

Oracle® Solaris Cluster Data Service for Oracle E-Business Suite Guide

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Preface

Oracle Solaris Cluster Data Service for Oracle E-Business Suite Guide explains how to install and configure Oracle Solaris Cluster data services.

Note – This Oracle Solaris Cluster release supports systems that use the SPARC and x86 families of processor architectures. In this document, “x86” refers to the larger family of x86 compatible products. Information in this document pertains to all platforms unless otherwise specified.

This document is intended for system administrators with extensive knowledge of Oracle software and hardware. Do not use this document as a planning or presales guide. Before reading this document, you should have already determined your system requirements and purchased the appropriate equipment and software.

The instructions in this book assume knowledge of the Oracle Solaris Operating System and expertise with the volume-manager software that is used with Oracle Solaris Cluster software.

Bash is the default shell for Oracle Solaris 11. Machine names shown with the Bash shell prompt are displayed for clarity.

Using UNIX Commands

This document contains information about commands that are specific to installing and configuring Oracle Solaris Cluster data services. The document does *not* contain comprehensive information about basic UNIX commands and procedures, such as shutting down the system, booting the system, and configuring devices. Information about basic UNIX commands and procedures is available from the following sources:

- Online documentation for the Oracle Solaris Operating System
- Oracle Solaris Operating System man pages
- Other software documentation that you received with your system

Typographic Conventions

The following table describes the typographic conventions that are used in this book.

TABLE P-1 Typographic Conventions

Typeface	Description	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name% you have mail.</code>
AaBbCc123	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> Password:
<i>aabbcc123</i>	Placeholder: replace with a real name or value	The command to remove a file is <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . <i>A cache</i> is a copy that is stored locally. Do <i>not</i> save the file. Note: Some emphasized items appear bold online.

Shell Prompts in Command Examples

The following table shows the default UNIX system prompt and superuser prompt for shells that are included in the Oracle Solaris OS. Note that the default system prompt that is displayed in command examples varies, depending on the Oracle Solaris release.

TABLE P-2 Shell Prompts

Shell	Prompt
Bash shell, Korn shell, and Bourne shell	\$
Bash shell, Korn shell, and Bourne shell for superuser	#
C shell	machine_name%
C shell for superuser	machine_name#

Related Documentation

Information about related Oracle Solaris Cluster topics is available in the documentation that is listed in the following table. All Oracle Solaris Cluster documentation is available at <http://www.oracle.com/technetwork/indexes/documentation/index.html>.

Topic	Documentation
Hardware installation and administration	<i>Oracle Solaris Cluster 4.1 Hardware Administration Manual</i> Individual hardware administration guides
Concepts	<i>Oracle Solaris Cluster Concepts Guide</i>
Software installation	<i>Oracle Solaris Cluster Software Installation Guide</i>
Data service installation and administration	<i>Oracle Solaris Cluster Data Services Planning and Administration Guide</i> and individual data service guides
Data service development	<i>Oracle Solaris Cluster Data Services Developer's Guide</i>
System administration	<i>Oracle Solaris Cluster System Administration Guide</i> <i>Oracle Solaris Cluster Quick Reference</i>
Software upgrade	<i>Oracle Solaris Cluster Upgrade Guide</i>
Error messages	<i>Oracle Solaris Cluster Error Messages Guide</i>
Command and function references	<i>Oracle Solaris Cluster Reference Manual</i> <i>Oracle Solaris Cluster Data Services Reference Manual</i> <i>Oracle Solaris Cluster Geographic Edition Reference Manual</i> <i>Oracle Solaris Cluster Quorum Server Reference Manual</i>
Compatible software	Oracle Solaris Cluster Compatibility Guide available at the Oracle Solaris Cluster Technical Resources page

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Getting Help

If you have problems installing or using Oracle Solaris Cluster, contact your service provider and provide the following information.

- Your name and email address (if available)
- Your company name, address, and phone number
- The model number and serial number of your systems
- The release number of the operating environment (for example, Oracle Solaris 11)
- The release number of Oracle Solaris Cluster (for example, Oracle Solaris Cluster 4.1)

Use the following commands to gather information about your system for your service provider.

Command	Function
<code>prtconf -v</code>	Displays the size of the system memory and reports information about peripheral devices
<code>psrinfo -v</code>	Displays information about processors
<code>pkg list</code>	Reports which packages are installed
<code>prtdiag -v</code>	Displays system diagnostic information
<code>/usr/cluster/bin/clnode show-rev -v</code>	Displays Oracle Solaris Cluster release and package version information for each node

Also have available the contents of the `/var/adm/messages` file.

Installing and Configuring Oracle Solaris Cluster HA for Oracle E-Business Suite

This chapter explains how to install and configure Oracle Solaris Cluster HA for Oracle E-Business Suite (HA for Oracle E-Business Suite).

This chapter contains the following sections.

- “HA for Oracle E-Business Suite Overview” on page 9
- “Overview of Installing and Configuring HA for Oracle E-Business Suite” on page 10
- “Planning the HA for Oracle E-Business Suite Installation and Configuration” on page 11
- “Installing and Configuring Oracle E-Business Suite” on page 22
- “Verifying the Installation and Configuration of Oracle E-Business Suite” on page 26
- “Installing the HA for Oracle E-Business Suite Package” on page 31
- “Registering and Configuring HA for Oracle E-Business Suite” on page 32
- “Verifying the HA for Oracle E-Business Suite Installation and Configuration” on page 40
- “Upgrading HA for Oracle E-Business Suite” on page 40
- “Understanding the HA for Oracle E-Business Suite Fault Monitor” on page 42
- “Debugging HA for Oracle E-Business Suite” on page 43

HA for Oracle E-Business Suite Overview

The HA for Oracle E-Business Suite data service provides a mechanism for orderly startup and shutdown, fault monitoring, and automatic failover of the Oracle E-Business Suite.

Oracle E-Business Suite is a complete set of business applications that enables you to efficiently manage business processes by using a unified open architecture. This architecture is a framework for multi tiered, distributed computing that supports Oracle products. The tiers that compose Oracle E-Business Suite are the database tier, applications tier, and desktop tier. These tiers can be distributed as a logical grouping and can be grouped on one or more nodes.

TABLE 1 Oracle E-Business Suite Architecture

Desktop Tier	Application Tier	Database Tier
	Web Server	
	Forms Server	
Web Browser	Concurrent Server	Database Server
	Admin Server	
	Discoverer Server	

The distributed nature of Oracle E-Business Suite requires more than one cluster data service if all application and database tiers are to be managed by the cluster.

The following tables list the Oracle E-Business Suite components and the corresponding Oracle Solaris Cluster data service that provides high availability to that component.

TABLE 2 Protection of Components

Component	Protected by
Database Server	HA for Oracle (Database and Listener)
Web Server	HA for Oracle E-Business Suite
Forms Server	HA for Oracle E-Business Suite
Concurrent Manager Server	HA for Oracle E-Business Suite
Concurrent Manager Listener	HA for Oracle E-Business Suite

The Admin Server and Discoverer Server are not normally run within Oracle Solaris Cluster and therefore are not protected by HA for Oracle E-Business Suite.

Overview of Installing and Configuring HA for Oracle E-Business Suite

The following table summarizes the tasks for installing and configuring HA for Oracle E-Business Suite and provides cross-references to detailed instructions for performing these tasks. Perform the tasks in the order that they are listed in the table.

TABLE 3 Tasks for Installing and Configuring HA for Oracle E-Business Suite

Task	Instructions
Plan the installation	“Planning the HA for Oracle E-Business Suite Installation and Configuration” on page 11
Install and configure the Oracle E-Business Suite software	“How to Install and Configure Oracle E-Business Suite” on page 22
Verify the installation and configuration	“How to Verify the Installation and Configuration of Oracle E-Business Suite” on page 26
Install HA for Oracle E-Business Suite packages	“How to Install the HA for Oracle E-Business Suite Package” on page 31
Register and configure HA for Oracle E-Business Suite resources	“How to Register and Configure HA for Oracle E-Business Suite” on page 32
Verify the HA for Oracle E-Business Suite installation and configuration	“How to Verify the HA for Oracle E-Business Suite Installation and Configuration” on page 40
Upgrade the HA for Oracle E-Business Suite data service	“How to Upgrade to the New Version of HA for Oracle E-Business Suite” on page 40
Tune the HA for Oracle E-Business Suite fault monitor	“Understanding the HA for Oracle E-Business Suite Fault Monitor” on page 42
Debug HA for Oracle E-Business Suite	“How to Turn on Debugging for HA for Oracle E-Business Suite” on page 43

Planning the HA for Oracle E-Business Suite Installation and Configuration

This section contains the information you need to plan your HA for Oracle E-Business Suite installation and configuration.

Configuration Restrictions

The configuration restrictions in the subsections that follow apply only to HA for Oracle E-Business Suite.



