

**Oracle® Solaris Cluster Data Service for  
Oracle E-Business Suite as of Release  
12.2 Guide**

**ORACLE®**

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## Using This Documentation

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- **Overview** – Describes how to install and configure the Oracle Solaris Cluster HA for Oracle E-Business Suite 12.2 or Later data service
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience troubleshooting and replacing hardware

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# Installing and Configuring Oracle Solaris Cluster HA for Oracle E-Business Suite 12.2 or Later

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This chapter explains how to install and configure Oracle Solaris Cluster HA for Oracle E-Business Suite 12.2 or Later for Oracle E-Business Suite 12.2 or later versions of the release.

For information about supported Oracle E-business Suite versions up to release 12.1, see [Oracle Solaris Cluster Data Service for Oracle E-Business Suite up to Release 12.1 Guide](#).

This chapter contains the following sections.

- [“HA for Oracle E-Business Suite 12.2 or Later Overview” on page 9](#)
- [“Overview of Installing and Configuring HA for Oracle E-Business Suite 12.2 or Later” on page 10](#)
- [“Planning the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration” on page 11](#)
- [“Installing and Configuring Oracle E-Business Suite 12.2 or Later” on page 12](#)
- [“Installing the HA for Oracle E-Business Suite 12.2 or Later Package” on page 15](#)
- [“Registering and Configuring the ORCL.ebs Resource Type” on page 16](#)
- [“Verifying the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration” on page 35](#)
- [“Upgrading to HA for Oracle E-Business Suite 12.2 or Later” on page 36](#)

## HA for Oracle E-Business Suite 12.2 or Later Overview

The HA for Oracle E-Business Suite 12.2 or later data service provides a mechanism for orderly startup and shutdown, fault monitoring, and automatic failover of the Oracle E-Business Suite 12.2 or later.

Oracle Solaris Cluster delivers a new resource type ORCL.ebs, that provides high availability for Oracle E-Business Suite 12.2.4 or later with technology stack (TXK) and Applications Database (AD) C.Delta.6 or later.

The following table lists the support provided by the resource type `ORCL.ebs` for the Oracle E-Business Suite 12.2 or later services. Each Service Group and Service has a short name that is represented within a square bracket, that will be used when registering Oracle E-Business Suite 12.2 or later services with the `ORCL.ebs` resource type.

**TABLE 1** Services Supported by `ORCL.ebs` in Oracle E-Business Suite 12.2 or Later

| Service Group                               | Service                              |
|---------------------------------------------|--------------------------------------|
| Root Service [root]                         | Node Manager [node_manager]          |
| Web Administration [web_admin]              | WebLogic Admin Server [admin_server] |
|                                             | TNS Listener [tns_apps]              |
| Web Entry Point [web_entry]                 | Oracle HTTP Server [ohs]             |
|                                             | Oracle Process Manager [opmn]        |
| Web Application Services [web_applications] | oacore [oacore]                      |
|                                             | oafm [oafm]                          |
|                                             | forms [forms]                        |
|                                             | forms-c4ws [forms-c4ws]              |
|                                             | TNS Listener [tns_apps]              |
| Batch Processing Services [batch]           | Concurrent Manager [concmgr]         |
|                                             | TNS Listener [tns_apps]              |
| Other Services [other]                      | Forms Server [forms_server]          |

---

**Note** - Each Service Group and Service has a short name, as shown in square brackets in [Table 1, “Services Supported by `ORCL.ebs` in Oracle E-Business Suite 12.2 or Later,”](#) on page 10, that will be used when registering Oracle E-Business Suite 12.2 services with `ORCL.ebs`.

---

## Overview of Installing and Configuring HA for Oracle E-Business Suite 12.2 or Later

The following table summarizes the tasks for installing and configuring HA for Oracle E-Business Suite 12.2 or later 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 2** Tasks for Installing and Configuring HA for Oracle E-Business Suite 12.2 or Later

| Task                                                                                   | Instructions                                                                                                               |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Plan the installation                                                                  | <a href="#">“Planning the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration” on page 11</a>      |
| Install and configure the Oracle E-Business Suite 12.2 or later software               | <a href="#">“Installing and Configuring Oracle E-Business Suite 12.2 or Later” on page 12</a>                              |
| Install HA for Oracle E-Business Suite 12.2 or later packages                          | <a href="#">“How to Install the HA for Oracle E-Business Suite 12.2 or Later Package” on page 15</a>                       |
| Register and configure the ORCL . ebs resource type                                    | <a href="#">“Registering and Configuring the ORCL . ebs Resource Type” on page 16</a>                                      |
| Verify the HA for Oracle E-Business Suite 12.2 or later installation and configuration | <a href="#">“How to Verify the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration” on page 35</a> |
| Upgrade the HA for Oracle E-Business Suite 12.2 or later data service                  | <a href="#">“How to Upgrade to the New Version of HA for Oracle E-Business Suite 12.2 or Later” on page 36</a>             |

## Planning the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration

This section contains the information you need to refer to while planning your HA for Oracle E-Business Suite 12.2 or later installation and configuration.

---

**Note** - Refer to the [“Configuration Requirements” on page 12](#) section for configuration requirements and restrictions before installing or upgrading to Oracle E-Business Suite 12.2 or later.

---

## References

To install or upgrade to Oracle E-Business Suite 12.2 or later, use the following Oracle E-Business Suite documentation and the relevant My Oracle Support (MOS) notes:

- [Oracle® E-Business Suite Installation Guide: Using Rapid Install Release 12.2 \(12.2.0\)](#)
- [R12.2: How To Create the Stage In Preparation For Installation \(Doc ID 1596433.1\)](#)
- [Solaris SPARC 64-bit checksum file, MD5 Checksums for R12.2 Rapid Install Media \(Doc ID 1505510.1\)](#)
- [Oracle E-Business Suite Release Notes, Release 12.2 \(Doc ID 1320300.1\)](#)
- [Oracle E-Business Suite Installation and Upgrade Notes Release 12 \(12.2\) for Oracle Solaris on SPARC \(64-bit\) \(Doc ID 1330702.1\)](#)

- Using Oracle 11g Release 2 Real Application Clusters and Automatic storage management with Oracle E-Business Suite Release 12.2 (Doc ID 1453213.1)
- Troubleshooting Rapid Install for E-Business Suite Release 12.2 (Doc ID 1378579.1)
- Applying the Latest AD and TXK Release Update Packs to Oracle E-Business Suite Release 12.2 (Doc ID 1617461.1)
- Oracle E-Business Suite Release 12.2.4 Readme (Doc ID 1617458.1)
- Sharing The Application Tier File System in Oracle E-Business Suite Release 12.2 (Doc ID 1375769.1) - Adding a Node to the Shared Application Tier File System.
- Cloning Oracle E-Business Suite Release 12.2 with Rapid Clone (Doc ID 1383621.1)
- Using Load-Balancers with Oracle E-Business Suite Release 12.2 (Doc ID 1375686.1)

## Installing and Configuring Oracle E-Business Suite 12.2 or Later

This section contains information you need to install and configure Oracle E-Business Suite 12.2 or later. Before proceeding with the installation, refer to the Oracle E-Business Suite documentation and relevant MOS notes that are listed in the [“References” on page 11](#) section.

### Configuration Requirements

The configuration requirements in this section apply only to HA for Oracle E-Business Suite 12.2 or later.



---

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

---

### Configuration Requirements While Installing or Upgrading Oracle E-Business Suite 12.2 or Later

Note the following configuration requirements, if you are installing or upgrading to a new Oracle E-Business Suite 12.2.4 or later system.

- The Primary Applications Node must be installed using an Oracle Solaris Cluster logical host.
- The Apps Base Dir, must use a Shared Application Tier File System such as a Cluster File System or NFS from a NAS storage system. For example, the Oracle ZFS Storage Appliance.
- The Shared Application Tier File System must be managed within Oracle Solaris Cluster by either the `SUNW.HASStoragePlus` (Cluster File System) or `SUNW.ScalMountPoint` (NFS) resource type. For more information, see the [SUNW.HASStoragePlus\(5\)](#) and [SUNW.ScalMountPoint\(5\)](#) man pages.
- Furthermore, Applications Nodes must be installed after the system has been upgraded to Oracle E-Business Suite 12.2.4 and AD/TXK C.Delta.6 or later.

---

**Note** - The Primary Applications Node will host the WebLogic Administration Server that is required when patching Oracle E-Business Suite 12.2. As such, installing the Primary Applications Node on an Oracle Solaris Cluster logical host provides high availability for the WebLogic Administration Server if a node failure occurs.

---

## Additional Configuration Information

This section describes additional configuration requirements that you must follow while installing or upgrading Oracle E-Business Suite 12.2 or later.

### Interpose Logical Host

**Symbolic links** - You must create the symbolic links as the Primary Applications Node is installed with a logical hostname.

As the root user on each Oracle Solaris Cluster node, create the following symbolic links:

```
# ln -s /usr/cluster/lib/libschost.so.1 /usr/lib/secure/libschost.so.1
# ln -s /usr/cluster/lib/64/libschost.so.1 /usr/lib/secure/64/libschost.so.1
```

**Environment variables** - If you need to source `Apps Base Dir/EBSapps.env` run|patch for the Primary Applications Node or any Applications Node, that uses an Oracle Solaris Cluster logical host, you must ensure that the following environment variables are set.

As the Oracle E-Business Suite Apps user, set the following environment variables:

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

---

**Note** - You must ensure that the `customglobal_db_name_logical_host.env` is created on the run and patch file system. You must also add those environment variables to the following file for the Primary Applications Node or any Applications Tier Node, that uses an Oracle Solaris Cluster logical host.

---

In the following command, replace *logical host* with the Oracle Solaris Cluster logical hostname used for the Primary Applications Node. Replace *global\_db\_name* with the entry from the context file.

```
#{INST_TOP}/appl/admin/customglobal_db_name_logical_host.env
```

## WebLogic Administrator and APPS User Passwords

The Oracle Solaris Cluster resource type `ORCL.ebs` needs to retrieve passwords for the WebLogic Administrator and APPS user. These passwords must be saved by issuing the following command as the root user from an Oracle Solaris Cluster node. For the WebLogic Administrator password, provide the WebLogic Administrator password when prompted to enter a string value.

```
# /usr/cluster/bin/clpstring create -b db_name -t resource global_db_name_WLS
Enter string value:
Enter string value again:
#
```

For the APPS password, provide the APPS password when prompted to enter a string value. In the following command, replace *global\_db\_name* with the entry from the context file.

```
# /usr/cluster/bin/clpstring create -b db_name -t resource global_db_name_APPS
Enter string value:
Enter string value again:
#
```

## Online Patching

Whenever an online patch is being applied, before running the cutover phase you must stop the Oracle E-Business Suite services using Oracle Solaris Cluster commands.

