

# Cluster Server Agent for Oracle Essbase Server Installation and Configuration Guide

AIX, HP-UX, Linux, Solaris

5.1

# Cluster Server Agent for Essbase Server Installation and Configuration Guide

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<https://sort.symantec.com/documents>

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<https://www-secure.symantec.com/connect/storage-management/forums/storage-and-clustering-documentation>

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<http://www.symantec.com/connect/storage-management>

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# Introducing the agent for Essbase Server

This chapter includes the following topics:

- [About the Cluster Server agent for Essbase Server](#)
- [Supported software](#)
- [How the agent makes Essbase Server highly available](#)
- [Essbase server agent functions](#)

## About the Cluster Server agent for Essbase Server

Cluster Server (VCS) agents monitor specific resources within an enterprise application. They determine the status of resources and start or stop them according to external events.

The Cluster Server agent for Essbase provides high availability for an Essbase server in a cluster. The agent brings specific Essbase server instance online, monitors the instance, and takes the instance offline. The agent monitors the processes of Essbase server instance and shuts down the Essbase server in case of failure.

See the Agent Pack Release Notes for the latest updates or software issues for this agent.

## Supported software

For information on the software versions that the Cluster Server agent for Essbase Server supports, see the Symantec Operations Readiness Tools (SORT) site: <https://sort.symantec.com/agents>.

## How the agent makes Essbase Server highly available

The Cluster Server agent for Essbase Server continuously monitors the Essbase processes to verify that they function properly.

The agent provides the following levels of application monitoring:

- **Primary or Basic monitoring**  
This mode has Process check and Health check monitoring options. With the default Process check option, the agent verifies that the Essbase processes are present in the process table. Process check cannot detect whether processes are in the hung or stopped states.
- **Secondary or Detail monitoring**  
In this mode, the agent runs a utility to verify the status of the Essbase. The agent detects application failure if the monitoring routine reports an improper function of the Essbase processes. When this application failure occurs, the Essbase service group fails over to another node in the cluster.  
Thus, the agent ensures high availability for Essbases.

## High availability for Essbase Server instances running in Solaris zones

Solaris provides a means of virtualizing operating system services, allowing one or more processes to run in isolation from other activity on the system. Such a 'sandbox' is called a 'non-global zone'. Each zone can provide a rich and customized set of services. The processes that run in a 'global zone' have the same set of privileges that are available on a Solaris system today.

VCS provides high availability to applications running in non-global zones by extending the failover capability to zones. VCS is installed in a global zone, and all the agents and the engine components run in the global zone. For applications running within non-global zones, agents run script entry points inside the zones. If a zone configured under VCS control faults, VCS fails over the entire service group containing the zone.

For more details, refer to the *Cluster Server Administrator's Guide*.

The Cluster Server agent for Essbase Server is zone-aware and can monitor Essbase instances running in non-global zones.

# Essbase server agent functions

The agent consists of resource type declarations and agent executables. The agent executables are organized into online, offline, monitor, and clean functions.

## Online

The online function performs the following tasks:

- Performs the preliminary check to ensure that the Essbase server is not online on the specified node in the cluster.
- Uses Essbase server binaries to start the Essbase server using the `ESSBASE` command available at the bin directory of `ArborPath` attribute value. The online function also sources a shell script or a program that the `EnvFile` attribute specifies. The script or program ensures that the required shell environment variables are properly set before executing the start script.
- Ensures that the Essbase server instance is up and running successfully. The operation uses the wait period that the `OnlineTimeout` attribute specifies, to enable the Essbase server instance to initialize fully before allowing the monitor function to probe the resource.

## Offline

The offline function performs the following tasks:

- Verifies that the Essbase server instance is not already offline.
- Uses the Essbase server binaries to stop the Essbase server instance using the `ESSCMD` command available at bin directory of `ArborPath` attribute value. The offline function also sources a shell script or a program that the `EnvFile` attribute specifies. The script or program ensures that the required shell environment variables are properly set before executing the stop script.
- Ensures that the Essbase server is given enough time to go offline successfully. The operation uses a wait period that the `OfflineTimeout` attribute specifies, to allow the Essbase server instance to complete the offline sequence before allowing further probing of the resource.

## Monitor

The monitor function monitors the states of the Essbase server instance running on all nodes within the cluster.

The function performs the following task:

- The first level check scans the system process table and searches the processes that must be running for the Essbase server instance. If the first level check does not find these processes running on the node, the check exits immediately, and reports the Essbase server instance as offline.
- If the SecondLevelMonitor attribute is set to greater than 0, the monitor function performs a second level check to determine the status of the Essbase server instance. The second level check try to login in the Essbase server instance to ensures that the processes are truly available for Essbase server instance.
- Depending upon the MonitorProgram attribute, the monitor function can perform a customized check using a user-supplied monitoring utility.  
See [“Executing a customized monitoring program”](#) on page 31.

## Clean

In case of a failure or after an unsuccessful attempt to online or offline, the clean function removes any Essbase server processes remaining in the system.

The function performs the following tasks:

- Attempts to gracefully shut down the Essbase server instance.
- If a graceful shutdown fails, the clean function looks for all the processes running for the Essbase server instance, and cleans the processes by killing them.

# Installing and configuring Essbase Server for high availability

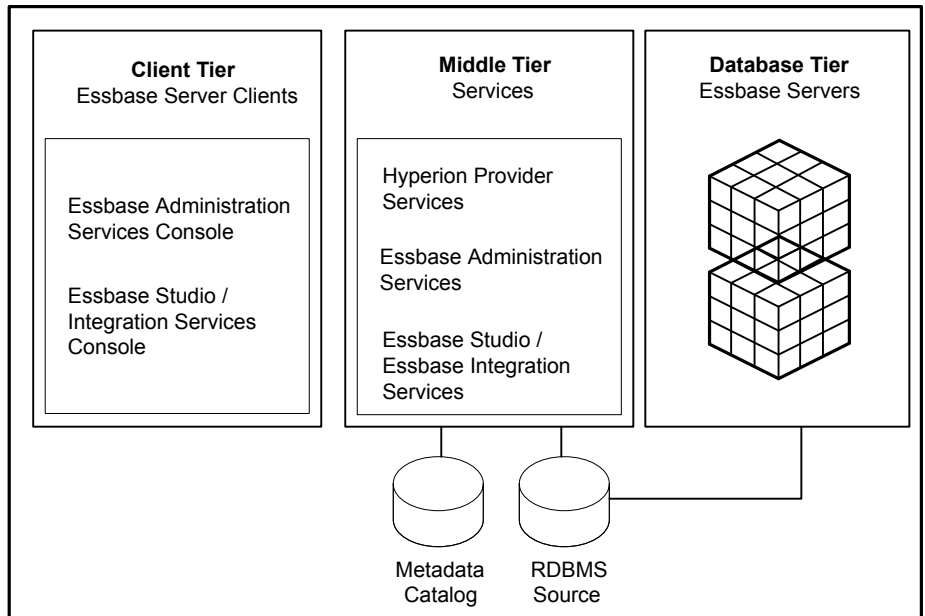
This chapter includes the following topics:

- [About Essbase Server](#)
- [Uniquely identifying Essbase Server server instances](#)
- [Configuring the Essbase Server for high availability](#)

## About Essbase Server

Oracle Essbase is a multi-threaded Online Analytical Processing (OLAP) database software that utilizes symmetric multiprocessing hardware platforms. The hardware platforms are based on Web-deployable, thin-client architecture. The server acts as a shared resource, handling all data storage, caching, calculations, and data security. The Essbase Server client needs to retrieve and view data that resides on a server. All Essbase application components, like database outlines, calculation scripts, application control, and multidimensional database information, reside on a server. Essbase allows you to configure server disk storage to span multiple disk drivers enabling you to store large databases.

