



# Sun Cluster 3.1 Data Service 5/03 Release Notes

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# Contents

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<b>Sun Cluster 3.1 Data Service 5/03 Release Notes</b>	<b>7</b>
What's New in Sun Cluster 3.1 Data Services 5/03	7
New Error Messages	7
Automatic End Backup Facility	8
Resource Type Upgrade	8
Sun Cluster HA for SAP liveCache	8
Sun Cluster HA for Siebel	8
Support for Sun ONE Proxy Server	9
New Supported Data Services	9
Supported Products	10
Restrictions	13
Installation Issues and Bugs	15
Installation Guidelines	15
Setting <code>broker_user</code> to NULL still creates resources (4803317)	15
<code>scinstall</code> Supports Sun Cluster HA for SAP and Sun Cluster HA for SAP liveCache (4776411)	15
Administration Runtime Issues and Bugs	16
Timeout-Period Guideline (4499573)	16
HA Oracle Stop Method Times Out (4644289)	16
HA-Siebel Does Not Automatically Restart Failed Siebel Components (4722288)	16
<code>xserver_svc_start</code> Reports <code>xserver</code> Unavailable During Start-up (4738554)	17
Public Network Failure Might Cause Siebel Gateway Probe to Timeout (4764204)	17
The <code>s1as</code> Resource Does Not Restart When the Second URI is Down (4803242)	17

SAP liveCache Stop Method Times Out (4836272)	18
xserver Resource Cannot be Configured as a Failover Resource (4836248)	18
Missing Localized Message Catalogs	18
Patches and Required Firmware Levels	18
PatchPro	19
SunSolve Online	19
End-of-Feature-Support Statements	20
HAStorage	20
Sun Cluster 3.1 Data Services 5/03 Software Localization	20
Sun Cluster 3.1 Data Services 5/03 Documentation	21
Documentation Issues	23
Sun Cluster 3.1 Data Service 5/03 for Oracle	23
Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters	24
Sun Cluster 3.1 Data Service 5/03 for Sun ONE Directory Server and Sun ONE Web Server	27
Sun Cluster 3.1 Data Service 5/03 for Siebel	27
Sun Cluster 3.1 Data Service 5/03 for SAP liveCache	28
Sun Cluster 3.1 Data Service 5/03 for WebLogic Server	28
Man Pages	28

**A Sun Cluster Installation and Configuration Worksheets 31**

Installation and Configuration Worksheets	32
Local File System Layout Worksheet	34
Cluster and Node Names Worksheet	36
Cluster Interconnect Worksheet	38
Public Networks Worksheet	40
Local Devices Worksheets	42
Disk Device Group Configurations Worksheet	44
Volume Manager Configurations Worksheet	46
Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)	48

**B Data Service Configuration Worksheets and Examples 51**

Configuration Worksheets	51
Resource Types Worksheet	52
Network Resources Worksheet	54
Application Resources—Failover Worksheet	56

Application Resources—Scalable Worksheet	58
Resource Groups—Failover Worksheet	60
Resource Groups—Scalable Worksheet	62



# Sun Cluster 3.1 Data Service 5/03 Release Notes

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This document provides the following information for Sun™ Cluster 3.1 Data Services 5/03 software.

- “What’s New in Sun Cluster 3.1 Data Services 5/03” on page 7
- “Installation Issues and Bugs” on page 15
- “Administration Runtime Issues and Bugs” on page 16
- “Patches and Required Firmware Levels” on page 18
- “End-of-Feature-Support Statements” on page 20
- “Sun Cluster 3.1 Data Services 5/03 Software Localization” on page 20
- “Sun Cluster 3.1 Data Services 5/03 Documentation” on page 21
- “Documentation Issues” on page 23

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## What’s New in Sun Cluster 3.1 Data Services 5/03

This section describes new features and functionality. Contact your Sun sales representative for the complete list of supported hardware and software.

### New Error Messages

For error messages that were not included on the Sun Cluster CD-ROM, see *Sun Cluster 3.1 5/03 Release Notes*.

## Automatic End Backup Facility

This new Sun Cluster HA for Oracle feature recognizes when a database fails to start because of files left in hot backup mode. This feature takes the necessary action to reopen the database for use. You can turn this feature on and off. The default state is OFF.

For information on the `Auto_End_Bkp` extension property that enables this feature, see *Sun Cluster 3.1 Data Service for Oracle*.

## Resource Type Upgrade

As newer versions of resource types are released, you will want to install and register the upgraded resource type. You may also want to upgrade your existing resources to the newer resource type versions. The Resource Type Upgrade feature enables you to upgrade an existing resource to a new resource type version. For documentation on this new feature, see "Upgrading a Resource Type" in *Sun Cluster 3.1 Data Service Planning and Administration Guide*.

## Sun Cluster HA for SAP liveCache

Sun Cluster HA for SAP liveCache is a data service that makes liveCache highly available. Sun Cluster HA for SAP liveCache provides fault monitoring and automatic failover for liveCache and fault monitoring and automatic restart for SAP xserver, eliminating a single point of failure in an SAP Advanced Planner & Optimizer (APO) System. With a combination of Sun Cluster HA for SAP liveCache and other Sun Cluster data services, Sun Cluster software provides a complete solution to protect SAP components in a Sun Cluster environment.

For documentation on Sun Cluster HA for SAP liveCache, see *Sun Cluster 3.1 Data Service for SAP liveCache*.

## Sun Cluster HA for Siebel

Sun Cluster HA for Siebel provides Fault Monitoring and automatic failover for the Siebel application. High availability is provided for the Siebel gateway and Siebel server. With a Siebel implementation, any physical node running the Sun Cluster agent cannot be running the Resonate agent as well. Resonate and Sun Cluster can co-exist within the same Siebel enterprise, but not on the same physical server.

For documentation on Sun Cluster HA for Siebel, see *Sun Cluster 3.1 Data Service for Siebel*.



## Support for Sun ONE Proxy Server

Sun Cluster HA for Sun ONE Web Server now supports Sun ONE Proxy Server. For information about the Sun ONE Proxy Server product, see <http://docs.sun.com/db/prod/s1.webproxys>. For Sun ONE Proxy Server installation and configuration information, see [http://docs.sun.com/db/coll/S1\\_ipwebproxysrvr36](http://docs.sun.com/db/coll/S1_ipwebproxysrvr36).

## New Supported Data Services

Sun Cluster 3.1 Data Services 5/03 supports the following data services:

- Sun Cluster HA for WebLogic Server – BEA WebLogic Server running on Sun Cluster systems delivers a highly available platform for developing and deploying mission-critical e-commerce applications across distributed, heterogeneous application environments.

The Sun Cluster HA for BEA WebLogic Server provides fault monitoring and high availability for the BEA WebLogic Server application. High availability is provided for the WebLogic Administration Server and WebLogic Managed Servers.

- Sun Cluster HA for DHCP – Solaris DHCP provides dynamic TCP/IP configuration to a DHCP client. The Sun Cluster HA for DHCP data service uses the DHCP software that is bundled with Solaris 8 and Solaris 9.

The Sun Cluster HA for DHCP data service provides a mechanism for orderly startup and shutdown, fault monitoring and automatic failover of the DHCP service.

- Sun Cluster HA for Samba – Samba is an Open Source/Freeware suite that provides seamless file and print services to SMB/CIFS clients.