Caution – Your data service configuration might not be supported if you do not observe these restrictions.

Restriction for the Supported Configurations of HA for Oracle E-Business Suite

The HA for Oracle E-Business Suite data service can be configured as a failover service or, when using Concurrent Parallel Processing, as a scalable service.

Oracle E-Business Suite can be deployed in the global zone. Oracle E-Business Suite is installed by using `rapidwiz` onto a *single-node*, *two-node* or *multi-node* installation.

- In a single-node installation, you install the Database, Web, Forms, and Concurrent Manager Servers onto a single node.
- In a two-node installation, one node contains the Database and Concurrent Manager Servers, and the other node contains the Forms and Web Servers.
- In a multi-node installation, you can specify any combination of up to five nodes to install the Database, Web, Forms, and Concurrent Manager Servers.
- The following are the components of an Oracle E-Business Suite configuration:
 - **Database Server** – Using `rapidwiz`, install the Database Server as a single database instance. The Database Server must be managed by Oracle Solaris Cluster HA for Oracle as a failover service in the cluster.
 - **Web Server** – Using `rapidwiz`, install the Web Server (Apache) onto a node. If this will run in the cluster, then the Web Server is managed by Oracle Solaris Cluster HA for Apache and can be deployed as either a failover or scalable service in the cluster.
 - **Forms and Concurrent Manager Server** – Depending on how you install using `rapidwiz`, you can install the Forms and Concurrent Manager Servers onto the same node or onto different nodes. All of these components are managed by HA for Oracle E-Business Suite as a failover service in the cluster.
- **Parallel Concurrent Processing** – HA for Oracle E-Business Suite support for Parallel Concurrent Processing requires a minimum of Oracle E-Business Suite Version 12.1. When using `rapidwiz`, you must specify the physical hostnames that will be used within the Parallel Concurrent Processing deployment.
- **Clustered Oracle Process Manager and Notification (OPMN)** – OPMN is supported with at least Oracle E-Business Suite Version 12.1. When you use the `rapidwiz` installer, you must install an OPMN instance as a single Web Entry Point (an HTTP_Server) using a logical host. Other OPMN instances must provide just OC4J services (oafm, forms, and oacore) and must specify the physical hostnames. Refer to MOS Note 380489.1 for more information about setting up a single Web Entry Point OPMN instance.

The following example shows Clustered OPMN OC4J instances on physical servers `pcastor3` and `pcastor4`, in addition to a single Web Entry Point OPMN instance using logical host `ebiz.lh` that can fail over between physical servers `pcastor3` and `pcastor4`.

```
-bash-3.00$ ./adopmctl.sh @cluster status
```

```
You are running adopmctl.sh version 120.4.12000000.3
```

Checking status of OPMN managed processes in a cluster...

Processes in Instance: PROD_pcastor4.pcastor4.sfbay.com

ias-component	process-type	pid	status
OC4J	oafm	11020	Alive
OC4J	forms	10892	Alive
OC4J	oacore	10672	Alive
HTTP_Server	HTTP_Server	N/A	Down

Processes in Instance: PROD_pcastor3.pcastor3.sfbay.com

ias-component	process-type	pid	status
OC4J	oafm	29657	Alive
OC4J	forms	29535	Alive
OC4J	oacore	29413	Alive
HTTP_Server	HTTP_Server	N/A	Down

Processes in Instance: PROD_ebiz-lh.ebiz-lh.sfbay.com

ias-component	process-type	pid	status
OC4J	oafm	N/A	Down
OC4J	forms	N/A	Down
OC4J	oacore	N/A	Down
HTTP_Server	HTTP_Server	16905	Alive

To implement clustered OPMN within Oracle Solaris Cluster, perform the following steps.

1. Ensure that each OPMN instance is deployed using a shared file system.
2. Install or clone the AppsTier Services for the OPMN OC4J instances where each OPMN OC4J instance uses the hostname of the node within the global cluster or the zone node of a zone cluster.
3. Install or clone the AppsTier Services for the OPMN Web Entry Point instance so that a logical host is used, regardless if the deployment of the OPMN Web Entry Point is within the global cluster or zone cluster. Using the example above, the OPMN Web Entry Point instance PROD_ebiz-lh.ebiz-lh.sfbay.com is deployed using a logical host (ebiz-lh) and can fail over between physical hosts pcastor3 and pcastor4.
4. Follow Metalink note-id 380489.1, section and subsection 3.1.1 for a Single Web Entry Point. When you use the example above, each OPMN instance context file should define the following context variable as follows.

```
<oc4j_cluster_nodes oa_var="s_oc4j_cluster_nodes">pcastor3.sfbay.com:6200,
pcastor4.sfbay.com:6200,ebiz-lh.sfbay.com:6200</oc4j_cluster_nodes>
<webentryhost oa_var="s_webentryhost">ebiz-lh</webentryhost>
<login_page oa_var="s_login_page">http://ebiz-lh.sfbay.com:8000/OA_HTML
/AppsLogin</login_page>
<externURL oa_var="s_external_url">http://ebiz-lh.sfbay.com:8000</externURL>
```

Refer to Metalink note-id 380489.1 for a description of these context variables and other context variables that can be changed.

5. When installing or cloning the AppsTier for the OPMN instances, ensure that the OPMN Web Entry Point instance uses different port numbers that are used by the OPMN OC4J instances for ONS-related variables. For example:

- `ons_localport`
- `ons_remoteport`
- `ons_requestport`

Failing to use different port numbers for the ONS-related variables prevents the OPMN Web Entry Point instance from starting.

Restriction for the Location of Oracle E-Business Suite Files

The Oracle E-Business Suite files are the data files that are created when you install Oracle E-Business Suite using the `rapidwiz` installer.

The Oracle E-Business Suite files must be placed on shared storage as either a cluster file system or a highly available local file system. The following tables show the mount points and acceptable file system types.

Mount Point	Filesystem Type
<code>dbnameDATA</code>	Cluster file system or highly available local file system.
<code>dbnameDB</code>	Local, cluster file system or highly available local file system.
<code>dbnameORA</code>	Local, cluster file system or highly available local file system.

Mount Point	Filesystem type
<code>dbnameCOMM_TOP</code>	Cluster file system or highly available local file system.
<code>dbnameAPPL_TOP</code>	Cluster file system or highly available local file system.
<code>dbnameAPPLCSF</code>	Cluster file system or highly available local file system.

Configuration Requirements

The configuration requirements in this section apply only to HA for Oracle E-Business Suite.



Caution – If your data service configuration does not conform to these requirements, the data service configuration might not be supported.

Determine Which Solaris Zone Oracle E-Business Suite Will Use

Solaris zones provide a means of creating virtualized operating system environments within an instance of the Solaris OS. Solaris zones allow one or more applications to run in isolation from other activity on your system. For complete information about installing and configuring Solaris zones, refer to *Oracle Solaris 11.1 Administration: Oracle Solaris Zones, Oracle Solaris 10 Zones, and Resource Management*.

You must determine which Solaris zone Oracle E-Business Suite will use. Oracle E-Business Suite can run within the global zone configuration.

Running the AutoConfig Command

When you are required to run the `AutoConfig` command and your database tier or application tier uses a logical host, you must ensure that the logical host interpositioning is in place for the `AutoConfig` command. See [Step 7](#) in “[How to Install and Configure Oracle E-Business Suite](#)” on [page 22](#) for instructions on setting the `customSID_app_logical_host.env` file for the application tier. For the database tier you must manually set the environment variables `LD_PRELOAD_32`, `LD_PRELOAD_64`, and `SC_LHOSTNAME` before running `AutoConfig`.

▼ How to Run the AutoConfig Command

The following task shows how to run the `Autoconfig` command after upgrading the Oracle Database to 11.2.0.3. The upgrade is part of the installation of Oracle E-Business Suite 12.1 on Oracle Solaris 11, where the physical hostname was used incorrectly.

In the example below, the physical hostnames are `pvino1` and `pvino2`. The logical hostnames used for the database tier and application tier are `vino-1` and `vino-2` respectively.

