



Sun Cluster 3.1 10/03 Release Notes

Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054
U.S.A.

Part No: 817-0638-10
October 2003, Revision A

Copyright 2003 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. All rights reserved.

This product or document is protected by copyright and distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any. Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, docs.sun.com, AnswerBook, AnswerBook2, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Federal Acquisitions: Commercial Software—Government Users Subject to Standard License Terms and Conditions.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2003 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. Tous droits réservés.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a. Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées du système Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, docs.sun.com, AnswerBook, AnswerBook2, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

CETTE PUBLICATION EST FOURNIE "EN L'ETAT" ET AUCUNE GARANTIE, EXPRESSE OU IMPLICITE, N'EST ACCORDEE, Y COMPRIS DES GARANTIES CONCERNANT LA VALEUR MARCHANDE, L'APTITUDE DE LA PUBLICATION A REpondre A UNE UTILISATION PARTICULIERE, OU LE FAIT QU'ELLE NE SOIT PAS CONTREFAISANTE DE PRODUIT DE TIERS. CE DENI DE GARANTIE NE S'APPLIQUERAIT PAS, DANS LA MESURE OU IL SERAIT TENU JURIDIQUEMENT NUL ET NON AVENU.



030930@6671



Contents

Sun Cluster 3.1 10/03 Release Notes	5
What's New in Sun Cluster 3.1 10/03 Software	5
New Features and Functionality	6
Supported Products	8
Restrictions	9
Known Issues and Bugs	14
Incorrect Largefile Status (4419214)	14
Nodes Unable to Bring Up qfe Paths (4526883)	15
File Blocks Not Updated Following Writes to Sparse File Holes (4607142)	15
During a Network Failure, the Data Service Starts and Stops Incorrectly (4644289)	15
Unmounting of a Cluster File System Fails (4656624)	16
Sun Cluster HA-Siebel Fails to Monitor Siebel Components (4722288)	16
Oracle RAC Instances May Become Unavailable on Newly Added Nodes (4723575)	16
The remove Script Fails to Unregister SUNW.gds Resource Type (4727699)	17
Using the Solaris shutdown Command May Result in Node Panic (4745648)	17
Path Timeouts When Using ce Adapters on the Private Interconnect (4746175)	17
scrgadm Prevents IP Addresses of Different Subnets to Reside on one NIC (4751406)	18
Unsuccessful Failover Results in Error (4766781)	18
Node Hangs After Rebooting When Switchover Is in Progress (4806621)	18
DNS Wizard Fails if an Existing DNS Configuration is not Supplied (4839993)	19
Using SunPlex Manager to Install an Oracle Service (4843605)	19

Shutdown or Reboot Sequence Fails (4844784)	19
Rebooting a Node (4862321)	20
Oracle DLM Process Remains Alive During Node Shutdown (4891227)	20
Oracle Listener Probe May Timeout on a Heavily Loaded System (4900140)	21
RG_system Resource Group Property Update may Result in Node Panic (4902066)	21
nsswitch.conf Requirements for passwd Make nis Unusable (4904975)	21
Data Service Installation Wizards for Oracle and Apache do not Support Solaris 9 and Above (4906470)	22
Installation Fails if Default Domain is not set (4913925)	22
Patches and Required Firmware Levels	22
PatchPro	23
SunSolve Online	23
Sun Cluster 3.1 10/03 Documentation	23
Documentation Issues	25
Software Installation Guide	25
SunPlex Manager Online Help	25
System Administration Guide	26
Error Messages Guide	27
Data Services Collection	27
Man Pages	27
A Sun Cluster Installation and Configuration Worksheets	29
Installation and Configuration Worksheets	30
Local File System Layout Worksheet	32
Cluster and Node Names Worksheet	34
Cluster Interconnect Worksheet	36
Public Networks Worksheet	38
Local Devices Worksheets	40
Disk Device Group Configurations Worksheet	42
Volume Manager Configurations Worksheet	44
Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)	46

Sun Cluster 3.1 10/03 Release Notes

This document provides the following information for Sun™ Cluster 3.1 10/03 software.

- “What’s New in Sun Cluster 3.1 10/03 Software” on page 5
- “Known Issues and Bugs” on page 14
- “Patches and Required Firmware Levels” on page 22
- “Sun Cluster 3.1 10/03 Documentation” on page 23
- “Documentation Issues” on page 25

Note – For information about Sun Cluster 3.1 10/03 data services, refer to the *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

What’s New in Sun Cluster 3.1 10/03 Software

This section provides information related to new features, functionality, and supported products in Sun Cluster 3.1 10/03 software.

New Features and Functionality

Cluster Reconfiguration Notification Protocol

The Cluster Reconfiguration Notification Protocol (CRNP) provides a mechanism for applications to register for, and receive subsequent asynchronous notification of Sun Cluster reconfiguration events. Both data services running on the cluster and applications running outside of the cluster can register for event notification. Notifications include changes in cluster membership, resource groups, and resource state.

Disk-Path Monitoring

Disk-Path Monitoring (DPM) informs system administrators of diskpath failures for both primary and secondary paths. Disk path failure detection mechanism generates an event through the Cluster Event Framework and allows manual intervention.