The Sun Cluster HA for Samba data service provides a mechanism for orderly startup and shutdown, fault monitoring and automatic failover of the Samba service.

- Sun Cluster HA for WebSphere MQ Integrator – WebSphere MQ Integrator works with WebSphere MQ messaging, extending its basic connectivity and transport capabilities to provide a powerful message broker solution driven by business rules.

The Sun Cluster HA for WebSphere MQ Integrator data service provides a mechanism for orderly startup and shutdown, fault monitoring and automatic failover for the WebSphere MQ Integrator service.

- Sun Cluster HA for WebSphere MQ – WebSphere MQ messaging software enables business applications to exchange information across different operating platforms in a way that is easy and straightforward for programmers to implement. Programs communicate using the WebSphere MQ API that assures once only delivery and time independent communications.

The Sun Cluster HA for WebSphere MQ data service provides a mechanism for orderly startup and shutdown, fault monitoring and automatic failover of the WebSphere MQ service.

## Supported Products

This section describes the supported software and memory requirements for Sun Cluster 3.1 software.

- **Operating environment and patches** – Supported Solaris versions and patches are available at the following URL:  
<http://sunsolve.sun.com>  
For more details, see “Patches and Required Firmware Levels” on page 18.
- **Volume managers**
  - **On Solaris 8** – Solstice DiskSuite™ 4.2.1 and VERITAS Volume Manager 3.2 and 3.5.
  - **On Solaris 9** – Solaris Volume Manager and VERITAS Volume Manager 3.5.

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**Note** – If you are upgrading from VERITAS Volume Manager (VxVM) 3.2 to 3.5, the Cluster Volume Manager (CVM) feature will not be available until you install the CVM license key for version 3.5. In VxVM 3.5, the CVM license key for version 3.2 does not enable CVM and must be upgraded to the CVM license key for version 3.5.

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- **File systems**
  - **On Solaris 8** – Solaris UFS and VERITAS File System 3.4 and 3.5.
  - **On Solaris 9** – Solaris UFS and VERITAS File System 3.5.
- **Data services (agents)** – Contact your Sun sales representative for the complete list of supported data services and application versions. Specify the resource type names when you install the data services by using the `scinstall (1M)` utility. You should also specify the resource type names when you register the resource types associated with the data service using the `scsetup (1M)` utility.

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**Note** – Procedures for Sun Cluster HA for Sun ONE Directory Server using iPlanet Directory Server 5.0 and 5.1 (plus Netscape HTTP, versions 4.11, 4.12, 4.13, and 4.16) are located in the *Sun Cluster 3.1 Data Service for Sun ONE Directory Server*. For later versions of iPlanet Directory Server (now known as Sun ONE Directory Server), see the Sun ONE documentation included with the data service.

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**TABLE 1–1** Supported Data Services for Sun Cluster 3.1 Software

<b>Data Service</b>	<b>Sun Cluster Resource Type</b>
Sun Cluster HA for Apache	SUNW.apache
Sun Cluster HA for BroadVision One-To-One Enterprise	SUNW.bv
Sun Cluster HA for DHCP	SUNW.gds
Sun Cluster HA for DNS	SUNW.dns
Sun Cluster HA for Sun ONE Web Server (This data service was formerly known as Sun Cluster HA for iPlanet Web Server)	SUNW.iws
Sun Cluster HA for NetBackup	SUNW.netbackup
Sun Cluster HA for NFS	SUNW.nfs
Sun Cluster HA for Sun ONE Directory Server (This data service was formerly known as Sun Cluster HA for iPlanet Directory Server)	SUNW.nslldap
Sun Cluster HA for Oracle	SUNW.oracle_server SUNW.oracle_listener
Sun Cluster HA for SAP	SUNW.sap_ci SUNW.sap_ci_v2 SUNW.sap_as SUNW.sap_as_v2
Sun Cluster HA for Sun ONE Application Server	SUNW.s1as
Sun Cluster HA for Sun ONE Message Queue	SUNW.s1mq
Sun Cluster HA for Sybase ASE	SUNW.sybase
Sun Cluster Support for Oracle Parallel Server/Real Application Clusters	N/A
Sun Cluster HA for SAP liveCache	SUNW.sap_livecache SUNW.sap_xserver
Sun Cluster HA for Samba	SUNW.gds
Sun Cluster HA for Siebel	SUNW.sblgtwy SUNW.sblsrvr
Sun Cluster HA for WebLogic Server	SUNW.wls
Sun Cluster HA for WebSphere MQ	SUNW.gds

**TABLE 1-1** Supported Data Services for Sun Cluster 3.1 Software (Continued)

Data Service	Sun Cluster Resource Type
Sun Cluster HA for WebSphere MQ Integrator	SUNW.gds

- **Memory Requirements** – Sun Cluster 3.1 software requires extra memory beyond what is configured for a node under a normal workload. The extra memory equals 128 Mbytes plus ten percent. For example, if a standalone node normally requires 1 Gbyte of memory, you need an extra 256 Mbytes to meet memory requirements.
- **RSMAPI** – Sun Cluster 3.1 software supports the Remote Shared Memory Application Programming Interface (RSMAPI) on RSM-capable interconnects, such as PCI-SCI.

## Sun Cluster Security Hardening

Sun Cluster Security Hardening uses the Solaris Operating Environment hardening techniques recommended by the Sun BluePrints™ program to achieve basic security hardening for clusters. The Solaris Security Toolkit automates the implementation of Sun Cluster Security Hardening.

The Sun Cluster Security Hardening documentation is available at <http://www.sun.com/blueprints/0203/817-1079.pdf>. You can also access the article from <http://www.sun.com/software/security/blueprints>. From this URL, scroll down to the Architecture heading to locate the article “Securing the Sun Cluster 3.x Software.” The documentation describes how to secure Sun Cluster 3.1 deployments in a Solaris 8 and Solaris 9 environment. The description includes the use of the Solaris Security Toolkit and other best-practice security techniques recommended by Sun security experts.

**TABLE 1-2** Data Services Supported by Sun Cluster Security Hardening

Data Service Agent	Application Version: Failover	Application Version: Scalable	Solaris Version
Sun Cluster HA for BEA WebLogic Server	7.0	N/A	Solaris 8, Solaris 9
Sun Cluster HA for iPlanet Messaging Server	6.0	4.1	Solaris 8
Sun Cluster HA for Sun ONE Web Server	6.0	4.1	Solaris 8, Solaris 9 (version 4.1)
Sun Cluster HA for Apache	1.3.9	1.3.9	Solaris 8, Solaris 9 (version 1.3.9)
Sun Cluster HA for SAP	4.6D (32 and 64 bit) and 6.20	4.6D (32 and 64 bit) and 6.20	Solaris 8, Solaris 9

**TABLE 1–2** Data Services Supported by Sun Cluster Security Hardening *(Continued)*

<b>Data Service Agent</b>	<b>Application Version: Failover</b>	<b>Application Version: Scalable</b>	<b>Solaris Version</b>
Sun Cluster HA for Sun ONE Directory Server	4.12	N/A	Solaris 8, Solaris 9 (version 5.1)
Sun Cluster HA for NetBackup	3.4	N/A	Solaris 8
Sun Cluster HA for Oracle	8.1.7 and 9i (32 and 64 bit)	N/A	Solaris 8, Solaris 9 (HA Oracle 9iR2)
Sun Cluster HA for Siebel	7.5	N/A	Solaris 8
Sun Cluster HA for Sybase ASE	12.0 (32 bit)	N/A	Solaris 8
Sun Cluster Support for Oracle Parallel Server/Real Application Clusters	8.1.7 and 9i (32 and 64 bit)	N/A	Solaris 8, Solaris 9
Sun Cluster HA for DNS	with OS	N/A	Solaris 8, Solaris 9
Sun Cluster HA for NFS	with OS	N/A	Solaris 8, Solaris 9

## Restrictions

### Running Sun Cluster HA for Oracle 3.0 on Sun Cluster 3.1

The Sun Cluster HA for Oracle 3.0 data service can run on Sun Cluster 3.1 only when used with the following versions of the Solaris operating environment:

- Solaris 8, 32-bit version
- Solaris 8, 64-bit version
- Solaris 9, 32-bit version

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**Note** – The Sun Cluster HA for Oracle 3.0 data service *cannot* run on Sun Cluster 3.1 when used with the 64-bit version of Solaris 9.

