Oracle® Fusion Applications

Installation Guide for Oracle VM

11*g* Release 1 (11.1.2)

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Documentation for users that describes how to install and configure Oracle Fusion Applications as an Oracle VM instance.

ORACLE®

Oracle Fusion Applications Installation Guide for Oracle VM, 11*g* Release 1 (11.1.2)

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Primary Author: Vickie Laughlin

Contributing Author: Bor-Ruey Fu

Contributing Author: Pranab Pradhan

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Preface

The Oracle Fusion Applications Oracle VM Installation Guide provides information about the installation and configuration of Oracle Fusion Applications as an Oracle VM instance.

Audience

This document is intended for users who are provisioning an Oracle Fusion Applications environment and installing product offerings for the first time. Users should be comfortable with system administration tasks such as installing Oracle Fusion Identity Management, setting up and configuring Oracle Database 11g, and applying patches on the computer where the product offerings will be installed.

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Related Documents

For more information, see the following documents:

- *Oracle Fusion Applications Installation Guide*

- *Oracle Fusion Applications Administrator and Implementor Roadmap*

- *Oracle Fusion Applications Concepts Guide*

- *Oracle Fusion Applications Administrator's Guide*

- *Oracle Application Server Administrator's Guide*

- *Oracle Fusion Applications Enterprise Deployment Guide*

- *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle Identity Management (Oracle Fusion Applications Edition)*

- *Oracle Fusion Middleware Configuration Guide for Oracle Business Intelligence Applications*

- *Oracle Database Installation Guide* for your platform

- *Oracle Fusion Applications Common Implementation Guide*

- *Oracle Fusion Applications Patching Guide*

- *Oracle VM Documentation*

Conventions

The following text conventions are used in this document:

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

1

Introduction to Oracle VM Installation

This chapter provides an introduction to the installation and configuration of Oracle Fusion Applications as an Oracle VM instance.

This chapter contains the following topics:

- Overview
- Terms and Definitions
- Oracle VM Installation Roadmap

1.1 Overview

Oracle VM provides the topology required by Oracle Fusion Applications on a virtual server. An Oracle VM template contains all of the software required to run a fully provisioned environment, including Oracle Database, Oracle Fusion Middleware, Oracle Identity Management, and Oracle Fusion Applications, all running on Oracle VM technology. The Oracle VM template is created using Oracle Fusion Applications Provisioning installers with the following product configurations:

- Oracle Fusion Customer Relationship Management (Sales and Marketing)
- Oracle Fusion Financials (Financials, Oracle Fusion Procurement, and Oracle Fusion Projects)
- Oracle Fusion Human Capital Management (Workforce Deployment, Workforce Development, and Compensation Management)
- Oracle Fusion Supply Chain Management (Product Management, Order Orchestration, Material Management and Logistics)

Table 1–1 displays a list of available templates along with their included product configurations. Each template has a fixed topology that cannot be altered.

Table 1–1   Oracle VM Templates and Product Configurations

Template Name	Included Product Configurations
FSCM+H	Oracle Fusion Financials, Oracle Fusion Supply Chain Management, and Oracle Fusion Human Capital Management
CRM	Oracle Fusion Customer Relationship Management
HCM	Oracle Fusion Human Capital Management

After you select the template that meets your needs, you complete the prerequisite steps to prepare the environment, and then you run the deployment steps to make the environment available for use. When you run the Oracle VM process, your entire

Oracle Fusion Applications environment runs on Oracle VM servers, using Hypervisor. Outside of the Hypervisor, you need a deployer host where you install and run Oracle VM Manager to create and deploy Oracle VMs on the Hypervisor servers.

1.2 Terms and Definitions

An **Oracle VM template** defines the topologies that will be deployed on Hypervisor servers along with associated artifacts, such as volumes and firewall configuration necessary to set up an Oracle Fusion Applications instance.

The enterprise deployment architectures provided by Oracle VM templates are capable of being **high availability (HA)** because each component or functional group of software components is replicated on a different computer, and configured for component-level high availability. You choose whether you want HA or not during the creation of the Oracle VM instance.

The **reference environment** is the environment delivered in the Oracle VM template.

The **target database** is an existing database located on a physical machine, where Oracle VM Manager restores the Recovery Manager backup that is delivered as part of the Oracle VM template.

Deployment is the process that is triggered on the deployer host when the user invokes the `faovmdeploy.sh createTopology` command. During the process of deployment the Oracle VM servers that are part of the topology are created from the Oracle VM template and are started.

Rehydration is the process that runs during the initial boot phase of Oracle VM deployment and performs additional reconfiguration steps that are specific to each Oracle VM.

1.3 Oracle VM Installation Roadmap

Table 1–2 lists the high-level tasks included in the end-to-end Oracle VM Installation flow.

Table 1–2   Oracle VM Installation Flow

Task	Description	Documentation
Select the appropriate template	Review the Oracle Fusion Applications product offerings included in each template	"Selecting Product Offerings" in *Oracle Fusion Applications Installation Guide*
Complete prerequisites	To install an Oracle VM environment, you must complete prerequisite steps to ensure that your system meets certain requirements and is configured properly	Chapter 2, "Prerequisites for Oracle VM Deployment"
Prepare deployment properties	Modify the properties file for the topology you are deploying.	Section 3.1, "Prepare Deployment Properties"
Run deployment	Create the Oracle Fusion Applications topology, including Oracle Identity Management, onto the Oracle VMs.	Section 3.2, "Run Deployment"
Post-rehydration	Perform post-rehydration steps	Section 3.3, "Post-Rehydration Steps"

Table 1–2   (Cont.) Oracle VM Installation Flow

Task	Description	Documentation
Scale out nodes	Scale out the Oracle HTTP Server (OHS) and Primary nodes	Section 3.4.1, "Scale Out the OHS Node", Section 3.4.2, "Scale Out the Primary Node"
Remove a deployed topology	Remove a previously created topology, as needed	Section 3.4.3, "Remove a Deployed Topology (Optional)"
Rerun a deployment	Reset a database so a deployment can be rerun.	Section 3.4.5, "Rerun a Deployment (Optional)"

2

Prerequisites for Oracle VM Deployment

This chapter describes the prerequisites for the deployment of Oracle VM templates.

This chapter contains the following topics:

- Oracle VM Servers and Virtual IP Addresses
- Allocate a Deployer Host
- Set the Privilege Escalation Mechanism
- Install Oracle VM Manager
- Provide Access to NetApp or Sun Storage Server
- Allocate BIG IP End Points
- Create a Database
- Prepare an Oracle Enterprise Manager Instance
- Configure Standalone Oracle Identity Management
- Confirm the Oracle Virtual Assembly Builder Home is Accessible
- Register Templates with Oracle VM Manager
- Install the Oracle VM Automation Utility

2.1 Oracle VM Servers and Virtual IP Addresses

The High Availability (HA) topologies require creation of the following Oracle VMs by default. You must have one or more Oracle VM servers that can host the following Oracle VMs.

- Node 1: (FA) Contains Administration Servers from all of the Oracle Fusion Applications domains.
- Node 2: (Primary) Contains all Managed Servers from Oracle Fusion Applications domains that need scale out.
- Node 3: (Secondary) Contains the remaining Managed Servers from Oracle Fusion Applications domains.
- Node 4: Contains the Oracle Business Intelligence domain.
- Node 5: Contains the base Oracle HTTP Server (OHS) instance.
- Node 6: Contains the High Availability OHS instance and is optional.
- Node 7: Contains the primary Managed Servers and is a replica of Node 2. This node is optional.

- Node 8: Contains the secondary Managed Servers and is a replica of Node 3. This node is optional.

- Node 9: Contains the WebChat and Beehive instance. This is required only for topologies that support WebChat.

- Node 10: Contains the standalone Oracle Identity Management.

Ensure that you allocate virtual host names and virtual IP addresses (static IPs) for each of these nodes. The DNS server used in the subnet where the Hypervisors and Oracle VMs reside must resolve the virtual host names and virtual IP addresses. During deployment you specify the values of virtual host names and virtual IP addresses in deployment properties. For more information, see Section 3.1, "Prepare Deployment Properties".

Table 2–1 displays suggested values for memory and number of virtual CPUs (vCPUs) for each topology.

Table 2–1   Suggested Memory and Number of vCPUs

Node Type/Topology	FSCM+H HA	CRM HA	HCM HA
Node 1 - FA	20G 6vCPU	17G 4vCPU	15G 4vCPU
Node 2 - Primary	20G 12vCPU	5G 4vCPU	8G 4vCPU
Node 3 - Secondary	50G 24vCPU	50G 24vCPU	38G 24vCPU
Node 4 - BI	6G 4vCPU	6G 4vCPU	6G 4vCPU
Node 5 - OHS	1G 2vCPU	1G 2vCPU	1G 2vCPU
Node 9 - WebChat	Not applicable	5G 4vCPU	Not applicable
Node 10 - Single Tenant IDM	16G 4vCPU	16G 4vCPU	16G 4vCPU

The memory settings provided should be seen as a minimum number to successfully complete deployment and rehydration. Both the memory number and the number of vCPUs on an Oracle VM may be changed during deployment, according to requirements based on a formal sizing exercise.

At the end of deployment, the Administration Servers on the Node 1 are shut down and the memory allocated to this Oracle VM is reduced to only 1.5GB after rehydration completes successfully. The memory is returned to the pool. This behavior is controlled by the following deployment properties.

```
faovm.ha.adminserver.shutdown=true
faovm.ha.fa.post.rehydrate.memory=1536
```

If you do not want this to happen, you may modify the properties as follows. For information about how to modify these properties, see Section 3.1, "Prepare Deployment Properties".

```
faovm.ha.adminserver.shutdown=false
faovm.ha.fa.post.rehydrate.memory=value_in_MB
```

If you set the property, `faovm.ha.adminserver.shutdown=false`, the Administration Servers stay up and the memory is not changed. If you leave this property set to `true` but increase the `post.rehydrate.memory` from `1536`, then you are specifying the quantity of memory allocated to the Oracle VM after shutting down the servers.

If you leave the settings at their original values, `true` and `1536`, in order to get enough memory returned to the Oracle VM in order to start the Administration Servers, you need to perform the following on the Oracle VM:

```
login as root
echo 30000MB > /proc/xen/balloon
```

After this step, you can start the Administration Servers. Note that when you use the previous method to increase the memory of the Oracle VM, you can only increase the memory up to the value that was initially allocated for the Oracle VM during rehydration.

2.2 Allocate a Deployer Host

Allocate one host, which can be a smaller machine, as a deployer host. You can use this host to run Oracle VM Manager, mount the Oracle Virtual Assembly Builder home with the templates, and run the deployment. The deployment uses network and disk resources, so two vCPUs and 4GB of RAM is sufficient.

Do not use one of your Oracle VM servers (Hypervisors) as the deployer host because Hypervisors are not suited for heavy I/O processing and may lock up.

2.3 Set the Privilege Escalation Mechanism

Certain operations that run from the deployer host require root privilege. There are four deployment properties that control how root privileges are obtained, as shown in the following examples. Note that lines beginning with a '#' are comments.

```
# Deploy-only privilege escalation properties, supported methods: run_as_root,
sudo, pbrun
faovm.privilege.escalation.method=run_as_root

# If escalating via run_as_root, path to properly configured run_as_root binary
relative to deployfw
faovm.privilege.escalation.run_as_root.path=bin/run_as_root

#faovm.privilege.escalation.run_as_root.path=/usr/local/packages/aime/ias/run_as_
root
# If escalating via sudo, path to sudo binary
faovm.privilege.escalation.sudo.path=/usr/bin/sudo

# If escalating via pbrun, path to pbrun binary
faovm.privilege.escalation.pbrun.path=/path/to/pbrun
```

The property, `faovm.privilege.escalation.method`, takes a value of `run_as_root`, `sudo`, or `pbrun`, as the method to obtain root privilege. The corresponding properties, `faovm.privilege.escalation.x.path` where x is `run_as_root`, `sudo` or `pbrun`, specify where the corresponding root privilege utility is located.

The property, `faovm.privilege.escalation.run_as_root.path` specifies where the `run_as_root` utility is located. The Oracle VM Automation Utility, described in Section 2.12, "Install the Oracle VM Automation Utility", includes the `run_as_root` utility in the `FAOVM/deokitfw/bin` directory. You can prepare the `FAOVM/deployfw/bin/run_as_root` utility by following these steps before starting the deployment:

1. Become the root user on the deployer host.

2. Run these commands:

```
chown root deployfw/bin/run_as_root
chmod u+s deployfw/bin/run_as_root
```

If the NFS-provided `/usr/local/packages` utility is available, then you can use it instead of using the `FAOVM/deployfw/bin/run_as_root` utility. This can be achieved by:

1. Comment out this line: `#faovm.privilege.escalation.run_as_root.path=bin/run_as_root`

2. Remove the comment from this line: `faovm.privilege.escalation.run_as_root.path=/usr/local/packages/aime/ias/run_as_root`

If you want to use `sudo` or `pbrun` instead, then set the `faovm.privilege.escalation.method` property to `sudo` or `pbrun`, and update the location of the utilities as shown in the following example:

```
# If escalating via sudo, path to sudo binary
faovm.privilege.escalation.sudo.path=/usr/bin/sudo

# If escalating via pbrun, path to pbrun binary
faovm.privilege.escalation.pbrun.path=/path/to/pbrun
```

2.4 Install Oracle VM Manager

Oracle VM Manager orchestrates the deployment. Follow the steps in the *Oracle VM Manager Installation Guide* to install Oracle VM Manager on your deployer host.

```
http://download.oracle.com/docs/cd/E15458_01/doc.22/e15439/toc.htm
```

After you install Oracle VM Manager, register your Oracle VM server pools with the Oracle VM Manager. For more information, see Section 2.11, "Register Templates with Oracle VM Manager".

