



Sun Cluster 3.1 8/05 With Sun Java Enterprise System 5 Special Instructions

For Solaris OS



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Sun Cluster 3.1 8/05 With Sun Java Enterprise System 5 Special Instructions

Sun Cluster 3.1 8/05 With Sun Java Enterprise System 5 Special Instructions provides special instructions for installing and configuring Sun™ Cluster 3.1 8/05 software as released with Sun Java™ Enterprise System 5. Use these instructions as a supplement to the instructions in the Sun Cluster 3.1 8/05 product documentation.

These special instructions are provided in the following sections:

- “Obtaining Sun Cluster 3.1 8/05 Software for Solaris 8 OS” on page 3
- “Installing Sun Cluster 3.1 8/05 Framework Software” on page 4
- “Upgrading to Sun Cluster 3.1 8/05 Software” on page 4
- “Installing Sun Cluster Support for Oracle Real Application Clusters Packages” on page 10
- “Installing Other Sun Cluster 3.1 8/05 Data Services” on page 13
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- “Configuring and Upgrading Sun Cluster HA for Sun Grid Engine” on page 16
- “Configuring Sun Cluster HA for Apache Tomcat in a Failover Zone” on page 19
- “Configuring Sun Cluster HA for MySQL in a Failover Zone” on page 23
- “Configuring HTTPS Connections With Sun Cluster HA for N1 Grid Service Provisioning System” on page 27

Obtaining Sun Cluster 3.1 8/05 Software for Solaris 8 OS

If you require Sun Cluster 3.1 8/05 software on the Solaris 8 OS, you must obtain Sun Cluster 3.1 8/05 software from the prior distribution of Sun Java Enterprise System, Sun Java Enterprise System 2005Q4. This version is located at

<http://www.sun.com/software/javaenterprisesystem/previous/index.xml>.

Sun Cluster 3.1 8/05 software is the same version in both the 2005Q4 and 5 releases of Sun Java Enterprise System. However, the installation of software on the Solaris 8 OS is no longer supported in the Sun Java Enterprise System 5 version of the `installer` utility.

To ensure successful installation of Sun Cluster 3.1 8/05 software on the Solaris 8 OS, perform the following steps:

1. Install Sun Cluster 3.1 8/05 software from the Sun Java Enterprise System 2005Q4 distribution.
2. Install all required patches for Sun Cluster 3.1 8/05 software.
3. If you are also installing Sun Cluster Geographic Edition software on the Solaris 8 OS, use the `pkgadd` command to install the software from the Sun Java Enterprise System 5 distribution. See installation instructions in the Sun Cluster Geographic Edition documentation.

Installing Sun Cluster 3.1 8/05 Framework Software

For instructions for installing the Sun Cluster 3.1 8/05 framework software, see *Sun Cluster Software Installation Guide for Solaris OS* (part number 819-0420). The instructions in *Sun Cluster Software Installation Guide for Solaris OS* for release 3.1 8/05 apply to this release of Sun Cluster software in the Sun Java Enterprise System 5 distribution. However, you should install software from the Sun Java Enterprise System 5 DVD-ROM instead of the Sun Cluster 3.1 8/05 1 of 2 CD-ROM, Sun Cluster 3.1 8/05 2 of 2 CD-ROM, or Sun Cluster 3.1 8/05 Agents CD-ROM.

Note – In the Sun Java Enterprise System 5 distribution, both Version 1.1 and 2.0 of common agent container software is installed on the cluster nodes. However, Sun Cluster 3.1 8/05 software only supports Version 1.1 of common agent container software, which is a required Sun Java Enterprise System shared component for Sun Cluster software. If you need to use the `cacaoadm` command in a Sun Cluster 3.1 8/05 configuration, you must specify the full Version 1.1 path to the command:

```
/opt/SUNWcacao/bin/cacaoadm
```

If you issue the `cacaoadm` command without supplying the full Version 1.1 path, you might instead invoke the Version 2.0 command, which has been moved to the `/usr/sbin` directory.

Upgrading to Sun Cluster 3.1 8/05 Software

For instructions to upgrade a Sun Cluster configuration to the 3.1 8/05 release, see *Sun Cluster Software Installation Guide for Solaris OS* (part number 819-0420). The upgrade instructions in *Sun Cluster Software Installation Guide for Solaris OS* apply to the Sun Java Enterprise System 5 distribution of Sun Cluster 3.1 8/05 software except as follows:

- Install software packages from the Sun Java Enterprise System 5 DVD-ROM instead of the Sun Cluster 3.1 8/05 CD-ROMs.

- Do not perform the procedure to upgrade dependency software (nonrolling upgrade or rolling upgrade). Instead, perform the following task to upgrade shared components.

Note – Do not use the Sun Java Enterprise System 5 installer utility to install shared components for Sun Cluster software. Not all versions of the shared components that the utility installs are supported for Sun Cluster 3.1 8/05 software.

▼ How to Upgrade Dependency Software

1 On the cluster node where you are installing the software packages, become superuser.

2 Load the Sun Java Enterprise System 5 DVD-ROM into the DVD-ROM drive.

If the Volume Management daemon `vol(1M)` is running and configured to manage DVD-ROM devices, it automatically mounts the DVD-ROM on the `/cdrom` directory.

3 Ensure that at least version 4.3.1 of the Explorer packages is installed.

These packages are required by Sun Cluster software for use by the `sccheck` utility.

a. Determine whether the Explorer packages are installed and, if so, what version.

```
# pkginfo -l SUNWexpl* | grep SUNW_PRODVERS
SUNW_PRODVERS=4.3.1
```

b. If a version earlier than 4.3.1 is installed, remove the existing Explorer packages.

```
# pkgrm SUNWexpl* SUNWexplu SUNWexplj
```

c. If you removed Explorer packages or none were installed, install the latest Explorer packages.

- For the Solaris 9 OS, use the following command:

```
# pkgadd -d . SUNWexpl*
```

- For the Solaris 10 OS, use the following command:

```
# pkgadd -G -d . SUNWexpl*
```

The `-G` option adds packages to the current zone only. You must add these packages only to the global zone. Therefore, this option also specifies that the packages are *not* propagated to any existing non-global zone or to any non-global zone that is created later.