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### Sun Cluster HA for Oracle Parallel Server/Real Application Cluster

Adhere to the documentation of Oracle Parallel Fail Safe/Real Application Clusters Guard option of Oracle Parallel Server/Real Application clusters because you cannot change hostnames after you install Sun Cluster software.

For more information on this restriction on hostnames and node names, see the Oracle Parallel Fail Safe/Real Application Clusters Guard documentation.

## Sun Cluster HA for NetBackup

- If the VERITAS NetBackup client is a cluster, only one logical host can be configured as the client because there is only one `bp.conf` file.
- If the NetBackup client is a cluster and if one of the logical hosts on the cluster is configured as the NetBackup client, NetBackup cannot back up the physical hosts.
- On the cluster running the master server, the master server is the only logical host that can be backed up.
- Backup media cannot be attached to the master server, so one or more media servers are required.

## Sun Cluster HA for NFS

- No Sun Cluster node may be an NFS client of a Sun Cluster HA for NFS-exported file system being mastered on a node in the same cluster. Such cross-mounting of Sun Cluster HA for NFS is prohibited. Use the cluster file system to share files among cluster nodes.
- Applications running locally on the cluster must not lock files on a file system exported via NFS. Otherwise, local blocking (for example, `flock(3UCB)` or `fcntl(2)`) might interfere with the ability to restart the lock manager (`lockd`). During restart, a blocked local process may be granted a lock which may be intended to be reclaimed by a remote client. This would cause unpredictable behavior.
- Sun Cluster HA for NFS requires that all NFS client mounts be “hard” mounts.
- For Sun Cluster HA for NFS, do not use hostname aliases for network resources. NFS clients mounting cluster file systems using hostname aliases might experience `statd` lock recovery problems.
- Sun Cluster 3.1 software does not support Secure NFS or the use of Kerberos with NFS, in particular, the `secure` and `kerberos` options to the `share_nfs(1M)` subsystem. However, Sun Cluster 3.1 software does support the use of secure ports for NFS by adding the entry `set nfssrv:nfs_portmon=1` to the `/etc/system` file on cluster nodes.

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# Installation Issues and Bugs

## Installation Guidelines

Identify requirements for all data services **before** you begin Solaris and Sun Cluster installation. If you do not determine these requirements, you might perform the installation process incorrectly and thereby need to completely reinstall the Solaris and Sun Cluster software.

For example, the Oracle Parallel Fail Safe/Real Application Clusters Guard option of Oracle Parallel Server/Real Application Clusters has special requirements for the hostnames/node names that you use in the cluster. You must accommodate these requirements before you install Sun Cluster software because you cannot change hostnames after you install Sun Cluster software. For more information on the special requirements for the hostnames/node names, see the Oracle Parallel Fail Safe/Real Application Clusters Guard documentation.

## Setting `broker_user` to NULL still creates resources (4803317)

When creating a Sun ONE Message Queue resource, if `smooth_shutdown` is set to `true`, the `broker_user` extension property is required. The `validate` method does not check to see if `broker_user` is set and the validation will succeed even if `broker_user` is not set.

When setting `smooth_shutdown` to `true` be sure that `broker_user` is also set.

## `scinstall` Supports Sun Cluster HA for SAP and Sun Cluster HA for SAP liveCache (4776411)

The `scinstall(1m)` command incorrectly displays that the following data services are not supported on Solaris 9:

- Sun Cluster HA for SAP
- Sun Cluster HA for SAP liveCache

Solaris 8 and Solaris 9 support Sun Cluster HA for SAP and Sun Cluster HA for SAP liveCache.

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# Administration Runtime Issues and Bugs

## Timeout-Period Guideline (4499573)

When using I/O-intensive data services with a large number of disks configured in the cluster, the application may experience delays due to retries within the I/O subsystem during disk failures. An I/O subsystem may take several minutes to retry and recover from a disk failure. This delay can result in Sun Cluster failing over the application to another node, even though the disk may have eventually recovered on its own.

To avoid failover during these instances, consider increasing the default probe timeout of the data service. If you need more information or help with increasing data service timeouts, contact your local support engineer.

## HA Oracle Stop Method Times Out (4644289)

If you are running Solaris 9, include the following entries in the `/etc/nsswitch.conf` configuration files on each node that can be the primary for `oracle_server` or `oracle_listener` resource so that the data service starts and stops correctly during a network failure:

```
passwd: files
groups: files
publickey: files
project: files
```

The Sun Cluster HA for Oracle data service uses the super user command, `su(1M)`, to start and stop the database. The network service might become unavailable when a cluster node's public network fails. Adding the above entries ensures that the `su` command does not refer to the NIS/NIS+ name services.

## HA-Siebel Does Not Automatically Restart Failed Siebel Components (4722288)

Sun Cluster HA-Siebel agent does not monitor individual Siebel components. If the failure of a Siebel component is detected, only a warning message is logged in `syslog`.

To work around this, restart the Siebel server resource group in which components are offline using the command `scswitch -R -h node -g resource_group`.



## xserver\_svc\_start Reports xserver Unavailable During Start-up (4738554)

The message “SAP xserver is not available” is printed during the start up of SAP xserver due to the fact that xserver is not considered to be available until it is fully up and running.

Ignore this message during the startup of the SAP xserver.

## Public Network Failure Might Cause Siebel Gateway Probe to Timeout (4764204)

When the node running the Siebel gateway has a path beginning with `/home`, which depends on network resources such as NFS and NIS, and the public network fails, the Siebel gateway probe times out and causes the Siebel gateway resource to go offline. Without the public network, Siebel gateway probe hangs while trying to open a file on `“/home”`, causing the probe to timeout.

To prevent the Siebel gateway probe from timing out while trying to open a file on `/home`, ensure the following for all the nodes of the cluster which can be the Siebel gateway:

- Include the following entries are set to `files` in the `/etc/nsswitch.conf` file:

```
passwd: files
groups: files
publickey: files
project: files
```
- Eliminate all NFS or NIS dependencies for any path starting with `/home`. You may either have a locally mounted `/home` path or rename the `/home` mount point to `/export/home` or another name which does not start with `/home`.
- Comment out the line containing `+auto_master` in the `/etc/auto_master` file, and change any `/home` entries to `auto_home`.
- Comment out the line containing `+auto_home` in the `/etc/auto_home` file.