2.5 Provide Access to NetApp or Sun Storage Server

Access to a NetApp or a Sun storage server is required so that Oracle Fusion Applications Oracle VM automation can create volumes required for deployment. For each deployment instance, the following volumes are created on the storage server during the deployment process if you are using NetApp or Sun Storage Server. If you are using generic Network File System (NFS), then the following volumes must be created and must exist before the deployment process begins. During deployment, the file volumes are mounted in the respective Oracle VMs. To configure the storage server, refer to step 5 of Section 3.1, "Prepare Deployment Properties".

- Volume 1: Shared by Nodes 1 through 4 (120GB)

- Volume 2: Used by the OHS nodes (12GB)

- Volume 3: Used by the WebChat nodes and is optional (12GB)

- Volume 4: Used by the single-tenant IDM node (50GB)

The volume sizes specified are based on the assumption that Volume 1 consumes approximately 90GB after rehydration and that OHS and WebChat use approximately 8GB. These volume sizes can be adjusted during deployment.

2.6 Allocate BIG IP End Points

Allocate BIG IP end points, both external and internal, for the Oracle VM topology deployment. Table 2–2 and Table 2–3 illustrate examples of BIG IP end points and their mappings to OHS virtual host end points. Replace *OHS_VM_IP_ADDR* with the IP address of your OHS Oracle VM. The port values for internal end points and the mapped OHS virtual host end points, both internal and external, are fixed and should have the exact values listed. Note that not all end points may be required for all topologies. For example, the end point for ICDomain is not required for any of the published topologies, but Oracle reserves these ports for future use.

Table 2–2   Internal BIG IP End Points (HTTP - Non-SSL)

Domain	Internal End Point (host:port)	Mapped to OHS Virtual Host End Point (host:port)
CommonDomain	gsi-elha-fs-int.us.oracle.com:10613	*OHS_VM_IP_ADDR*:10613
HCMDomain	gsi-elha-hcm-int.us.oracle.com:10619	*OHS_VM_IP_ADDR*:10619
CRMDomain	gsi-elha-crm-int.us.oracle.com:10615	*OHS_VM_IP_ADDR*:10615
FinancialDomain	gsi-elha-fin-int.us.oracle.com:10603	*OHS_VM_IP_ADDR*:10603
ProjectsDomain	gsi-elha-prj-int.us.oracle.com:10605	*OHS_VM_IP_ADDR*:10605
ProcurementDomain	gsi-elha-prc-int.us.oracle.com:10607	*OHS_VM_IP_ADDR*:10607
ProcurementDomain (Supplier Portal)	gsi-elha-prc-sp-int.us.oracle.com:10609	*OHS_VM_IP_ADDR*:10609
SCMDomain	gsi-elha-scm-int.us.oracle.com:10617	*OHS_VM_IP_ADDR*:10617
BIDomain	gsi-elha-bi-int.us.oracle.com:10621	*OHS_VM_IP_ADDR*:10621
ICDomain	gsi-elha-ic-int.us.oracle.com:10611	*OHS_VM_IP_ADDR*:10611

Table 2–3   External BIG IP End Points (HTTPS - SSL enabled)

Domain	External End Point (host:port)	Mapped to OHS Virtual Host End Point (host:port)
CommonDomain	gsi-elha-fs-ext.us.oracle.com:10614	*OHS_VM_IP_ADDR*:10614
HCMDomain	gsi-elha-hcm-ext.us.oracle.com:10620	*OHS_VM_IP_ADDR*:10620
CRMDomain	gsi-elha-crm-ext.us.oracle.com:10616	*OHS_VM_IP_ADDR*:10616
FinancialDomain	gsi-elha-fin-ext.us.oracle.com:10604	*OHS_VM_IP_ADDR*:10604
ProjectsDomain	gsi-elha-prj-ext.us.oracle.com:10606	*OHS_VM_IP_ADDR*:10606
ProcurementDomain	gsi-elha-prc-ext.us.oracle.com:10608	*OHS_VM_IP_ADDR*:10608
ProcurementDomain (Supplier Portal)	gsi-elha-prc-sp-ext.us.oracle.com:10610	*OHS_VM_IP_ADDR*:10610
SCMDomain	gsi-elha-scm-ext.us.oracle.com:10618	*OHS_VM_IP_ADDR*:10618
BIDomain	gsi-elha-bi-ext.us.oracle.com:10622	*OHS_VM_IP_ADDR*:10622
ICDomain	gsi-elha-ic-ext.us.oracle.com:10612	*OHS_VM_IP_ADDR*:10612

2.7 Create a Database

The Oracle Fusion Applications database that is delivered as part of the Oracle VM template was created by an RMAN backup. The Oracle VM process restores this backup to an already existing database, called the target database. The target database

can be either a two-node Oracle RAC or a single instance database and must be on a physical machine, not an Oracle VM.

Review these sections to prepare your database:

- Configure spfile On The Database
- Set Up an Oracle Real Application Clusters (RAC) Database
- Set Up a Single Instance Database

2.7.1 Configure spfile On The Database

The RMAN restore procedure relies on the target database being configured with an spfile. Follow these steps to add an spfile to the database:

1. Log in as the sys user.

2. Run this command:

```
create spfile from pfile = 'ORACLE_HOME/dbs/initORACLE_SID.ora';
```

If an spfile does not exist for the target database before running RMAN restore, an error occurs, related to not being unable to find /dbs/spfile.

2.7.2 Set Up an Oracle Real Application Clusters (RAC) Database

This section describes the setup for a two-node Oracle RAC database for Oracle VM deployment. Refer to Section 2.7.3, "Set Up a Single Instance Database" for the setup of a single instance database.

2.7.2.1 Database Parameters

Table 2–4 describes the recommended database parameters that should be set prior to database cloning.

Table 2–4   Recommended Database Parameters for Oracle 11.2.0.2

Parameter	Recommended Value for Starter	Recommended Value for Production
_fix_control	6708183:ON	6708183:ON
_b_tree_bitmap_plans	FALSE	FALSE
audit_trail	NONE	NONE
nls_sort	BINARY	BINARY
open_cursors	500	500
pga_aggregate_target	4GB	8GB
plsql_code_type	NATIVE	NATIVE
processes	5000	5000
session_cached_cursors	500	500
sga_target	9GB	18GB
undo	12GB	12GB
temp	9GB	9GB
redo	3 groups;each 2GB	3 groups;each 2GB

When changing Oracle RAC database parameters to conform with Performance, Scalability and Reliability (PSR) requirements, use and update the `spfile` in Oracle Automatic Storage Management. Do not save the parameters to a local `spfile`. The Oracle VM database restore process uses and updates only the Oracle Automatic Storage Management `spfile`. Oracle VM assumes that the location of the Oracle Automatic Storage Management `spfile` is:

```
spfile='+DATADISCGROUP/RACDBNAME/spfileRACDBNAME.ora'
```

For example:

```
spfile='+DATA_SLCC10/dbm/spfiledbm.ora'
```

In this example, `DATA_SLCC10` is the Data Disc Group name and `dbm` is the Oracle RAC database name.

2.7.2.2 Collect Oracle RAC Database Information

Collect the following information about your Oracle RAC database, which is required when you specify input property values in the `deploy.properties` file prior to deployment:

- Oracle RAC service name

- Physical host names for the two-node Oracle RAC database

- SID values for the two-node Oracle RAC database

- Listener port for the two-node Oracle RAC database, where the ports must be the same on each instance

- Oracle home

- Operating system user credentials that own the Oracle RAC instance, generally for the `oracle` user

- SYS schema credentials

- Oracle Automatic Storage Management DATA disc and REDO disc names

- Path to the folders where datafiles, temporary files and redo logs will be restored. You may want to query the Oracle RACs Oracle Automatic Storage Management to get these values.

- Path to the `spfile` in Oracle Automatic Storage Management.

2.7.2.3 Specify a Stage Location

Specify a stage location that is not in the Oracle Automatic Storage Management, to which the contents of the Recovery Manager (RMAN) database backup `tar.gz` file can be unpacked in preparation for the RMAN restore. The deployment process will restore the RMAN backup of the reference environment database to the target Oracle RAC database using the first node of the two-node Oracle RAC.

2.7.3 Set Up a Single Instance Database

Restoring to a single instance database is similar to restoring to a Oracle RAC database, with the following exceptions:

- Set the `faovm.ha.fusiondb.new.is.rac` property to false. Leave the `faovm.ha.fusiondb.src.is.rac` property to true.

- If the single instance database (SIDB) is not configured to use Oracle Automatic Storage Management, then you must provide database data file paths to these properties: `faovm.ha.fusiondb.new.datafile.path`, `faovm.ha.fusiondb.new.tempfile.path`, and `faovm.ha.fusiondb.new.recolog.path`. These must be set to the absolute path of the folder where the target database stores `data`/`temp` files.

   Run `show parameter control_files;` in SQL*Plus before cloning, to find this path.

- Leave the properties for Oracle RAC, `faovm.ha.fusiondb.clone.spfile`, `faovm.ha.fusiondb.clone.datadisc`, and `faovm.ha.fusiondb.clone.recodisc` as they are, but do not leave them empty.

- Set the service name to be the same as the SID.

- If the single instance database is configured to use Oracle Automatic Storage Management, the following properties should be filled with the correct Oracle Automatic Storage Management disc group names: `faovm.ha.fusiondb.new.datafile.path`, `faovm.ha.fusiondb.newtempfile.path`, `faovm.ha.fusiondb.new.recolog.path`, `faovm.ha.fusiondb.new.spfile`, `fusiondb.new.datadisc`, and `fusiondb.new.recodisc`. You may want to query the Oracle Automatic Storage Management to get these values.

- Set the listener port in `fusiondb.new.port`.

2.7.4 Change the Paths for DBA Directories

To create an Oracle Fusion Applications database, several DBA directories must be set accordingly and manually created on the file system. The paths of the DBA directories are defined in the deployment properties file using the following properties. For more information, see Section 3.1, "Prepare Deployment Properties".

```
# dba_directories configuration (can add as many as needed)
faovm.ha.fusiondb.new.oracle.base=/u01/app/oracle/product/11.2.0_CHANGEME
faovm.ha.fusiondb.new.dba.dir.name0=APPLCP_FILE_DIR
faovm.ha.fusiondb.new.dba.dir.path0=${fusiondb.new.oracle.home}/incident_logs
faovm.ha.fusiondb.new.dba.dir.name1=APPLLOG_DIR
faovm.ha.fusiondb.new.dba.dir.path1=${fusiondb.new.oracle.home}/appllog_dir
faovm.ha.fusiondb.new.dba.dir.name2=ADMIN_DIR
faovm.ha.fusiondb.new.dba.dir.path2=${fusiondb.new.oracle.home}/rdbms/admin
faovm.ha.fusiondb.new.dba.dir.name3=EQ_CONFIG_DIR
faovm.ha.fusiondb.new.dba.dir.path3=${fusiondb.new.oracle.home}/search/webapp/conf
ig
faovm.ha.fusiondb.new.dba.dir.name4=XMLDIR
faovm.ha.fusiondb.new.dba.dir.path4=${fusiondb.new.oracle.home}/rdbms/xml
faovm.ha.fusiondb.new.dba.dir.name5=EQ_LANG_DIR
faovm.ha.fusiondb.new.dba.dir.path5=${fusiondb.new.oracle.home}/search/data/langua
ge
faovm.ha.fusiondb.new.dba.dir.name6=ORACLE_OCM_CONFIG_DIR
faovm.ha.fusiondb.new.dba.dir.path6=${fusiondb.new.oracle.home}/ccr/state
faovm.ha.fusiondb.new.dba.dir.name7=DATA_PUMP_DIR
faovm.ha.fusiondb.new.dba.dir.path7=${fusiondb.new.oracle.base}/admin/${fusiondb.n
ew.service.name}/dpdump
faovm.ha.fusiondb.new.dba.dir.name8=EQ_CACHE_DIR

faovm.ha.fusiondb.new.dba.dir.path8=${fusiondb.new.oracle.base}/oradata/${fusiondb
.new.service.name}/cache
```

If you do not change these properties in the deployment property file, then manually create the following directories on the database server where `ORACLE_HOME` is the Oracle Database home directory.

```
/u01/app/oracle/product/11.2.0_CHANGEME
ORACLE_HOME/incident_logs
ORACLE_HOME/appllog_dir
ORACLE_HOME/rdbms/admi
ORACLE_HOME/search/webapp/config
ORACLE_HOME/rdbms/xml
ORACLE_HOME/search/data/language
ORACLE_HOME/ccr/state
ORACLE_HOME/admin/fusion_apps_database_service_name/dpdump
ORACLE_HOME/oradata/fusion_apps_database_service_name/cache
```

2.8 Prepare an Oracle Enterprise Manager Instance

The Oracle VM deployment process installs an Oracle Enterprise Manager agent into each of the Oracle VMs in the topology. You must prepare either an Oracle Enterprise Manager 11*g* Grid Control (Grid Control) instance or an Oracle Enterprise Manager 12c Cloud Control instance (Cloud Control) for the wiring of these agents.

2.8.1 Install Oracle Enterprise Manager 12*c* Cloud Control

Perform the following steps to prepare a Cloud Control instance.

1. Refer to the *Oracle Enterprise Manager Cloud Control Basic Installation Guide* to install this product.

2. Download and deploy the Oracle Fusion Applications plug-in in your Cloud Control. This is required for the discovery of the deployed Oracle Fusion Applications OVM topology into Cloud Control. For more information, follow the steps in "Deploying and Updating Plug-ins" in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

3. Ensure that you can deploy the Java VM Diagnostics (JVMD) Manager on your Oracle Enterprise Manager 12c Oracle Management Service. This is required for the JVMD agent deployment that occurs as part of the Oracle Fusion Applications Oracle VM rehydration. For more information, see "Installing JVM Diagnostics" in the *Oracle Enterprise Manager Cloud Control Basic Installation Guide*.

4. Apply patch 13258023 for the Oracle Fusion Applications discovery to occur during the Oracle Fusion Applications Oracle VM rehydration process. Follow the steps in the patch README file to patch your Oracle Management Service.

2.8.2 Install Oracle Enterprise Manager 11*g* Grid Control

Perform the following steps to prepare a Grid Control instance.