For example:

```
# /usr/cluster/bin/clresource disable resource
```

When executing the cutover phase, you must specify the `mt restart=no` parameter and then manually start the Oracle E-Business Suite services using the Oracle Solaris Cluster commands.

For example:

```
$ adop phase=cutover mtrestart=no
```

Once the cutover phase has completed successfully, start the Oracle Solaris Cluster resources.

```
# /usr/cluster/bin/clresource enable resource
```

## Installing the HA for Oracle E-Business Suite 12.2 or Later Package

The `oracle-ebs-fmw` package is included with the `ha-cluster-full` and the `ha-cluster-data-services-full` Oracle Solaris Cluster group packages.

If the two group packages were not used to install Oracle Solaris Cluster, then you can install the individual package.

If you did not install the HA for Oracle E-Business Suite 12.2 or Later 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 12.2 or Later Package

Perform this procedure on each cluster node where you want the HA for Oracle E-Business Suite 12.2 or Later software to run.

1. **On the cluster node where you are installing the data service package, assume the root role.**
2. **Install the HA for Oracle E-Business Suite 12.2 or Later software package.**

```
# pkg install oracle-ebs-fmw
```

3. **Verify that the package installed successfully.**

```
$ pkg info ha-cluster/data-service/oracle-ebs-fmw
```

Installation is successful if output shows that State is Installed.

4. **Perform any necessary updates to the Oracle Solaris Cluster software.**  
For instructions on updating your software, see [Chapter 11, “Updating Your Software”](#) in *Oracle Solaris Cluster 4.3 System Administration Guide*.

## Registering and Configuring the ORCL.ebs Resource Type

This section contains the procedures you need to register and configure the ORCL.ebs resource type.

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

### Registering the ORCL.ebs Resource Type

After installing Oracle E-Business Suite 12.2 and upgrading to 12.2.4 or later together with AD/TXK C.Delta.6 or later, you can install and configure the ORCL.ebs resource type.

To register the ORCL.ebs resource type, as the root user on one Oracle Solaris Cluster node, enter the following command from the global cluster or zone cluster:

```
# /usr/cluster/bin/clrt register ORCL.ebs
```

### Managing Oracle E-Business Suite Services with ORCL.ebs Resource Type

After the ORCL.ebs resource type has been registered, you can manage Oracle E-Business Suite 12.2.4 or later services with the ORCL.ebs resource type.

### Creating a Resource Group for Oracle E-Business Suite 12.2 or Later

Services with Oracle E-Business Suite 12.2.4 or later can be managed by Oracle Solaris Cluster resources of type ORCL.ebs.

Those resources can be created within a failover resource group or a single-node or multi-master resource group.

Services from the Primary Applications Node or any Applications Tier Node that uses an Oracle Solaris Cluster logical host must be created within a failover resource group.

Services from an Application Tier Node that do not use an Oracle Solaris Cluster logical host must be created within a single-node or multi-master resource group.



- To create a failover resource group:

```
# /usr/cluster/bin/clresourcegroup create [-n node[,...]] resource group
```

For example:

```
# clresourcegroup create ebs-fo1-rg
```

- To create a multi-master resource group:

```
# /usr/cluster/bin/clresourcegroup create -S [-n node[,...]] resource group
```

For example:

```
# clresourcegroup create -S ebs-mm-rg
```

`[-n node[,...]]`

Specifies a node or a list of nodes in the target global cluster or zone cluster. For more information, see the [clresourcegroup\(1CL\)](#) man page.

---

**Note** - For a single-node resource group, specify just one node.

---

*resource group*

Specifies an Oracle Solaris Cluster resource group name for the Node Manager. This name must be unique for Oracle Solaris Cluster.

## ▼ How to Create the Root Service Group Resource

The Root Service Group contains services for Node Manager Service (root) This service can be configured within a failover resource group, single-node or multi-master resource group.

### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later”](#) on page 16.

### 2. Create a Node Manager resource.

```
# clresource create -g resource group -t ORCL.ebs \
-p base_dir=apps base dir \
-p service_group=root -p service=node_manager \
-p resource_dependencies_offline_restart=storage-resource \
[ -p interpose_logical_hostname=logical host \ ]
[ -p resource_dependencies=logical-host-resource \ ]
-d node-manager-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*node-manager-resource name*

Specifies an Oracle Solaris Cluster resource name for the Node Manager. This name must be unique with Oracle Solaris Cluster.

### 3. Bring online the resource group and enable the resource.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specifies the resource group that you created earlier.

## ▼ How to Create the Web Administration Service Group Resources

The Web Administration Service Group contains services for TNS Listener (`tns_apps`) and WebLogic Administration Server (`admin_server`). These services can be configured within a failover resource group, single-node or multi-master resource group.

### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later”](#) on page 16.

## 2. Create the `tns_apps` resource.

```
# clresource create -g resource_group -t ORCL.ebs \
-p base_dir=apps_base_dir \
-p service_group=web_admin -p service=tns_apps \
-p resource_dependencies_offline_restart=storage-resource \
-p pmf_managed=true \
-p interpose_logical_hostname=logical_host \
-p resource_dependencies=logical-host-resource \
-d tns-listener-resource_name
```

*resource\_group*

Specifies the resource group that you created earlier.

*apps\_base\_dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps\_base\_dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies the logical hostname that was used when the Primary Applications Node was installed.

*logical-host-resource*

Specifies the Oracle Solaris Cluster resource that manages the logical hostname. This must be a resource of type `SUNW.LogicalHostname`.

*tns-listener-resource\_name*

Specifies an Oracle Solaris Cluster resource name for the TNS Listener. This name must be unique with Oracle Solaris Cluster.

## 3. Create a WebLogic Admin Server resource.

```
# clresource create -g resource_group -t ORCL.ebs \
-p base_dir=apps_base_dir \
-p service_group=web_admin -p service=admin_server \
-p resource_dependencies_offline_restart=storage-resource,tns-listener-resource,node-manager-resource,[scope:]db-resource \
```

```
-p interpose_logical_hostname=logical host \  
-p resource_dependencies=logical-host-resource \  
-d admin-server-rs name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*tns-listener-rs*

Specifies the Oracle Solaris Cluster resource for the TNS Listener resource you created earlier within this resource group.

*node-manager-resource*

Specifies the Oracle Solaris Cluster resource for the Node Manager resource you created earlier within this resource group.

*[scope:]db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status.

This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If the Database and WebLogic Admin Server both reside on the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the WebLogic Admin Server resides in the zone cluster, then you must specify the scope parameter.

If the Database and WebLogic Admin Server both reside on different zone clusters, then you should specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*logical-host*

Specifies the logical hostname that was used when the Primary Applications Node was installed.

*logical-host-resource*

Specifies the Oracle Solaris Cluster resource that manages the logical hostname. This must be a resource of type `SUNW.LogicalHostname`.

*admin-server-resource name*

Specifies an Oracle Solaris Cluster resource name for the WebLogic Admin Server. This name must be unique with Oracle Solaris Cluster.

#### 4. Bring online the resource group and enable the resources.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specifies the resource group that you created earlier.

## ▼ How to Create the Web Entry Point Service Group Resources

The Web Entry Point Service Group contains services for Oracle Process Manager and Notification (OPMN) and Oracle HTTP Server (OHS). These services can be configured within a failover resource group, single-node or multi-master resource group.

### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later” on page 16](#).

### 2. Create the OPMN resource.

```
# clresource create -g resource group -t ORCL.ebs \  
-p base_dir=apps base dir \  
-p service_group=web_entry -p service=opmn \  
-p resource_dependencies_offline_restart=storage-resource \  
-p pmf_managed=true \  
[ -p interpose_logical_hostname=logical host \  
[ -p resource_dependencies=logical-host-resource \  
-d opmn-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type *SUNW.HASStoragePlus* or *SUNW.ScalMountPoint*.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type *SUNW.LogicalHostname*. If a logical hostname was not used, omit this extension property.

*opmn-resource name*

Specifies an Oracle Solaris Cluster resource name for the OPMN Server. This name must be unique with Oracle Solaris Cluster.

### 3. Create the OHS resource.

```
# clresource create -g resource_group -t ORCL.ebs \  
-p base_dir=apps_base_dir \  
-p service_group=web_entry -p service=ohs \  
-p resource_dependencies_offline_restart=storage-resource \  
-p resource_dependencies=opmn-resource,logical-host-resource \  
[ -p interpose_logical_hostname=logical_host \  
-d ohs-resource_name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type *SUNW.HAStoragePlus* or *SUNW.ScalMountPoint*.

*opmn-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type *SUNW.HAStoragePlus* or *SUNW.ScalMountPoint*.

*logical-host*

Specify an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type *SUNW.LogicalHostname*. If a logical hostname was not used, omit this extension property.

*opmn-resource name*

Specifies an Oracle Solaris Cluster resource name for OHS. This name must be unique with Oracle Solaris Cluster.

#### 4. Bring online the resource group and enable the resources.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specify the resource group that you created earlier.

## ▼ How to Create the Web Application Service Group Resources

The Web Application Service Group contains services for TNS Listener (*tns\_apps*), Oracle Applications Core (*oacore*), Oracle Applications Fusion Middleware (*oafm*), Oracle Applications Forms (*forms*), and Oracle Applications Forms for Web Services (*forms-c4ws*). These services can be created within a failover resource group, single-node or multi-master resource group.

#### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later” on page 16](#).

**2. Create a Node Manager resource.**

When creating the Node Manager resource, ensure that you use the resource group that you created in Step 1 of this procedure.

For more information on how to create a Node Manager resource, see [“How to Create the Root Service Group Resource” on page 17.](#)

**3. Create the `tns_apps` resource.**

```
# clresource create -g resource_group -t ORCL.ebs \  
-p base_dir=apps base_dir \  
-p service_group=web_applications -p service=tns_apps \  
-p resource_dependencies_offline_restart=storage-resource \  
-p pmf_managed=true \  
[ -p interpose_logical_hostname=logical_host \  
[ -p resource_dependencies=logical-host-resource \  
-d tns-listener-resource name
```

*resource\_group*

Specifies the resource group that you created earlier.

