

SunSwift™ SBus Adapter Installation and User's Guide



The Network Is the Computer™

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Preface

This manual describes how to install and use your SBus card.

The procedures in this manual assume that you are a system or network administrator experienced in installing similar hardware and that you are familiar with Solaris administration.

UNIX Commands

This document may not include specific software commands or procedures. Instead, it may name software tasks and refer you to operating system documentation or the handbook that was shipped with your new hardware.

The type of information that you might need to use references for includes:

- Shutting down the system
- Booting the system
- Configuring devices
- Other basic software procedures

See one or more of the following:

- *Solaris 2.x Handbook for SMCC Peripherals* contains Solaris™ 2.x software commands.
- On-line AnswerBook™ for the complete set of documentation supporting the Solaris 2.x software environment.
- Other software documentation that you received with your system.

Typographic Conventions

The following table describes the typographic changes used in this book.

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. machine_name% You have mail.
AaBbCc123	What you type, contrasted with on-screen computer output	machine_name% su Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be root to do this.

Shell Prompts

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

Shell	Prompt
C shell	machine_name%
C shell superuser	machine_name#
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

Related Documents

The following documents contain topics that relate to the information in the *SunSwift SBus Adapter Installation and User's Guide*.

Title	Part Number
Your system installation or service manual	
<i>Solaris 2.4 Handbook for SMCC Peripherals</i>	801-6990
<i>Solaris 2.5 Handbook for SMCC Peripherals</i>	802-3725
<i>SMCC Open Issues Supplement Solaris 2.4</i>	802-2284
<i>SMCC Open Issues Supplement Solaris 2.5</i>	802-3708
<i>SMCC Open Issues Supplement Solaris 2.5 Hardware: 1/96</i>	802-3740
<i>Solaris 2.4 on Sun Hardware AnswerBook</i>	
<i>Solaris 2.5 on Sun Hardware AnswerBook</i>	
<i>SunVTS 1.0 User's Guide</i>	801-7271
<i>Platform Notes: The hme Fast Ethernet Device Driver</i>	802-3970

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note - This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into a power outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Shielded Cables

Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

Modifications



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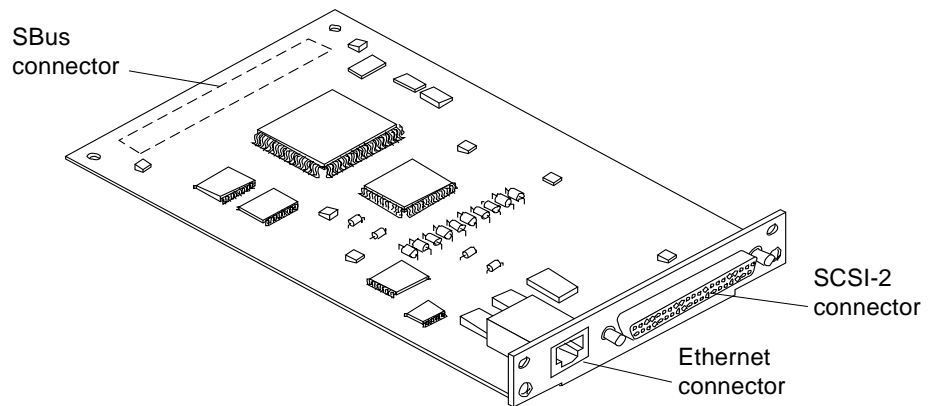
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Preparing for Installation



The SunSwift™ SBus Adapter offers Fast Ethernet and FastWide SCSI-2 capabilities on the same SBus card.



1.1 Features

This SBus card offers the following features:

- Switchable 10BASE-T/100BASE-TX Ethernet. Automatically sets 10/100 Mbps speed. Conforms to IEEE 802.3u Ethernet standard.
- 20 Mbytes/s, 16-bit, single-ended SCSI-2 controller. Conforms to ANSI X3T9.2 SCSI-2 standard.
- SBus interface to host system. Complies with IEEE 1496 SBus specification.