1. Refer to the *Oracle Enterprise Manager Grid Control Basic Installation Guide* and *Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide* to install this product.

2. Apply the following patches to your Oracle Management Service:

    - 11696545 - DELETION SLOW FOR WEBLOGIC DOMAIN WITH 1500-2000 CHILD TARGETS

    - 11725426 - MERGE LABEL REQUEST ON TOP OF 11.1.0.1.0 FOR BUGS 10337519

- 11679645 - DB WAIT LINK IS NOT ACTIVE

- 9901141 - MERGE LABEL REQUEST ON TOP OF 11.1.0.1 FOR MIDDLEWARE MANAGEMENT BUNDLE (OMS)

- 9730644 - START SCRIPT NOT BEING SET FROM COHERENCE DP

- 10037764 - MERGE LABEL REQUEST ON TOP OF 11.1.0.1.0 FOR BUGS 9562052,9698650,..

- 10037757 - MERGE LABEL REQUEST ON TOP OF 11.1.0.1.0 FOR BUGS 9535273,9677944, ...

- 10037751 - MERGE LABEL REQUEST ON TOP OF 11.1.0.1.0 FOR BUGS 9553992, 9562036,...

- 9367763 - LDAP SHOULD HONOR ORA_LDAP_MESGDIR ENV VARIABLE

- 9207217 - SMPSSE: MDS SCHEMA CREATION FAILS IF NO PUBLIC GRANT ON DBMS_LOB

3. After you apply the patches, review the patch README files to determine whether you need to perform any postinstallation tasks.

   Note that the README for patch 11679645 also contains instructions for deploying Java VM Diagnostics (JVMD) to your Grid Control. Follow the steps documented in the README to ensure that the JVMD configuration is also performed in your Grid Control.

   To determine whether these patches are applied, run the `opatch lsinventory` command:

   ```
   cd <oms11g home>/OPatch
   ./opatch lsinventory
   ```

2.9 Configure Standalone Oracle Identity Management

If you use the single-tenant or standalone templates, a standalone 11g Oracle Identity Management Oracle VM is rehydrated as part of the deployment process. This Oracle VM can be deployed in one of two ways: using a single host or using three hosts.

2.9.1 Single-Host Standalone Oracle Identity Management

When using single-tenant templates, the default in the properties file is to implement a single host IDM. This is specified by the `idm1` at the beginning of the property:

```
faovm.topo.ovms=idm1,ohs,fa,secondary,primary,bi,webchat
```

In this scenario, the following properties must all reference the same host name:

```
faovm.ha.HOST_IDMDB=server01.oracle.com_CHANGEME
faovm.ha.HOST_LDAP=${HOST_IDMDB}
faovm.ha.HOST_PSTORE=${HOST_LDAP}
faovm.ha.HOST_OIM=${HOST_LDAP}
faovm.ha.HOST_OAM=${HOST_LDAP}
faovm.ha.HOST_WEBGATE=${HOST_IDMDB}
```

Properties beginning with the prefix `faovm.ha.idm1.*` need to be configured. Properties beginning with `faovm.ha.idm3.*` can be ignored.

2.9.2 Three-Host Standalone Oracle Identity Management

When using single-tenant templates, you have the option of deploying the IDM in an EDG-compliant three host configuration where the IDM is split as follows:

- Host 1: OID DB, OIM DB, OID

- Host 2: OIM

- Host 3: AuthOHS

These components cannot be rearranged. To tell the deployer to create these three hosts, the `faovm.topo.ovms` property must look like this:

```
foavm.topo.ovms=idm3db,idm3mw,idm3ohs,fa,secondary,primary,bi,webchat
```

In this scenario, the following properties must be set as follows:

```
faovm.ha.HOST_IDMDB=idm3db_hostname
faovm.ha.HOST_LDAP=${HOST_IDMDB}
faovm.ha.HOST_PSTORE=${HOST_IDMDB}
faovm.ha.HOST_OIM=idm3mw_hostname
faovm.ha.HOST_OAM=${HOST_OIM}
faovm.ha.HOST_WEBGATE=idm3ohs_hostname
```

Properties beginning with the prefix `faovm.ha.idm3.*` need to be configured. Properties beginning with `faovm.ha.idm1.*` can be ignored.

2.9.3 Non-Oracle Fusion Customer Relationship Management Topology

If you use an Oracle VM template that does not contain Oracle Fusion Customer Relationship Management, then do not include `webchat` in the `faovm.topo.ovms` property. If WebChat is enabled in a single-instance IDM non-Oracle Fusion Customer Relationship Management topology, users are redirected to the OAM Logon page after any cursor movement in the Manage User page of the Function Setup Manager application.

To prevent WebChat from being deployed in a single-instance IDM non-Oracle Fusion Customer Relationship Management topology, make sure the following line in the deployment property file does not contain `webchat`:

```
faovm.topo.ovms=idm1,ohs,fa,secondary,primary,bi (if 1-host standalone IDM)
foavm.topo.ovms=idm3db,idm3mw,idm3ohs,fa,secondary,primary,bi (if 3-host
standalone IDM)
```

2.10 Confirm the Oracle Virtual Assembly Builder Home is Accessible

Confirm that the Oracle Virtual Assembly Builder software, `OVAB_HOME`, is accessible from the deployer host. Table 2–5 describes the file location.

Table 2–5   Home Directories

Home Directory	Description	Variable Representation
Oracle Virtual Assembly Builder Home	This directory is the top-level directory for the Oracle Virtual Assembly Builder that contains all of the software needed to deploy Oracle Fusion Applications as an Oracle VM instance.	OVAB_HOME
Oracle VM Automation Utility	This directory is the top-level directory where you install the Oracle VM Automation Utility, as described in Section 2.12, "Install the Oracle VM Automation Utility". Confirm that this directory is accessible from the deployer host.	FAOVM

2.11 Register Templates with Oracle VM Manager

Follow these one-time setup steps to register the topology templates in the appropriate server pools in Oracle VM Manager.

1. Determine template paths for each node (ohs, fa, bi, webchat) inside the Oracle Virtual Assembly Builder catalog:

   a. `setenv ORACLE_HOME OAVB_HOME`

   b. `setenv AB_INSTANCE $ORACLE_HOME/ab_instance`

   c. `setenv JAVA_HOME $ORACLE_HOME/`jre (or to a valid JDK 1.6 location)

   d. `cd $AB_INSTANCE/bin`

   e. Run the following command to print information about the following assemblies: `component_wls_fa` (for the `FA` node), `component_wls_bi` (for the `BI` node), `composite_ohs` (for the `OHS` node), and `wls_webchat` (for the `WebChat` node, if applicable.)

   ```
   ./abctl edit <<!
   ? open component_wls_fs
   ? print
   !
   ```

   The output of this command contains the location of the template `*.img` and `*.cfg` files inside the catalog for the respective assembly. For example:

   ```
   template UCMCluster /ovab/small_20110510/ab_instance/catalog/shared/cid_
   8B6Qd53dUBj2PE3/templates/tid_m1K0GgbdUBj2PE3/templateFiles
   ```

   There may be multiple template entries in the output but all of them contain the same directory path for a given assembly. Under the directory there are multiple `*.img` files and one `vm.cfg` file. Usually there are `System.img`, `AB.img` and `vm.cfg` files.

   Repeat this step to locate the template directories for Oracle Business Intelligence, OHS, and WebChat by using assembly names `component_wls_bi`, `composite_ohs`, `component_wls_webchat`, respectively, in the `abctl edit` command. Note that for OHS there is an additional `ORACLE_INSTANCE.img` file, which you must also copy.

2. Log in to each of your Oracle VM servers and create directories for the fa, bi, ohs, and webchat templates under `/OVS/seed_pool`. An example for FSCMH V1 MT templates from 20111013 follows:

   ```
   cd /OVS/seed_pool
   mkdir ha-fscmh-v1-mt_20111013_ohs (for ohs)
   mkdir ha-fscmh-v1-mt_20111013_fa (for fa)
   mkdir ha-fscmh-v1-mt_20111013_bi (for bi)
   mkdir ha-fscmh-v1-mt_20111013_webchat (for webchat)
   - Cl.
   ```

   Copy the `*.img` files and `vm.cfg` file, which are located inside the catalog, for OHS, FA and BI into the directories you just created, making sure to copy the correct `.img` file for the given node type, such as `bi`. If the wrong `.img` files are copied, rehydration will fail.

3. Log in to Oracle VM Manager for example, `http://server01.com:8888/OVS`. Go to **Resources**, then **Import**, and choose **Select from Server Pool (Discover and register)** to register the templates in Oracle VM manager.

Now the templates are registered in Oracle VM Manager and they correspond to the latest packaged bits stored in your OVAB home.

Register the IDM Oracle VM template in Oracle VM Manager. The IDM template's `System.img` file and `vm.cfg` files are located under the *OVAB_HOME*/`idm` directory. When copying the IDM template files to the Hypervisor's `/OVS/seed_pool,` ensure that they are renamed to `System.img` and `vm.cfg`.

2.12 Install the Oracle VM Automation Utility

Perform the following steps to install the Oracle VM Automation Utility on your deployer host.

1. Create a `faovm` directory, for example, `mkdir /scratch/faovm`.

2. Copy *OVAB_HOME*/`faovm/oracle-ovmautomation-all.zip` to `/scratch/faovm` and unzip.

3. `setenv FAOVM /scratch/faovm`

Proceed to Chapter 3, "Deployment of Oracle VM Templates".

3

Deployment of Oracle VM Templates

This chapter describes the steps for the deployment of Oracle VM templates.

This chapter contains the following topics:

- Prepare Deployment Properties
- Run Deployment
- Post-Rehydration Steps
- Other Oracle VM Life Cycle Management Tasks
- Troubleshooting Oracle VM Deployment

3.1 Prepare Deployment Properties

From the `FAS/deployfw/deployprops` directory created in Section 2.12, "Install the Oracle VM Automation Utility", copy the ovm-*crm*|*fscmh*|*hcm*-deploy.properties file to the `ova-ha-deploy.properties` file, depending on which topology you are deploying. This file contains the input properties for the deployment instance that are required for creating a topology from the templates. The properties file should be modified as described in the following steps. Each step includes an example of the file properties to be modified.

1. Update the following properties to specify your Oracle VM Manager connection information and the default pool name.

   ```
   faovm.ovmm.host=server01.com
   faovm.ovmm.port=8888
   faovm.ovmm.secure.port=8889
   faovm.ovmm.use.secure=false
   faovm.ovmm.username=admin
   faovm.ovmm.password=Welcome1
   ```

2. Update the following properties to specify the Oracle Enterprise Manager 11*g* Grid Control (Grid Control) information for the wiring for the Oracle Enterprise Manager agents inside the Oracle VMs.

   ```
   faovm.emagent.oms.host=server01.com
   faovm.emagent.oms.ports=4889
   faovm.emagent.agent.password=Welcome1
   ```

3. Update the following properties to specify your Grid Control Oracle Management Server (OMS) Repository information.

   ```
   faovm.oms.url=http://server01.com:4889/em/
   faovm.oms.user=sysman
   ```

```
faovm.oms.password=Welcome1
faovm.oms.db.host=server01.com
faovm.oms.db.port=1521
faovm.oms.db.service.name=emdb.us.oracle.com
```

4. Update the following JVM Diagnostics properties to specify your Grid Control OMS.

```
faovm.jvmd.host=server01.com
faovm.jvmd.port=3600
```

5. Update the following properties to point to your storage server. Use `faovm.storage.type` to indicate the type of storage that you will use, for example, `netapp`, `sun` or `genericnfs`, and specify the properties for that storage type in subsequent sections.

```
# Storage-related properties, supported types: netapp, sun, genericnfs
faovm.storage.type=netapp

# location where the shared storage is mounted on the reference system (DO NOT
CHANGE)
faovm.storage.mount=/u01
# location to mount the deploy shared storage on deployer and VMs (MAY BE
CHANGED)
faovm.storage.physical.mount=/u1234

# Netapp Storage properties
faovm.storage.netapp.host=server01
faovm.storage.netapp.username=fusionst
faovm.storage.netapp.password=CHANGEME
faovm.storage.netapp.containing-aggregate=emsprod01
# snapshot disable property should only be set in developer's environment
faovm.storage.netapp.snapshot.disable=true
# NFS options to use when mounting storage
faovm.storage.netapp.nfs.export.root=/vol
faovm.storage.netapp.nfs.mount.options=rw,tcp,hard,nointr,rsize=32768,wsize=327
68,nfsvers=3,timeo=600

# Sun Storage properties
faovm.storage.sun.host=server404
faovm.storage.sun.username=fusovm
faovm.storage.sun.password=CHANGEME
faovm.storage.sun.pool=pool-404
faovm.storage.sun.project=emsprod02
faovm.storage.sun.snapshot.disable=true
# NFS options to use when mounting storage
faovm.storage.sun.nfs.export.root=/export
faovm.storage.sun.nfs.mount.options=rw,tcp,hard,nointr,rsize=131072,wsize=13107
2,nfsvers=3,timeo=600

# Generic, Pre-defined NFS
faovm.storage.genericnfs.host=server123
faovm.storage.genericnfs.nfs.export.root=/vol
faovm.storage.genericnfs.nfs.mount.options=rw,tcp,hard,nointr,rsize=32768,wsize
=32768,nfsvers=3,timeo=600
```

6. If you plan to use the same template several times, you can use the pre-exported template storage feature. Instead of exporting template contents during deployment, this feature exports the template file system contents, once before you

begin, and then each deployment uses clones of this volume to save time and space on the storage appliance.