4 Ensure that at least version 5.1,REV=34 of the Java Dynamic Management Kit (JDK) packages is installed.

a. Determine whether JDK packages are installed and, if so, what version.

```
# pkginfo -l SUNWjdk-runtime | grep VERSION
VERSION=5.1,REV=34
```

b. If a version earlier than 5.1,REV=34 is installed, remove the existing JDK packages.

```
# pkgrm SUNWjdk-runtime SUNWjdk-runtime-jmx
```

c. If you removed JDK packages or none were installed, install the latest JDK packages.

■ For the Solaris 9 OS, use the following command:

```
# pkgadd -d . SUNWjdk*
```

■ For the Solaris 10 OS, use the following command:

```
# pkgadd -G -d . SUNWjdk*
```

5 Ensure that at least version 4.5.0 of the Netscape™ Portable Runtime (NSPR) packages is installed.

a. Determine whether NSPR packages are installed and, if so, what version.

```
# cat /var/sadm/pkg/SUNWpr/pkginfo | grep SUNW_PRODVERS
SUNW_PRODVERS=4.5.0
```

b. If a version earlier than 4.5.0 is installed, remove the existing NSPR packages.

```
# pkgrm SUNWpr SUNWprx
```

c. If you removed NSPR packages or none were installed, install the latest NSPR packages.

- The following table lists the location of each package, where *arch* is *sparc* or *x86* and where *ver* is *9* for Solaris 9 or *10* for Solaris 10.

Path	Packages
Solaris_arch/Product/shared_components/Packages/	SUNWpr
Solaris_arch/Product/shared_components/Solaris_ver/Packages/	SUNWprx

- The following table lists the applicable packages for each hardware platform.

Note – Install packages in the order in which they are listed in the following table.

Hardware Platform	NSPR Package Names
SPARC	SUNWpr SUNWprx
x86	SUNWpr

- For the Solaris 9 OS, use the following command:

```
# pkgadd -d . packages
```

- For the Solaris 10 OS, use the following command:

```
# pkgadd -G -d . packages
```

6 Ensure that at least version 3.9.4 of the Network Security Services (NSS) packages is installed.

- Determine whether NSS packages are installed and, if so, what version.

```
# cat /var/sadm/pkg/SUNWt1s/pkginfo | grep SUNW_PRODVERS
SUNW_PRODVERS=3.9.4
```

- If a version earlier than 3.9.4 is installed, remove the existing NSS packages.

```
# pkgrm SUNWt1s SUNWt1su SUNWt1sx
```

- If you removed NSS packages or none were installed, install the latest NSS packages.

- The following table lists the location of each package, where *arch* is sparc or x86 and where *ver* is 9 for Solaris 9 or 10 for Solaris 10.

Path	Packages
Solaris_ <i>arch</i> /Product/shared_components/Packages/	SUNWt1s, SUNWt1su
Solaris_ <i>arch</i> /Product/shared_components/Solaris_ <i>ver</i> /Packages/	SUNWt1sx

- The following table lists the applicable packages for each hardware platform.

Note – Install packages in the order in which they are listed in the following table.

Hardware Platform	NSS Package Names
SPARC	SUNWt1s SUNWt1su SUNWt1sx
x86	SUNWt1s SUNWt1su

- For the Solaris 8 or Solaris 9 OS, use the following command:

```
# pkgadd -d . packages
```

- For the Solaris 10 OS, use the following command:

```
# pkgadd -G -d . packages
```

- 7 Change back to the `Solaris_arch/Product/shared_components//Packages/` directory.

```
# cd ../../Packages
```

- 8 Ensure that at least version 1.1,REV=15 of the common agent container packages is installed.
-

Note – Sun Cluster 3.1 8/05 software does not support version 2.0 of the common agent container, which is also supplied with the Sun Java Enterprise System 5 distribution.

- a. Determine whether the common agent container packages are installed and, if so, what version.

```
# pkginfo -l SUNWcacao | grep VERSION  
VERSION=1.0,REV=25
```

- b. If a version other than 1.1,REV=15 is installed, stop the security file agent for the common agent container on each cluster node.

```
# /opt/SUNWcacao/bin/cacaoadm stop
```

- c. If a version other than 1.1,REV=15 is installed, remove the existing common agent container packages.

```
# pkgrm SUNWcacao SUNWcacaocfg
```

- d. If you removed the common agent container packages or none were installed, install the version 1.1 common agent container packages.

- For the Solaris 9 OS, use the following command:

```
# pkgadd -d . SUNWcacaocfg SUNWcacao
```

- For the Solaris 10 OS, use the following command:

```
# pkgadd -G -d . SUNWcacaocfg SUNWcacao
```

- 9 For upgrade from Solaris 8 to Solaris 9 OS, install or upgrade Sun Java Web Console packages.

- a. Change to the `Solaris_arch/Product/sunwebconsole/` directory, where *arch* is `sparc` or `x86`.

- b. Install the Sun Java Web Console packages.

```
# ./setup
```

The `setup` command installs or upgrades all packages to support Sun Java Web Console.

- 10 Unload the Sun Java Enterprise System 5 DVD-ROM from the DVD-ROM drive.**
- To ensure that the DVD-ROM is not being used, change to a directory that does *not* reside on the DVD-ROM.
 - Eject the DVD-ROM.
- 11 Ensure that the `/usr/java/` directory is a symbolic link to the minimum or latest version of Java software.**

Sun Cluster software requires at least version 1.5.0_06 of Java software. If you upgraded Solaris software or in some other way installed an earlier version of Java software, the symbolic link might have been changed to point to that earlier, unsupported version of Java software.

- Determine what directory the `/usr/java/` directory is symbolically linked to.

```
# ls -l /usr/java
lrwxrwxrwx  1 root  other   9 Apr 19 14:05 /usr/java -> /usr/j2se/
```

- Determine what version or versions of Java software are installed.

The following are examples of commands that you can use to display the version of their related releases of Java software.

```
# /usr/j2se/bin/java -version
# /usr/java1.2/bin/java -version
# /usr/jdk/jdk1.5.0_06/bin/java -version
```

- If the `/usr/java/` directory is not symbolically linked to a supported version of Java software, recreate the symbolic link to link to a supported version of Java software.