- 1 On a cluster member, assume a role that provides `solaris.cluster.modify` RBAC authorization.
- 2 Ensure that the logical hostname is available.
 - a. You can manually add the logical interface or ensure that the Oracle Solaris Cluster logical host resource is online on the node where you intend to run the `AutoConfig` command.

```
root@pvino1:~# ifconfig net0 addif vino-1 netmask 255.255.255.0 up
Created new logical interface net0:1
root@pvino1:~#
root@pvino1:~# ifconfig net0 addif vino-2 netmask 255.255.255.0 up
Created new logical interface net0:2
root@pvino1:~#
```

You can also run the follow command to ensure that the logical hostname is available:

```
root@pvino1:~# clrs status db-lh apps-lh
=== Cluster Resources ===
Resource Name      Node Name      State      Status Message
```

```

-----
db-lh          pvino2      Offline    Offline - LogicalHostname offline.
              pvino1      Online     Online - LogicalHostname online.

apps-lh       pvino2      Offline    Offline - LogicalHostname offline.
              pvino1      Online     Online - LogicalHostname online.

root@pvino1:~# ping vino-1
vino-1 is alive
root@pvino1:~# ping vino-2
vino-2 is alive

```

3 Perform the necessary setup tasks and run the AutoConfig command.

a. As the Oracle database user, set the environment variables for the database tier.

```

root@pvino-1:~# uname -n
pvino1
root@pvino1:~# su - oracle
Oracle Corporation SunOS 5.11 11.0 November 2011
-bash-4.1$
-bash-4.1$ export LD_PRELOAD_32=/usr/lib/secure/libschost.so.1
-bash-4.1$ export LD_PRELOAD_64=/usr/lib/secure/sparcv9/libschost.so.1
-bash-4.1$ SC_HOSTNAME=vino-1.us.oracle.com
-bash-4.1$ export LD_PRELOAD_32= LD_PRELOAD_64 SC_LHOSTNAME
-bash-4.1$ uname -n
vino-1.us.oracle.com
-bash-4.1$

```

b. Ensure that the new Oracle Home listener file references the logical host.

```

-bash-4.1$ cd $ORACLE_HOME/network/admin
-bash-4.1$ pwd
/db/d01/oracle/PROD/db/tech_st/11.2.0/network/admin
-bash-4.1$ ls -l
total 8
drwxr-xr-x  2 oracle dba           8 Jan 12 08:37 PROD_vino-1
drwxr-xr-x  2 oracle dba           5 Jan  5 07:51 samples
-rw-r--r--  1 oracle dba          205 May 11 2011 shrept.lst
-bash-4.1$ cd PROD_vino-1
-bash-4.1$ ls -l
total 19
-rw-r--r--  1 oracle dba          1609 Jan 12 08:37 listener.ora
-rw-r--r--  1 oracle dba           2 Jan  9 08:33 listener_ifile.ora
-rw-r----- 1 oracle dba           382 Jan 10 01:46 sqlnet.log
-rw-r--r--  1 oracle dba           875 Jan 12 08:37 sqlnet.ora
-rw-r--r--  1 oracle dba           2 Jan  9 08:33 sqlnet_ifile.ora
-rw-r--r--  1 oracle dba          1998 Jan 12 08:37 tnsnames.ora
-bash-4.1$ more listener.ora
#
# $Header: ad8ilsnr.ora 120.3.12010000.3 2010/03/09 07:07:03 jmajumde ship $
#
# #####
#
# This file is automatically generated by AutoConfig. It will be read and
# overwritten. If you were instructed to edit this file, or if you are not
# able to use the settings created by AutoConfig, refer to Metalink Note
# 387859.1 for assistance.
#

```

```

#####
#
# Net8 definition for Database listener
#
LISTENER_PROD =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = vino-1.us.oracle.com)(PORT = 1521))
    )
  )
...
    
```

c. Start the 11.2.0.3 Database and Listener .

d. Optional: Clean the current configuration.

This step is required only if you have an incorrect entry within FND_NODES. In this example, PVINO1 is not required. In this example, you must also run AutoConfig for the database tier and application tier when you install Oracle E-Business Suite 12.1 on Oracle Solaris 11.

```

-bash-4.1$ sqlplus apps/apps
SQL*Plus: Release 11.2.0.3.0 Production on Thu Jan 12 08:07:09 2012
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Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> select node_name, node_mode, support_cp, support_web, support_admin, \
support_forms from FND_NODES;

NODE_NAME                                N S S S
-----
VINO-1                                    0 N N N
AUTHENTICATION                            0 N N N
PVINO1                                     0 N N N
VINO-2                                     0 Y Y Y

SQL> exec fnd_conc_clone.setup_clean
PL/SQL procedure successfully completed.

SQL> select node_name, node_mode, support_cp, support_web, support_admin, \
support_forms from FND_NODES;
no rows selected

SQL> exit
    
```

e. As the Oracle Database user, generate the new Database Context file.

```

-bash-4.1$ uname -n
pvino-1
-bash-4.1$
-bash-4.1$ export LD_PRELOAD_32=/usr/lib/secure/libschost.so.1
-bash-4.1$ export LD_PRELOAD_64=/usr/lib/secure/sparcv9/libschost.so.1
-bash-4.1$ SC_LHOSTNAME=vino-1.us.oracle.com
-bash-4.1$ export LD_PRELOAD_32 LD_PRELOAD_64 SC_LHOSTNAME
-bash-4.1$ uname -n
vino-1.us.oracle.com
    
```

```

-bash-4.1$ cd $ORACLE_HOME/appsutil/bin
-bash-4.1$ ls -l
total 704
-rwxr-xr-x 1 oracle dba 2689 Jan 9 06:59 TXKScript.pl
-rwxr-xr-x 1 oracle dba 19728 Jan 9 06:59 adblxml.pl
-rw-r--r-- 1 oracle dba 13224 Jan 9 06:59 adchkcfg.cmd
-rwxr-xr-x 1 oracle dba 4767 Jan 9 06:59 adchkcfg.sh
-rwxr-xr-x 1 oracle dba 4836 Jan 9 06:59 adchkutl.sh
-rwxr-xr-x 1 oracle dba 55747 Jan 9 06:59 adclone.pl
-rwxr-xr-x 1 oracle dba 1012 Jan 9 06:59 adclone.sh
-rwxr-xr-x 1 oracle dba 27277 Jan 9 06:59 adclonctx.pl
-rw-r--r-- 1 oracle dba 13470 Jan 9 06:59 adconfig.cmd
-rwxr-xr-x 1 oracle dba 38255 Jan 9 06:59 adconfig.pl
-rwxr-xr-x 1 oracle dba 4490 Jan 9 06:59 adconfig.sh
-rw-r--r-- 1 oracle dba 12119 Jan 9 06:59 adcustomizer.cmd
-rwxr-xr-x 1 oracle dba 5919 Jan 9 06:59 adcustomizer.sh
-rw-r--r-- 1 oracle dba 12754 Jan 9 06:59 adcvn.cmd
-rwxr-xr-x 1 oracle dba 6737 Jan 9 06:59 adcvn.sh
-rwxr-xr-x 1 oracle dba 20185 Jan 9 06:59 addlnctl.pl
-rwxr-xr-x 1 oracle dba 18139 Jan 9 06:59 adgentns.pl
-rw-r--r-- 1 oracle dba 13451 Jan 9 06:59 adtmplreport.cmd
-rwxr-xr-x 1 oracle dba 7200 Jan 9 06:59 adtmplreport.sh
-rw-r--r-- 1 oracle dba 2585 Jan 9 06:59 adxerr.pl
-rw-r----- 1 oracle dba 382 Jan 12 08:37 sqlnet.log
-rwxr-xr-x 1 oracle dba 2768 Jan 12 08:38 \
txkDBSecUserAuditActionBanner.pl
-rwxr-xr-x 1 oracle dba 14728 Jan 9 06:59 txkGenCtxInfRep.pl
-rwxr-xr-x 1 oracle dba 18354 Jan 9 06:59 txkHealthCheckReport.pl
-rwxr-xr-x 1 oracle dba 15573 Jan 9 06:59 txkInventory.pl
-rwxr-xr-x 1 oracle dba 4435 Jan 9 06:59 txkrun.pl
-bash-4.1$
    
```

Note – If you are upgrading the Oracle Database, you must generate a new context file using `adblxml.pl` for the database tier.

```

-bash-4.1$ perl adblxml.pl
Starting context file generation for db tier..
Using JVM from /db/d01/oracle/PROD/db/tech_st/11.2.0/jdk/jre/bin/java \
to execute java programs.
APPS Password: apps
The log file for this adblxml session is located at:
/db/d01/oracle/PROD/db/tech_st/11.2.0/appsutil/log/adblxml_01120836.log
Couldn't determine the localHost name.
Enter localHost name: vino-1
Enter the value for Display Variable: :10
The context file has been created at:
/db/d01/oracle/PROD/db/tech_st/11.2.0/appsutil/PROD_vino-1.xml
    
```

f. After you generate the new Database Context file, run the `AutoConfig` command for the database tier.