## The s1as Resource Does Not Restart When the Second URI is Down (4803242)

If a hostname in an URI in `monitor_uri_list` is an unknown host, the agent logs a message stating that the connection attempt has timed out. Normally, a connection that times out will trigger a restart or failover of the application server. However, when the hostname is unknown, the connection will not initiate a restart or failover.

If the agent logs a message saying that a connection timed out but does not take any action, check to ensure that the hostnames in `monitor_uri_list` are correct.

## SAP liveCache Stop Method Times Out (4836272)

If you are running Solaris 9, include one of the following entries for the `publickey` database in the `/etc/nsswitch.conf` configuration files on each node that can be the primary for `liveCache` resources so that the data service starts and stops correctly during a network failure:

```
publickey:  
publickey: files  
publickey: files [NOTFOUND=return] nis  
publickey: files [NOTFOUND=return] nisplus
```

The Sun Cluster HA for SAP `liveCache` data service uses the `dbmcli` command to start and stop the `liveCache`. The network service might become unavailable when a cluster node's public network fails. Adding one of the above entries, in addition to updates documented in *Sun Cluster 3.1 Data Service for SAP liveCache* ensures that the `su` command and the `dbmcli` command do not refer to the NIS/NIS+ name services.

## xserver Resource Cannot be Configured as a Failover Resource (4836248)

Do not configure the `xserver` resource as a failover resource. The Sun Cluster HA for SAP `liveCache` data service does not failover properly when `xserver` is configured as a failover resource.

## Missing Localized Message Catalogs

The localized message catalogs for the following agents are not included in Data Services 3.1 5/03:

- Sun ONE Application Server
- Sun ONE Message Queue
- BEA WebLogic

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## Patches and Required Firmware Levels

This section provides information about patches for Sun Cluster configuration.

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**Note** – You must be a registered SunSolve™ user to view and download the required patches for the Sun Cluster product. If you do not have a SunSolve account, contact your Sun service representative or sales engineer, or register online at <http://sunsolve.sun.com>.

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## PatchPro

PatchPro is a patch-management tool designed to ease the selection and download of patches required for installation or maintenance of Sun Cluster software. PatchPro provides a Sun Cluster-specific Interactive Mode tool to make the installation of patches easier and an Expert Mode tool to maintain your configuration with the latest set of patches. Expert Mode is especially useful for those who want to get all of the latest patches, not just the high availability and security patches.

To access the PatchPro tool for Sun Cluster software, go to <http://www.sun.com/PatchPro/>, click Sun Cluster, then choose either Interactive Mode or Expert Mode. Follow the instructions in the PatchPro tool to describe your cluster configuration and download the patches.

## SunSolve Online

The SunSolve™ Online Web site provides 24-hour access to the most up-to-date information regarding patches, software, and firmware for Sun products. Access the SunSolve Online site at <http://sunsolve.sun.com> for the most current matrixes of supported software, firmware, and patch revisions.

You can find Sun Cluster 3.1 patch information by using the Info Docs. To view Info Docs, log on to SunSolve and access the Simple Search selection from the top of the main page. From the Simple Search page, click on Info Docs and type **Sun Cluster 3.1** in the search criteria box. This will bring up the Info Docs page for Sun Cluster 3.1 software.

Before you install Sun Cluster 3.1 software and apply patches to a cluster component (Solaris operating environment, Sun Cluster software, volume manager or data services software, or disk hardware), review the Info Docs and any README files that accompany the patches. All cluster nodes must have the same patch level for proper cluster operation.

For specific patch procedures and tips on administering patches, see the *Sun Cluster 3.1 System Administration Guide*.

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## End-of-Feature-Support Statements

### HAStorage

HAStorage might not be supported in a future release of Sun Cluster software. Near-equivalent functionality is supported by HAStoragePlus. To upgrade from HAStorage to HAStoragePlus when you use cluster file systems or device groups, see “Upgrading from HAStorage to HAStoragePlus” in *Sun Cluster 3.1 Data Service Planning and Administration Guide*.

---

## Sun Cluster 3.1 Data Services 5/03 Software Localization

The following localization packages are available on the Data Services CD-ROM. When you install or upgrade to Sun Cluster 3.1, the localization packages will be automatically installed for the data services you have selected.

Language	Package Name	Package Description
French	SUNWfscapc	French Sun Cluster Apache Web Server Component
	SUNWfscbv	French Sun Cluster BV Server Component
	SUNWfscdns	French Sun Cluster Domain Name Server Component
	SUNWfscht	French Sun Cluster iPlanet Web Server Component
	SUNWfsc1c	French Sun Cluster resource type for SAP liveCache
	SUNWfscnb	French Sun Cluster resource type for netbackup_master server
	SUNWfscnfs	French Sun Cluster NFS Server Component
	SUNWfscnsl	French Sun Cluster Netscape Directory Server Component
	SUNWfscor	French Sun Cluster HA Oracle data service
	SUNWfscsap	French Sun Cluster SAP R/3 Component

Language	Package Name	Package Description
Japanese	SUNWjscapc	Japanese Sun Cluster Apache Web Server Component
	SUNWjscbv	Japanese Sun Cluster BV Server Component
	SUNWjscdns	Japanese Sun Cluster Domain Name Server Component
	SUNWjscht	Japanese Sun Cluster iPlanet Web Server Component
	SUNWjsc1c	Japanese Sun Cluster resource type for SAP liveCache
	SUNWjscnb	Japanese Sun Cluster resource type for netbackup_master server
	SUNWjscnfs	Japanese Sun Cluster NFS Server Component
	SUNWjscnsl	Japanese Sun Cluster Netscape Directory Server Component
	SUNWjscor	Japanese Sun Cluster HA Oracle data service
	SUNWjcsap	Japanese Sun Cluster SAP R/3 Component
	SUNWjcsbl	Japanese Sun Cluster resource types for Siebel gateway and Siebel server

---

## Sun Cluster 3.1 Data Services 5/03 Documentation

The complete Sun Cluster 3.1 Data Services 5/03 user documentation set is available in PDF and HTML format on the Sun Cluster Agents CD-ROM. AnswerBook2™ server software is not needed to read Sun Cluster 3.1 documentation. See the `index.html` file at the top level of either CD-ROM for more information. This `index.html` file enables you to read the PDF and HTML manuals directly from the disc and to access instructions to install the documentation packages.

---

**Note** – The `SUNWsdocs` package must be installed before you install any Sun Cluster documentation packages. You can use `pkgadd` to install the `SUNWsdocs` package from either the `SunCluster_3.1/Sol_N/Packages/` directory of the Sun Cluster CD-ROM or from the `components/SunCluster_Docs_3.1/Sol_N/Packages/` directory of the Sun Cluster Agents CD-ROM, where *N* is either 8 for Solaris 8 or 9 for Solaris 9. The `SUNWsdocs` package is also automatically installed when you run the installer from the Solaris 9 Documentation CD.