The following example shows the creation of a symbolic link to the `/usr/j2se/` directory, which contains Java 1.5.0_06 software.

```
# rm /usr/java
# ln -s /usr/j2se /usr/java
```

Next Steps Proceed to the Chapter 5, “Upgrading Sun Cluster Software,” in *Sun Cluster Software Installation Guide for Solaris OS* to upgrade Sun Cluster software by using the `scinstall` utility (nonrolling upgrade and rolling upgrade).

Installing Sun Cluster Support for Oracle® Real Application Clusters Packages

“Installing Sun Cluster Support for Oracle Real Application Clusters Packages” in *Sun Cluster Data Service for Oracle Real Application Clusters Guide for Solaris OS* explains how to install this data service from the Sun Cluster 3.1 8/05 Agents CD-ROM. If you obtained Sun Cluster 3.1 8/05 with Sun Java Enterprise System 5, install this data service from the Sun Java Enterprise System 5 DVD-ROM. To install this data service from the Sun Java Enterprise System 5 DVD-ROM, perform the appropriate procedure for your platform:

- **SPARC platform.** See “[SPARC: How to Install Sun Cluster Support for Oracle Real Application Clusters Packages on the SPARC Platform](#)” on page 10.
- **x86 platform.** See “[x86: How to Install Sun Cluster Support for Oracle Real Application Clusters Packages on the x86 Platform](#)” on page 12.

▼ SPARC: How to Install Sun Cluster Support for Oracle Real Application Clusters Packages on the SPARC Platform

If you did not install the Sun Cluster Support for Oracle Real Application Clusters packages during your initial Sun Cluster installation, perform this procedure to install the packages. Perform this procedure on all of the cluster nodes that can run Sun Cluster Support for Oracle Real Application Clusters.

Note – If you are using the Solaris 10 Operating System (OS), install these packages *only* in the global zone. Also ensure that these packages are not propagated to any local zones that are created after you install the packages.

Install the Sun Cluster Support for Oracle Real Application Clusters packages by using the `pkgadd` utility.

Before You Begin Ensure that you have the Sun Java Enterprise System 5 DVD-ROM.

- 1 On the cluster node where you are installing the Sun Cluster Support for Oracle Real Application Clusters packages, become superuser.**
- 2 Load the Sun Java Enterprise System 5 DVD-ROM into the DVD-ROM drive.**

If the Volume Management daemon `volfd(1M)` is running and configured to manage DVD-ROM devices, the daemon automatically mounts the DVD-ROM on the `/cdrom` directory.

- 3 **Change the current working directory to the directory that contains the Sun Cluster Support for Oracle Real Application Clusters packages.**

```
# cd /cdrom/cdrom0/Solaris_sparc/Product/sun_cluster_agents/Solaris_N/Packages
```

N is the version number of the Solaris OS that you are using. For example, if you are using the Solaris 10 OS, *N* is 10.

- 4 **On each cluster node that can run Sun Cluster Support for Oracle Real Application Clusters, start the utility to install the packages that your storage management scheme requires.**

Note – If you are using the Solaris 10 OS, install these packages *only* in the global zone. Also specify the `-G` option in the `pkgadd` command. The `-G` option ensures that these packages are not propagated to any local zones that are created after you install the packages.

The packages that are required depends on whether your storage management scheme includes a volume manager.

- **If your storage management scheme includes Solaris Volume Manager for Sun Cluster, run the following command:**

```
# pkgadd -d . SUNWscucm SUNWudlm SUNWudlmr SUNWscmd
```

Run this command if you are using Solaris Volume Manager for Sun Cluster alone or if you are using Sun StorEdge™ QFS with Solaris Volume Manager for Sun Cluster.

- **If your storage management scheme includes VERITAS Volume Manager (VxVM) with the cluster feature, run the following command:**

```
# pkgadd -d . SUNWscucm SUNWudlm SUNWudlmr SUNWcvm SUNWcvmr
```

- **If your storage management scheme does *not* include a volume manager, run the following command:**

```
# pkgadd -d . SUNWscucm SUNWudlm SUNWudlmr SUNWschwr
```

Run this command if you are using any storage management scheme in the following list:

- Hardware redundant array of independent disks (RAID)
- Sun StorEdge QFS *without* a volume manager
- Network Appliance NAS devices
- Automatic Storage Management (ASM) *without* a volume manager

- 5 **If you are using Oracle 9i Real Application Clusters, install the SUNWscor package.**

If you are using Oracle 10g Real Application Clusters, omit this step.

```
# pkgadd -d . SUNWscor
```

▼ **x86: How to Install Sun Cluster Support for Oracle Real Application Clusters Packages on the x86 Platform**

If you did not install the Sun Cluster Support for Oracle Real Application Clusters packages during your initial Sun Cluster installation, perform this procedure to install the packages. Perform this procedure on all of the cluster nodes that can run Sun Cluster Support for Oracle Real Application Clusters.

Note – If you are using the Solaris 10 Operating System (OS), install these packages *only* in the global zone. Also ensure that these packages are not propagated to any local zones that are created after you install the packages.

Install the Sun Cluster Support for Oracle Real Application Clusters packages by using the `pkgadd` utility.

Before You Begin Ensure that you have the Sun Java Enterprise System 5 DVD-ROM.

1 On the cluster node where you are installing the Sun Cluster Support for Oracle Real Application Clusters packages, become superuser.

2 Load the Sun Java Enterprise System 5 DVD-ROM into the DVD-ROM drive.

If the Volume Management daemon `volfd(1M)` is running and configured to manage DVD-ROM devices, the daemon automatically mounts the DVD-ROM on the `/cdrom` directory.

3 Change the current working directory to the directory that contains the Sun Cluster Support for Oracle Real Application Clusters packages.

```
# cd /cdrom/cdrom0/Solaris_x86/Product/sun_cluster_agents/Solaris_N/Packages
```

N is the version number of the Solaris OS that you are using. For example, if you are using the Solaris 10 OS, *N* is 10.

4 On each cluster node that can run Sun Cluster Support for Oracle Real Application Clusters, start the utility to install the packages that your storage management scheme requires.