You can run `adautocfg.sh`, unless you are upgrading the Oracle Database.

```

-bash-4.1$ pwd
/db/d01/oracle/PROD/db/tech_st/11.2.0/appsutil/scripts/PROD_vino-1
-bash-4.1$ ls -l adautocfg.sh
-rwx----- 1 oracle dba 1539 Jan 12 08:37 adautocfg.sh
-bash-4.1$
    
```

g. If you have upgraded your Oracle database and generated a new context file, the output appears similar to the following:

```
-bash-4.1$ adconfig.sh contextfile=/db/d01/oracle/PROD/db/tech_st/11.2.0 \
/appstutil/PROD_vino-1.xml
Enter the APPS user password:
The log file for this session is located at: /db/d01/oracle/PROD/db/tech_st/11.2.0 \
/appstutil/log/PROD_vino-1/01120837/adconfig.log

AutoConfig is configuring the Database environment...

AutoConfig will consider the custom templates if present.

        Using ORACLE_HOME location : /db/d01/oracle/PROD/db/tech_st/11.2.0
        Classpath                   : /db/d01/oracle/PROD/db/tech_st/11.2.0/jdbc \
/lib/ojdbc5.jar:/db/d01/oracle/PROD/db/tech_st/11.2.0/appstutil/java \
/xmlparserv2.jar:/db/d01/oracle/PROD/db/tech_st/11.2.0/appstutil/java: \
/db/d01/oracle/PROD/db/tech_st/11.2.0/jlib/netcfg.jar:/db/d01/oracle/ \
PROD/db/tech_st/11.2.0/jlib/ldapjclnt11.jar
        Using Context file          : /db/d01/oracle/PROD/db/tech_st/11.2.0/ \
appstutil/PROD_vino-1.xml

Context Value Management will now update the Context file

        Updating Context file...COMPLETED

        Attempting upload of Context file and templates to database...COMPLETED

Updating rdbms version in Context file to db112
Updating rdbms type in Context file to 64 bits
Configuring templates from ORACLE_HOME ...

AutoConfig completed successfully.
-bash-4.1$
-bash-4.1$ sqlplus apps/apps

SQL*Plus: Release 11.2.0.3.0 Production on Thu Jan 12 08:44:01 2012

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Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> select node_name, node_mode, support_cp, support_web, support_admin, \
support_forms from FND_NODES;

NODE_NAME                N S S S
-----
VINO-1                   O N N N

SQL> exit
```

4 As the Oracle Application user, run the AutoConfig command on each application tier.

```
root@pvino1:~# uname -n
pvino1
root@pvino1:~# su - applmgr
Oracle Corporation      SunOS 5.11      11.0      November 2011
```

```
-bash-4.1$
-bash-4.1$ cat /apps/d01/oracle/PROD/apps/apps_st/appl/customPROD_vino-2.env
LD_PRELOAD_32=/usr/lib/secure/libschost.so.1
LD_PRELOAD_64=/usr/lib/secure/sparcv9/libschost.so.1
SC_LHOSTNAME=vino-2.us.oracle.com
```

```
export LD_PRELOAD_32 LD_PRELOAD_64 SC_LHOSTNAME
-bash-4.1$ . /apps/d01/oracle/PROD/apps/apps_st/appl/customPROD_vino-2.env
```

```
-bash-4.1$ uname -n
vino-2.us.oracle.com
```

```
-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
-bash-4.1$ ls -l
```

```
total 353
-rwx----- 1 applmgr dba      7391 Jan 16 02:35 adalnctl.sh
-rwx----- 1 applmgr dba      8437 Jan 16 02:35 adapcctl.sh
-rwx----- 1 applmgr dba     1564 Jan 16 02:35 adautocfg.sh
-rwx----- 1 applmgr dba    18044 Jan 16 02:35 adcmctl.sh
-rwx----- 1 applmgr dba     7275 Jan 16 02:35 adexecsql.pl
-rwx----- 1 applmgr dba    10516 Jan 16 02:35 adforms-c4wsctl.sh
-rwx----- 1 applmgr dba    11119 Jan 16 02:35 adformscctl.sh
-rwx----- 1 applmgr dba    11326 Jan 16 02:35 adformsrvctl.sh
-rwx----- 1 applmgr dba     8192 Jan 16 02:35 adoacorectl.sh
-rwx----- 1 applmgr dba     8200 Jan 16 02:35 adoafmctl.sh
-rwx----- 1 applmgr dba    11084 Jan 16 02:35 adopmncctl.sh
-rwx----- 1 applmgr dba    15476 Jan 16 02:35 adpreclone.pl
-rwx----- 1 applmgr dba     8446 Jan 16 02:35 adstpall.sh
-rwx----- 1 applmgr dba     8491 Jan 16 02:35 adstrtal.sh
-rwx----- 1 applmgr dba     2244 Jan 16 02:35 gsmstart.sh
drwxr-xr-x 2 applmgr dba        10 Jan  4 05:55 ieo
-rwx----- 1 applmgr dba     2566 Jan 16 02:35 java.sh
-rwx----- 1 applmgr dba     6699 Jan 16 02:36 jtffmctl.sh
drwxr-xr-x 2 applmgr dba         3 Jan  4 05:55 msc
-rwxrwxr-- 1 applmgr dba     6644 Jan 16 02:36 mwactl.sh
-rwxrwxr-- 1 applmgr dba     6645 Jan 16 02:36 mwactlwrpr.sh
-rw-r--r-- 1 applmgr dba     1468 Jan 10 07:54 sqlnet.log
```

```
-bash-4.1$
-bash-4.1$ ./adautocfg.sh
Enter the APPS user password:
```

```
The log file for this session is located at: /apps/d01/oracle \
/PROD/inst/apps/PROD_vino-2/admin/log/01120906/adconfig.log
```

AutoConfig is configuring the Applications environment...

```
AutoConfig will consider the custom templates if present.
Using CONFIG_HOME location : /apps/d01/oracle/PROD/ \
inst/apps/PROD_vino-2
Classpath : /apps/d01/oracle/PROD/apps/apps_st \
/comn/java/lib/appsborg2.zip:/apps/d01/oracle/PROD/apps/apps_st \
/comn/java/classes
Using Context file : /apps/d01/oracle/PROD/inst/apps \
/PROD_vino-2/appl/admin/PROD_vino-2.xml
```

Context Value Management will now update the Context file

Updating Context file...COMPLETED

```

Attempting upload of Context file and templates to database...COMPLETED

Configuring templates from all of the product tops...
Configuring AD_TOP.....COMPLETED
Configuring FND_TOP.....COMPLETED
Configuring ICX_TOP.....COMPLETED
Configuring MSC_TOP.....COMPLETED
Configuring IEO_TOP.....COMPLETED
Configuring BIS_TOP.....COMPLETED
Configuring AMS_TOP.....COMPLETED
Configuring CCT_TOP.....COMPLETED
Configuring WSH_TOP.....COMPLETED
Configuring CLN_TOP.....COMPLETED
Configuring OKE_TOP.....COMPLETED
Configuring OKL_TOP.....COMPLETED
Configuring OKS_TOP.....COMPLETED
Configuring CSF_TOP.....COMPLETED
Configuring IGS_TOP.....COMPLETED
Configuring IBY_TOP.....COMPLETED
Configuring JTF_TOP.....COMPLETED
Configuring MWA_TOP.....COMPLETED
Configuring CN_TOP.....COMPLETED
Configuring CSI_TOP.....COMPLETED
Configuring WIP_TOP.....COMPLETED
Configuring CSE_TOP.....COMPLETED
Configuring EAM_TOP.....COMPLETED
Configuring FTE_TOP.....COMPLETED
Configuring ONT_TOP.....COMPLETED
Configuring AR_TOP.....COMPLETED
Configuring AHL_TOP.....COMPLETED
Configuring OZF_TOP.....COMPLETED
Configuring IES_TOP.....COMPLETED
Configuring CSD_TOP.....COMPLETED
Configuring IGC_TOP.....COMPLETED

```

AutoConfig completed successfully.

```

-bash-4.1$
-bash-4.1$ sqlplus apps/apps

```

SQL*Plus: Release 10.1.0.5.0 - Production on Thu Jan 12 09:09:49 2012

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With the Partitioning, OLAP, Data Mining and Real Application Testing options

```

SQL> select node_name, node_mode, support_cp, support_web, \
support_admin, support_forms from FND_NODES;

```

NODE_NAME	N	S	S	S	S
AUTHENTICATION	O	N	N	N	N
VINO-1	O	N	N	N	N
VINO-2	O	Y	Y	Y	Y

SQL>

Installing and Configuring Oracle E-Business Suite

This section contains the procedures you need to install and configure Oracle E-Business Suite.

▼ How to Install and Configure Oracle E-Business Suite

This section contains the procedures you need to install and configure Oracle E-Business Suite.

- 1 **On a cluster member, assume a role that provides `soLaris.cLuster.modify` RBAC authorization.**
- 2 **Determine which Solaris zone to use.**

Refer to “[Determine Which Solaris Zone Oracle E-Business Suite Will Use](#)” on page 15 for more information.
- 3 **If a Solaris zone will be used, create the zone.**

Refer to *Oracle Solaris 11.1 Administration: Oracle Solaris Zones, Oracle Solaris 10 Zones, and Resource Management* for complete information about installing and configuring a zone.
- 4 **Create a cluster file system or highly available local file system for the Oracle E-Business Suite files.**

Refer to *Oracle Solaris Cluster Software Installation Guide* for information about creating a cluster file system and to *Oracle Solaris Cluster Data Services Planning and Administration Guide* for information about creating a highly available local file system.
- 5 **Mount the highly available local file system.**

Perform this step from the global zone on one node of the cluster.