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The Sun Cluster 3.1 documentation set consists of the following collections:

- The Sun Cluster 3.1 Software Collection, which includes the following manuals:
  - Sun Cluster 3.1 Concepts Guide*

*Sun Cluster 3.1 Data Services Developer's Guide*

*Sun Cluster 3.1 Error Messages Guide*

*Sun Cluster 3.1 Software Installation Guide*

*Sun Cluster 3.1 System Administration Guide*

*Sun Cluster 3.1 Reference Manual*

- The Sun Cluster 3.1 Hardware Administration Collection, which includes the following manuals:

*Sun Cluster 3.1 Hardware Administration Manual*

*Sun Cluster 3.1 With Sun StorEdge 3310 Array Manual*

*Sun Cluster 3.1 With Sun StorEdge 3900 or 6900 Series System Manual*

*Sun Cluster 3.1 With Sun StorEdge 9900 Series Storage Device Manual*

*Sun Cluster 3.1 With Sun StorEdge A1000 or Netra st A1000 Array Manual*

*Sun Cluster 3.1 With Sun StorEdge A3500/A3500FC System Manual*

*Sun Cluster 3.1 With Sun StorEdge A5x00 Array Manual*

*Sun Cluster 3.1 With Sun StorEdge D1000 or Netra st D1000 Disk Array Manual*

*Sun Cluster 3.1 With Sun StorEdge D2 Array Manual*

*Sun Cluster 3.1 With Sun StorEdge MultiPack Enclosure Manual*

*Sun Cluster 3.1 With Sun StorEdge Netra D130 or StorEdge S1 Enclosure Manual*

*Sun Cluster 3.1 With Sun StorEdge T3 or T3+ Array Partner-Group Configuration Manual*

*Sun Cluster 3.1 With Sun StorEdge T3 or T3+ Array Single-Controller Configuration Manual*

- The Sun Cluster 3.1 Data Services Collection, which contains the following manual:

*Sun Cluster 3.1 Data Service Planning and Administration Guide*

*Sun Cluster 3.1 Data Service for Apache*

*Sun Cluster 3.1 Data Service for BroadVision One-To-One Enterprise*

*Sun Cluster 3.1 Data Service for DHCP*

*Sun Cluster 3.1 Data Service for Domain Name Service (DNS)*

*Sun Cluster 3.1 Data Service for Netbackup*

*Sun Cluster 3.1 Data Service for Network File System (NFS)*

*Sun Cluster 3.1 Data Service for Oracle*

*Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*

*Sun Cluster 3.1 Data Service for SAP*

*Sun Cluster 3.1 Data Service for SAP liveCache*

*Sun Cluster 3.1 Data Service for Samba*

*Sun Cluster 3.1 Data Service for Siebel*

*Sun Cluster 3.1 Data Service for Sun ONE Application Server*  
*Sun Cluster 3.1 Data Service for Sun ONE Directory Server*  
*Sun Cluster 3.1 Data Service for Sun ONE Message Queue*  
*Sun Cluster 3.1 Data Service for Sun ONE Web Server*  
*Sun Cluster 3.1 Data Service for Sybase ASE*  
*Sun Cluster 3.1 Data Service for WebLogic Server*  
*Sun Cluster 3.1 Data Service for WebSphere MQ*  
*Sun Cluster 3.1 Data Service for WebSphere MQ Integrator*

In addition, the `docs.sun.comSM` web site enables you to access Sun Cluster documentation on the Web. You can browse the `docs.sun.com` archive or search for a specific book title or subject at the following Web site:

<http://docs.sun.com>

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## Documentation Issues

This section discusses known errors or omissions for documentation, online help, or man pages and steps to correct these problems.

### Sun Cluster 3.1 Data Service 5/03 for Oracle

This section discusses errors and omissions from *Sun Cluster 3.1 Data Service for Oracle*.

### Sun Cluster HA for Oracle Packages

The introductory paragraph to “Installing Sun Cluster HA for Oracle Packages” in the *Sun Cluster 3.1 Data Service Planning and Administration Guide* does not discuss the additional package needed for users with clusters running Sun Cluster HA for Oracle with 64-bit Oracle. The following section corrects the introductory paragraph to “Installing Sun Cluster HA for Oracle Packages” in the *Sun Cluster 3.1 Data Service for Oracle*.

### Installing Sun Cluster HA for Oracle Packages

Depending on your configuration, use the `scinstall(1M)` utility to install one or both of the following packages on your cluster. Do not use the `-s` option to non-interactive `scinstall` to install all of the data service packages.

- SUNWscor: Cluster running Sun Cluster HA for Oracle with 32 bit Oracle or 64-bit Oracle
- SUNWscorx: Cluster running Sun Cluster HA for Oracle with 64-bit Oracle

---

**Note** – SUNWscor is the prerequisite package for SUNWscorx.

---

If you installed the SUNWscor data service package as part of your initial Sun Cluster installation, proceed to “Registering and Configuring Sun Cluster HA for Oracle” on page 30. Otherwise, use the procedure documented in *Sun Cluster 3.1 Data Service Planning and Administration Guide*.

## Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters

This section discusses errors and omissions from *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

### Pre-Installation Considerations

Pre-installation considerations for using Oracle Parallel Server/Real Application Clusters with the cluster file system are missing from “Overview” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

Oracle Parallel Server/Real Application Clusters is a scalable application that can run on more than one node concurrently. You can store all of the files that are associated with this application on the cluster file system, namely:

- Binary files
- Control files
- Data files
- Log files
- Configuration files

For optimum I/O performance during the writing of redo logs, ensure that the following items are located on the same node:

- The Oracle Parallel Server/Real Application Clusters database instance
- The primary of the device group that contains the cluster file system that holds the following logs of the database instance:
  - Online redo logs
  - Archived redo logs



For other pre-installation considerations that apply to Sun Cluster Support for Oracle Parallel Server/Real Application Clusters, see “Overview” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

## How to Use the Cluster File System

Information on how to use the cluster file system with Oracle Parallel Server/Real Application Clusters is missing from “Installing Volume Management Software With Sun Cluster Support for Oracle Parallel Server/Real Application Clusters” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

To use the cluster file system with Oracle Parallel Server/Real Application Clusters, create and mount the cluster file system as explained in “Configuring the Cluster” in *Sun Cluster 3.1 5/03 Software Installation Guide*. When you add an entry to the `/etc/vfstab` file for the mount point, set UNIX file system (UFS) file system specific options for various types of Oracle files as shown in the following table.

**TABLE 1-3** UFS File System Specific Options for Oracle Files

File Type	Options
RDBMS data files, log files, control files	global, logging, forcedirectio
Oracle binary files, configuration files	global, logging

## ▼ How to Install Sun Cluster Support for Oracle Parallel Server/Real Application Clusters Packages With the Cluster File System

Information on how to install Sun Cluster Support for Oracle Parallel Server/Real Application Clusters packages with the cluster file system is missing from “Installing Volume Management Software With Sun Cluster Support for Oracle Parallel Server/Real Application Clusters” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

To complete this procedure, you need the Sun Cluster CD-ROM. Perform this procedure on all of the cluster nodes that can run Sun Cluster Support for Oracle Parallel Server/Real Application Clusters.

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**Note** – Due to the preparation that is required prior to installation, the `scinstall(1M)` utility does not support automatic installation of the data service packages.

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1. Load the Sun Cluster CD-ROM into the CD-ROM drive.

2. Become superuser.
3. Change the current working directory to the directory that contains the packages for the version of the Solaris operating environment that you are using.

