solaris

# HOW to INSTALL and CONFIGURE
# A TWO-NODE CLUSTER

> **Solaris™ 10** How To Guides

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# About This Solaris How To Guide

This Sun Cluster Two-Node Installation and Configuration How-To guide is intended to help a new or experienced Solaris user quickly and easily install and configure Sun Cluster software for two nodes, including the configuration of a quorum device. Users are guided step-by-step through the process, with examples and screenshots to simplify the process. This document will not cover the configuration of highly available services; that topic will be covered in a separate guide.

For more details about how to install and configure other Sun Cluster software configurations, see the Sun Cluster Software Installation Guide at docs.sun.com/app/docs/doc/819-0420.

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# Sun Two-Node Cluster How To Guide

## Sun Two-Node Cluster: Overview

This Sun Cluster Two-Node Installation and Configuration How-To guide uses the interactive scinstall utility. This utility enables you to configure all the nodes of your new cluster quickly and easily. The interactive scinstall utility is menu driven. These menus help reduce the chance of mistakes and promote best practices by using default values and prompting you for information specific to your cluster. The utility also helps prevent mistakes by identifying invalid entries. Finally, the scinstall utility eliminates the need to manually set up a quorum device by automating the configuration of a quorum device for your new cluster. This How-To Guide refers to the Sun Cluster 3.1 release. For more information about the latest Sun Cluster release, visit: sun.com/cluster.

## Prerequisites, Assumptions, and Defaults

### Configuration Assumptions

This How-To guide assumes the following configuration:

- You are installing on Solaris 10 6/06 and you have basic administration skills.
- You are installing Sun Cluster 3.1 8/05 software.
- You already have the Sun Cluster 3.1 8/05 software. If not, you can download it from sun.com/software/solaris/get.jsp; select the Sun Java Availability Suite and click Get Downloads & Media.
- The cluster hardware is a supported configuration for Sun Cluster 3.1 8/05 software. If you are not sure about your configuration, visit: sun.com/software/solaris/cluster/specs.xml.
- This is a two-node cluster, and you have a third system that will be your administrative console.
- Each node has two spare network interfaces to be used as private interconnects.
- SCSI shared storage is connected to the two nodes.
- All of the SCSI devices are supported by Sun Cluster software as potential quorum devices. For more information about SCSI devices that are supported for use as quorum device, see your Sun Cluster customer service representative or visit the online documentation at sun.com/app/docs/doc/819-0579?q=suncluster+3.1.
- Your setup looks like the drawing below. You might have fewer or more devices, depending on your system or network configuration.
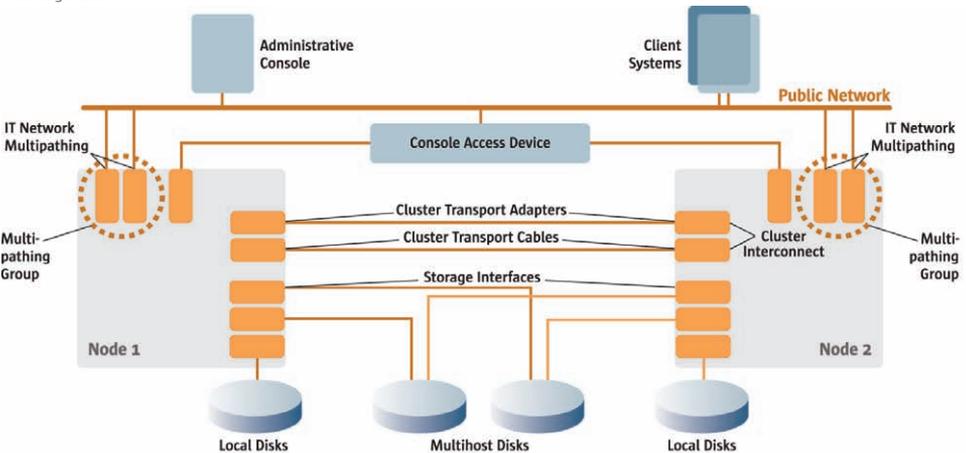


Figure 1—Sun Cluster Hardware Configuration

## Prerequisites for Each System

This How-To guide assumes that the following prerequisites have been met on both systems:

• Solaris 10 6/06 is installed.
• The Solaris software group is at least End User.
• A 512-Mbyte partition is named /globaldevices.
• (Optional) A 20-Mbyte partition is created on slice 7 for volume manager use.
• The latest patches have been installed on your systems using Sun Update Connection. For more information, visit
  sun.com/service/sunupdate/ or sunsolve.sun.com/.

If Solaris software is preinstalled on the servers that you will configure as cluster nodes, ensure that the Solaris OS meets the above criteria. If the Solaris OS does not meet these requirements, modify the configuration or reinstall Solaris software on each server.