 - **If a non-ZFS highly available local file system is being used for Oracle E-Business Suite, perform the following step.**

Note – Ensure that the node has ownership of the disk set or disk group.

- For Solaris Volume Manager, type:

```
# metaset -s disk-set -t
```
- **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# mount highly-available-local-filesystem
```

- If a ZFS highly available local file system is being used for Oracle E-Business Suite, perform one of the following steps.
 - If the global zone is being used for Oracle E-Business Suite, type the following command.


```
# zpool import -R / HAZpool
```

6 Plumb the Oracle E-Business Suite logical hostname.

Note – If you are using Parallel Concurrent Processing, omit this step. Parallel Concurrent Processing requires physical hostnames.

Perform this step in the global zone on one node of the cluster for each logical hostname being used by Oracle E-Business Suite.

- If the global zone is being used for Oracle E-Business Suite, type the following command.


```
# ifconfig interface addif logical-hostname up
```
- If a Solaris zone is being used for Oracle E-Business Suite, type the following command.


```
# ifconfig interface addif logical-hostname up zone zonename
```

If you are deploying Clustered OPMN OC4J instances, omit this step. Clustered OPMN OC4J instances require physical hostnames. If you are installing a Clustered OPMN single Web Entry Point server, you must still specify a logical hostname.

7 Enable logical host interpositioning.

Perform this step on all cluster nodes where Oracle E-Business Suite will run.

To provide logical host interpositioning for Oracle E-Business Suite, you must create the following symbolic links:

```
# cd /usr/lib/secure
# ln -s /usr/cluster/lib/libschost.so.1 libschost.so.1
# cd /usr/lib/secure/sparcv9
# ln -s /usr/cluster/lib/sparcv9/libschost.so.1 libschost.so.1
```

If you are installing at least Oracle E-Business Suite Version 12, perform the following steps:

a. Create a customSID_app-logical-host.env file.

```
# su - oraapp-user
# vi app-base directory/apps/apps st/appl/customSID_app-logical-host.env
```

b. Add the following lines to the customSID_app-logical-host.env file:

```
LD_PRELOAD_32=/usr/lib/secure/libschost.so.1
LD_PRELOAD_64=/usr/lib/secure/64/libschost.so.1
SC_LHOSTNAME=app-logical-host
export LD_PRELOAD_32 LD_PRELOAD_64 SC_LHOSTNAME
```

c. Test the setup of the logical host interpositioning.

```
# su - oraapp-user
# . app-base_directory/apps/apps_st/appl/customSID_app-logical-host.env
# hostname
# uname -n
```

The `hostname` and `uname -n` commands should return the value that was set for the environment variable `SC_LHOSTNAME`.

8 Install the Oracle E-Business Suite software.

Perform this step in the global zone on one node of the cluster.

a. As the root role, execute `rapidwiz`.

When running the `rapidwiz` installer, unless you are installing Parallel Concurrent Processing or Clustered OPMN OC4J instances, you must enter the logical hostname as the node name for the Database, Administration, Concurrent Manager, Forms, and Web Server. If you are performing a two-node or multi-node installation, you must specify the appropriate logical hostname as the appropriate node for the Database, Administration, Concurrent Manager, Forms, and Web Server.

If you are installing Parallel Concurrent Processing, do not specify a logical hostname. Instead, specify the physical hostname for the Concurrent Manager (Batch services). Using `rapidwiz`, add a server and configure batch services for each physical hostname that will participate in Parallel Concurrent Processing.

If you are installing Clustered OPMN OC4J instances, do not specify a logical hostname. Instead, specify the physical hostname. Using `rapidwiz`, add a server for each physical hostname that will participate in Clustered OPMN OC4J instances. If you are installing a Clustered OPMN single Web Entry Point server, you must still specify a logical hostname.

When executing `rapidwiz`, save the `config.txt` file in a permanent location, for example, `/var/tmp/config.txt`. If you are installing at least Oracle E-Business Suite Version 12, save the `/var/tmp/conf_SID.txt` file before clicking OK on `rapidwiz` message `No install actions found`.

```
# cd oracle-ebusiness-suite-install-directory
# ./rapidwiz
```

b. As the root role, execute `rapidwiz` for each logical hostname.

Execute `rapidwiz` for each logical hostname that you entered when generating the `/var/tmp/config.txt` file or `/var/tmp/conf_SID` file.

```
# cd oracle-ebusiness-suite-install-directory
# ./rapidwiz -servername logical-hostname
```

9 Stop Oracle E-Business Suite.

Perform this step from the global zone where you installed Oracle E-Business Suite.

Note – If you installed Parallel Concurrent Processing, you installed batch services on the physical hostname. Therefore, to stop the Concurrent Manager, you must specify the physical-host pathname for the `admin` scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

If you installed Clustered OPMN OC4J instances, you installed on the physical hostname. Therefore, to stop the Clustered OPMN OC4J instance, you must specify the physical-host pathname for the `admin` scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

- **For Oracle E-Business Suite Version 12, type the following commands.**

```
# su - oraapp-user
$ cd app-base-directory/inst/apps/SID_app-logical-hostname/admin/scripts
$ ./adstpall.sh apps/apps
$ exit
# su - oradb-user
$ cd db-base-directory/SID/db/tech_st/*/appsutil/scripts/SID_db-logical-hostname
$ ./addlnctl.sh stop SID
$ ./addbctl.sh stop immediate
```

10 Unmount the highly available local file system.

Perform this step from the global zone on the node where you installed Oracle E-Business Suite.

- **To unmount a non-ZFS highly available local file system that is being used for the Oracle E-Business Suite, perform one of the following steps.**
 - **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# umount highly-available-local-filesystem
```
 - **If a ZFS highly available local file system is being used for Oracle E-Business Suite, type the following command.**

```
# zpool export -f HAZpool
```

11 Unplumb the Oracle E-Business Suite logical hostname.

Perform this step from the global zone on one node of the cluster for each logical hostname being used by Oracle E-Business Suite.

```
# ifconfig interface removeif logical-hostname
```

Verifying the Installation and Configuration of Oracle E-Business Suite

This section contains the procedure you need to verify the installation and configuration.

▼ How to Verify the Installation and Configuration of Oracle E-Business Suite

This procedure does not verify that your application is highly available because you have not yet installed your data service.

Perform this procedure on one node or zone of the cluster unless a specific step indicates otherwise.

- 1 **On a cluster member, assume a role that provides `solaris.cluster.modify` RBAC authorization.**
- 2 **Mount the highly available local file system.**

Perform this step from the global zone on one node of the cluster.

- **If a non-ZFS highly available local file system is being used for the Oracle E-Business Suite files, perform one of the following steps.**

Note – Ensure that the node has ownership of the disk set or disk group.

For Solaris Volume Manager, type:

```
# metaset -s disk-set -t
```

- **If the global zone is being used for Oracle E-Business Suite, type:**

```
# mount highly-available-local-filesystem
```
 - **If a ZFS highly available local file system is being used for Oracle E-Business Suite, perform the following step.**
 - **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# zpool import -R / HAZpool
```
- 3 **Plumb the Oracle E-Business Suite logical hostname.**

Note – If you are using Parallel Concurrent Processing, omit this step. Parallel Concurrent Processing requires physical hostnames.

If you are using Clustered OPMN OC4J instances, omit this step. Clustered OPMN OC4J instances require physical hostnames.

Perform this step for each logical hostname being used by Oracle E-Business Suite.

If the global zone is being used for Oracle E-Business Suite, type the following command.