- If you are using Solaris 8, run the following command:

```
# cd /cdrom/suncluster_3_1/SunCluster_3.1/Sol_8/Packages
```

- If you are using Solaris 9, run the following command:

```
# cd /cdrom/suncluster_3_1/SunCluster_3.1/Sol_9/Packages
```

4. On each node of the cluster, transfer the contents of the required software packages from the CD-ROM to the node.

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



---

**Caution** – Before you reboot the nodes, you must ensure that you have correctly installed and configured the Oracle UDLM software. For more information, see “Installing the Oracle Software” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

---

### *Where to Go From Here*

Go to “Installing the Oracle Software” in *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters* to install the Oracle UDLM and Oracle RDBMS software.

## Using the Sun Cluster LogicalHostname Resource With Oracle Parallel Server/Real Application Clusters

Information on using the Sun Cluster LogicalHostname resource with Oracle Parallel Server/Real Application Clusters is missing from *Sun Cluster 3.1 Data Service for Oracle Parallel Server/Real Application Clusters*.

If a cluster node that is running an instance of Oracle Parallel Server/Real Application Clusters fails, an operation that a client application attempted might be required to time out before the operation is attempted again on another instance. If the TCP/IP network timeout is high, the client application might take a long time to detect the failure. Typically client applications take between three and nine minutes to detect such failures.

In such situations, client applications may use the Sun Cluster LogicalHostname resource for connecting to an Oracle Parallel Server/Real Application Clusters database that is running on Sun Cluster. You can configure the LogicalHostname resource in a separate resource group that is mastered on the nodes on which Oracle

Parallel Server/Real Application Clusters is running. If a node fails, the LogicalHostname resource fails over to another surviving node on which Oracle Parallel Server/Real Application Clusters is running. The failover of the LogicalHostname resource enables new connections to be directed to the other instance of Oracle Parallel Server/Real Application Clusters.



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**Caution** – Before using the LogicalHostname resource for this purpose, consider the effect on existing user connections of failover or failback of the LogicalHostname resource.

---

## Sun Cluster 3.1 Data Service 5/03 for Sun ONE Directory Server and Sun ONE Web Server

This section discusses errors and omissions from *Sun Cluster 3.1 Data Service for Sun ONE Directory Server* and *Sun Cluster 3.1 Data Service for Sun ONE Web Server*.

### Name Change for iPlanet Web Server and for iPlanet Directory Server

The names for iPlanet Web Server and iPlanet Directory Server have been changed. The new names are Sun ONE Web Server and Sun ONE Directory Server. The data service names are now Sun Cluster HA for Sun ONE Web Server and Sun Cluster HA for Sun ONE Directory Server.

The application name on the Sun Cluster Agents CD-ROM might still be iPlanet Web Server and iPlanet Directory Server.

## Sun Cluster 3.1 Data Service 5/03 for Siebel

This section discusses errors and omissions from the *Sun Cluster 3.1 Data Service for Siebel*.

### Scalable Sun ONE Web Server Is Not Supported with HA-Siebel

In the "Planning the Sun Cluster HA for Siebel Installation and Configuration" section, the configuration restrictions should state that scalable Sun ONE Web Server (iWS) cannot be used with HA Siebel. You must configure iWS as a failover data service.

## Sun Cluster 3.1 Data Service 5/03 for SAP liveCache

This section discusses errors and omissions from the *Sun Cluster 3.1 Data Service for SAP liveCache*.

The “Registering and Configuring Sun Cluster HA for SAP liveCache” section should state that the SAP xserver can only be configured as a scalable resource. Configuring the SAP xserver as a failover resource will cause the SAP liveCache resource not failover. Ignore all references to configuring the SAP xserver resource as a failover resource in *Sun Cluster 3.1 Data Service for SAP liveCache*.

## Sun Cluster 3.1 Data Service 5/03 for WebLogic Server

This section discusses errors and omissions from the *Sun Cluster 3.1 Data Service for WebLogic Server*.

The “Protection of BEA WebLogic Server Component” table should state that the BEA WebLogic Server database is protected by all databases supported by BEA WebLogic Server and supported on Sun Cluster. The table should also state that the HTTP servers are protected by all HTTP servers supported by BEA WebLogic Server and supported on Sun Cluster.

## Man Pages

### SUNW.sap\_ci(5)

- There is an error in the Name section. The Name section should read as follows:  
`sap_ci, SUNW.sap_ci, sap_ci_v2` and `SUNW.sap_ci_v2` - Resource type implementations for Sun Cluster HA for SAP central instance.
- There is an error in the Description section. The Description section should read as follows:  
The Resource Group Manager (RGM) manages the SAP data service for Sun Cluster software. Configure the Sun Cluster HA for SAP central instance as a logical-hostname resource and an SAP central instance resource.

### SUNW.sap\_as(5)

- There is an error in the Name section. The Name section should read as follows:

`sap_as`, `SUNW.sap_as` - Resource type implementation for Sun Cluster HA for SAP as a failover data service.

`sap_as_v2`, `SUNW.sap_as_v2` - Resource type implementation for Sun Cluster HA for SAP as a failover data service or a scalable data service.

- There is an error in the Description section. The Description section should read as follows:

The Resource Group Manager (RGM) manages the SAP data service for Sun Cluster software. If you are setting up the Sun Cluster HA for SAP application server as a failover data service configure it as a logical-hostname resource and an SAP application-server resource. If you are setting up the Sun Cluster HA for SAP application-server as a scalable data service configure it as a scalable SAP application-server resource.

## `rg_properties(5)`

The following new resource group property should be added to the `rg_properties(5)` man page.

`Auto_start_on_new_cluster`

This property controls whether the Resource Group Manager starts the resource group automatically when a new cluster is forming.

The default is `TRUE`. If set to `TRUE`, the Resource Group Manager attempts to start the resource group automatically to achieve `Desired primaries` when all nodes of the cluster are simultaneously rebooted. If set to `FALSE`, the Resource Group does not start automatically when the cluster is rebooted.

## `SUNW.wls(5)`

There is an error in the See Also section of this man page. Instead of referencing the Sun Cluster 3.1 Data Services Installation and Configuration Guide, you should reference the *Sun Cluster 3.1 Data Service for WebLogic Server*.



## Sun Cluster Installation and Configuration Worksheets

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This appendix provides worksheets to plan various components of your cluster configuration and examples of completed worksheets for your reference. See Appendix B for configuration worksheets for resources, resource types, and resource groups.

# Installation and Configuration Worksheets

If necessary, make additional copies of a worksheet to accommodate all the components in your cluster configuration. Follow planning guidelines in the *Sun Cluster 3.1 Software Installation Guide* to complete these worksheets. Then refer to your completed worksheets during cluster installation and configuration.

---

**Note** – The data used in the worksheet examples is intended as a guide only. The examples do not represent a complete configuration of a functional cluster.

---

The following table lists the planning worksheets and examples provided in this appendix, as well as the titles of sections in “Planning the Sun Cluster Configuration” in *Sun Cluster 3.1 Software Installation Guide* that contain related planning guidelines.

