13PM 02:13PM 02:2	SFM 02:31PM 02:43PM 02:43PM 02:55PM Average Active Session02	Other Commit Application Concurrency System I/O CPU	1.2 1. 0.8 0.6 0.4 0.2 0 02:00PM 02:0	6PM 02:12PM 02:18	DPM 02:249M 02:49PM 02:49PM 02:54PM Average Active Semion	Other Commit Application Concurrency System I/O User I/O Scheduler CPU
Details						- 🗆
Configuration Resource						
Name	Host/Instance	Base Perio	d		Comparison Period	
T INSTANCE						
▼ resource_manager_plan						
	Instance 1				SCHEDULER[0x310D]:DEFAULT_MAI	NTENANCE_PLAN

Managing Database Performance using OEM 12c -

6. Click on the Finding tab to see the difference between the two periods.

Expand **Show SQL Breakdown** to find the SQL details.

Det	Details -								
ß	🖉 Configuration 🐞 Finding 🔞 Resource								
Performance Difference Change Impact(%) Base Period Comparison Period									
-0	Top New SQLs	-133			0			.03 🔺	
0	Top Missing SQLs	48			.01			0 =	
-Q	Checkpoints Due to Tablespa	-25			0			.01	
1	Undersized Buffer Cache	-25			0			.01	
1	Undo I/O	-13			0			0	
			-						
Displa	y: Change Impact (Absolute Value)	>= 5 % 🔱	v Regression ↑ v	Improvement					
Dese	ription								
As	ignificant part of database activity is	due to SQL statements found in	the comparison period but not	in the base period.					
Im	pact changed from 0 active sessions t	to 0.03 active sessions by -133%							
	Hide SQL Breakdown								
			SQL ID	Change Impact(%)		Base Period	Comparison Period		
	¢	09214han015hr		-12		0		<0.01	
	Ŷ	cc073g2vbzbas		-12		0		<0.01	
	Ŷ	7b4uc3z0bxx6m		-12		0		<0.01	
	π	9tykkw8nb3b5y		-12		0		<0.01	

 Click on Resources to view the difference between resource usages in CPU, Memory, I/O, and Interconnect, as per your analysis requirement, such as CPU or I/O bound.



How it works...

The Compare Period ADDM feature allows administrators to visually compare two periods of time in order to identify differences in database performance. It identifies what has changed, such as configuration changes and workload changes, quantifies the performance difference by using DB time as the basis for measuring performance, and also identifies the root cause of performance issues.



There's more...

The Compare Period ADDM feature can be used by database administrators to identify the potential cause of performance issues between two different periods for the same execution of queries. An SQL commonality number of 100 percent in the Compare Period ADDM screen would imply that identical queries are being executed during the base and comparison period.

Comparing period reports

The AWR report shows AWR data between two snapshots. The AWR Compare Periods Report indicates the difference between two periods, that is, two reports that are equal to four snapshots. The Compare Periods Report feature helps database administrators to identify detailed attributes in the performance and configuration settings that differ between two time periods.

The following recipe describes the steps to use Compare Periods Report by using the OEM12C cloud control console.

Getting ready

The agent needs to be up and running on a host where a database is installed.

In this example, the database instance called as OEM12c is used to demonstrate Compare Periods Report using the OEM 12C Cloud Control.

How to do it...

To access the Compare Period ADDM, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- From the Targets option, select Databases from the drop-down menu.
 Select the name of the database instance in which you are interested.
 Select AWR under the Performance tab.
- 3. Select **Compare Period Reports** from the drop-down menu of **AWR**.
- Connect as sys privileged user credential on the Database Login page. Click on Login.

For the **First Period** and **Second Period** values, populate **Begin Snapshot** and **End Snapshot** or **Baseline** on the **Run Compare Periods Report** screen.



Managing Database Performance using OEM 12c -

In this example, the **By Snapshot** option is selected for both **First period** and **Second Period**.

	e Manager Cloud Control 1	2c			
🚓 Enterprise 👻 🌀 Targets 👻	🐈 Eavorites 👻 🕑 Hist <u>o</u> ry 👻				
Oracle Database ✓ Performance	: → Availability → Schema → Adr	ninistra	tion 🗸		
Automatic Workload Repository > Run Compare Periods R Specify two periods for compariso	 Run AWR Report Report n. For each period, you can either p 	ick one	baseline or a pair of snapshots.	Generate Report	
First Period			Second Period		
🔘 By Baseline			🔘 By Baseline		
Baseline		Q	Baseline		Q
By Snapshot			By Snapshot		
Begin Snapshot	4072	Q	Begin Snapshot	4074	Q
End Snapshot	4073	Q	End Snapshot	4075	Q

5. Click on Generate Report.

Automatic Workload Repository 2 Run Compare Periods R Specify two periods for compariso	 Run AWR Report Report In. For each period, you can either pick or 	e baseline or a pair of snapshots.	Generate Report		
First Period First Period By Baseline By Snapshot Begin Snapshot End Snapshot	4072 Q	Second Period By Baseline Baseline By Snapshot End Snapshot	4074 Q 4075 Q	Q Q Q	
Report Results				Sav	e to File
WORKLOAD	REPOSITORY	COMPARE PE	ERIOD REPORT	т	_

- 6. Click on Save to File to save the Compare Periods Report for further analysis.
- 7. Analyze the Compare Periods Report for various sections such as Host configuration comparison, Cache sizes, Time Model Statistics and Operating System Statistics.

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How it works...

The Compare Periods Report helps to identify the cause of performance degradation. If the application workload is known to be stable during a particular period each day, but the performance on a particular day was poor between the same period, running the Compare Periods Report for these two AWR snapshots identifies configuration settings, workload profile, and statistics that are different between those two periods. The cause of performance degradation can be more easily diagnosed based on the difference identified in the report.

The AWR Compare Periods Report is divided into multiple sections and the report includes links that can be used to navigate between the different sections.

There's more...

The OEM 12c Cloud Control is the primary interface for generating the AWR Compare Periods Report. The same report can also be generated by the SQL script awrddrpt.sql, which is a part of the Oracle software installation. The path of the script is \$ORACLE_HOME/rdbms/ admin/awrddrpt.sql.

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T Middleware Management Using OEM 12c

In this chapter we will cover:

- Managing Oracle Business Intelligence
- Integrating BI Publisher with Enterprise Manager 12c
- Creating sample reports in BI Publisher
- ► Implementing BI Publisher Security Model
- Managing and monitoring Oracle GoldenGate
- Setting up Application Dependency and Performance (ADP) Manager in Cloud Control
- Setting up JVM Diagnostics (JVMD) Manager in Cloud Control
- Discovering and managing Weblogic Server Target
- Deploying ADP agents on Weblogic Target nodes
- Deploying JVMD Agent on Weblogic Target nodes

Introduction

In this chapter, we will explore the various configuration options available in the Cloud Control console to manage Middleware products, such as Oracle Business Intelligence, Oracle Bl Publisher, Oracle GoldenGate, and Oracle Weblogic using Oracle Enterprise Manager 12c (OEM 12c).

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Middleware Management using OEM 12c -

OEM 12c Version 12.1.0.2 is built-in with the FMW (Fusion Middleware) plugin 12.1.0.3, which is certified for Oracle Business Intelligence 11g targets monitoring. Oracle BI Publisher Version 11.1.1.6 is certified to be configured with Cloud Control 12.1.0.2.

Oracle Enterprise Manager 12.1.0.2 is installed to demonstrate the recipes in this chapter.

Managing Oracle Business Intelligence

Oracle Business Intelligence is an integrated solution that addresses business intelligence requirements, such as enterprise performance management, data integration, financial performance management, data warehousing analysis, and reporting.

Oracle Business Intelligence includes Oracle Business Intelligence Discoverer, Oracle Business Intelligence Reporting and Publishing, and Oracle Business Intelligence Publisher.

This recipe describes the steps to configure OEM 12c to manually discover the Oracle BI EE targets.

Getting ready

Oracle Business Intelligence Version 11.1.1.6 is installed on a host other than the OMS host. The agent needs to be up and running on the host where Oracle Business Intelligence is installed.

How to do it...

To discover the OBIEE 11g target, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. From the Targets tab, select the Middleware option from the drop-down menu.

ORACLE Enterprise Manager Cloud Control 12c	Setto - Beb - 12 SYSHIN - LogOut 🤇
🖧 (Interprise = 🧶 (argets = 🌟 (avantes = 🙁 Hatary =	Search Target Name -
Middleware III Hidenver Features +	Page Refreshed 30-Oct-2012 18:04:35 GHT C
i Search Find Neine ▼ ▲ Advanced Search	
Yes - d Add - 32 Remove & Configure	Marchar Osha
Name	Type Status Summary Compliance Score (%) Target Version
▷ Re BMGC_GCDuman	Oracle Fusion Middleware Farm n/a 0 4 0 0 n/a 10.3.5.0

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3. Click on the **+ Add** button on the **Middleware** home page.

ORACL	E Enterprise Manager Cloud Control 120	:			Set	p + H	🕸 + 🛛 👥 SYSMAN + 🗌	Log Out 🤦
🔓 Enterprise 🔹	🔹 Enterprize = 🍈 Engels = 🌟 Elsonites = 🐵 Hotigy =					•		
Middleware	e Features +	© Page Refreded 30-Oct-2012 18:04:35 GHT (1:35 GMT 🖒	
⊻ Search Find Name	v	Advanced Search						
Name	Orade Fusion Middeware/WebLogic Domain Orade WebLogic Domain 7.x and 8.x		Туре	Status	Member Summar	Status	Compliance Score (%)	Target Version
► []\$EMCC_	Crack application Server Orack application Server Form Crack application Server Cutter (Set WebSphere Application Server Cal ISM WebSphere Application Server Orack Coherence Orack Detectory Server Enterprise Edition Oracks Editetty Management 10g (DMA, OEF, ODP)		Orade Fusion Middeware Farm	n/a	0 4	0	0 n/a	10.3.5.0

- 4. Select the **Oracle Fusion Middleware/Weblogic Domain** option from the drop-down list.
- 5. Populate the Oracle Business Intelligence Weblogic Domain details on the **Add Fusion Middleware Farm: Find Targets** screen.
 - Select Administration Server Host of the Oracle Business Intelligence host.
 - Specify the Oracle Business Intelligence domain admin server port, and add a username, a password.
 - Also provide a meaningful **Unique Domain Identifier**. The default name is left unchanged in this example.

	rise Manager Cloud Control 12c	Setup + Help	• 🟦 SYSMAN • Log Out 🦕
🖧 Enterprise 🔻 🙆 Targets	🔻 🌟 Envorites 👻 🕝 History 🕶	Sourch Target Name 🔻	[•
		Page Refreshe	d 30-Oct-2012 18:11:29 GHT 🖒
Add Fusion Middlewa Enterprise Manager can be o 340 Protocol.	re Farm: Find Targets onfgured to manage additional Orade WebLogic Domains. For adding a sec	ured Drade Weblagic Domain, select a secured JHK Protocol such as Lis from the "Advanced" section. If the "Advanced" section is collapsed, expan	Continue Cancel Id it and then choose the proper
* Administration Server Host	ndinfra.starfleet.com		
* Port	2001		
*Username	weblogic		
* Password	•••••		
* Unique Domain Identifier	Farm01		
* Agent	ndinfra.starfleet.com:3872	Q.	

Middleware Management using OEM 12c

6. Click on Continue.

Confirmation				
Finding Targets - Completed Successfully				
Tick Clean to project the property				
lick close to assign the agents.				
⊽ Hide				
Targets found: 38				
Click Close to assign the agents.				
Close	e			

7. Click on Close.

ORACLE Enterprise Manager Cloud Control 12c	Şehip + tileb + 🛛 🏦 SYSMAN + 🛛 Log Out. 📿
🗳 Enterprise 🔹 🥘 Eargets 🔹 📩 Eavorites 🔹 😕 History 🔹	Search Target Name •
/Farm01_bifoundation_domain/bifoundation_domain @	Page Referenced 30-Oct-2012 18:23:53 GHT 🖉
Add Fusion Middleware Farm: Assign Agents	Cancel Rook, Add Targets
Targets Found 38 Targets Assigned To Local Agent 22	
You can optionally override any agent assignment using the table below. All the agents column is left blank.	and for monitoring the targets must be up. For the targets which require local agent, by default, only local agents are assigned. For such targets, if local agent is not found, the "Configured Agent"
Show Targets And Agent Assignments	
✓ Hide WebLogic Domain Global Properties Specify global properties for WebLogic Domain. These properties will also be set on a	It the targets of this form.
Comment	
Contact	
Department	
Lifecyde Status None	
Lipe of Business	-
Location	

8. Click on **Add Targets** to add the discovered components of the Oracle Business Intelligence domain.

Confirmation	
Saving targets To Agent - Completed Successfully	
38 targets have been successfully added to Enterprise Manager.	
∀Hide	
Total targets = 38	
38 targets have been successfully added to Enterprise Manager.	
	Close



- 9. Click on Close.
- 10. Verify the Add Fusion Middleware Farm: Results screen.
- 11. Expand the **Show Targets Details** tab to view all the components of Oracle Business Intelligence.

	Cloud Control 12c			Setup + 13db + 1	SYSMAN - Log Out
Enterprise 🔻 🌒 Targets 👻 🌟 Enventes 👻 🌘	📀 History 🔻			Search Target Name 🛪	
undation domain @					ndefra.starfleet.com
WebLogic Domain +				Page Refreshed 30-0	ee-2012 18:33:37 GMT 🖒
dd Fusion Middleware Farm: Result	5				OK ·
targets have been successfully added to Enterpris	e Manager.				
ve may be a delay before these targets are visible	e and monitored. This is because saving the targets	to the agents involve target pro	motion to that may also include reading the monitoring risks	a to the agent. All the apends used for menthering the targets on	and then one
second as a second proving a size on Account when			committee and any entropy beaming and mering help	the exception in the by by the block of the manual of the big cards	ust be up.
he targets of the farm or domain change in the ful	ture, use Refresh WebLogic Domain to add targets	If targets are later removed fro	m the farm or domain, you can delete them from the All Targe	ets page or the Agent page.	un de ligh
te targets of the farm or domain change in the fu	ture, use Refresh WebLogic Domain to add targets	If targets are later removed fro	m the farm or domain, you can delete them from the AB Targe	ets page or the Agent page.	un ue up.
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12. Click on OK.

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Middleware Management using OEM 12c



13. Click on the **Farm01_bifoundation_domain** link to monitor and manage all the Oracle Business Intelligence components.

How it works...

This recipe describes the steps to discover the **Oracle Fusion Middleware/WebLogic Domain** target. The Fusion Middleware plugin Version 12.1.0.3 is embedded with Cloud Control 12.1.0.2 and is certified to discover components of the Oracle Business Intelligence target, which can be managed and monitored using EM Cloud Control.

There's more...

Multiple Oracle Business Intelligence instances can be managed and monitored more efficiently using EM Cloud Control 12c. Enterprise Manager displays the performance of the managed targets data in a user-friendly graphical format.

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Integrating BI Publisher with Enterprise Manager 12c

Oracle BI Publisher is installed on the same Middleware home of Enterprise Manager 12c as a separate installation. Create a new BI repository database schema in the OEM 12c repository database, and configure it to be hosted in the Enterprise Manager 12c Weblogic Server domain.

