

## **Oracle® Fusion Applications**

Installation Guide for Oracle VM

11g Release 1 (11.1.4)

**E26570-07**

May 2012

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

Oracle Fusion Applications Installation Guide for Oracle VM, 11g Release 1 (11.1.4)

E26570-07

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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 guide 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 Fusion Middleware Administrator's Guide*
- *Oracle Fusion Applications Customer Relationship Management 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 guide:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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.

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# What's New in This Guide for Release 11.1.4

For Release 11.1.4, this guide has been updated in several ways. The following table lists the sections that have been added or changed.

Sections	Changes Made
<b>Chapter 2, "Prerequisites for Oracle VM Deployment"</b>	
<a href="#">Table 2-1, "Suggested Memory (in GB) and Number of vCPUs"</a>	Information modified to reflect current correct values.
<a href="#">Table 2-2, "Internal BIG IP End Points (HTTP - Non-SSL)"</a>	Information about IDM Domain and IDM Admin added.
<a href="#">Table 2-3, "External BIG IP End Points (HTTPS - SSL enabled)"</a>	Information about IDM Domain added.
<a href="#">Section 2.7, "Create a Database"</a>	Updated information about the currently supported database version.
<a href="#">Section 2.7.1, "Configure spfile on the Database"</a>	Updated procedure for configuring spfile on the database.
<a href="#">Section 2.7.3, "Set Up a Single-Instance Database"</a>	Updated process for setting up a single-instance database.
<a href="#">Section 2.8, "Prepare an Oracle Enterprise Manager Instance"</a>	Altered to reflect the discontinuing of the use of Oracle Enterprise Manager 11g Grid Control.
<a href="#">Section 2.9.2, "Three-Host Standalone Oracle Identity Management"</a>	Section revised to reflect using shared Oracle Identity Management
<a href="#">Section 2.13, "Enable Secure Shell (SSH) for Deployer Host"</a>	Added information about enabling secure shell (SSH) for Deployer Host.
<b>Chapter 3, "Deployment of Oracle VM Templates"</b>	
<a href="#">Section 3.1.1, "Additional Deployment Properties"</a>	Added information about additional deployment properties, altered information to reflect the use of Oracle Enterprise Manager 12c Cloud Control.
<a href="#">Section 3.3.2.1, "Enable Single Sign-on After Deployment"</a>	Added information to detail how to enable single sign-on after deployment.



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# Introduction to Oracle VM Installation

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

This chapter includes the following sections:

- [Section 1.1, "Overview"](#)
- [Section 1.2, "Terms and Definitions"](#)
- [Section 1.3, "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, and Enterprise Contracts)
- 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, and Enterprise Contracts
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, except for the Oracle Fusion Applications Database, 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 implement **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 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 <i>Oracle Fusion Applications Installation Guide</i>
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.	<a href="#">Chapter 2, "Prerequisites for Oracle VM Deployment"</a>
Prepare deployment properties.	Modify the properties file for the topology you are deploying.	<a href="#">Section 3.1, "Prepare Deployment Properties"</a>
Run deployment.	Create the Oracle Fusion Applications topology, including Oracle Identity Management, onto the Oracle VMs.	<a href="#">Section 3.2, "Run Deployment"</a>

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

<b>Task</b>	<b>Description</b>	<b>Documentation</b>
Post-rehydration.	Perform post-rehydration steps.	<a href="#">Section 3.3, "Post-Rehydration Steps"</a>
Scale out nodes.	Scale out the Oracle HTTP Server (OHS) and Primary nodes.	<a href="#">Section 3.4.1, "Scale Out the OHS Node"</a> , <a href="#">Section 3.4.2, "Scale Out the Primary Node"</a>
Remove a deployed topology.	Remove a previously created topology, as needed.	<a href="#">Section 3.4.3, "Remove a Deployed Topology (Optional)"</a>
Remove Exported Template Storage	Remove pre-exported templates that are no longer needed.	<a href="#">Section 3.4.4, "Remove Exported Template Storage (Optional)"</a>
Rerun a deployment.	Reset a database so a deployment can be rerun.	<a href="#">Section 3.4.5, "Rerun a Deployment (Optional)"</a>