1.2 Requirements for Using the SBus Adapter

Before installing the adapter, make sure your system meets the following hardware and software requirements:

Hardware Requirements	Sun SPARCstation™ systems with an available SBus slot
Software Requirements	Solaris™ 2.4 Solaris 2.5 or later Solaris 2.x release
Supported Platforms	Solaris 2.4 SPARCstation 5*, SPARCstation 10, SPARCstation 20, SPARCserver™ 1000/1000E, SPARCcenter™ 2000/ 2000E, SPARCserver 6x0MP Solaris 2.5 Sun Ultra™ systems, SPARCstation 5*, SPARCstation 10, SPARCstation 20, SPARCserver 1000/1000E, SPARCcenter 2000/2000E, SPARCserver 6x0MP
Firmware	OpenBoot™ PROM Version 2.9 or greater
Peripherals	Only Sun SCSI-2 devices
SCSI Cables	Only standard, Sun-supported cabling to ensure reliable SCSI interface connections
Part Numbers	530-2115-02 (1.2 m 50-pin to 68-pin cable) 530-1884-03 (0.8 m 68-pin to 68-pin cable) 530-2228-01 (2 m 50-pin to 68-pin cable) 530-1885-03 (2 m 68-pin to 68-pin cable)

*Two SBus adapters maximum.

SCSI Cabling

You can daisy chain up to 15 devices on the SunSwift SBus Adapter as follows:

Wide-to-wide devices	Use a 68-pin to 68-pin cable. Always put wide SCSI devices closest to the host system.
Wide-to-narrow devices	Use a 68-pin to 50-pin cable. You can include only one wide-to-narrow cable along a chain of peripherals. Always put the narrow SCSI devices at the end of the chain.

The SCSI bus must be terminated at the end of the chain.

- Single byte data transfers from an odd memory address to a SCSI device are not supported by the SunSwift SBus Adapter SCSI-2 (fas) device. Refer to *SMCC Open Issues Supplement Solaris 2.5 Hardware: 1/96* for more detailed information.
- If you use the SunSwift SBus Adapter for SCSI purposes only, you *must* change the device name from `SUNW,hme` to `SUNW,hme_idle` to avoid a “Link Down – cable problem?” message. Refer to *SMCC Open Issues Supplement Solaris 2.5* for more detailed information.

Ethernet Cabling

An additional Ethernet cable is required if you want to use your system’s existing Ethernet interface *and* the SunSwift SBus Adapter Ethernet interface.

Disabling Your Current Ethernet Device

If you remove your system’s existing Ethernet cable (either from its on-board Ethernet device or from an existing Ethernet card) and insert it into the SunSwift SBus Adapter Ethernet connection, you must disable your current card’s Ethernet device. For example, if your current Ethernet device is called `le0`, you would remove its IP address and hostname from the `/etc/hosts` file and remove the `/etc/hostname.le0` file itself.

Installing the Adapter



This chapter tells you how to install the adapter in your system and verify that the adapter is correctly installed.

2.1 Performing the Installation

Note – Refer to your system installation or service manual (and the SCSI device installation manual, as necessary) for detailed instructions for the following tasks.

- 1. Power off your system, using the standard shutdown procedures described in *Solaris 2.x Handbook for SMCC Peripherals*.**
- 2. If you are replacing an SBus card with the SunSwift SBus Adapter, remove the old card now.**
- 3. Install the SunSwift SBus Adapter in the selected SBus slot.**
- 4. Attach the SCSI cable to the 68-pin SCSI connector on the adapter and to the SCSI device, if necessary.**

Note – Make sure you have an Ethernet cable for each interface.

- 5. Connect the Ethernet cable to the SunSwift SBus Adapter RJ-45 connector and to the hub.**

2.2 Verifying the Installation

After the SunSwift SBus Adapter is installed, *and before booting the system*, verify installation by performing the following tasks. Refer to the *Solaris 2.x Handbook for SMCC Peripherals* manual or your Solaris documentation for the detailed instructions.