## Initial Preparation of Public IP Addresses and Logical Hostnames

You have to add the logical names (hostnames) and IP addresses of the nodes to be configured as a cluster. Add those entries on each other's /etc/inet/hosts file or /etc/inet/ipnodes file or both, as appropriate, and to a naming service if used (like DNS or NIS+ maps).

In this example, the configuration is:

|  | Name | Interface | IP Address |
|---|---|---|---|
| Administrative Console | myconsole | ce0 | 192.168.1.1 |
| Cluster Name | mycluster |  |  |
| Node 1 | mynode1 | eri0 | 192.168.1.10 |
| Node 2 | mynode2 | eri0 | 192.168.1.11 |

## Defaults

The scinstall interactive utility in Typical mode installs Sun Cluster software with the following defaults:

• Private-network address 172.16.0.0
• Private-network netmask 255.255.248.0
• Cluster-transport switches switch1 and switch2
• Installation security (DES) level Limited

The example in this guide has no cluster-transport switches. Instead, the private-networking is resolved by using cross-over cables. More information can be found at: docs.sun.com/ (search for Sun Cluster 3.1 architecture).

In this example, the interfaces of the private interconnects are eri1 and hme0 on both cluster nodes. To find more information about how to identify your hardware, visit the Solaris 10 hardware platform guide: docs.sun.com/source/817-6337/chapterHPG.html

## Installing Sun Cluster Software Packages

1.  To use the GUI form of the installer program, set the display environment on your administrative console. In this
    example, we are using csh:

    ```
    myconsole# xhost +
    myconsole# setenv display myconsole:0.0
    ```

Continue using the administrative console for the next steps, and remember to perform them on both nodes, one at a
time.

2.  Become superuser on the cluster node on which you are installing Sun Cluster software. Use the telnet command to
    mynode1, then log in with the root login and password:

    ```
    myconsole# telnet mynode1
    mynode1 login: root
    password: ********
    ```

3.  Insert the Sun Cluster installation media into the appropriate media drive of the cluster node. If you are installing
    from a network, navigate to the appropriate media image.
4.  Change to the directory that contains the installer program (in this case the local DVD reader) and use the appropriate
    directory, depending on the architecture of your nodes. In the following example, use the first command for an
    UltraSPARC platform and the second command for all x86 systems:

    ```
    mynode1# cd /cdrom/cdrom0/solaris_sparc
    [Or]
    mynode1# cd /cdrom/cdrom0/solaris_x86
    ```

5.  Start the installer program:

    ```
    mynode1# ./installer
    ```

    It might take up to a minute for the installer GUI to display.
6.  Follow the instructions on the screen to install the Sun Cluster software.

On the welcome opening screen, click Next:
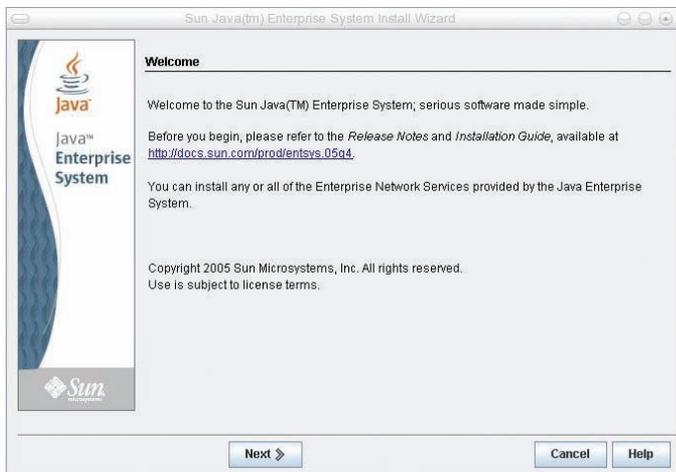


Click Yes, Accept License to accept the license agreement:
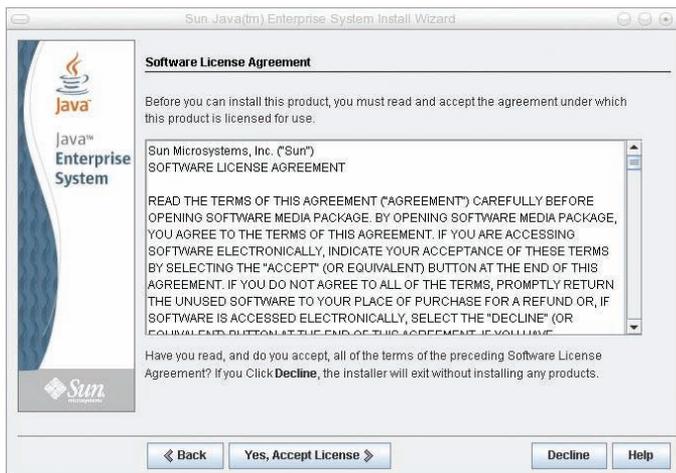
Choose extra languages support if desired, then click Next:



From the list of software to install, under Availability Services, select Sun Cluster 3.1u4:
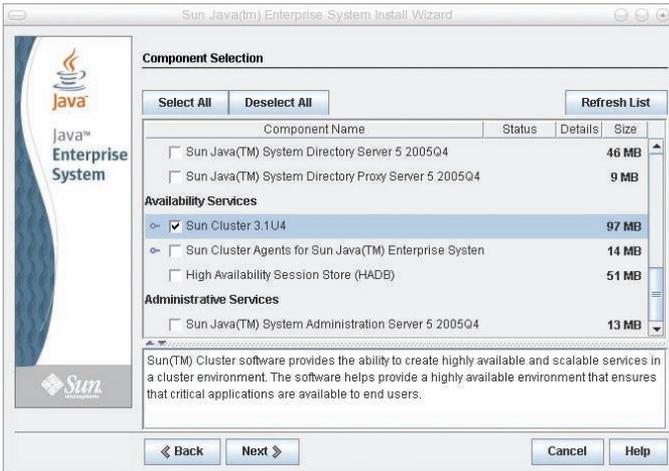
In the J2SE Software Development Kit Upgrade screen, select Automatically Update:



When prompted, choose Configure Later:
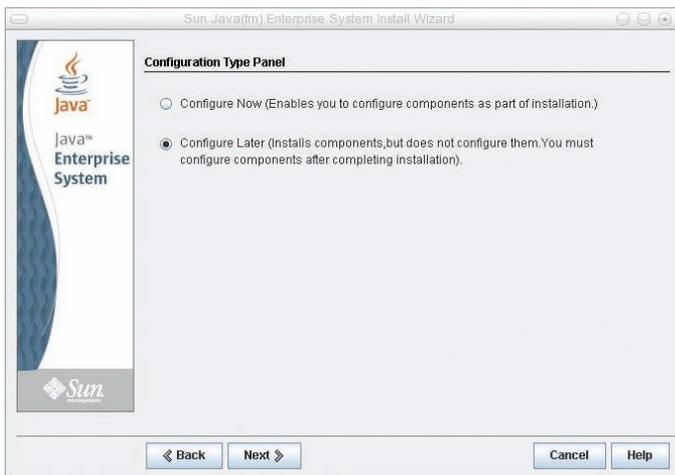
When you receive confirmation that the system is ready to install, click Next:
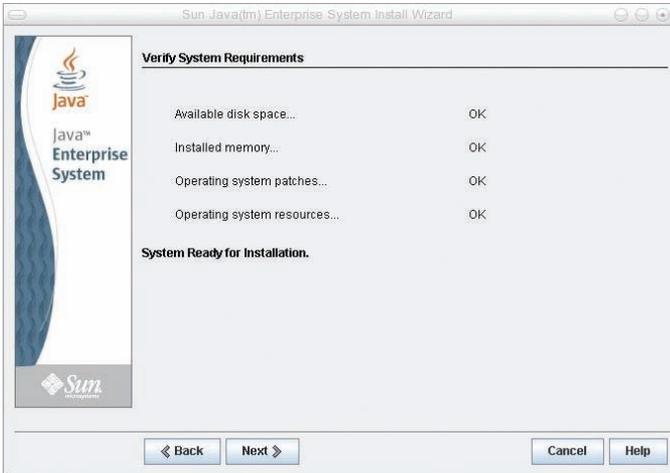


Click Next to confirm selections:
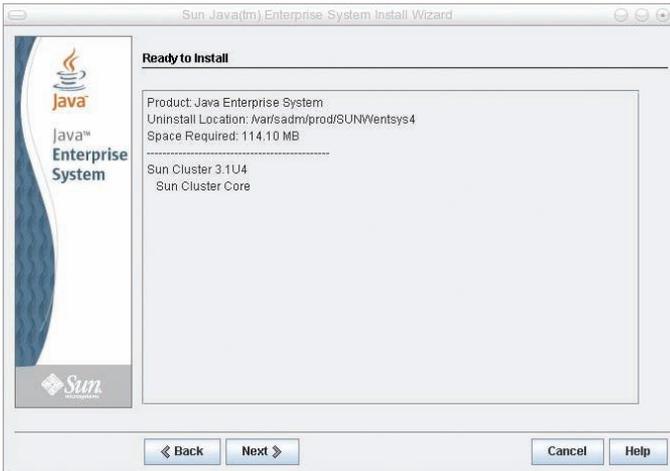
For product registration and installation, click Install:



The installer program installs Sun Cluster software packages plus additional software that is required to run certain Sun Cluster functionality. When finished, the installer program provides an installation summary.