Application Traffic Striping Over the Sun Cluster Private Network

This feature stripes IP traffic sent to the per-node logical IP addresses across all private interconnects. TCP traffic is striped on a per connection granularity. UDP traffic is striped on a per packet basis. .

Detecting Vulnerable Configurations

The integration of Sun's eRAS knowledge engine with the `sccheck (1M)` utility greatly increases the power of `sccheck` to detect "vulnerable" configurations by leveraging many existing eRAS checks. Vulnerability reports are produced from both individual nodes as well as the cluster.

Role-Based Access Control

This feature enables the use of Role Based Access Control (RBAC) for cluster administration and operation.

Single Node Cluster

This feature extends Sun Cluster functionality to support single-node clusters.

Agent Builder Integrated with Sun ONE Studio

This feature enables developers to use Sun ONE Studio's development environment to create agents.

Centralized Install

This feature enhances `scinstall (1M)` to install all nodes of a new cluster from a single point of control. Additionally, it provides compatibility with the Solaris Web Start installation tool.

Localized Versions

Localized Sun Cluster components are now available in five languages and can be installed using the Web Start program. For more information, see *Sun Cluster 3.1 10/03 Software Installation Guide*.

Language	Localized Sun Cluster Component
French	Installation Cluster Control Panel (CCP) Sun Cluster software Sun Cluster data services Sun Cluster module for Sun Management Center SunPlex Manager Sun Cluster data services
Japanese	Installation Cluster Control Panel (CCP) Sun Cluster software Sun Cluster data services Sun Cluster module for Sun Management Center SunPlex Manager Sun Cluster man pages Cluster Control Panel man pages Sun Cluster data services man pages

Language	Localized Sun Cluster Component
Simplified Chinese	Installation Cluster Control Panel (CCP) Sun Cluster software Sun Cluster data services Sun Cluster module for Sun Management Center SunPlex Manager
Traditional Chinese	Installation Cluster Control Panel (CCP) Sun Cluster software Sun Cluster data services Sun Cluster module for Sun Management Center SunPlex Manager
Korean	Installation Cluster Control Panel (CCP) Sun Cluster software Sun Cluster data services Sun Cluster module for Sun Management Center SunPlex Manager

Data Services

For information on data services enhancements, see *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

Supported Products

This section describes the supported software and memory requirements for Sun Cluster 3.1 10/03 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 22.
- **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.

Note – If you are upgrading from VERITAS Volume Manager (VxVM) 3.2 to 3.5, the Cluster Volume Manger (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.

- **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)** – For information on supported data services, see *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

Note – Sun Cluster 3.0 data services can run on Sun Cluster 3.1 10/03 software, except as noted in “Running Sun Cluster HA for Oracle 3.0 on Sun Cluster 3.1 10/03 Software” on page 14.

- **Memory Requirements** – Sun Cluster 3.1 10/03 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 10/03 software supports the Remote Shared Memory Application Programming Interface (RSMAPI) on RSM-capable interconnects, such as PCI-SCI.

Restrictions

The following restrictions apply to the Sun Cluster 3.1 10/03 release:

- “Hardware Restrictions” on page 10
- “Network Restrictions” on page 10
- “Volume-Manager Restrictions” on page 11
- “Cluster File System Restrictions” on page 11
- “VxFS Restrictions” on page 12
- “Internet Protocol (IP) Network Multipathing Restrictions” on page 12
- “Service and Application Restrictions” on page 13
- “Data Service Restrictions” on page 14

- “Running Sun Cluster HA for Oracle 3.0 on Sun Cluster 3.1 10/03 Software” on page 14

For other known problems or restrictions, see “Known Issues and Bugs” on page 14.

Hardware Restrictions

- Multihost tape, CD-ROM, and DVD-ROM are not supported.
- Alternate Pathing (AP) is not supported.
- Storage devices with more than a single path from a given cluster node to the enclosure are not supported except on the following storage devices:
 - Sun StorEdge™ A3500, for which two paths are supported to each of two nodes
 - Any device that supports Sun StorEdge Traffic Manager
 - EMC storage devices that use EMC PowerPath software
- If you are using a Sun Enterprise™ 420R server with a PCI card in slot J4701, the motherboard must be at dash-level 15 or higher (501-5168-15 or higher). To find the motherboard part number and revision level, look at the edge of the board closest to PCI slot 1.
- System panics have been observed in clusters when UDWIS I/O cards are used in slot 0 of a board in a Sun Enterprise 10000 server; do not install UDWIS I/O cards in slot 0 of a board in this server.
- When you increase or decrease the number of node attachments to a quorum device, the quorum vote count is not automatically recalculated. You can reestablish the correct quorum vote if you remove all quorum devices and then add them back into the configuration.
- SunVTS™ is not supported.

Network Restrictions

- IPv6 is not supported.
- Remote Shared Memory (RSM) transport types are mentioned in the documentation, but are not supported. If you use the RSM API, specify `dlpi` as the transport type.
- The SBus Scalable Coherent Interface (SCI) is not supported as a cluster interconnect. However, the PCI-SCI interface is supported.
- Logical network interfaces are reserved for use by Sun Cluster software.
- Client applications that run on cluster nodes should not map to logical IP addresses of an HA data service. During failover, these logical IP addresses might go away, leaving the client without a connection.