*apps base\_dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base\_dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*tns-listener-resource name*

Specifies an Oracle Solaris Cluster resource name for the TNS Listener. This name must be unique with Oracle Solaris Cluster.

**4. Create the `oacore` resource.**



```
# clresource create -g resource group -t ORCL.ebs \
-p base_dir=apps base dir \
-p service_group=web_applications -p service=oacore \
-p resource_dependencies=tns-listener-resource,node-manager-resource,[scope:]db-resource \
-p resource_dependencies_offline_restart=storage-resource \
[ -p interpose_logical_hostname=logical host \ ]
[ -p resource_dependencies=logical-host-resource \ ]
-d oacore-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*tns-listener-resource*

Specifies the Oracle Solaris Cluster resource for the TNS Listener resource you created earlier within this resource group.

*node-manager-resource*

Specifies the Oracle Solaris Cluster resource for the Node Manager resource you created earlier within this resource group.

*[scope:]db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status.

This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If both the Database and the Web Applications Service, `oacore`, reside in the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the Web Applications Service, `oacore`, resides in the zone cluster, then you must specify the scope parameter.

If both the Database and the Web Applications Service, `oacore`, reside in different zone clusters, then you must specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*oacore-resource name*

Specify an Oracle Solaris Cluster resource name for the oacore Web Application. This name must be unique with Oracle Solaris Cluster.

## 5. Create the oafm resource.

```
# clresource create -g resource group -t ORCL.ebs \  
-p base_dir=apps base dir \  
-p service_group=web_applications -p service=oafm \  
-p resource_dependencies=tns-listener-resource,node-manager-resource,[scope:]db-resource \  
-p resource_dependencies_offline_restart=storage-resource \  
[ -p interpose_logical_hostname=logical host \  
[ -p resource_dependencies=logical-host-resource \  
-d oafm-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*tns-listener-resource*

Specifies the Oracle Solaris Cluster resource for the TNS Listener resource you created earlier within this resource group.

*node-manager-resource*

Specifies the Oracle Solaris Cluster resource for the Node Manager resource you created earlier within this resource group.

[scope:]*db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status.

This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If both the Database and the Web Applications Service, `oafm`, reside in the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the Web Applications Service, `oafm`, resides in the zone cluster, then you must specify the scope parameter.

If both the Database and the Web Applications Service, `oafm`, reside in different zone clusters, then you must specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*oafm-resource name*

Specifies an Oracle Solaris Cluster resource name for the Web Application oafm. This name must be unique with Oracle Solaris Cluster.

## 6. Create the forms resource.

```
# clresource create -g resource_group -t ORCL.ebs \  
-p base_dir=apps_base_dir \  
-p service_group=web_applications -p service=forms \  
-p resource_dependencies=tns-listener-resource,node-manager-resource,[scope:]db-resource \  
-p resource_dependencies_offline_restart=storage-resource \  
[ -p interpose_logical_hostname=logical_host \  
[ -p resource_dependencies=logical-host-resource \  
-d forms-resource name
```

*resource\_group*

Specifies the resource group that you created earlier.

*apps\_base\_dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps\_base\_dir/EBSapps.env*.

*tns-listener-resource*

Specifies the Oracle Solaris Cluster resource for the TNS Listener resource you created earlier within this resource group.

*node-manager-resource*

Specifies the Oracle Solaris Cluster resource for the Node Manager resource you created earlier within this resource group.

*[scope:]db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status.

This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If both the Database and the Web Applications Service, *forms*, reside in the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the Web Applications Service, *forms*, resides in the zone cluster, then you must specify the scope parameter.

If both the Database and the Web Applications Service, forms, reside in different zone clusters, then you must specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type SUNW.HASStoragePlus or SUNW.ScalMountPoint.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type SUNW.LogicalHostname. If a logical hostname was not used, omit this extension property.

*forms-resource name*

Specify an Oracle Solaris Cluster resource name for the forms web application . This name must be unique with Oracle Solaris Cluster.

## 7. Create the forms-c4ws resource.

```
# clresource create -g resource group -t ORCL.ebs \
-p base_dir=apps base dir \
-p service_group=web_applications -p service=forms-c4ws \
-p resource_dependencies=tns-listener-resource,node-manager-resource,[scope:]db-resource \
-p resource_dependencies_offline_restart=storage-resource \
[ -p interpose_logical_hostname=logical host \ ]
[ -p resource_dependencies=logical-host-resource \ ]
-d forms-c4ws-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*tns-listener-resource*

Specifies the Oracle Solaris Cluster resource for the TNS Listener resource you created earlier within this resource group.

*node-manager-resource*

Specifies the Oracle Solaris Cluster resource for the Node Manager resource you created earlier within this resource group.

[scope:]*db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status.

This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If both the Database and the Web Applications Service, `forms-c4ws`, reside in the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the Web Applications Service, `forms-c4ws`, resides in the zone cluster, then you must specify the scope parameter.

If both the Database and the Web Applications Service, `forms-c4ws`, reside in different zone clusters, then you must specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*storage-resource*

Specifies the Oracle Solaris Cluster resource for the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies an optional property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used omit this property.

*logical-host-resource*

Specifies an optional property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type SUNW.LogicalHostname. If a logical hostname was not used, omit this extension property.

*forms-c4ws-resource name*

Specify an Oracle Solaris Cluster resource name for the forms -c4ws web application. This name must be unique with Oracle Solaris Cluster.

## 8. Bring online the resource group and enable the resources.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specify the resource group that you created earlier.

## ▼ How to Create the Batch Service Group Resources

The Batch Service contains services for TNS Listener (tns\_apps) and Concurrent Manager (concmgr). These services can be created within a failover resource group or multi-master resource group.

### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later” on page 16](#).

### 2. Create a tns\_apps resource.

```
# clresource create -g resource group -t ORCL.ebs \
-p base_dir=apps base dir \
-p service_group=batch -p service=tns_apps \
-p resource_dependencies_offline_restart=storage-resource \
-p pmf_managed=true \
[ -p interpose_logical_hostname=logical host \ ]
[ -p resource_dependencies=logical-host-resource \ ]
-d tns-listener-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource that manages the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies the optional extension property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this extension property

*logical-host-resource*

Specifies the optional extension property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*tns-listener-resource name*

Specifies an Oracle Solaris Cluster resource name for the TNS Listener. This name must be unique with Oracle Solaris Cluster.

**3. Create a concmgr resource.**

```
# clresource create -g resource group -t ORCL.ebs \  
-p base_dir=apps base dir \  
-p service_group=batch -p service=concmgr \  
-p resource_dependencies=tns-listener-resource,[scope:]db-resource \  
-p resource_dependencies_offline_restart=storage-resource \  
[ -p interpose_logical_hostname=logical host \  
[ -p resource_dependencies=logical-host-resource \  
-d concmgr-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.



*tns-listener-resource*

Specifies the Oracle Solaris Cluster resource that manages the TNS Listener resource you created earlier within this resource group.

*[scope:]db-resource*

Specifies the Oracle Solaris Cluster resource that proxies the Database status. This must be a resource of type `SUNW.oracle_server` (single instance database), type `SUNW.scalable_rac_server_proxy` (Real Application Cluster), or type `ORCL.oracle_external_proxy` (single instance database, Real Application Cluster or database external from this cluster).

If the Database and Concurrent Manager both reside in the same global cluster or zone cluster, you can omit the scope parameter.

If the Database resides in the global cluster and the Concurrent Manager resides in the zone cluster, then you must specify the scope parameter.

If the Database and Concurrent Manager both reside in different zone clusters, then you should specify the scope parameter.

---

**Note** - Using the scope parameter will set an inter-cluster dependency and can only be set from the global cluster. For information on setting the scope parameter and dependency, refer to [“Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster”](#).

---

*storage-resource*

Specifies the Oracle Solaris Cluster resource that manages the Shared Application Tier File System. This must be a resource of type `SUNW.HASStoragePlus` or `SUNW.ScalMountPoint`.

*logical-host*

Specifies the optional extension property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle Solaris Cluster logical host. If a logical hostname was not used, omit this extension property

*logical-host-resource*

Specifies the optional extension property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used omit this extension property.

*tns-listener-resource name*

Specifies an Oracle Solaris Cluster resource name for the Concurrent manager. This name must be unique with Oracle Solaris Cluster.

#### 4. Bring online the resource group and enable the resources.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specifies the resource group that you created earlier.

### ▼ How to Create the Other Service Group Resource

The Other Service contains a service for Forms Server Socket Mode (*forms\_server*) This service can be created within a failover resource group or multi-master resource group.

#### 1. Create an appropriate resource group.

For more information, see [“Creating a Resource Group for Oracle E-Business Suite 12.2 or Later” on page 16.](#)

#### 2. Create a *forms\_server* resource.

```
# clresource create -g resource group \  
-t ORCL.ebs \  
-p base_dir=apps base dir \  
-p service_group=other -p service=forms_server \  
-p resource_dependencies_offline_restart=storage-resource \  
-p pmf_managed=true \  
[ -p interpose_logical_hostname=logical host \  
[ -p resource_dependencies=logical-host-resource \  
-d forms-srv-resource name
```

*resource group*

Specifies the resource group that you created earlier.

*apps base dir*

Specifies the Oracle E-Business Suite Apps Base Directory. For example, *apps base dir/EBSapps.env*.

*storage-resource*

Specifies the Oracle Solaris Cluster resource that manages the Shared Application Tier File System. This must be a resource of type *SUNW.HASStoragePlus* or *SUNW.ScalMountPoint*.

*logical-host*

Specifies the optional extension property to identify the logical hostname, that was used when the Primary Applications Node or Secondary Node was installed using an Oracle

Solaris Cluster logical host. If a logical hostname was not used, omit this extension property

*logical-host-resource*

Specifies the optional extension property to identify the Oracle Solaris Cluster resource name for the logical hostname. This must be a resource of type `SUNW.LogicalHostname`. If a logical hostname was not used, omit this extension property.

*forms-srv-resource name*

Specifies an Oracle Solaris Cluster resource name for the Forms Server (Socket mode). This name must be unique with Oracle Solaris Cluster.

### 3. Bring online the resource group and enable the resource.

```
# clresourcegroup online -eM resource group
```

*resource group*

Specify the resource group that you created earlier.

## Verifying the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration

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

After Oracle E-Business Suite 12.2.4 and AD/TXK C.Delta.6 or later has been installed, you must verify that the services can be manually started and stopped before creating Oracle Solaris Cluster resources of type `ORCL.ebs`.

### ▼ How to Verify the HA for Oracle E-Business Suite 12.2 or Later Installation and Configuration

1. On a cluster member, become an administrator that provides `solaris.cluster.modify authorization`.
2. Ensure that all the Oracle E-Business Suite 12.2 or later resources are online.