Essbase server runs multi-threaded operating system to efficiently manage simultaneous requests and server agent process that act as a traffic coordinator for all the user requests that are sent to the applications. Aggregate storage databases provide an alternative to block storage. MaxL is a multidimensional database access language that automates Essbase administration and maintenance tasks.

**Figure 2-1** Oracle Essbase Architecture

## Administration Services

It is a database and an interface to Essbase that provides a single point of access console to multiple Essbase Servers. It allows you to design, develop, maintain, and manage multiple Essbase servers, applications, and databases. It allows you to preview the data from within the console.

## Essbase Studio

It simplifies the cube construction since it offers single environment to perform tasks related to data modeling, cube designing, and analytic application construction. It supports modeling of various data source types, which help in building Essbase applications. A single common metadata repository or catalog captures all the metadata related to all the Essbase applications built in the enterprise and allows the reuse of metadata at the lowest level of granularity.

## Integration Services

It is an optional component that provides a metadata driven environment to bridge the gap between the data stored in Essbase databases and detailed data stored in relational databases. The Hybrid Analysis feature provides business users detail

for decision-making and the IT managers' modularity in designing and maintaining large-scale analytic applications. The Hybrid Analysis stores parts of Essbase databases in a relational database. This data is mapped to appropriate Essbase hierarchies.

## Provider Services

It provides a middle-tier data-source to Essbase for Java API, Smart View, and XMLA clients. It supports concurrent analytical scenarios and provides scalability and reliability in a distributed Web-enabled enterprise environment.

## Uniquely identifying Essbase Server server instances

For multiple Essbase server instance running concurrently on a single node, the Cluster Server agent must be able to uniquely identify each of the Essbase instance on that system. Each Essbase server has a unique `ArborPath` location. The agent uses the `ArborPath` attribute value to identify the Essbase server instance uniquely.

Differentiating the Essbase server instances is important to identify each Essbase server uniquely. When the Cluster Server agent kills the processes of a non-responsive or failed Essbase instance in the absence of unique `ArborPath` for each Essbase Server instance, the agent may kill processes for more than one Essbase server instance during a clean operation.

## Configuring the Essbase Server for high availability

This section provides the information about the tasks you must perform to configure Essbase Server for high availability.

### Synchronizing accounts and services

Ensure that you synchronize accounts and services in the following ways:

- Synchronize the Essbase installation user accounts user name, UNIX uid, group name, and UNIX gid across all nodes in the cluster.
- The `/etc/services` entries should be consistent on all cluster nodes.

## Removing physical host dependencies

Perform the following tasks to remove the physical host dependencies:

- Add or modify the parameter `NODENAME` in the `essbase.cfg` file at the bin directory of Essbase instance `ArborPath` (`ArborPath/bin/essbase.cfg`).  
`NODENAME essbase.vxindia.veritas.com`
- Modify the parameter in the `Server1in server.properties` file at the bin directory of Essbase instance `ArborPath` (`ArborPath/bin/server.properties`).  
`Server1= essbase.vxindia.veritas.com`

---

**Note:** `essbase.vxindia.veritas.com` is the virtual host name of the Essbase server. It should be resolved from the network.

---



# Installing, upgrading, and removing the agent for Essbase Server

This chapter includes the following topics:

- [Before you install the Cluster Server agent for Essbase Server](#)
- [About the ACC library](#)
- [Installing the ACC library](#)
- [Installing the agent in a VCS environment](#)
- [Uninstalling the agent in a VCS environment](#)
- [Removing the ACC library](#)

## Before you install the Cluster Server agent for Essbase Server

You must install the Cluster Server agent for Essbase Server on all the systems that will host Essbase service groups.

Before you install the agent for Essbase Server, ensure that the following prerequisites are met.

- Install and configure Cluster Server.  
For more information on installing and configuring Cluster Server, refer to the Cluster Server installation and configuration guides.
- Install the latest version of ACC Library.

To install or update the ACC Library package, locate the library and related documentation in the Agent Pack tarball,  
See “[Installing the ACC library](#)” on page 18.

## About the ACC library

The operations of a Cluster Server agent depend on a set of Perl modules known as the ACC library. The library must be installed on each system in the cluster that runs the agent. The ACC library contains common, reusable functions that perform tasks, such as process identification, logging, and system calls.

Instructions to install or remove the ACC library on a single system in the cluster are given in the following sections. The instructions assume that the ACCLib tar file has already been extracted.

---

**Note:** The LogDbg attribute should be used to enable debug logs for the ACCLib-based agents when the ACCLib version is 6.2.0.0 or later and VCS version is 6.2 or later.

---

## Installing the ACC library

Install the ACC library on each system in the cluster that runs an agent that depends on the ACC library.

### To install the ACC library

- 1 Log in as a superuser.
- 2 Download ACC Library.

You can download either the complete Agent Pack tar file or the individual ACCLib tar file from the Symantec Operations Readiness Tools (SORT) site (<https://sort.symantec.com/agents>).

- 3 If you downloaded the complete Agent Pack tar file, navigate to the directory containing the package for the platform running in your environment.

AIX	<code>cd1/aix/vcs/application/acc_library/version_library/pkgs</code>
HP-UX	<code>cd1/hpux/generic/vcs/application/acc_library/version_library/pkgs</code>
Linux	<code>cd1/linux/generic/vcs/application/acc_library/version_library/rpms</code>
Solaris	<code>cd1/solaris/dist_arch/vcs/application/acc_library/version_library/pkgs</code>

where *dist\_arch* is `sol_sparc`

- 4 If you downloaded the individual ACCLib tar file, navigate to the pkgs directory (for AIX and Solaris), or rpms directory (for Linux).
- 5 Install the package. Enter **Yes**, if asked to confirm overwriting of files in the existing package.

```
AIX          # installp -ac -d VRTSacclib.bff VRTSacclib
HP-UX        # swinstall -s `pwd` VRTSacclib
Linux        # rpm -i \
              VRTSacclib-VersionNumber-GA_GENERIC.noarch.rpm
Solaris      # pkgadd -d VRTSacclib.pkg
```

---

**Note:** The LogDbg attribute should be used to enable debug logs for the ACCLib-based agents when the ACCLib version is 6.2.0.0 or later and VCS version is 6.2 or later.

---

## Installing the ACC library IPS package on Oracle Solaris 11 systems

### To install the ACC library IPS package on an Oracle Solaris 11 system

- 1 Copy the VRTSacclib.p5p package from the pkgs directory to the system in the /tmp/install directory.
- 2 Disable the publishers that are not reachable as package install may fail, if any, of the already added repositories are unreachable.

```
# pkg set-publisher --disable <publisher name>
```

- 3 Add a file-based repository in the system.

```
# pkg set-publisher -g /tmp/install/VRTSacclib.p5p Symantec
```

- 4 Install the package.

```
# pkg install --accept VRTSacclib
```

- 5 Remove the publisher from the system.

```
# pkg unset-publisher Symantec
```

- 6 Enable the publishers that were disabled earlier.

```
# pkg set-publisher --enable <publisher name>
```

## Installing the ACC library package on Solaris brand non-global zones

With Oracle Solaris 11, you must install the ACC library package inside non-global zones. The native non-global zones are called Solaris brand zones.