To use this feature, set the following property to true:

```
# Controls whether createTopology will attempt to thin-provision storage
# using exploded template storage already provisioned using the
# createExportedTemplateStorage verb. Note: this can not be used when
# the storage.type is genericnfs
faovm.storage.use.exported.template=true
```

The following properties become relevant and should be set based on what storage type is in use:

```
# Settings used when using flex-cloning
faovm.storage.netapp.exported.template.nfs.export.root=${storage.netapp.nfs.exp
ort.root}
faovm.storage.netapp.exported.template.snapshot.name=faovm_exported_template_
snapshot

# Settings used when using snapshot-cloning
faovm.storage.sun.exported.template.project=${storage.sun.project}
faovm.storage.sun.exported.template.nfs.export.root=${storage.sun.nfs.export.ro
ot}
faovm.storage.sun.exported.template.snapshot.name=faovm_exported_template_
snapshot
```

The following properties are used to construct the names and sizes of the volumes used for the base exported template volume and need to be updated only when using netapp flexclones because the "-" character is not allowed in volume names:

```
faovm.ha.fa.storage.exported.template.size=80g
faovm.ha.fa.storage.exported.template.name=${faovm.ha.fa.vm.template.name}
faovm.ha.primary.storage.exported.template.name=${faovm.ha.fa.storage.exported.
template.name}
faovm.ha.secondary.storage.exported.template.name=${faovm.ha.fa.storage.exporte
d.template.name}
faovm.ha.bi.storage.exported.template.name={faovm.ha.fa.storage.exported.templa
te.name}
faovm.ha.ohs.storage.exported.template.size=8g
faovm.ha.ohs.storage.exported.template.name=${vm.template.name}
faovm.ha.webchat.storage.exported.template.size=10g
faovm.ha.webchat.storage.exported.template.name=${vm.template.name}
```

7. (Optional) Update the following properties for your system and VNC console credentials for the Oracle VMs.

```
faovm.os.vnc.console.password=Welcome1
faovm.os.system.user.name=root
faovm.os.system.user.password=Welcome1
```

8. (Optional) Update the following properties to specify the operating system (OS) user and group name and IDs for the OS user that owns the netapp volumes.

```
faovm.os.apps.user.name=oracle
faovm.os.apps.user.password=Welcome1
faovm.os.apps.user.id=1000
faovm.os.apps.user.group.name=dba
faovm.os.apps.user.group.id=1001
faovm.os.apps.user.home.dir=/home/oracle
```

9. Update the following properties to configure the `eth0` network for the Oracle VMs. These settings may be the same as the setting of the Hypervisors where the Oracle VMs will be started.

   If you have Oracle VMs spread across different Hypervisors that happen to be located in a different subnet, then you can add additional properties for the specific combination of topology type and Oracle VM host type. The format of the additional properties is `faovm.`*topologyType*`.`*hostType*`.network.`*X* , where *topologyType* = ha, *hostType* takes one of the values from: `ohs|fa|primary|secondary|bi|webchat|idm1|idm3db|idm3mw|idm3ohs`, and *X* is the remainder of the property such as `dns.server, eth0.gateway`, and so on.

   The following properties are the default network properties for all Oracle VM host types:

   ```
   faovm.os.network.dns.server=144.20.190.70
   faovm.os.network.eth0.gateway=10.232.144.1
   faovm.os.network.eth0.netmask=255.255.248.0
   ```

10. Update the following properties for your BIG IP end point host and ports. Note that ports are optional.

   ```
   faovm.ha.bigip.mapping.fs.host.external=fscmhcm-cln-large-fs-ext.us.oracle.com
   faovm.ha.bigip.mapping.fs.port.external=10614
   faovm.ha.bigip.mapping.fs.host.internal=fscmhcm-cln-large-fs-int.us.oracle.com
   faovm.ha.bigip.mapping.crm.host.external=fscmhcm-cln-large-crm-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.crm.port.external=10616
   faovm.ha.bigip.mapping.crm.host.internal=fscmhcm-cln-large-crm-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.fin.host.external=fscmhcm-cln-large-fin-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.fin.port.external=10604
   faovm.ha.bigip.mapping.fin.host.internal=fscmhcm-cln-large-fin-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.scm.host.external=fscmhcm-cln-large-scm-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.scm.port.external=10618
   faovm.ha.bigip.mapping.scm.host.internal=fscmhcm-cln-large-scm-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.hcm.host.external=fscmhcm-cln-large-hcm-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.hcm.port.external=10620
   faovm.ha.bigip.mapping.hcm.host.internal=fscmhcm-cln-large-hcm-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.prj.host.external=fscmhcm-cln-large-prj-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.prj.port.external=10606
   faovm.ha.bigip.mapping.prj.host.internal=fscmhcm-cln-large-prj-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.prc.host.external=fscmhcm-cln-large-prc-ext.us.oracle.co
   m
   faovm.ha.bigip.mapping.prc.port.external=10608
   faovm.ha.bigip.mapping.prc.host.internal=fscmhcm-cln-large-prc-int.us.oracle.co
   m
   faovm.ha.bigip.mapping.prc.supplierportal.host.external=fscmhcm-cln-large-prc-s
   p-ext.us.oracle.com
   faovm.ha.bigip.mapping.prc.supplierportal.port.external=10610
   faovm.ha.bigip.mapping.prc.supplierportal.host.internal=fscmhcm-cln-large-prc-s
   p-int.us.oracle.com
   faovm.ha.bigip.mapping.bi.host.external=fscmhcm-cln-large-bi-ext.us.oracle.com
   ```

```
faovm.ha.bigip.mapping.bi.port.external=10622
faovm.ha.bigip.mapping.bi.host.internal=fscmhcm-cln-large-bi-int.us.oracle.com
faovm.ha.bigip.mapping.default.port.external=443
```

If external ports are not specified, they are configured with the default value of
`443`.

11. This step includes updating Oracle RAC database properties and database
directories.

   a. Update the following properties to specify Oracle RAC database properties.
   Specify the following values that you collected when setting up the Oracle
   RAC instance in Section 2.7.2, "Set Up an Oracle Real Application Clusters
   (RAC) Database":

   - Oracle RAC service name

   - Physical host names for the two-node Oracle RAC database

   - SID values for the two-node Oracle RAC database

   - Listener port for the two-node Oracle RAC database, where the ports must
   be the same on each instance

   - Oracle home

   - Operating system user credentials that own the Oracle RAC instance,
   generally for the `oracle` user

   - SYS schema credentials

   - Oracle Automatic Storage Management DATA disc and REDO disc names

   Examples follow:

```
faovm.ha.fusiondb.new.service.name=dbm
faovm.ha.fusiondb.rac.new.sid1=dbm1
faovm.ha.fusiondb.rac.new.sid2=dbm2
faovm.ha.fusiondb.clone.enabled=true

faovm.ha.fusiondb.src.backup.dir=db <an absolute path or relative path to
$OVABHOME/db, where db backup archive is located >

faovm.ha.fusiondb.src.backup.archive=${fusiondb.src.backup.dir}
/dbbackup.tar.gz <path to the RMAN backup archive
>
faovm.ha.fusiondb.clone.do.backup.push=true <this enables the deploy to
untar the DB tar ball directly to target DB, make sure there enough disk
space on target DB.>

faovm.ha.fusiondb.clone.backup.stage.path=<path to where src.backup.archive
should be staged on the HOST1 of the target DB. If do.backup.push is
enabled, the backup.archive will be exploded to this location during
deploy. This is a non-ASM path.>

faovm.ha.fusiondb.clone.host.user.name=oracle
faovm.ha.fusiondb.clone.host.user.password=<CHANGE ME>

faovm.ha.fusiondb.clone.sys.user.name=sys
faovm.ha.fusiondb.clone.sys.user.password=welcome1

faovm.ha.fusiondb.clone.oracle.home=/u01/app/oracle/product/11.2.0/dbhome_1

faovm.ha.fusiondb.clone.datadisc=DATA
```

```
faovm.ha.fusiondb.clone.recodisc=RECO

faovm.ha.fusiondb.clone.datafile.path=${fusiondb.clone.datadisc}/${fusiondb
.new.service.name}/datafile
faovm.ha.fusiondb.clone.tempfile.path=${fusiondb.clone.datadisc}/${fusiondb
.new.service.name}/tempfile
faovm.ha.fusiondb.clone.recolog.path=${fusiondb.clone.recodisc}/${fusiondb.
new.service.name}/ONLINELOG
faovm.ha.fusiondb.clone.spfile=+${fusiondb.clone.datadisc}/${fusiondb.new.s
ervice.name}/spfile${fusiondb.new.service.name}.ora

# physical host 1 for 2-node RAC
faovm.ha.HOST_DB=adcdba04.us.oracle.com

# physical host 2 for 2-node RAC
faovm.ha.HOST_DB2=adcdba05.us.oracle.com
```

Note: The Oracle Automatic Storage Management directory structures defined by the variables below must exist and be writable:

- `faovm.ha.fusiondb.new.datadisc=DATA`

- `faovm.ha.fusiondb.new.recodisc=RECO`

- `faovm.ha.fusiondb.new.datafile.path=${fusiondb.new.datadisc}/${fusiondb.new.sid}/datafile`

- `faovm.ha.fusiondb.new.tempfile.path=${fusiondb.new.datadisc}/${fusiondb.new.sid}/tempfile`

- `faovm.ha.fusiondb.new.recolog.path=${fusiondb.new.recodisc}/${fusiondb.new.sid}/ONLINELOG`

- `faovm.ha.fusiondb.new.spfile=+${fusiondb.new.datadisc}/${fusiondb.new.sid}/spfile${fusiondb.new.sid}.ora`

For each of the above directory structures in Oracle Automatic Storage Management, the following must exist and can be created using `asmcmd`:

```
+DATA/hcmtest1/datafile
+DATA/hcmtest1/tempfile
+RECO/hcmtest1/ONLINELOG
```

In addition, if specifying a path in the controlfile location, the directory structure `*.control_files='+DATA/hcmtest1/controlfile/control01.ctl','+DATA/hcmtest1/controlfile/control02.ctl'` must exist before you run the command.

---

b. Review and update, if necessary, the following properties that specify the paths for database directory objects in the database:

```
# dba_directories configuration (can add as many as needed)
faovm.ha.fusiondb.new.oracle.base=/u01/app/oracle/product/11.2.0_CHANGEME
faovm.ha.fusiondb.new.dba.dir.name0=APPLCP_FILE_DIR
faovm.ha.fusiondb.new.dba.dir.path0=${fusiondb.new.oracle.home}/incident_
logs
faovm.ha.fusiondb.new.dba.dir.name1=APPLLOG_DIR
faovm.ha.fusiondb.new.dba.dir.path1=${fusiondb.new.oracle.home}/appllog_dir
faovm.ha.fusiondb.new.dba.dir.name2=ADMIN_DIR
```

```
faovm.ha.fusiondb.new.dba.dir.path2=${fusiondb.new.oracle.home}/rdbms/admi
faovm.ha.fusiondb.new.dba.dir.name3=EQ_CONFIG_DIR
faovm.ha.fusiondb.new.dba.dir.path3=${fusiondb.new.oracle.home}/search/weba
pp/config
faovm.ha.fusiondb.new.dba.dir.name4=XMLDIR
faovm.ha.fusiondb.new.dba.dir.path4=${fusiondb.new.oracle.home}/rdbms/xml
faovm.ha.fusiondb.new.dba.dir.name5=EQ_LANG_DIR
faovm.ha.fusiondb.new.dba.dir.path5=${fusiondb.new.oracle.home}/search/data
/language
faovm.ha.fusiondb.new.dba.dir.name6=ORACLE_OCM_CONFIG_DIR
faovm.ha.fusiondb.new.dba.dir.path6=${fusiondb.new.oracle.home}/ccr/state
faovm.ha.fusiondb.new.dba.dir.name7=DATA_PUMP_DIR
faovm.ha.fusiondb.new.dba.dir.path7=${fusiondb.new.oracle.base}/admin/${fus
iondb.new.service.name}/dpdump
faovm.ha.fusiondb.new.dba.dir.name8=EQ_CACHE_DIR
faovm.ha.fusiondb.new.dba.dir.path8=${fusiondb.new.oracle.base}/oradata/${f
usiondb.new.service.name}/cache
```

For most directories, their paths are relative to `fusiondb.new.oracle.home`, so the default value should be sufficient. The `DATA_PUMP_DIR` and `EQ_CACHE_DIR` directories depend on the value of the `fusiondb.new.oracle.base` property by default. Specify a value for the `fusiondb.new.oracle.base` property if you want to use the default values for the `DATA_PUMP_DIR` and `EQ_CACHE_DIR` directories.

12. Update the following properties for the host names of the Oracle VMs for the topologies to be deployed.

```
faovm.ha.HOST_FA=adc2130516.us.oracle.com_CHANGEME
faovm.ha.HOST_PRIMARY=adc2130517.us.oracle.com_CHANGEME
faovm.ha.HOST_SECONDARY=adc2130518.us.oracle.com_CHANGEME
faovm.ha.HOST_BI=adc2130519.us.oracle.com_CHANGEME
faovm.ha.HOST_OHS=adc2130505.us.oracle.com_CHANGEME
faovm.ha.HOST_WEBCHAT=adc2130527.us.oracle.com_CHANGEME
```

13. Update the following properties for your Oracle VMs for the HA nodes if you plan to create a High Availability Oracle VM.

```
faovm.ha.HOST_PRIMARY_HA1=adc2130531.us.oracle.com_CHANGEME
faovm.ha.HOST_SECONDARY_HA1=adc2130532.us.oracle.com_CHANGEME
faovm.ha.HOST_OHS_HA1=adc2130506.us.oracle.com
```

The creation of HA nodes for Primary, Secondary and OHS Oracle VMs as part of `createTopology` is disabled by default with the following settings in `ovm-ha-deploy.properties`. If you want the HA nodes for primary and secondary Oracle VMs to also be created, set the following properties to true.

```
faovm.ha.primary.create.ha.node=true
faovm.ha.secondary.create.ha.node=true
faovm.ha.ohs.create.ha.node=true
```

14. Update the following properties to point to your external dependency hosts, for example, LDAP, IDMDB, OAM, OIM, and so on.

```
# host 1 for 2-node RAC
faovm.ha.HOST_DB=adcdba04.us.oracle.com
# host 2 for 2-node RAC
faovm.ha.HOST_DB2=adcdba05.us.oracle.com
faovm.ha.HOST_LDAP=adcgby14.us.oracle.com
faovm.ha.HOST_IDMDB=adcgby14.us.oracle.com
faovm.ha.HOST_PSTORE=adcgby14.us.oracle.com
```

```
faovm.ha.HOST_WEBGATE=adcgby14.us.oracle.com
faovm.ha.HOST_OAM=adcgby14.us.oracle.com
faovm.ha.HOST_OIM=adcgby14.us.oracle.com
faovm.ha.HOST_SMTP=adc2170258.us.oracle.com
```

Note that hosts specified in Steps 12, 13, and 14 are used to identify the IP addresses to update /etc/hosts during rehydration of each Oracle VM.