```
# cluster status
```

Enable any Oracle E-Business Suite 12.2 or later resources that are not online.

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

3. **Switch the Oracle E-Business Suite 12.2 or later resource group that contains the WebLogic Admin Server to another cluster node.**

```
# clresourcegroup switch -n node oracle-ebusiness-suite-admin-server-resourcegroup
```

## Upgrading to HA for Oracle E-Business Suite 12.2 or Later

Upgrade to HA for Oracle E-Business Suite 12.2 or later data service if the following conditions apply:

- You are upgrading from an earlier version of the HA for Oracle E-Business Suite 12.2 or later 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 12.2 or Later

You must perform all the steps within this procedure.

---

**Note** - Before performing this procedure you should consider if your current Oracle E-Business Suite 12.2 or later 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 12.2 or later resources.

---

1. **On a cluster member, become an administrator that provides `solaris.cluster.modify` authorization.**
2. **Register the new `ORCL.ebs` resource type.**  
For more information, see [“Registering and Configuring the `ORCL.ebs` Resource Type” on page 16.](#)
3. **Determine the version of the `ORCL.ebs` resource type that is currently being used by resources of type `ORCL.ebs`.**

```
# clrs show -p type -p type_version resource
```

For example:

```
# clrs show -p type -p type_version ebs-mm-nm-rs
```

**4. Determine the new version of the resource type that is related to ORCL.ebs.**

---

**Note** - In the example output below, ORCL.ebs:2 is just an example and does not currently exist.

---

```
# clrt list | grep ORCL.ebs
ORCL.ebs:1
ORCL.ebs:2
```

**5. Upgrade to the new ORCL.ebs resource type version.**

**a. Check the upgrade directive from the new ORCL.ebs resource registration file.**

```
# grep upgrade /opt/ORCLscebs/etc/ORCL.ebs
#$upgrade
#$upgrade_from "1" ANYTIME
```

---

**Note** - The upgrade directive for the appropriate version can be one of the following values:

- ANYTIME
  - AT\_CREATION
  - WHEN\_DISABLED
  - WHEN\_OFFLINE
  - WHEN\_UNMANAGED
  - WHEN\_UNMONITORED
- 

**b. Upgrade to the new ORCL.ebs resource type version.**

You must adhere to the upgrade directive before upgrading to the new ORCL.ebs resource type version.

For example, if the upgrade directive is WHEN\_DISABLED, you must disable your resource before upgrading to the new ORCL.ebs resource type version.

If the upgrade directive is AT\_CREATION you must disable and delete the resource and then recreate the resource with the new resource type version.

Once you have adhered to the upgrade directive, upgrade your resource of type ORCL.ebs as follows:

```
# clresource set -p Type_version=new version resource
```

---

**Note** - If you are upgrading from an earlier version of HA for Oracle E-Business Suite data service, that is from Oracle E-Business Suite 12.1.x, you must disable and delete your old resources and register new resources of type ORCL.ebs.

---

## Tuning the HA for Oracle E-Business Suite 12.2 or Later Fault Monitor

This section describes the HA for Oracle E-Business Suite 12.2 or later fault monitor's probing algorithm or functionality, and states the conditions and recovery actions associated with unsuccessful probing.

### Resource Properties

The HA for Oracle E-Business Suite 12.2 or later fault monitor uses the resource properties that are specified in the resource type ORCL.ebs. Refer to the `r_properties(5)` man page for a list of general resource properties used. Refer to the `ORCL.ebs(5)` man page Extension Properties for a specific list of resource properties for this resource type.

### Probing Algorithm and Functionality

The HA for Oracle E-Business Suite 12.2 or later is controlled by extension properties that control the probing frequency. The default values of these properties determine the preset behavior of the fault monitor and are suitable for most Oracle Solaris Cluster installations. You can modify this preset behavior by modifying the following settings:

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

The HA for Oracle E-Business Suite 12.2 or later fault monitor checks services within an infinite loop. During each cycle, the fault monitor checks the service state and reports either a partial or complete failure or success.

- If the fault monitor is successful, it returns to the infinite loop and continues the next cycle of probing and sleeping.
- If the fault monitor reports a complete failure, a request is made to the cluster to restart the resource. If the fault monitor reports another complete failure, another request is made to the cluster to restart the resource. This behavior continues whenever the fault monitor reports a complete 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.
- If the fault monitor reports a partial failure, the return code value is used to sum successive partial failures. Once successive summed partial failures reaches or exceeds 100 a complete failure is declared.

## Operations of the Fault Monitor

All service fault monitors check the following:

- That the RUN File System can be sourced by the Apps OS User.
- That various entries from the Application Tier's context file can be retrieved. If it is not possible to perform these checks, a complete failure is declared.

The following sections describe the operations of the fault monitor.

### Node Manager Fault Monitor

Checks that the Node Manager process ID exists for the Application Tier. If the process ID does not exist a complete failure is declared.

As the OS Apps User, the WebLogic Scripting Tool is used to connect to and then disconnect from the Node Manager using the Node Manager Port value (`nm_port` value from the Application Tier's context file).

If it is possible to successfully connect to the Node Manager, the fault monitor reports a success. Otherwise a complete failure is declared.

### WebLogic Admin Server Fault Monitor

Checks that the WebLogic Admin Server process ID exists for the Application Tier. If the process ID does not exist a complete failure is declared.

As the OS Apps User, the WebLogic Scripting Tool is used to connect to the Admin Server using the Admin Server Port value (`wls_adminport` value from the Application Tier's context

file). Once connected, it obtains the state of the Admin Server and then disconnects from the Admin Server.

If it is not possible to connect using the WebLogic Scripting Tool, the `${EBS_DOMAIN_HOME}/servers/AdminServer/data/nodemanager/AdminServer.state` file is used to determine the state.

If the state is `RUNNING`, then the fault monitor reports a success.

If the state is `STARTING`, the fault monitor reports a partial failure value of 10. Successive fault monitor partial failures are summed up and as soon as a value of 100 is reached, a complete failure is declared.

If the state is `STANDBY`, `ADMIN`, `RESUMING`, `FAILED_RESTARTING`, or `ADMIN_ON_ABORTED_STARTUP`, the fault monitor reports a partial failure value of 20. Successive fault monitor partial failures are summed up and as soon as a value of 100 is reached, a complete failure is declared. If the state is any other value, a complete failure is declared.

## TNS Listener Fault Monitor

Checks that the TNS Listener process ID exists for the Application Tier. If the process ID does not exist, a complete failure is declared.

As the OS Apps User, the `lsnrctl status ${FNDNAM}_${dbSid}` command is used to determine the status of the TNS Listener. Values for `FNDNAM` and `dbSid` are derived from the Application Tier's context file.

If the status is `RUNNING`, the fault monitor reports a success. Otherwise, a complete failure is declared.

## Oracle Process Manager Fault Monitor

Checks that the Oracle Process Manager process ID exists for the Application Tier. If the process ID does not exist, a complete failure is declared.

As the OS Apps User, the `${ohs_instance_loc}/opmnctl ping` command is used to determine the status of the Oracle Process Manager status. The value for `ohs_instance_loc` is derived from the Application Tier's context file.

If the ping is successful, the fault monitor reports a success. Otherwise a complete failure is declared.



## Oracle HTTP Server Fault Monitor

Checks that Oracle HTTP process ID exists for the Application Tier. If the process ID does not exist, a complete failure is declared.

As the OS Apps User, the `opmnctl status ias-component=${ohs_component}` command is used to determine the status of the Oracle HTTP Server status. The value for `ohs_component` is derived from the Application Tier's context file.

If the status is `ALIVE`, the fault monitor reports a success.

If the status is `INIT`, the fault monitor reports a partial failure value of 50. Successive fault monitor partial failures are summed up and as soon a value of 100 is reached, a complete failure is declared.

If the status is any other value, a complete failure is declared.

## Web Application Services (oacore, oafm, forms, and forms-c4ws) Fault Monitor

Checks that the Web Application Service process ID exists for the Application Tier. If the process ID does not exist, a complete failure is declared.

As the OS Apps User, the WebLogic Scripting Tool is used to connect to the Web Application Service using the Web Application Service Port value (`wls_service` port value from the Application Tier's context file). Once connected, it obtains the state of the Web Application Service and then disconnects from the Web Application Service.

If it is not possible to connect using the WebLogic Scripting Tool, the `/${EBS_DOMAIN_HOME}/servers/service_servern/data/nodemanager/service_servern.state` file is used to determine the state.

If the state is `RUNNING`, the fault monitor reports a success.

If the state is `STARTING`, the fault monitor reports a partial failure value of 10. Successive fault monitor partial failures are summed up and as soon as a value of 100 is reached, a complete failure is declared.

If the state is `STANDBY`, `ADMIN`, `RESUMING`, `FAILED_RESTARTING`, or `ADMIN_ON_ABORTED_STARTUP`, the fault monitor reports a partial failure value of 20. Successive fault monitor partial failures are summed up and as soon as a value of 100 is reached, a complete failure is declared.

If the state is any other value, a complete failure is declared.

## **Concurrent Manager Fault Monitor**

As the APPS User, connect to the database using SQL\*Plus to determine the actual and target Concurrent Manager OS process IDs.

When 2 or more actual process IDs are found, the fault monitor reports a success. Otherwise, a complete failure is declared.

If the status is any other value, a complete failure is declared.

## **Forms Server Fault Monitor**

Checks that the Forms Server process ID exists for the Application Tier. If the process ID does not exist a complete failure is declared.

# Deployment Example: How to Install and Configure Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster

---

## Installing and Configuring Oracle E-Business Suite 12.2 or Later on Oracle Solaris Cluster

This deployment example demonstrates a working example of Oracle E-Business Suite 12.2.4 with technology stack (TXK) and Applications Database (AD) C.Delta.6 on Oracle Solaris Cluster 4.3.

This deployment example is based on the information available in the “Deployment Option with Single Web Entry Point and Multiple Managed Servers” section of the My Oracle Support (MOS) note, Using Load-Balancers with Oracle E-Business Suite Release 12.2 (Doc ID 1375686.1), with the modification that the Admin Server and its Node Manager are running on the Web Entry Point server.

The deployment example uses two Oracle Solaris Cluster nodes `psmash1` and `psmash2`. There are also two zone clusters, `zc1` and `zc2`, deployed across those two nodes. The respective zone nodes are `vzsmash1` and `vzsmash2` for `zc1` and `vzsmash1b` and `vzsmash2b` for `zc2`. Oracle E-Business Suite 12.2.4 services are deployed as follows:

- The Primary Applications Node, hosting the HTTP Server and WebLogic Admin Server, has been installed using logical host `smash-6` which is deployed within zone cluster `zc1` (`vzsmash1` and `vzsmash2`).
- Web Applications are deployed on Secondary Application Nodes within the global cluster (`psmash1` and `psmash2`).
- Concurrent Managers are deployed on Secondary Application Nodes within zone cluster `zc2` (`vzsmash1b` and `vzsmash2b`).

## Oracle Solaris Cluster Resources That are Already Setup

The following Oracle Solaris Cluster resources have already been setup that include Oracle Grid Infrastructure for the Cluster, Oracle ASM, and Oracle RAC.