1. **Power on the system, and when the banner appears, press the Stop-A keys to interrupt the boot process and to get to the `ok` prompt.**
2. **Use the `show-devs` command to list the system devices.**
You should see a line (similar to the one in the example below) in the display, specific to the SunSwift SBus Adapter:

```
ok show-devs
...
/iommu@f,e0000000/sbus@f,e0001000/SUNW,fas@0,8800000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@0,8c00000
...
```

- `fas@0` identifies the adapter's SCSI-2 device.
- `hme@0` identifies the adapter's Ethernet device.

Note – In the above example, the number 0 following `fas@` and `hme@` corresponds to the SBus slot in which the SunSwift SBus Adapter resides.

If you do not see these devices listed, check that the adapter is properly seated and reinstall the adapter, if necessary.

Diagnostics Testing

- For SunSwift SBus Adapter diagnostics testing on systems running Solaris 2.4, see Appendix A, “Running Diagnostics for Solaris 2.4.”
- For SunSwift SBus Adapter diagnostics testing on systems running Solaris 2.5, refer to the *SunVTS 1.0 User's Guide*.

2.3 *Watching Network Activity*

Make sure that you are connected to an active network.

◆ **You can watch network activity or incoming network packets by typing**

`watch-net-all:`

```
ok watch-net-all
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@3,8c00000
Internal loopback test -- succeeded.
Transceiver check -- Using Onboard Transceiver - Link Up.
passed
Using Onboard Transceiver - Link Up.
Looking for Ethernet Packets.
'.' is a Good Packet. 'X' is a Bad Packet.
Type any key to stop.
.....
```

Note – The network speed is the same as the speed of the hub to which your system is connected. See Chapter 3, Section 3.6, “Post-Installation Procedures (Optional)” for more detailed information on speed selection.

Where to Proceed

- See Chapter 3, “Installing SunSwift SBus Adapter Software On Solaris 2.4 and 2.5 Systems.”

Installing SunSwift SBus Adapter Software On Solaris 2.4 and 2.5 Systems



This chapter describes SunSwift SBus Adapter software installation requirements for Solaris 2.4 and 2.5 software versions only.

Note - You must have already installed the SunSwift SBus Adapter in your system prior to performing the following tasks.

3.1 *Preparing for Software Installation*

Note – If the CD-ROM drive that you are using for software installation is attached to a remote machine, refer to your SunOS installation guide for remote CD-ROM access.

For Solaris 2.5 Systems

Some newer systems are pre-loaded with the SunSwift SBus Adapter driver (`hme`). Before installing the driver from the CD-ROM, perform the following task.

- ◆ **As superuser, check for the `hme` driver and its revision number by using the `modinfo` command:**

```
# modinfo | grep hme
```

You should see a line similar to the example below if the driver is already installed:

```
51 50270000 9f78 7 1 hme (FEPS Ethernet Driver v 1.40)
```

- If the revision number is 1.40 or above, your system already has the SunSwift SBus Adapter driver, and loading from the CD is unnecessary.
- If the revision number is below 1.40, or nothing is displayed as a result of the `modinfo` command, install the software from the CD-ROM that came with the SunSwift SBus Adapter. (See below).

Installing Software From the CD-ROM for Solaris 2.4 and 2.5

- ◆ **Install the software drivers from the CD-ROM that came with the SunSwift SBus Adapter. Refer to the CD-ROM documentation that came with your adapter for driver installation instructions (Part No: 804-5303-10).**

3.2 Net-Install of Solaris 2.4 Over the hme Interface

This section is *only* applicable if you are installing Solaris 2.4 on a net-install client system *over* the SunSwift SBus Adapter (hme) interface.

Note – The Solaris 2.4 CD-ROM cannot be used to perform a net-install (read only), thus the Solaris 2.4 CD image archive is required to update certain SunSwift SBus Adapter files.

Updating the Solaris 2.4 Archive to Use the hme Interface

1. Determine the directory where the CD image is located on the boot server.

For example, if the Solaris software is located within a directory named DIR, change to the root partition of the client being installed by typing:

```
# cd DIR/export/exec/kvm/<archive_of_arch>/etc
```

The /etc/bootparams file will point you to the client's root partition.