Volume-Manager Restrictions

- If you are upgrading from VERITAS Volume Manager (VxVM) 3.2 to 3.5, the Cluster Volume Manger (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.
- In Solstice DiskSuite/Solaris Volume Manager configurations that use mediators, the number of mediator hosts configured for a diskset must be exactly two.
- DiskSuite Tool (Solstice DiskSuite `metatool`) and the Enhanced Storage module of Solaris Management Console (Solaris Volume Manager) are not compatible with Sun Cluster 3.1 10/03 software.
- With VxVM 3.2 or later, Dynamic Multipathing (DMP) cannot be disabled with the `scvxinstall` command during VxVM installation. This procedure is described in the chapter, "Installing and Configuring VERITAS Volume Manager" in *Sun Cluster 3.1 10/03 Software Installation Guide*. The use of Veritas Dynamic Multipathing is supported in the following configurations.
 - A single I/O path per node to the cluster's shared storage.
 - A supported multipathing solution (Sun Traffic Manager, EMC PowerPath, Hitachi HDLM) that manages multiple I/O paths per node to the shared cluster storage. The use of Dynamic Multipathing (DMP) alone to manage multiple I/O paths per node to the shared storage is not supported.
- Simple root disk groups (`rootdg` created on a single slice of the root disk) are not supported as disk types with VxVM on Sun Cluster 3.1 10/03 software.
- Software RAID 5 is not supported.

Cluster File System Restrictions

- Quotas are not supported on cluster file systems.
- Sun Cluster 3.1 10/03 software does not support the use of the loopback file system (LOFS) on cluster nodes.
- The command `umount -f` behaves in the same manner as the `umount` command without the `-f` option. It does not support forced unmounts.
- The command `unlink(1M)` is not supported on non-empty directories.
- The command `lockfs -d` is not supported. Use `lockfs -n` as a workaround.
- The cluster file system does not support any of the file-system features of Solaris software by which one would put a communication end-point in the file-system name space. Therefore, although you can create a UNIX domain socket whose name is a path name into the cluster file system, the socket would not survive a node failover. In addition, any `fifos` or named pipes you create on a cluster file system would not be globally accessible, nor should you attempt to use `fattach` from any node other than the local node.

- It is not supported to execute binaries off cluster file systems that are mounted by using the `forcedirectio` mount option.
- You cannot remount a cluster file system with the `directio` mount option added at remount time.
You cannot set the `directio` mount option on a single file by using the `directio` ioctl.

VxFS Restrictions

- The following VxFS features are not supported in a Sun Cluster 3.1 10/03 configuration.
 - Quick I/O
 - Snapshots
 - Storage checkpoints
 - Cache advisories (these can be used, but the effect will be observed on the given node only)
 - VERITAS CFS (requires VERITAS cluster feature and VCS)

All other VxFS features and options that are supported in a cluster configuration are supported by Sun Cluster 3.1 10/03 software. See VxFS documentation and man pages for details about VxFS options that are or are not supported in a cluster configuration.

- The following VxFS-specific mount options are not supported in a Sun Cluster 3.1 10/03 configuration.
 - `convosync` (Convert `O_SYNC`)
 - `mincache`
 - `qlog`, `delaylog`, `tmplog`
- For information about administering VxFS cluster file systems in a Sun Cluster configuration, see “Administering Cluster File Systems Overview” in *Sun Cluster 3.1 10/03 System Administration Guide*.

Internet Protocol (IP) Network Multipathing Restrictions

This section identifies any restrictions on using IP Network Multipathing that apply only in a Sun Cluster 3.1 10/03 environment, or are different than information provided in the Solaris documentation for IP Network Multipathing.

- IPv6 is not supported.
- All public network adapters must be in IP Network Multipathing groups.
- In the `/etc/default/mpathd` file, do not change `TRACK_INTERFACES_ONLY_WITH_GROUPS` from yes to no.

Most procedures, guidelines, and restrictions that are identified in the Solaris documentation for IP Network Multipathing are the same in a cluster or a noncluster environment. Therefore, see the appropriate Solaris document for additional information about IP Network Multipathing restrictions.

Operating Environment Release	For Instructions, Go To...
Solaris 8 operating environment	<i>IP Network Multipathing Administration Guide</i>
Solaris 9 operating environment	"IP Network Multipathing Topics" in <i>System Administration Guide: IP Series</i>