```
root@psmash1:~# clresource status
```

```
=== Cluster Resources ===
```

| Resource Name | Node Name | State  | Status Message                                |
|---------------|-----------|--------|-----------------------------------------------|
| crs-fmwk-rs   | psmash2   | Online | Online                                        |
|               | psmash1   | Online | Online                                        |
| rac-fmwk-rs   | psmash2   | Online | Online                                        |
|               | psmash1   | Online | Online                                        |
| asm-inst-rs   | psmash2   | Online | Online - +ASM2 is UP and ENABLED              |
|               | psmash1   | Online | Online - +ASM1 is UP and ENABLED              |
| asm-dg-rs     | psmash2   | Online | Online - Mounted: DATA                        |
|               | psmash1   | Online | Online - Mounted: DATA                        |
| oep-rs        | psmash2   | Online | Online - Service VIS is UP [Instance is OPEN] |
|               | psmash1   | Online | Online - Service VIS is UP [Instance is OPEN] |

```
root@psmash1:~#
```

## Oracle Solaris Cluster Zone Clusters zc1 and zc2

The following Oracle Solaris Cluster Zone Clusters have been installed and configured with the Shared Application Tier File System (/global/ebs) and logical host (smash-6) on zc1.

```
root@psmash1:~# clzonecluster status
```

```
=== Zone Clusters ===
```

```
--- Zone Cluster Status ---
```

| Name | Brand | Node Name | Zone Host Name | Status | Zone Status |
|------|-------|-----------|----------------|--------|-------------|
| ---- | ----- | -----     | -----          | -----  | -----       |

```

zc1    solaris  psmash1  vzsmash1    Online  Running
        psmash2  vzsmash2    Online  Running

zc2    solaris  psmash1  vzsmash1b   Online  Running
        psmash2  vzsmash2b   Online  Running

```

```
root@psmash1:~#
```

```
root@psmash1:~# clzonecluster configure zc1
```

```
clzc:zc1> info fs
```

```
fs:
```

```
dir: /global/ebs
special: /global/ebs
raw not specified
type: lofs
options: []
cluster-control: true
```

```
clzc:zc1> info net
```

```
net:
```

```
address: smash-6
physical: auto
```

```
clzc:zc1> exit
```

```
root@psmash1:~#
```

```
root@psmash1:~# clzonecluster configure zc2
```

```
clzc:zc2> info fs
```

```
fs:
```

```
dir: /global/ebs
special: /global/ebs
raw not specified
type: lofs
options: []
cluster-control: true
```

```
clzc:zc2> info net
```

```
clzc:zc2> exit
```

```
root@psmash1:~#
```

## Registering the SUNW.HAStoragePlus Resource Type

Create a storage resource to manage the /global/ebs/VIS Shared Application File System. The following /etc/vfstab entry exists on psmash1 and psmash2 and mount points exist for /global/ebs on psmash1, psmash2, vzsmash1, vzsmash2, vzsmash1b and vzsmash2b.

```
/dev/md/dg1/dsk/d100 /dev/md/dg1/rdisk/d100 /global/ebs ufs 3 yes global,logging
```

```
root@psmash1:~# clresourcetype register SUNW.HAStoragePlus
```

```
root@psmash1:~# clresourcetype register -Z zc1 SUNW.HAStoragePlus
```

```

root@psmash1:~# clresourcetype register -Z zc2 SUNW.HASStoragePlus
root@psmash1:~#
root@psmash1:~# clresourcegroup create -S hasp-rg
root@psmash1:~#
root@psmash1:~# clresourcegroup create -S -Z zc1 \
-p RG_Affinities=++global:hasp-rg hasp-rg
root@psmash1:~#
root@psmash1:~# clresourcegroup create -S -Z zc2 \
-p RG_Affinities=++global:hasp-rg hasp-rg
root@psmash1:~#
root@psmash1:~# clresource create -g hasp-rg -t SUNW.HASStoragePlus \
-p FileSystemMountPoints=/global/ebs -d hasp-rs
root@psmash1:~#
root@psmash1:~# clresourcegroup online -eM hasp-rg
root@psmash1:~#
root@psmash1:~# clresource create -Z zc1 -g hasp-rg -t SUNW.HASStoragePlus \
-p FileSystemMountPoints=/global/ebs \
-p resource_dependencies_offline_restart=global:hasp-rs -d hasp-rs
root@psmash1:~#
root@psmash1:~# clresource create -Z zc2 -g hasp-rg -t SUNW.HASStoragePlus \
-p FileSystemMountPoints=/global/ebs \
-p resource_dependencies_offline_restart=global:hasp-rs -d hasp-rs
root@psmash1:~#
root@psmash1:~# clresourcegroup online -eM -Z zc1 hasp-rg
root@psmash1:~# clresourcegroup online -eM -Z zc2 hasp-rg
root@psmash1:~# clresource status -Z all -g hasp-rg

```

```
=== Cluster Resources ===
```

| Resource Name | Node Name | State  | Status Message |
|---------------|-----------|--------|----------------|
| hasp-rs       | psmash2   | Online | Online         |
|               | psmash1   | Online | Online         |
| hasp-rs       | vzsmash2  | Online | Online         |
|               | vzsmash1  | Online | Online         |
| hasp-rs       | vzsmash2b | Online | Online         |
|               | vzsmash1b | Online | Online         |

```
root@psmash1:~#
```

## Verifying the Oracle E-Business Suite Installation

In subsequent steps, you will create resources of type ORCL.ebs. Once created, these resources will manage the start and stop of various Oracle E-Business Suite 12.2.4 services. However,

before creating these resources, you must ensure that those services can be manually started and stopped.

On the Primary Applications Node (smash-6), manually start and stop the following services:

- OPMN
- Oracle HTTP Server
- TNS Listener
- Node Manager
- WebLogic Admin Server

---

**Note** - /global/ebs/VIS/fs2/inst/apps/VIS\_smash-6/appl/admin/customVIS\_smash-6.env reflects \${INST\_TOP}/appl/admin/customglobal\_db-name\_logical\_host.env as described in “Interpose Logical Host” on page 13.

---

```

root@psmash1:~# zlogin zc1
[Connected to zone 'zc1' pts/6]
?Oracle Corporation SunOS 5.11 11.2 April 2015
You have new mail.
root@vzsmash1:~# su - applvis
Oracle Corporation SunOS 5.11 11.2 April 2015
You have new mail.
-bash-4.1$ cd /global/ebs/VIS
-bash-4.1$
-bash-4.1$ cat /global/ebs/VIS/fs2/inst/apps/VIS_smash-6/appl/admin/
customVIS_smash-6.env
export LD_PRELOAD_32=/usr/lib/secure/libschost.so.1
export LD_PRELOAD_64=/usr/lib/secure/64/libschost.so.1
export SC_LHOSTNAME=smash-6

-bash-4.1$ . /global/ebs/VIS/fs2/inst/apps/VIS_smash-6/appl/admin/customVIS_smash-6.env
-bash-4.1$ uname -n
smash-6
-bash-4.1$
-bash-4.1$ . EBSapps.env run

E-Business Suite Environment Information
-----
RUN File System      : /global/ebs/VIS/fs2/EBSapps/appl
PATCH File System   : /global/ebs/VIS/fs1/EBSapps/appl
Non-Edited File System : /global/ebs/VIS/fs_ne

DB Host: psmash1.us.oracle.com  Service/SID: VIS

```

```
Sourcing the RUN File System ...

-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
-bash-4.1$
-bash-4.1$ ./adalnctl.sh start

adalnctl.sh version 120.3.12020000.2

Checking for FNDFS executable.
Starting listener process APPS_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adalnctl.txt \
for more information ...

-bash-4.1$
-bash-4.1$ ./adopmctl.sh start

You are running adopmctl.sh version 120.0.12020000.2

Starting Oracle Process Manager (OPMN) ...

adopmctl.sh: exiting with status 0

adopmctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adopmctl.txt \
for more information ...

-bash-4.1$
-bash-4.1$ ./adapctl.sh start

You are running adapctl.sh version 120.0.12020000.6

Starting OPMN managed Oracle HTTP Server (OHS) instance ...

adapctl.sh: exiting with status 0

adapctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adapctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh start

You are running adnodemgrctl.sh version 120.11.12020000.11
```



```
Enter the WebLogic Admin password:
Starting the Node Manager...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adnodemgrctl.txt for
details

adnodemgrctl.sh: exiting with status 0

adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adnodemgrctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adadminrvctl.sh start

You are running adadminrvctl.sh version 120.10.12020000.9

Enter the WebLogic Admin password:
Enter the APPS Schema password:
Starting WLS Admin Server...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adadminrvctl.txt
for details

adadminrvctl.sh: exiting with status 0

adadminrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adadminrvctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adadminrvctl.sh stop

You are running adadminrvctl.sh version 120.10.12020000.9

Enter the WebLogic Admin password:
Enter the APPS Schema password:
Stopping WLS Admin Server...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adadminrvctl.txt
for details

adadminrvctl.sh: exiting with status 0

adadminrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adadminrvctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh stop
```

```
You are running adnodemgrctl.sh version 120.11.12020000.11

Enter the WebLogic Admin password:

adnodemgrctl.sh: exiting with status 0

adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adnodemgrctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adapcctl.sh stop

You are running adapcctl.sh version 120.0.12020000.6

Stopping OPMN managed Oracle HTTP Server (OHS) instance ...

adapcctl.sh: exiting with status 0

adapcctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adapcctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adopmnctl.sh stop

You are running adopmnctl.sh version 120.0.12020000.2

Stopping Oracle Process Manager (OPMN) and the managed processes ...

adopmnctl.sh: exiting with status 0

adopmnctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adopmnctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adalnctl.sh stop

adalnctl.sh version 120.3.12020000.2

Shutting down listener process APPS_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \
```

```
/global/ebs/VIS/fs2/inst/apps/VIS_smash-6/logs/appl/admin/log/adaInctl.txt for more
information ...
```

```
-bash-4.1$
```

On the Secondary Application Nodes (psmash1 and psmash2), manually start and stop the following services:

- TNS Listener
- Node Manager
- Web Applications oacore
- Web Applications oafm
- Web Applications forms
- Web Applications forms-c4ws

---

**Note** - You must be able to manually start these managed server in managed server independence mode on both nodes. A managed server can only be started in MSI mode provided it was started in non-MSI mode at least once after being created.

---

---

**Note** - The following commands were executed on node psmash1.

---

```
root@psmash1:~# su - applvis
Oracle Corporation SunOS 5.11 11.2 April 2015
You have new mail.
-bash-4.1$ cd /global/ebs/VIS
-bash-4.1$ . EBSapps.env run

E-Business Suite Environment Information
-----
RUN File System      : /global/ebs/VIS/fs2/EBSapps/appl
PATCH File System  : /global/ebs/VIS/fs1/EBSapps/appl
Non-Edited File System : /global/ebs/VIS/fs_ne

DB Host: psmash1.us.oracle.com  Service/SID: VIS

Sourcing the RUN File System ...