### To install the ACC library package on Solaris brand non-global zones

- 1 Ensure that the SMF service  
`svc:/application/pkg/system-repository:default` and  
`svc:/application/pkg/zones-proxyd:default` are online on the global zone.  
  

```
# svcctl svc:/application/pkg/system-repository:default
# svcctl svc:/application/pkg/zones-proxyd:default
```
- 2 Log on to the non-global zone as a superuser.
- 3 Ensure that the SMF service  
`svc:/application/pkg/zones-proxy-client:default` is online inside the non-global zone:  
  

```
# svcctl svc:/application/pkg/zones-proxy-client:default
```
- 4 Copy the `VRTSacclib.p5p` package from the `pkgs` directory to the non-global zone (for example, at the `/tmp/install` directory).
- 5 Disable the publishers that are not reachable, as package install may fail if any of the already added repositories are unreachable.  
  

```
# pkg set-publisher --disable <publisher name>
```
- 6 Add a file-based repository in the non-global zone.  
  

```
# pkg set-publisher -g/tmp/install/VRTSacclib.p5p Symantec
```
- 7 Install the package.  
  

```
# pkg install --accept VRTSacclib
```
- 8 Remove the publisher on the non-global zone.  
  

```
# pkg unset-publisher Symantec
```
- 9 Clear the state of the SMF service, as setting the file-based repository causes the SMF service `svc:/application/pkg/system-repository:default` to go into the maintenance state.  
  

```
# svcadm clear svc:/application/pkg/system-repository:default
```
- 10 Enable the publishers that were disabled earlier.  
  

```
# pkg set-publisher --enable <publisher>
```

---

**Note:** Perform steps 2 through 10 on each non-global zone.

---

## Installing the agent in a VCS environment

Install the agent for Essbase Server on each node in the cluster.

### To install the agent in a VCS environment

- 1 Download the agent from the Symantec Operations Readiness Tools (SORT) site: <https://sort.symantec.com/agents>.

You can download either the complete Agent Pack tar file or an individual agent tar file.

- 2 Uncompress the file to a temporary location, say /tmp.
- 3 If you downloaded the complete Agent Pack tar file, navigate to the directory containing the package for the platform running in your environment.

AIX           cd1/aix/vcs/application/essbase\_agent/  
              vcs\_version/version\_agent/pkg

HP-UX       cd1/hpux/generic/vcs/application/essbase\_agent/  
              vcs\_version/version\_agent/pkg

Linux       cd1/linux/generic/vcs/application/essbase\_agent/  
              vcs\_version/version\_agent/rpms

Solaris     cd1/solaris/dist\_arch/vcs/application/essbase\_agent/  
              vcs\_version/version\_agent/pkg  
              where, *dist\_arch* is sol\_sparc.

If you downloaded the individual agent tar file, navigate to the pkg directory (for AIX and Solaris), or rpms directory (for Linux).

- 4 Log in as a superuser.

**5** Install the package.

```
AIX          # installp -ac -d  
              VRTSvcscsess.rte.bff VRTSvcscsess.rte  
  
HP-UX        # swinstall -s `pwd` VRTSvcscsess  
  
Linux        # rpm -ihv \  
              VRTSvcscsess-AgentVersion-GA_GENERIC.noarch.rpm  
  
Solaris      # pkgadd -d . VRTSvcscsess
```

**6** After installing the agent package, you must import the agent type configuration file.

## Installing the agent IPS package on Oracle Solaris 11 systems

**To install the agent IPS package on an Oracle Solaris 11 system****1** Copy the `VRTSvcscsess.p5p` package from the `pkgs` directory to the system in the `/tmp/install` directory.**2** Disable the publishers that are not reachable as package install may fail if any of the already added repositories are unreachable.

```
# pkg set-publisher --disable <publisher name>
```

where the publisher name is obtained using the `pkg publisher` command.

**3** Add a file-based repository in the system.

```
# pkg set-publisher -g /tmp/install/VRTSvcscsess.p5p Symantec
```

**4** Install the package.

```
# pkg install --accept VRTSvcscsess
```

**5** Remove the publisher from the system.

```
# pkg unset-publisher Symantec
```

**6** Enable the publishers that were disabled earlier.

```
# pkg set-publisher --enable <publisher name>
```

## Installing agent packages on Solaris brand non-global zones

With Oracle Solaris 11, you must install the agent package inside non-global zones. The native non-global zones are called Solaris brand zones.

### To install the agent package on Solaris brand non-global zones

- 1 Ensure that the SMF service  
`svc:/application/pkg/system-repository:default` and  
`svc:/application/pkg/zones-proxyd:default` are online on the global zone.  

```
# svcs svc:/application/pkg/system-repository:default
# svcs svc:/application/pkg/zones-proxyd:default
```
- 2 Log on to the non-global zone as a superuser.
- 3 Ensure that the SMF service  
`svc:/application/pkg/zones-proxy-client:default` is online inside non-global zone:  

```
# svcs svc:/application/pkg/zones-proxy-client:default
```
- 4 Copy the `VRTSvcsess.p5p` package from the `pkgs` directory to the non-global zone (for example, at the `/tmp/install` directory).
- 5 Disable the publishers that are not reachable, as package install may fail if any of the already added repositories are unreachable.  

```
# pkg set-publisher --disable <publisher name>
```
- 6 Add a file-based repository in the non-global zone.  

```
# pkg set-publisher -g/tmp/install/VRTSvcsess.p5p Symantec
```
- 7 Install the package.  

```
# pkg install --accept VRTSvcsess
```
- 8 Remove the publisher on the non-global zone.  

```
# pkg unset-publisher Symantec
```
- 9 Clear the state of the SMF service, as setting the file-based repository causes the SMF service `svc:/application/pkg/system-repository:default` to go into the maintenance state.  

```
# svcadm clear svc:/application/pkg/system-repository:default
```
- 10 Enable the publishers that were disabled earlier.  

```
# pkg set-publisher --enable <publisher>
```

---

**Note:** Perform steps 2 through 10 on each non-global zone.

---

## Uninstalling the agent in a VCS environment

You must uninstall the agent for Essbase Server from a cluster while the cluster is active.

### To uninstall the agent in a VCS environment

- 1 Log in as a superuser.
  - 2 Set the cluster configuration mode to read/write by running the following command from any node in the cluster:
- # haconf -makerw
- 3 Remove all Essbase resources from the cluster. Run the following command to verify that all resources have been removed:

```
# hares -list Type=Essbase
```

- 4 Remove the agent type from the cluster configuration by running the following command from any node in the cluster:

```
# hatype -delete Essbase
```

Removing the agent's type file from the cluster removes the include statement for the agent from the `main.cf` file, but the agent's type file is not removed from the cluster configuration directory. You can remove the agent's type file later from the cluster configuration directory.