BI Publisher's integration with Enterprise Manager Cloud Control Weblogic Domain enables the users to take advantage of the various features of BI Publisher.

This recipe describes the steps required to install Oracle BI Publisher and configure it to integrate with Oracle Enterprise Manager Cloud Control.

Getting ready

Oracle BI Publisher Version 11.1.1.6 is certified with Cloud Control Version 12.1.0.2 and Oracle BI Publisher Version 11.1.1.5 is certified with Cloud Control Version 12.1.0.1.

The following Oracle Business Intelligence Version 11.1.1.6 binary is downloaded from the Oracle eDelivery site and FTP copied to the Oracle Management Server:

- ▶ V30155-01_1of2.zip
- ▶ V30155-01_2of2.zip
- ▶ V30156-01_1of2.zip
- ▶ V30156-01_2of2.zip
- ▶ V30160-01.zip

Extract the binaries to a staging directory on OMS.

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How to do it...

To install the BI EE software, perform the following steps:

 Run the BI EE Publisher installer (Disk1/runInstaller) as a user of OMS using the following command:

\$cd /u01/software/bishiphome/Disk1

- \$ TEMP=/u01/tmp
- \$ export TEMP

In this example, /tmp does not have adequate space for the BI EE Publisher installer. Therefore, the TEMP variable is set to instruct the installer to use the relevant mount point allocated to the TEMP variable.

```
$ ./runInstaller
```

Starting Oracle Universal Installer...



- 2. Click on Next.
- 3. Select the Skip Software Updates option.



Chapter 7



- 4. Click on Next.
- 5. Select the Software Only Install option.

Oracle Business Intelligence	11g 11.1.1.6.0 - Step 3 of 14
Select Installatio	FUSION MIDDLEWARE
<u>Welcome</u> <u>Skip Software Updates</u>	Simple Install Installs and configures selected components with default settings.
Software Only Install Prerequisite Checks Installation Location Security Updates	 Enterprise Install Installs binaries in an ORACLE_HOME and configures working instances in an INSTANCE_HOME.
Summary Installation Progress Complete	Software Only Install Installs binaries in an ORACLE_HOME, but does not configure a working instance of any installed components.
	Choose this option for a software only install. You will not be able to configure your components or select farm options until after the installation is finished.
Help	< <u>Back</u> Next > Einish Cancel
	Elapsed Time: 3m 11

Middleware Management using OEM 12c _____

6. Click on Next.

Prerequisite Ch	ecks			<u>eware</u> 11
Welcome	Selection	Check	Progress	Status
Skip Software Updates	8	Checking operating system certific	100%	~
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o Complete	•	8888		
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		hecking operating system certification hecking recommended operating syst hecking kernel parameters hecking Recommended glibc version hecking abusies memory	i em packages	

- 7. Click on Next.
- 8. Enter the **Oracle Middleware Home** path that was created earlier during the EM installation. The **Oracle Home Directory** path will appear with a default value of Oracle_BI1. This value should not be changed.

Oracle Business Intelligence 11	g 11.1.1.6.0 - Step 5 of 9		
Specify Installation	on Location	C FUSI	
Velcome Skip Software Updates Software Only Install Prerequisite Checks Installation Location Security Updates Summary Installation Progress Complete	Oracle <u>Mi</u> ddleware Home: <u>O</u> racle Home Directory: — <u>An Application Server</u>	/u01/app/Middleware Oracle_811	Browse
Help		< <u>B</u> ack <u>N</u> ext >	Einish Cancel



- 9. Click on Next.
- 10. Deselect the I wish to receive security updates via My Oracle Support option.

Specify Security	Updates
Welcome Skip Software Updates Software Only Install Prerequisite Checks Installation Location Security Updates Summary Installation Progress Complete	Provide your email address to be informed of security issues, install the product and initiate configuration manager. <u>View details</u> . Email: Easier for you if you use your My Oracle Support email address/username. I wish to receive security updates via My Oracle Support. My <u>O</u> racle Support Password
Help	< <u>Back</u> <u>Next</u> <u>Finish</u> Canc

11. Click on Next.





Middleware Management using OEM 12c -----

12. In the resulting window, click on Yes.

<u>Welcome</u> <u>Skip Software Updates</u> <u>Software Only Install</u> <u>Prerequisite Checks</u> Installional ocation	Type: Software Only Install Installation Details Installation Details Hildelware Home: /u01/app/Middleware BI Oracle Home: /u01/app/Middleware/Oracle_Bil
Security Updates Summary Installation Progress Complete	
	Save File: Save

13. Click on Install.

Oracle Business Intelligence 1	1g 11.1.1.6.0 - Step 8 of 9	9 23
Installation Prog		11 ^g
Software Only Install	Progress 100%	
Prerequisite Checks	Completed	
Installation Location	Install Log /home/oralnventory/logs/install2012-10-31_06-08-03PM.h	og
Security Updates	Installation Successful.	
ý Summary	Starting execution of post install scripts	
Installation Progress	Execution of post install scripts completed	
	Performance Manage Applications Driving Profitable Growth CRACLE	ment
Help	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel
	Elapsed Tim	e: 43m 6s



14. Click on Next.



15. Click on Finish.

To integrate with Cloud Control, perform the following steps:

- 1. Take a backup of the OEM repository using RMAN or a data pump.
- 2. Take a back up of Enterprise Manager Domain to avoid any unforeseen errors during the BI Publisher configuration.

```
$cd /u01/app/Middleware/gc_inst/user_projects/domains
$zip -r GCDomain.tar GCDomain
Above command will create GCDomain.tar file
$gzip GCDomain.tar
```

3. Execute the configureBIP script residing in the ORACLE_HOME/bin directory of the OMS instance.

The script will ask for S_{YS} (for the EM Repository database), Admin server, and node manager credentials (part of EM Weblogic Domain), which need to be entered.

```
$ cd $ORACLE_HOME/bin
$./configureBIP
Configuring BI Publisher Version "11.1.1.6.0" to work with
Enterprise Manager
Logging started at /u01/app/Middleware/oms/cfgtoollogs/bip/
bipca_20121102174242.log.
```



Middleware Management using OEM 12c -

- 4. Log in to Enterprise Manager Cloud Control.
- 5. On the Enterprise tab, select Reports from the drop-down menu.



6. Click on BI Publisher Enterprise Reports.



7. Select any report, as per your requirement.

Target a specified type under the EM sample reports to view a report.

8. Enter the username and password on the Sign In screen of BI Publisher.

sign to
Please enter username and password
Upername
sysman
Pasaword
Accessbility Mode
Sign In



9. Click on **Sign In** to view the targets monitored by Cloud Control in a graphical representation.

DRACLE BI Publisher Enterprise	See 8 10 11 O Mediater Mar See M 3
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There's more...

BI Publisher's standard features, such as PDF, Excel, Word, and HTML output of reports, integration with the Enterprise Manager's security, and the standardized Enterprise Manager subtemplates for headers can be used in Enterprise Manager. It is also possible to develop custom reports using the read-only Enterprise Manager Repository.

Creating sample reports in BI Publisher

Oracle Enterprise Manager Cloud Control 12c is integrated with the OBIEE Publisher 11g. Oracle Business Intelligence Publisher (BI Publisher) is the ideal product to create reports using the EM repository.

Formatted reports from various data sources can be created using BI Publisher. Customized reports can be created from the read-only OEM 12c repository using BI Publisher.

Getting ready

Oracle BI Publisher Version 11.1.1.6 is certified with Cloud Control Version 12.1.0.2 and Oracle BI Publisher Version 11.1.1.5 is certified with Cloud Control Version 12.1.0.1.

Ensure that the BI Publisher is integrated with OEM 12c.

How to do it...

To install the software-only BI EE, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select Enterprise.
- 3. Click on Reports.



Middleware Management using OEM 12c -

- 4. Click on BI Publisher Enterprise Reports.
- 5. Click on BI Publisher Enterprise Reports Web Application.
- 6. Enter the user ID and password in the appropriate boxes.
- 7. Create a new folder named Test Reports.
- 8. Click on **Permissions** and grant the required permissions to the various roles.

ORACLE BI Publisher E	BI Publisher Enterprise Suid M Howe Catalog Howe Catalog C								
Catalog									Catalo
9~ 9 2 10 2 10 11 2 2 ~		Shared Folders/Test%20Reports							
lei Folders									
B My Folders									
E Shared Folders									
III Components	Dormics	tions							(54)
El Complance Reports	Permise	ions							
E M Sample Reports	Location	1 /Test%20Reports							
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EM_Subtemplates		+ ×		1. Second					
E IDM Reports		Role Name	Read	Write	Delete	Run Report Online	Schedule Report	View Report O	utput
🗄 🧰 OSB Reports		EMBIPAdministrator	[7]	V	(V)	×.	(V)	V	_
El SOA Reports		EMBIPAuthor	2	2	2				
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9. Click on OK.

We intend to create a simple report that includes any database instance and extends information for any chosen database. The BI Publisher report mainly has two parts: A data model and a layout for displaying the data. In this sample report, to create a data model, we will need a set of parameter(s), a list of values, and a data set. To do this, perform the following steps:

- 1. Under the Catalog folders, select the Test Reports folder.
- 2. From the **Catalog** menu, click on the new icon.
- 3. Click on Data Model.





- 4. Enter the data model details for the test report.
- 5. Select EMREPOS as the **Default Data Source**.

ORACLE [®] BI Publisher Enterprise									
Untitled Data Model									
🖃 Data Model	Properties								
Data Model	Description	Data model for test reports							
🖃 Data Sets									
Event Triggers									
E Flexfields	Default Data Source	EMREPOS							
⊟ List of Values									
List_of_databases	Oracle DB Default Package								
Parameters	Database Fetch Size								
E Bursting		Enable Scalable Mode							
	Backup Data Source	Enable Backup Connection							
		Switch to Backup Data Source when Primary Data Source is unavailable							
		Use Backup Data Source only							
	XML Output Options	✓ Include Parameter Tags ☐ Include Empty Tags for Null Elements ☐ Include Group List Tag							
	XML Tag Display	Upper Case 👻							

6. Click on the List of Values tab in the Data Model section. Select a Type of SQL Query and a Data Source of EMREPOS.

ORACLE BI Publishe	er Enterprise				Search All	~	🕑 Adr
db_tablespaces_dm						Home	Catalog 📔 📑 New 🗸 📋 🖻
🗆 Data Model	List of Values						
🖃 Data Model							
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db_instance_tablespace_info	List of db lov	SOL Query	EMPEROS				
Event Triggers	List_or_ub_lov	Joge Query	Eniner 05				
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	List_of_db_lov: Type	e: SQL Query					
4	Options	Cache Result					
	SQL Query						Query Builder
	sel fro	ect "MGMT\$DB_DBNINSTANCEI "MGMT\$DB_DBNINSTANCEINFO" om "MGMT_VIEW"."MGMT\$DB_[INFO". "INSTANCE_NAME" as ". "TARGET_GUID" as "TARGE" DBNINSTANCEINFO" "MGMT\$I	"INSTANCE_NAME", T_GUID" DB_DBNINSTANCEINFO"			

7. Enter the SQL query, which can be entered by either clicking on the **Query Builder** button or by pasting the exact query into the **SQL Query** section.



Middleware Management using OEM 12c -

8. After clicking on the **Query Builder** button, select the required view from the left-hand pane and move it to the right-hand pane. In this example, the MGMT\$DB_DBINSTANCEINFO view is selected and moved to the right-hand pane.

Schema MGMT_VIEW -	Model Conditions SQL Resu	ults 10 🔻	
Search MGM1\$DB			
	MGMT\$DB_DBNINSTAN	ICEINFO 🔄 🗈	×
MGMT\$DB_ASSOC_DATA	HOST_NAME	A	*
MGMT\$DB_AUTOTASK_CLIENT		-	-
MGMT\$DB_CONTROLFILES	TARGET_NAME	A	=
MGMT\$DB_CONTROLFILES_ALL	TARGET_TYPE	A	-
MGMT\$DB_CPU_USAGE			-
MGMT\$DB_DATAFILES	V TARGET_GOID		
MGMT\$DB_DATAFILES_ALL	COLLECTION_TIMESTAMP	31	
MGMT\$DB_DBNINSTANCEINFO	DATABASE NAME	A	
MGMT\$DB_DBNINSTANCEINFO_ALL			
MGMT\$DB_FEATURE_USAGE	GLOBAL_NAME	A	
MGMT\$DB_FEATUREUSAGE			Ŧ

9. Select the **INSTANCE_NAME** and **TARGET_GUID** fields in the view, and then click on **Save**.

Alternatively, the following query can be entered in the SQL Query section:

10. Click on **OK**.

11. Click on Data Sets, then click on Diagram, and then click on SQL Query.





12. Enter the data set **Name**, choose a **Data Source** of EMREPOS, and then click on the **Query Builder** button and select relevant fields:

del Conditions SQL Result	s 10	•					Save	
						n		
🖄 MGMT\$DB_DBNINSTANC	EINFO	^ X	MGMT\$DB_TABLESPA	CES	A X			
HOST_NAME	Α	^	HOST_NAME	Α	^			
TARGET_NAME	Α	=	TARGET_NAME	Α				
TARGET_TYPE	Α		TARGET_TYPE	Α	_			
TARGET_GUID			TARGET_GUID					
COLLECTION_TIMESTAMP	1		COLLECTION_TIMESTAMP	21				
DATABASE_NAME	А		TABLESPACE_NAME	Α				
GLOBAL_NAME	Α		CONTENTS	Α				
		-			-			

select "MGMT\$DB DBNINSTANCEINFO"."DBVERSION" as "DBVERSION", "MGMT\$DB DBNINSTANCEINFO"."TARGET NAME" as "TARGET NAME", "MGMT\$DB DBNINSTANCEINFO"."INSTANCE NAME" as "INSTANCE NAME", "MGMT\$DB_TABLESPACES"."TABLESPACE_SIZE" as "TABLESPACE_ SIZE", "MGMT\$DB TABLESPACES"."TABLESPACE USED SIZE" as "TABLESPACE USED SIZE", "MGMT\$DB_TABLESPACES"."TABLESPACE_NAME" as "TABLESPACE_ NAME", "MGMT\$DB TABLESPACES"."INITIAL EXT SIZE" as "INITIAL EXT SIZE", "MGMT\$DB TABLESPACES"."NEXT EXTENT" as "NEXT EXTENT", "MGMT\$DB TABLESPACES"."MAX EXTENTS" as "MAX EXTENTS", "MGMT\$DB TABLESPACES"."INCREMENT BY" as "INCREMENT BY", "MGMT\$DB TABLESPACES"."MIN EXTENTS" as "MIN EXTENTS" from "MGMT VIEW". "MGMT\$DB TABLESPACES" "MGMT\$DB TABLESPACES", "MGMT VIEW". "MGMT\$DB DBNINSTANCEINFO" "MGMT\$DB DBNINSTANCEINFO" "MGMT\$DB_DBNINSTANCEINFO"."TARGET_GUID"="MGMT\$DB_ where TABLESPACES"."TARGET_GUID" "MGMT\$DB_DBNINSTANCEINFO"."TARGET_GUID" =:list_of_db_param and 13. Click on Save.