Service and Application Restrictions

- Do not configure cluster nodes as routers (gateways). If the system goes down, the clients cannot find an alternate router and cannot recover.
- Do not configure cluster nodes as NIS or NIS+ servers. However, cluster nodes can be NIS or NIS+ clients.
- Do not use a Sun Cluster configuration to provide a highly available boot or installation service on client systems.
- Do not use a Sun Cluster configuration to provide an `rarpd` service.
- If you install an RPC service on the cluster, the service must not use the following program numbers: 100141, 100142, and 100248. These numbers are reserved for the Sun Cluster daemons `rgmd_receptionist`, `fed`, and `pmfd`, respectively. If the RPC service you install also uses one of these program numbers, you must change that RPC service to use a different program number.
- Currently, Sun StorEdge Network Data Replicator (SNDR) can only be used with HAStorage. This restriction only applies to the light weight resource group that includes the logical host that SNDR is using for replication. Application resource groups can still use HAStoragePlus with SNDR. You can use failover file system with HAStoragePlus and SNDR by using HAStorage for the SNDR resource group, and HAStoragePlus for the application resource group, where the HAStorage and HAStoragePlus resources point at the same underlying DCS device. A patch is being developed to enable SNDR to work with HAStoragePlus.
- Running high-priority process scheduling classes on cluster nodes is not supported. Processes that run in the time-sharing scheduling class with a high priority, or processes that run in the real-time scheduling class should not be run on cluster nodes. Sun Cluster software relies on kernel threads that do not run in the real-time scheduling class. Other time-sharing processes that run at higher-than-normal priority or real-time processes can prevent the Sun Cluster kernel threads from acquiring needed CPU cycles.

Data Service Restrictions

- Sun Cluster 3.1 10/03 software can only provide service for those data services that are either supplied with the Sun Cluster product or set up with the Sun Cluster data services API.
- Sun Cluster software currently does not have an HA data service for the `sendmail(1M)` subsystem. The `sendmail` subsystem can run on the individual cluster nodes, but the `sendmail` functionality will not be highly available, including the functionality of mail delivery and mail routing, queuing, or retry.

For information about restrictions for specific data services, see *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

Running Sun Cluster HA for Oracle 3.0 on Sun Cluster 3.1 10/03 Software

The Sun Cluster HA for Oracle 3.0 data service can run on Sun Cluster 3.1 10/03 software 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

Note – The Sun Cluster HA for Oracle 3.0 data service *cannot* run on Sun Cluster 3.1 10/03 software when used with the 64-bit version of Solaris 9.

Known Issues and Bugs

The following known issues and bugs affect the operation of the Sun Cluster 3.1 10/03 release. For the most current information, see the online *Sun Cluster 3.1 10/03 Release Notes Supplement* at <http://docs.sun.com>.

Incorrect Largefile Status (4419214)

Problem Summary: The `/etc/mnttab` file does not show the most current largefile status of a globally mounted VxFS filesystem.

Workaround: Use the `fsadm` command to verify the filesystem largefile status, instead of the `/etc/mnttab` entry.

Nodes Unable to Bring Up qfe Paths (4526883)

Problem Summary: Sometimes, private interconnect transport paths ending at a qfe adapter fail to come online.

Workaround: Follow the steps shown below:

1. Using `scstat -w`, identify the adapter that is at fault. The output will show all transport paths with that adapter as one of the path endpoints in the `faulted` or the `waiting` states.
2. Use `scsetup` to remove from the cluster configuration all the cables connected to that adapter.
3. Use `scsetup` again to remove that adapter from the cluster configuration.
4. Add back the adapter and the cables.
5. Verify if the paths appear. If the problem persists, repeat steps 1–5 a few times.
6. Verify if the paths appear. If the problem still persists, reboot the node with the at-fault adapter. Before the node is rebooted, make sure that the remaining cluster has enough quorum votes to survive the node reboot.

File Blocks Not Updated Following Writes to Sparse File Holes (4607142)

Problem Summary: A file's block count is not always consistent across cluster nodes following block-allocating write operations within a sparse file. For a cluster file system layered on UFS (or VxFS 3.4), the block inconsistency across cluster nodes disappears within 30 seconds or so.

Workaround: File metadata operations which update the `inode` (`touch`, etc.) should synchronize the `st_blocks` value so that subsequent metadata operations will ensure consistent `st_blocks` values.

During a Network Failure, the Data Service Starts and Stops Incorrectly (4644289)

Problem Summary: The Sun Cluster HA for Oracle data service uses the `su` command to start and stop the database. The network service might become unavailable when a cluster node's public network fails.

Workaround: In Solaris 9, configure the `/etc/nsswitch.conf` files as follows so that the data service starts and stops correctly in the event of a network failure:

On each node that can be a primary for `oracle_server` or `oracle_listener` resource, modify `/etc/nsswitch.conf` to include the following entries for `passwd`, `group`, `publickey`, and `project` databases:

- passwd: files
- group: files
- publickey: files
- project: files

Adding the above entries ensures that the `su (1M)` command does not refer to the NIS/NIS+ name services.

Unmounting of a Cluster File System Fails (4656624)

Problem Summary: The unmounting of a cluster file system fails sometimes even though the `fuser` command shows that there are no users on any node.

Workaround: Retry the unmounting after all asynchronous I/O to the underlying file system has been completed.

Sun Cluster HA–Siebel Fails to Monitor Siebel Components (4722288)

Problem Summary: The Sun Cluster HA-Siebel agent will not monitor individual Siebel components. If failure of a Siebel component is detected, only a warning message would be logged in `syslog`.

Workaround: Restart the Siebel server resource group in which components are offline using the command `scswitch -R -h node -g resource_group`.