Note – If you are using the Solaris 10 OS, install these packages *only* in the global zone. Also specify the `-G` option in the `pkgadd` command. The `-G` option ensures that these packages are not propagated to any local zones that are created after you install the packages.

The packages that are required depends on whether your storage management scheme includes a volume manager.

x86 only – VxVM is *not* supported on the x86 platform.

- **If your storage management scheme includes Solaris Volume Manager for Sun Cluster, run the following command:**

```
# pkgadd -d . SUNWscucm SUNWscmd
```

Run this command if you are using Solaris Volume Manager for Sun Cluster alone or if you are using Sun StorEdge QFS with Solaris Volume Manager for Sun Cluster.

- **If your storage management scheme does *not* include a volume manager, run the following command:**

```
# pkgadd -d . SUNWscucm SUNWschwr
```

Run this command if you are using any storage management scheme in the following list:

- Hardware RAID
- Sun StorEdge QFS *without* a volume manager
- Network Appliance NAS devices
- ASM *without* a volume manager

- 5 **If you are using Oracle 9i Real Application Clusters, install the SUNWscor package.**

If you are using Oracle 10g Real Application Clusters, omit this step.

```
# pkgadd -d . SUNWscor
```

Installing Other Sun Cluster 3.1 8/05 Data Services

The individual guides for data services other than Sun Cluster Support for Oracle Real Application Clusters explain how to install the data services from the following media:

- Sun Cluster 3.1 8/05 1 of 2 CD-ROM
- Sun Cluster 3.1 8/05 Agents CD-ROM

If you obtained Sun Cluster 3.1 8/05 software from the Sun Java Enterprise System 5 distribution, install these data services from the Sun Java Enterprise System 5 DVD-ROM. To install a Sun Cluster 3.1 8/05 data service from the Sun Java Enterprise System 5 DVD-ROM, perform the procedure that follows.

▼ How to Install a Sun Cluster 3.1 8/05 Data Service

If you did not install the data service packages during your initial Sun Cluster 3.1 8/05 installation, perform this procedure to install the packages. Perform this procedure on each cluster node where you are installing the data service packages.

You can run the Sun Java Enterprise System installation wizard program with a command-line interface (CLI) or with a graphical user interface (GUI). The content and sequence of instructions in the CLI and the GUI are similar.

Note – If you are using the Solaris 10 OS, install the packages for these data services *only* in the global zone. The Sun Java Enterprise System installation wizard ensures that these packages are not propagated to any local zones that are created after you install the packages.

Before You Begin Ensure that you have the Sun Java Enterprise System 5 DVD-ROM.

If you intend to run the Sun Java Enterprise System installation wizard program with a GUI, ensure that your DISPLAY environment variable is set.

- 1 **On the cluster node where you are installing the data service packages, become superuser.**
- 2 **Load the Sun Java Enterprise System 5 DVD-ROM into the DVD-ROM drive.**

If the Volume Management daemon vold(1M) is running and configured to manage DVD-ROM devices, the daemon automatically mounts the DVD-ROM on the /cdrom directory.
- 3 **Change to the Sun Java Enterprise System installation wizard directory of the DVD-ROM.**
 - **If you are installing the data service packages on the SPARC® platform, type the following command:**

```
# cd /cdrom/cdrom0/Solaris_sparc
```
 - **If you are installing the data service packages on the x86 platform, type the following command:**

```
# cd /cdrom/cdrom0/Solaris_x86
```
- 4 **Start the Sun Java Enterprise System installation wizard program.**

```
# ./installer
```
- 5 **When you are prompted, accept the license agreement.**
- 6 **From the list of Sun Cluster agents under Availability Services, select the data service that you are installing.**
- 7 **If you require support for languages other than English, select the option to install multilingual packages.**

English language support is always installed.

- 8 When prompted whether to configure the data service, choose Configure Later.**
Choose Configure Later to perform the configuration after the installation.
- 9 If you do not want to register the product and receive product updates, deselect the Product Registration option.**
- 10 Follow the instructions on the screen to install the data service packages on the node.**
The Sun Java Enterprise System installation wizard program displays the status of the installation. When the installation is complete, the program displays an installation summary and the installation logs.
- 11 Exit the Sun Java Enterprise System installation wizard program.**
- 12 Unload the Sun Java Enterprise System 5 DVD-ROM from the DVD-ROM drive.**
 - a. To ensure that the DVD-ROM is not being used, change to a directory that does *not* reside on the DVD-ROM.**
 - b. Eject the DVD-ROM.**
`# eject cdrom`

Configuring Sun Java System Web Server

The configuration instructions in *Sun Cluster Data Service for Sun Java System Web Server Guide for Solaris OS* apply to the release of Sun Cluster 3.1 8/05 software in the Sun Java Enterprise System 5 distribution except as follows:

- Ignore all references to the PID file that Sun Java System Web Server manages. The version of Sun Java System Web Server that Sun Java Enterprise System 5 supports does not manage a PID file.
- If you do not want to save the key password in the keypass file while configuring Sun Java System Web Server, add the following code in the `server.xml` file located in the server root directory.

```
<pkcs11>
  <enabled>true</enabled>
  <token>
    <name>internal</name>
    <pin>admin123</pin>
  </token>
</pkcs11>
```

The keypass file must exist in the server root directory even though it is empty.

Configuring and Upgrading Sun Cluster HA for Sun Grid Engine

The configuration instructions in *Sun Cluster Data Service for Sun Grid Engine Guide for Solaris OS* apply to the release of Sun Cluster 3.1 8/05 software in the Sun Java Enterprise System 5 distribution except as noted in the sections that follow.

Setting the MASTERPORT Configuration Parameter

If you are using Sun Grid Engine 6.0, you *must* set the MASTERPORT configuration parameter to the TCP port number on which the `sge_qmaster` daemon is to listen. Ignore the statement in “Specifying Configuration Parameters for Sun Cluster HA for Sun Grid Engine Resources” in *Sun Cluster Data Service for Sun Grid Engine Guide for Solaris OS* that the value of MASTERPORT is not used by the Sun Cluster HA for Sun Grid Engine data service.