- 5 Save these changes. Then set the cluster configuration mode to read-only by running the following command from any node in the cluster:

```
# haconf -dump -makero
```

- 6 Use the platform's native software management program to remove the agent for Essbase Server from each node in the cluster.

Run the following command to uninstall the agent:

AIX `# installp -u VRTSvcsess.rte`

HP-UX `# swremove VRTSvcsess`

Linux `# rpm -e VRTSvcsess`

Solaris `# pkgrm VRTSvcsess`

**Note:** To uninstall the agent IPS package on a Solaris 11 system, run the following command:

```
# pkg uninstall VRTSvcsess
```

## Removing the ACC library

Perform the following steps to remove the ACC library.

### To remove the ACC library

- 1 Ensure that all agents that use ACC library are removed.
- 2 Run the following command to remove the ACC library package.

AIX `# installp -u VRTSacclib`

HP-UX `# swremove VRTSacclib`

Linux `# rpm -e VRTSacclib`

Solaris `# pkgrm VRTSacclib`

**Note:** To uninstall the ACCLib IPS package on a Solaris 11 system, run the following command:

```
# pkg uninstall VRTSacclib
```

# Configuring the agent for Essbase Server

This chapter includes the following topics:

- [About configuring the Cluster Server agent for Essbase Server](#)
- [Importing the agent types files in a VCS environment](#)
- [Essbase server agent attributes](#)
- [Executing a customized monitoring program](#)

## About configuring the Cluster Server agent for Essbase Server

After installing the Cluster Server agent for Essbase Server, you must import the agent type configuration file. After importing this file, you can create and configure an Essbase resource. Before you configure a resource, review the attributes table that describes the resource type and its attributes.

To view the sample agent type definition and service groups configuration:

See [“About sample configurations for the agents for Essbase Server”](#) on page 42.

## Importing the agent types files in a VCS environment

To use the agent for Essbase Server, you must import the agent types file into the cluster.

You can import the agent types file using the VCS graphical user interface or using the command line interface.

**To import the agent types file using the VCS graphical user interface**

- 1** Start the Cluster Manager (Java Console) and connect to the cluster on which the agent is installed.
- 2** Click **File > Import Types**.
- 3** In the **Import Types** dialog box, select the following file:

VCS 4.x	■ AIX	/etc/VRTSvcs/conf/sample_Essbase/
	■ HP-UX	EssbaseTypes.cf
	■ Linux	
	■ Solaris	
VCS 5.x or later	■ AIX	/etc/VRTSagents/ha/conf/Essbase/
	■ HP-UX	EssbaseTypes.cf
	■ Linux	
VCS 5.0	Solaris SPARC	/etc/VRTSagents/ha/conf/Essbase/
		EssbaseTypes50.cf
VCS 5.1 or later	Solaris SPARC	/etc/VRTSagents/ha/conf/Essbase/
		EssbaseTypes51.cf

- 4** Click **Import**.
- 5** Save the VCS configuration.

The Essbase agent type is now imported to the VCS engine.

You can now create Essbase resources. For additional information about using the VCS GUI, refer to the *Cluster Server Administrator's Guide*.

**To import the agent types file using the command line interface (CLI):**

- 1** Log on to any one of the systems in the cluster as the superuser.
- 2** Create a temporary directory.

```
# mkdir ./temp
# cd ./temp
```

- 3** Copy the sample file `Types.cf`.

VCS 4.x	■ AIX	/etc/VRTSvcs/conf/sample_Essbase/
	■ HP-UX	EssbaseTypes.cf
	■ Linux	
	■ Solaris	
VCS 5.x or later	■ AIX	/etc/VRTSagents/ha/conf/Essbase/
	■ HP-UX	EssbaseTypes.cf
	■ Linux	
VCS 5.0	■ Solaris SPARC	/etc/VRTSagents/ha/conf/Essbase/ EssbaseTypes50.cf

The following example assumes VCS 5.0 is installed on Solaris.

```
# cp /etc/VRTSagents/ha/conf/Essbase/EssbaseTypes.cf .
```

#### 4 Create a dummy main.cf file.

```
# echo 'include "EssbaseTypes.cf"' > main.cf
```

#### 5 Create the Essbase resource type as follows:

```
# hacf -verify .
# haconf -makerw
# sh main.cmd
# haconf -dump
```

The Essbase agent type is now imported to the VCS engine.

You can now create Essbase resources. For additional information about using the VCS CLI, refer to the *Cluster Server Administrator's Guide*.

## Essbase server agent attributes

Refer to the required attributes and optional attributes while configuring the agent for Essbase server.

[Table 4-1](#) lists the required attributes for the Essbase server.

**Table 4-1** Required attributes

Required attribute	Description
ArborPath	<p>Specifies the base directory for Essbase server installation. This directory contains the binaries and configuration directories relative to ARBORPATH.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: /oracle/hyperion/AnalyticServices</p>
HostName	<p>Specifies the virtual host name for Essbase server instance. ESSCMD uses the host name to log on to the Essbase Server.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: web1.symantec.com</p>
User	<p>Specifies the user name that the agent uses for executing the programs for managing a Essbase Server. If unspecified, the server instance starts as user root.</p> <p>The user name must be synchronized across the systems in the cluster. The user name must resolve to the same UID and must have the same default shell on each system in the cluster. The agent entry points use the getpwnam(3c) function call to obtain UNIX user attributes. As a result, the user can be defined locally or can be defined in a common repository (that is, NIS, NIS+, or LDAP). In the latter case, the agent fails if the access to this repository fails.</p> <p>The supported shell environments are: ksh, sh, and csh.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: cvradm</p>
EssbaseUser	<p>Specifies the Essbase user which is configured for Essbase server instance. The agent uses this user to log on to the Essbase server using the ESSCMD command.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: essuser</p>

**Table 4-1** Required attributes (*continued*)

Required attribute	Description
EssbasePassword	<p>Specifies the encrypted Essbase user password to start the Essbase server and log on to the Essbase server using the <code>ESSCMD</code> command.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: password</p>
EnvFile	<p>Specifies the full path to the file that must be sourced with the UNIX shell. Source this file to set the environment before executing any Essbase server command.</p> <p>Symantec recommends storing this file on a shared disk.</p> <p>The supported shell environments are: ksh, sh, and csh.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: /Essbase/products/Essbase/EssbaseServer/hyperionenv.env</p>
ResLogLevel	<p>Specifies the logging detail performed by the agent for the resource.</p> <p>The valid values are as follows:</p> <ul style="list-style-type: none"><li>■ <b>ERROR</b>: Only logs error messages.</li><li>■ <b>WARN</b>: Logs above plus warning messages.</li><li>■ <b>INFO</b>: Logs above plus informational messages.</li><li>■ <b>TRACE</b>: Logs above plus trace messages. TRACE is very verbose and should only be used during initial configuration or for troubleshooting and diagnostic operations.</li></ul> <p>Type and Dimension: string-scaler</p> <p>Default: INFO</p> <p>Example: TRACE</p>
ComponentType	<p>Specifies the name of the component for specific component types.</p> <p>Type and Dimension: string-scaler</p> <p>Default: EssbaseServer</p> <p>Example: EssbaseServer</p>

[Table 4-2](#) lists the optional attributes for the Essbase server.