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## Prerequisites for Oracle VM Deployment

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

This chapter includes the following sections:

- [Section 2.1, "Oracle VM Servers and Virtual IP Addresses"](#)
- [Section 2.2, "Allocate a Deployer Host"](#)
- [Section 2.3, "Set the Privilege Escalation Mechanism"](#)
- [Section 2.4, "Install Oracle VM Manager"](#)
- [Section 2.5, "Provide Access to NetApp or Sun Storage Server"](#)
- [Section 2.6, "Allocate BIG IP End Points"](#)
- [Section 2.7, "Create a Database"](#)
- [Section 2.8, "Prepare an Oracle Enterprise Manager Instance"](#)
- [Section 2.9, "Configure Standalone Oracle Identity Management"](#)
- [Section 2.10, "Confirm the Oracle Virtual Assembly Builder Home is Accessible"](#)
- [Section 2.11, "Register Templates with Oracle VM Manager"](#)
- [Section 2.12, "Install the Oracle VM Automation Utility"](#)
- [Section 2.13, "Enable Secure Shell \(SSH\) for Deployer Host"](#)

### 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 to 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 Oracle 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 Domain Name System (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 (in GB) and Number of vCPUs**

Node Type/Topology	CRM HA	HCM HA	GSI HA
Node 1 - FA	20 G 6 vCPU	15 G 4 vCPU	23 G 6 vCPU
Node 2 - Primary	17 G 6 vCPU	14 G 4 vCPU	20 G 8 vCPU
Node 3 - Secondary	50 G 24 vCPU	43 G 24 vCPU	68 G 24 vCPU
Node 4 - BI	6 G 4 vCPU	6 G 4 vCPU	6 G 4 vCPU
Node 5 - OHS	1 G 2 vCPU	1 G 2 vCPU	1 G 2 vCPU
Node 9 - WebChat	5 G 4 vCPU	Not applicable	5 G 4 vCPU
Node 10 - Single Tenant IDM	22 G 4 vCPU	22 G 4 vCPU	22 G 4 vCPU

The memory settings provided are 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 1.5 GB 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 the Node 1 Administration Servers to shutdown at the end of deployment, you can 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, to get enough memory returned to the Oracle VM 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 increase the memory only up to the value that was initially allocated for the Oracle VM during rehydration.

## 2.2 Allocate a Deployer Host

Allocate one server 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 4 GB of RAM are 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 pound sign, '#', 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 `/usr/local/packages` utility provided by the Network File System (NFS) 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](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, see Step 5 of [Section 3.1, "Prepare Deployment Properties."](#)

- Volume 1: Shared by the FA, Primary, Secondary, and BI nodes (120 GB)
- Volume 2: Used by the OHS nodes (12 GB)
- Volume 3: Used by the WebChat nodes and is optional (12 GB)
- Volume 4: Used by the single-tenant IDM node (50 GB)

The volume sizes specified are based on the assumption that Volume 1 consumes approximately 90 GB after rehydration and that OHS and WebChat use approximately 8 GB. 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 will not be 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	<i>OHS_VM_IP_ADDR</i> :10613
HCMDomain	gsi-elha-hcm-int.us.oracle.com:10619	<i>OHS_VM_IP_ADDR</i> :10619
CRMDomain	gsi-elha-crm-int.us.oracle.com:10615	<i>OHS_VM_IP_ADDR</i> :10615
FinancialDomain	gsi-elha-fin-int.us.oracle.com:10603	<i>OHS_VM_IP_ADDR</i> :10603
ProjectsDomain	gsi-elha-prj-int.us.oracle.com:10605	<i>OHS_VM_IP_ADDR</i> :10605
ProcurementDomain	gsi-elha-prc-int.us.oracle.com:10607	<i>OHS_VM_IP_ADDR</i> :10607
ProcurementDomain (Supplier Portal)	gsi-elha-prc-sp-int.us.oracle.com:10609	<i>OHS_VM_IP_ADDR</i> :10609
SCMDomain	gsi-elha-scm-int.us.oracle.com:10617	<i>OHS_VM_IP_ADDR</i> :10617
BIDomain	gsi-elha-bi-int.us.oracle.com:10621	<i>OHS_VM_IP_ADDR</i> :10621
ICDomain	gsi-elha-ic-int.us.oracle.com:10611	<i>OHS_VM_IP_ADDR</i> :10611
IDMDomain	gsi-cln-ha-ldap-int.us.oracle.com:7777	<i>OHS_VM_IP_ADDR</i> :7777
IDM Admin	gsi-cln-ha-ldap-admin.us.oracle.com:443	<i>OHS_VM_IP_ADDR</i> :7777