Sun Cluster HA for Sun Grid Engine as released with Sun Java Enterprise System 5 enables multiple `sge_qmaster` instances to run in a Sun Cluster configuration. To enable multiple `sge_qmaster` instances to run in a Sun Cluster configuration, you must specify the port number for each `sge_qmaster` instance explicitly. The `sge_register` script sets required Sun Cluster resource properties on the basis of the setting of MASTERPORT.

You cannot use the file `/etc/inet/services` to specify the port number for the `sge_qmaster` daemon. This file enables the port number to be specified for only one `sge_qmaster` instance.

Upgrading Sun Cluster HA for Sun Grid Engine

As a result of requests for enhancement, the configuration of Sun Cluster HA for Sun Grid Engine resources has changed. Before you upgrade the Sun Cluster HA for Sun Grid Engine software packages, ensure that these resources are configured appropriately.

If you are running Sun Cluster HA for Sun Grid Engine with Sun Grid Engine 6.0, you must ensure that the `Port_list` standard property is correctly set for the following resources:

- Scheduling daemon (`sge_schedd`) resource
- Queue master daemon (`sge_qmaster`) resource

For both resources, the `Port_list` standard property must specify the TCP port number on which the `sge_qmaster` daemon is to listen.

Before modifying any resources, determine whether the modification is required.

▼ How to Determine Whether Resources Must Be Modified

The resources must be modified *only* if the values of the `Port_list` property for the `sge_schedd` resource and the `sge_qmaster` resource are incorrect or different.

- ▶ **Compare the values of the `Port_list` standard property for the `sge_schedd` resource and the `sge_qmaster` resource.**

```
# ssha_resource_get -R sge-schedd-rs -O Port_list
# ssha_resource_get -R sge-qmaster-rs -O Port_list
```

`sge-schedd-rs` Specifies the name of the resource that represents the scheduling daemon (`sge_schedd`)

`sge-qmaster-rs` Specifies the name of the resource that represents the queue master daemon (`sge_qmaster`)

Next Steps The next step depends on whether the values are identical and correct.

- If the values are identical and correct, upgrade the Sun Cluster HA for Sun Grid Engine software packages.
- If the values are different or incorrect, perform the procedure that applies to the release of the Sun Cluster *foundation* that you are using:
 - [“How to Modify Sun Cluster HA for Sun Grid Engine Resources With Sun Cluster 3.1 8/05 Software”](#) on page 17
 - [“How to Modify Sun Cluster HA for Sun Grid Engine Resources With Sun Cluster 3.1 9/04 Software”](#) on page 18

▼ **How to Modify Sun Cluster HA for Sun Grid Engine Resources With Sun Cluster 3.1 8/05 Software**

In Sun Cluster 3.1 8/05 software, the `Port_list` standard property is tunable at any time. Therefore, you can modify the `sge_schedd` resource and the `sge_qmaster` resource without deleting and re-creating these resources.

Perform this task for each pair of `sge_schedd` and `sge_qmaster` resources that you must modify.

Before You Begin Confirm that you must perform this task.

- 1 **Set the `Port_list` property of the `sge_schedd` resource and the `sge_qmaster` resource to the TCP port number on which the `sge_qmaster` daemon is to listen.**

```
# srgadm -c -j sge-schedd-rs -y Port_list=port/tcp
# srgadm -c -j sge-qmaster-rs -y Port_list=port/tcp
```

`sge-schedd-rs` Specifies the name of the resource that represents the scheduling daemon (`sge_schedd`)

`sge-qmaster-rs` Specifies the name of the resource that represents the queue master daemon (`sge_qmaster`)

port Specifies the TCP port number on which the `sge_qmaster` daemon is to listen

2 Ensure that the following environment variables are correctly set for all Sun Grid Engine clients.

- `SGE_QMASTER_PORT`
- `SGE_EXECD_PORT`

These environment variables are set in the script files `sge-root/cell/common/settings.csh` or `sge-root/cell/common/settings.sh`.

Next Steps Upgrade the Sun Cluster HA for Sun Grid Engine software packages.

▼ How to Modify Sun Cluster HA for Sun Grid Engine Resources With Sun Cluster 3.1 9/04 Software

In Sun Cluster 3.1 9/04 software, the `Port_list` standard property is tunable only at creation. Therefore, you must delete and re-create the `sge_schedd` resource and the `sge_qmaster` resource.

Perform this task for each pair of `sge_schedd` and `sge_qmaster` resources that you must modify.

Before You Begin Confirm that you must perform this task.

1 Remove the `sge_schedd` resource and the `sge_qmaster` resource.

```
# srgadm -r -j sge-schedd-rs
# srgadm -r -j sge-qmaster-rs
```

sge-schedd-rs Specifies the name of the resource that represents the scheduling daemon (`sge_schedd`)

sge-qmaster-rs Specifies the name of the resource that represents the queue master daemon (`sge_qmaster`)

2 Set the `MASTERPORT` configuration parameter to the TCP port number on which the `sge_qmaster` daemon is to listen.

To set this configuration parameter, edit the file `/opt/SUNWscsge/util/sge_config`. For more information, see “Specifying Configuration Parameters for Sun Cluster HA for Sun Grid Engine Resources” in *Sun Cluster Data Service for Sun Grid Engine Guide for Solaris OS*.

3 Go to the directory that contains the script for creating the Sun Grid Engine resources.

```
# cd /opt/SUNWscsge/util/
```

4 Run the script that creates the Sun Grid Engine resources.

```
# ./sge_register
```

5 Enable the `sge_schedd` resource and the `sge_qmaster` resource.

```
# scswitch -e -j sge-schedd-rs, sge-qmaster-rs
```

`sge-schedd-rs` Specifies the name of the resource that represents the scheduling daemon (`sge_schedd`)

`sge-qmaster-rs` Specifies the name of the resource that represents the queue master daemon (`sge_qmaster`)

6 Ensure that the following environment variables are correctly set for all Sun Grid Engine clients.

- `SGE_QMASTER_PORT`
- `SGE_EXECD_PORT`

These environment variables are set in the script files `sge-root/cell/common/settings.csh` or `sge-root/cell/common/settings.sh`.

Next Steps Upgrade the Sun Cluster HA for Sun Grid Engine software packages.