Oracle RAC Instances May Become Unavailable on Newly Added Nodes (4723575)

Problem Summary: Installing Sun Cluster support for RAC on a newly added node will cause unavailability of Oracle RAC instances.

Workaround: To add a node into a cluster currently running with Oracle RAC support, without losing availability of the Oracle RAC database, requires special installation steps. The example shown below describes going from a 3–node cluster to a 4–node cluster, with Oracle RAC running on nodes 1, 2, and 3:

1. Install the Sun Cluster software on the new node (node 4).

Note: Do not install the RAC support packages as this time.

2. Reboot the new node into the cluster.

3. Once the new node has joined the cluster, shutdown the Oracle RAC database on one of the nodes where it is already running (node 1, in this example).
4. Reboot the node where the database was just shutdown (node 1).
5. Once the node (node 1) is back up, start the Oracle database on that node to resume database service.
6. If a single node is capable of handling the database workload, shutdown the database on the remaining nodes (nodes 2 and 3), and reboot these nodes. If more than one node is required to support the database workload, do them one at a time as described in steps 3 to 5.
7. Once all nodes have been rebooted, it is safe to install the Oracle RAC support packages on the new node.

The remove Script Fails to Unregister SUNW.gds Resource Type (4727699)

Problem Summary: The `remove` script fails to unregister `SUNW.gds` resource type and displays the following message:

```
Resource type has been un-registered already.
```

Workaround: After using the `remove` script, manually unregister `SUNW.gds`. Alternatively, use the `scsetup` command or the SunPlex Manager.

Using the Solaris shutdown Command May Result in Node Panic (4745648)

Problem Summary: Using the Solaris `shutdown` command or similar commands (for example, `uadmin`) to bring down a cluster node may result in node panic and display the following message:

```
CMM: Shutdown timer expired. Halting.
```

Workaround: Contact your Sun service representative for support. The panic is necessary to provide a guaranteed safe way for another node in the cluster to take over the services that were being hosted by the shutting-down node.

Path Timeouts When Using ce Adapters on the Private Interconnect (4746175)

Problem Summary: Clusters using `ce` adapters on the private interconnect may notice path timeouts and subsequent node panics if one or more cluster nodes have more than four processors.

Workaround: Set the `ce_taskq_disable` parameter in the `ce` driver by adding `set ce:ce_taskq_disable=1` to `/etc/system` file on all cluster nodes and then rebooting the cluster nodes. This ensures that heartbeats (and other packets) are always delivered in the interrupt context, eliminating path timeouts and the subsequent node panics. Quorum considerations should be observed while rebooting cluster nodes.

scrgadm Prevents IP Addresses of Different Subnets to Reside on one NIC (4751406)

Problem Summary: `scrgadm` prevents the hosting of logical hostnames/shared addresses which belong to a subnet that is different from the subnet of the IPMP (NAFO) group.

Workaround: Use the following form of the `scrgadm` command:

```
scrgadm -a -j <resource> -t <resource_type> -g <resource_group>
-x HostnameList=<logical_hostname> -x
NetIfList=<nafogroup>@<nodeid>.
```

Note that `nodenames` do not appear to work in the `NetIfList`; use `nodeids`, instead.

Unsuccessful Failover Results in Error (4766781)

Problem Summary: An unsuccessful failover/switchover of a file system might leave the file system in an errored state.

Workaround: Unmount and remount the file system.

Node Hangs After Rebooting When Switchover Is in Progress (4806621)

Problem Summary: If a device group switchover is in progress when a node joins the cluster, the joining node and the switchover operation may hang. Any attempts to access any device service will also hang. This is more likely to happen on a cluster with more than two nodes and if the file system mounted on the device is a VxFS file system.

Workaround: To avoid this situation, do not initiate device group switchovers while a node is joining the cluster. If this situation occurs, then all the cluster nodes must be rebooted to restore access to device groups.

DNS Wizard Fails if an Existing DNS Configuration is not Supplied (4839993)

Problem Summary: SunPlex Manager includes a data service installation wizard that sets up a highly available DNS service on the cluster. If the user does not supply an existing DNS configuration, such as a `named.conf` file, the wizard attempts to generate a valid DNS configuration by autodetecting the existing network and `nameservice` configuration. However, it fails in some network environments, causing the wizard to fail without issuing an error message.

Workaround: When prompted, supply the SunPlex Manager DNS data service install wizard with an existing, valid `named.conf` file. Otherwise, follow the documented DNS data service procedures to manually configure highly available DNS on the cluster.

Using SunPlex Manager to Install an Oracle Service (4843605)

Problem Summary: SunPlex Manager includes a data service installation wizard which sets up a highly available Oracle service on the cluster by installing and configuring the Oracle binaries as well as creating the cluster configuration. However, this installation wizard is currently not working, and results in a variety of errors based on the users' software configuration.

Workaround: Manually install and configure the Oracle data service on the cluster, using the procedures provided in the Sun Cluster documentation.