7.  Now that you have finished the installation on Node1, go back to step 2 and start the installation process, this time for Node 2.

8.  Install any necessary patches.
    Go to sunsolve.sun.com/ and download the recommended patches for Java ES Component Patch Solaris 10 SPARC or x86 accordingly and install on each node.

## Configuring Sun Cluster Software

1. Log on to one of the two nodes. Start the scinstall utility in interactive mode as superuser:

```
# /usr/cluster/bin/scinstall
```

This procedure will configure the Sun Cluster software on both nodes.

2. From the Main Menu, type "1" to choose the menu item, Install a cluster or cluster node:

```
*** Main Menu ***

    Please select from one of the following (*) options:

      * 1) Install a cluster or cluster node
        2) Configure a cluster to be JumpStarted from this install server
        3) Add support for new data services to this cluster node
        4) Upgrade this cluster node
      * 5) Print release information for this cluster node
      * ?) Help with menu options
      * q) Quit

    Option:  1
```

3. From the Install Menu that appears, type "1" to choose the menu item, Install all nodes of a new cluster. Then confirm your choice by answering "y" when prompted:

```
*** Install Menu ***

    Please select from any one of the following options:

        1) Install all nodes of a new cluster
        2) Install just this machine as the first node of a new cluster
        3) Add this machine as a node in an existing cluster

        ?) Help with menu options
        q) Return to the Main Menu

    Option:  1
…
  *** Installing all Nodes of a New Cluster ***
…
    Do you want to continue (yes/no)? y
```

4.  From the Type of Installation menu, type "1" to choose Typical:

```
>>> Type of Installation <<<
…
    Please select from one of the following options:

        1) Typical
        2) Custom

        ?) Help
        q) Return to the Main Menu

    Option [1]:  1
```

5.  When prompted, supply the following information:

    • Name to give the cluster: mycluster
    • Name of the other node (if started from mynode1): mynode2
    • Type "yes" if correct and press Return to continue
    • The first private adapter name (interface name): eri1
    • The second private adapter name (interface name): hme0
    • Type "no" to disabling automatic quorum device selection
    • Type "yes" and press Return to continue
    • Type "no" to interrupting cluster creation for sccheck errors

At this point, the scinstall utility configures all cluster nodes and reboots the cluster. This might take several minutes. The cluster is established when all nodes have successfully booted into the cluster. Sun Cluster installation output is logged in a /var/cluster/logs/install/scinstall.log.*N* file.

6.  Verify on each node that multi-user services for the Service Management Facility (SMF) are online:

```
# svcs multi-user-server
STATE          STIME   FMRI
online         17:52:55 svc:/milestone/multi-user-server:default
```

If services are not yet online for a node, wait until the state becomes online before you proceed to the next step.

7.  From one of the nodes, verify that both nodes have joined the cluster:

```
# scstat -n
```

Output resembles the following:

```
-- Cluster Nodes --

                        Node name      Status
                        ---------      ------
  Cluster node:         mynode1        Online
  Cluster node:         mynode2        Online
```

At this point, the scinstall utility runs the following tasks:

• Configures the cluster nodes
• Chooses a SCSI device and configures it as a quorum device
• Removes the cluster from installation mode

When the scinstall utility finishes, this completes the installation and configuration of the basic Sun Cluster software.

The cluster is now ready to configure the components you will use to support highly available applications. These cluster components can include device groups, cluster file systems, highly available local file systems, and individual data services. To configure these components, consult the installation documentation detailed below.

## For More Information

For more information about configuring the Sun Cluster components, see the following manuals:

| Manuals | |
| --- | --- |
| Sun Cluster Software Installation Guide | docs.sun.com/app/docs/doc/819-0420 |
| Configuring the Cluster in the Sun Cluster Software Installation Guide | docs.sun.com/app/docs/doc/819-0420/6n2rlnnaa?a=view |
| Data Services Planning and Administration Guide | docs.sun.com/app/docs/doc/819-0703 |
| Individual Data Service Manuals | docs.sun.com/app/docs/coll/1124.4 |
| Sun Cluster 3.1 Administration | sun.com/training/catalog/courses/ES-338.xml |
| Sun Cluster Advanced Edition for Oracle RAC | sun.com/training/catalog/courses/WET-3094.xml |
| Sun Cluster Geographic Edition 3.1 Software Administration | sun.com/training/catalog/courses/ES-361.xml |
| Sun Cluster 3.1 Advanced Administration | sun.com/training/catalog/courses/ES-438.xml |
| For information on the latest Sun Cluster release, documentation and training, visit: | docs.sun.com/app/docs/doc/820-0335/6nc35dge2?a=view sun.com/training/savings/cluster.xml |

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