Configuring Sun Cluster HA for Apache Tomcat in a Failover Zone

The configuration instructions in *Sun Cluster Data Service for Apache Tomcat Guide for Solaris OS* apply to the release of Sun Cluster 3.1 8/05 software in the Sun Java Enterprise System 5 distribution except as noted in the sections that follow.

The following list describes feature additions to the Sun Cluster HA for Apache Tomcat data service:

- **Configuration file** - Sun Cluster HA for Apache Tomcat as released with Sun Java Enterprise System 5 enables the use of an optional configuration file with the registration commands. You can use the default file, `/opt/SUNWscatomcat/util/sctomcat_config`, or use a copy of the file in which you modify the parameter values as needed. The command syntax is as follows:

```
# ksh /opt/SUNWscatomcat/util/sctomcat_command [-f filename]
```

`sctomcat_command` One of the following Sun Cluster HA for Apache Tomcat registration commands:

- `sctomcat_register`
- `sctomcat_smf_register`

- `sctomcat_smf_remove`
- f Specifies the configuration file name.
- filename* The configuration file name. The default file is `/opt/SUNWsctomcat/util/sctomcat_config`.
- **DEBUG variable** - The Sun Cluster HA for Apache Tomcat data service as released with Sun Java Enterprise System 5 accepts a comma-delimited list of resources in the DEBUG variable in the `/opt/SUNWsctomcat/etc/config` file. A Korn shell trace of the start and stop methods in a failover-zone configuration is recorded if either of the following conditions exist:
 - The resource name matches a resource in the list that is contained in the DEBUG variable.
 - The DEBUG variable is set to ALL.

The Korn shell trace of the start and stop methods is recorded in the `/var/svc/log/application-sczone-agents:resource.log` file.

▼ How to Register Sun Cluster HA for Apache Tomcat in a Failover Zone

This procedure uses the configuration file to register Sun Cluster HA for Apache Tomcat in a failover zone.

Before You Begin Before you register Sun Cluster HA for Apache Tomcat in a failover zone, perform the following tasks. Follow procedures in the *Sun Cluster Data Service for Solaris Containers Guide* and *Sun Cluster Data Service for Apache Tomcat Guide for Solaris OS*.

- Install Sun Cluster HA for Containers and Sun Cluster HA for Apache Tomcat data-service packages in the global zone of each cluster node that you want to run the failover zone.
- Create the failover zone.
 - Inherit at least the directory that will contain the Sun Cluster HA for Apache Tomcat data service. To have all the data service directories in one location, inherit the `/opt` directory.
 - Configure the boot component to control your failover zone.

1 Become superuser in the global zone.

2 Make a copy of the `/opt/SUNWsctomcat/util/sctomcat_config` file to use as your configuration file.

You can place this configuration file in any directory that is accessible to the failover zone.

3 Open your configuration file for editing and modify the variables for non-global zones.

These variables are used only when the data service is installed in a non-global zone. Set the values of these variables as follows:

ZONE	Set the name of the zone where Sun Cluster HA for Apache Tomcat should run.
ZONE_BT	Set the name of the resource that controls the zone.
PROJECT	Set the name of the Sun Resource Manager Project in the failover zone. If the PROJECT variable is omitted from the configuration file, the data service uses the default project of the user, <code>:default</code> , in a Solaris Service Management Facility (SMF) context. This project name is placed in the <code>start/project</code> property and the <code>stop/project</code> property of the SMF service.

Note – Keep this modified configuration file for possible future use.

4 Log in as superuser to the failover zone's console.**5 Install Apache Tomcat software in the zone.****6 Copy and modify the parameter file `/opt/SUNWsctomcat/pfile`.**

Follow instructions in “How to Register and Configure Sun Cluster HA for Apache Tomcat as a failover data service” in *Sun Cluster Data Service for Apache Tomcat Guide for Solaris OS*.

7 Create the environment script.

Follow instructions in “How to Register and Configure Sun Cluster HA for Apache Tomcat as a failover data service” in *Sun Cluster Data Service for Apache Tomcat Guide for Solaris OS*.

8 Disconnect from the failover zone's console.**9 Register Sun Cluster HA for Apache Tomcat with SMF.**

```
# ksh /opt/SUNWsctomcat/util/sctomcat_register -f filename
```

`-f` Specifies the configuration file name.

`filename` The configuration file name.

The registration of Sun Cluster HA for Apache Tomcat generates an SMF manifest and registers an SMF service in the failover zone that is specified by the ZONE variable in the configuration file. The manifest is named `resourcename.xml`, where `resource` is the name that is specified by the RS variable in the configuration file. This manifest is placed in the `/var/svc/manifest/application/sczone-agents/` directory. The SMF service is named `svc:/application/sczone-agents/resource`.

The Sun Cluster HA for Apache Tomcat data service uses the SMF component of the Sun Cluster HA for Containers data service to control and probe this SMF service of the Sun Cluster HA for Apache Tomcat. It registers a Sun Cluster HA for Containers SMF component on top of the already-created SMF service. The name of the script that starts and stops the manifest as well as probes the SMF component is `control_sctomcat`.

▼ How to Modify Parameters in the Sun Cluster HA for Apache Tomcat Manifest

Perform this task to change parameters in the Sun Cluster HA for Apache Tomcat manifest and to validate the parameters in the failover zone. Parameters for the Sun Cluster HA for Apache Tomcat manifest are stored as properties of the SMF service. To modify parameters in the manifest, change the related properties in the SMF service then validate the parameter changes.

- 1 Log in as superuser to the failover zone's console.
- 2 Change the Solaris Service Management Facility (SMF) properties for the Sun Cluster HA for Apache Tomcat manifest.

```
# svccfg svc:/application/sczone-agents:resource
```

For more information, see the `svccfg(1M)` man page.

- 3 Validate the parameter changes.

```
# /opt/SUNWsctomcat/bin/control_sctomcat validate resource
```

Messages for this command are stored in the `/var/adm/messages/` directory of the failover zone.

- 4 Disconnect from the failover zone's console.