```
# ifconfig interface addif logical-hostname up
```

4 Start Oracle E-Business Suite.

Note – If you installed Parallel Concurrent Processing, you installed batch services on the physical hostname. Therefore, to start the Concurrent Manager, you must specify the physical-host pathname for the `admin` scripts. To start other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

If you installed Clustered OPMN OC4J instances, you installed on the physical hostname. Therefore, to start the Clustered OPMN OC4J instance, you must specify the physical-host pathname for the `admin` scripts. To start other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

- **For Oracle E-Business Suite Version 12, perform the following commands.**

```
# su - oradb-user
$ cd db-base-directory/SID/db/tech_st/*/appsutil/scripts/SID_db-logical-hostname
$ ./addbctl.sh start
$ ./addlnctl.sh start SID
$ exit
# su - oraapp-user
$ cd app-base-directory/inst/apps/SID_app-logical-hostname/admin/scripts
$ ./adstrtal.sh apps/apps
$ exit
```

5 Test that a client can access Oracle E-Business Suite.

- **For Oracle E-Business Suite Version 12, perform the following steps.**

- a. **Log into Oracle E-Business Suite.**

```
http://ebs-logical-host.domainname:8000
```

- b. **Verify that you can successfully log in and navigate through Oracle E-Business Suite.**

6 Stop Oracle E-Business Suite.

Note – If you installed Parallel Concurrent Processing, you installed batch services on the physical hostname. Therefore, to stop the Concurrent Manager, you must specify the physical-host pathname for the admin scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the admin scripts.

If you installed Clustered OPMN OC4J instances, you installed on the physical hostname. Therefore, to stop the Clustered OPMN OC4J instance, you must specify the physical-host pathname for the admin scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the admin scripts.

- **For Oracle E-Business Suite Version 12, perform the following commands.**

```
# su - oraapp-user
$ cd app-base-directroy/inst/apps/SID_app-logical-hostname/admin/scripts
$ .adstpall.sh apps/apps
$ exit
# su - oradb-user
$ cd db-base-directory/SID/db/tech_st/*/appsutil/scripts/SID_db-logical-hostname
$ ./addlnctl.sh stop SID
$ ./addbctl.sh stop immediate
```

7 Unmount the highly available local file system.

Perform this step only in the global zone.

- **To unmount a non-ZFS highly available local file system that is being used for Oracle E-Business Suite, perform one of the following steps.**
 - **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# umount highly-available-local-filesystem
```
 - **If a Solaris zone is being used for Oracle E-Business Suite, unmount the highly available local file system from the zone.**

```
# umount /zonepath/root/highly-available-local-filesystem
```
- **If a ZFS highly available file system is being used for Oracle E-Business Suite, type the following command.**

```
# zpool export -f HAZpool
```

8 Unplumb the Infrastructure logical IP address.

Perform this step for each logical hostname being used by Oracle E-Business Suite.

```
# ifconfig interface removeif logical-hostname
```

9 Relocate the shared storage to another node and mount the highly available local file system.

Perform this step on another node of the cluster.

- **If a non-ZFS highly available local file system is being used for the Oracle E-Business Suite files, perform one of the following steps.**

Note – Ensure that the node has ownership of the disk set or disk group.

- For Solaris Volume Manager, type the following command.

```
# metaset -s disk-set -t
```

- **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# mount highly-available-local-filesystem
```

- **If a ZFS highly available file system is being used for Oracle E-Business Suite, perform the following step.**

- **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# zpool import -R / HAZpool
```

10 Plumb the Oracle E-Business Suite logical hostname.

Perform this step on another node of the cluster for each logical hostname being used by Oracle E-Business Suite.

- **If the global zone is being used for Oracle E-Business Suite, type the following command.**

```
# ifconfig interface addif logical-hostname up
```

11 Start Oracle E-Business Suite.

Note – If you installed Parallel Concurrent Processing, you installed batch services on the physical hostname. Therefore, to start the Concurrent Manager, you must specify the physical-host pathname for the `admin` scripts. To start other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

If you installed Clustered OPMN OC4J instances, you installed on the physical hostname. Therefore, to start the Clustered OPMN OC4J instance, you must specify the physical-host pathname for the `admin` scripts. To start other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the `admin` scripts.

- **For Oracle E-Business Suite Version 12, perform the following:**

```
# su - oradb-user
$ cd db-base-directory/SID/db/tech_st/*/appsutil/scripts/SID_db-logical-hostname
$ ./adbctl.sh start
```

```

$ ./addlnctl.sh start SID
$ exit
# su - oraapp-user
$ cd app-base-directory/inst/apps/SID_app-logical-hostname/admin/scripts
$ ./adstrtal.sh apps/apps
$ exit

```

12 Test that a client can access Oracle E-Business Suite.

- For Oracle E-Business Suite Version 12, perform the following:

a. Log into Oracle E-Business Suite.

`http://ebs-logical-host.domainname:8000`

b. Verify that you can successfully log in and navigate through Oracle E-Business Suite.

13 Stop Oracle E-Business Suite.

Note – If you installed Parallel Concurrent Processing, you installed batch services on the physical hostname. Therefore, to stop the Concurrent Manager, you must specify the physical-host pathname for the admin scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the admin scripts.

If you installed Clustered OPMN OC4J instances, you installed on the physical hostname. Therefore, to stop the Clustered OPMN OC4J instance, you must specify the physical-host pathname for the admin scripts. To stop other application-tier components that you installed by using a logical host, you must use the logical-host pathname for the admin scripts.

- For Oracle E-Business Suite Version 12, perform the following commands.

```

# su - oraapp-user
$ cd app-base-directroy/inst/apps/SID_app-logical-hostname/admin/scripts
$ .adstpall.sh apps/apps
$ exit
# su - oradb-user
$ cd db-base-directory/SIDdb/tech_st/*/appsutil/scripts/SID_db-logical-hostname
$ ./addlnctl.sh stop SID
$ ./adbctl.sh stop immediate

```

14 Unmount the highly available local file system.

Perform this step in the global zone only.

- To unmount a non-ZFS highly available local file system that is being used for Oracle E-Business Suite, perform the following step.
 - If the global zone is being used for Oracle E-Business Suite, type the following command.


```
# umount highly-available-local-filesystem
```

- If a ZFS highly available file system is being used for Oracle E-Business Suite, type the following command.

```
# zpool export -f HAZpool
```

15 Unplumb the Oracle E-Business Suite logical hostname.

Perform this step for each logical hostname being used by Oracle E-Business Suite.

```
# ifconfig interface removeif logical hostname
```

Installing the HA for Oracle E-Business Suite Package

If you did not install the HA for Oracle E-Business Suite package during your initial Oracle Solaris Cluster installation, perform this procedure to install the package.

▼ How to Install the HA for Oracle E-Business Suite Package

Perform this procedure on each cluster node where you want the HA for Oracle E-Business Suite software to run.

- 1 On the cluster node where you are installing the data service package, assume the root role.**
- 2 Ensure that the solaris and ha-cluster publishers are valid.**

```
# pkg publisher
PUBLISHER          TYPE    STATUS  URI
solaris             origin  online  solaris-repository
ha-cluster          origin  online  ha-cluster-repository
```

For information about setting the solaris publisher, see [“Set the Publisher Origin to the File Repository URI” in Copying and Creating Oracle Solaris 11.1 Package Repositories.](#)

- 3 Install the HA for Oracle E-Business Suite software package.**

```
# pkg install ha-cluster/data-service/oracle-eps
```

- 4 Verify that the package installed successfully.**

```
$ pkg info ha-cluster/data-service/oracle-eps
```

Installation is successful if output shows that State is Installed.

- 5 Perform any necessary updates to the Oracle Solaris Cluster software.**

For instructions on updating single or multiple packages, see [Chapter 11, “Updating Your Software,” in Oracle Solaris Cluster System Administration Guide.](#)

Registering and Configuring HA for Oracle E-Business Suite

This section contains the procedures you need to configure HA for Oracle E-Business Suite.

Some procedures within this section require you to use certain Oracle Solaris Clustercommands. Refer to the relevant Oracle Solaris Clustercommand man page for more information about these commands and their parameters.

▼ How to Register and Configure HA for Oracle E-Business Suite

Perform this procedure on one node of the cluster only.

This procedure assumes that you installed the data service packages during your initial Oracle Solaris Cluster installation.

If you did not install the HA for Oracle E-Business Suite packages as part of your initial Oracle Solaris Cluster installation, go to [“How to Install the HA for Oracle E-Business Suite Package” on page 31](#).

Before You Begin Ensure that the `/etc/netmasks` file has IP-address subnet and netmask entries for all logical hostnames. If necessary, edit the `/etc/netmasks` file to add any missing entries.

1 On a cluster member, assume a role that provides `solaris.cluster.modify` RBAC authorization.

2 Register the following resource types.

```
# clresourcetype register SUNW.HASStoragePlus
# clresourcetype register SUNW.gds
```

3 (Optional) Create a scalable resource group for Parallel Concurrent Processing.

```
# clresourcegroup create -S -n nodelist pcp-rg
```

4 (Optional). Create a scalable resource group for Clustered OPMN OC4J instances.

```
# clresourcegroup create -S -n nodelist c_opmn-rg
```

5 Create a failover resource group for Oracle E-Business Suite.

```
# clresourcegroup create -n nodelist ebs-rg
```

6 Create a resource for the Oracle E-Business Suite Logical Hostname.

```
# clreslogicalhostname create -g ebs-rg \
> -h logical-hostname \
> logical-hostname-resource
```

7 Create a resource for the Oracle E-Business Suite Disk Storage.

- If a ZFS highly available local file system is being used, perform the following command.

```
# clresource create -g ebs-rg \  
> -t SUNW.HASStoragePlus \  
> -p Zpools=oracle-ebusiness-suite-zspool \  
> oracle-ebusiness-suite-hastorage-resource
```

- If a cluster file system or a non-ZFS highly available local file system is being used, perform the following command.

```
# clresource create -g ebs-rg \  
> -t SUNW.HASStoragePlus \  
> -p FilesystemMountPoints=oracle-ebusiness-suite-filessystem-mountpoint \  
> oracle-ebusiness-suite-hastorage-resource
```

Note – If you installed Parallel Concurrent Processing on a cluster file system, when you create the HASStoragePlus resource, specify the scalable resource group that you created in [Step 3](#).