14. Click on **XML** to generate some test data that can be used during the report layout design.

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15. On clicking on **Data Sets**, the following screen will appear:

🗉 Data Model	Diagram Structure Code	
Data Model		
Data Sets		
database_information		
Event Triggers	Global Level Functions	
- Flexfields	Drop here for aggregate function TARGET_NAME	abc >>
- List of Values	DBVERSION	abc >>
	INSTANCE_NAME	abc >>
List_of_databases	TARGET_GUID	abc >>
Parameters	TABLESPACE_NAME	abc >>
database parameter	TABLESPACE_SIZE	999 >>
-	TABLESPACE_USED_SIZE	999 >>
E Bursting	Drop here for aggregate	function

- 16. Click on Save. Click on XML.
- 17. Click on Create New Report.
- 18. Click on Use Existing Data Model, created in the previous steps.



19. Select an option in the **Create Layout** section. In this example, the **Chart and Table** template is chosen.

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- 20. Enter the layout information.
- 21. Enter the title of the report as Database Instance Extents Information.
- 22. Drag-and-drop the **INSTANCE_NAME** and **DBVERSION** fields from the left-hand pane to the layout.
- 23. Then in the main layout, drag-and-drop the **INITIAL_EXT_SIZE** and **NEXT_EXTENT** fields into the **Drop Value Here** section.



- Report1 : Report1_Layout 100 😹 🕼 🗊 📓 🖌 Insert 🛛 Page Layout Data S 9 Chart DATA_DS Ball Ist_of_db_param G_ 6_1 Select Chart Types Chart Styles Effect Filte Convert S lat_of_ab_param G_1 G_1 B_0 TARGET_IAME B_TARGET_IAME B_TA Filter diah Pivet Table 🔓 Select 👒 30 Effect 🗙 Delete 🗉 7 Man 1 Seit 150 200 400 505 550 600 100 288 Database Instance Extents Information Instance Name Database Version INSTANCE_NAME DBVERSION Database Initial and Next Extents 7 INITIAL_EXT_SIZE NEXT_EXTENT 40K NEXT_EXTENT 306 TABLESPACE_NAME Drop Label Here
- 24. Drag-and-drop the TABLESPACE_NAME field into the Drop Label Here section.

- 25. Enter the table title as Base Data, and drag-and-drop the TABLESPACE_NAME, INITIAL_EXT_SIZE, and NEXT_EXTENT fields into the Base Data section to get the raw or base data.
- 26. Click on Save.





- Report1 Database Instance trgdb Apply Report1_Layout Database Instance Extents Information 11.2.0.2.0 trgdb Database Initial and Next Extents 6,000 5,000M 4 0008 INITIAL_EXT_SIZE 3,000 2,000 1,000 -Base Data TABLESPACE_NAME SYSAUX INITIAL EXT SU NEXT EXTENT SYSAU) UNDOT USERS 65536 65536 SYSTEM EXAMPLE OGGTS 6553 6553 1048576
- 27. Click on **View report**, select the database instance, and then click on **Apply** to view the report, as shown in the following screenshot:

There's more...

Various precreated reports are also available in BI Publisher.

Implementing BI Publisher Security Model

Oracle BI Publisher 11g is tightly-integrated with the Oracle Fusion Middleware Security architecture. It shares the security model of Weblogic, which is configured to be used by Enterprise Manager. The BI Publisher report adheres to the Enterprise authentication security model. This model's authentication is repository-based which in-turn uses the Oracle database for authentication.

The Oracle Platform Security Services (OPSS) application roles, namely EMBIViewer, EMBIPAuthor, EMBIPScheduler, and EMBIPAdministrator, create a hierarchical security model for access to BI Publisher.

This recipe describes the steps to be followed to grant or revoke the OPSS application roles using the WLST command to Cloud Control Administrator.



Getting ready

Four Cloud Control Administrator users, EMUSER1, EMUSER2, EMUSER3, and EMUSER4 are created using the Cloud Control console to allocate the OPSS application roles, namely, EMBIViewer, EMBIPAuthor, EMBIPAdministrator, and EMBIPScheduler respectively.

Log in to the Cloud Control Unix server by using PuTTY as the Cloud Control installation user, in order to invoke WLST.

How to do it...

To verify the Cloud Control Administrator access to BI Publisher, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. From Enterprise, select Reports from the drop-down menu.
- 3. Click on BI Publisher Enterprise Reports.
- 4. Click on the **BI Publisher Enterprise Reports Web Application** link in the **BI Publisher Enterprise Reports** screen to access the **BI Publisher** link.
- 5. Enter the username and password of the Cloud Control Administrator user.

emuser3 is selected for this demonstration, which does not have any OPSS application role in EMBIPAdministrator.

ORACLE BI Publisher Enterprise	
	Sign In
	Please enter username and password
	Username
	emuser3
	Password
	Accessibility Mode
	Sign In
	Englich (I Inited States)
	The registric (onited states)

6. Click on Sign In.





ORACLE BI Publisher I	Enterprise Search A		×	6	Help *	Sign Out 🖸
	Hor	ne Catalog	New *	Dpen 🗠	Signed In As	emuser3*
Create Browse/Manage Catalog Folders Report Job History	Recent Reports		Report Report Jo Data Mod Style Ten Sub Temp	ib iel splate slate		
Get Started	Others					
Download BI Publisher Tools -	Favorites Manage					

The user does not yet have any privilege to create a report, schedule a report, and so on.

To grant BI Publisher's OPSS application role to the Cloud Control user, perform the following steps:

- 1. Log in to the Cloud Control Unix server as the installation user of OEM 12c.
- 2. Append the following entry to the WLST_PROPERTIES variable in the wlst.sh script under the \$MW HOME/oracle common/common/bin path:

```
-Dweblogic.security.SSL.ignoreHostnameVerification=true
-Dweblogic.security.TrustKeyStore=DemoTrust
```

The other option is to source these Java settings in an environment during the execution of the wlst.sh script.

3. Execute the wlst.sh script.

```
$export MW_HOME=/u01/app/Middleware
$cd $MW_HOME/oracle_common/common/bin
$./wlst.sh
CLASSPATH=/u01/app/Middleware/oracle_common/modules/oracle.
jdbc_11.1.1/ojdbc6dms.jar:/u01/app/Middleware/Oracle_BI1/
bifoundation/jdbc/jdk16/bijdbc.jar::/u01/app/Middleware
----
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() for help on available commands
wls:/offline>
```

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```
4. Connect to Cloud Control Weblogic Domain through the Administration SSL port.
  wls:/offline> connect('weblogic','xxx','t3s://nclvoem01.starfleet.
  com:7102')
  Connecting to t3s://nclvoem01.starfleet.com:7102 with userid
  weblogic ...
  <Nov 5, 2012 3:21:40 PM GMT> <Info> <Security> <BEA-090906>
  <Changing the default Random Number Generator in RSA CryptoJ from
  ECDRBG to FIPS186PRNG.
  --
  AlgorithmIdentifier object: 1.2.840.113549.1.1.11.>
  Successfully connected to Admin Server 'EMGC_ADMINSERVER' that
  belongs to domain 'GCDomain'.
  wls:/GCDomain/serverConfig>
```

5. Grant the OPSS application roles to the Cloud Control user using the grantAppRole directive.

Four Cloud Control Administrator users, such as EMUSER1, EMUSER2, EMUSER3, and EMUSER4 are allocated to the BI Publisher application roles, namely, EMBIViewer, EMBIPAuthor, EMBIPAdministrator, and EMBIPScheduler respectively. The following example refers to this:

```
wls:/GCDomain/serverConfig> grantAppRole(appStripe="obi",appRoleNa
me="EMBIPViewer",principalClass="weblogic.security.principal.WLSUs
erImpl",principalName="EMUSER1")
```

6. Log in to BI Publisher as a user that has an application role as EMBIPAdministrator. The user EMUSER3 is considered for this example.

ORACLE BI Publisher E	interprise	Search Al 😽	🕑 Administration Help ~ Sign Out 🔎
		Home Catalog	New 🗠 📔 Open 🗠 Signed In As remuser3 🗠
Create Report Report Jub	Recent Reports		Report Report Jub B Data Model Ø Style Template Sub Template
Hore * Browse/Manage	Others		
Catalog Folders Report Jobs Report Job History	Favorites Manage		
Get Started Download Bt Publisher Tools •			
Orade Technology Network			

This Administrative user has full access to BI Publisher.



7. Log in to BI Publisher as a user that has an application role as EMBIViewer. User EMUSER1 is considered for this example.

ORACLE BI Publisher I	Enterprise	Search Al	×	Help **	Syn Out 🧕
		Home Catalog	New 🛀 ڬ 🗅)pen ≚ Signed In A	s emuser1*
Create Browse/Manage	Recent		Report Report Job Data Model		
Catalog Folders Report Jobs Report Job History	Recent Reports		Style Template Sub Template		
Get Started Consider Tools *	Others				
Help Contents Oracle Technology Network	Favorites Manage				

This Administrative user can view the BI Publisher reports provided by Enterprise Manager and also receive e-mails.

8. Log in to BI Publisher as a user that has an application role as EMBIPAuthor. User EMUSER2 is considered for this example.

ORACLE BI Publisher I	Interprise	Search All	100	(P) Help *	Sign Out O
		Home Catalog	New -	🗅 Open 🐖 Signed In	As enurser? *
Create Report Data Model	Recent Reports		Report Report 200 Data Mudel Style Temple Sub Temple	late hte	-
Browse/Manage Catalog Polders Catalog Polders Report Jobs Report Jobs Hatory	Others				
Get Started Converticed BE Publisher Tools * Convertige Consents Consents Consent Technology Network	🛠 Favorites Monage				

This Administrative user can view the the BI Publisher reports provided by Enterprise Manager and receive e-mails. This user can also create new reports in his/her private folder.

9. Log in to BI Publisher as a user that has an application role as EMBIPScheduler. User EMUSER4 is considered for this example.

ORACLE BI Publisher I	Enterprise	Search All	×.	🕑 Help 🖌 Sign Out 📿
		Home Catalog	New *	🔁 Open 🐃 Signed In As emuser4 🐃
Create Report 3db Browse/Manage Costello Folders Report 3db Report 3d	Recent Recent Reports		Report 30 Data Mod Style Tem Sub Temp	b plate fate
Get Started Get Started Coverload SI Publisher Tools * Peb Contents Coverload SI Contents Coverload SI Contents Coverload SI Contents Coverload SI Contents	Favorites Manage			

This Administrative user can receive e-mails and can schedule the BI Publisher reports provided by Enterprise Manager with the addition of the EMBIPViewer role.



To revoke the BI Publisher OPSS application role from the Cloud Control user, perform the following steps:

- Execute the wlst.sh script under the \$MW_HOME/oracle_common/common/bin path.
- 2. Connect to Cloud Control Weblogic Domain through the Administration SSL port.
- 3. Revoke the OPSS application roles to the Cloud Control user using the revokeAppRole directive.

The EMUSER3 user is considered for revoking the BI Publisher application role EMBIPAdministrator.

wls:/GCDomain/serverConfig> revokeAppRole
(appStripe="obi",appRoleName="EMBIPAdministrator",principalClass="
weblogic.security.principal.WLSUserImpl",principalName="EMUSER3")
Location changed to domainRuntime tree. This is a read-only tree
with DomainMBean as the root.

For more help, use help(domainRuntime)

How it works...

This recipe describes the steps to be followed to manage the BI Publisher access to the Cloud Control Administrator users.

OPSS is the repository of application-specific policies. All the policies used by all the applications deployed in one domain are stored in a single store. Enterprise Manager and BI Publisher are two separate applications deployed on the same domain. It is required to grant specific BI Publisher OPSS application roles to EM Administrators in order to use BI Publisher.

The domain policy store (OPSS) is only used in the repository-based authentication security model to control an EM Administrator's access to BI Publisher.

The directives grantAppRole and revokeAppRole are used to grant and revoke the OPSS application roles using WLST.

When changing an EM Administrator's BI Publisher access privileges, the Super Administrator needs to wait at least 15 minutes for the changes to take place through OPSS and become effective. The change will be visible after the subsequent log in to BI Publisher.

The Super Administrator user of Enterprise Manager, such as sysman, gets the EMBIPAdministrator role by default, which provides complete access to BI Publisher.



There's more...

BI Publisher and Enterprise Manager are separate applications. The LDAP-based authentication model can also be used to access BI Publisher via Oracle Enterprise Manager Cloud Control.

Managing and monitoring Oracle GoldenGate

Oracle Enterprise Manager 12c Bundle Patch (12.1.0.1) or later versions can be configured to monitor and manage Oracle GoldenGate 11g Release 2 (11.2.1.0.1) and the later instances, such as manager, extract, replicat, and pump running on the source and target servers using the Oracle GoldenGate (OGG) system monitoring plugin.

This recipe describes in detail the steps to be followed to set up and configure GoldenGate instance monitoring using Cloud Control.

Getting ready

The following prerequisites must be met before configuring the Oracle GoldenGate plugin:

 GoldenGate 11g Release 2 Version 11.2.1.0.1 is installed on the source and target servers.

Oracle GoldenGate V11.2.1.0.3 is installed on the source server hosting the OMS and target server (different from the OMS host) for demonstrating this recipe.

• The GoldenGate instances' configuration at the source and target servers.

The manager, extract, and pump processes are configured on the source server. The manager and replicat configurations are performed on the target server for demonstrating this recipe.

 Oracle Management Agent needs to be installed on each system where an Oracle GoldenGate instance is installed and needs to be monitored.

The source server has an agent installation as a part of the Cloud Control installation. Please ensure that the OEM 12c Cloud Control Agent is installed on the Target GoldenGate instance server for demonstrating this recipe.

- Any release of Java 1.6 Version should be installed on all servers where OGG is configured. The installation must be done as the OGG installation user. It must be JDK and not JRE.
 - Download the jdk-6u35-linux-x64.bin binary from the OTN site for Linux-X86 operating system for demonstrating this recipe



- Copy the jdk-6u35-linux-x64.bin binary to the server on which GoldenGate is running to a predefined mount point for the JDK installation using the FTP process
- Jdk1.6.0 35 is installed on both the GoldenGate running servers
- Set the environment variables to point to JDK, based on the shell of the installation of the user.
- ▶ Set LD LIBRARY PATH to the location of the libjvm.so file.
- .bash_profile or .profile is modified for the GoldenGate installation user to refer to JDK1.6 JAVA_HOME.

The following environment settings are set in .bash_profile of the GoldenGate user oraogg to demonstrate this setting:

```
export JAVA_HOME=/dboracle/product/goldengate/jdk1.6.0_35
export PATH=/usr/local/bin:/usr/bin:$GG_HOME:$ORACLE_HOME/
bin:$JAVA_HOME/bin
```

export LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$ORACLE_HOME/lib:\$JAVA_ HOME/jre/lib

 Configuration of the software library: The software library configuration is required in order to upload the GoldenGate plugin to Cloud Control for further availability of the plugin to deploy on multiple target Cloud Control Agents.

The OMS shared file location /u01/app/Middleware/swlib1 is configured for the software library using the EM Cloud Control console in this example.

Download the Oracle GoldenGate binary plugin 12.1.0.1.0_oracle.fmw. gg 2000 0.zip from the following OTN URL:

http://www.oracle.com/technetwork/middleware/goldengate/ downloads/

- Extract the GoldenGate plugin on the local system and FTP OGG_Add.zip to a staging directory on the OMS host server.
- Log in to the GoldenGate instance servers as an Oracle GoldenGate Unix user and also connect to the Cloud Control server as OEM12C user using PuTTY.

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How to do it...

To configure an Oracle GoldenGate instance, perform the following steps as the GoldenGate installation user:

- 1. Set the environment and start the GoldenGate command-line utility ggsci.
 - \$ export GG_HOME=/dboracle/product/goldengate/11.2
 - \$ cd \$GG_HOME
 - \$ ggsci
- 2. Enable monitoring by navigating to the OGG installation directory. Edit the GLOBALS parameter file to add the ENABLEMONITORING keyword to the GLOBALS parameters, and then save the file.