**Table 4-2** Optional attributes

Optional attribute	Description
SecondLevelMonitor	<p>Used to enable second-level monitoring. Second-level monitoring is a deeper, more thorough state check of the Essbase server. The numeric value specifies how often the monitoring routines must run. 0 means never run the second-level monitoring routines, 1 means run routines every monitor interval, 2 means run routines every second monitor interval. This interpretation may be extended to other values.</p> <p><b>Note:</b> Exercise caution while setting SecondLevelMonitor to large numbers. For example, if the MonitorInterval is set to 60 seconds and the SecondLevelMonitor is set to 100, then the second level check is executed every 100 minutes, which may not be as often as intended. For maximum flexibility, no upper limit is defined for SecondLevelMonitor.</p> <p>Type and Dimension: integer-scaler</p> <p>Default: 0</p> <p>Example: 5</p>
MonitorProgram	<p>Specifies the absolute path name of an external, user-supplied monitor executable.</p> <p>See <a href="#">“Executing a customized monitoring program”</a> on page 31.</p> <p>Type and Dimension: string-scaler</p> <p>Default: ""</p> <p>Example: /Essbase/products/Essbase/EssbaseServer/myMonitor.sh</p>
Port	<p>Specifies the port number on which this Essbase server instance is listening. To determine whether the HTTP server is responding to Essbase requests, the monitor entry point uses the value specified by the Port attribute.</p> <p>When second level monitor is enabled, this attribute is specified.</p> <p>Type and Dimension: integer-scaler</p> <p>Default: 80</p> <p>Example: 8080</p>

## Executing a customized monitoring program

The monitor function executes a custom monitor program to perform an additional Essbase Server state check. The monitor function executes the utility specified in the MonitorProgram attribute, if:

- The specified utility is a valid executable file.
- The first-level process check indicates that the Essbase Server instance is online.
- The SecondLevelMonitor attribute is either set to 0 or 1, and the second-level check indicates that the Essbase Server instance is online.
- The SecondLevelMonitor attribute is set to greater than 1, but the second-level check is deferred for this monitoring cycle.

The monitor function interprets the utility exit code as follows:

110 or 0	Essbase server instance is online
100 or 1	Essbase server instance is offline
99	Essbase server instance is unknown
Any other value	Essbase server instance is unknown

To ensure that the customized utility is always available to the agent, Symantec recommends storing the file in a shared directory that is available on an online node.



# Configuring the service groups for Essbase Server using the CLI

This chapter includes the following topics:

- [About configuring service groups for Essbase Server](#)
- [Before configuring the service groups for Essbase Server](#)
- [Configuring service groups for Essbase Server](#)
- [Generating the environments file for Essbase Server](#)

## About configuring service groups for Essbase Server

Configuring the Essbase Server service group involves creating the Essbase service group, its resources, and defining attribute values for the configured resources. You must have administrator privileges to create and configure a service group.

You can configure the service groups using one of the following:

- The Cluster Manager (Java console)
- Veritas Infoscale Operations Manager
- The command line

See [“Configuring service groups for Essbase Server”](#) on page 34.

## Before configuring the service groups for Essbase Server

Before you configure the Essbase service group, you must:

- Verify that Cluster Server is installed and configured on all nodes in the cluster where you will configure the service group.  
For more information on installing and configuring Cluster Server, refer to the Cluster Server installation and configuration guides.
- Verify that Essbase server is installed and configured on all the systems in the cluster on the same path that will host a Essbase service group.
- Verify that the Cluster Server agent for Essbase Server is installed on all nodes in the cluster.  
See [“Installing the agent in a VCS environment”](#) on page 21.
- Verify that the type definition for the Cluster Server agent for Essbase Server is imported into the VCS engine.  
See [“Importing the agent types files in a VCS environment”](#) on page 26.

## Configuring service groups for Essbase Server

While setting up a cluster, you must ensure that the cluster has some spare capacity to handle the Essbase Server failover scenarios.

The cluster should be able to provide application failover by encapsulating the resources required for an application into a service group. A service group is a virtualized application that can switch between the cluster nodes. It contains a set of dependent resources, such as IP addresses, NIC cards, and dependent application processes. It also includes logic about the dependencies between the application components.

These service groups should thus be configured such that the cluster can start, stop, monitor, and switch the service groups between the nodes, depending upon the server faults or resource faults. An administrator should also be proactively able to move a service group between cluster nodes to perform preventative maintenance or apply patches.

**Perform the following steps to add a service group for Essbase Server**

- 1** Create a service group for Essbase server.

```
# hagr -add Essbase_grp
```

For more details on creating a service group refer to the *Cluster Server Administrator's Guide*.

- 2** Modify the SystemList attribute for the group, to add systems.

For example,

```
# hagr -modify Essbase_grp SystemList systemA 0 systemB 1
```

- 3** Create resources for NIC and IP.

For example,

```
# hares -add Essbase_nic NIC Essbase_grp
```

```
# hares - Essbase_ip IP Essbase_grp
```

For more details on creating and modifying resource attributes for NIC and IP, refer to the *Cluster Server Bundled Agents Reference Guide*.

- 4** Create links between the resources.

For example,

```
# hares -link Essbase_ip Essbase_nic
```

- 5** If you have not installed the Essbase server on shared file system then follow the steps 6 onwards, otherwise, directly go to step 9 and continue further.
- 6** Create a separate file system for Essbase Server on shared disk.
- 7** Copy the contents of installation directory of the Essbase to the shared file system.
- 8** Delete the contents of installation directory and then create a link between installation directory and the directory on the shared disk where you have copied the contents of the installation directory.
- 9** Add the file system to respective agent service group using Mount, DiskGroup, and Volume resources.

## 10 Create Mount and DiskGroup resources.

For example,

```
# hares -add Essbase_dg DiskGroup Essbase_grp
# hares - Essbase_mount Mount Essbase_grp
```

Based on the Essbase server instance you are clustering, modify the resource attributes of Mount and DiskGroup resources.

For more details on creating and modifying resource attributes for Mount and DiskGroup refer to the *Cluster Server Bundled Agents Reference Guide*.

## 11 Create links between the resources.

For example,

```
# hares -link Essbase_mount Essbase_dg
```

## 12 Create Essbase resource for Essbase server.

For example,

```
# hares -add Essbase_res Essbase Essbase_grp
```

Based on the Essbase server instance you are clustering, modify the resource attributes. For more information on agent attributes,

See [“Essbase server agent attributes”](#) on page 28.

## 13 Create resource dependencies for Essbase resource.

The Essbase resource depends on the IP and Mount resources.

```
# hares -link Essbase_res Essbase_ip
# hares -link Essbase_res Essbase_mount
```

## 14 Verify the final resource dependencies for Essbase\_grp server group.

For example,

```
# hares -dep
```

Group	Parent	Child
Essbase_grp	Essbase_res	Essbase_ip
Essbase_grp	Essbase_res	Essbase_mount
Essbase_grp	Essbase_ip	Essbase_nic
Essbase_grp	Essbase_mount	Essbase_dg

# Generating the environments file for Essbase Server

## To generate the environments file for Essbase Server

- 1 Login as Essbase installation user using the following command.

```
su - essadmin
```

- 2 Capture the environment with the following command.

```
env > /home/essadmin/essadmin.env
```

- 3 Modify the file according to the Essbase installation user shell environment.

