SCO® Advanced Hardware Supplement (AHS)

Release 5.2.0
Release and Installation Notes

for SCO OpenServer™

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About this book

You will find the information you need more quickly if you are familiar with:

- "How this book is organized" (this page)
- "Related documentation" (this page)
- "Typographical conventions" (page 2)

Although we try to present information in the most useful way, you are the ultimate judge of how well we succeed. Please let us know how we can improve this book (page 3).

How this book is organized

After introducing SCO® system products, this book includes the following:

- Chapter 1, "Before installing AHS" (page 5)
- Chapter 2, "Installing the AHS 5.2.0 software" (page 15)
- Chapter 3, "Removing the AHS software" (page 25)

Related documentation

The AHS documentation set includes the following online books:

AHS Release and Installation Notes
: contains notes about installing AHS components and system requirements. PostScript® and ASCII versions of the Advanced Hardware Supplement Release 5.2 are also available.

AHS Features and Limitations
describes new features, supported devices, and known limitations for AHS components.

Configuring Video Adapters
provides information about configuring graphics drivers.

Configuring Network Connections
provides information about configuring network drivers.

Typographical conventions

This publication presents commands, filenames, keystrokes, and other special elements as shown here:

Example:	Used for:
lp or **lp**(C)	commands, device drivers, programs, and utilities (names, icons, or windows); the letter in parentheses indicates the reference manual section in which the command, driver, program, or utility is documented
/new/client.list	files, directories, and desktops (names, icons, or windows)
root	system, network, or user names
filename	placeholders (replace with appropriate name or value)
⟨Esc⟩	keyboard keys
`Exit program?`	system output (prompts, messages)
yes or **`yes`**	user input
“Description”	field names or column headings (on screen or in database)
Cancel	button names
Edit	menu names
Copy	menu items
File ⇨ Find ⇨ Text	sequences of menus and menu items
open or **open**(S)	library routines, system calls, kernel functions, C keywords; the letter in parentheses indicates the reference manual section in which the file is documented
$HOME	environment or shell variables
SIGHUP	named constants or signals
“adm3a”	data values
employees	database names
orders	database tables

buf	C program structures
b_b.errno	structure members

How can we improve this book?

What did you find particularly helpful in this book? Are there mistakes in this book? Could it be organized more usefully? Did we leave out information you need or include unnecessary material? If so, please tell us.

To help us implement your suggestions, include relevant details, such as book title, section name, page number, and system component. We would appreciate information on how to contact you in case we need additional explanation.

To contact us, use the card at the back of the *SCO OpenServer Handbook* or write to us at:

Technical Publications
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USA

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Thank you.

Chapter 1

Before installing AHS

Advanced Hardware Supplement (AHS) Release 5.2.0 provides device drivers and documentation to support the latest hardware on SCO OpenServer™ systems for:

- graphics devices
- network adapters
- mass storage devices
- multiprocessing systems

AHS software and documentation is available on:

CD-ROM distribution
: You can install the entire AHS 5.2.0 product or individual AHS components from the SCO OpenServer Release 5.0.2 CD-ROM distribution.

SCO Online Support
: You can download the entire AHS 5.2.0 product or individual AHS components from the SCO Online Support (SOS) system using:

  - WWW access
  - **ftp**
  - **telnet**
  - dial-up access

  See "Downloading AHS components" (page 9).

Floppy disk distribution
: You can install the entire AHS 5.2.0 product or individual AHS components from the AHS Release 5.2.0 floppy disk distribution or from disk images downloaded from the SOS system.

See also "Creating installation floppy disks" (page 13).

Before installing AHS components, familiarize yourself with:

- AHS 5.2.0 system requirements (this page)
- AHS 5.2.0 system components (page 7)
- SSOs and AHS 5.2.0 (page 8)

Then, see Chapter 2, "Installing the AHS 5.2.0 software" (page 15).

NOTE After installation, we recommend that you review *AHS Features and Limitations* before configuring individual device drivers. *AHS Release and Installation Notes* and *AHS Features and Limitations* are installed by default when any AHS 5.2.0 component is installed.

System requirements

AHS Release 5.2.0 is supported on these platforms:

- SCO OpenServer Release 5.0.2
- SCO OpenServer Release 5.0.0d with the Network Maintenance Supplement installed

If AHS Release 5.1.0 is installed on an SCO OpenServer Release 5.0.0d system, AHS Release 5.2.0 will update it.