```
GGSCI 1> EDIT PARAM. /GLOBALS
ENABLEMONITORING
```

After starting the Enterprise Manager, this parameter will be activated.

This step needs to be followed for all the GoldenGate instances that are going to be monitored by Cloud Control as appropriate.

Oracle Wallet stores passwords. Oracle Management Agent will use an Oracle Wallet password to connect to OGG Agent in order to receive the metric values.

1. Run the following commands to create a new Oracle wallet:

```
$cd /dboracle/product/goldengate/11
```

```
$./pw_agent_util.sh -jagentonly
```

2. Enter the OEM agent password.

\$cd \$GG_HOME
\$./pw_agent_util.sh -jagentonly
Please create a password for Java Agent:
Please confirm password for Java Agent:
Wallet is created successfully.

In this example, this is a new installation and a ${\tt dirwlt}$ directory is created with the wallet file.

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 If the dirwlt directory is not present under the GoldenGate installation directory, execute the following script to create a Jagent password:

```
./pw_agent_util.sh -updateAgentJMX
```

This step needs to be followed for all of the GoldenGate instances server that are going to be monitored by Cloud Control.

- 4. Configure OGG to run with OEM 12c.
 - Navigate to the Oracle GoldenGate installation directory.

\$ cd \$GG_HOME

- □ Change the Config.properties file under \$GG_HOME/cfg from agent. type.enabled=OGGMON to agent.type.enabled=OEM.
- Set the correct Remote Method Invocation (RMI) port for the Oracle Enterprise Manager agent. The default is 5559. The default value is left unchanged in this example.
- Set the property for the host of the Jagent:

Change from jagent.host=localhost to jagent.host=nclvoem01. starfleet.com in this example.

- Set the port of the Jagent. The default value for this property is 5555. The default value is left unchanged in this example.
- Set the parameter for a connection to the Jagent as follows:

Change jagent.username=root to jagent.username=oraoem in this example.

This step needs to be followed for all of the GoldenGate instances that are going to be monitored by Cloud Control.

To start the Oracle GoldenGate instances, perform the following steps:

- 1. Start a GGSCI session.
- 2. Create the DATASTORE file using the following code:

GSCI 2> CREATE DATASTORE Datastore created

3. Stop and start the GoldenGate Manager instance to activate the latest changes made to the GLOBAL files for monitoring the GoldenGate instance.

```
GGSCI 7> stop MANAGER
Manager process is required by other GGS processes.
Are you sure you want to stop it (y/n)? y
Sending STOP request to MANAGER ...
Request processed.
```

Manager stopped. GGSCI 8> START MANAGER Manager started.

4. Start the Oracle GoldenGate agent using the following command:

GGSCI 9> START JAGENT GGCMD JAGENT started

5. Check the GoldenGate instance execution process using the following command:

GGSCI 14>	info all			
Program	Status	Group	Lag at Chkpt	Time Since Chkpt
MANAGER	RUNNING			
JAGENT	RUNNING			
EXTRACT	RUNNING	EXTSRC	00:00:00	00:00:09
EXTRACT	RUNNING	PUMPSRC	00:00:00	00:00:00

This step needs to be followed for all the GoldenGate instances that are going to be monitored by Cloud Control. The demonstration of commands in the current example is for the source server.

To configure Management Agent to deploy the plugin to the OMS host, perform the following steps:

- 1. In the OEM console, click on Setup | Security | Preferred Credentials.
- 2. Select Host under Target Type on the Preferred Credentials page.

RACLE Enterprise Manager Cloud Control 12c					
🖁 Enterprise 👻 🎯 Targets 👻 🏫 Eavorites 👻	⊖ Hist <u>o</u> ry –				
ecurity					
Nuclear and the state of the st					
You can use preferred credentials to simplify acc You can set default credentials for each target t	ess to targets tha ype. Default cred	it you manage. If a target has pr entials are used for any targets t	eferred credentials set, applica hat do not have preferred creo	ations that log in to that target will automatically use the preferred credentials dentials explicitly set.	
/ Manage Preferred Credentials					
Target Type	\blacksquare	Total Targets	Targets with Credentials Set	Default Credentials Set	
Agent		2		0 No	
Application Deployment		17		0 No	
Beacon		1		0 No	
Clustered Application Deployment		12		0 No	
Host		2		0 No	
Metadata Repository		3		0 No	
OMS Console		1		0 No	
OMS Platform		1		0 No	
Oracle Authorization Policy Manager		1		0 No	
Oracle BI Cluster Controller		1		0 No	
Oracle BI Instance		1		0 No	
Oracle BI JavaHost		1		0 No	
Oracle BI Presentation Server		1		0 No	
Oracle BI Scheduler		1		0 No	
Orada BT Server		1		0 No	



- 3. Click on the Manage Preferred Credentials button.
- 4. Select the host to which the plugin is to be deployed from the list of hosts available under the **Target Preferred Credentials** section, and then click on **Set**.
- 5. Set the credentials on the same page and then click on **Test**.



If the test runs successfully, the credentials are correctly set.

6. Log in to the OMS server as an OMS installation user by using a PuTTY session, in order to extract the GoldenGate plugin.

\$cd /u01/software/gg_plugin
\$cp /spare/OGG_Add.zip .
\$unzip OGG_Add.zip

7. Log in to the EMCLI client from the OMS home folder on the OMS host.

\$\$OMS_HOME/bin/emcli login -username=sysman -password=xxxxxx Login successful Synchronize EMCLI: \$\$OMS_HOME/bin//u01/app/Middleware/oms/bin/emcli sync Synchronized successfully

8. Upload the GoldenGate plugin to Enterprise Manager Cloud Control using the following command:

\$\$OMS_HOME/bin/emcli import_update -file=/u01/software/gg_
plugin/12.1.0.1.0_oracle.fmw.gg_2000_0.opar -omslo cal



9. Click on **Setup** (in the upper-right corner), and select **Extensibility** from the drop-down list of the **Setup** menu.

[Setup 🤝 Help 🖌 🛛 👥 SYSMAN 🗸 🗎 L	.og Ou	t 🧲
Search Targe	Add Target		→
Self Update	Extensibility	• •	r Ċ
	Proxy Settings	1	-
Nug-ins	-		100
Management Connectors	Security	•	ĥ
Data Exchange	Incidents	•	
Development Kit	Notifications	•	
	Provisioning and Patching	•	
	My Oracle Support	• II	
	Application Performance Management		
	Manage Cloud Control	•	
	Command Line Interface	IJ	
	Management Packs	۰ħ	

- 10. Click on Plug-ins.
- 11. On the **Plug-ins** page, expand the Middleware folder and select **Oracle GoldenGate**.

ORACLE E	iterprise Ma	nager cloud cons	01120			Serb + Geb + T stans + I robour -
🖧 Enterprise 🕶 🧑 I	argets 👻 🏫 Eav	vontes 🔹 💿 History -				Search Target Name +
Plug-ins						Page Refreshed 08-Hov-2012 00:29:36 GMT C
This page displays the l	st of plug-ins avai	lable, downloaded and d	leployed in the Enterprise Mar	nager environment. Plug in kfr	cycle actions r	uch as deploy/undeploy of Plug ins on Management Server and Management Agents can be initiated from here.
Actions • View •	Deploy On	+ 🛐 Undeploy From	- 🔐 Check Updates	Deployment Activities		
			Version		Management	
Name		Latest Available	Latest Downloaded	On Management Server	Agent with Plug-in	Description
b Douthurs (B)		11.10.2.0	17.10.20 50			orace sector by more set or monitoring a crimal againem to rorace sector a ca.
V Middleware						
St Apache Tom	at	12.1.0.1.0	12.1.0.1.0		0	Apache Tomcat Plugin for monitoring Apache Tomcat Server from Enterprise Manager
Di Microsoft JN	t Framework	12.1.0.1.0	12.1.0.1.0		0	'Enterprise Manager for Microsoft Net Framework' is for monitoring of Microsoft JNET Framework
Di Mcrosoft Act	he Directory	12.1.0.1.0	12.1.0.1.0		0	Enterprise Manager for Microsoft Active Directory' is for monitoring of Microsoft's Active Directory.
Sh Microsoft Biz	Talk Server	12.1.0.1.0	12.1.0.1.0		0	"Enterprise Manager for Microsoft Biz Talk Server' is for monitoring of Microsoft BizTalk Server
SI Microsoft IIS		12.1.0.1.0	12.1.0.1.0 🚳		0	'Enterprise Manager for Microsoft IIS' is for monitoring of Microsoft Internet Information Services.
S) Oracle Fusion	Mddeware	12.1.0.3.0	12.1.0.3.0	12.1.0.3.0	2	Enterprise Manager for Fusion Middleware consists of monitoring and management for Oracle Fusion Middleware and diagnostics in middleware area.
D) Oracle Golde	nGate	12.1.0.1.0	12.1.0.1.0 🔀		0	Enterprise Manager for Oracle GoldenGate
Servers, Storag	e and Network 🕕					provide the second s
Oracle GoldenGate						لغ
General Re	ent Deployment A	lotivities				
Version on Managem	Plug-in ID orade Vendor orade ent Server None	:.fmw.gg Versions Do C	wnloaded 12.1.0.1.0 Jescription Enterprise Manag	er for Orade GoldenGate		

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- 12. Click on **Deploy on**, and select **Management Servers** to start the deployment process.
- 13. Enter **Repository SYS Password**.

eneral			
1	lame	Oracle GoldenGate	
Ve	rsion	12.1.0.1.0 -	
* Repository SYS Pass	word	******	
arnet Types			
Name	Supp	orted Target Versions	
oracle_goldengate	12.1	0.1.0+	
oracle_goldengate_extract	12.1	0.1.0+	
oracle_goldengate_manager	12.1	0.1.0+	
oracle_goldengate_replicat	12.1	0.1.0+	
oracie_goidengate_replicat	12.1	0.1.0+	

14. Click on **Continue**.

	equisite Checks		
V	Pre-requisite Checks - Completed Successfully		
	Name Oracle GoldenGate Version 12.1.0.1.0		
M	anagement Servers	Pre-requisite Name	Status
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Submit job for pre-requisites check	v
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Initialize	A
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Install software	A
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Validate plug-in home	A
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Perform custom pre-configuration	A
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Check mandatory patches	v
⊳ no	dvoem01.starfleet.com:4890_Management_Service	Generate metadata SQL	A
⊳ no	clvoem01.starfleet.com:4890_Management_Service	Pre-configure repository	~

15. Click on Next.



Chapter 7

eview		
Deployment of plug-in on Management Server will require a disconnected from the Enterprise Manager. During downt Manager and Enterprise Manager will not monitor any tar Drade recommends that you take a backup of repository and export firs ensure appropriate recovery plan is in place prior to deploying the plug-i "I have vou backed up the repository and conflueration of first man	e downtime. All currently connected users will ge ime period, users will not be able to connect to E gets st management server configuration using "emctl exporte n agement server?	t nterprise onfig oms" or
Name Oracle GoldenGate		
Version 12.1.0.1.0		
Management Servers		
Name	Currently Deployed Plug-in Version	Status
nclvoem01.starfleet.com:4890_Management_Service	None	Û

- 16. Click on Deploy.
- 17. Various prerequisite system checks will commence. Click on **Next** to continue with each system check.
- 18. Once the prerequisite checks are complete, click on **Deploy**.

Deploy Plug-in on Management Servers		
Confirmation		
The deployment of plug-in "Oracle GoldenGate" version 12.1.0.1.0 is in progress.		
You can monitor the progress using following command		
emcti status oms -details		
		_
	Show Status	Close

19. Check the status of the plugin installation on the Unix terminal as an OMS installation user.

```
$OMS_HOME/bin/emctl status oms -details
----
Managed Server Instance Name: EMGC_OMS1
Managed Server Instance Host: nclvoem01.starfleet.com
WebTier is Up
Oracle Management Server is Up
```

This process may take 10 to 15 minutes, as a complete OMS restart occurs.



20. The status of the plugin deployment can be checked through the emcli command:

```
$$OMS_HOME/bin/emcli login -username=sysman -password=xxxxxxx
Login successful
Synchronize EMCLI:
$$OMS_HOME/bin/emcli sync
Synchronized successfully
$$OMS_HOME/bin/emcli get_plugin_deployment_status -plugin_
id=oracle.fmw.gg
Plugin Deployment/Undeployment Status
            : OMS - nclvoem01.starfleet.com:4890_
Destination
Management_Service
Plugin Name
                  : Oracle GoldenGate
Version
                   : 12.1.0.1.0
ID
                    : oracle.fmw.gg
Content
                    : Plugin
Action
                    : Deployment
Status
                    : Success
- - - -
```

An Oracle GoldenGate item will appear under the **Targets** tab in EM Cloud Control once the plugin is deployed.

To add the plugin target to Enterprise Manager Cloud Control for central monitoring and management, perform the following steps:

1. Select Add Target from the Setup menu, and then click on Configure Auto Discovery.

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nfigure Auto Discovery			Page Refreshed 08-Nov-2012 01:04:29 GHT
Instruction	er lannets so that they can	he monitored and manage	and for Potervise Macazer: Use the following onteres to conference and offsedule automatic discovery.
Configure Auto Discovery ••stage discovery using #"Som ••stage discovery on Sphere Heat ••stage discovery on Multiple Heats	Add Targets from Au Discovery Results Add Non Host Target Add Discovered Hosts Ignore Discovered Ta	te Is s vgets	Add Targets Hanselly or Using Guilded Process • Add Costend Targets • Add Costend Targets • Use Electorery Modes
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nfigure Auto Discovery	Туре	Configure Host Discovery	
Infigure Auto Discovery Heat Decovery Host and Orade VM Manager Decovery using IP Scan	Type Agent-less	Configure Host Discovery	
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- 2. Click on the GoldenGate Discovery link in the Configure Auto Discovery section.
- 3. Select the agent host name and then click on **Edit Parameters** to connect to the Oracle GoldenGate Agent.
- 4. Enter the details in the **JAgent Password**, **JAgent RMI Port**, and **JAgent User Name** fields as specified in the **config.properties** file in the GoldenGate setup.

Edit Parameters		×
* JAgent Password	xxxxxx	
* JAgent RMI Port	5559	
* JAgent User Name	oraoem	
		OK Cancel

5. Click on OK.

ORACLE Enterprise Manager Cloud C	control 12c	8	¢• Ω					
Configure Target Discovery for Target Typ Use this page to configure target discovery and parameters	ES I for this discovery mo	ndik.	Cancel					
Discovery Module Golder GateDiscovery Target Types Oracle GoldenGate, Oracle GoldenG Schedule & Keep current discovery schedule on all host	Decovery Kodyle GoldenGateDicovery Target Types Grade GoldenGate, Drade GoldenGate Dutract, Orade GoldenGate Manager, Grade GoldenGate Rapicat Schndule 💩 Keep current dicovery schedule on al hosts							
Oue following discovery schedule for all targ Frequency Every Day(s)	Use following docovery subsidie for all target types on all hosts Frequency Every Tory(d)							
Agent Host Name	Schedule	Discovery Parameters Configuration Status Tolares						
ndvoem01.starfleet.com	Every 1 Day(s)	Specified or Magent Liser Name-woracem, Magent RMI Port+5559, Magent Password-wsysman 12c						

To promote a GoldenGate instance in Enterprise Manager Cloud Control, follow these steps in order to perform central monitoring and management of the GoldenGate instances:

- 1. Select Add Target from the Setup menu, and then click on Auto Discovery Results.
- 2. Click on Non-Host Targets.

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3. Select Target Type of Oracle GoldenGate to promote.

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4. Click on **Promote**.

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5. Once the target is promoted, click on **Close**.

Confirmation		
arget Promotion - Completed Successfully		
∀ Hide		
	Clo	se

To monitor the GoldenGate instances of a promoted host in Enterprise Manager Cloud Control, perform the following steps for central monitoring and management of the GoldenGate instances:

1. From the Targets menu, select GoldenGate.







2. Verify the GoldenGate instance's process status on the **Oracle GoldenGate Homepage** screen.

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MGR M	lanager	1						0	0	0	0		
EXTSRC EX	xtract	1	1		1	0	0	0	0	0	0	51	Nov 11, 2012 00:35:11 AM GMT

3. Click on each GoldenGate instance, such as the pump, manager, and extract processes to see more details.

Extract : EXTSRC			OGG Instance OGG Home Auto I minute
Vew +			
Metric Name	Metric Value	Last Updated	
Delta Updates	0	Sun Nov 11:00:50:27 GMT 2012	
End of File	tue	Sun Nev 11 00:50:27 GMT 2012	
Lag (Sec)	1	Sun Nev 11:00:50:27 GMT 2012	
Last OGG Chedront Timestamp	Sun Nov 11 00:50:16 GMT 2012	Sun Nov 11:00:50:27 GMT 2012	
Last Operation Timestamp	Sat Nov 10 22:06:06 GMT 2012	Sun Nov 11 00:50:27 GMT 2012	
Last Processed Timestamp	Sat Nov 10 22:06:07 GMT 2012	Sun Nov 11 00:50:27 GMT 2012	
Nessage	1738-541 Nov 30 21-46-35 GMT 2012/BOUNCED RECOUPERV. CHECHOOMIN, for object, pool 1: p17693, extr: tartri-Geolyce, 8, R&A: 317394, SCHE 0.1248-86 (2468-80), Timestamp: 2012-11- 10 21-55:50.000000, Thread: 1, end-Scipter 8, RBX: 3172-46, SCHE 0.1248-96 (2168/94), Timestamp: 2012-11-10 21-45:50.000000, Thread: 1.	Sun New 11 00:50:27 GMT 2012	
Name	EXTSRC	Sun Nov 11:00:50:27 GMT 2012	
Seconds Since Last OGG Checkpoint	62	Sun Nov 11:00:50:27 GMT 2012	
Start Time	Wed Nov 07 17:44:55 GMT 2012	Sun Nev 11:00:50:27 GMT 2012	
Status	Running	Sun Nov 11 00:50:27 GMT 2012	
Total Deletes	0	Sun Nev 11 00:50:27 GMT 2012	
Total Discards	0	Sun Nov 11:00:50:27 GMT 2012	
Total Executed DDLs	0	Sun Nov 11:00:50:27 GMT 2012	
Total Ignores	0	Sun Nov 11:00:50:27 GMT 2012	
Total Inserts	1	Sun Nov 11 00:50:27 GMT 2012	
Total Operations	1	Sun Nov 11 00:50:27 GMT 2012	
Total Row Fetch Attempts	0	Sun Nov 11 00:50:27 GMT 2012	
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4. Click on the **EXTSRC** extract process in this example, for demonstration purposes.



How it works...

This recipe describes the steps to be followed to configure the GoldenGate instances with Enterprise Manager Cloud Control.

The OGG plugin can monitor all platforms where the Oracle GoldenGate 11.2 instances can run, with the exception of very few operating systems. Please refer to the Oracle-supplied documentation for details.

The ENABLEMONITORING parameter is added to the GLOBALS file under the Oracle GoldenGate 11g binary installation path in order to enable monitoring of GoldenGate. The configuration file is called Config. Properties are configured to monitor GoldenGate through Oracle Enterprise Manager. Oracle Wallet is created to store a password securely. This wallet can be used by Oracle Management Agent to connect to the GoldenGate Agent process and by JAgent to receive the periodic metrics values to upload to OMS.

The Oracle GoldenGate plugin is uploaded to Cloud Control so that the plugin is available for deployment to any other agents monitored by Cloud Control. GoldenGate instances are promoted after the discovery of targets, which is done through automatic discovery.

There's more...

All of the GoldenGate instances running on a different host other than the OMS host can be configured by following the same steps as mentioned previously, except the installation of the plugin has to be directed to a Management Agent hosted on the target server, which can be configured to monitor and manage a GoldenGate instance on the target server. The following steps result in different screens during the process of configuration:

- 1. Log in to **Enterprise Manager Cloud Control** and complete the deployment to a Management Agent after importing the plugin.
- 2. Click on **Setup** (in the upper-right corner), and select **Extensibility** from the dropdown menu.
- 3. Click on Plug-ins.
- 4. On the **Plug-ins** page, after expanding the Middleware folder, select **Oracle GoldenGate**.

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5. Click on **Deploy On**, and then select **Management Agent** to start the deployment process.

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🚓 Enterprise 👻 👩 1	argets 👻 🏫 Eav	orites 👻 🥝	History 🕶				Search Target Name 🕶
Plug-ins							Page Refreshed 09-Nov-2012 11:49:32 GMT C
This page displays the l	ist of plug-ins avail	able, downloa	ded and de	ployed in the Enterprise Mar	ager environment. Plug-in life	ecycle actions s	uch as deploy/undeploy of Plug-ins on Management Server and Management Agents can be initiated from here.
Actions • View •	Deploy On	🕶 📴 Unde	ploy From	- 🚱 Check Updates	Deployment Activities		
	Management	Servers		Version		Management	
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Crosoft Ac	tive Directory	12.1.0.1.0		12.1.0.1.0		0	'Enterprise Manager for Microsoft Active Directory' is for monitoring of Microsoft's Active Directory.
Crosoft Bu	Talk Server	12.1.0.1.0		12.1.0.1.0 🙉		0	'Enterprise Manager for Microsoft Biz Talk Server' is for monitoring of Microsoft BizTalk Server
Di Microsoft IIS		12.1.0.1.0		12.1.0.1.0		0	'Enterprise Manager for Microsoft IIS' is for monitoring of Microsoft Internet Information Services.
Drade Fusio	n Middleware	12.1.0.3.0		12.1.0.3.0	12.1.0.3.0	2	Enterprise Manager for Fusion Middleware consists of monitoring and management for Oracle Fusion Middleware and diagnostics in middleware area.
Crade Golde	nGate	12.1.0.1.0		12.1.0.1.0	12.1.0.1.0	1	Enterprise Manager for Oracle GoldenGate
> 🔁 Servers, Storag	e and Network 🕕						
Exalogic Elastic	Cloud Infrastruc	12.1.0.1.0		12.1.0.1.0 🙉		0	Elastic Cloud Infrastructure
Drade Audit Va	ult	12.1.0.2.0		12.1.0.2.0		0	Oracle Audit Vault Plugin provides monitoring and management of Oracle Audit Vault Server and its components.
Crade Beacon		12.1.0.2.0		12.1.0.2.0	12.1.0.2.0	1	Orade Beacon plugin is required on the Managed Hosts to support beacon test monitoring capability
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Versions	on rundychich	Managemer	t Agent wi	th Plup-in Managed Host Op	erating System		
121010				1 Linux x86-64			

- 6. Click on + Add and select the Management Agent instance.
- 7. Click on **Continue** and then click on **Next**.
- 8. Click on Deploy.





9. Click on Show Status.

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The Replicat GoldenGate process is used to replicate data on the target database instance. If the target database instance is also hosted on the same source as the database instance, a single GoldenGate installation setup and configuration will monitor the Replicat process. The installation and configuration of a GoldenGate instance on a server other than the OMS server allows monitoring of the Replicat process separately from the other GoldenGate instances, such as Manager.

The GoldenGate home page provides a single view of all of the GoldenGate instances managed by Enterprise Manager Cloud Control, as shown in the following screenshot:

ORACLE Enterprise	Manager Cloud Co	ntrol 12c										Setup	• Help • 🟦 SYSMAN • Lop Out 🧲
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Setting up Application Dependency and Performance (ADP) Manager in Cloud Control

Application Dependency and Performance (ADP) is one of the most important functions in Enterprise Manager Cloud Control and allows the analysis of the SOA, JAVA EE, and Portal applications. It easily captures the complex relations between the application building blocks in its application schema model.



Chapter 7

This recipe describes the installation of ADP Manager on the same host as OMS having Cloud Control Version 12.1.0.2.

Getting ready

The following prerequisites need to be noted when finalizing the Weblogic Domain for ADP Manager installation:

- Weblogic Server must be up and running in order to deploy the ADP Manager application
- ADP Manager can only be deployed on the managed servers configured in the OEM 12c Weblogic Domain
- The default ports used as part of the ADP installations are ADP Manager Port: 51099, Java Provider Port: 55003, and Remote Service Controller Port: 55000

Log in to the Cloud Control console URL in order to deploy ADP Manager.

How to do it...

To deploy ADP Manager on the same host as OMS, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select Application Performance Management from the Setup menu.





3. On the **Application Performance Management** page, select the **Application Dependency and Performance Engine** option from the **+ Add** menu.



- 4. Select the **Create a managed server** option, and enter the following details on the **Deploy ADP Engine** page:
 - Select an OMS Server from the Host list. The list consists of all of the servers that were discovered in the EM Weblogic Domain.
 - Enter the Managed Server Name, which should be unique.

The managed server name EMGC ADPMANAGER2 is left unchanged in this example.

The port numbers for Listen Port, SSL Listen Port, ADP Engine Registry Port, ADP Engine Java Provider Port, and ADP Engine Controller Port are populated with the default values 4210, 4211, 52099, 56003, and 56000 respectively. The default ports are kept unchanged in this example. It is possible to change to different ports if required.

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Application Performance Management							
Deploy ADP Engine You can deploy an ADP Engine to server on the same host as an Of	an existing WebLogic managed server or create MS server. An ADP Engine can only be deployed						
Oreate a managed server							
Host	ndvoem01.starfleet.com (EMGC_OMS1) 🔻						
Managed Server Name	EMGC_ADPMANAGER2						
Listen Port	4210						
SSL Listen Port	4211						
ADP Engine Registry Port	52099						
ADP Engine Java Provider Port	56003						
ADP Engine Controller Port	56000						
Deploy on an existing mana	ged server						

Based on the OMS host selected, populate **Oracle WebLogic Administration Server Host Credentials** and **Oracle WebLogic Domain Credentials** under the **Credentials** section of the **Application Performance Management** page.

Oracle WebLogic Administration Server Host Credentials are the credentials for the host where the Weblogic Administration Server is running.

The OEM 12c Cloud Control installation user credential is selected in this example. The credentials of the OMS user details are provided as new.

Oracle WebLogic Domain Credentials are the credentials of the Weblogic Domain in Enterprise Manager Cloud Control.

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The OEM 12c Weblogic Domain credential is selected in this example. A new credential, such as NC_EMGC_OMSWLS_DOMAIN is created and tested. This credential will be available as the named credential for further use.

Credentials		
This operation requires both Manage ∇ Oracle WebLogic Administra Specify credentials for host when	ement Agent Host and Oracle V tion Server Host Credentia e WebLogic Administration Serv	Veblogic Domain Credentials. a ls ver is running
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♥ Oracle WebLogic Server Dom Specify Credentials for Weblogic	nain Credentials domain	
Select credential from one of the	following options.	
Credential	Preferred Named	New
Credential Name	NC_EMGC_OMSWLS_DOMA	IN 🔻
Credential Details	Attribute	Value
	Administrator Username	weblogic
	Administrator Dansword	*****

5. Click on **Deploy** after populating all of the sections on the **Application Performance Management** screen.





6. Click on the ADP Engine Deployment job execution status link.

lob Activity	> Execution: 2 targets				Page Refreshed 27-Nov-	2012 23:15:58 GMT C
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	Step: Push JVMD zip file to EMAgent	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nov-2012 23:11:52 GMT+00:00	27-Nov-2012 23:11:53 GMT+00:00	0 second