**TABLE A-1** Cluster Installation Worksheets and Related Planning Guidelines

Worksheet	Example	Section Titles of Related Planning Guidelines
“Local File System Layout Worksheet” on page 34	“Example: Local File System Layout Worksheets, With and Without Mirrored Root” on page 35	“System Disk Partitions” “Mirroring the Root Disk”
“Cluster and Node Names Worksheet” on page 36	“Example: Cluster and Node Names Worksheet” on page 37	“Cluster Name” “Node Names” “Private Network” “Private Hostnames”
“Cluster Interconnect Worksheet” on page 38	“Example: Cluster Interconnect Worksheet” on page 39	“Cluster Interconnect”
“Public Networks Worksheet” on page 40	“Example: Public Networks Worksheet” on page 41	“Public Networks” “IP Network Multipathing Groups”
“Local Devices Worksheets” on page 42	“Example: Local Devices Worksheets” on page 43	---
“Disk Device Group Configurations Worksheet” on page 44	“Example: Disk Device Group Configurations Worksheet” on page 45	“Disk Device Groups” “Planning Volume Management”



**TABLE A-1** Cluster Installation Worksheets and Related Planning Guidelines (Continued)

Worksheet	Example	Section Titles of Related Planning Guidelines
"Volume Manager Configurations Worksheet" on page 46	"Example: Volume Manager Configurations Worksheet" on page 47	"Planning Volume Management" Your volume manager documentation
"Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)" on page 48	"Example: Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)" on page 49	"Planning Volume Management" <i>Solstice DiskSuite 4.2.1 Installation and Product Notes</i> or <i>Solaris Volume Manager Administration Guide</i>

# Local File System Layout Worksheet

Node name: \_\_\_\_\_

**TABLE A-2** Local File Systems With Mirrored Root Worksheet

Volume Name	Component	Component	File System	Size
			/	
			swap	
			/globaldevices	

**TABLE A-3** Local File Systems with Non-Mirrored Root Worksheet

Device Name	File System	Size
	/	
	swap	
	/globaldevices	

## Example: Local File System Layout Worksheets, With and Without Mirrored Root

Node name: **phys-schost-1**

**TABLE A-4** Example: Local File Systems With Mirrored Root Worksheet

Volume Name	Component	Component	File System	Size
d1	c0t0d0s0	c1t0d0s0	/	6.75 GB
d2	c0t0d0s1	c1t0d0s1	swap	750 MB
d3	c0t0d0s3	c1t0d0s3	/globaldevices	512 MB
d7	c0t0d0s7	c1t0d0s7	SDS replica	20 MB

**TABLE A-5** Example: Local File Systems With Non-Mirrored Root Worksheet

Device Name	File System	Size
c0t0d0s0	/	6.75 GB
c0t0d0s1	swap	750 MB
c0t0d0s3	/globaldevices	512 MB
c0t0d0s7	SDS replica	20 MB

# Cluster and Node Names Worksheet

**TABLE A-6** Cluster and Node Names Worksheet

Component	Default	Actual
Cluster name		
Private network address	172.16.0.0	_____._____.0.0
Private network mask	255.255.0.0	255.255._____._____
First-Installed node name		
Private hostname	clusternode_____-priv	
Additional node name		
Private hostname	clusternode_____-priv	
Additional node name		
Private hostname	clusternode_____-priv	
Additional node name		
Private hostname	clusternode_____-priv	

## Example: Cluster and Node Names Worksheet

**TABLE A-7** Example: Cluster and Node Names Worksheet

Component	Default	Actual
Cluster name		<b>sc-cluster</b>
Private network address	172.16.0.0	<b>172.16.0.0</b>
Private network mask	255.255.0.0	<b>255.255.0.0</b>
First-Installed node name		<b>phys-schost-1</b>
Private hostname	clusternode1-priv	<b>phys-schost-1-priv</b>
Additional node name		<b>phys-schost-2</b>
Private hostname	clusternode2-priv	<b>phys-schost-2-priv</b>
Additional node name		
Private hostname	clusternode____-priv	
Additional node name		
Private hostname	clusternode____-priv	

# Cluster Interconnect Worksheet

**TABLE A-8** Cluster Interconnect Worksheet

Node Name	Adapter Name	Transport Type	Junction Name	Junction Type	Port Name

## Example: Cluster Interconnect Worksheet

**TABLE A-9** Example: Cluster Interconnect Worksheet

Node Name	Adapter Name	Transport Type	Junction Name	Junction Type	Port Name
phys-schost-1	hme0	dlpi	switch1	switch	1
phys-schost-1	hme1	dlpi	switch2	switch	1
phys-schost-2	hme0	dlpi	switch1	switch	2
phys-schost-2	hme1	dlpi	switch2	switch	2

# Public Networks Worksheet

**TABLE A-10** Public Networks Worksheet

Component	Name
<b>Node name</b>	
<b>Primary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	
<b>Secondary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	
<b>Secondary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	
<b>Secondary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	



## Example: Public Networks Worksheet

**TABLE A-11** Example: Public Networks Worksheet

Component	Name
<b>Node name</b>	<b>phys-schost-1</b>
<b>Primary hostname</b>	<b>phys-schost-1</b>
IP Network Multipathing group	<b>ipmp0</b>
Adapter name	<b>qfe0</b>
Backup adapter(s) (optional)	<b>qfe4</b>
Network name	<b>net-85</b>
<b>Secondary hostname</b>	<b>phys-schost-1-86</b>
IP Network Multipathing group	<b>ipmp1</b>
Adapter name	<b>qfe1</b>
Backup adapter(s) (optional)	<b>qfe5</b>
Network name	<b>net-86</b>
<b>Secondary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	
<b>Secondary hostname</b>	
IP Network Multipathing group	
Adapter name	
Backup adapter(s) (optional)	
Network name	

# Local Devices Worksheets

Node name: \_\_\_\_\_

**TABLE A-12** Local Disks Worksheet

Local Disk Name	Size

**TABLE A-13** Other Local Devices Worksheet

Device Type	Name

## Example: Local Devices Worksheets

Node name: **phys-schost-1**

**TABLE A-14** Example: Local Disks Worksheet

Local Disk Name	Size
c0t0d0	2G
c0t1d0	2G
c1t0d0	2G
c1t1d0	2G

**TABLE A-15** Example: Other Local Devices Worksheet

Device Type	Name
tape	/dev/rmt/0

# Disk Device Group Configurations Worksheet

Volume manager (circle one):

Solstice DiskSuite | Solaris Volume Manager | VxVM

**TABLE A-16** Disk Device Groups Worksheet

<b>Disk Group/ Diskset Name</b>	<b>Node Names (indicate priority if ordered list)</b>	<b>Ordered priority? (circle one)</b>	<b>Failback? circle one)</b>
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No

## Example: Disk Device Group Configurations Worksheet

Volume manager (circle one):

**Solstice DiskSuite**

**TABLE A-17** Example: Disk Device Groups Configurations Worksheet

Disk Group/ Diskset Name	Node Names (indicate priority if ordered list)	Ordered priority? (circle one)	Failback? circle one)
dg-schost-1	1) phys-schost-1, 2) phys-schost-2	Yes	Yes
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No
		Yes   No	Yes   No



## Example: Volume Manager Configurations Worksheet

Volume manager (circle one):

**Solstice DiskSuite**

**TABLE A-19** Example: Volume Manager Configurations Worksheet

Name	Type	Component	Component
dg-schost-1/d0	trans	dg-schost-1/d1	dg-schost-1/d4
dg-schost-1/d1	mirror	c0t0d0s4	c4t4d0s4
dg-schost-1/d4	mirror	c0t0d2s5	d4t4d2s5

# Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)

**TABLE A-20** Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)

File System	Metatrans	Metamirrors		Submirrors		Hot Spare Pool	Physical Device	
		(Data)	(Log)	(Data)	(Log)		(Data)	(Log)



## Example: Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)

**TABLE A-21** Example: Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)

File System	Metatrans	Metamirrors		Submirrors		Hot Spare Pool	Physical Device	
		(Data)	(Log)	(Data)	(Log)		(Data)	(Log)
/A	d10	d11		d12, d13		hsp000	c1t0d0s0, c2t0d1s0	
			d14		d15	hsp006		c1t0d1s6, c2t1d1s6



# Data Service Configuration Worksheets and Examples

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This appendix provides worksheets for planning resource-related components of your cluster configuration and examples of completed worksheets for your reference. See Appendix A for worksheets for other components of your cluster configuration.