For example, if the generated file contains environments for bash shell and Essbase installation user shell is C shell, convert the file to C shell environments.

- Edit the essdmin.env file to add string 'setenv' at the beginning of each line.
- Replace the '=' with space " " in the file.

- 4 Copy the essadmin.env file to shared directory and use it as the Essbase Server instance environments file in EnvFile attribute. Ensure that the permissions are set properly for Essbase user.

```
chmod 755 essadmin.env
```

---

**Note:** Before generating the EnvFile, verify the successful execution of start, stop, and second level monitor command with Essbase user environment.

---

# Troubleshooting the agent for Essbase Server

This chapter includes the following topics:

- [Using the correct software and operating system versions](#)
- [Meeting prerequisites](#)
- [Configuring Essbase resources](#)
- [Starting the Essbase instance outside a cluster](#)
- [Reviewing error log files](#)

## Using the correct software and operating system versions

Ensure that you use correct software and operating system versions.

For information on the software versions that the agent for Essbase Server supports, see the Symantec Operations Readiness Tools (SORT) site:

<https://sort.symantec.com/agents>.

## Meeting prerequisites

Before installing the agent for Essbase Server, ensure that the following prerequisites are met.

For example, you must install the ACC library on VCS before installing the agent for Essbase Server.

See [“Before you install the Cluster Server agent for Essbase Server”](#) on page 17.

# Configuring Essbase resources

Before using an Essbase agent resource, ensure that you configure the resource properly. For a list of attributes used to configure all Essbase resources, refer to the agent attributes.

See [“Essbase server agent attributes”](#) on page 28.

## Starting the Essbase instance outside a cluster

If you face problems while working with a resource, you must disable the resource within the cluster framework. A disabled resource is not under the control of the cluster framework, and so you can test the Essbase instance independent of the cluster framework. Refer to the cluster documentation for information about disabling a resource.

You can then restart the Essbase instance outside the cluster framework.

---

**Note:** Use the same parameters that the resource attributes define within the cluster framework while restarting the resource outside the cluster framework.

---

A sample procedure to start an Essbase server instance outside the cluster framework, is described as follows.

### To restart the Essbase server outside the framework

- 1 Log in to the Essbase node as an User.

```
# su - User
```

- 2 Source the environment file.

```
# . EnvFile
```

- 3 Start the Essbase server.

```
# ArborPath/bin/ESSBASE -b secure <<EOF &
```

```
EssbasePassword
```

```
EOF
```

If the Essbase server works properly outside the cluster framework, you can then attempt to implement the Essbase server within the cluster framework.

# Reviewing error log files

If you face problems while using Essbase or the agent for Essbase Server, use the log files described in this section to investigate the problems.

## Reviewing cluster log files

In case of problems while using the agent for Essbase Server, you can access the engine log file for more information about a particular resource. The engine log file is located at `/var/VRTSvcs/log/engine_A.log`.

You can also access the Essbase agent log file for more detailed information. The agent log file is located at `/var/VRTSvcs/log/Essbase_A.log`

## Using trace level logging

The `ResLogLevel` attribute controls the level of logging that is written in a cluster log file for each Essbase resource. You can set this attribute to `TRACE`, which enables very detailed and verbose logging.

If you set `ResLogLevel` to `TRACE`, a very high volume of messages are produced. Symantec recommends that you localize the `ResLogLevel` attribute for a particular resource.

The `LogDbg` attribute should be used to enable the debug logs for the ACCLib-based agents when the ACCLIB version is 6.2.0.0 or later and the VCS version is 6.2 or later.

### To localize `ResLogLevel` attribute for a resource

**1** Identify the resource for which you want to enable detailed logging.

**2** Localize the `ResLogLevel` attribute for the identified resource:

```
# hares -local Resource_Name ResLogLevel
```

**3** Set the `ResLogLevel` attribute to `TRACE` for the identified resource:

```
# hares -modify Resource_Name ResLogLevel TRACE -sys SysA
```

**4** Note the time before you begin to operate the identified resource.

**5** Test the identified resource. The function reproduces the problem that you are attempting to diagnose.

**6** Note the time when the problem is reproduced.



- 7 Set the ResLogLevel attribute back to INFO for the identified resource:

```
# hares -modify Resource_Name ResLogLevel INFO -sys SysA
```

- 8 Save the configuration changes.

```
# haconf -dump
```

- 9 Review the contents of the log file.

Use the time noted in Step 4 and Step 6 to diagnose the problem.

You can also contact Symantec support for more help.

#### **To enable debug logs for all resources of type Essbase**

- ◆ Enable the debug log.

```
# hatype -modify Essbase LogDbg DBG_5
```

#### **To override the LogDbg attribute at resource level**

- ◆ Override the LogDbg attribute at the resource level and enable the debug logs for the specific resource.

```
# hares -override Essbase LogDbg
# hares -modify Essbase LogDbg DBG_5
```

# Sample Configurations

This appendix includes the following topics:

- [About sample configurations for the agents for Essbase Server](#)
- [Sample agent type definition](#)
- [Sample configuration](#)
- [Sample configuration with Solaris zone support](#)
- [Sample service group configuration](#)
- [Sample service group configuration with Solaris zone support](#)

## About sample configurations for the agents for Essbase Server

The sample configuration graphically depicts the resource types, resources, and resource dependencies within the service group. Review these dependencies carefully before configuring the agents for Essbase Server. For more information about these resource types, refer to the *Cluster Server Bundled Agents Reference Guide*.

## Sample agent type definition

This section lists the sample agent type definition files for ESSBase agent on different versions of VCS.

After importing the agent types into the cluster, save the configuration file on the system disk using the `haconf -dump` command. The `EssbaseTypes.cf` file is found in the `/etc/VRTSvcs/conf/config` cluster configuration directory.

### For VCS 4.x

```
type Essbase (
static str ArgList[] = { ResLogLevel, State, IState, User, HostName,
Port, EnvFile, ArborPath, ComponentType, EssbaseUser, EssbasePassword,
SecondLevelMonitor, MonitorProgram }
    str ResLogLevel = INFO
    str User = "root"
    str HostName
    int Port = 1423
    str EnvFile
    str ArborPath
    str ComponentType = "EssbaseServer"
    str EssbaseUser
    str EssbasePassword
    int SecondLevelMonitor = 0
    str MonitorProgram
)
```

### For 5.0

```
type Essbase (
    static str ContainerType = Zone
    static boolean AEPTIMEOUT = 1
    static str AgentFile = "/opt/VRTSvcs/bin/Script50Agent"
    static str AgentDirectory = "/opt/VRTSagents/ha/bin/Essbase"
static str ArgList[] = { ResLogLevel, State, IState, User, HostName,
Port, EnvFile, ArborPath, ComponentType, EssbaseUser, EssbasePassword,
SecondLevelMonitor, MonitorProgram }
    str ResLogLevel = INFO
    str User = "root"
    str HostName
    int Port = 1423
    str EnvFile
    str ArborPath
    str ComponentType = "EssbaseServer"
    str EssbaseUser
    str EssbasePassword
    int SecondLevelMonitor = 0
    str MonitorProgram
    str ContainerName
)
```