2. Edit the name_to_major file by adding an entry for the SunSwift SBus Adapter device (hme).

If the major device number for the last file entry is n then use n+1 for the hme channel major device number. As shown in the example below, if the last entry for the major device number is 108, use 109 for the hme device.

```
# llcl 107
# audiocs 108
# hme 109
```

3. Copy the hme driver from the SunSwift SBus Adapter CD-ROM to the client's root partition as follows:

```
# cp /cdrom/sunswift_1_0/2.4/SUNWhmd/reloc/kernel/drv/hme \
DIR/export/exec/kvm/<archive_of_arch>/kernel/drv
```

4. On the client system, perform the tasks in Section 3.5.3, "Booting From the Network Using Solaris 2.4."

5. **Complete the client installation. Refer to your Solaris documentation for detailed instructions.**
6. **Reboot the system.**
7. **Install the software drivers from the CD-ROM that came with the SunSwift SBus Adapter. Refer to the CD-ROM documentation that came with your adapter for driver installation instructions (Part No: 804-5303-10).**

3.3 Host File Configuration

After installing the SunSwift SBus Adapter software, you must create a `hostname.hme<num>` file for its Ethernet interface. You must also create both an IP address and a hostname for its Ethernet interface in the `/etc/hosts` file.

To prepare your system for the SunSwift SBus Adapter:

1. **Create a `/etc/hostname.hme<num>` file, where `<num>` refers to the number of each SunSwift SBus Adapter channel you plan to use. For example, use channel `hme0` for the first card; use channel `hme1` for a second card.**
 - Do not create `/etc/hostname.hme<num>` files for SunSwift SBus Adapter channels you plan to leave unused. The `/etc/hostname.hme<num>` file must contain the hostname for the appropriate network interface.
 - The hostname should have an IP address and should be entered in the `/etc/hosts` file.
 - The hostname should be different from any other hostname of any other interface, for example: `/etc/hostname.le0` and `/etc/hostname.hme0` cannot share the same hostname.
 - Following is an example of the `/etc/hostname.hme<num>` files required for a machine called `zardoz` that will be known as `zardoz-11` and `zardoz-12` on the networks connected to the `hme0` and `hme1` Ethernet interfaces.

```
zardoz # cat /etc/hostname.hme0
zardoz-11
zardoz # cat /etc/hostname.hme1
zardoz-12
```

2. Create an appropriate entry in the `/etc/hosts` file for each active hme channel.

Using the example in step 1, you will have:

```
zardoz # cat /etc/hosts
...
127.0.0.1    localhost
129.144.10.57 zardoz    loghost
129.144.11.83 zardoz-11
129.144.12.41 zardoz-12
```

3.4 *Caution: Package Dependency*



Caution – There is a package dependency with the SunSwift SBus Adapter. Before proceeding, perform the following task.

- ◆ **As superuser, check for the adapter packages by using the `pkginfo` command:**

```
# pkginfo | grep SUNWhmd
```

- If you see lines containing `SUNWhmdl` and `SUNWhmdl` *and* lines containing `SUNWhmd` and `SUNWhmdu`, then do not remove any of these packages from your system.

3.5 Booting

The following sections discuss various ways of booting. See the section that applies to your specific needs.

3.5.1 Booting From the Network Using Solaris 2.5

To use the SunSwift SBus Adapter Ethernet interface as the boot device for Solaris 2.5 systems, perform the following tasks.

1. At the `ok` prompt type:

```
ok show-devs
```

The `show-devs` command lists the system devices. You should see the full path name of the `hme` device, similar to the example below:

```
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@3,8c00000
```

2. At the `ok` prompt type:

```
ok boot (full path name of the hme device)
```


3.5.2 Diskless Client Booting for Solaris 2.4

In order to boot a diskless client with a local SunSwift SBus Adapter interface (hme) on a Solaris 2.4 system, the following tasks must be performed on the boot server.