**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	<i>OHS_VM_IP_ADDR</i> :10614
HCMDomain	gsi-elha-hcm-ext.us.oracle.com:10620	<i>OHS_VM_IP_ADDR</i> :10620
CRMDomain	gsi-elha-crm-ext.us.oracle.com:10616	<i>OHS_VM_IP_ADDR</i> :10616
FinancialDomain	gsi-elha-fin-ext.us.oracle.com:10604	<i>OHS_VM_IP_ADDR</i> :10604
ProjectsDomain	gsi-elha-prj-ext.us.oracle.com:10606	<i>OHS_VM_IP_ADDR</i> :10606
ProcurementDomain	gsi-elha-prc-ext.us.oracle.com:10608	<i>OHS_VM_IP_ADDR</i> :10608
ProcurementDomain (Supplier Portal)	gsi-elha-prc-sp-ext.us.oracle.com:10610	<i>OHS_VM_IP_ADDR</i> :10610
SCMDomain	gsi-elha-scm-ext.us.oracle.com:10618	<i>OHS_VM_IP_ADDR</i> :10618
BIDomain	gsi-elha-bi-ext.us.oracle.com:10622	<i>OHS_VM_IP_ADDR</i> :10622
ICDomain	gsi-elha-ic-ext.us.oracle.com:10612	<i>OHS_VM_IP_ADDR</i> :10612
IDMDomain	gsi-cln-ha-login.us.oracle.com:443	<i>OHS_VM_IP_ADDR</i> :7777

## 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 Real Application Cluster (Oracle RAC) or a single instance database and must be on a physical machine, not an Oracle VM. For this release, the supported database version is Oracle Database 11.2.0.3.

Review these sections to prepare your database:

- [Section 2.7.1, "Configure spfile on the Database"](#)
- [Section 2.7.2, "Set Up an Oracle Real Application Clusters \(RAC\) Database"](#)
- [Section 2.7.3, "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 file to the database:

1. Log in as the sys user.
2. For the following command:

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

replace ORACLE\_HOME and ORACLE\_SID with the value of the database that you created and run the command.

If an spfile does not exist for the target database before running the 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

The following is the setup for a two-node Oracle RAC database for Oracle VM deployment. See [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 11.2.0.3**

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	4 GB	8 GB
plsql_code_type	NATIVE	NATIVE
processes	5000	5000

**Table 2–4 (Cont.) Recommended Database Parameters for Oracle 11.2.0.3**

Parameter	Recommended Value for Starter	Recommended Value for Production
session_cached_cursors	500	500
sga_target	9 GB	18 GB
undo	12 GB	12 GB
temp	9 GB	9 GB
redo	3 groups; each 2 GB	3 groups; each 2 GB

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 set 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`.
- Set both `faovm.ha.HOST_DB` and `faovm.ha.HOST_DB2` equal to the database host.

### 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.new.service.name}/dpdump
faovm.ha.fusiondb.new.dba.dir.name8=EQ_CACHE_DIR

faovm.ha.fusiondb.new.dba.dir.path8=${fusiondb.new.oracle.base}/oradata/${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_CHANGEEME
ORACLE_HOME/incident_logs
ORACLE_HOME/applog_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 an Oracle Enterprise Manager 12c Cloud Control instance (Cloud Control) for the wiring of these agents.