### For 5.1

```

type Essbase (
    static int ContainerOpts{} = { RunInContainer=1, PassCInfo=0 }
    static boolean AEPTIMEOUT = 1
    static str AgentFile = "/opt/VRTSvcs/bin/Script51Agent"
    static str AgentDirectory = "/opt/VRTSagents/ha/bin/Essbase"
    static str ArgList[] = { ResLogLevel, State, IState, User, HostName,
    Port, EnvFile, ArborPath, ComponentType, EssbaseUser, EssbasePassword,
    SecondLevelMonitor, MonitorProgram }
    str ResLogLevel = INFO
    str User = "root"
    str HostName
    int Port = 1423
    str EnvFile
    str ArborPath
    str ComponentType = "EssbaseServer"
    str EssbaseUser
    str EssbasePassword
    int SecondLevelMonitor = 0
    str MonitorProgram
)

```

## Sample configuration

This section provides a sample configuration for Essbase server agent. The sample configuration depicts a graphical view of the resource types, resources, and resource dependencies within the service group.

```

include "types.cf"
include "EssbaseTypes51.cf"

cluster system01_02 (
    UserNames = { admin = IhiAhcHeiDiiGqiChf }
    Administrators = { admin }
    HaccliUserLevel = COMMANDROOT
)

system system01 (
)

system system02 (
)

group Essbase_grp (
    SystemList = { system01 = 0, system02 = 1 }
)

```

```
)

DiskGroup Essbase_dg (
    DiskGroup = Essbase_dskgrp
)

Essbase Essbase_res (
    HostName = "essbase.vxindia.veritas.com"
    EnvFile = "/Essbase/products/Essbase/
                EssbaseServer/hyperionenv.env"
    ArborPath = "/Essbase/products/Essbase/EssbaseServer"
    EssbaseUser = isv
    EssbasePassword = cqiofqFqiOfqF
    SecondLevelMonitor = 1
    MonitorProgram = "/Essbase/monitor.sh"
)

IP Essbase_ip (
    Device = bge0
    Address = "100.109.173.10"
    NetMask = "255.255.254.0"
)

Mount Essbase_mount (
    MountPoint = "/Essbase"
    BlockDevice = "/dev/vx/dsk/Essbase_dskgrp/Essbase_vol"
    FSType = vxfs
    FsckOpt = "-y"
)

NIC Essbase_nic (
    Device = bge0
)

Essbase_ip requires Essbase_nic
Essbase_mount requires Essbase_dg
Essbase_res requires Essbase_ip
Essbase_res requires Essbase_mount

// resource dependency tree
//
//      group Essbase_grp
//      {
```

```
//      Essbase Essbase_res
//      {
//      IP Essbase_ip
//      {
//      NIC Essbase_nic
//      }
//      Mount Essbase_mount
//      {
//      DiskGroup Essbase_dg
//      }
//      }
//      }
```

## Sample configuration with Solaris zone support

This section provides a sample configuration with Solaris local zone support for Oracle Essbase Server agent.

```
include "types.cf"
include "EssbaseTypes51.cf"

cluster hypeclus (
    UserNames = { admin = HMNfMHmJNiNNlVNhMK }
    Administrators = { admin }
)

system vcssx082 (
)

system vcssx084 (
)

group ESSBASE-SG (
    SystemList = { vcssx082 = 0, vcssx084 = 1 }
)

DiskGroup ESS-DG (
    Critical = 0
    DiskGroup = infomixdb
)

Essbase ESSBASE-RES (
    Critical = 0
```

```
ResLogLevel = TRACE
User = hyperion
HostName = essbase
Port = 13450
EnvFile = "/export/home/hyperion/.cshrc"
ArborPath = "/export/home/hyperion/products/Essbase/EssbaseSe
EssbaseUser = hyperion
EssbasePassword = ftlRitIlgLh1I
)

IP ESS-IP (
    Critical = 0
    Device = bge0
    Address = "10.209.62.60"
)

Mount ESS-MNT (
    Critical = 0
    MountPoint = "/export/home/hyperion"
    BlockDevice = "/dev/vx/dsk/infomixdb/infomixdb_vol"
    FSType = vxfs
    FsckOpt = "-y"
)

NIC ESS-NIC (
    Critical = 0
    Device = bge0
)

Volume ESS-VOL (
    Critical = 0
    Volume = infomixdb_vol
    DiskGroup = infomixdb
)

Zone ESSBASE-ZONE (
    Critical = 0
)

ESS-IP requires ESSBASE-ZONE
ESS-MNT requires ESS-VOL
ESS-VOL requires ESS-DG
ESSBASE-RES requires ESS-IP
```

```
ESSBASE-ZONE requires ESS-MNT
ESSBASE-ZONE requires ESS-NIC

// resource dependency tree
//
//      group ESSBASE-SG
//      {
//      Essbase ESSBASE-RES
//      {
//      IP ESS-IP
//      {
//      Zone ESSBASE-ZONE
//      {
//      Mount ESS-MNT
//      {
//      Volume ESS-VOL
//      {
//      DiskGroup ESS-DG
//      }
//      }
//      NIC ESS-NIC
//      }
//      }
//      }
//      }
```

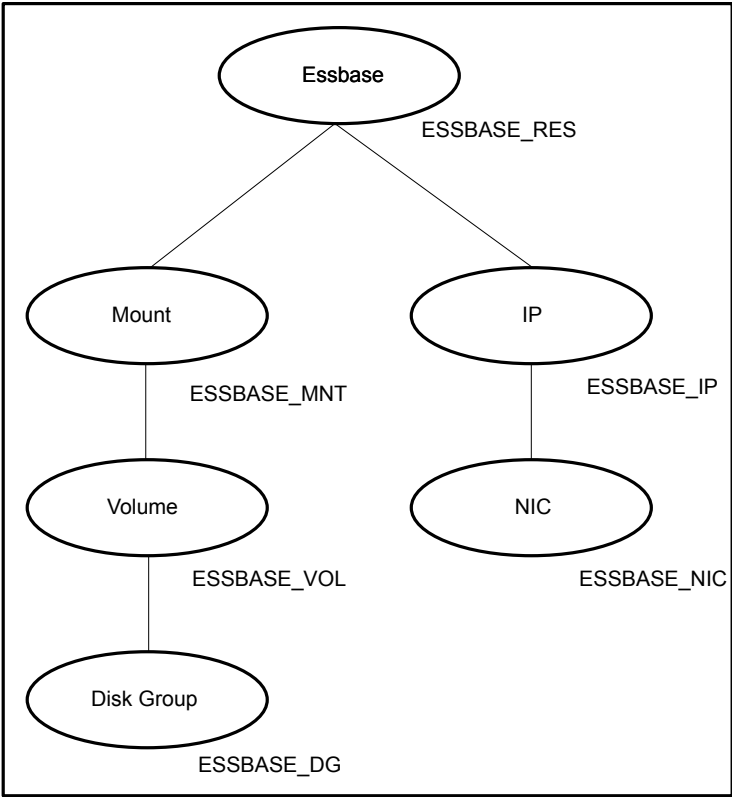
## Sample service group configuration

This section includes sample service groups configurations in a VCS environment.

The service group includes a DiskGroup resource, a NIC resource, an IP resource, a Volume resource, and Mount resource, along with an Essbase Server resource.