	Step: Unzp JVHD zp file	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nev-2012 23:11:54 GMT +00:00	27-Nov-2012 23:11:55 GMT +00:00	0 second
	Step: Run Prerequisite Checks	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nev-2012 23:12:00 GMT+00:00	27-Nev-2012 23:12:00 GMT+00:00	0 seconds
	Step: Unzip ADP Engine zip file	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nov-2012 23:12:00 GMT+00:00	27-Nov-2012 23: 12:03 GMT+00:00	3 second
	Step: Modify Weblogic Policy File	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nov-2012 23:12:04 GMT+00:00	27-Nov-2012 23:12:04 GMT+00:00	0 seconds
	Step: Modify Configuration Files	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nov-2012 23:12:04 GMT+00:00	27-Nov-2012 23:12:04 GMT +00:00	0 seconds
	Step: Repackage Dummy Application	/EMGC_GCDomain/GCDomain/EMGC_OMS1	Succeeded	27-Nov-2012 23:12:04 GMT+00:00	27-Nov-2012 23:12:06 GMT+00:00	2 seconds
	Step: Deploy ADP Engine	/EMGC_GCDoman/GCDoman/EMGC_OMS1	Succeeded	27-Nov-2012 23:12:06 GMT +00:00	27-Nov-2012 23:15:34 GMT+00:00	3.5 minutes
	Step: Refresh targeted WebLogic domain	/EMGC_GCDomain/GCDomain	Succeeded	27-Nov-2012 23:15:34 GMT+00:00	274kov-2012 23:15:49 GMT+00:00	14 seconds

To verify whether ADP Manager has been accurately set up on the managed server of Cloud Control Weblogic Domain, perform the following steps:

1. In Cloud Control, select the **Middleware Features** option from the **Targets** menu.



- 2. From the **Middleware Features** menu, click on **Application Dependency and Performance**.
- 3. On the ADP home page, click on the **Registration** tab, and select the manager name.



4. Click on **Test Connect** to check if the manger is working or not.

ORACLE Enterprise Manager Cloud C	ontrol 12c
🚓 Enterprise 🔻 🎯 Targets 👻 🐈 Eavorites 👻 🤗 Histo	ry 🕶
Application Dependency and Performance	
Use time frame: 1 hour Start: 27/11/2012 22:; Configuration Registration Managers	20 B End: 27/11/2012 23:20 B End time is current system time ADPManager_EMGC_ADPMANAGER2@ndvoem01.starfleet.com:52099 Test Connect: OK Manager Name ADPManager_EMGC_ADPMANAGER2 Host (IP or Name) ndvoem01.starfleet.com Port 52099 Upload Port S2099 Upload Port S2099 Upload
	Home Directory Key Store File Key Store Password Trust Store File Trust Store Password Alias Agent ndvoem01.starfleet.com:3872 ▼ ✓ Test Connect

How it works...

This recipe describes the steps to be followed to set up ADP Manager on the host of OMS.

ADP Manager performs statistical calculations and mathematical modeling using the summarized data received from all of the ADP agents. The communication between ADP Manager and ADP Agent is enabled by the ADP Manager Registry port.

ADP Manager meets the changing demand of enterprise deployments through a fully distributed, multitier, and configuration architecture, which is scalable and flexible. Multiple managed servers need to be created on the same Enterprise Manager Weblogic Domain, to deploy multiple ADP Managers, which in turn can address the various ADP agents hosted on different hosts.

During the deployment process ADP Manager creates a managed server in OEM 12c Weblogic Domain and deploys the ADP Manager application.

It is advisable not to deploy any other application on this managed server.



There's more...

This recipe demonstrates in detail the steps to be followed in order to deploy ADP Manager on the same host as OMS with a newly-created managed server. It is possible to deploy ADP Manager on an already-created managed server on a domain by selecting **Deploy on an existing managed server** under the **Deploy ADP Engine** section of the **Application Performance Management** screen.

It is also possible to deploy ADP Manager on a separate host from OMS. This is referred to as Remote Deployment.

Setting up JVM Diagnostics (JVMD) Manager in Cloud Control

JVM Diagnostics (JVMD) is one of the most important functionalities in OEM 12c, and enables the Middleware Administrators to diagnose performance issues in Java applications.

JVMD leads to effective management of applications and simplified identification of the root cause of performance problems without having to reproduce the issues in a test or development environment.

JVMD Manager is a key analytical engine of the JVMD monitoring system.

This recipe describes the installation of JVMD Manager on the same host as OMS having Cloud Control Version 12.1.0.2.

Getting ready

The following prerequisites are required for finalizing Weblogic Domain for the JVMD Manager installation:

- Weblogic Server must be up and running to deploy the JVMD Manager application
- JVMD Manager can only be deployed on those managed servers which are a part of OEM 12c Weblogic Domain

Log in to the Cloud Control console URL to deploy JVMD Manager.

How to do it...

To deploy JVMD Manager on the same host as OMS, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select Application Performance Management from the Setup menu.



3. Select JVM Diagnostics Engine from the + Add menu on the Application Performance Management page.



- 4. On the **Deploy JVM Diagnostics Engine** page, select **Create a managed server**, and enter the following details:
 - Select an OMS Server from the Host list of all the servers discovered in the EM Weblogic Domain.
 - Enter the Managed Server Name, which should be unique.
 - The managed server name EMGC_JVMDMANAGER1 is set in this example as the default value. The default ports are kept unchanged for this example. It is possible to change the different ports if required.

ORACLE Enterprise	Manager Cloud Control 12c
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Application Performance M	lanagement
Deploy JVM Diagnostics E You can deploy JVM Diagnostics Er host as OMS server. JVM Diagnost	ngine ngine on an existing weblogic server or a new wel ics Engine can be deployed only on managed sen
Host	ndvoem01.starfleet.com (EMGC_OMS1) 👻
Managed Server Name	EMGC_JVMDMANAGER 1
Managed Server Listen Port	3800
Managed Server SSL Listen Port	3801
Deploy on an existing manage	ed server

-270

Based on the OMS host selected, specify the **Oracle Management Server Host Credentials** and **Oracle WebLogic Domain Credentials** section of the **Application Performance Management** page.

Oracle Management Server Host Credentials are the credentials for the host machine where the selected OMS server is running. The **Named** credential is selected in this example, which is available on the domain for the OMS host credential.

Oracle WebLogic Domain Credentials are the credentials of Weblogic Domain in Enterprise Manager Cloud Control. The Named credential, is selected in this example, which is available for OMS Cloud Control Weblogic Domain.

ment Agent Host and Oracle	Weblogic Domain Credentials.	
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Administrator Password	*****	
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5. Click on **Deploy** after populating all of the sections on the **Application Performance Management** screen.



6. Click on the JVMD job execution status link to view the status of the job execution of the job status for setting up JVMD Manager.

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Tergital Status All Cal Expand Al College Al Nere V Exectors: [Net: _StChonen/[KtChonen/[KtC] [PR6] Status Care Stage Directory Status Care Stage Directory Status Care John Status Status Care John Status Status Care John Status Status Care Directory Status Care Status Status Care Directory Status Care Status Status Care Directory Status Care Directo	Targels JAKC, SCDanan, KCDanan, BASC, Di JAKC, SCDanan, KCDanan, BASC, Di	Status SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded SSI Succeeded	Started 06-0ec-2012 22:47-96 GHT 400:00 06-0ec-2012 22:47-96 GHT 400:00 06-0ec-2012 22:59:50 GHT 400:00 06-0ec-2012 22:59:50 GHT 400:00 06-0ec-2012 22:59:50 GHT 400:00	Ended 06-Dec-2012 22:50:25 0MT 400:00 06-Dec-2012 22:47+07 0MT 400:00 06-Dec-2012 22:47+07 0MT 400:00 06-Dec-2012 22:47+09 0MT 400:00 06-Dec-2012 22:47+09 0MT 400:00 06-Dec-2012 22:50:50 0MT 400:00 06-Dec-2012 22:50:50 0MT 400:00 06-Dec-2012 22:50:50 0MT 400:00 06-Dec-2012 22:50:50 0MT 400:00	Elapsed Time 2.6 minutes 0 seconds 0 seconds 0 seconds 0 seconds 2.2 minutes 2 seconds 8 seconds 8 seconds

To verify whether JVMD Manager has been accurately set up on the managed server of Cloud Control Weblogic Domain, perform the following steps:

1. In Cloud Control, select **Application Performance Management** from the **Setup** menu.

On the **Application Performance Management** page, all of the deployed Managed servers are listed. Fields such as Host, Port, and so on, on the **Application Performance Management** page helps monitor the status of JVMD Manager.



Chapter 7

ORACLE Enterprise Manager Cloud Control 12c						Setup 🔻 Lielp 🛪 📑 SY	IMAN 🔹 Log Out 🤇		
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Application Performance Management						Page Refreshed 06 Dec 2	012 22:53:21 GMT 🕻		
Application Performance Management Agents JMPJ Agents Count: 0 ADP Agents Count: 2 & Application Performance Management Engines						- B Man	ge Diagnostics Agents		
Vew - 💠 Add - 💥 Hemove 🖉 Configure									
Name	Host	Port	SSL Port	Availability (%)	Status	Server	Version		
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V IMDiagnostics Engines (1) 🎝									
jammanagerEMGC_JIMDMANAGER1	ndvoem01.starfleet.com	3900	3001	100		EMGC_IVMDMANAGER1	6478		
V ADP Engines (1) &									

How it works...

This recipe describes the steps to be followed to set up JVMD Manager on the host of OMS.

JVMD Diagnostics is integrated with Oracle Enterprise Manager Cloud Control. It enables the Middleware Administrators to diagnose performance-related issues in the Java applications in the production and test environments.

The Application Performance Management GUI tool as part of Enterprise Manager Cloud Control, is used to install JVMD Manager in Cloud Control Weblogic Domain.

During the process of JVMD Manager deployment, a managed server is deployed in the OEM 12c Weblogic Domain, and the JVMD Manager application is deployed on the managed server. It is advisable not to deploy any other application on this managed server.

There's more...

This recipe demonstrates in detail the steps to be followed to deploy JVMD Manager on the same host as OMS with a newly-created managed server. It is also possible to deploy JVMD Manager on an already-created managed server on a domain by selecting **Deploy on an existing managed server** under the **Deploy JVM Diagnostics Engine** section of the **Application Performance Management** screen.

It is also possible to deploy JVMD Manager on a separate host from OMS, which is referred to as Remote Deployment. There is an option available to deploy JVMD Manager manually by downloading jvmd.zip from Middleware HOME>/ plugins/oracle.sysman.emas.oms.plugin_12.1.0.0.0/archives/jvmd, followed by running the DeployAD4JManager.sh script in Linux.


Middleware Management using OEM 12c -

Discovering and managing Weblogic Server Target

IT organizations are increasingly adopting Java EE, SOA, composite application, and Cloud computing, which enable them to quickly connect their disparate applications and fulfill ever-changing business needs.

Oracle Weblogic Server is the most commonly-used application server for deploying enterprise-wide applications. It is very critical to manage and monitor multiple Weblogic Domains running Weblogic Server instances centrally through Enterprise Manager Cloud Control, rather than connecting to the individual Weblogic Domain console for managing and monitoring.

The following recipe describes the steps to be followed to discover Weblogic Domain to Cloud Control, followed by managing and monitoring Weblogic Servers from Cloud Control.

Getting ready

Weblogic Domain is already created on a target server. The assumption is that the target server is already being monitored by Oracle Management Agent.

Log in to the Cloud Control console URL to discover Weblogic Domain, which is not yet configured in Cloud Control to monitor.

How to do it...

To discover Weblogic Domain, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select **Middleware** from the **Targets** menu.
- 3. Select Oracle Fusion Middleware/Weblogic Domain from the +Add menu.

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1iddleware I Middleware Features →						
⊻ Search						
Find Name	•					
View 👻 🗖	🔓 Add 🚽 💥 Remove 🛯 🖉 Configure					
	Oracle Fusion Middleware/WebLogic Domain					
Name	Oracle WebLogic Domain 7.x and 8.x					
	Oracle Application Server					
⊳ 📑 Farm0:	Oracle Application Server Farm					
	Oracle Application Server Cluster					
	IBM WebSphere Application Server Cell					
	IBM WebSphere Application Server					
	JBoss Application Server					
	Oracle Coherence					
	Oracle Directory Server Enterprise Edition					
	Oracle Identity Management 10g (OAM, OIF, OIM)					

4. Specify the **Administration Server Host** by selecting the appropriate target host, Admin server Port, and the Weblogic Domain credentials such as the username and password.

ORACLE Enterprise Manager Cloud Control 12c	Setup + Help + 🛛 🏦 St	MAN - L	og Out 🧧
🖧 Enternise + 🎯 Tarpels + 🌟 Eavontes + 🥝 History +	Search Target Name 👻		+
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Add Fusion Middleware Farm: Find Targets	E	Continue	Cancel
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5. Click on **Continue**.

- 12 I	Confirmation	
Fine	ding Targets - Completed Successfully	
CILL	Close to produce the product	
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	Taxaata faundu E	
	Click Close to assign the agents	
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Middleware Management using OEM 12c -----

6. Click on **Close**.

ORACLE Enterprise Manager Cloud Control 12c	Setup + Help + 📑 STSMAN + Log Dut 🧲
n Griterprise + 📸 Dargets + 🌟 Exvantes + 🙁 History +	Search Target Name 🕶 💽
/Farm02_demo_domain/demo_domain @	Page Refreshed 19-Rov-2012 00.0950 GHT 💍
Add Fusion Middleware Farm: Assign Agents Targets Form 3	Cancel Back Add Targets

7. Click on Add Targets after reviewing the Add Fusion Middleware Farm: Assign Agents screen page.

Saving targets To Agent - Completed Successfully	
S targets have been successfully added to Enterprise Manager.	
∀ Hide	
Total targets = 5	
5 targets have been successfully added to Enterprise Manager.	
	Close

8. Click on Close.

The Managed servers, Admin server, and deployed application on the managed servers have now been discovered by Cloud Control and can be managed and monitored for the demo_domain domain for demonstration.

demo_domain 📵				🗒 ndinfra.starfeet.co		
📲 Wettage Domain + Page Referired 19-Have-2012 00:16:00						
Add Fusion Middleware Farm: Re	sults			<u>a</u>		
5 targets have been successfully added to Ente	erprise Manager.					
There may be a delay before these targets are	visible and monitored. This is because saving the tar	gets to the agents involve target pro	omotion job that may also include pushing the monitoring plug	in to the agent. All the agents used for monitoring the targets must be up.		
If the targets of the farm or domain change in t	the future, use Refresh WebLogic Domain to add targ	ets. If targets are later removed fro	on the farm or domain, you can delete them from the All Targ	gets page or the Agent page.		
Target Name	Target Type	liost	Configured Agent	E Status		
V dam danah	Oracle WebLogic Domain		ndinfra.starfleet.com:3872	Successfully seved target to agent.		
Administration	Orade WebLogic Server	ndinfra.starfleet.com	ndinfra.starfleet.com:3872	Successfully saved target to agent.		
V Manager Server 1	Orade WebLogic Server	ndinfra.starfleet.com	ndinfra.starfleet.com:3872	Successfully seved target to agent.		
demo ann	Application Deployment	ndinfra.starfleet.com	[Inherited From Parent]	Successfully seved target to agent.		
ManagedGerver 2	Orade WebLogic Server	ndinfra.starfleet.com	ndinfra.starfleet.com:3872	Successfully saved target to agent.		