15. Specify the template name that you previously registered with Oracle VM Manager, and any VM-specific properties for the FA Node.

```
faovm.ha.fa.ovmm.pool.name=adcgei12-pool
faovm.ha.fa.vm.template.name=ha-fscmh-v1-mt_20111013_fa
faovm.ha.fa.cpus=6
faovm.ha.fa.memory=13312
faovm.ha.fa.netapp.volume.name=ha_fscmh_v1_fa
faovm.ha.fa.netapp.volume.size=120g
```

16. Update VM-specific properties for the Primary node. The Primary node uses the same template as the FA node and shares the same volume.

```
faovm.ha.primary.ovmm.pool.name=adcgei12-pool
faovm.ha.primary.cpus=12
faovm.ha.primary.memory=20480
```

17. Update VM-specific properties for the Secondary node. The Secondary node uses the same template as the FA node and shares the same volume.

```
faovm.ha.secondary.ovmm.pool.name=adcgei12-pool
faovm.ha.secondary.cpus=24
faovm.ha.secondary.memory=51200
```

18. Specify the template name that you previously registered with OVM manager and any VM specific properties for the BI node. The BI node shares the volume with the FA node.

```
faovm.ha.bi.ovmm.pool.name=adcgei12-pool
faovm.ha.bi.vm.template.name=ha-fscmh-v1-mt_20111013_bi
faovm.ha.bi.cpus=4
faovm.ha.bi.memory=6144
```

19. Specify the template name that you previously registered with Oracle VM Manager and any VM-specific properties for the OHS node. The OHS node has its own volume.

```
faovm.ha.ohs.ovmm.pool.name=adcgei12-pool
faovm.ha.ohs.vm.template.name=ha-fscmh-v1-mt_20111013_ohs
faovm.ha.ohs.cpus=2
faovm.ha.ohs.memory=1024
faovm.ha.ohs.netapp.volume.name=ha_fscmh_v1_ohs
faovm.ha.ohs.netapp.volume.size=12g
```

20. Specify the template name that you previously registered with Oracle VM manager and any VM-specific properties for the WebChat node. The WebChat node has its own volume so you must replace user_webchat_CHANGEME with the file system that you allocated to the WebChat Node. See Section 2.5, "Provide Access to NetApp or Sun Storage Server" for more information.

```
faovm.ha.webchat.ovmm.pool.name=adcgei12-pool
faovm.ha.webchat.vm.template.name=ha-fscmh-v1_20111013_webchat
faovm.ha.webchat.cpus=4
faovm.ha.webchat.memory=5120
```

```
faovm.ha.webchat.storage.size=12g
faovm.ha.webchat.storage.name=user_webchat_CHANGEME
```

21. For deployment of a single-tenant IDM based topology, specify the template name that you previously registered with Oracle VM Manager and any VM-specific properties for the IDM node. The IDM node has its own volume so you must replace user_idm_CHANGEME with the file system that you allocated to the IDM node. See Section 2.5, "Provide Access to NetApp or Sun Storage Server" for more information.

```
faovm.ha.idm1.ovmm.pool.name=adcgei12-pool
faovm.ha.idm1.vm.template.name=ha-fscmh-v1_20111013_idm
faovm.ha.idm1.cpus=4
faovm.ha.idm1.memory=16384
faovm.ha.idm1.storage.size=70g
faovm.ha.idm1.storage.name=user_idm_CHANGEME
```

You may find that the ovm-ha-deploy.properties file has more properties defined than the ones listed in this section. You do not need to change the values of these properties.

Save the ovm-ha-deploy.properties file after you complete your updates.

3.2 Run Deployment

This step initiates the creation of the Oracle Fusion Applications topology, including Oracle Identity Management, onto the Oracle VMs.

1. Set the following environment variables.

```
setenv OVAB_HOME path_to_your_ovab_home
setenv JAVA_HOME path_to_jre (in OVAB_HOME/jre) or path_to_JDK_1.6
setenv FAOVM path_to_ovm_utility
export ABUSERPROPS="-Dassemblybuilder.runtime.nolock=true"
```

Note that the path_to_ovm_utility refers to the directory you created in Section 2.12, "Install the Oracle VM Automation Utility".

2. Run the faovmdeploy.sh utility to create exported template storage. This step is optional and should be used only if you followed Step 6 in Section 3.1, "Prepare Deployment Properties".

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh createExportedTemplateStorage type=ha
```

This utility operates on all host types for which storage is created, such as ohs, fa, webchat, and idm hosts. It does not operate on hosts that share storage, such as primary and secondary hosts.

This utility generates a log file for the creation of your topology in the directory, $FAOVM/deployfw/logs.

An example of the output follows:

```
[13:33:13/ohs] Executing Task: Create Sun Storage Share - ha-crm-v1r1-mt_
20111213_ohs ... Done. [0m45s]
[13:33:59/ohs] Executing Task: Mount Storage - /u1234 ... Done. [0m1s]
[13:34:00/ohs] Executing Task: Change Storage Owner to Deploy User - /u1234 ...
Done. [0m11s]
[13:34:12/ohs] Executing Task: Read Shared File Sets ... Done. [0m28s]
[13:34:41/ohs] Executing Task: Export File Sets ...
[13:34:41/ohs] Executing Task: Export File Set - fmwHome ... Done. [8m29s]
```

```
[13:43:10/ohs] Executing Task: Export File Set - webgate ... Done. [0m49s]
[13:44:00/ohs] Executing Task: Export File Set - ora_inventory ... Done.
[0m26s]
[13:44:26/ohs] Executing Task: Export File Set - ovabext ... Done. [0m26s]
[13:44:52/ohs] Executing Task: Export File Set - EMAgent ... Done. [0m44s]
... Done. [10m55s]
[13:45:36/ohs] Executing Task: Unmount Storage - /u1234 ... Done. [0m1s]
[13:45:44/ohs] Executing Task: Create Sun Storage Snapshot - ha-crm-v1r1-mt_
20111213_ohs@faovm_exported_template_snapshot ... Done. [0m8s]
[13:45:52/fa] Executing Task: Create Sun Storage Share - ha-crm-v1r1-mt_
20111213_fa ... Done. [0m31s]
```

3. Run the `faovmdeploy.sh` utility to create an Oracle VM.

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh createTopology type=ha
```

This utility generates a log file for the creation of your topology in the directory, `$FAOVM/deployfw/logs`.

An example of the output follows:

```
[19:40:59] Starting createTopology execution for FSCM+HCM HA Topology

[19:40:59/ohs] Executing Task: Create Volume - ilawler_ohs ... Done. [0m9s]
[19:41:08/ohs] Executing Task: Change Volume Owner ... Done. [0m5s]
[19:41:13/ohs] Executing Task: Read Shared File Sets ... Done. [0m32s]
[19:41:46/ohs] Executing Task: Export File Sets ...
[19:41:46/ohs] Executing Task: Export File Set - fmwHome ... Done. [3m46s]
[19:45:33/ohs] Executing Task: Export File Set - ORACLE_INSTANCE ... Done. [0m40s]
[19:46:14/ohs] Executing Task: Export File Set - webgate ... Done. [0m43s]
[19:46:57/ohs] Executing Task: Export File Set - ovabext ... Done. [0m31s]
[19:47:29/ohs] Executing Task: Export File Set - EMAgent ... Done. [0m38s]
... Done. [6m21s]
[19:48:07/ohs] Executing Task: Instantiate Rehydration Templates ... Done. [0m5s]
[19:48:12/ohs] Executing Task: Copy Rehydrate Framework Files to Volume ... Done.
[0m0s]
[19:48:13/ohs] Executing Task: Stage Rehydration Patches ... Done. [0s]
[19:48:13/ohs] Executing Task: Fix APPLTOP Permissions ... Done. [0m15s]
[19:48:29/ohs] Executing Task: Change Volume Owner ... Done. [0m24s]
[19:48:53/ohs] Executing Task: Create OVM - adc2130518.us.oracle.com ... Done.
[3m35s]
[19:52:29/ohs] Executing Task: Unmount Volume Mount Point - /u01 ... Done. [0m5s]
.....

[19:52:35] Completed createTopology execution for CRM Small Topology [11m35s]
```

The `faovmdeploy.sh` command completes after the storage volumes are created and populated and the Oracle VMs are powered on. The rehydration of the domains continues within each individual Oracle VM even after the command completes.

3.2.1 Check the Status of createTopology

Use the `status` argument to check the status of the `createTopology` session. You can check the status of the entire topology with this command:

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh status type=ha
```

You can also check the status of a single node type by specifying the `hostType` argument:

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh status type=ha hostType=[ohs|fa|primary|secondary|bi]
```

3.2.2 Check the Status of Each Oracle VM

To manually check the status of each Oracle VM, log in to each Oracle VM using the root credentials that you specified, and monitor the rehydration progress within that Oracle VM.

For example, to check progress of the FA node, log in to the FA Oracle VM and run this command:

```
cd /u01/APPLTOP/ovabext/crmapps.oracleoutsourcing.com/CRMDomain
ls wls-latebinding-*.out
```

This command lists the Managed Servers for the CRMDomain, such as the Administration Server and Managed Servers, that have been rehydrated so far. An example of the output follows:

```
-rw-r-r- 1 root    root    33 May 12 03:50
wls-latebinding-CRMDomain-AdminServer.properties.out
-rw-r-r- 1 root    root    33 May 12 03:53
wls-latebinding-CRMDomain-ODICluster.properties.out
-rw-r-r- 1 root    root    33 May 12 03:56
wls-latebinding-CRMDomain-EmailMarketingCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:00
wls-latebinding-CRMDomain-ContractManagementCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:05
wls-latebinding-CRMDomain-SalesCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:10 wls-latebinding-CRMDomain-CRM_
SOACluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:14
wls-latebinding-CRMDomain-CRMAnalyticsCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:18
wls-latebinding-CRMDomain-MarketingCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:22
wls-latebinding-CRMDomain-CustomerCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:27
wls-latebinding-CRMDomain-CRMPerformanceCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:33
wls-latebinding-CRMDomain-CRMCommonCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:38
wls-latebinding-CRMDomain-OrderCaptureCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:41
wls-latebinding-CRMDomain-CRMSearchCluster.properties.out
-rw-r-r- 1 root    root    33 May 12 04:45
wls-latebinding-CRMDomain-ESSCluster.properties.out
```

Each file contains the following text if the rehydration of that Managed Server was successful.

```
/u01/APPLTOP/ovabext/crmapps.oracleoutsourcing.com/CRMDomain/wls-latebinding-CRMDo
main-AdminServer.properties.out
deployer.rehydration-result = OK
```

Additional log files related to rehydration are located under the /assemblybuilder/log directory within the Oracle VM.

3.3 Post-Rehydration Steps

Perform the following steps after rehydration completes successfully.

- Oracle VM Manual Steps

- Product Family Specific Manual Steps

- Apply Oracle Fusion Middleware Patches

- Apply Oracle Fusion Applications Patches

- Oracle Fusion Applications Post-installation Steps

> **Note:** In the following sections, references to hosts, such as HOST_
> SECONDARY and HOST_BI, represent the host names that you
> defined in Steps 12 through 14 in Section 3.1, "Prepare Deployment
> Properties". You must replace them with the host names in your
> environment to perform the manual steps.

3.3.1 Oracle VM Manual Steps

Complete the following post-rehydration steps that are related to Oracle VM.

- Perform Postinstallation Tasks

- Update BI Connection URL Value

- Enable Sudo in Enterprise Manager agentstup Script

- Fix Intermittent Rehydration Error in the BI Node

- Randomize the Coherence Cluster Address

- Update the idm.conf File

- Enable Global Search

3.3.1.1 Perform Postinstallation Tasks

After Oracle VM deployment is complete, follow the manual "Postinstallation Tasks"
described in the *Oracle Fusion Applications Installation Guide*.

3.3.1.2 Update BI Connection URL Value

After Oracle VM deployment, the Oracle Business Intelligence connection URLs
contain invalid entries that cause errors in the setup page of Financials Reports and
Analytics. The solution is to manually edit the `StaticResourcesLocation` property,
using the System MBean Browser in Oracle Enterprise Manager, with the correct
external load balancer URL for Oracle Business Intelligence. All of the affected
applications on the Oracle WebLogic Server managed servers that have a
`BISoapConnection` type must be examined, corrected, and restarted to resolve this
issue. Table 3–1 lists the affected applications.

Table 3–1   Affected Applications

Domain	Server	Application
Common	HomePageServer	HomePageApp
CRM	CustomerServer	CustomerApp
CRM	MarketingServer	MarketingApp

Table 3–1   (Cont.) Affected Applications

Domain	Server	Application
CRM	CRMPerformanceServer	CRMPerformanceApp
CRM	SalesServer	SalesApp
FIN	GeneralLedgerServer	LedgerApp
FIN	PayablesServer	PayablesApp
FIN	ReceivablesServer	ReceivablesApp
HCM	CompensationServer	HcmCompensationApp
HCM	CoreProcessesServer	HcmCoreApp
HCM	TalentManagementServer	HcmTalentApp
IC	IncentiveCompensationServer	IncentiveCompensationApp
PRC	ess_server	ProcurementEssApp
PRC	ProcurementServer	ProcurementApp
PRC	SupplierPortalServer	SupplierPortalApp
PRJ	ProjectFinancialsServer	ProjectFinancialsApp
SCM	CostManagementServer	CostManagementApp
SCM	LogisticsServer	LogisticsApp
SCM	OrderOrchestrationServer	OrderOrchestrationApp
SCM	ProductManagement	ProductManagementApp

The following steps describe how to edit `BISoapConnection` objects.