### 2.8.1 Install Oracle Enterprise Manager 12c 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.

## 2.9 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_CHANGEEME
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.*` must 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:

```
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.*` must be configured. Properties beginning with `faovm.ha.idm1.*` can be ignored.

Note that you must leave the property

```
#faovm.ha.idm3db.faappsadmin=<FAAdmin>commented (with a "#" at the start of the line). This means that the Oracle Fusion Applications administration user cannot be seeded into LDAP during deployment steps. You must create this user after deployment. For more information on creating and managing users, see "Provisioning Identities" in Oracle Fusion Applications Administrator's Guide
```

Note also that when using a shared Oracle Identity Management, the property `faovm.topo.ovms` should not contain an entry for any Identity Management related nodes.

### 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, ensure that 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 <a href="#">Section 2.12, "Install the Oracle VM Automation Utility"</a> . 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 the OHS, FA and BI templates 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`

## 2.13 Enable Secure Shell (SSH) for Deployer Host

During deployment steps, the deployer host must be able to establish secured shell (SSH) with all the database hosts (Oracle Fusion Applications and IDM), and all of the OVM hosts to be created during the deployment steps. The SSH session uses the OS user credentials specified in the deployment properties.

The default SSH port is port 22. This port must be open for bi-directional communication if you place a firewall between the hosts.



---

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## Deployment of Oracle VM Templates

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

This chapter includes the following sections:

- [Section 3.1, "Prepare Deployment Properties"](#)
- [Section 3.2, "Run Deployment"](#)
- [Section 3.3, "Post-Rehydration Steps"](#)
- [Section 3.4, "Other Oracle VM Life Cycle Management Tasks"](#)
- [Section 3.5, "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 12c Cloud Control (Cloud 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 Cloud 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 Cloud 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 be set only 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,wsiz
e=32768,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,wsiz
e=131072,nfsvers=3,timeo=600

# Generic, Predefined 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,wsiz
e=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.export.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.root}
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=${faovm.ha.fa.storage.exported.template.name}
faovm.ha.bi.storage.exported.template.name=${faovm.ha.fa.storage.exported.template.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.com
faovm.ha.bigip.mapping.crm.port.external=10616
faovm.ha.bigip.mapping.crm.host.internal=fscmhcm-cln-large-crm-int.us.oracle.com
faovm.ha.bigip.mapping.fin.host.external=fscmhcm-cln-large-fin-ext.us.oracle.com
faovm.ha.bigip.mapping.fin.port.external=10604
faovm.ha.bigip.mapping.fin.host.internal=fscmhcm-cln-large-fin-int.us.oracle.com
faovm.ha.bigip.mapping.scm.host.external=fscmhcm-cln-large-scm-ext.us.oracle.com
faovm.ha.bigip.mapping.scm.port.external=10618
faovm.ha.bigip.mapping.scm.host.internal=fscmhcm-cln-large-scm-int.us.oracle.com
faovm.ha.bigip.mapping.hcm.host.external=fscmhcm-cln-large-hcm-ext.us.oracle.com
faovm.ha.bigip.mapping.hcm.port.external=10620
faovm.ha.bigip.mapping.hcm.host.internal=fscmhcm-cln-large-hcm-int.us.oracle.com
faovm.ha.bigip.mapping.prj.host.external=fscmhcm-cln-large-prj-ext.us.oracle.com
faovm.ha.bigip.mapping.prj.port.external=10606
faovm.ha.bigip.mapping.prj.host.internal=fscmhcm-cln-large-prj-int.us.oracle.com
faovm.ha.bigip.mapping.prc.host.external=fscmhcm-cln-large-prc-ext.us.oracle.com
faovm.ha.bigip.mapping.prc.port.external=10608
faovm.ha.bigip.mapping.prc.host.internal=fscmhcm-cln-large-prc-int.us.oracle.com
faovm.ha.bigip.mapping.prc.supplierportal.host.external=fscmhcm-cln-large-prc-sp-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-sp-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 is 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
deployment. 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/hcmttest1/datafile
+DATA/hcmttest1/tempfile
+RECO/hcmttest1/ONLINELOG