-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
-bash-4.1$
-bash-4.1$ ./adaInctl.sh start

adaInctl.sh version 120.3.12020000.2
```

```
Checking for FNDFS executable.
Starting listener process APPS_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adalnctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh start

You are running adnodemgrctl.sh version 120.11.12020000.11

Enter the WebLogic Admin password:
Starting the Node Manager...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adnodemgrctl.txt for
details

adnodemgrctl.sh: exiting with status 0

adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adnodemgrctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh start oacore_server2 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:

Calling txkChkEBSDependencies.pl to perform dependency checks for oacore_server2
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/rgf/TXK/
txkChkEBSDependencies_Fri_Jun_5_07_34_45_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_34_45_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully

Starting oacore_server2...

admanagedsrvctl.sh: exiting with status 0
```

```
admanagedsrvctl.sh: check the logfile \  
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoacorectl.txt for more  
information ...
```

```
-bash-4.1$  
-bash-4.1$ ./admanagedsrvctl.sh start oafm_server2 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

```
Enter the WebLogic Admin password:
```

```
Calling txkChkEBSDependencies.pl to perform dependency checks for oafm_server2  
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS  
*** Log File = \  
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/rgf/TXK/  
txkChkEBSDependencies_Fri_Jun_5_07_40_32_2015/ \  
txkChkEBSDependencies_Fri_Jun_5_07_40_32_2015.log  
Perl script txkChkEBSDependencies.pl got executed successfully
```

```
Starting oafm_server2...
```

```
admanagedsrvctl.sh: exiting with status 0
```

```
admanagedsrvctl.sh: check the logfile \  
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoafmctl.txt for more  
information ...
```

```
-bash-4.1$  
-bash-4.1$ ./admanagedsrvctl.sh start forms_server2 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

```
Enter the WebLogic Admin password:
```

```
Calling txkChkEBSDependencies.pl to perform dependency checks for forms_server2  
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS  
*** Log File = \  
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/rgf/TXK/  
txkChkEBSDependencies_Fri_Jun_5_07_43_24_2015/ \  
txkChkEBSDependencies_Fri_Jun_5_07_43_24_2015.log  
Perl script txkChkEBSDependencies.pl got executed successfully
```

```
Starting forms_server2...

admanagersrvctl.sh: exiting with status 0

admanagersrvctl.sh: check the logfile /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/
appl/admin/log/adformsctl.txt \
for more information ...

-bash-4.1$
-bash-4.1$ ./admanagersrvctl.sh start forms-c4ws_server2 -msimode

You are running admanagersrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:

Calling txkChkEBSDependencies.pl to perform dependency checks for forms-c4ws_server2
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/rgf/TXK/
txkChkEBSDependencies_Fri_Jun_5_07_45_14_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_45_14_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully

Starting forms-c4ws_server2...

admanagersrvctl.sh: exiting with status 0

admanagersrvctl.sh: check the logfile /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/
appl/admin/log/adforms-c4wsctl.txt \
for more information ...

-bash-4.1$
-bash-4.1$ ./admanagersrvctl.sh stop forms-c4ws_server2 -msimode

You are running admanagersrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:
Stopping forms-c4ws_server2...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adforms-c4wsctl.txt
for details

admanagersrvctl.sh: exiting with status 0
```

```
admanagedsrvctl.sh: check the logfile /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/
appl/admin/log/adforms-c4wsctl.txt \
for more information ...
```

```
-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop forms_server2 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

```
Enter the WebLogic Admin password:
Stopping forms_server2...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adformsctl.txt for
details
```

```
admanagedsrvctl.sh: exiting with status 0
```

```
admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adformsctl.txt for more
information ...
```

```
-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop oafm_server2 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

```
Enter the WebLogic Admin password:
Stopping oafm_server2...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoafmctl.txt for
details
```

```
admanagedsrvctl.sh: exiting with status 0
```

```
admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoafmctl.txt for more
information ...
```

```
-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop oacore_server2 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

```
Enter the WebLogic Admin password:
```

```
Stopping oacore_server2...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoacorectl.txt for
  details

admanagersrvctl.sh: exiting with status 0

admanagersrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adoacorectl.txt for more
  information ...

-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh stop

You are running adnodemgrctl.sh version 120.11.12020000.11

Enter the WebLogic Admin password:

adnodemgrctl.sh: exiting with status 0

adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adnodemgrctl.txt for more
  information ...

-bash-4.1$
-bash-4.1$ ./adalnctl.sh stop

adalnctl.sh version 120.3.12020000.2

Shutting down listener process APPS_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash1/logs/appl/admin/log/adalnctl.txt for more
  information ...

-bash-4.1$
```

**Note - The following commands were executed on node psmash2.**

```
root@psmash2:~# su - applvis
Oracle Corporation SunOS 5.11 11.2 April 2015
-bash-4.1$ cd /global/ebs/VIS
-bash-4.1$ . EBSapps.env run
```

```
E-Business Suite Environment Information
-----
```



```
RUN File System      : /global/ebs/VIS/fs2/EBSapps/appl
PATCH File System   : /global/ebs/VIS/fs1/EBSapps/appl
Non-Edited File System : /global/ebs/VIS/fs_ne
```

```
DB Host: psmash2.us.oracle.com Service/SID: VIS
```

```
Sourcing the RUN File System ...
```

```
-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
-bash-4.1$ ./adalnctl.sh start
```

```
adalnctl.sh version 120.3.12020000.2
```

```
Checking for FNDFS executable.
Starting listener process APPS_VIS.
```

```
adalnctl.sh: exiting with status 0
```

```
adalnctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adalnctl.txt for more
information ...
```

```
-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh start
```

```
You are running adnodemgrctl.sh version 120.11.12020000.11
```

```
Enter the WebLogic Admin password:
Starting the Node Manager...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adnodemgrctl.txt for
details
```

```
adnodemgrctl.sh: exiting with status 0
```

```
adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adnodemgrctl.txt for more
information ...
```

```
-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh start oacore_server3 -msimode
```

```
You are running admanagedsrvctl.sh version 120.14.12020000.10
```

```
Setting MS_INDEPENDENT_MODE to Y
```

Enter the WebLogic Admin password:

```
Calling txkChkEBSDependencies.pl to perform dependency checks for oacore_server3
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/rgf/TXK/
txkChkEBSDependencies_Fri_Jun_5_07_43_10_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_43_10_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully
```

Starting oacore\_server3...

admanagersrvctl.sh: exiting with status 0

admanagersrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS\_psmash2/logs/appl/admin/log/adoacorectl.txt for more
information ...

-bash-4.1\$

-bash-4.1\$ **./admanagersrvctl.sh start oafm\_server3 -msimode**

You are running admanagersrvctl.sh version 120.14.12020000.10

Setting MS\_INDEPENDENT\_MODE to Y

Enter the WebLogic Admin password:

```
Calling txkChkEBSDependencies.pl to perform dependency checks for oafm_server3
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/rgf/TXK/
txkChkEBSDependencies_Fri_Jun_5_07_48_50_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_48_50_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully
```

Starting oafm\_server3...

admanagersrvctl.sh: exiting with status 0

admanagersrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS\_psmash2/logs/appl/admin/log/adoafmctl.txt for more
information ...

-bash-4.1\$

-bash-4.1\$ **./admanagersrvctl.sh start forms\_server3 -msimode**

```
You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:

Calling txkChkEBSDependencies.pl to perform dependency checks for forms_server3
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/eb/vis/fs2/inst/apps/vis_psmash2/logs/appl/rgf/txk/
txkChkEBSDependencies_Fri_Jun_5_07_51_49_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_51_49_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully

Starting forms_server3...

admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/eb/vis/fs2/inst/apps/vis_psmash2/logs/appl/admin/log/adformsctl.txt for more
information ...

-bash-4.1$ ./admanagedsrvctl.sh start forms-c4ws_server3 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:

Calling txkChkEBSDependencies.pl to perform dependency checks for forms-c4ws_server3
*** ALL THE FOLLOWING FILES ARE REQUIRED FOR RESOLVING RUNTIME ERRORS
*** Log File = \
/global/eb/vis/fs2/inst/apps/vis_psmash2/logs/appl/rgf/txk/
txkChkEBSDependencies_Fri_Jun_5_07_56_23_2015/ \
txkChkEBSDependencies_Fri_Jun_5_07_56_23_2015.log
Perl script txkChkEBSDependencies.pl got executed successfully

Starting forms-c4ws_server3...

admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/eb/vis/fs2/inst/apps/vis_psmash2/logs/appl/admin/log/adforms-c4wsctl.txt for
more information ...
```

```
-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop forms-c4ws_server3 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:
Stopping forms-c4ws_server3...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adforms-c4wsctl.txt
for details

admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adforms-c4wsctl.txt for
more information ...

-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop forms_server3 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:
Stopping forms_server3...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adformsctl.txt for
details

admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adformsctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop oafm_server3 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:
Stopping oafm_server3...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adoafmctl.txt for
details
```

```
admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adoafmctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./admanagedsrvctl.sh stop oacore_server3 -msimode

You are running admanagedsrvctl.sh version 120.14.12020000.10

Setting MS_INDEPENDENT_MODE to Y

Enter the WebLogic Admin password:
Stopping oacore_server3...
Refer /global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adoacorectl.txt for
details

admanagedsrvctl.sh: exiting with status 0

admanagedsrvctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adoacorectl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adnodemgrctl.sh stop

You are running adnodemgrctl.sh version 120.11.12020000.11

Enter the WebLogic Admin password:

adnodemgrctl.sh: exiting with status 0

adnodemgrctl.sh: check the logfile \
/global/ebs/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adnodemgrctl.txt for more
information ...

-bash-4.1$
-bash-4.1$ ./adalnctl.sh stop

adalnctl.sh version 120.3.12020000.2

Shutting down listener process APPS_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \
```

```
/global/eb/s/VIS/fs2/inst/apps/VIS_psmash2/logs/appl/admin/log/adaInctl.txt for more
information ...
```

```
-bash-4.1$
```