1. Log in to Oracle Enterprise Manager for each of the product family domains listed in .

2. Go to **System MBean Browser** by right clicking the domain target under **Farm_ *Product_Family*Domain**, **WebLogicDomain,** then *Product_Family***Domain**.

3. Go to **Application Defined MBeans**, then **oracle.adf.share.connections** where all servers and applications for the domain are displayed.

4. Go to each Oracle ADF connection using this navigation path: *Server*, *Application*, **ADFConnections**, **ADFConnections**. Edit the value of the `StaticResourcesLocation` property for all connections with type `BISoapConnection`. Note that the connections are of the type `BISoapConnection` and can have different names, for example, `BIDB_Connection`, `AtkRPSoapConn`, `BIPresentationServer`, `CentralServerConn`, `MarketingServer`, and so on.

5. Go to the Operations tab and click Save to save the changes to the underlying store and to ensure the values are not lost during server restarts.

6. Repeat Steps 1 through 5 for all of the affected applications, servers, clusters, and domains. Then restart the affected domains.

3.3.1.3 Enable Sudo in Enterprise Manager agentstup Script

Edit the file
`/oem/app/oracle/product/12c/core/12.1.0.1.0/install/unix/scripts/agentstup`
inside the Oracle VM. Replace:

```
sudo > /dev/null 2>&1
```

With:

```
/bin/false #sudo > /dev/null 2>&1
```

3.3.1.4 Fix Intermittent Rehydration Error in the BI Node

Follow these steps to avoid possible failures during Oracle Enterprise Manager 12c Cloud Control discovery for the BI node:

1. Login to the BI Oracle VM as the applications system user, as specified by the faovm.os.apps.user.name property, and run the following commands.

    ```
    cd /u01/APPLTOP/ovabext/emcli
    export JAVA_HOME=/assemblybuilder/jre
    export EMCLI_STATE_DIR=/u01/APPLTOP/ovabext/emcli/conf
    ```

2. Get the status of the BI Agent.

    ```
    ./emcli get_targets \-noheader \-targets="<BI Oracle VM host name>:<agent
    port>:oracle_emd"

    Example:
    ./emcli get_targets \-noheader \-targets="adc2130498.us.oracle.com:3875:oracle_
    emd"
    ```

3. Ensure that the status of BI Agent is **Up** before proceeding to the next step.

4. Restart the discovery of the BIDomain and the remaining rehydration commands on the BI Oracle VM by logging in to the BI Oracle VM as the root user and then running these commands:

    ```
    cd /u01/APPLTOP/ovabext/bi.oracleoutsourcing.com
    source faovm-host.env
    export JAVA_HOME=/assemblybuilder/jre
    export PATH=$PATH:$JAVA_HOME/bin
    ${AB_FAOVM_REHYDRATEFW_HOME}
    /bin/rehydrate_assist.sh post-host-rehydrate 93.2
    ```

3.3.1.5 Randomize the Coherence Cluster Address

1. Login to the OIM Oracle VM.

2. Update -Dtangosol.coherence.clusteraddress=227.7.7.9 in the following files to have a different randomized value (not 7 or 9) for the 3rd and 4th segments of the numbers in the cluster address. In other words, x and y in -Dtangosol.coherence.clusteraddress=227.7.x.y should have a value between 1 to 254. Use the same value that you choose in all of the following files:

    ```
    /u01/oim/user_projects/domains/oim_domain/bin/setDomainEnv.sh
    /u01/oim/user_projects/domains/oim_domain/init-info/startscript.xml
    /u01/oim/user_projects/domains/oim_domain/init-info/startscript-unsub.xml
    ```

3. Restart the OIM domain for these settings to be effective.

3.3.1.6 Update the idm.conf File

Modify the existing idm.conf file to be compatible with your deployment topology. This file is located under the following directory:

ohs_install_directory/ohsauth_inst/config/OHS/ohs1/moduleconf

1. Comment out all of the context-roots *locations* in the first virtual host (authohs.mycompany.com) after all of the Load Balancer (LBR) end points (for three virtual hosts) are configured. This prevents access to the context roots through the physical host but only through the LBR. An example follows:

```
# Admin Server and EM
# <Location /console>
# SetHandler weblogic-handler
# WebLogicHost weblogic-host.mycompany.com
# WeblogicPort 17001
# </Location>
```

2. Update the administration virtual host to be on https instead of http. For example, update http://admin.mycompany.com:7777 to be https:admin.mycompany.com:443. Oracle recommends that you have the administrative consoles exposed using https (LBR).

3. Add the RewriteRule to avoid the console logout issues from the Enterprise Manager and the WebLogic Administrator consoles.

```
RewriteEngine On
RewriteRule ^/console/jsp/common/logout.jsp "/oamsso/logout.html?end_
url=/console" [R]
RewriteRule ^/em/targetauth/emaslogout.jsp "/oamsso/logout.html?end_url=/em"
[R]
RewriteOptions inherit
UseCanonicalName On
```

4. Ensure the following ProxySSL entries exist for all the context-root locations, where ever the LBR is configured for the https protocol.

```
 WLProxySSL ON
 WLProxySSLPassThrough ON
```

5. Add a ServerAlias entry under the internal virtual host, for example, idminternal.mycompany.com.

```
....
ServerName http://idminternal.mycompany.com:7777
ServerAlias oim.oracleoutsourcing.com authohs-host.mycompany.com
RewriteEngine On
....
```

6. Add a new context-root *location* entry for the ODSM console. The weblogic host referenced here is the host where ODSM is deployed, which is typically in *OID_ORACLE_HOME*.

   Add this location entry for the default authohs virtual host (http).

```
<Location /odsm>
SetHandler weblogic-handler
WebLogicHost weblogic-host-odsm.mycompany.com
WebLogicPort 7005
</Location>
```

   Add this location entry for the administration virtual host (https).

```
<Location /odsm>
SetHandler weblogic-handler
WLProxySSL ON
WLProxySSLPassThrough ON
WebLogicHost weblogic-host-odsm.mycompany.com
```

```
WebLogicPort 7005
</Location>
```

3.3.1.7 Enable Global Search

After you configure the search and start the crawl, enable the Oracle Fusion Applications Search User Interface by setting the value of the `FUSION_APPS_SEARCH_ENABLED` profile option to **Yes**. This setting makes the search controls visible in the user interface. The default value is **No**, which disables the search controls in the user interface.

To set the `FUSION_APPS_SEARCH_ENABLED` profile option to **Yes**:

1. Log in to Oracle Fusion Applications with a user account that is provisioned with the Manage All Application Profile Values role. Contact your security administrator for details.

2. From the Administration menu in the work area of Oracle Fusion Applications, choose **Setup and Maintenance**. In the **Search: Tasks** menu, enter `manage administrator`, then click the search icon to find the **Manage Administrator Profile Values** task flow. Click **Go to Task** to display the **Managed Administrator Profile Values** page.

3. Query the profile option 'by entering the profile option code, `FUSION_APPS_SEARCH_ENABLED`.

4. Set the value to **Yes** at the Site Profile Level. This profile option is defined at the site level only.

5. Select **Save** from the Action menu to save your work.

3.3.2 Product Family Specific Manual Steps

Complete the following post-rehydration steps that are related to Oracle Fusion Customer Relationship Management and Oracle Fusion Human Capital Management.

- Increase the Memory Settings of GeneralLedgerServer_1
- Increase the Memory Settings of the CRMDomain Administration Server
- Update the Oracle Secure Enterprise Search Configuration
- Configure Informatica
- Disable BI Caching
- Load the Required Roles for CRM topology
- Apply Fix to Support Sales Prediction Engine (SPE) Inline Service Artifacts
- Configure Common Email
- Set Up Marketing Email (ESD)
- Set Up In-Bound Repository (IBR)
- Set Up Oracle Fusion Human Capital Management Coexistence
- Enable Proxies in Oracle Fusion HCM Pods

3.3.2.1 Increase the Memory Settings of GeneralLedgerServer_1

For CRM templates only, follow these steps to update the memory settings on the `GeneralLedgerServer_1` managed server.

1. On the Oracle Fusion Applications Oracle VM, go to
   `/u01/APPLTOP/instance/domains/HOST_SECONDARY/FinancialDomain/bin`.

2. Modify the file `fusionapps_start_params.properties` as follows:

   a. Replace the line:

      ```
      fusion.FinancialDomain.GeneralLedgerCluster.default.minmaxmemory.main=-Xms5
      0m -Xmx500m
      ```

      With:

      ```
      fusion.FinancialDomain.GeneralLedgerCluster.default.minmaxmemory.main=-Xms5
      0m -Xmx750m
      ```

   b. Replace the line:

      ```
      fusion.FinancialDomain.GeneralLedgerCluster.default.minmaxmemory.nonmain=-X
      ms50m -Xmx500m
      ```

      With:

      ```
      fusion.FinancialDomain.GeneralLedgerCluster.default.minmaxmemory.nonmain=-X
      ms50m -Xmx750m
      ```

3. In the `FinancialDomain` administration console on the Oracle Fusion Applications
   Oracle VM, port 7401, restart the `GeneralLedgerServer_1` managed server.

3.3.2.2 Increase the Memory Settings of the CRMDomain Administration Server

For CRM templates only, follow these steps to update the memory setting on the
`CRMDomain` Administration Server.

1. On the Oracle Fusion Applications Oracle VM, go to
   `/u01/APPLTOP/instance/domains/HOST_`
   `SECONDARY/admin-apps.oracleoutsourcing.com/CRMDomain/bin`.

2. Modify the file `fusionapps_start_params.properties` as follows:

   a. Replace the line:

      ```
      fusion.CRMDomain.AdminServer.default.minmaxmemory.main=-Xms50m -Xmx1024m
      ```

      With:

      ```
      fusion.CRMDomain.AdminServer.default.minmaxmemory.main=-Xms50m -Xmx1536m
      ```

   b. Replace the line:

      ```
      fusion.CRMDomain.AdminServer.default.minmaxmemory.nonmain=-Xms50m -Xmx1024m
      ```

      With:

      ```
      fusion.CRMDomain.AdminServer.default.minmaxmemory.nonmain=-Xms50m -Xmx1536m
      ```

3. Restart the `CRMDomain` Administration Server using Node Manager for these
   settings to take effect.

3.3.2.3 Update the Oracle Secure Enterprise Search Configuration

For CRM templates only, perform the following steps to update the Oracle Secure
Enterprise Search (Oracle SES) configuration.

1. On the Oracle Fusion Applications Oracle VM, log in to the secondary server. Run
   the following command:

```
/u01/APPLTOP/fusionapps/ses/bin/searchadmin -c
http://HOST_SECONDARY:7016/search/api/admin/AdminService
export queryConfig -o /u01/APPLTOP/fusionapps/ses/bin/qConfig.xml -p welcome1
```

2. Edit the entry for `preserveStaleSecurityFilterOnError` in `qConfig.xml` to be false.

3. Run the following command to update Oracle SES from the altered file:

```
/u01/APPLTOP/fusionapps/ses/bin/searchadmin -c
http://secondary.oracleoutsourcing.com:7016/search/api/admin/AdminService
update queryConfig -i /u01/APPLTOP/fusionapps/ses/bin/qConfig.xml -p welcome1
```

4. Stop and start the Oracle SES server in the Common Domain or wait for Oracle SES to include the change during its next cycle.

3.3.2.4 Configure Informatica

For CRM templates only, perform the following steps to configure Informatica.

1. Log in to the `CRM_Admin_Server_HOST`. Start a VNC session with the command `vncserver`. An existing VNC session can be used.

2. Update the Informatica Key file, which needs to updated every year.

   – Stop the Informatica Identity Resolution (IIR) server.

   – Edit the file called `key` in `/u01/APPLTOP/InformaticaIR/ssaas/ad5/ad/db`. Replace the existing key with the new key provided by Oracle. For 2012, the key value is `QARXW7UEAEUK9DRTC79U6HXL1PM8927JP0LA`.

   – Start the IIR server.

   Note that the 2012 Key is a limited distribution Key and works only for California addresses. You must request a new Key from the software vendor for production. The Key is valid for one year and you must obtain a new key every year.

3. Check the database connection using the following commands.

   ■ `cd /u01/APPLTOP/InformaticaIR/bin`

   ■ `./setfusionEnv.sh`

   ■ `tnsping ORCL` (Database connection information can be found in `/u01/APPLTOP/InformaticaIR/ids/ssadb.dic`)

4. Start the IIR servers after you confirm the database connection.

   ■ `/liup`

   ■ `/idsup`

   ■ Confirm there are eight Informatica processes running plus one for the grep command.

   `ps -ef | grep Informatica | wc`

5. Initiate indexing.

   ■ `./idsconc -a`

   ■ On the launched console, select the **Rulebase Type**=`SSA` and **Alias**=`rtunitrb`.

   ■ Click **OK** and then click **YES** to create a new rulebase.

   ■ Go to System -> New -> Create a system from SDF and enter the following system information:

- – System Name: FusionDQRealtime

- – System Definition File:
  `/u01/APPLTOP/InformaticaIR/ids/FusionDQRealtime.sdf`

- – DB Type: SSA

- – Alias: fusion_s01

- ■ Click **OK**. When the process is complete, click **Close**.

- ■ Click **Select** to select FusionDQRealtime, and click **OK**.

- ■ Click **Load IDT** to start loading the following IDT tables one at a time.

  - – load_location

  - – load_organization

  - – load_org_address

  - – load_person

  - – load_per_address

  - – load_per_phone

6. Use the IIR web-based search client to sanity test the IIR matching server. The SSA_HTPORT port can be found in `/u01/APPLTOP/InformaticaIR/env/isss`.

   - ■ Go to the `CRM_Admin_Server_HOST`/systems in a browser.