1. Go to your client's root partition by typing the following:

```
# cd /export/root/<client name>/etc
```

2. Edit the `name_to_major` file by adding an entry for the SunSwift SBus Adapter device (hme).

If the major device number for the last file entry is `n` then use `n+1` for the hme channel major device number. As shown in the example below, if the last entry for the major device number is 104, use 105 for the hme device.

```
# qec 103
# qe 104
# hme 105
```

3. Copy the hme driver from the CD-ROM to the client's root partition as follows:

```
# cp /cdrom/sunswift_1_0/2.4/SUNWhmd/reloc/kernel/drv/hme \
/export/root/<client name>/kernel/drv/hme
```

4. Create a `hostname.hme<num>` file for the client in the `/etc` directory in the client's root partition.

Proceed to Section 3.5.3, "Booting From the Network Using Solaris 2.4" for the client system.

3.5.3 Booting From the Network Using Solaris 2.4

The device name of newer SBus cards for Solaris 2.5 is identified by a “SUNW,” prefix. If your system is running Solaris 2.4, it will not recognize the device. Perform the following tasks to set up your system so the device driver can recognize the SunSwift SBus Adapter.

1. At the `ok` prompt type:

```
ok setenv use-nvramrc? true
ok show-devs
```

The `show-devs` command lists the system devices. You should see the full path name of the `hme` device, similar to the example below:

```
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@3,8c00000
```

2. Type:

```
ok nvedit
```

3. Type the following exactly as shown, spaces and quotation marks included, pressing the Return key at the end of lines 0, 1 and 2:

```
0: probe-all install-console banner
1: cd (full path name of the hme device)
2: " hme" nameprop
3: device-end
```

4. Press the Control-C keys after typing `device-end`.

5. At the `ok` prompt, type:

```
ok nvstore
ok reset
```

Your system will reset and the banner will appear.

6. Press the Stop-A keys to get to the `ok` prompt.
7. At the `ok` prompt, type `show-devs` to list your system devices and verify that the name property was changed correctly.
You should see the full path name of the `hme` device, *excluding* `SUNW`, prior to `hme`, similar to the example below:

```
/iommu@f,e0000000/sbus@f,e0001000/hme@3,8c00000
```

8. At the `ok` prompt, type:

```
ok boot (full path name of the hme device)
```

3.6 Post-Installation Procedures (Optional)

Perform the tasks in the following sections to verify and customize the performance of the SunSwift SBus Adapter.

3.6.1 Using Hubs That Do Not Send Link Pulses

Certain hubs are not compliant with the IEEE 802.3 Ethernet standards for link pulses, therefore do not send link pulses. To connect your system to these non-compliant hubs, you need to disable your system from looking for link pulses.

1. At the `ok` prompt type:

```
ok show-devs
```

The `show-devs` command lists the system devices. You should see the full path name of the `hme` device, similar to the example below:

```
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@3,8c00000
```

2. Type:

```
ok nvedit
```

3. Type the following, pressing the Return key at the end of line 0:

```
0: probe-all install-console banner
1: apply disable-link-pulse (full path name of the hme device)
```

4. Press the Control-C keys after typing (full path name of the hme device).

5. At the `ok` prompt, type:

```
ok nvstore
ok setenv use-nvramrc? true
```

6. Reboot your system.

3.6.2 Configuring Driver Parameters

The `hme` device driver, which is loaded from the CD-ROM, controls the `SUNW,hme` Ethernet device. The device driver automatically selects the link speed using the auto-negotiation protocol with the link partner. (See Section 3.6.5, “Auto-Negotiation.”)

You can manually configure the `hme` device driver parameters to customize each `SUNW,hme` device in your system in one of three ways:

- Configure the `hme` driver parameters generally for all devices in the system by entering the parameter variables in the `/etc/system` file.
- Set a parameter on a per-device basis by creating the `hme.conf` file in the `/kernel/drv` directory.
- Use the `ndd` utility to *temporarily* change a parameter. This change is lost when you reboot the system.

3.6.3 Increasing 100BASE-T Performance

The 100BASE-T performance of the SunSwift SBus Adapter can be increased by changing the TCP hiwater marks to 64K. This can be done with the `ndd` utility as follows.