Installing the entire AHS Release 5.2.0 product requires approximately 13MB of disk space; the Graphics and Network Drivers components each require about 5MB, and the Mass Storage and Multiprocessing components together require about 2.5MB.

WARNING

- Do not install AHS Release 5.2.0 on a system that is a server for networked operating system installation (initial system load, or ISL). If you do, networked ISLs will no longer be possible from that machine.
- If you intend to add local language support for SCO OpenServer Release 5.0.2, do so before installing AHS Release 5.2.0. If you install language support after installing AHS, screen messages and documentation may not correspond to installed software. Reinstalling AHS Release 5.2.0 will correct this problem.

About AHS components

AHS Release 5.2.0 includes these technology components:

Graphics Drivers

Includes graphics drivers, *grafinfo* files, and *moninfo* files for all supported graphics devices, plus an updated version of the **Video Configuration Manager**, a revised *Configuring Video Adapters* book, and new context-sensitive help for the video configuration software.

Installing this component will update any configured devices on your system. Additional devices can be configured with the **Video Configuration Manager** after the AHS software is installed.

See Chapter 1, “Graphics drivers: features and limitations” in the *AHS Features and Limitations*.

Network Drivers

Includes driver binaries and support files for all supported network devices, plus an updated version of the **Network Configuration Manager**, a revised *Configuring Network Connections* book, and new context-sensitive help for the network configuration software.

Installing this component will update any configured devices on your system. Additional devices can be configured with the **Network Configuration Manager** after the AHS software is installed.

See Chapter 2, “Network drivers: features and limitations” in the *AHS Features and Limitations*.

Mass Storage Drivers

Includes driver binaries and support files for SCSI host adapters, the SCSI jukebox peripheral drive, the Irwin tape drive, and ESDI and WD (EIDE and ATAPI CD-ROM) disk drives.

The boot-time loadable drivers (BTLDs) that are included in the Mass Storage Drivers component can be installed directly at boot time using the **link**(HW) or **ahslink** commands; see “Using BTLDs at installation time” (page 21).

NOTE See “Creating a BTLD disk” (page 13) if you are downloading the Mass Storage Drivers component and you want to use a boot-time loadable driver BTLD at installation time.

See Chapter 3, “Mass storage drivers: notes and limitations” in the *AHS Features and Limitations*.

Multiprocessing Drivers

Software to support the Tricord PowerFrame and APIC (Intel MPS) platforms.

See Chapter 4, “Multiprocessing drivers: notes and limitations” in the *AHS Features and Limitations*.

AHS Base Documentation and Tools
Provides support for other AHS components. Do not select this component for installation; it is automatically installed by the other components that require it. Selecting this component installs only documentation.

About SSOs and AHS releases

AHS Release 5.2.0 components use the SCO OpenServer software storage object (SSO) architecture. For SCO OpenServer Release 5.0.0, each of these components was contained in a single SSO. In subsequent AHS releases, these large SSOs are replaced by a collection of smaller SSOs to allow for more modular upgrades in future releases. The Graphics and Network Drivers were reorganized in AHS Release 5.1.0, and the Mass Storage Drivers were reorganized in AHS Release 5.2.0.

You will not be affected by this SSO reorganization if you are installing AHS Release 5.2.0 components as an entire product or a technology component.

If you install a single driver package, you **must** first install the appropriate configuration tool:

Video Configuration Manager
for the Graphics Drivers component

Network Configuration Manager
for the Network Drivers component

AHS Base Documentation and Tools
for the Mass Storage Drivers Component

WARNING If you install the AHS Release 5.2.0 graphics or network single driver packages on SCO OpenServer systems without AHS Release 5.1.0 installed and without first installing the appropriate configuration tool, you will remove existing drivers of that technology.

You will lose configuration information:

- when you update the **Network Configuration Manager**.
- if you install graphics or network single driver packages when two or more drivers are configured in the system. Configuration information will be lost for at least one of the drivers.

If you need to install single driver packages under these conditions, write down your network configuration information before installing new drivers.

The mass storage drivers are not affected by these problems.

The Multiprocessing Drivers component is not affected by the SSO reorganization, so single driver packages can be installed from this component on all supported platforms.