```

In addition, if specifying a path in the controlfile location, the directory structure `*.control_files='+DATA/hcmttest1/controlfile/control01.ctl', '+DATA/hcmttest1/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=${fusiondb.new.oracle.home}/search/webapp/config
faovm.ha.fusiondb.new.dba.dir.name4=XMLDIR
faovm.ha.fusiondb.new.dba.dir.path4=${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=${fusiondb.new.oracle.base}/admin/${fusiondb.new.service.name}/dpdump
faovm.ha.fusiondb.new.dba.dir.name8=EQ_CACHE_DIR
faovm.ha.fusiondb.new.dba.dir.path8=${fusiondb.new.oracle.base}/oradata/${fusiondb.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_CHANGEEME
faovm.ha.HOST_PRIMARY=adc2130517.us.oracle.com_CHANGEEME
faovm.ha.HOST_SECONDARY=adc2130518.us.oracle.com_CHANGEEME
faovm.ha.HOST_BI=adc2130519.us.oracle.com_CHANGEEME
faovm.ha.HOST_OHS=adc2130505.us.oracle.com_CHANGEEME
faovm.ha.HOST_WEBCHAT=adc2130527.us.oracle.com_CHANGEEME

```

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_CHANGEEME
faovm.ha.HOST_SECONDARY_HA1=adc2130532.us.oracle.com_CHANGEEME
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_CHANGEEME` 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_CHANGEEME
```

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_CHANGEEME` 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_CHANGEEME
```

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.

### 3.1.1 Additional Deployment Properties

This section lists additional deployment properties added in this release, as well as their default values. You can make changes to these properties to suit your needs and then continue with deployment.

- Property for specifying privilege escalation pbrun policy name:

```
faovm.privilege.escalation.pbrun.policy.name=policy1-root
```

- Properties for enabling/disabling agent for Java VM Diagnostics and specifying its version:

```
faovm.jvmd.enabled=${emagent.install.enabled}
faovm.jvmd.agent.version=12c
```

- Property for specifying ODI repository identifier:

```
faovm.odi.repository.id=502
```

- Property for enabling ODI for HR2HR (HCM Coexistence):

```
faovm.hcm.hr2hr.odi.config.enable=false
```

- Properties for Secure File Transfer Protocol (FTP):

```
faovm.sftp.config.enabled=false
faovm.sftp.username=user
faovm.sftp.password=pwd
faovm.sftp.server.host=sftp.cloud.oracle.com
faovm.sftp.server.port=2021
```

- Property for removing WebGate configuration:

```
faovm.ha.ohs.remove.webgate.conf=false
```

- Property for specifying sendmail configuration and enabling sendmail feature:

```
faovm.sendmail.smart.host=smtp.oracleoutsourcing.com
faovm.sendmail.daemon.options='Port=submission,Addr=127.0.0.1, Name=MSA, M=E '
faovm.sendmail.submit.feature.msp=' [127.0.0.1] ', 'MSA'
```

```
faovm.ha.sendmail.enabled=false
faovm.ha.primary.sendmail.enabled=true
faovm.ha.secondary.sendmail.enabled=true
faovm.ha.bi.sendmail.enabled=true
```

```

faovm.ha.idm1.sendmail.enabled=true
faovm.ha.idm1.sendmail.smart.host=auohs-smtp.oracle.com
faovm.ha.idm1.sendmail.daemon.options='Port=smtp,Addr=127.0.0.1, Name=MTA '
faovm.ha.idm3mw.sendmail.submit.feature.msp=' [127.0.0.1] '

```

### 3.1.1.1 Changed Default Deployment Properties Values

The default values for these deployment properties have changed from the previous release:

```

faovm.emagent.install.enabled=true
#faovm.mtidm.source.tenant.id=17099669285212912
#faovm.mtidm.source.tenant.name=acme
#faovm.mtidm.source.enterprise.id=17099669285215912
#faovm.mtidm.source.jps.root=cn=acme.FAService,cn=OPSS
faovm.lstorage.sun.nfs.mount.options=rw,hard,nointr,rsize=131072,wsiz
e=131072,timeo=600,noacl,noatime,nodiratime
faovm.storage.genericnfs.nfs.mount.options=rw,hard,nointr,rsiz
e=32768,wsize=32768,timeo=600
#faovm.storage.vm.aux.mount0.nfs.mount.options=rw,tcp,hard,nointr,rsiz
e=32768,timeo=600

faovm.ha.bigip.mapping.ic.host.external=crm-cln-ha-ic-ext.us.oracle.com
faovm.ha.bigip.mapping.ic.port.external=10612
faovm.ha.bigip.mapping.ic.host.internal=crm-cln-ha-ic-int.us.oracle.com

faovm.ha.HOST_SMTP=adcemodmx.atoracle.com

faovm.ha.fa.memory=20480
faovm.ha.fa.originally.provisioned.memory=26624

faovm.ha.primary.cpus=6
faovm.ha.primary.memory=17408
faovm.ha.primary.originally.provisioned.memory=19456

faovm.ha.idm1.standalone.file.archive0=idm/u01_dboid.tar.gz
faovm.ha.idm1.storage.size=90g
faovm.ha.idm1.storage.exported.template.size=80g
#faovm.ha.idm1.faapsadmin.username=FAAdmin_CHANGE ME
#faovm.ha.idm1.faapsadmin.password=CHANGE ME
faovm.ha.idm3db.standalone.file.archive0=idm/u01_dboid.tar.gz

faovm.ha.idm3db.storage.size=70g
faovm.ha.idm3db.storage.exported.template.size=65g

faovm.ha.webchat.lockfile=/dev/shm/ohs_webchat_http_lock
faovm.ha.idm1.lockfile=/dev/shm/ohs_auth_http_lock
faovm.ha.idm3ohs.lockfile=/dev/shm/ohs_auth_http_lock
faovm.ha.ohs.lockfile=/dev/shm/ohs_ohs1_http_lock

```

## 3.2 Run Deployment

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

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-ODICCluster.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_
SOACcluster.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-CRMDomain-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:

- [Perform Postinstallation Tasks](#)
- [Perform Post-rehydration Steps](#)
- [Apply Oracle Fusion Middleware Patches](#)
- [Apply Oracle Fusion Applications Patches](#)
- [Oracle Fusion Applications Post-installation Steps](#)

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**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.

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### 3.3.1 Perform Postinstallation Tasks

Complete the following post-rehydration step that is related to Oracle VM.

- [Perform Postinstallation Tasks](#)

#### 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*.

### 3.3.2 Perform Post-rehydration Steps

Complete the following post-rehydration step.

### 3.3.2.1 Enable Single Sign-on After Deployment

After Deployment, a user who tries to access some URLs may not see the Single Sign-On page. If this is the case, perform the following manual steps:

1. Locate the file `/u02/instance/CommonDomain_webtier)local/config/OHS/ohs1/httpd.conf`
2. Using a text editor, add the following to the end of the file:  

```
include /u02/instance/CommonDomain_webtier_local/config/OHS/ohs1/webgate.conf
```
3. Bounce OHS

### 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

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

These are other life cycle management tasks that might be useful for your Oracle VM installation.

- [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 add 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.

- [Re-triggering Rehydration](#)

### 3.5.1 Re-triggering Rehydration

During rehydration, if for some reason, you need to log in to an Oracle VM and manually re-trigger rehydration for that Oracle VM by invoking `abinit-host.sh`, remember to set the following environment variables first:

```
export JAVA_HOME=/assemblybuilder/jre
export PATH=$PATH:$JAVA_HOME/bin
```