On the Secondary Applications Nodes (vzsmash1b and vzsmash2b), manually start and stop the following services:

- TNS Listener
- Concurrent Manager

---

**Note** - The following commands were executed on the zone cluster node vzsmash1b.

---

```
root@vzsmash1b:~# su - applvis
Oracle Corporation SunOS 5.11 11.2 April 2015
```

```
-bash-4.1$ cd /global/eb/s/VIS
```

```
-bash-4.1$ . EBSapps.env run
```

```
E-Business Suite Environment Information
```

```
-----
```

```
RUN File System          : /global/eb/s/VIS/fs2/EBSapps/appl
```

```
PATCH File System       : /global/eb/s/VIS/fs1/EBSapps/appl
```

```
Non-Edited File System  : /global/eb/s/VIS/fs_ne
```

```
DB Host: psmash1.us.oracle.com  Service/SID: VIS
```

```
Sourcing the RUN File System ...
```

```
-bash-4.1$
```

```
-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
```

```
-bash-4.1$ ./adaInctl.sh start
```

```
adaInctl.sh version 120.3.12020000.2
```

```
Checking for FNDFS executable.
```

```
Starting listener process APPS_VIS.
```

```
adaInctl.sh: exiting with status 0
```

```
adaInctl.sh: check the logfile \
```

```
/global/eb/s/VIS/fs2/inst/apps/VIS_vzsmash1b/logs/appl/admin/log/adaInctl.txt for more
information ...
```

```
-bash-4.1$
```

```
-bash-4.1$ ./adcmctl.sh start
```

```
cp wait parameter passed with value: N
```

```
You are running adcmctl.sh version 120.19.12020000.4
```

```
Enter the APPS username : apps
```

```
Enter the APPS password :  
Starting concurrent manager for VIS ...  
Starting VIS_0612@VIS Internal Concurrent Manager  
Default printer is noprint
```

```
adcmctl.sh: exiting with status 0
```

```
adcmctl.sh: check the logfile \  
/global/ebis/VIS/fs2/inst/apps/VIS_vzsmash1b/logs/appl/admin/log/adcmctl.txt for more  
information ...
```

```
-bash-4.1$  
-bash-4.1$ ./adcmctl.sh abort  
cp wait parameter passed with value: N
```

```
You are running adcmctl.sh version 120.19.12020000.4
```

```
Enter the APPS username : apps
```

```
Enter the APPS password :  
Aborting concurrent managers for VIS ...  
ORACLE Password:  
Submitted request 7443008 for CONCURRENT FND ABORT
```

```
adcmctl.sh: exiting with status 0
```

```
adcmctl.sh: check the logfile \  
/global/ebis/VIS/fs2/inst/apps/VIS_vzsmash1b/logs/appl/admin/log/adcmctl.txt for more  
information ...
```

```
-bash-4.1$  
-bash-4.1$ ./adalnctl.sh stop
```

```
adalnctl.sh version 120.3.12020000.2
```

Shutting down listener process APPS\_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \  
/global/ebs/VIS/fs2/inst/apps/VIS\_vzsmash1b/logs/appl/admin/log/adalnctl.txt for more  
information ...

-bash-4.1\$

**Note - The following commands were executed on the zone cluster node vzsmash2b.**

```
root@vzsmash2b:~# su - applvis
Oracle Corporation SunOS 5.11 11.2 April 2015
-bash-4.1$ cd /global/ebs/VIS
-bash-4.1$ . EBSapps.env run
```

E-Business Suite Environment Information

```
-----
RUN File System           : /global/ebs/VIS/fs2/EBSapps/appl
PATCH File System        : /global/ebs/VIS/fs1/EBSapps/appl
Non-Editted File System  : /global/ebs/VIS/fs_ne
```

DB Host: psmash1.us.oracle.com Service/SID: VIS

Sourcing the RUN File System ...

```
-bash-4.1$ cd $ADMIN_SCRIPTS_HOME
-bash-4.1$ ./adalnctl.sh start
```

adalnctl.sh version 120.3.12020000.2

Checking for FNDFS executable.  
Starting listener process APPS\_VIS.

adalnctl.sh: exiting with status 0

adalnctl.sh: check the logfile \  
/global/ebs/VIS/fs2/inst/apps/VIS\_vzsmash2b/logs/appl/admin/log/adalnctl.txt for more  
information ...

```
-bash-4.1$
-bash-4.1$ ./adcmctl.sh start
cp wait parameter passed with value: N
```



You are running adcmctl.sh version 120.19.12020000.4

Enter the APPS username : apps

Enter the APPS password :  
Starting concurrent manager for VIS ...  
Starting VIS\_0612@VIS Internal Concurrent Manager  
Default printer is noprint

adcmctl.sh: exiting with status 0

adcmctl.sh: check the logfile \  
/global/ebis/VIS/fs2/inst/apps/VIS\_vzsmash2b/logs/appl/admin/log/adcmctl.txt for more  
information ...

-bash-4.1\$  
-bash-4.1\$ **./adcmctl.sh abort**  
cp wait parameter passed with value: N

You are running adcmctl.sh version 120.19.12020000.4

Enter the APPS username : apps

Enter the APPS password :  
Aborting concurrent managers for VIS ...  
ORACLE Password:  
Submitted request 7443009 for CONCURRENT FND ABORT

adcmctl.sh: exiting with status 0

adcmctl.sh: check the logfile \  
/global/ebis/VIS/fs2/inst/apps/VIS\_vzsmash2b/logs/appl/admin/log/adcmctl.txt for more  
information ...

-bash-4.1\$  
-bash-4.1\$ **./adalnctl.sh stop**

adalnctl.sh version 120.3.12020000.2

Shutting down listener process APPS\_VIS.

```
adalnctl.sh: exiting with status 0
```

```
adalnctl.sh: check the logfile \  
/global/ebs/VIS/fs2/inst/apps/VIS_vzsmash2b/logs/appl/admin/log/adalnctl.txt for more  
information ...
```

```
You have mail in /var/mail/applvis  
-bash-4.1$
```

## Creating Symbolic Links

Before creating resources of type ORCL.ebs you must create the following symbolic links so that the Primary Applications Node can be interposed with the logical hostname (smash-6).

---

**Note** - Create symbolic links for nodes psmash1, psmash2, vzsmash1, vzsmash2, vzsmash1b and vzsmash2b.

---

```
root@psmash1:~# ln -s /usr/cluster/lib/libschost.so.1 /usr/lib/secure/libschost.so.1  
root@psmash1:~# ln -s /usr/cluster/lib/sparcv9/libschost.so.1 /usr/lib/secure/64/  
libschost.so.1
```

## Saving the WebLogic and APPS User Passwords

The Oracle Solaris Cluster resources of type ORCL.ebs require the WebLogic Administrator and APPS user passwords. Hence, you will need to save those passwords within the Global Cluster and Zone Clusters.

```
root@psmash1:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_APPS  
Enter string value:  
Enter string value again:  
root@psmash1:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_WLS  
Enter string value:  
Enter string value again:  
root@psmash1:~#
```

```
root@vzsmash1:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_APPS  
Enter string value:  
Enter string value again:  
root@vzsmash1:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_WLS  
Enter string value:  
Enter string value again:
```

```
root@vzsmash1:~#  
  
root@vzsmash1b:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_APPS  
Enter string value:  
Enter string value again:  
root@vzsmash1b:~# /usr/cluster/bin/clpstring create -b VIS -t resource VIS_WLS  
Enter string value:  
Enter string value again:  
root@vzsmash1b:~#
```

## Registering the ORCL.ebs Resource Type

Register ORCL.ebs within the global cluster and zone clusters.

```
root@psmash1:~# clresourcetype register ORCL.ebs  
root@psmash1:~# clresourcetype register -Z zc1 ORCL.ebs  
root@psmash1:~# clresourcetype register -Z zc2 ORCL.ebs
```

## Creating OPMN, OHS, TNS Listener, Node Manager and WebLogic Admin Server Resources

The Primary Applications Node (smash-6) can failover between the Oracle Solaris Zone Cluster nodes (vzsmash1 and vzsmash2). To accomplish that, a failover resource group ebs-fo1-rg will be created with resources to manage the following services:

- OPMN
- Oracle HTTP Server
- TNS Listener

---

**Note** - A TNS Listener resource will be created on the Primary Applications Node (smash-6) which can failover between zone cluster nodes vzsmash1 and vzsmash2. If vzsmash1 and vzsmash2 are also to be used to host other Oracle E-Business Suite 12.2.4 services, then you will need to ensure that there is no port conflict for the TNS Listener. If required, the `s_rpcport` value for the Primary Applications Node's (smash-6) context file can be incremented by one from 1626 to 1627.