Downloading AHS components

To download AHS components or the entire AHS product from the SCO Online Support (SOS) system:

1. Create a */tmp/ahs5_2* directory (or other directory of your choice) and change directories to it:

   mkdir /tmp/ahs5_2
   cd /tmp/ahs5_2

2. Download AHS components using one of these methods:
   - WWW access (page 10)
   - **ftp** (page 10)
   - **telnet** (page 10)
   - dialup access (page 11)

3. Install the AHS components you downloaded according to the instructions in Chapter 2, "Installing the AHS 5.2.0 software" (page 15). The components will appear as "media images" on the local host during the installation process.

> **NOTE** It is not necessary to transfer downloaded AHS disk images to floppy disk before installing the components. Doing so will considerably lengthen the installation process. However, if you need to install AHS components from floppy disks, see "Creating installation floppy disks" (page 13).
>
> If you are downloading BTLD components and you want to use a BTLD at installation time, you must first create a BTLD floppy disk. See "Creating a BTLD disk" (page 13).

For more information about the SCO Online Support (SOS) system, see "SCO Online Support" in the introduction to the printed version of the SCO OpenServer *Release Notes*. Also, consult the *README* files included in SOS system directories before downloading AHS components.

WWW

To download AHS components from the SCO World Wide Web (WWW) site, point your WWW browser (such as **scohelp**, Netscape, or NCSA Mosaic) to this URL (Uniform Resource Locator):

http://www.sco.com/

To access current information about AHS and other SCO support services, click on "Services."

ftp

To download AHS components using anonymous **ftp**(TC):

1. Establish an **ftp** connection by entering:

   ftp -i ftp.sco.com

2. Log in as *anonymous*, giving your e-mail address for the password.
3. Enter:

   cd AHS

4. After consulting READMEs for current information, download the desired components and exit **ftp**.

telnet

To download AHS components using **telnet**(TC):

1. Establish a **telnet** connection by entering:

   telnet SOS.sco.com

2. After entering the appropriate terminal type, select “Toolchest” from the SOS system menu, then “AHS.”
3. After consulting the “List” to determine the files you need, follow the menu instructions to download files.

   When you enter the name of a file, you will be given a list of transfer protocols. Depending on the transfer protocol selected, you may be required to enter a **receive** command before proceeding.
4. After when downloading is complete, return to the main menu and exit.

Dial-up connections

When downloading from the SOS system using a dialup modem line, two choices are available:

- an interactive login from a DOS-based PC (this page), followed by download via the XMODEM, YMODEM, ZMODEM, or KERMIT protocols
- a non-interactive download using UUCP file transfer protocol from an SCO system (page 12) (probably the machine on which the AHS software is to be installed)

Downloading from a DOS-based PC

NOTE You must have a serial communication package that includes one of the following transfer protocols:

- XMODEM
- XMODEM-1K
- YMODEM
- ZMODEM
- kermit (binary mode)

To download AHS components using dial-up connections:

1. Use your modem and communications software to call either the US or the UK, depending on location:

   For the US site:
   (408) 426-9495 (for 300 to 14.4K baud modems).
   (408) 426-9525 (if you have a Telebit modem, 19.2K or lower)

   For the UK site:
   +44 (0) 1923 210 888 (up to 2,400 baud)
2. After a welcome message, enter **sos** when prompted for an SOS login.

3. Set your terminal type or choose line-by-line mode.
4. At the SOS system menu, select "Toolchest," then "AHS."
5. After consulting the "List" to determine the files you need, choose "Download" and enter the name of the file to be downloaded.

   You will then be given the list of transfer protocols mentioned above. Depending on the transfer protocol selected, you may be required to enter a **receive** command before downloading proceeds.

   > **NOTE** Some of the download protocols transmit the filename along with the file data. Since some of the filenames on the SOS system are not compatible with DOS filename conventions, this may cause the download to fail. To work around this problem, use a protocol such as XMODEM that does not transmit the filename, giving you the opportunity to manually enter a different name.

6. When downloading is complete, copy the file to a floppy disk.
7. Use **doscp**(C) to copy the file to the SCO OpenServer target machine and convert it to a UNIX file by entering:

   doscp -r ***DOS.files*** **.**

   The **-r** option prevents newline conversions and forces a true byte copy, regardless of file type.

Downloading from an SCO system using UUCP

1. After configuring your modem for dialing out, configure UUCP recognize the SCO system that contains the files. Add one of the following lines to the end of the *Systems* configuration file in the directory */usr/lib/uucp* (if they do not already exist):

   - v.32 compatible modem:
     ```
     sosco Any ACU Any 14084253502 -\r\d-ogin:-\K\d-ogin:-\K\d-ogin: uusls
     ```
   - Telebit modem (PEP mode only):
     ```
     sosco Any ACU Any 14084291786 -\r\d-ogin:-\K\d-ogin:-\K\d-ogin: uusls
     ```

2. Once the system is configured, use the **uucp**(C) command to request files from the remote system. All files for AHS Release 5.2.0 reside in */usr/spool/uucppublic/AHS/5.0/sco/5.2*.