If you installed Clustered OPMN OC4J instances, when you create the HASStoragePlus resource, specify the scalable resource group that you created in [Step 4](#).

8 Enable the resource group.

If you created a scalable resource group in [Step 3](#), also enable that resource group.

```
# clresourcegroup online -M ebs-rg  
  If Parallel Concurrent Processing is used:  
# clresourcegroup online -M pcp-rg
```

If Clustered OPMN OC4J instances are used, enable that resource group,

```
# clresourcegroup online -M c_opmn-rg
```

9 Register and enable a resource for the Oracle Database.

For complete information about creating and registering a cluster resource for the Oracle Database, refer to [Oracle Solaris Cluster Data Service for Oracle Guide](#).

Note – Before creating corresponding resources, you need to register the SUNW.oracle_server resource type.

```
# clresource create -g ebs-rg \  
> -t SUNW.oracle_Server \  
> -p Connect_string=apps/apps \  
> -p ORACLE_SID=SID \  
> -p ORACLE_HOME=oracle-home \  
> -p Alert_log_file=oracle-home/admin/SID \  
> _db-logical-hostname/bdump/alert_SID.log \  
>
```

```
> -p Restart_type=RESOURCE_GROUP_RESTART \
> -p Resource_dependencies=oracle-ebusiness-suite-hastorage-resource \
> oracle-resource
# clresource enable oracle-resource
```

10 Register and enable a resource for the Oracle Listener.

For complete information about creating and registering a cluster resource for the Oracle Listener, refer to *Oracle Solaris Cluster Data Service for Oracle Guide*.

Note – The `copy_env` script is used to copy and format the `sid.env` to `sid_ha.env`, which is used by the `User_env` parameter in the following example.

Note – Before creating corresponding resources, you need to register the `SUNW.oracle_listener` resource type.

```
# cd /opt/SUNWscebs/cmg/util
# ./copy_env oracle-home SID_db-logical-host
# clresource create -g ebs-rg \
> -t SUNW.oracle_listener \
> -p Listener_name=SID or LISTENER_SID \
> -p ORACLE_HOME=oracle-home \
> -p User_env=oracle-home/SID_db-logical-hostname_ha.env \
> -p Resource_dependencies=oracle-ebusiness-suite-hastorage-resource \
> listener-resource
# clresource enable listener-resource
```

11 Create and register a resource for the Concurrent Manager Listener.

Note – If deploying Oracle E-Business Suite within a zone cluster, you must loopback mount the `/var/cluster/logs` directory within the zone-cluster node, before registering the Oracle E-Business Suite components.

On all the zone-cluster nodes, perform the following step:

```
# mkdir /var/cluster/logs
```

In the global zone where the zone-cluster node is running, perform the following step:

```
# mount -F lofs /var/cluster/logs zonenode zonepath/root/var/cluster/logs
```

After all the Oracle E-Business Suite components have been registered, `/var/cluster/logs` is no longer required within the zone-cluster node. To unmount the previously loopback mounted `/var/cluster/logs`, perform the following step from the global zone where you loopback mounted `/var/cluster/logs`:

```
# umount zonenode zonepath/root/var/cluster/logs
```

Edit the `/opt/SUNWscebs/cmglslr/util/cmglslr_config` file and follow the comments within that file. After editing the `cmglslr_config` file, you must register the resource.

```
# cd /opt/SUNWscebs/cmglslr/util
# vi cmglslr_config
# ./cmglslr_register
```

Note – The variable `COMNTOP` does not explicitly refer to the `COMN_TOP` or `COMMON_TOP` variable. Instead, different values are required depending on the version of Oracle E-Business Suite that is being deployed. See the text below for more details. If you installed Parallel Concurrent Processing, follow these additional editing instructions:

- Use `COMNTOP=app-base-directory/inst/apps/.`
 - Specify the scalable resource group that you created in [Step 3](#).
 - Specify a null value for the `LH=` entry.
-

- **For Oracle E-Business Suite Version 12, use:**

```
COMNTOP=app-base-directory/inst/apps/SID_app-logical-hostname
```

The following example shows edits of the `cmglslr_config` file.

```
RS=ebs-cmglslr
RG=ebs-rg
LH=ebs-lh
HAS_RS=ebs-has
COMNTOP=use appropriate COMNTOP
APPSUSER=oraapp-user
APP_SID=SID
VERSION=12.1
```


Use the following descriptions as a guide:

- *ZONE* – The global cluster or the zone cluster name where the Oracle Database and Listener resources reside.
- *DBLSR-RS* – The Oracle Database Listener resource.
- *DB_RS* – The Oracle Database resource.
- *CM-ZC* – The global cluster or zone cluster name where the Oracle E-Business Suite Concurrent Manager resource resides.
- *CM-RS* – The Oracle E-Business Suite Concurrent Manager resource.

```
RS=ebs-cmg
RG=ebs-rg
LH=ebs-lh
HAS_RS=ebs-has
LSR_RS=ebs-cmglsr
VERSION=12.1
COMNTOP=use appropriate COMNTOP
APPSUSER=oraapp-user
APP_SID=SID
APPS_PASSWD=password or empty
if using /opt/SUNWscebs/.${APP_SID}_passwd to store the password.
ORACLE_HOME=oracle_home
CON_LIMIT=50
#
# Required for Oracle E-Business Suite version 11.5.10 CU2 or later
#
ORASVR_RS=ebs1-orasvr
ORALSR_RS=ebs1-oralsr
```

13 Create and register a resource for the Forms Server in Servlet Mode.

Note – The variable COMNTOP does not explicitly refer to the Oracle E-Business Suite `COMM_TOP` or `COMMON_TOP` variable. Instead, different values are required depending on the version of Oracle E-Business Suite that is being deployed. See the text at the end of this step for more details.

For Oracle E-Business Suite Version 12, use
`COMNTOP=app-base-directory/inst/apps/SID_app-logical-hostname.`

Note – If deploying Oracle E-Business Suite within a zone cluster, you must loopback mount `/var/cluster/logs` within the zone-cluster node before performing this step. See [Step 11](#), for information to loop back mount `/var/cluster/logs`.

Edit the `/opt/SUNWscebs/frm/util/frm_config` file and follow the comments within that file. After you have edited the `frm_config` file, you must register the resource.

```
# cd /opt/SUNWscebs/frm/util
# vi frm_config
# ./frm_register
```

The following example shows edits of the `frm_config` file.

```
RS=ebs-frm
RG=ebs-rg
LH=ebs-lh
HAS_RS=ebs-has
COMNTOP=base-directory/sidcomm
APPSUSER=oraapp-user
APP_SID=SID
VERSION=12.1
```

14 Create and register a resource for the Forms Server in Socket Mode.

This step is required only if you are using Oracle E-Business Suite Forms Server in Socket Mode.

Note – The variable `COMNTOP` does not explicitly refer to the Oracle E-Business Suite `COMN_TOP` or `COMMON_TOP` variable. Instead, different values are required depending on the version of Oracle E-Business Suite that is being deployed. See the text below for more details.

For Oracle E-Business Suite Version 12, use
`COMNTOP=app-base-directory/inst/apps/SID_app-logical-hostname`.

Note – If you are deploying Oracle E-Business Suite within a zone cluster, you must loopback mount the `/var/cluster/logs` directory within the zone-cluster node before performing this step. See [Step 11](#) for instructions on loopback mounting the `/var/cluster/logs` directory.

Edit the `/opt/SUNWscebs/frmsrv/util/frmsrv_config` file and follow the comments within that file. After you have edited the `frmsrv_config` file, you must register the resource.

```
# cd /opt/SUNWscebs/frmsrv/util
# vi frmsrv_config
# ./frmsrv_register
```

The following example shows edits of the `frmsrv_config` file.

```
RS=ebs-frmsrv
RG=ebs-rg
LH=ebs-lh
HAS_RS=ebs-has
COMNTOP=base-directory/sidcomm
APPSUSER=oraapp-user
```

```
APP_SID=SID
VERSION=12.1
```

15 Create and register a resource for the OPMN Server.

Note – If deploying Oracle E-Business Suite within a zone cluster, you must loopback mount `/var/cluster/logs` within the zone-cluster node before performing this step. See [Step 11](#), for information to loopback mount `/var/cluster/logs`.