1. As superuser type:

```
# ndd -set /dev/tcp tcp_xmit_hiwat 65535
# ndd -set /dev/tcp tcp_recv_hiwat 65535
# ndd -set /dev/tcp tcp_cwnd_max 65534
```

The changes will take effect immediately.

3.6.4 Forcing Network Speed Between 10 Mbps and 100 Mbps

1. At the `ok` prompt, use the `show-devs` command to list the system devices. You should see the full path name of the `hme` device, similar to the example below:

```
/iommu@f,e0000000/sbus@f,e0001000/SUNW,hme@3,8c00000
```

2. Type:

```
ok nvedit
```

3. Type the following, pressing the Return key at the end of line 0:

```
0: probe-all install-console banner
1: apply transfer-speed=10 (full path name of the hme device)
```

4. Press the Control-C keys after typing (full path name of the `hme` device).

Note – In the above example, the speed is forced to 10 Mbps. To force the speed to 100 Mbps, replace 10 with 100.

5. At the `ok` prompt type:

```
ok nvstore
ok setenv use-nvramrc? true
```

6. Reboot your system.

Refer to the *Platform Notes: The hme Fast Ethernet Device Driver* document (Part No: 802-3970) for more information on the `hme` device driver and forcing network speed. This document is also available on the Solaris 2.5 and the Solaris 2.5: 1/96 AnswerBook.

3.6.5 Auto-Negotiation

A key feature of the SunSwift SBus Adapter is auto-negotiation. The *auto-negotiation* protocol, as specified by the 100BASE-T standard, automatically selects the operation mode (half-duplex or full-duplex) and speed (10 Mbps or 100 Mbps) for the adapter.

The `hme` device driver operates the `SUNW,hme` device by default in half-duplex mode only.

If the SunSwift SBus Adapter is connected to a remote system or interface that is not capable of auto-negotiation, your system automatically selects the speed and half-duplex mode.

If the SunSwift SBus Adapter is connected to a link partner with which the auto-negotiation protocol fails to operate successfully, you can configure the device to not use this protocol and force the driver to set up the link in the mode and speed of your choice.

Refer to the *Platform Notes: The hme Fast Ethernet Device Driver* document (Part No: 802-3970) for more information on the `hme` device driver and auto-negotiation. This document is also available on the Solaris 2.5 and the Solaris 2.5: 1/96 AnswerBook.

Running Diagnostics for Solaris 2.4



Note – For Solaris 2.5 diagnostics testing, refer to the *SunVTS 1.0 User's Guide*.

A.1 Sundiag

Sundiag is an on-line system exerciser that runs diagnostic hardware tests. It is used primarily with the OpenWindows software interface that enables you to quickly and easily set test parameters to run tests.

Note – Sundiag does not probe for SunSwift SBus Adapter devices by default. For Sundiag to acknowledge an hme<num> channel, the `.usertest` file must be edited before bringing up Sundiag, as described in the following section.

A.1.1 Editing `.usertest` File

1. Login as superuser and then type the following:

```
zardoz# cd /opt/SUNWdiag/bin
```

2. Edit the file `.usertest` by adding the following line wherein the format is test label, test name, and command-line arguments.

The example given is for a single `hme0` interface; for multiple channels add an additional line for each channel using `hme1`, `hme2`, etc.:

```
hme0, nettest, IF=hme0 v
```

Because testing the SunSwift SBus Adapter is user defined, default options are not displayed in Sundiag. Test options for an `hme<num>` channel can be defined in the `.usertest` file using the command `nettest`. Type the command `nettest` without arguments for a list of options, for example:

```
zardoz# nettest
Usage: nettest [TARGET=h1+h2...] [IF=interface] {TEST=0..7}
N=nopkts} {P=pattern} [T=seconds]
```

A.1.2 The Sundiag Window

Note – Examples in this section show Sundiag running in the OPEN LOOK® environment. Sundiag run in the SunView™ environment will look different.