   - ■ Select **FusionDQRealtime** from the dropdown list, then **dup** for the **Org**, then enter Toyota for the **Organization Name** and click **Search**. If the search is successful, then the steps performed so far were successful.

7. Start the Update Synchronizer.

   - ■ In the IIR Console, go to the **Tools** menu, then **Synchronizer**, and **Run Synchronizer.** Click **OK**.

   - ■ Accept all default values in the **Update Synchronizer** screen and make sure that the **IDT Name=all** option is selected. Click **OK**.

8. Connect Oracle Fusion Applications to the Data Quality Engine.

   - ■ Open a browser and login to Oracle Fusion Setup Manager as the `faadmin` user.

   - ■ Search for and select the task **Manage Server Configuration**.

   - ■ Click **Search** and confirm that four servers are listed.

   - ■ For the following servers, update the **ServerAddress** to `Administration_Server`, which is the host name of the Administration Server. Update the **Server Port** to 1666. Note that SSA_SEPORT can be found in `/u01/APPLTOP/InformaticaIR/env/isss`. Also select the **Enable** checkbox for the following servers:

     - – Realtime and Batch Basic Server

     - – Realtime Cleanse Server

     - – Batch Cleanse Server

9. Start the Oracle Fusion Synchronization.

   - ■ Open a browser and login to Oracle Fusion Setup Manager as the `faadmin` user.

- Search for and select the task **Manage Data Synchronization**.

- Click **Actions**, then **Refresh Identity Table Information**. Six tables are listed.

- Check **Enable for Sync** for each Identity Table check box, and click **Save**.

- Click **Schedule Synchronization Process** to start the synchronization process.

- In the Schedule Synchronization Process window, click **Advanced** button.

- Check **Using a schedule**, set the **Frequency** to **Hourly/Minute** using 0 hours and 5 minutes, and set the **End Date** to be a few days from the current date.

10. Enable Address Cleansing for a country.

- Open a browser and login to Oracle Fusion Setup Manager as the `faadmin` user.

- Search for and select the task **Manage Geographies**.

- Search for the country by name or by country code.

- Click **Go to task** in the **Address Cleansing Defined** column.

- In the popup window, set **Real-Time Address Cleansing Level** to **Optional**, then click **Save and Close**.

3.3.2.5 Disable BI Caching

For CRM templates only, perform the following steps to disable BI caching.

1. Go to Oracle Enterprise Manager for the `BIDomain`.

2. Expand Farm_BIDomain > WebLogic Domain > BIDomain.

3. Right click and select **System MBean Browser**.

4. Go to Application Defined MBeans > oracle.biee.admin > Domain: BIDomain > BIDomain > BIDomain.

5. Click the **Operations** tab, then **Lock**, then **Invoke**.

6. Go to Application Defined MBeans > oracle.biee.admin > BIDomain.BIInstance.PerformanceConfiguration > BIDomain.BIInstance.PerformanceConfiguration.

7. Change `BIServerCacheEnabled` to false and click Apply.

8. Go to Application Defined MBeans > oracle.biee.admin > Domain: BIDomain > BIDomain > BIDomain.

9. Click the **Operations** tab, then **Commit**, then **Invoke**.

3.3.2.6 Load the Required Roles for CRM topology

For CRM templates only, perform the following steps to load the roles required by the CRM topology.

1. Download and open the zip file attached to article 1420426.1 from *My Oracle Support* (http://support.oracle.com).

2. Follow the instructions in the patch README file to load both of the LDIF files in the zip file.

3. Log in to the ATK Homepage as Fusion/Welcome1

4. Go to Navigator -> Scheduled Processes

5. Click **Scheduled New Process**

6. In the Search New Process window, open the **Process Name** drop down, and click **Search**.

7. In the **Search and Select: Process Name** window, search for **SyncRolesJob**, select it, and click **OK**.

8. Click **OK** in the Search New Process window.

9. Click **Submit** in the Process Details window.

10. Take note of the submitted process id, then click **Close** in the Process Details window.

11. Monitor the process until completion. If you see errors when running the script, use the command DOS2Unix to fix characters in the LDIF and script files.

3.3.2.7 Apply Fix to Support Sales Prediction Engine (SPE) Inline Service Artifacts

For CRM templates only, perform the following steps to prevent errors during usage of SPE artifacts.

1. Log in to the console for the BI Domain. Lock and edit if necessary.

2. Go to Service > Data Sources.

3. Click **Fusion_BIDS**, then click **Connection Pool**.

4. In the URL, remove the extra '**/**' from around Global Currency 4 so that it ends like this:

```
NQ_SESSION.PREFERRED_CURRENCY=Global Currency 4;
```

5. Repeat steps 3 and 4 in the Connection Pool setting for the BIAnalytics data source.

6. Activate Changes, if necessary.

7. Release Configuration

8. Stop and restart bi_server1.

3.3.2.8 Configure Common Email

This section is for CRM templates only. If you want to configure Oracle Fusion Customer Relationship Management with a common email feature, this section provides an example of how to do that.

3.3.2.8.1 Set Up Sendmail in the OIM Host

1. Start the local sendmail process.

```
cd /etc/mail/
cp /fsnadmin/saas/crm/b18/mt/sendmail.mc .
```

2. Perform the following steps as root.

```
vi /etc/mail/sendmail.mc
```

Search for SMART and replace this line:

```
define(`SMART_HOST',`internal-mail-router.oracle.com')dnl
```

With this:

```
define(`SMART_HOST', `auohs-smtp.oracle.com')dnl
```

3. Enable sendmail on startup by running the following commands as root.

```
chmod 777 /var/spool/clientmqueue/
cd /etc/mail
make
/sbin/service sendmail stop
/sbin/service sendmail start
/sbin/service sendmail status
/sbin/chkconfig sendmail --add
/sbin/chkconfig sendmail on
/sbin/chkconfig --list sendmail

chkconfig --list sendmail
sendmail 0:off 1:off 2:on 3:on 4:on 5:on 6:off
```

3.3.2.8.2 Set Up Sendmail in the Primary and Secondary Hosts

1. Update the SMART_HOST definition in the file `sendmail.mc`.

```
cd /etc/mail
cp /fsnadmin/saas/crm/b18/sendmail.mc .
vi /etc/mail/sendmail.mc
```

Replace this line:

```
define(`SMART_HOST',`internal-mail-router.oracle.com')dnl
```

With this:

```
define(`SMART_HOST', `adcemodmx.atoracle.com')dnl
```

2. Update DAEMON_OPTIONS in the file `sendmail.mc`.

Replace this line:

```
DAEMON_OPTIONS(`Port=smtp,Addr=127.0.0.1, Name=MTA')dnl
```

With this:

```
DAEMON_OPTIONS(`Port=submission,Addr=127.0.0.1, Name=MSA, M=E')dnl
```

3. As root, edit the submit.mc file.

Replace this line:

```
FEATURE(`msp', `[127.0.0.1]')dnl
```

With this:

```
FEATURE(`msp', `[127.0.0.1]', `MSA')dnl
```

4. As root, run the following commands to start or restart the sendmail process.

```
chmod 777 /var/spool/clientmqueue/
 cd /etc/mail
 make
 /sbin/service sendmail stop
 /sbin/service sendmail start
 /sbin/service sendmail status
```

5. Enable sendmail on startup by executing these commands as root.

```
/sbin/chkconfig sendmail --add
/sbin/chkconfig sendmail on
/sbin/chkconfig --list sendmail
```

3.3.2.8.3 Configure Bounce Handler Daemon (BHD)

1. Update the `bhd-onpremise-ctl.sh` file.

   ```
   vi /u01/APPLTOP/fusionbhd/fusionapps/crm/ewm/bhd/bin/bhd-onpremise-ctl.sh
   ```

   Search for JAVA_HOME and replace this line:

   ```
   #JAVA=${JAVA_HOME}/bin/java
   ```

   With this:

   ```
   JAVA=/u01/APPLTOP/webtier_mwhome/oracle_common/jdk/bin/java
   ```

2. Stop and start BHD as root.

   ```
   /u01/APPLTOP/fusionbhd/fusionapps/crm/ewm/bhd/bin/bhd-onpremise-ctl.sh stop
   /u01/APPLTOP/fusionbhd/fusionapps/crm/ewm/bhd/bin/bhd-onpremise-ctl.sh start
   ```

3. As root, edit `rc.local` so that BHD is started during Oracle VM startup.

   ```
   vi /etc/rc.d/rc.local
   ```

   Add these lines to the end of the file.

   ```
   #Start BHD
   /u01/APPLTOP/fusionbhd/fusionapps/crm/ewm/bhd/bin/bhd-onpremise-ctl.sh stop
   /u01/APPLTOP/fusionbhd/fusionapps/crm/ewm/bhd/bin/bhd-onpremise-ctl.sh start
   ```

3.3.2.8.4 Update the SOA Workflow Mail Notification

1. Log in to the `CRMDomain` Enterprise Manager Console, then select **Update Mail Server Properties**.

2. Go to usermessagingdriver-email(soa_server1) -> Email Driver Properties.

3. Update the following properties:

   ```
   OutgoingMailServer: auohs-smtp.oracle.com
   OutgoingMailServerPort: 25
   OutgoingDefaultFromAddr: FusionCRMCloudService@AtOracle.com
   ```

3.3.2.9 Set Up Marketing Email (ESD)

For CRM templates only, perform the following steps to set up Marketing email.

1. Verify that the `/etc/hosts` smtp.oracleoutsouring.com value in the hosts file is equivalent to adcemodmx.atoracle.com. Update this value if it is incorrect.

2. Log in as faadmin to https://fs-aufsn4x0pod.oracleoutsourcing.com/setup/faces/TaskListManagerTop.

3. Go to the **Manage Marketing Supplier Details and Distribution** task.

4. Click **Oracle Fusion Email** in the top grid.

5. Click **E-Mail Profile** in the bottom grid.

6. Update the following values for CTD and BHD and save your updates:

```
CTD Host: crm-aufsn4x0POD.oracleoutsourcing.com
CTD port: 443
CTD protocol: https
BHD: aufsn4x0POD.atoracle.com
```

7. Stop and start `EmailMarketingServer_1` in the `CRMDomain`.

3.3.2.10 Set Up In-Bound Repository (IBR)

For CRM templates only, perform the following steps to set up IBR.

1. Log in to the secondary server.

2. Edit the following file, `provider.hda`, to change the `IntradocServerHostName` to the IP address of the secondary server. This only works with an IP address, therefore, do not use host name alias.

```
/u01/APPLTOP/instance/domains/HOST_
SECONDARY/CommonDomain/ucm/cs/data/providers/ibrprovider/provider.hda
```

An example follows:

```
IntradocServerHostName=10.240.38.99
```

3. Edit the following file to change the `fontdirectory` to a value that exists, for example:

```
fontdirectory=/u01/APPLTOP/fusionapps/jdk6/jre/lib/fonts
```

3.3.2.11 Set Up Oracle Fusion Human Capital Management Coexistence

For Oracle Fusion Human Capital Management Coexistence customers only, perform the following steps to set up Oracle Fusion Human Capital Management Coexistence.

1. Update roles for `FUSION_ODI_STAGE`. Connect to the Oracle Fusion Applications database and run the following script.

```
GRANT SELECT ON FUSION.PER_ROLES_DN TO FUSION_ODI_STAGE;
CREATE OR REPLACE SYNONYM FUSION_ODI_STAGE.PER_ROLES_DN FOR FUSION.PER_ROLES_
DN;
```

2. Set up FTP accounts.

Create two user accounts with read and write access, a generic user account to configure the FTP adapter and a user specific account for Oracle Fusion Applications. For example, create user accounts with the directory structure and permissions as shown in the table Table 3–2. Permissions should be read and write for the current directory and child levels only.

Table 3–2   Directory Structure

User/Usage	Operating System User Name	Password	User Home Directory	Comments
BPEL/SOA	\<bpel_ username>	\<bpel_ password>	/fusion	User account used with Oracle Fusion SOA FTP Adapter configuration.

Table 3–2 (Cont.) Directory Structure

User/Usage	Operating System User Name	Password	User Home Directory	Comments
Customer 1	<customer1_username>	<customer1-pswd>	/fusion/E_<ENTERPRISE_ID>	The <ENTERPRISE_ID> corresponds to the Oracle Fusion Applications ID of Customer 1. The user account is used by the PeopleSoft Enterprise application interaction with the Oracle Fusion SOA/BPEL process.

3. Set up the SOA FTP adapter.

Set up the following parameters of the SOA FTP adapter.

- Set the FTP server host name in the FTP adapter connections properties file `weblogic-ra.xml`.

- Set the FTP server operating system user name and password.

Set the FTP server host name and set the FTP server operating system user name and password in the FTP adapter connections property file as follows.

a. Access `FtpAdapter.rar` available in the Oracle_SOA1 directory structure on the Oracle Weblogic Server (WLS) HcmDomain server file system.

b. Extract and save the `META-INF/weblogic-ra.xml` file to a temporary location.

c. Update the META-INF/weblogic-ra.xml file with appropriate values for the following connection properties.

  – <wls:jndi-name>eis/Ftp/FtpAdapter</wls:jndi-name>

  – <wls:name>host</wls:name>

    <wls:value>ftpServerHostName</wls:value>

  – <wls:name>username</wls:name>

    <wls:value>ftpUserName</wls:value>

  – <wls:name>password</wls:name>

    <wls:value>ftpUserPswd</wls:value>

  – <wls:property>

    <wls:name>useSftp</wls:name>

    <wls:value>false</wls:value>

    </wls:property>

d. Create an additional copy of `FtpAdapter.rar`.

e. Update FtpAdapter.rar with the updated META-INF/weblogic-ra.xml file by running the following command.

```
zip -ur  /<path>/Oracle_SOA1/soa/connectors/FtpAdapter.rar
META-INF/weblogic-ra.xml
```

f. Bounce the WLS HcmDomain.