---

- Node Manager
- WebLogic Admin Server

```
root@psmash1:~# zlogin zc1  
[Connected to zone 'zc1' pts/3]
```

```

Oracle Corporation      SunOS 5.11      11.2      February 2015
You have new mail.
root@vzsmash1:~#
root@vzsmash1:~# clresourcegroup create ebs-fo1-rg
root@vzsmash1:~# clreslogicalhostname create -g ebs-fo1-rg \
-h smash-6 ebs-fo1-lh-rs
root@vzsmash1:~# clresource create -g ebs-fo1-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p interpose_logical_hostname=smash-6 \
-p service_group=web_entry \
-p service=opmn \
-p pmf_managed=true \
-p resource_dependencies=ebs-fo1-lh-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-fo1-opmn-rs
root@vzsmash1:~#
root@vzsmash1:~# clresource create -g ebs-fo1-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p interpose_logical_hostname=smash-6 \
-p service_group=web_entry \
-p service=ohs \
-p resource_dependencies=ebs-fo1-lh-rs,ebs-fo1-opmn-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-fo1-ohs-rs
root@vzsmash1:~#
root@vzsmash1:~# clresource create -g ebs-fo1-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p interpose_logical_hostname=smash-6 \
-p service_group=web_admin \
-p service=tns_apps \
-p resource_dependencies_offline_restart=hasp-rs \
-p resource_dependencies=ebs-fo1-lh-rs \
-p pmf_managed=true \
-d ebs-fo1-tns-rs
root@vzsmash1:~#
root@vzsmash1:~# clresource create -g ebs-fo1-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p interpose_logical_hostname=smash-6 \
-p service_group=root \
-p service=node_manager \
-p resource_dependencies_offline_restart=hasp-rs \
-p resource_dependencies=ebs-fo1-lh-rs \
-d ebs-fo1-nm-rs
root@vzsmash1:~#

```

---

**Note** - The Weblogic Admin Server resource is dependent on the database resource which, in this deployment example, is running in the global zone. However, it is not possible to set an inter-cluster dependency from a zone cluster. Instead, the command needs to be run from the global cluster to set inter-cluster dependency. Execute the following command from the global cluster.

---

```

root@psmash1:~# clresource create -Z zc1 -g ebs-fo1-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p interpose_logical_hostname=smash-6 \
-p service_group=web_admin \
-p service=admin_server \
-p resource_dependencies_offline_restart=hasp-rs \
-p resource_dependencies=ebs-fo1-lh-rs,ebs-fo1-tns-rs,ebs-fo1-nm-rs,global:oepr-rs \
-d ebs-fo1-admin-rs
root@psmash1:~#
root@vzsmash1:~# clresourcegroup online -eM ebs-fo1-rg
root@vzsmash1:~# clresource status

```

```
=== Cluster Resources ===
```

| Resource Name    | Node Name | State   | Status Message                   |
|------------------|-----------|---------|----------------------------------|
| -----            | -----     | -----   | -----                            |
| hasp-rs          | vzsmash2  | Online  | Online                           |
|                  | vzsmash1  | Online  | Online                           |
| ebs-fo1-admin-rs | vzsmash2  | Online  | Online - Service is online.      |
|                  | vzsmash1  | Offline | Offline                          |
| ebs-fo1-nm-rs    | vzsmash2  | Online  | Online - Service is online.      |
|                  | vzsmash1  | Offline | Offline                          |
| ebs-fo1-tns-rs   | vzsmash2  | Online  | Online - Service is online.      |
|                  | vzsmash1  | Offline | Offline                          |
| ebs-fo1-ohs-rs   | vzsmash2  | Online  | Online - Service is online.      |
|                  | vzsmash1  | Offline | Offline                          |
| ebs-fo1-opmn-rs  | vzsmash2  | Online  | Online - Service is online.      |
|                  | vzsmash1  | Offline | Offline                          |
| ebs-fo1-lh-rs    | vzsmash2  | Online  | Online - LogicalHostname online. |
|                  | vzsmash1  | Offline | Offline                          |

```

root@vzsmash1:~#

```

Test a switch over to vzs mash1 of ebs-fo1-rg. From another terminal on either vzs mash1 or vzs mash2, you can issue the `clresource status` command to see the resources stopping and starting.

```

root@vzs mash1:~# clresourcegroup switch -n vzs mash1 ebs-fo1-rg
root@vzs mash1:~# clresource status

=== Cluster Resources ===

Resource Name      Node Name      State      Status Message
-----
hasp-rs            vzs mash2     Online     Online
                  vzs mash1     Online     Online

ebs-fo1-admin-rs  vzs mash2     Offline    Offline
                  vzs mash1     Online     Online - Service is online.

ebs-fo1-nm-rs     vzs mash2     Offline    Offline
                  vzs mash1     Online     Online - Service is online.

ebs-fo1-tns-rs    vzs mash2     Offline    Offline
                  vzs mash1     Online     Online - Service is online.

ebs-fo1-ohs-rs    vzs mash2     Offline    Offline
                  vzs mash1     Online     Online - Service is online.

ebs-fo1-opmn-rs   vzs mash2     Offline    Offline
                  vzs mash1     Online     Online - Service is online.

ebs-fo1-lh-rs     vzs mash2     Offline    Offline - LogicalHostname offline.
                  vzs mash1     Online     Online - LogicalHostname online.

root@vzs mash1:~#

```

## Creating TNS Listener, Node Manager, oacore, oafm, forms and forms-c4ws Resources

Create a multi-master resource group on the Global Cluster nodes (ps mash1 and ps mash2) for the following resources:

- TNS Listener
- Node Manager
- Web Applications oacore
- Web Applications oafm

- Web Applications forms
- Web Applications forms-c4ws

---

**Note** - Issue the following Oracle Solaris Cluster commands on just one node.

---

```

root@psmash1:~# clresourcegroup create -S ebs-mm-rg
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=web_applications \
-p service=tns_apps \
-p resource_dependencies_offline_restart=hasp-rs \
-p pmf_managed=true \
-d ebs-mm-tns-rs
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS -p service_group=root \
-p service=node_manager \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-nm-rs
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=web_applications \
-p service=oacore \
-p resource_dependencies=ebs-mm-tns-rs,ebs-mm-nm-rs,oep-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-oaocore-rs
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=web_applications \
-p service=oafm \
-p resource_dependencies=ebs-mm-tns-rs,ebs-mm-nm-rs,oep-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-oafm-rs
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=web_applications \
-p service=forms \
-p resource_dependencies=ebs-mm-tns-rs,ebs-mm-nm-rs,oep-rs \

```

```

-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-forms-rs
root@psmash1:~#
root@psmash1:~# clresource create -g ebs-mm-rg \
-t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=web_applications \
-p service=forms-c4ws \
-p resource_dependencies=ebs-mm-tns-rs,ebs-mm-nm-rs,oep-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-forms-c4ws-rs
root@psmash1:~#
root@psmash1:~# clresourcegroup online -eM ebs-mm-rg
root@psmash1:~# clresource status -g ebs-mm-rg

```

=== Cluster Resources ===

| Resource Name        | Node Name          | State            | Status Message                                             |
|----------------------|--------------------|------------------|------------------------------------------------------------|
| ebs-mm-forms-c4ws-rs | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |
| ebs-mm-forms-rs      | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |
| ebs-mm-oafm-rs       | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |
| ebs-mm-oacore-rs     | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |
| ebs-mm-nm-rs         | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |
| ebs-mm-tns-rs        | psmash2<br>psmash1 | Online<br>Online | Online - Service is online.<br>Online - Service is online. |

root@psmash1:~#

## Creating TNS Listener and Concurrent Manager Resources

---

**Note** - Parallel Concurrent Processing (PCP) has already been configured.

---



Create a multi-master resource group within the zone cluster zc2 (vzsmash1b and vzsmash2b) for the following resources:

- TNS Listener
- Concurrent Manager

```
root@vzsmash1b:~# clresourcegroup create -S ebs-mm-rg
root@vzsmash1b:~# clresource create -g ebs-mm-rg -t ORCL.ebs \
-p base_dir=/global/ebs/VIS \
-p service_group=batch \
-p service=tns_apps \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-tns-rs
root@vzsmash1b:~#
```

---

**Note** - The Concurrent Manager resource is dependent on the database resource which, in this deployment example, is running in the global zone. However, it is not possible to set an inter-cluster dependency from a zone cluster. Instead, the command needs to be run from the global cluster to set inter-cluster dependency. Execute the following command from the global cluster.

---

```
root@psmash1:~# clresource create -Z zc2 -g ebs-mm-rg -t ORCL.ebs \
-p base_dir=/global/ebs/VIS -p service_group=batch -p service=concmgr \
-p resource_dependencies=ebs-mm-tns-rs,global:oepr-rs \
-p resource_dependencies_offline_restart=hasp-rs \
-d ebs-mm-concmgr-rs
root@psmash1:~#
root@vzsmash1b:~# clresourcegroup online -eM ebs-mm-rg
root@vzsmash1b:~# clresource status
```

=== Cluster Resources ===

| Resource Name     | Node Name | State  | Status Message              |
|-------------------|-----------|--------|-----------------------------|
| hasp-rs           | vzsmash2b | Online | Online                      |
|                   | vzsmash1b | Online | Online                      |
| ebs-mm-concmgr-rs | vzsmash2b | Online | Online - Service is online. |
|                   | vzsmash1b | Online | Online - Service is online. |
| ebs-mm-tns-rs     | vzsmash2b | Online | Online - Service is online. |
|                   | vzsmash1b | Online | Online - Service is online. |

```
root@vzsmash1b:~#
```



# HA for Oracle E-Business Suite 12.2 or Later Extension Properties

---

The ORCL.ebs resource type inherits the algorithms and properties from the ORCL.gds resource type. Only the additional extension properties for the ORCL.ebs resource type are described in this Appendix. For a description of all other properties, see [Oracle Solaris Cluster Generic Data Service \(GDS\) Guide](#).

## ORCL.ebs Extension Properties

The additional extension properties of this resource type are as follows:

### Base\_dir

This property interposes the Oracle E-Business Suite 12.2 or later base directory.

|                  |               |
|------------------|---------------|
| <b>Data type</b> | String        |
| <b>Default</b>   | None defined  |
| <b>Per node</b>  | False         |
| <b>Tunable</b>   | When disabled |

### Service

This property identifies the Oracle E-Business Suite 12.2 or later suite service.

|                  |               |
|------------------|---------------|
| <b>Data type</b> | string        |
| <b>Default</b>   | None defined  |
| <b>Per node</b>  | True          |
| <b>Tunable</b>   | When disabled |

Service\_group

This property identifies the Oracle E-Business Suite 12.2 or later service group.

|                  |               |
|------------------|---------------|
| <b>Data type</b> | String        |
| <b>Default</b>   | None defined  |
| <b>Per node</b>  | True          |
| <b>Tunable</b>   | When disabled |

Status\_message

This property turns on and off the descriptive status messages.

|                  |         |
|------------------|---------|
| <b>Data type</b> | Boolean |
| <b>Default</b>   | False   |
| <b>Per node</b>  | False   |
| <b>Tunable</b>   | Anytime |

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