Shutdown or Reboot Sequence Fails (4844784)

Problem Summary: When shutting down or rebooting a node, the node may hang and the shutdown or reboot sequence may not complete. The system hangs after issuing the following message: `Failfast: Halting because all userland daemons all have died.`

Workaround: Before shutting down or rebooting the node, issue the following command: `psradm -f -a`:

To shutdown a node:

1. `# scswitch -S -h <node>`
2. `# psradm -f -a`
3. `# shutdown -g0 -y -i0`

To reboot a node:

1. `# scswitch -S -h <node>`

2. # psradm -f -a
3. # shutdown -g0 -y -i6

Note – In some rare instances, the suggested workarounds may fail to resolve this problem.

Rebooting a Node (4862321)

Problem Summary: On large systems running Sun Cluster 3.x, `shutdown -g0 -y -i6`, the command to reboot a node, can make the system to go to the OK prompt with the message `Failfast: Halting because all userland daemons have died`, instead of rebooting.

Workaround: Use one of the following workarounds:

- Halt the node and then type `boot` at the `ok` prompt.
- Disable `failfasts` before rebooting the node:

```
# /usr/cluster/lib/sc/cmm_ctl -f
# shutdown -g0 -y -i6
```

Remember to re-enable `failfasts` after the node has rebooted:

```
# /usr/cluster/lib/sc/cmm_ctl -f
```

or increase the `failfast_panic_delay` timeout before shutting down the system, using the following `mdb` command:

```
(echo 'cl_comm`conf+8/W 0t600000' ;
echo 'cl_comm`conf+c/W 0t600000') | mdb -kw
```

This sets the timeout to 600000 ms (10 minutes).

Oracle DLM Process Remains Alive During Node Shutdown (4891227)

Problem Summary: Oracle DLM process does not terminate during shutdown and prevents `/var` from being unmounted.

Workaround: Use one of the following two workarounds:

- Do not use a separate `/var` partition.
- Use `reboot/halt` instead of `init` or `shutdown`.

Oracle Listener Probe May Timeout on a Heavily Loaded System (4900140)

Problem Summary: The Oracle listener probe may timeout on a heavily loaded system, causing the Oracle listener to restart.

Workaround: On a heavily loaded system, the Oracle listener resource probe timeouts may be prevented by increasing the value of `Thorough_probe_interval` property of the resource.

The probe timeout is calculated as follows:

10 seconds if `Thorough_probe_interval` is greater than 20 seconds

60 seconds if `Thorough_probe_interval` is greater than 120 seconds

`Thorough_probe_interval/2` in other cases

RG_system Resource Group Property Update may Result in Node Panic (4902066)

Problem Summary: When set to TRUE, the `RG_system` resource group property indicates that the resource group and its resources are being used to support the cluster infrastructure, instead of implementing a user data service. If `RG_system` is TRUE, the RGM prevents the system administrator from inadvertently switching the group or its resources offline, or modifying their properties. In some instances, the node may panic when you try to modify a resource group property after setting the `RG_system` property to TRUE.

Workaround: Do not edit the value of the `RG_system` resource group property.

nsswitch.conf Requirements for passwd Make nis Unusable (4904975)

Problem Summary: On each node that can master the liveCache resource, the `su` command might hang when the public net is down.

Workaround: On each node that can master the liveCache resource, the following changes to `/etc/nsswitch.conf` are recommended so that the `su` command will not hang when the public net is down:

```
passwd: files nis [TRYAGAIN=0]
```

Data Service Installation Wizards for Oracle and Apache do not Support Solaris 9 and Above (4906470)

Problem Summary: The SunPlex Manager data service installation wizards for Apache and Oracle do not support Solaris 9 and above.

Workaround: Manually install Oracle on the cluster using, using Sun Cluster documentation. If installing Apache on Solaris 9 (or higher), manually add the Solaris Apache packages `SUNWapchr` and `SUNWapchu` before running the installation wizard.

Installation Fails if Default Domain is not set (4913925)

Problem Summary: When adding nodes to a cluster during installation and configuration, you may see an "RPC authentication" failure. The error messages are similar to the following:

- "RPC authentication error"
- "Not authorized to communicate with <sponsor-node>"
- "Cluster name verification failed"

This will occur when the nodes are not configured to use NIS/NIS+, particularly if the file `/etc/defaultdomain` is not present.

Workaround: When a domain name is not set (that is, the `/etc/defaultdomain` file is missing), set the domain name on all nodes joining the cluster, using the `domainname (1M)` command before proceeding with the installation. For example, `# domainname xxx`.

Patches and Required Firmware Levels

This section provides information about patches for Sun Cluster configurations.

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>.

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 on "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 10/03 patch information by using the Info Docs. To view the 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 the Info Docs box and type **Sun Cluster 3.1** in the search criteria box. This will bring up the Info Doc page for Sun Cluster 3.1 software.

Before you install Sun Cluster 3.1 10/03 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 "Patching Sun Cluster Software and Firmware" in *Sun Cluster 3.1 10/03 System Administration Guide*.

Sun Cluster 3.1 10/03 Documentation

The Sun Cluster 3.1 10/03 user documentation set is available in PDF and HTML format on the Sun Cluster 3.1 10/03 CD-ROM.