   First, download the *README* for a list of files and other relevant information:

   uucp sosco!/usr/spool/uucppublic/AHS/5.0/sco/5.2/README /tmp/README

3. Download other files as necessary.

If you are using the C shell command interpreter, you must enter a backslash character (\) before the exclamation mark (“ ! ”) to prevent the C shell history mechanism from intercepting the rest of the command line.

NOTE In general, a local directory other than */tmp* is not accessible using UUCP for downloading without configuring the */usr/lib/uucp/Permissions* file. See the **uucp**(C) manual page about downloading directly to local directories.

Creating installation floppy disks

To create a set of floppy disks for installing AHS:

1. If the AHS software is not yet accessible (on a local or remote machine), download media images according to the instructions in “Downloading AHS components” (page 9)
2. Copy the media images to formatted floppy disks using the **dd**(C) command, for example:

   dd if=/*image_directory*/*images* of=/dev/rfd0

   The directory containing the media images will be located on your CD-ROM or in a directory on a hard disk (such as */tmp/ahs5_2*.
3. Install AHS components according to the instructions in “Installing from floppy disks” (page 19).

Creating a BTLD disk

If you downloaded mass storage drivers and you want to use a BTLD driver at installation time, you must create a BTLD disk to use as your boot disk.

NOTE If you have the AHS Release 5.2.0 CD-ROM distribution, you do not need to create a BTLD disk; one is included with the distribution.

To create a BTLD disk:

1. Download the media image marked “BTLD disk”.
2. Copy the media image to a formatted floppy disk using the **dd**(C) command, for example:

   dd if=/tmp/ahs5_2/*btld_disk_image* of=/dev/rfd0

3. Use the BTLD disk as your boot disk as described in “Using BTLDs at installation time” (page 21).

Chapter 2

Installing the AHS 5.2.0 software

You can intall the AHS 5.2.0 software and documentation:

- complete product, containing all types of supported drivers
- technology component, containing single types of supported drivers:
  - graphics drivers
  - network drivers
  - mass storage drivers; see special instructions in "Installing BTLD and mass storage drivers" (page 20)
  - multiprocessor drivers; see special instructions in "Installing multiprocessing drivers" (page 23)
- as single driver packages

Install AHS 5.2.0 software and documentation from:

- the CD-ROM distribution (page 16)
- downloaded files (page 17)
- floppy disks (page 19)

If you install graphics or network drivers, you must configure them using the:

Video Configuration Manager
: see Chapter 1, "Configuring video adapters" in *Configuring Video Adapters*.

Network Configuration Manager
: see Chapter 1, "Configuring network connections" in *Configuring Network Connections*.

CAUTION

- If you remove the Graphics Drivers or Network Drivers components of the AHS software from the system after it is installed, you must reinstall some software from the original SCO OpenServer Release 5 release media. See "Restoring software after removing AHS Release 5.2.0" (page 26).
- Installing single driver or documentation packages may remove previously configured drivers. See "About SSOs and AHS releases" (page 8).

Installing from the CD-ROM distribution

To install AHS software from the CD-ROM distribution:

1. As *root*, run the **Software Manager** from the desktop, or enter **scoadmin software** from the command line.

   You can significantly shorten the installation process by installing AHS software from the command line using **custom**(ADM) instead of running the **Software Manager**. As *root*, enter:

   custom -i -p ***component_name*** **-m /dev/cd0**

   Replace ***component_name*** with the symbol for the AHS software component you want to install:

   - **SCO:AHS** — the entire AHS product
   - **SCO-aga:XDrivers** — the Graphics Drivers technology component
   - **SCO:lli** — the Network Drivers technology component
   - **SCO:OS_drivers** — the Mass Storage and Multiprocessing Drivers technology components

   Go to Step 6 when the command line installation process is complete.

2. Select **Install New** from the **Software** menu.
3. Select the current host and specify the correct **CD-ROM Drive**. Insert your CD-ROM and click on **Continue**. When presented with the contents of the CD-ROM, select **Advanced Hardware Supplement Release 5.2.0** as the product to install.
4. Choose a **Full** or **Partial** installation:

   - **To install the entire AHS product**, click on **Full**.
   - **To install a single technology or single drivers**, click on **Partial**. Then select the components you want from the list of available software and click on **Install**. The components are described in "About AHS components" (page 7).