To start Sundiag, `cd` to the Sundiag directory (`/opt/SUNWdiag/bin/sundiag`) and then type the `sundiag` command. After you enter the `sundiag` command, the Sundiag window is displayed on your screen, refer to Figure A-1. This window is the primary interface for running Sundiag. Refer to the Sundiag manual that came with your operating system for further details.

The Sundiag window is divided into four small windows:

- The system status window at the upper-left of the screen displays the status of the tests.
- The performance monitor panel in the upper-middle of the screen displays the performance statistics for the system that is under test.
- The control panel is located at the right. The panel includes buttons, exclusive choice, toggle, and pop-up menus that allow you to select test parameters and options.
- The console window at the bottom-left displays test messages, and allows you, as a superuser, to use operating system commands.

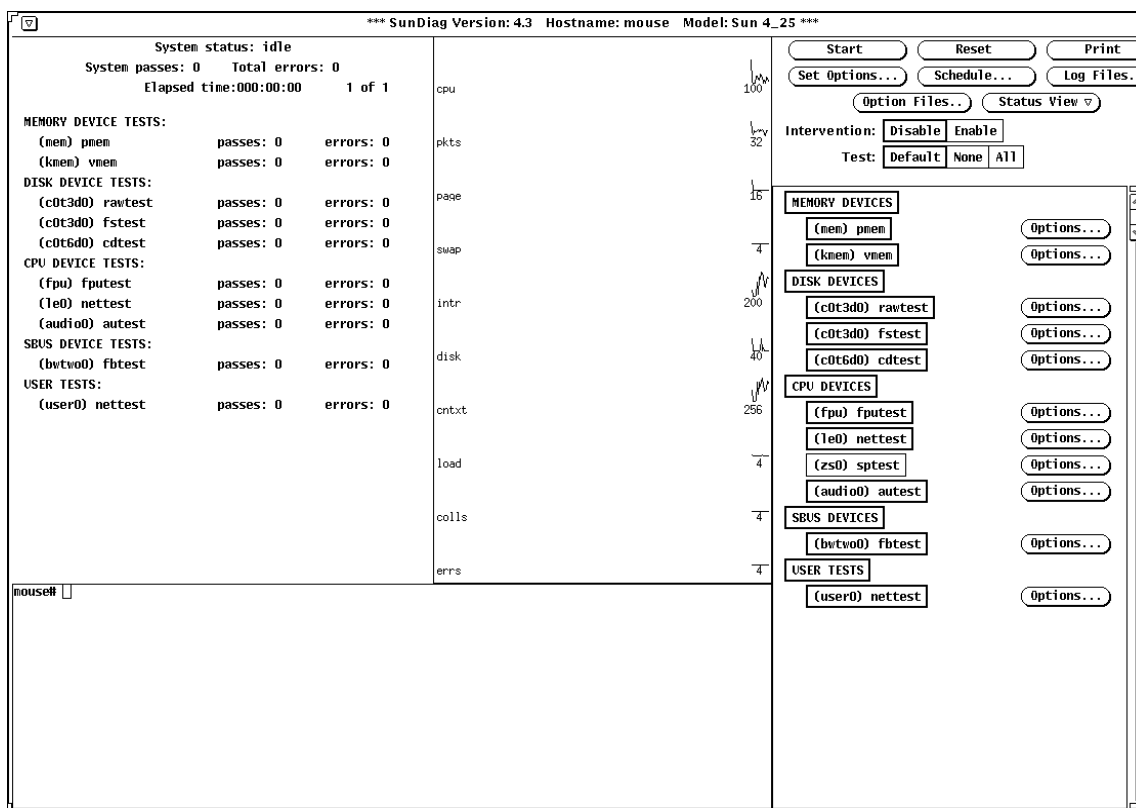


Figure A-1 Sundiag Window

A.1.3 Starting the Test

- 1. Review the information in the control panel, which identifies the devices that are available for testing.**

Click on the device that you want to test, in this case (*USER 0*) `nettest`. Your selection is confirmed with the display of a highlighted box next to the device name.