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9. Click on OK.

To manage and monitor Weblogic Domain, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select Middleware from the Targets menu.

You can identify all of the discovered Weblogic Domains managed by Cloud Control on the **Middleware** screen. Expand the Weblogic Domain of interest to verify whether all instances are up or not via a single point of view.

demo_domain is integrated as part of the demonstration of this recipe. Expand the domain and verify if all the Weblogic instances of the domain are up or down.

			Мел	ber S	lolus			Tarret
Name	Type	Status	-	1	Q,	0	Compliance Score (%)	Version
7 demo domain	Orade WebLogic Domain	n/a	0	3	0	0	nja	10.3.6.0
Jul Admin Server	Drade WebLogic Server	1	0	۵	0	0	n/a	10.3.6.0
ManagedServer_1	Orade WebLogic Server	1	0	0	0	0	n/e	10.3.6.0
AnagedServer_2	Orade WebLogic Server	1	0	0	0	0	nja	10.3.6.0
> BEBMSC GCDumain	Oracle Fusion Middleware Farm	n/e	0	8	0	0	n/a	10.3.5.0
> 🕂 Farm01_bifoundation_domain	Oracle Fusion Middleware Farm	n/a	0	4	0	0	n/a	10.3.5.0

The Admin server and two managed servers created as part of Weblogic Domain demo domain are up in this example.

3. Click on an individual domain of interest from the list of discovered Weblogic Domains to get more details of the domain for managing and monitoring. demo_ domain is selected for demonstrating the example.

Active sessions, heap usage, CPU, number of requests, request processing times, and so on can be monitored as per all the Weblogic Server instances, apart from checking the status of application deployment in this screen.

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Middleware Management using OEM 12c -

- ORACLE Enterprise Manager Cloud Control 12c Setup + Help + 👖 SYSMAN + Log Out 🧲 🔩 Enterprise + 🥘 Encgets + 🐈 Enviorites + 😒 History + Search Target Name + demo_domain ③ 📋 ndinfra.sta Target Navigation - WebLogic Domain • 📴 Page Refreshed 19-Nov-2012 23:54:33 GHT 🖒 Vex + > 🛅 Application Deployments V Weblogic Domain V Weblogic Domain AdminiServer ManagedServer 1 ManagedServer 2 Administration Server AdminServer Administration Server Host Indinfisistra fleet.com Immistration Server Listen Port 60001 WebLogic Domain Refreshed 1948av-2012 00:41:05 Up (1) Tools Ø To configure and manage this WebLogic Domain, use the WebLogic Server Administration Ver · Search + nitoring and Diagnostics Status Deployed On V DApplication Deployments Incients 0 scendant Target Incidents 0 deur abb ÷ ManagedServer_1 Configuration Changes 2 Diagnostic Findings 0 ⊻ Servers 0. Up (3) View - Search CPU Usage (%) Heap Active Request Usage Sessions Time (ms) ▲ V Status Hos Listen Port H Administre odatra 60001 0.00 RanagedServer 1 4 ndinfra... 60002 0.00 69.85 107.75
- 4. Click on the **WebLogic Server Administration Console** link to access the Weblogic console directly to configure and manage Weblogic Domain.

5. Click on the appropriate options from the drop-down list under the **Weblogic Domain** tab, which is available at the corner of the right-hand pane, in order to manage and monitor Weblogic Domain from Cloud Control.

de	mo_domain ③	
	Home	
	Monitoring	۲
	Diagnostics	۲
	Control	۲
	Logs	۲
	Information Publisher Reports	
	Web Services	۲
	Routing Topology	
	Members	
	Refresh WebLogic Domain	
ම	WebLogic Server Administration Console	
	Configuration	۲
	Compliance	۲
	Provisioning	۲
	Target Setup	۲
	Target Information	



6. Click on each Weblogic Server instance in the left-hand side pane to get more monitoring details of the server instances, as per your requirements. In this example, Managedserver_1 is selected in the left-hand side pane and the right-hand side pane is populated with detailed information for the managed server, including the applications deployed on the same server, which helps in providing a one-page view of the Weblogic Server instance for monitoring and managing the instance.

CLE Enterprise Man	ager Cloud Control 12c			2	stup + Help +	1 SYSMAN +	Log Out
rise 🕶 👩 Targets 👻 🌪 Eave	vites 👻 📀 History 🕶			Search Target I	iame 🕶		6
Navigation	ManagedServer_1 MelogicServer + Start Up Start Up Shut Down.	🍕 Create Blackout 🌚 End Blackout			age Refreshed 20	ndevi 0 Nov 2012 00:2	a starfleet.com S:04 GPST 💍
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How it works...

This recipe describes the steps to be followed in order to discover Weblogic Domain with Cloud Control.

A Cloud Control agent uploads Weblogic instance monitoring stats to OMS, which then provides a summarized view of the Weblogic Server instances in Cloud Control for managing and monitoring.

There's more...

The Enterprise Cloud Control console also provides a direct link to access the Weblogic Server domain console to perform the managing and monitoring of the Weblogic Server instances.

Deploying ADP agents on Weblogic Target nodes

ADP Java Agent is used to collect data on the ADP Application Service Management (ASM) system. It gets deployed to all of the managed application servers to perform a number of tasks, including tracking, summarizing of data in real time, and identifying contextual relationships, with minimal overhead.

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Middleware Management using OEM 12c

This recipe describes the steps to be followed to install an ADP agent on the managed node of Weblogic Server.

Getting ready

Weblogic Domain is already created on a target server. The assumption is that the target server is already being monitored by Oracle Management Agent.

The following prerequisites need to be checked before deploying an ADP agent:

- Weblogic Server hosting ADP Manager should be up and running.
- Make sure that, in order to deploy an ADP agent, at least one ADP Manager is up and running in the active state

How to do it...

To deploy an ADP agent to a Weblogic Server, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select **Middleware** from the **Targets** menu.
- 3. Click on the **WebLogic Domain** target of interest on the **Middleware** page. demo domain is selected for demonstrating this recipe.
- 4. Select **Diagnostics** from the **WebLogic Domain** menu.





5. Click on the Setup Diagnostics Agents option to deploy agents.

ManagedServer_1 and ManagedServer_2 are selected in this example to deploy an ADP agent.

ORACLE Enterprise	Manager Cloud Control 12c										Setup - Help -	SYSMAN -	Log Out
🔏 Enterprise + 🍘 Targets + 🌟	Eavorites + 🙁 History +								3	Search Targ	st Nome 🕶		
Target Navigation	demo_domain @											🗐 nd	infra starfeet.com
Vev -	WebLogic Domain +										Page Refreshed	27-Nov-2012 23	644:24 GMT 🖒
Appkaton Deskyments WebLog: Doman Volume Administry Administry Administry ManagetServer_1 ManagetServer_2	Deploy Diagnostics Agents Croce the servers that you next to monitor for Application D a comparative Draget should already be disalyned. For examp Select Tangets Culture and Managed Servers present in current domain are la	ependency and Performance, de, to deploy an ADP agent, stad below. Select the diagno	and 3VH 0 an ADP En stics agent	Nagnostics. Yo gine should all to you want to	u need to ready be d	setup the as rokoyed. each manag	propriate agent(s ed server.) on ea	h server t	o enable the	se options. In orde	Deploy r to deploy a diagn	Cancel *
			T		En	able ADP			En	able 3/MD			
	Name	Туре	Status	Deploy	Status	Deployed Version	Version to Deploy	10 0	Status	Deployed Version	Version to Deploy		
	V /Farm02_demo_domain/demo_domain /Farm02_demo_domain/demo_domain/AdminServer	Oracle WebLogic Domain Oracle WebLogic Server		5			EMCC12-30991				6486		
	/Farm02_demo_domain/idemo_domain/ManagedServer_	1 Oracle WebLogic Server		1			EMCC12-30991	10			6486		
	/Fam02_deno_domain/deno_domain/ManagedServer_	2 Orade WebLogic Server		1			EMOC12-30991				6486		

6. Select the desired ADP Manager from the ADP Manager list under **ADP Configuration Properties**.

The **Update Remote Start configuration** option is checked in this example for both of the managed servers selected for the ADP agent installation.

Diagnostics Agent Configuration Specify configuration specific to agents	here		
ADP Configuration Properties		JVMD Configu	ration Properties
		JVMD Engine	ndvoem01.starfleet.com:3800 -
* ADP Engine	ndvoem01.starfleet.com:52099 👻	-	
Update Remote Start configuration			

7. In the **Credentials** section, provide the **Oracle WebLogic Administration Server Host Credentials** and then scroll down.

⊻ Credentials	
Oracle WebLogic Administrat	ion Server Host Credentials
Specify the login credentials for t	he host nclinfra.starfleet.com, where WebLogic administration server for the monitored domain is running
Select credential from one of the	following options.
Credential	🔘 Preferred 🔘 Named 💿 New
* UserName	adpjvmd
* Password	*****
* Confirm Password	*****
	Save As H_FARM02_DEMO_DOMAIN_OS
	Set As Preferred Credentials
	& Test



Middleware Management using OEM 12c _____

8. Provide Oracle WebLogic Domain Credentials and then scroll down in the Credentials section.

Oracle WebLogic Domain Credentials					
Specify the WebLogic credentials (like	Specify the WebLogic credentials (like those used to log into the WebLogic admin console) for the domain being monitored				
Select credential from one of the following options.					
Credential 💿	Preferred 🔘 Named 🖲 New				
* Administrator Username	weblogic				
* Administrator Password	••••				
* Confirm Administrator Password	•••••				
	Save As D_FARM02_DEMO_DOMAIN_WLS				
	Set As Preferred Credentials				
S.	Test				

9. Enter Oracle Enterprise Manager WebLogic Administration Server Host Credentials, and the Oracle Enterprise Manager WebLogic Domain Credentials.

Oracle Enterprise Manager W	ebl onic Administration S	erver Host Credentials	
Specify the login credentials for t	he host ndvoem01.starfleet.	com, where the WebLogic administration server for the	Cloud Control domain is running
Select credential from one of the	following options.		
Credential	Preferred O Named	New	
Credential Name	NC OMS HOST OEM -		
Credential Details		v 1	
Ci cuci fulla Detalla	Attribute	value	
	UserName	oraoem	
	Password		
	More Details		
Oracle Enterprise Manager W	ebLogic Domain Credent	als	
Specify WebLogic credentials (like	those used to log into the W	ebLogic admin console) for the Cloud Control domain	
Select credential from one of the	following options.		
Crodential			
Credentia	Preferred I Named	lo New	
Credential Name	NC_EMGC_OMSWLS_DOM	AIN 👻	
Credential Details	Attribute	Value	
	Administrator Username	weblogic	
	Administrator Password	******	
	More Details		

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10. Scroll up and click on **Deploy** to submit the job.



11. The status page appears with a link to the job status in the **ADP Agent Deployment** <date> format. Click on the link to check the status of the job that you have submitted.

ORACLE Enterprise Manager Cloud Control 12c				Setup - Help	• STSMAN • Log Out
🖧 Enterprise + 👩 Targets + 🌟 Eavorites + 🥝 History +				Search Target Name 👻	
Job Activity > Execution: 2 targets				Page Refreshed 29-	Nov-2012 23:57:12 GMT 🖒
Execution: 2 targets				Delete Run	Edit Vew Definition
Summary					
Status Successed Scheeked SHerr 2012 25:52:27 OHT +00:00 Ended SHerr 2012 25:52:30 OHT +00:00 Ended SHerr 2012 25:52:30 OHT +00:00 Ended SHerr 2012 25:52:00 OHT +00:00 Ended SHerr 2012 25:50 OHT +00:00 Ended SHER 2010 OHT +00:00 Ended SHERR 2010 OHT +00:00			Type AD Agen Detorment Dere 19944 Decement 20 Agen Detorment Exection ID 07 April Detorment Exection ID 07 April 2007 A270409	28448355896	Log Report
Expand Al Collapse Al					1
Name	Targets	Status	Started	Ended	Elapsed Time
V Execution: 2 targets	2	Succeeded	29-Nev-2012 23:52:29 GMT+00:00	29-Nev-2012 23:55:44 GMT+00:00	3.2 minutes
Previous					
Step: Greate Script Directory on Target	/Farn02_deno_doman/deno_domar	Succeeded	294/ov-2012 23:52:29 GMT+00:00	29-Nov-2012 23:52:30 GMT+00:00	0 seconds
Step: Copy JVMD Zp to Target	/Farm02_demo_domain/demo_domain	Succeeded	29-Nov-2012 23:52:30 GMT+00:00	29-Nev-2012 23:52:31 GMT+00:00	0 seconds
Step: Copying ADP Agent Zp	/Farm02_demo_domain/demo_domain	Succeeded	29-Nov-2012 23:52:36 GMT+00:00	29-Nov-2012 23:52:37 GMT+00:00	0 seconds
Step: Extract MTM Deploy Scripts	/Farm02_demo_domain/idemo_domain	Succeeded	29-Nov-2012 23:52:37 GMT+00:00	29-Nov-2012 23:52:38 GMT+00:00	0 seconds
Step: Create Script Directory on Target	/EMGC_GCDomain/GCDomain	Succeeded	29-Nov-2012 23:52:38 GMT+00:00	29-Nov-2012 23:52:39 GMT+00:00	0 seconds
Step: Copy JVMD Zp to Target	/BMGC_GCDomain/GCDomain	Succeeded	29-Nov-2012 23:52:39 GMT+00:00	29-10v-2012 23:52:40 GMT+00:00	0 seconds
Step: Extract MTM Deploy Scripts	/BHGC_GCDomain/GCDomain	Succeeded	29-Nev-2012 23:52:41 GMT+00:00	29-Nev-2012 23:52:41 GMT+00:00	0 seconds
Step: Checking Existence of Required Jans	/Farm02_demo_domain/idemo_domain	Succeeded	29-Nov-2012 23:52:41 GMT+00:00	29-Nov-2012 23:52:41 GMT+00:00	0 seconds
Step: Create Stage Directory For Logs	/EMGC_GCDomain/GCDomain	Succeeded	29-Nov-2012 23:52:41 GMT +00:00	29-Nov-2012 23:52-42 GMT+00:00	C como do
					V seconos

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Middleware Management using OEM 12c -

To verify the ADP agent installation, perform the following steps:

- 1. Select Middleware from the Targets menu.
- 2. Click on the **Application Dependency and Performance** option from the **Middleware** features.
- 3. Expand the folder corresponding to the ADP Manager associated with the deployed agents on the **Monitoring** tab.
- 4. In the navigation tree select the **Status** node, and click on the node without expanding it. For the servers that you deployed, please verify the **Agent Information** table.

	ORACLE Enterprise Manager Cloud Control 12c								
🐣 Enterprise 🔻 🔞 Iargets 👻 🖕 Eavorites 💌 🥝 Hist	🚓 Enterprise 🕶 🎯 Targets 🕶 👷 Eavonites 🕶 🤭 Histogry 🕶 Search Targ								
Application Dependency and Performance									
Use time frame: 1 hour • Start: 29/11/2012 23:32 B End: 30/11/2012 00:32 B End time is current system time • Monitoring Configuration V & Orade Enterprise Manager (ADPManager_EMGC) V Bill (www • Deltach									
> Applications	Server	Container Status	Agent In Synch	EJB Installed	Agent installed	Agent Activated	Agent Status	Server Type	
▷ Nesources	AdminServer	up	true	false	false	false	n/a	administration	
Status	ManagedServer_1	up	true	true	true	true	reporting 1	individual	
	ManagedServer_2	up	true	true	true	true	reporting 1	individual	
	•			III					

How it works...

This recipe describes the steps to be followed to deploy an ADP agent on the Weblogic nodes.

Deploy ADP Manager to a managed server in the Cloud Control domain as demonstrated earlier in this chapter. Then deploy the ADP agents on the production Weblogic Servers wherever you need deeper visibility into the SOA, OSB, Portal, and ADF applications.

By default, Administration Server appears deselected during the selection of the managed server to deploy an ADP agent. However, an ADP agent gets deployed to the Administration Server in addition to the selected managed servers.

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There's more...

This recipe demonstrates in detail the steps to be followed to deploy an ADP agent on the managed servers of Weblogic Domain hosted on a server other than OMS.

It is also possible to deploy the ADP agents on a Weblogic Domain that is being monitored by Management Agent in Enterprise Manager Weblogic Domain. These are referred to as ADP agents (Remote Deployment).

Deploying JVMD Agents on Weblogic Target nodes

JVMD Agents act as data collectors of the target JVM. JVMD Agents collect JVM monitoring data related to the JVM CPU usage, heap, threads, and stacks in real time, with minimal impact on the source system.

The following recipe describes the steps to be followed to install a JVMD Agent on a managed node of Weblogic Server.

Getting ready