Note – The Sun Cluster 3.1 Data Services 10/03 user documentation set is available on the Sun Cluster 3.1 Agents 10/03 CD-ROM.

AnswerBook2™ server software is not needed to read Sun Cluster 3.1 10/03 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 CD-ROM 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. The `SUNWsdocs` package is located in the `SunCluster_3.1/Sol_N/Packages/` directory of the Sun Cluster 3.1 10/03 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` program from the Solaris 9 Documentation CD-ROM.

The Sun Cluster 3.1 10/03 user documentation set consists of the following collections:

- The Sun Cluster 3.1 10/03 Software Collection, which includes the following manuals:
 - Sun Cluster 3.1 10/03 Concepts Guide*
 - Sun Cluster 3.1 10/03 Data Services Developer's Guide*
 - Sun Cluster 3.1 10/03 Error Messages Guide*
 - Sun Cluster 3.1 10/03 Software Installation Guide*
 - Sun Cluster 3.1 10/03 System Administration Guide*
- The Sun Cluster 3.x Hardware Administration Collection, which includes the following manuals:
 - Sun Cluster 3.x Hardware Administration Manual*
 - Sun Cluster 3.x With Sun StorEdge 3310 Array Manual*
 - Sun Cluster 3.x With Sun StorEdge 3510 FC Array Manual*
 - Sun Cluster 3.x With Sun StorEdge 3900 or 6900 Series System Manual*
 - Sun Cluster 3.x With Sun StorEdge 6120 Array Manual*
 - Sun Cluster 3.x With Sun StorEdge 6320 System Manual*
 - Sun Cluster 3.x With Sun StorEdge 9900 Series Storage Device Manual*
 - Sun Cluster 3.x With Sun StorEdge A1000 or Netra st A1000 Array Manual*
 - Sun Cluster 3.x With Sun StorEdge A3500/A3500FC System Manual*
 - Sun Cluster 3.x With Sun StorEdge A5x00 Array Manual*
 - Sun Cluster 3.x With Sun StorEdge D1000 or Netra st D1000 Disk Array Manual*

Sun Cluster 3.x With Sun StorEdge D2 Array Manual

Sun Cluster 3.x With Sun StorEdge MultiPack Enclosure Manual

Sun Cluster 3.x With Sun StorEdge Netra D130 or StorEdge S1 Enclosure Manual

Sun Cluster 3.x With Sun StorEdge T3 or T3+ Array Manual

- The Sun Cluster 3.1 10/03 Reference Collection, which contains the following manual:

Sun Cluster 3.1 10/03 Reference Manual

For a listing of the manuals contained in Sun Cluster 3.1 Data Services 10/03 Collection, see the *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

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>

Documentation Issues

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



Caution – Sun Cluster 3.1 10/03 does not support RSM Transport. All references to RSM transport appearing in the Sun Cluster documentation collection must be disregarded.

Software Installation Guide

This section discusses known errors or omissions from the *Sun Cluster 3.1 10/03 Software Installation Guide*.

SunPlex Manager Online Help

This section discusses errors and omissions in SunPlex Manager online help.

Sun Cluster HA for Oracle

In the online help file that is titled “Sun Cluster HA for Oracle,” in the section titled “Before Starting,” a note is incorrect.

Incorrect:

If no entries exist for `shmsys` and `semsys` in `/etc/system`, default values for these variables are automatically inserted in `/etc/system`. The system must then be rebooted. Check Oracle installation documentation to verify that these values are correct for your database.

Correct:

If no entries exist for the `shmsys` and `semsys` variables in the `/etc/system` file when you install the Oracle data service, you can open `/etc/system` and insert default values for these variables. You must then reboot the system. Check Oracle installation documentation to verify that the values that you insert are correct for your database.

Role-Based Access Control (RBAC) (4895087)

In the table under "Sun Cluster RBAC Rights Profiles," the authorizations `solaris.cluster.appinstall` and `solaris.cluster.install` should be listed under the Cluster Management profile rather than the Cluster Operation profile.

In the table under "Sun Cluster RBAC Rights Profiles," under the profile Sun Cluster Commands, `sccheck(1M)` should also be included in the list of commands.

System Administration Guide

This section discusses errors and omissions from the *Sun Cluster 3.1 10/03 System Administration Guide*.

Simple Root Disk Groups With VERITAS Volume Manager

Simple root disk groups are not supported as disk types with VERITAS Volume Manager on Sun Cluster software. As a result, if you perform the procedure "How to Restore a Non-Encapsulated root (/) File System (VERITAS Volume Manager)" in the *Sun Cluster 3.1 System Administration Guide*, you should ignore Step 9, which asks you to determine if the root disk group (`rootdg`) is on a single slice on the root disk. You would complete Step 1 through Step 8, skip Step 9, and proceed with Step 10 to the end of the procedure.

Changing the Number of Node Attachments to a Quorum Device

When increasing or decreasing the number of node attachments to a quorum device, the quorum vote count is not automatically recalculated. You can re-establish the correct quorum vote if you remove all quorum devices and then add them back into the configuration.