▼ How to Remove a Sun Cluster HA for Apache Tomcat Resource From a Failover Zone

- 1 Become superuser in the global zone.
- 2 Disable and remove the resource that is used by the Sun Cluster HA for Apache Tomcat data service.

```
# scswitch -n resource
```

```
# scrgadm -r -j resource
```

- 3 Log in as superuser to the failover zone's console.
- 4 Unregister Sun Cluster HA for Apache Tomcat from the Solaris Service Management Facility (SMF) service.

```
# /opt/SUNWscotomcat/sctomcat_smf_remove -f filename
```

-f Specifies the configuration file name.

filename The name of the configuration file that you used to register Sun Cluster HA for Apache Tomcat with the SMF service.

Note – If you no longer have the configuration file that you used to register Sun Cluster HA for Apache Tomcat with the SMF service, create a replacement configuration file:

- a. Make a copy of the default file, /opt/SUNWscotomcat/util/sctomcat_config.
 - b. Set the ZONE and RS parameters with the values that are used by the data service.
 - c. Run the sctomcat_smf_remove command and use the -f option to specify this configuration file.
-

- 5 Disconnect from the failover zone's console.

Configuring Sun Cluster HA for MySQL in a Failover Zone

The configuration instructions in *Sun Cluster Data Service for MySQL Guide for Solaris OS* for release 3.1 8/05 apply to this release of Sun Cluster 3.1 8/05 software in the Sun Java Enterprise System 5 distribution except as noted in the sections that follow.

The following list describes feature additions to the Sun Cluster HA for MySQL data service:

- **Configuration file** - Sun Cluster HA for MySQL as released with Sun Java Enterprise System 5 enables the use of an optional configuration file with the registration commands. You can use one of the default files, /opt/SUNWscmys/util/ha_mysql_config or /opt/SUNWscmys/util/mysql_config, or use a copy of the file in which you modify the parameter values as needed. The command syntax is as follows:

```
# ksh /opt/SUNWscmys/util/scmysql_command [-f filename]
```

scmysql_command One of the following Sun Cluster HA for MySQL registration commands:

- mysql_register
- ha_mysql_register
- ha_mysql_smf_register
- ha_mysql_smf_remove

-f Specifies the configuration file name.
filename The configuration file name. The default file is `/opt/SUNWscmys/util/ha_mysql_config`.

- **DEBUG variable** - The Sun Cluster HA for MySQL data service as released with Sun Java Enterprise System 5 accepts a comma-delimited list of resources in the `DEBUG` variable in the `/opt/SUNWscmys/etc/config` file. A Korn shell trace of the start and stop methods in a failover-zone configuration is recorded if either of the following conditions exist:
 - The resource name matches a resource in the list that is contained in the `DEBUG` variable.
 - The `DEBUG` variable is set to `ALL`.

The Korn shell trace of the start and stop methods is recorded in the `/var/svc/log/application-sczone-agents:resource.log` file.

▼ How to Register Sun Cluster HA for MySQL in a Failover Zone

This procedure uses the configuration file to register Sun Cluster HA for MySQL in a failover zone.

Before You Begin Before you register Sun Cluster HA for MySQL in a failover zone, perform the following tasks. Follow procedures in *Sun Cluster Data Service for Solaris Containers Guide* and *Sun Cluster Data Service for MySQL Guide for Solaris OS*.

- Install Sun Cluster HA for Containers and Sun Cluster HA for MySQL data-service packages in the global zone of each cluster node that you want to run the failover zone.
- Create the failover zone.
 - Inherit at least the directory that will contain the Sun Cluster HA for MySQL data service. To have all the data service directories in one location, inherit the `/opt` directory.
 - Configure the boot component to control your failover zone.

1 Become superuser in the global zone.

2 Make a copy of the `/opt/SUNWscmys/util/ha_mysql_config` file to use as your configuration file.

You can place this configuration file in any directory that is accessible to the failover zone.

3 Open your configuration file for editing and modify the variables for non-global zones.

These variables are used only when the data service is installed in a non-global zone. Set the values of these variables as follows:

ZONE	Set the name of the zone where Sun Cluster HA for MySQL should run.
ZONE_BT	Set the name of the resource that controls the zone.
PROJECT	Set the name of the Sun Resource Manager Project in the failover zone. If the PROJECT variable is omitted from the configuration file, the data service uses the default project of the user, : default, in a Solaris Service Management Facility (SMF) context. This project name is placed in the start/project property and the stop/project property of the SMF service.

Note – Keep this modified configuration file for possible future use.

4 Log in as superuser to the failover zone's console.

5 Install MySQL software in the zone.

6 Prepare the MySQL database.

Follow instructions in “How to Verify the Installation and Configuration of MySQL” in *Sun Cluster Data Service for MySQL Guide for Solaris OS* and “How to Register and Configure Sun Cluster HA for MySQL as a Failover Service” in *Sun Cluster Data Service for MySQL Guide for Solaris OS*. This step includes the following tasks:

- Start the MySQL database.
- Configure the access rights of the MySQL database.
- Make a copy of the /opt/SUNWscmys/util/mysql_config file.
- Modify the configuration file.
- Register the database by using the modified configuration file.

7 Register Sun Cluster HA for MySQL with SMF.

```
# ksh /opt/SUNWscmys/util/ha_mysql_register -f filename
```

-f Specifies the configuration file name.

filename The configuration file name.

The registration of Sun Cluster HA for MySQL generates an SMF manifest and registers an SMF service in the failover zone that is specified by the ZONE variable in the configuration file. The manifest is named *resourcename.xml*, where *resource* is the name that is specified by the RS variable in the configuration file. This manifest is placed in the /var/svc/manifest/application/sczone-agents/ directory. The SMF service is named svc:/application/sczone-agents/*resource*.

The Sun Cluster HA for MySQL data service uses the SMF component of the Sun Cluster HA for Containers data service to control and probe this SMF service of the Sun Cluster HA for MySQL. It registers a Sun Cluster HA for Containers SMF component on top of the

already-created SMF service. The name of the script that starts and stops the manifest as well as probes the SMF component is `control_sctomcat`.

8 Shut down the MySQL database.

```
# kill -TERM `cat MySQL-Databasedirectory/mysqlid.pid`
```

9 Disconnect from the failover zone's console.

▼ How to Modify Parameters in the Sun Cluster HA for MySQL Manifest

Perform this task to change parameters in the Sun Cluster HA for MySQL manifest and to validate the parameters in the failover zone. Parameters for the Sun Cluster HA for MySQL manifest are stored as properties of the SMF service. To modify parameters in the manifest, change the related properties in the SMF service then validate the parameter changes.