If Clustered OPMN OC4J instances are being deployed, you must specify the `OPMN_COMPONENTS=opmn/oacore/forms/oafrm`. If a Clustered OPMN single Web Entry Point instance is being deployed, you must specify `OPMN_COMPONENTS=opmn/http_server`. You may also specify OC4J services if required.

For Oracle E-Business Suite Version 12, perform the following:

Edit the `/opt/SUNWscsbebs/opmn/util/opmn_config` file and follow the comments within that file. After you have edited the `opmn_config` file, you must register the resource.

```
# cd /opt/SUNWscsbebs/opmn/util
# vi opmn_config
# ./opmn_register
```

The following example shows the edits of the `opmn_config` file.

```
RS=ebs-opmn
RG=ebs-rg
LH=ebs-lh
HAS_RS=ebs-has
VERSION=12.1
COMNTOP=app-base-directory/inst/apps/SID_app-logical-host
APPSUSER=oraapp-user
APP_SID=PROD
APPS_PASSWD=apps
OPMN_COMPONENTS=all
```

16 Enable the Oracle E-Business Suite resources.

If you created a scalable resource group in [Step 3](#), also enable that resource group.

```
# clresource enable -g ebs-rg +
  If Parallel Concurrent Processing is used:
# clresourcegroup online -eM pcp-rg
```

If you used Clustered OPMN OC4J, enable that resource group.

```
# clresourcegroup online -eM c_opmn-rg
```

Verifying the HA for Oracle E-Business Suite Installation and Configuration

This section contains the procedure you need to verify that you installed and configured your data service correctly.

▼ How to Verify the HA for Oracle E-Business Suite Installation and Configuration

- 1 On a cluster member, assume a role that provides `solaris.cluster.modify` RBAC authorization.
- 2 Ensure that all the Oracle E-Business Suite resources are online.

```
# cluster status
```

Enable any Oracle E-Business Suite resources that are not online.

```
# clresource enable oracle-ebusiness-suite-resource
```
- 3 Switch the Oracle E-Business Suite resource group to another cluster node.

```
# clresourcegroup switch -n node ebs-rg
```

Upgrading HA for Oracle E-Business Suite

Upgrade the HA for Oracle E-Business Suite data service if the following conditions apply:

- You are upgrading from an earlier version of the HA for Oracle E-Business Suite data service.
- You need to use the new features of this data service.

▼ How to Upgrade to the New Version of HA for Oracle E-Business Suite

You must perform all the steps within this procedure.

Note – Before performing this procedure you should consider if your current Oracle E-Business Suite resources have been modified to have specific timeout values that suit your deployment. If timeout values were previously adjusted you should reapply those timeout values to your new Oracle E-Business Suite resources.

1 On a cluster member, assume a role that provides `soLaris.cluster.modify` RBAC authorization.

2 Disable the Oracle E-Business Suite resources.

```
# clresource disable oracle-ebusiness-suite-resource
```

3 Install the new version of HA for Oracle E-Business Suite on each cluster.

Refer to [“How to Install the HA for Oracle E-Business Suite Package”](#) on page 31 for more information.

4 Delete the Oracle E-Business Suite resources.

```
# clresource delete oracle-ebusiness-suite-resource
```

5 Upgrade the logical hostname interpositioning.

Note – You must repeat the following steps, as the logical host interpositioning file name and variable names have changed. Change the following:

- LHOSTNAME to SC_LHOSTNAME
 - `libloghost_32.so.1` to `libschostr.so.1`
-

6 Repeat [Step 7](#) from [“How to Install and Configure Oracle E-Business Suite”](#) on page 22.

7 Reregister the Oracle E-Business Suite resources.

Refer to [“How to Register and Configure HA for Oracle E-Business Suite”](#) on page 32 for more information.

8 Enable the Oracle E-Business Suite resources.

```
# clresource enable oracle-ebusiness-suite-resource
```

Understanding the HA for Oracle E-Business Suite Fault Monitor

This section describes the HA for Oracle E-Business Suite fault monitor probing algorithm or functionality, states the conditions, and recovery actions associated with unsuccessful probing.

For conceptual information about fault monitors, see the *Oracle Solaris Cluster Concepts Guide*.

Resource Properties

The HA for Oracle E-Business Suite fault monitor uses the same resource properties as resource type `SUNW.gds`. Refer to the `SUNW.gds(5)` man page for a complete list of resource properties used.

Probing Algorithm and Functionality

The HA for Oracle E-Business Suite fault monitor is controlled by the extension properties that control the probing frequency. The default values of these properties determine the preset behavior of the fault monitor. The preset behavior should be suitable for most Oracle Solaris Cluster installations. Therefore, you should tune the HA for Oracle E-Business Suite fault monitor *only* if you need to modify this preset behavior.

- Setting the interval between fault monitor probes (`Thorough_probe_interval`)
- Setting the timeout for fault monitor probes (`Probe_timeout`)
- Setting the number of times the fault monitor attempts to restart the resource (`Retry_count`)

The HA for Oracle E-Business Suite fault monitor performs a check within an infinite loop. During each cycle, the fault monitor checks the relevant component and reports either a failure or success.

If the fault monitor is successful, it returns to its infinite loop and continues the next cycle of probing and sleeping.

If the fault monitor reports a failure, a request is made to the cluster to restart the resource. If the fault monitor reports another failure, another request is made to the cluster to restart the resource. This behavior continues whenever the fault monitor reports a failure.

If successive restarts exceed the `Retry_count` within the `Thorough_probe_interval`, a request is made to fail over the resource group onto a different node or zone.

Concurrent Manager Probe

- Test whether at least one FND (Concurrent Manager) process is running. If this test fails, the probe restarts the Concurrent Manager Server resource.
- Test whether the probe can still connect to the Oracle Database. If this test fails, the probe restarts the Concurrent Manager Server resource.
- Calculate the number of concurrent processes running as a percentage of the maximum number of concurrent processes allowed. Then test whether that percentage is less than CON_LIMIT, when the Concurrent Manager Server resource was defined. If the percentage is less than CON_LIMIT, the probe restarts the Concurrent Manager Server resource.

Forms Server in Servlet Mode Probe

Test whether the `f60srv` process is running. If `f60srv` is found, then test whether `f60webmx` process is running. If `f60webmx` is not found, the probe retests after another iteration of the probe to determine whether `f60webmx` is still missing, because `f60srv` usually restarts `f60webmx`. If after two successive probes, `f60webmx` is still missing or `f60srv` is not found on any probe, the probe restarts the Forms Server resource.

Forms Server in Socket Mode Probe

Test whether the `frmsrv` process is running. If this test fails, the probe restarts the Forms Server in Socket Mode resource.

Debugging HA for Oracle E-Business Suite

▼ How to Turn on Debugging for HA for Oracle E-Business Suite

HA for Oracle E-Business Suite can be used by multiple Oracle E-Business Suite instances. It is possible to turn debugging on for all Oracle E-Business Suite instances or a particular Oracle E-Business Suite instance.

`/opt/SUNWscebs/xxx/etc/config` allows you to turn on debugging for all Oracle E-Business Suite instances or for a specific Oracle E-Business Suite instance on a particular node or zone within the cluster. If you require debugging to be turned on for HA for Oracle E-Business Suite across the whole cluster, repeat this step on all nodes within the cluster.

1 Edit the /etc/syslog.conf file.**a. Change daemon.notice to daemon.debug.**

```
# grep daemon /etc/syslog.conf
*.err;kern.debug;daemon.notice;mail.crit      /var/adm/messages
*.alert;kern.err;daemon.err                    operator
#
```

b. Change the daemon.notice file to daemon.debug and restart the syslogd command.

Note that the following output, from `grep daemon /etc/syslog.conf`, shows that `daemon.debug` has been set.

```
# grep daemon /etc/syslog.conf
*.err;kern.debug;daemon.debug;mail.crit      /var/adm/messages
*.alert;kern.err;daemon.err                    operator
```

c. Restart the syslog daemon.

```
# svcadm disable system-log
# svcadm enable system-log
```

2 Edit the /opt/SUNWscebs/cmge/etc/config file.

Perform this step for each component that requires debug output, on each node of Oracle Solaris Cluster as required.

Edit the `/opt/SUNWscebs/cmge/etc/config` file and change `DEBUG=` to `DEBUG=ALL` or `DEBUG=sun-cluster-resource`.

```
# cat /opt/SUNWscebs/cmge/etc/config
#
# Copyright 2012 Oracle and/or its affiliates. All rights reserved.
# Use is subject to license terms.
#
# ident "@(#)config 1.1 06/03/06"
#
# Usage:
#     DEBUG=<RESOURCE_NAME> or ALL
#
DEBUG=ALL
```

Note – To turn off debug, reverse the previous steps.

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