**Figure A-1**
Sample service group for an Essbase Server instance



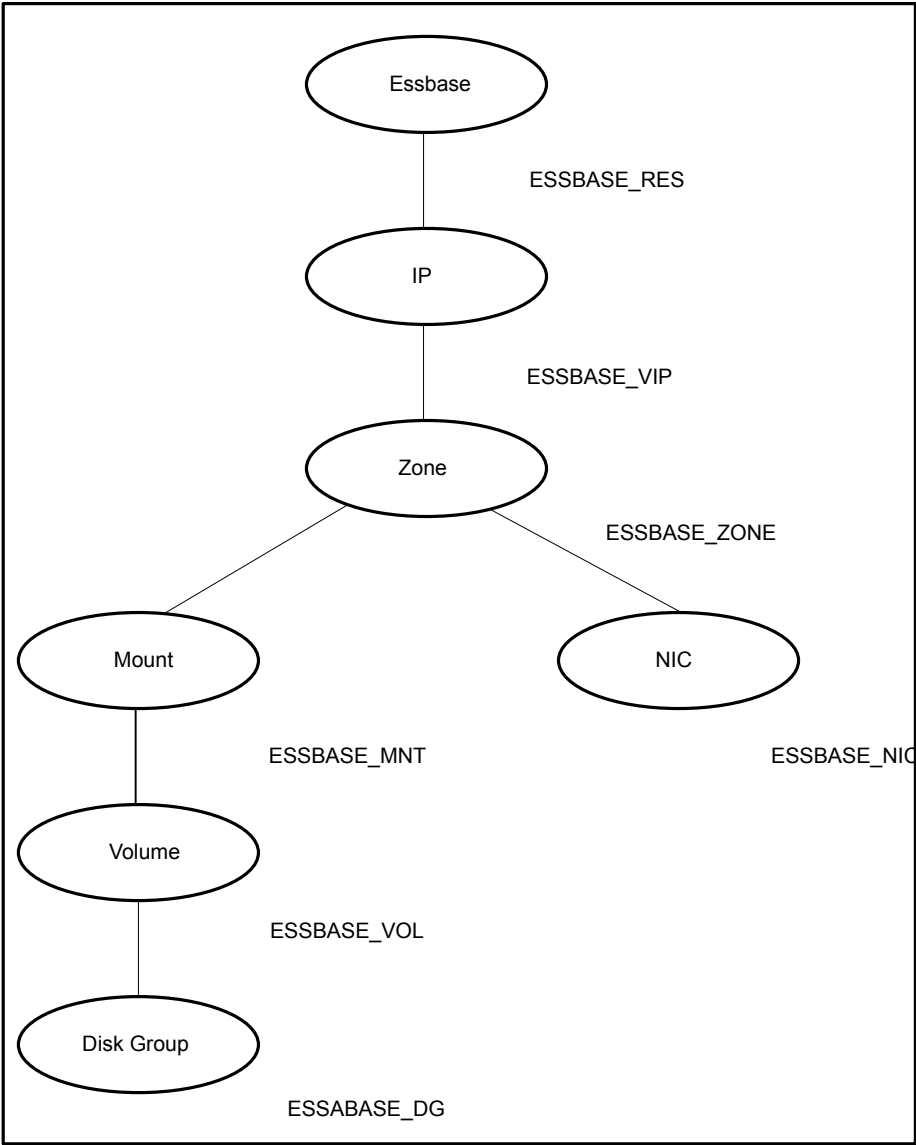
For Essbase Type definition See [“Sample agent type definition”](#) on page 42.

## Sample service group configuration with Solaris zone support

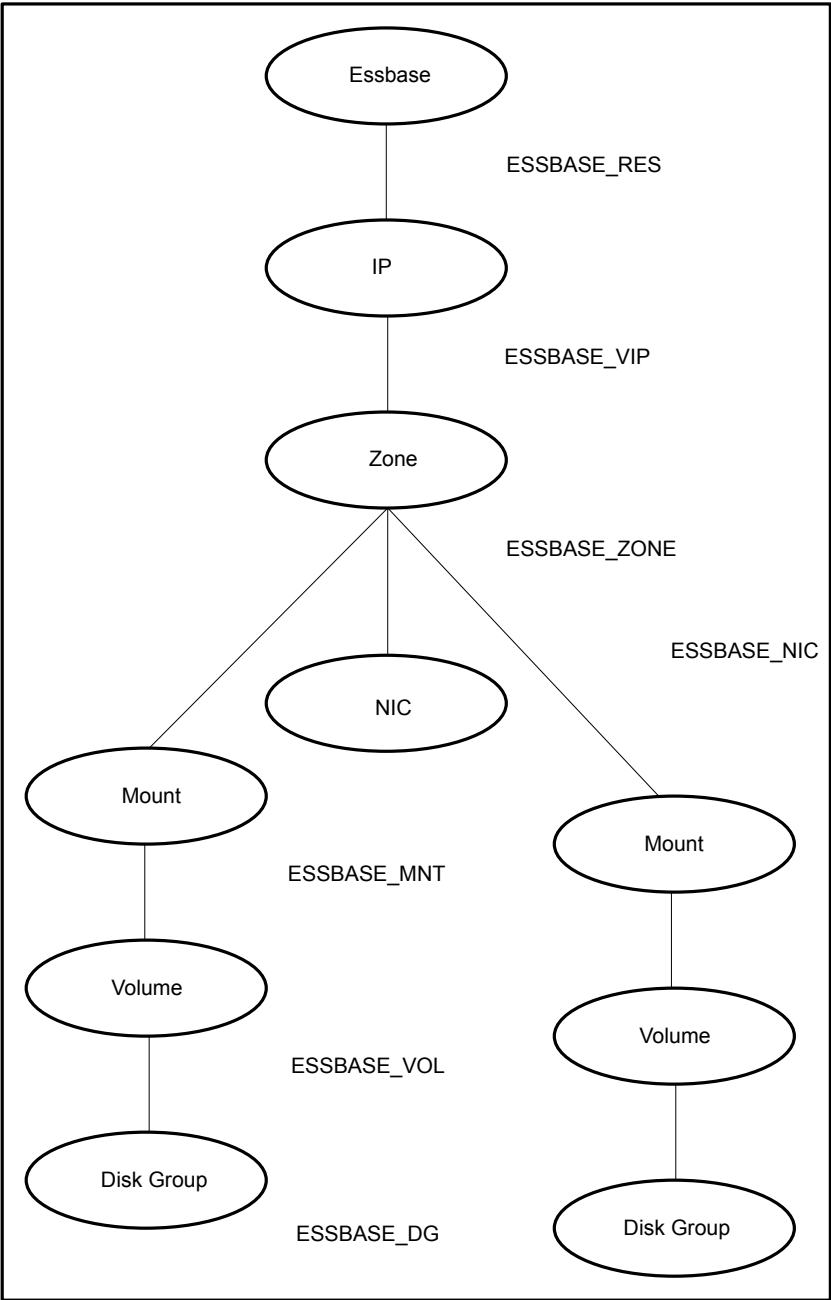
This section includes sample service groups with Solaris zone support.

The figure shows a service group with Oracle Essbase Server instance installed, configured, and running under Solaris local zones.

Figure A-2 Sample service group with Oracle Essbase Server instance



**Figure A-3** Sample service group with Oracle Essbase Server instance installed in a shared disk and local zone configured on a shared disk



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