4. Set Up Oracle Data Integrator

a. Download the `hcmPythonUtil.jar` from this location:
`http://hcmwiki.us.oracle.com:8880/download/attachments/54561116/hcm`
`PythonUtil.jar?version=1&modificationDate=1328308334000`.

b. Log in to the HcmDomain App Server host.

c. Create a temporary directory.

   `mkdir -p $HOME/tmp/hcmOdiConfigDir`

d. FTP the `hcmPythonUtil.jar` file to the `$HOME/tmp/hcmOdiConfigDir`.

e. Unzip `hcmPythonUtil.jar`.

f. Update the following settings in
   `$HOME/tmp/hcmOdiConfigDir/hcmConfig.prop`.

   – Modify the `updateMode` to be false to review the current configuration.

   – Update ODI Master Repository details, for example:
     `odiMasterJDBCURL=jdbc:oracle:thin:@fusiondb.oracleoutsourcing.co`
     `m:1616:DPFGR010`

   – Update ODI Supervisor User credentials, for example:

     ```
     odiWorkUser=FUSION_APPS_HCM_ODI_SUPERVISOR_APPID
     odiWorkUserPassWord=kza4Qb1grf#etu
     ```

   – Update ODI Work repository details, for example:

     ```
     odiWorkReposJDBCURL=jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=T
     CP)(HOST=fusiondb.oracleoutsourcing.com)(PORT=1616))(ADDRESS=(PROTOCOL=
     TCP)(HOST=fusiondb2.oracleoutsourcing.com)(PORT=1616))(LOAD_
     BALANCE=YES)(CONNECT_DATA=(SERVER=DEDICATED)(SERVICE_NAME=DPFGR010)))
     ```

   – Update ODI Configure Database Connections, for example:

     ```
     oraFusionSchemaUser=FUSION
     oraFusionSchemaUserPswd=welcome1
     oraFusionOdiSchemaUser=FUSION_ODI
     oraFusionOdiSchemaUserPswd=welcome1
     oraFusionOdiStageSchemaUser=FUSION_ODI_STAGE
     oraFusionOdiStageSchemaUserPswd=welcome1
     ```

   – Update the ODI DB link value, for example:

     ```
     oraOdiInstanceDbLinkFieldValue=fusiondb.oracleoutsourcing.com:1616/DPFG
     R010
     ```

   – Update ODI JDBC URL value, for example:

     ```
     oraJdbcThinDriverUrl=jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=
     TCP)(HOST=fusiondb.oracleoutsourcing.com)(PORT=1616))(ADDRESS=(PROTOCOL
     =TCP)(HOST=fusiondb2.oracleoutsourcing.com)(PORT=1616))(LOAD_
     BALANCE=YES)(CONNECT_DATA=(SERVER=DEDICATED)(SERVICE_NAME=DPFGR010)))
     ```

   – Update ODI File Connections, for example:

     ```
     #FILE_ROOT_HCM
     fileRootHcmSchemaLoc=/u01/oracle/ODI_FILE_ROOT_HCM
     fileRootHcmWSSchemaLoc=/u01/oracle/ODI_FILE_ROOT_HCM

     #FILE_OUTPUT_HCM
     fileOutHcmSchemaLoc=/u01/oracle/ODI_FILE_ROOT_HCM/export
     fileOutHcmWSSchemaLoc=/u01/oracle/ODI_FILE_ROOT_HCM/export
     ```

– Update and review the following tags in jps-config.xml:

```
cd $HOME/tmp/hcmOdiConfigDir/config
vi $HOME/tmp/hcmOdiConfigDir/config/jps-config.xml

<!-- JPS OID LDAP Identity Store Service Instance -->
 <serviceInstance name="idstore.oid" provider="idstore.ldap.provider">
 <property name="subscriber.name" value="dc=us,dc=oracle,dc=com" />
 <property name="idstore.type" value="OID" />
 <property name="cleartext.ldap.credentials"
value="cn=orcladmin:fusionapps1"/>

<property name="ldap.url"
value="ldap://vmfsnpfgr001.oracleoutsourcing.com:3060" />
 <extendedProperty>
  <name>user.search.bases</name>
  <values>
   <value>cn=Users,dc=us,dc=oracle,dc=com</value>
  </values>
 </extendedProperty>
 <extendedProperty>
  <name>group.search.bases</name>
  <values>
   <value>cn=Groups,dc=us,dc=oracle,dc=com</value>
  </values>
 </extendedProperty>
 <property name="username.attr" value="uid" />
 <property name="groupname.attr" value="cn" />
</serviceInstance>
```

– Review and update the setDomainEnv.sh location in hcmAdmin.sh, for example:

```
# Modify the path of the HcmDomain setDomainEnv.sh if needed to match
the env.
 #----------------------------------------------------------------------
/u01/APPLTOP/instance/domains/admin-apps.oracleoutsourcing.com/HCMDomai
n/bin/setDomainEnv.sh

sh $HOME/tmp/hcmOdiConfigDir/hcmAdmin.sh
```

Capture the output in viewodiconfig.log.

```
cd $HOME/tmp/hcmOdiConfigDir/
vi $HOME/tmp/hcmOdiConfigDir/hcmConfig.prop
```

– Modify the updateMode to be true, to update the ODI configuration.

Run the shell script, sh $HOME/tmp/hcmOdiConfigDir/hcmAdmin.sh and capture the output in the postUpdateViewOdiConfig.log.

g. Enable SQL*Loader for Oracle Data Integrator.

Oracle Fusion HCM Coexistence Oracle Data Integrator uses SQL*Loader to import file data. Use the SQL*Loader in Oracle Data Integrator from the Oracle Weblogic Server environment, to perform the following steps.

– Determine the directory where the Oracle client software is installed for your deployment. The default name would be DBCLIENT and it will be placed in the parent directory of *MW_HOME*. You can refer to this directory as *DBCLIENT ORACLE_HOME*.

– Verify the existence of *DBCLIENT ORACLE_HOME*/bin/sqlldr.

– Using the cd command, change the directory to *ODI_ORACLE_HOME*/bin.

– Use a text editor to create a script with the file name sqlldr containing the following text:.

```
#!/bin/sh
ORACLE_HOME=<DBCLIENT ORACLE_HOME>
export ORACLE_HOME
$ORACLE_HOME/bin/sqlldr $*
#
```

– Make the script executable by using the following command.

```
chmod +x sqlldr
```

5. Compile the following information required by the Oracle Fusion HCM Application Administrator for configuring the HR2HR functionality:

   ■ Sftp details including user name, password, host name, port and credentials

   ■ ODI Context : DEVELOPMENT (default value)

   ■ ODI Root Directory

   ■ ODI User : FUSION_APPS_HCM_ODI_SUPERVISOR_APPID (default value)

   ■ ODI Password

   ■ ODI Work Repository : FUSIONAPPS_WREP (default value)

3.3.2.12 Enable Proxies in Oracle Fusion HCM Pods

Enable proxies by performing the following steps.

1. Append the following entries to fusion.default.default.sysprops in DOMAIN_HOME/bin/fusionapps_start_params.properties for primary and secondary hosts. The values for proxyHost, proxyPort and nonProxyHosts need to change for each implementation. The values here are examples used at Oracle.

```
-Dhttp.proxyHost=www-proxy.oracleoutsourcing.com -Dhttp.proxyPort=80
-Dhttp.proxySet=true -Dhttp.nonProxyHosts=*.oracleoutsourcing.com
```

2. Stop and start the entire domain.

3. Add the appropriate proxy entries in /etc/hosts, as shown in the following example.

```
133.10.55.130 www-proxy.oracleoutsourcing.com
133.10.55.130 www-proxy.us.oracle.com
```

3.3.3 Apply Oracle Fusion Middleware Patches

Apply the mandatory Oracle Fusion Middleware patches. For more information, see "Oracle Fusion Middleware" in Oracle Fusion Applications release notes.

3.3.4 Apply Oracle Fusion Applications Patches

Apply the following mandatory patches:

■ 13618503 - BACKPORT REFERENCE GRANTS FOR SETIDS

Refer to Oracle Fusion Applications release notes for information related to any additional patches that must be applied after Oracle VM deployment.

3.3.5 Oracle Fusion Applications Post-installation Steps

You must now perform the necessary implementation and functional setup tasks.

3.3.5.1 Manage User Passwords for Login Access to Applications Components

For complete information about setting up and managing passwords for your new environment, see "Securing Oracle Fusion Applications" and "Provisioning Identities" in *Oracle Fusion Applications Administrator's Guide*

3.3.5.2 Enable Product Offering Functionality

Before you can start using any of the product offerings you have installed, you must complete some common implementation tasks and enable the functionality of the offerings in your environment.

A large library of product-related documentation is available for use after provisioning. Some of the guides that you will find useful are listed here:

- *Oracle Fusion Applications Information Technology Management, Implement Applications Guide*

- *Oracle Fusion Applications Common Implementation Guide*

- *Oracle Fusion Applications Post-Installation Guide*

- Product-specific Oracle Fusion Applications implementation guides

3.4 Other Oracle VM Life Cycle Management Tasks

get some more background on these use cases (telling customers when they will need to run a particular task).

- Scale Out the OHS Node

- Scale Out the Primary Node

- Remove a Deployed Topology (Optional)

- Remove Exported Template Storage (Optional)

- Rerun a Deployment (Optional)

3.4.1 Scale Out the OHS Node

To scale out the OHS node, first prepare the `ovm-ha-deploy.properties` file by updating the scale out Oracle VM information. You must specify your Oracle VM host names. Other properties are determined automatically based on the specifications for the base OHS Oracle VM.

```
faovm.ha.HOST_OHS_SCALE1=server02.com
```

You must adSd the number of scale out host names based on the number of scale out OHS Oracle VM. Update environment information in POD's excel sheets that you want to create.

To execute the scale out:

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh scaleoutOHS type=ha scaleoutInstances=1
```

3.4.2 Scale Out the Primary Node

To scale out the Primary node, first prepare the `ovm-ha-deploy.properties` file by updating the scale out Oracle VM information. You must specify your Oracle VM host names. Other properties are determined automatically based on the specifications for the base Primary Oracle VM.

```
faovm.ha.HOST_PRIMARY_SCALE1=adc2130529.us.oracle.com
```

You must add the number of scale out host names based on the number of scale out Primary Oracle VMs that you want to create.

To execute the scale out:

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh scaleoutApps type=ha scaleoutInstances=1
```

3.4.3 Remove a Deployed Topology (Optional)

If you want to remove a topology that you previously created, use the `cleanupTopology` argument with `faovmdeploy.sh`.

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh cleanupTopology type=ha
```

Additionally, if you want to reset the Oracle RAC database to its original state, you can do this by dropping the data files. You should drop these data files only if you are certain that you want to destroy the topology. An example script follows:

```
startup nomount pfile='/tmp/workpfile.ora';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/system01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/sysaux01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_undo01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
02.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
03.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
04.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
05.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_transaction_table_
06.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/SEARCH_INDEX_1.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_ias_sdpmaq_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_archive_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_dq_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_interface_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_nologging_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/otbi_biacmts_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_seed_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_dyn_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_queues_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_aq_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/SEARCH_DATA_1.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_media_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_summary_01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_data.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_index.dbf';
```

```
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_seed.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_interface.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_audit.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_archive.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_queues.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_lobs.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_search_data.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_search_index.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/bee_search_lobs.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/BEE_mds.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/fusion_temp01.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/SEARCH_TEMP_1.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/BEE_iastemp.dbf';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo01.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo02.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo03.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo01b.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo02b.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/redo03b.log';
ALTER DISKGROUP DATA_SLCC10 drop file '+DATA_SLCC10/undotbs2.dbf';
shutdown;
quit;
```

3.4.4 Remove Exported Template Storage (Optional)

If you previously used the pre-exported template storage feature, as described in Step 6 under Section 3.1, "Prepare Deployment Properties", you can remove these templates by using the `cleanupExportedTemplateStorage` command. Do not use this command if any topologies exist with volumes that are clones of the base exported template storage volumes and shares. If you run this command when these clones exist, the command will fail and it may also remove all of the storage for those clones. The command syntax follows:

```
cd $FAOVM/deployfw/bin
./faovmdeploy.sh cleanupExportedTemplateStorage type=ha
```

3.4.5 Rerun a Deployment (Optional)

If you want to rerun a deployment, reset the database and reexecute the restore process because some steps cannot be rerun on a database that has already undergone a deployment and rehydration. To reset the database, create a shell script `/tmp/resetdb.xxxx.sh`, where xxxx is the source database name, to help stop the database and drop or remove the data files.

3.5 Troubleshooting Oracle VM Deployment

The following troubleshooting scenarios are included in this section.

- Resolve Error About essbase Server When Starting BI Components
- Stop and Restart CRMPerformance Server Every Time BI Server Starts

3.5.1 Resolve Error About essbase Server When Starting BI Components

If you scaled out your servers after Oracle VM deployment, you may encounter an error when starting BI components.To resolve this error, edit the `/u01/APPLTOP/instance/BIInstance/config/OPMN/opmn/opmn.xml` file. In the `opmn.xml` file, check if the path value of <variable id="ARBORPATH" > exists. If the

path does not exist, update it to a path that does exist. Then stop and start all BI components to allow the Essbase server to start up successfully.

3.5.2 Stop and Restart CRMPerformance Server Every Time BI Server Starts

You must stop and start the `CRMPerformance` server every time you start the BI Server. The following example provide the correct order of steps for starting the BI server.

1. Start the BI Server.

   a. Log in to the *HOST_BI*/console as the applications system user, as specified by the `faovm.os.apps.user.name` property.

   b. Click **Servers**.

   c. Go to the **Control** tab

   d. Select `bi_server1` and click **Start**.

2. Stop and start the `CRMPerformance` Server.

   a. Log in to *HOST_CRM* /console as the applications system user, as specified by the `faovm.os.apps.user.name` property.

   b. Click **Servers**.

   c. Go to the **Control** tab

   d. Select `CRMPerformanceServer_1` and click **Shutdown**, then **Force Shutdown Now**.

   e. When the server is shut down, select `CRMPerformanceServer_1` and click **Start.**