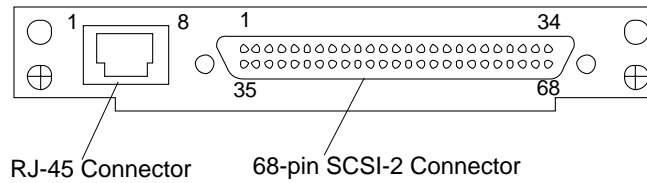
- 2. Click on the Start button.**
- 3. Watch the console window for messages.**
- 4. To interrupt a test or to stop after a test is completed, click on the Stop button.**

If no problems are identified during the testing, the SunSwift SBus Adapter is ready for operation in your system. Click on the Quit button to exit Sundiag.

Interface Signals



B.1 SunSwift SBus Adapter Connectors



B.2 RJ-45 Connector Signals

Pin	Signal
1	Transmit+
2	Transmit-
3	Receive+
4	No Connection
5	No Connection
6	Receive-
7	No Connection
8	No Connection

B.3 SCSI-2 Connector Signals

Pin	Signal	Pin	Signal
1	SCSI_GND	35	SCSI_D<12>_
2	SCSI_GND	36	SCSI_D<13>_
3	SCSI_GND	37	SCSI_D<14>_
4	SCSI_GND	38	SCSI_D<15>_
5	SCSI_GND	39	SCSI_DATA_PARITY1_
6	SCSI_GND	40	SCSI_D<0>_
7	SCSI_GND	41	SCSI_D<1>_
8	SCSI_GND	42	SCSI_D<2>_
9	SCSI_GND	43	SCSI_D<3>_
10	SCSI_GND	44	SCSI_D<4>_
11	SCSI_GND	45	SCSI_D<5>_
12	SCSI_GND	46	SCSI_D<6>_
13	SCSI_GND	47	SCSI_D<7>_
14	SCSI_GND	48	SCSI_DATA_PARITY0_
15	SCSI_GND	49	SCSI_GND
16	SCSI_GND	50	SCSI_GND
17	SCSI_TERMPOWER	51	SCSI_TERMPOWER
18	SCSI_TERMPOWER	52	SCSI_TERMPOWER
19	PULLUP	53	PULLUP
20	SCSI_GND	54	SCSI_GND
21	SCSI_GND	55	SCSI_ATN_
22	SCSI_GND	56	SCSI_GND
23	SCSI_GND	57	SCSI_BSY_
24	SCSI_GND	58	SCSI_ACK_
25	SCSI_GND	59	SCSI_RST_
26	SCSI_GND	60	SCSI_MSG_
27	SCSI_GND	61	SCSI_SEL_
28	SCSI_GND	62	SCSI_CD_
29	SCSI_GND	63	SCSI_REQ_
30	SCSI_GND	64	SCSI_IO_
31	SCSI_GND	65	SCSI_D<8>_
32	SCSI_GND	66	SCSI_D<9>_
33	SCSI_GND	67	SCSI_D<10>_
34	SCSI_GND	68	SCSI_D<11>_

Specifications



C.1 Physical Characteristics

Length	5.78 in. (147.70 mm)
Width	3.3 in. (83.82 mm)
Weight	4.0 oz. (113.40 g)

C.2 Power Requirements

Maximum Power Dissipation	9.5 Watt
Power Consumption	0.9 Amps @ 5Volts
Voltage Tolerance	5V +/- 5%
Ripple	Maximum 100 mV
Operational Current	1.9A

C.3 Performance Specifications

Maximum Ethernet Transfer Rate	10/100 Mbps
Network Interface	100BASE-TX using Category 5 (data-grade) cable; 10BASE-T using Category 3 (voice-grade) cable or better
Ethernet Version	Conforms to IEEE 802.3u
SCSI Interface	20 Mbytes/s, 16-bit single-ended
SBus Clock	16.67 MHz to 25 MHz
SBus Burst Sizes	16/32/64 bytes
SBus Modes	Master/Slave, 64-bit support
SBus Parity	Yes
SBus Version	Conforms to IEEE 1496