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## Configuration Worksheets

If necessary, make additional copies of a worksheet to accommodate all the resource-related components in your cluster configuration. Follow planning guidelines in the *Sun Cluster 3.1 Software Installation Guide* and the *Sun Cluster 3.1 Data Services Installation and Configuration Guide* to complete these worksheets. Then refer to your completed worksheets during cluster installation and configuration.

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**Note** – The data used in the worksheet examples is intended as a guide only. The examples do not represent a complete configuration of a functional cluster.

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- “Resource Types Worksheet” on page 52
- “Network Resources Worksheet” on page 54
- “Application Resources—Failover Worksheet” on page 56
- “Application Resources—Scalable Worksheet” on page 58
- “Resource Groups—Failover Worksheet” on page 60
- “Resource Groups—Scalable Worksheet” on page 62



## Example: Resource Types Worksheet

**TABLE B-2** Example: Resource Types Worksheet

Resource Type Name	Nodes on Which the Resource Type Runs
SUNW.nshttp	phys-schost-1, phys-schost-2
SUNW.oracle_listener	phys-schost-1, phys-schost-2
SUNW.oracle_server	phys-schost-1, phys-schost-2

# Network Resources Worksheet

**TABLE B-3** Network Resources Worksheet

Component	Name	
Resource name		
Resource group name		
Resource type (circle one)	Logical hostname   Shared address	
Resource type name		
Dependencies		
Hostnames used		
Extension properties	Name	Value

## Example: Network Resources—Shared Address Worksheet

**TABLE B-4** Example: Network Resources—Shared Address Worksheet

Component	Name	
Resource name	<b>sh-galileo</b>	
Resource group name	<b>rg-shared</b>	
Resource type (circle one)	<b>Shared address</b>	
Resource type name	<b>SUNW.SharedAddress</b>	
Dependencies	<b>none</b>	
Hostnames used	<b>sh-galileo</b>	
Extension properties	Name	Value
	<b>netiflist</b>	<b>ipmp0@1, ipmp0@2</b>

## Example: Network Resources—Logical Hostname Worksheet

**TABLE B-5** Example: Network Resources—Logical Hostname Worksheet

Component	Name	
Resource name	<b>relo-galileo</b>	
Resource group name	<b>rg-oracle</b>	
Resource type (circle one)	<b>Logical hostname</b>	
Resource type name	<b>SUNW.LogicalHostname</b>	
Dependencies	<b>none</b>	
Hostnames used	<b>relo-galileo</b>	
Extension properties	Name	Value
	<b>netiflist</b>	<b>ipmp0@1, ipmp0@2</b>

# Application Resources—Failover Worksheet

**TABLE B-6** Application Resources—Failover Worksheet

Component	Name	
Resource name		
Resource group name		
Resource type name		
Dependencies		
Extension Properties	Name	Value



## Example: Application Resources—Failover Worksheet

**TABLE B-7** Example: Application Resources—Failover Worksheet

<b>Component</b>	<b>Name</b>	
Resource name	oracle-listener	
Resource group name	rg-oracle	
Resource type name	SUNW.oracle_listener	
Dependencies	hasp_resource	
Extension Properties	<b>Name</b>	<b>Value</b>
	ORACLE_HOME	/global/oracle/orahome/
	LISTENER_NAME	lsnr1

# Application Resources—Scalable Worksheet

**TABLE B-8** Application Resources—Scalable Worksheet

Component	Name	
Resource name		
Logical-host resource group name		
Shared-address resource group name		
Logical-host resource type name		
Shared-address resource type name		
Dependencies		
Extension Properties	Name	Value

## Example: Application Resources—Scalable Worksheet

**TABLE B-9** Example: Application Resources—Scalable Worksheet

Component	Name	
Resource name	<b>sh-galileo</b>	
Logical-host resource group name		
Shared-address resource group name	<b>rg-shared</b>	
Logical-host resource type name		
Shared-address resource type name		
Dependencies		
Extension Properties	Name	Value

## Resource Groups—Failover Worksheet

**TABLE B-10** Resource Groups—Failover Worksheet

Component	Notes	Name
Resource group name	The name must be unique within the cluster	
Function	Describe the function of this resource group	
Failback? (circle one)	Will this resource group switch back to the primary node after the primary node has failed and been restored?	Yes   No
Node list	Indicate the cluster nodes that may host this resource group. The first node in this list should be the primary, with others being the secondaries. The order of the secondaries will indicate preference for becoming primaries.	
Dependent disk device groups	List the disk device groups upon which this resource group depends.	
Configuration directory	If the resources in this resource group need to create files for administrative purposes, include the subdirectory they use.	

## Example: Resource Groups—Failover Worksheet

**TABLE B-11** Example: Resource Groups—Failover Worksheet

Component	Notes	Name
Resource group name	The name must be unique within the cluster	<b>rg-oracle</b>
Function	Describe the function of this resource group	<b>Contains the Oracle resources</b>
Failback? (circle one)	Will this resource group switch back to the primary node after the primary node has failed and been restored?	<b>No</b>
Node list	Indicate the cluster nodes that may host this resource group. The first node in this list should be the primary, with others being the secondaries. The order of the secondaries will indicate preference for becoming primaries.	1) <b>phys-schost-1</b> 2) <b>phys-schost-2</b>
Dependent disk device groups	List the disk device groups upon which this resource group depends.	<b>schost1-dg</b>
Configuration directory	If the resources in this resource group need to create files for administrative purposes, include the subdirectory they use.	

## Resource Groups—Scalable Worksheet

**TABLE B-12** Resource Groups—Scalable Worksheet

Component	Notes	Name
Resource group name	The name must be unique within the cluster.	
Function		
Maximum number of primaries		
Desired number of primaries		
Failback? (circle one)	Will this resource group switch back to the primary node, after the primary node has failed?	Yes   No
Node list	Indicate the cluster nodes that may host this resource group. The first node in this list should be the primary, with others being the secondaries. The order of the secondaries will indicate preference for becoming primaries.	
Dependencies	List any resource groups this resource depends on.	

## Example: Resource Groups—Scalable Worksheet

**TABLE B-13** Example: Resource Groups—Scalable Worksheet

Component	Notes	Name
Resource group name	The name must be unique within the cluster.	<b>rg-http</b>
Function		<b>Contains the web server resources</b>
Maximum number of primaries		<b>2</b>
Desired number of primaries		<b>2</b>
Failback? (circle one)	Will this resource group switch back to the primary node, after the primary node has failed?	<b>No</b>
Node list	Indicate the cluster nodes that may host this resource group. The first node in this list should be the primary, with others being the secondaries. The order of the secondaries will indicate preference for becoming primaries.	<b>1) phys-schost-1</b> <b>2) phys-schost-2</b>
Dependencies	List any resource groups this resource depends on.	<b>rg-shared</b>