Error Messages Guide

Certain error messages related to Sun Cluster data services are missing from the Error Messages Guide. For a list of error messages that did not get included in the documentation collection, see *Sun Cluster 3.1 Data Services 10/03 Release Notes*

Data Services Collection

Errors and omissions related to the Data Services documentation are described in the *Sun Cluster 3.1 Data Services 10/03 Release Notes*.

Man Pages

This section discusses errors and omissions from the Sun Cluster man pages.

scconf_transp_adap_sci(1M)

The `scconf_transp_adap_sci(1M)` man page states that SCI transport adapters can be used with the `rsm` transport type. This support statement is incorrect. SCI transport adapters do *not* support the `rsm` transport type. SCI transport adapters support the `dlpi` transport type only.

scconf_transp_adap_sci(1M)

The following sentence clarifies the name of an SCI-PCI adapter. This information is not currently included in the `scconf_transp_adap_sci(1M)` man page.

New Information:

Use the name `sciN` to specify an SCI adapter.

scgdevs(1M)

The following paragraph clarifies behavior of the `scgdevs` command. This information is not currently included in the `scgdevs(1M)` man page.

New Information:

`scgdevs(1M)` called from the local node will perform its work on remote nodes asynchronously. Therefore, command completion on the local node does not necessarily mean it has completed its work cluster wide.

rt_properties(5)

In this release, the current `API_version` has been incremented to 3 from its previous value of 2. If you are developing a new Sun Cluster agent and wish to prevent your new resource type from being registered on an earlier version of Sun Cluster software, declare `API_version=3` in your agent's RTR file. For more information, see `rt_reg(4)` and `rt_properties(5)`.

Sun Cluster 3.0 Data Service Man Pages

To display Sun Cluster 3.0 data service man pages, install the latest patches for the Sun Cluster 3.0 data services that you installed on Sun Cluster 3.1 10/03 software. See "Patches and Required Firmware Levels" on page 22 for more information.

After you have applied the patch, access the Sun Cluster 3.0 data service man pages by issuing the `man -M` command with the full man page path as the argument. The following example opens the Apache man page.

```
% man -M /opt/SUNWscapc/man SUNW.apache
```

Consider modifying your `MANPATH` to enable access to Sun Cluster 3.0 data service man pages without specifying the full path. The following example describes command input for adding the Apache man page path to your `MANPATH` and displaying the Apache man page.

```
% MANPATH=/opt/SUNWscapc/man:$MANPATH; export MANPATH
% man SUNW.apache
```

Sun Cluster Installation and Configuration Worksheets

This appendix provides worksheets to plan various components of your cluster configuration and examples of completed worksheets for your reference. See *Sun Cluster 3.1 Data Service 10/03 Release Notes* 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 32	“Example: Local File System Layout Worksheets, With and Without Mirrored Root” on page 33	“System Disk Partitions” “Mirroring the Root Disk”
“Cluster and Node Names Worksheet” on page 34	“Example: Cluster and Node Names Worksheet” on page 35	“Cluster Name” “Node Names” “Private Network” “Private Hostnames”
“Cluster Interconnect Worksheet” on page 36	“Example: Cluster Interconnect Worksheet” on page 37	“Cluster Interconnect”
“Public Networks Worksheet” on page 38	“Example: Public Networks Worksheet” on page 39	“Public Networks” “IP Network Multipathing Groups”
“Local Devices Worksheets” on page 40	“Example: Local Devices Worksheets” on page 41	---
“Disk Device Group Configurations Worksheet” on page 42	“Example: Disk Device Group Configurations Worksheet” on page 43	“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 44	"Example: Volume Manager Configurations Worksheet" on page 45	"Planning Volume Management" Your volume manager documentation
"Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)" on page 46	"Example: Metadevices Worksheet (Solstice DiskSuite/Solaris Volume Manager)" on page 47	"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		sc-cluster
Private network address	172.16.0.0	172.16.0.0
Private network mask	255.255.0.0	255.255.0.0
First-Installed node name		phys-schost-1
Private hostname	clusternode1-priv	phys-schost-1-priv
Additional node name		phys-schost-2
Private hostname	clusternode2-priv	phys-schost-2-priv
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
Node name	
Primary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (optional)	
Network name	
Secondary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (optional)	
Network name	
Secondary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (optional)	
Network name	
Secondary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (optional)	
Network name	

Example: Public Networks Worksheet

TABLE A-11 Example: Public Networks Worksheet

Component	Name
Node name	phys-schost-1
Primary hostname	phys-schost-1
IP Network Multipathing group	ipmp0
Adapter name and test IP address	qfe0, schost-85-t-1a
Backup adapter and test IP address (optional)	qfe4, schost-85-t-1b
Network name	net-85
Secondary hostname	phys-schost-1-86
IP Network Multipathing group	ipmp1
Adapter name and test IP address	qfe1, schost-86-t-1a
Backup adapter and test IP address (optional)	qfe5, schost-86-t-1b
Network name	net-86
Secondary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (optional)	
Network name	
Secondary hostname	
IP Network Multipathing group	
Adapter name and test IP address	
Backup adapter and test IP address (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

Disk Group/ Diskset Name	Node Names (indicate priority if ordered list)	Ordered priority? (circle one)	Failback? circle one)
		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: 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