A Weblogic domain is already created on a target server. The assumption is that the target server is already being monitored by Oracle Management Agent.

The following prerequisites need to be checked before deploying JVMD Agents:

- The Weblogic Server hosting the JVMD Agent should be up and running
- At least one JVMD Manager should be in the active state to deploy JVMD Agent

How to do it...

The following sequences help to deploy JVMD Agent on a managed server hosted on a different physical server to that of the OMS host:

- Downloading the jamagent.war file
- Deploying JVMD Agent

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Middleware Management using OEM 12c -

To download the jamagent.war file using Cloud Control, perform the following steps:

- 1. Log in to Enterprise Manager Cloud Control.
- 2. Select the Application Performance Management option from the Setup menu.
- 3. Select the **JVM Diagnostics Engine (1)** option on the **Application Performance Management Engines** page.



- 4. Click on **Configure**.
- 5. Click on the JVMs and Pools tab on the JVM Diagnostics Setup page.

ORACLE Enterprise Manager Cloud Control 12c Setur + 18b + 11 SISH			👖 SYSMAN 🗸	Log Qué 🧯			
🚯 Enterprise 🔹 🍘 Targets 🔹 🌪 Eaucrites 🔹 🥹 History 🔹	Search Target Name +			1			
JVM Diagnostics Setup		Page Reference 07-Dec-2012 00-09:11 G				19:11 GMT 🖒	
JMD Configuration JMHs and Pools Register Databases Heap L JMHs and Pools	oader						
Ven • 🔮 Create Pool 💥 Remove 🤌 Configure 📓 Detai 🛛 👲 D	ovnloads						
lane	Target Name	Туре	Status	Sumary Version	n Poll Enable	Pol Interval (E ed (ms) I	ngine D

- 6. Click on the Downloads button on the JVM Diagnostic Setup page.
- 7. Select JVMD Agent as JVMD Component.

Download JVM Diagnostics Components 🕅						
JVMD Component	JVMD Agent	•				
		OK				
		l				

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- 8. Click on OK.
- 9. Select one of the ports from the listed JVMD engines.
 - For connecting to JVMD Manager, select the non-SSL port (3800)
 - □ For securely connecting to JVMD Manager, select the SSL port (3801)



Note that if you do not want to select an existing manager, then you can select **Other** from the **Available Engines** menu and then specify the port and hostname for the agent to connect to. This is especially useful when multiple JVMD Managers are load balanced.

JVM Diagnostics Agent web.x	ml Parameters
Available Engines ndvoem01	L.starfleet.com:3800 👻
Tuning/Timeouts Paramete	rs
Connection Retry Time(secs)	90
Long Request Timeout(secs)	900
GC Wait Timeout(secs)	10
Idle Agent Timeout(secs)	1200
Target Association Paramet	ters
Weblogic Server	
Target Name	
Pool Name	
Logging Parameters	
Agent Log Level	3
Optimization Level	
Optimization Level	2
	Download Cancel

10. Click on **Download**.

The downloaded jamagent.war file can be used to deploy JVMD Agent either from the Weblogic Administration console or via a non-Weblogic Server.



Middleware Management using OEM 12c -

To deploy jamagent.war on a Weblogic Server instance, perform the following steps:

- 1. Log in to the Weblogic console where you want to deploy JVMD Agent.
- 2. Deploy the jamagent.war file to the Admin server and all managed nodes of the domain that are designated for the JVMD Agent installation.
- 3. Activate the application.

Г	Deployments							
	Insta	I Update Delete Start V Stop V	Showing 1 to 4 of 4 Previous Next					
		Name 🗞	State	Health	Туре	Deployment Order		
		H CAsera	Active	≪ ок	Enterprise Application	100		
l		🖻 🧓 demo_app	Active	🖋 ОК	Web Application	100		
		🗄 [aHttpDeployer	Active	🖋 ОК	Enterprise Application	100		
		🗄 💽 jamagent	Active	🖋 ОК	Web Application	100		
	Insta	I Update Delete Start V Stop V				Showing 1 to 4 of 4 Previous Next		

To verify the JVMD Agent installation, perform the following steps:

- 1. Select Middleware from the Targets menu.
- 2. On the Middleware page, select the domain where JVMD Agent was deployed.

You will notice that a Java Virtual Machine named <domain name>_jvmpool appears. In this example, demo_domain_jvmpool is created as the Java Virtual Machine pool. This consists of three JVMD Agents hosted on AdminServer, Managed_Server1, and Managed_Server 2. The status of the Java Virtual Machine is up, which suggests that JVMD Agents are up and running on these Weblogic instances.

ORACLE Enterprise Manager Cloud Control 12c			- 3	Setup	p + 6	jelo - 🔢 SYSMAN -	Log Out
🔩 Enterprise + 🧑 Eargets + 🌟 Eavorites + 🙁 History +		Search	Targe	t Nan	e •		+
Middleware			0	Pag	e Refri	eshed 07-Dec-2012 01	34:40 GMT C
Hiddeware Peatures •							· ·
∑ Search Find Tasse ◆ Advanced Search							
Ven + 👍 Add + 🧝 Remove 🖉 Configure							
Name	Type	Status	Sum	tiber S mary	tatus Ca	Compliance Score (*	Ni) Target Version
V j dero_donan	Orade WebLogic Domain	n/a	0	6	0	0 n/a	10.3.6.0
Administerver	Orade WebLogic Server		0	0	0	0 0,6	10.3.6.0
V 强 demo_domain_tympool	Java Virtual Machine Pool	n/a	0	3	0	0 n/a	
Admiserver_jum	Java Witual Medhine	1	0	0	0	0 n/6	1.6.0_25
KanagedServer_1_p/m	Java Virtual Machine		0	0	0	0 n/a	1.6.0_35
ManagedServer_2_jum	Java Wrtual Machine		0	0	0	0 n/is	1.4.0_35
ManagetBerver_1	Oracle WebLogic Server	*	0	0	0	0 n/8	10.3.6.0
ManagetServer_2	Oracle WebLogic Server		0	0	0	0 n.la	10.3.6.0
> HEMGC_GCDoman	Oracle Fusion Modeware Farm	n/a	0	8	0	0 n/s	10.3.5.0
> REFerm01 bifoundation domain	Oracle Fusion Middleware Farm	n/a	0	4	0	0 n/a	10.3.5.0

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How it works...

This recipe describes the steps to be followed to deploy JVMD Agent on a Weblogic node being monitored by Oracle Management Agent other than Cloud Control Agent.

JVMD Manager runs as an Enterprise JavaBeans (EJB) technology on a Weblogic Server. JVMD Agent is deployed to the managed application servers in order to collect the JVM monitoring data related to the JVM threads, sacks, heap, and CPU usage in real time. The connection between JVMD Manager and JVMD can be a secure or non-secure connection.



Note that JVMD Agent cannot be deployed on the Weblogic managed node server on which the ADP Manager application is running. It can be deployed on the OMS server, Admin server, or JVMD managed server in the Enterprise Manager domain or any other Weblogic domain.

There's more...

This recipe demonstrates the steps for downloading the jamagent.war file from the Enterprise Manager Cloud Control console, followed by deploying the JVMD Agent application war file on the Weblogic nodes being monitored by Oracle Management Agent on a different host.

The other option available for deploying JVMD Agent is using Enterprise Manager Cloud Control. In this case, JVMD Agent is deployed on a Weblogic domain that is being monitored by Management Agent in the Enterprise Manager Weblogic domain.

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8 Incident and Problem Management Using an iDevice (iPhone, iPod Touch, or iPad)

In this chapter, we will cover the following:

- ▶ Setting up OEM12c on an iDevice
- ▶ Using Incident Management from an iDevice
- Using Problem Management from an iDevice

Introduction

The Oracle Enterprise Manager Cloud Control 12c Mobile application enables the tracking and managing of incidents from an iDevice. The details of the incident and problem can be viewed, acknowledged, assigned, prioritized, escalated, and annotated. It also provides a facility to connect with My Oracle Support in order to drill down to service requests that are associated with a problem.

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Incident and Problem Management Using iDevice (iPhone, iPod Touch, or iPad) _____

The Cloud Control Mobile requirements are as follows:

- Any iDevice (iPhone, iPod touch, or iPad) that is running iOS 4.2.x or later
- 3G or Wi-Fi connection to a network having access to Oracle Enterprise Manager Cloud Control
- An Apple account to download the app from the iTunes App Store

In this chapter, we will set up and configure the OEM12c application on an iDevice, and perform Incident and Problem management using Oracle Enterprise Manager 12c (OEM 12c) Release 1 on an iPhone. All the recipes in this chapter focus on iPhone using OEM12c. Similar steps can be used on other iDevices like iPad or iPod Touch.

Setting up OEM12c on an iDevice

Oracle Enterprise Manager 12c (OEM) is a single, integrated cloud management solution for an entire enterprise. With OEM, we can manage servers, databases, listeners, middle-tier layers, and various other Oracle products.

Getting ready

The OEM12c application needs to be downloaded and configured on the iPhone.

Please ensure that the firewall rules permit access to OEM12c URL from the iPhone, and that the OEM server has access to the target databases/servers that need to be monitored via OEM 12c.

How to do it...

In order to get OEM12c working on an iPhone, the application needs to be installed and configured on the iPhone. OEM12c needs to be configured even for its usage in subsequent recipes. The steps to install and configure OEM12c are given in the following section:

1. On the iPhone, to download the OEM 12c Mobile application for an iPhone, type the following URL in Safari:

http://itunes.apple.com/us/app/oracle-enterprise-manager/ id460074921?ls=1&mt=8

2. Click on **Download** to install the application on the smart device:





- 3. It should take a few minutes to install the application, and then the application will be available on the smart device.
- 4. Start up the application, and then enter the site name; for example:

https://servername.domainname.com/em

In this example, the configuration was done to redirect the request from the iPhone to the actual underlying OEM12c URL via the IIS/Apache server; hence the port number is not specified in the URL.

5. Enter the user ID and password to access OEM installed on the server.



Chapter 8

Incident and Problem Management Using iDevice (iPhone, iPod Touch, or iPad) -

How it works...

This recipe describes the installation and configuration steps of an OEM12c application.

There's more...

Ensure that the firewall rules permit access to OEM12c URL from the iPhone.

Using Incident management on an iDevice

An **incident** is an event or a set of correlated events that represent an observed issue that requires resolution through manual or automated immediate action or root-cause problem resolution.

Examples of events are as follows:

- If the database is up or down
- Monitoring host resources via various metric alert conditions, such as CPU load, Memory, and Disk space usage.

Incident and Problem Management are key features available in OEM12c on an iPhone. For the discovered database, the incidents are visible as they occur, and the administrator can reassign the incident and change the priority of incidents. Users or other administrators can then acknowledge the incidents. The following steps explain how to use Incident Management features on an iPhone.

Getting ready

Access the OEM12c application from the device and then enter your user ID and password. Once you are logged into the OEM12c application, follow the steps given for Incident management.

How to do it...

1. Click on **All open incidents**. All open incidents will be displayed, as shown in the following screenshot:

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2. Click on any incident to view more details, as follows:

02-UK 😤	22:55	0 88 %
Incidents	Details	Actions
Summary	11	
Target is down pa03_pawan	; 1 members are dow	vn:
Category	Availability	
Reported	Sep 17, 2012 7:15:37	PM IST
Last Updated	Sep 19, 2012 4:07:44	AM IST
pa03_sys Database Syste	am	>
Tracking		New
Owne	r SYSMAN	
Priority	None	
Acknowledge	Yes 🥩	
Escalated	No	
Last Commen	t	
(Dhananjay wi	II try and fix this issu	e) SYSMAN on



Incident and Problem Management Using iDevice (iPhone, iPod Touch, or iPad) -

- 3. In the preceding screenshot, the incident is **Acknowledged** and also comments are entered so that all other members in the group can view the status of the incident.
- 4. **Incidents** can be assigned to team members. Also **Priority** can be changed for all the incidents.
- 5. Team members can enter comments and also acknowledge incidents.

How it works...

This recipe describes the incident management features of OEM12c in IPhone.

Using problem management on an iDevice

A problem represents the root cause of the incident, which needs further analysis beyond the immediate resolution of the incident. For OEM12c, problems focus on the diagnostic incidents generated by **Advanced Diagnostic Repository** (**ADR**). Because the Support Workbench problems and diagnostic incidents are propagated to the Incident Manager, you can perform additional tracking, such as viewing problems across different databases. A problem represents the root cause of all Oracle software incidents.

The steps mentioned in this recipe explain how to use problem management features on an iPhone.

Getting ready

The OEM12c application needs to be downloaded and configured on the smart device. Internet connectivity should exist on the iPhone.

How to do it...

1. Click on **All Open** incidents. All Open problems are displayed, as shown in the following screenshot:

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2. Click on any problem to view more details. In the preceding screenshot, there are **12 incidents** that are caused by the ORA 4030 error and **1 incidents** for ORA 600. Click on a problem to view more details, as shown in the following screenshot:

No Service 穼	00:24	9 39% 🗈
Incidents	Details	Actions
🔕 Summar	ſy	
Problem: ORA	4030	
ID	2891	
Problem Key	ORA 4030	
SR #	-	
Bug #	-	
Reported		
Last Updated		
m091 Database Inst	ance	>
Tracking		New
Owne	er -	
Priori	ty None	
Acknowledge	ed No	



Chapter 8

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Incident and Problem Management Using iDevice (iPhone, iPod Touch, or iPad) -

3. Click on the arrow sign to **Acknowledge** the problem or **Manage** the problem, as shown in the following screenshot:

No Service 😚	00:24	Ø 39% 🗊
	Details	Actions
🥵 Summar	у	
Problem: ORA	4030	
ID	2891	
Problem Key	ORA 4030	
SR#		
Bug #		
Reported		
	Acknowledge	
	Manage	
10w/H	11. K.	
	Cancel	
Azaninadian	10 MI2	

4. Click on Manage and then the Status, Owner, Priority, and Escalated level can be changed. The values of Status can be New, Work In Progress, or Resolved. The values of Priority can be None, Urgent, Very High, High, Medium, or Low. The Escalation level values can be None, Level 1, Level 2, Level 3, Level 4, or Level 5. Add relevant comments as appropriate:

No Service		4 38% 🗈
Cancel	Manage	Save
😢 Problem: Ol	RA 4030	
Status	New	
Owner	User1	
Priority	Urgent	
Escalated	Level 1	
Add Comn	nent	
Urgent at	tention required pls	



How it works...

This recipe describes the handling of problems via OEM 12c by acknowledging, assigning or changing the status, owner, priority, or escalation level.

There's more...

The complete functionality of the Incident Manager can be used from the Incident Manager Console of OEM12c. The navigation path is **Enterprise** | **Monitoring** | **Incident Manager**:

ORACLE Enterprise Manager Cloud Control 12c						Setup +	Help 🗸 👔	SYSMA	N +	Log Out
କ୍ଟ Enterprise → 🍥 Targets → 🧙 Eavorites → 📀 History → Incident Manager: All open incidents					Search Target Name Page Refreshed 02-Jan-2013 17:16:09 GMT					
										Views Search
Standard	Severity	Summary	Target	Priority	Status	Last Updated	Owner	Ack	Esc	Туре
My open incidents and problems		The WebLogic Server is down	/EMGC_G	None	New	14-Dec-2012 04:57:42	-	No	No	Incident
Unassigned incidents		The J2EE Application is down	/EMGC_G	None	New	14-Dec-2012 04:56:12	-	No	No	Incident
Unacknowledged incidents		The J2EE Application is down	/EMGC_G	None	New	06-Dec-2012 22:50:02	-	No	No	Incident
Escalated incidents All open incidents Unassigned problems All open problems Events without incidents										

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