1 Log in as superuser to the failover zone's console.

2 Change the Solaris Service Management Facility (SMF) properties for the Sun Cluster HA for MySQL manifest.

```
# svccfg svc:/application/sczone-agents:resource
```

For more information, see the `svccfg(1M)` man page.

3 Validate the parameter changes.

```
# /opt/SUNWscmys/bin/control_mysql validate resource
```

Messages for this command are stored in the `/var/adm/messages/` directory of the failover zone.

4 Disconnect from the failover zone's console.

▼ How to Remove a Sun Cluster HA for MySQL Resource From a Failover Zone

1 Become superuser in the global zone.

2 Disable and remove the resource that is used by the Sun Cluster HA for MySQL data service.

```
# scswitch -n resource
```

```
# scrgadm -r -j resource
```

- 3 Log in as superuser to the failover zone's console.
- 4 Unregister Sun Cluster HA for MySQL from the Solaris Service Management Facility (SMF) service.

```
# /opt/SUNWscmys/ha_mysql_smf_remove -f filename
```

-f Specifies the configuration file name.

filename The name of the configuration file that you used to register Sun Cluster HA for MySQL with the SMF service.

Note – If you no longer have the configuration file that you used to register Sun Cluster HA for MySQL with the SMF service, create a replacement configuration file:

- a. Make a copy of the default file, /opt/SUNWscmys/util/ha_mysql_config.
 - b. Set the ZONE and RS parameters with the values that are used by the data service.
 - c. Run the ha_mysql_smf_remove command and use the -f option to specify this configuration file.
-

- 5 Disconnect from the failover zone's console.

Configuring HTTPS Connections With Sun Cluster HA for N1™ Grid Service Provisioning System

The configuration instructions in *Sun Cluster Data Service for N1 Grid Service Provisioning System for Solaris OS* apply to the release of Sun Cluster 3.1 8/05 software in the Sun Java Enterprise System 5 distribution except as noted in the sections that follow.

Sun Cluster HA for N1 Grid Service Provisioning System as released with Sun Java Enterprise System 5 introduces support for HTTPS configurations.

▼ How to Configure HTTPS Connections With Sun Cluster HA for N1 Grid Service Provisioning System

Perform the following task to configure your Master Server resource to listen on HTTPS connections only. Perform this task during the procedure “How to Register and Configure Sun Cluster HA for N1 Service Provisioning System Master Server as a failover data service” in *Sun Cluster Data Service for N1 Grid Service Provisioning System for Solaris OS*.

Before You Begin Ensure that GNU Wget software is installed on all nodes. If Wget software is not already installed on all nodes, install it in one of the following ways:

- Download GNU Wget software from <http://www.sunfreeware.com>.
- Download GNU Wget development source files from <http://www.gnu.org/software/wget> and compile an HTTPS-compliant form of Wget.

▮ **Modify the following variables in the `profile` parameter file.**

For more information about the `Tport` and `TestCmd` variables, see “Understanding the Sun Cluster HA for N1 Service Provisioning System Master Server Parameter File” in *Sun Cluster Data Service for N1 Grid Service Provisioning System for Solaris OS*.

`WgetPath` Specifies the full path to the `wget` command.

`Tport` Specifies the HTTPS port number that you used when you configured the N1 Grid Service Provisioning System software.

`TestCmd` Specifies a test command that is other than an HTTP command. The test command must be the last fraction of a web page, including the leading slash (/).

Note – The example test command `get /index.jsp` that is used in Chapter 1, “Installing and Configuring Sun Cluster HA for MySQL,” in *Sun Cluster Data Service for MySQL Guide for Solaris OS* is not valid for HTTPS connections.

The parameter values would be similar to the following:

```
WgetPath=/usr/sfw/bin/wget
Tport=8443
TestCmd="/index.jsp"
```

▼ How to Upgrade Sun Cluster HA for N1 Grid Service Provisioning System to Configure HTTPS Connections

Perform this procedure to upgrade an existing Sun Cluster HA for N1 Grid Service Provisioning System installation to listen on HTTPS connections only.

1 Shut down the Sun Cluster HA for N1 Grid Service Provisioning System resource.

```
# scswitch -n -j resource
```

`-n` Disables the specified resource

`-j resource` Specifies the name of the resource to disable

2 Upgrade Sun Cluster HA for N1 Grid Service Provisioning System on each node.

a. Install the software.

Follow procedures in “How to Install the Sun Cluster HA for N1 Service Provisioning System Packages Using the scinstall Utility” in *Sun Cluster Data Service for N1 Grid Service Provisioning System for Solaris OS*.

b. Register the new resource type.

Follow procedures in “How to Install and Register an Upgrade of a Resource Type” in *Sun Cluster Data Services Planning and Administration Guide for Solaris OS*.

c. Migrate the Sun Cluster HA for N1 Grid Service Provisioning System resource to the new resource type.

Follow procedures in “How to Migrate Existing Resources to a New Version of the Resource Type” in *Sun Cluster Data Services Planning and Administration Guide for Solaris OS*.

3 Modify the following variables in the Master Servers parameter file, `pfile`, that you specified at registration time.

For more information about the `Tport` and `TestCmd` variables, see “Understanding the Sun Cluster HA for N1 Service Provisioning System Master Server Parameter File” in *Sun Cluster Data Service for N1 Grid Service Provisioning System for Solaris OS*.

`WgetPath` Specify the full path to the `wget` command.

`Tport` Specify the HTTPS port number that you used when you configured the N1 Grid Service Provisioning System software.

`TestCmd` Specify a test command that is other than an HTTP command. The test command must be the last fraction of a web page, including the leading slash (/).

The parameter values would be similar to the following:

```
WgetPath=/usr/sfw/bin/wget
Tport=8443
TestCmd="/index.jsp"
```

4 Enable the Sun Cluster HA for N1 Grid Service Provisioning System resource.

```
# scswitch -e -j resource
```

`-e` Enables the specified resource