CAUTION Installing single driver or documentation packages may remove previously configured drivers. See "About SSOs and AHS releases" (page 8).

5. When the installation is complete, select **Exit** from the **Host** menu.
6. If the kernel was relinked, you must reboot your system for the changes to take effect. Type **init 6**, then press ⟨Enter⟩ to reboot your system.

When the system comes up, the new drivers are installed. Store the distribution media in a safe place.

Installing from downloaded files

To install AHS software from downloaded files:

1. Download software according to instructions in "Downloading AHS components" (page 9).
2. As *root*, run the **Software Manager** from the desktop, or enter **scoadmin software** from the command line. Select **Install New** from the **Software** menu.

   You can significantly shorten the installation process by installing AHS software from the command line using **custom**(ADM) instead of running the **Software Manager**. As *root*, enter:

   custom -i -p ***component_name*** **-z /tmp/ahs5_2**

   Replace ***component_name*** with the symbol for the AHS software component you want to install:

   - **SCO:AHS** — the entire AHS product
   - **SCO-aga:XDrivers** — the Graphics Drivers technology component
   - **SCO:lli** — the Network Drivers technology component
   - **SCO:OS_drivers** — the Mass Storage and Multiprocessing Drivers technology components

   Go to Step 6 when the command line installation process is complete.
3. Identify the installation source:
   - **To install from files on the local host**, select the current host and specify **Media Images** as the media device. Then, enter the name of the directory containing the media images (for example, */tmp/ahs5_2*).
   - **To install from another host**, select **From another host**. Specify the host that contains the AHS software files, and enter the *swadmin* password for that host when prompted.

   - If AHS is installed on the remote host, specify **Hard Disk** as the media device, then select **SCO OpenServer Advanced Hardware Supplement**.
   - If the AHS images are loaded onto the remote host, but are not installed, specify **Media Images** as the media device. Then, enter the full pathname of the directory containing the media images.

4. Choose a **Full** or **Partial** installation based on the files you downloaded:
   - **If you downloaded the entire AHS distribution**,
     - Click on **Full** to install the entire AHS product.
     - Click on **Partial** to install a technology component. Then, select the component you want from the list of available software and click on **Install**. The components are described in "About AHS components" (page 7).
     - Click on **Partial** to install individual drivers, then expand the component that contains the drivers you want to install. From the list of available drivers, select the ones you want and click on **Install**.
   - **If you downloaded a single technology component**:
     - Click on **Full** to install all drivers of that hardware type (such as Graphics Drivers or Network Drivers).
     - Click on **Partial** to install one or more individual drivers, then expand the component that contains the drivers you want to install. From the list of available drivers, select the ones you want and click on **Install**.
   - **If you downloaded a single technology component**, click on **Full** to install the single driver package.

   > **CAUTION** Installing single driver or documentation packages may remove previously configured drivers. See "About SSOs and AHS releases" (page 8).

5. When the installation is complete, select **Exit** from the **Host** menu.
6. When the system prompt returns, you can delete the AHS Release 5.2.0 volume image files from your system if they are not required for other installations.
7. If the kernel was relinked, you must reboot your system for the changes to take effect. Type **init 6**, then press ⟨Enter⟩ to reboot your system.

When the system comes up, the new drivers are installed.

Installing from floppy disks

To install AHS software from floppy disks:

1. Create a set of floppy disks according to instructions in "Creating installation floppy disks" (page 13) if you do not already have a set.

   NOTE We recommend that you copy your AHS media images from floppy disks to your hard drive before installing AHS software. To do so, use the **dd**(C) command, for example:

   dd if=/dev/rfd0 of=/tmp/ahs5_2/VOL.00*N*.000

   The volume names must correspond exactly to the media image names (***N*** is a number from 0-5). Then install AHS software according to the instructions in "Installing from downloaded files" (page 17). Doing so will significantly simplify and shorten the installation procedure.

2. As *root*, run the **Software Manager** from the desktop, or enter **scoadmin software** from the command line.
3. Select **Install New** from the **Software** menu.
4. Select the current host and specify the correct **Floppy Disk Drive**. Insert your floppy disk and click on **Continue**.
5. Choose a **Full** or **Partial** installation:
   - **To install the entire AHS product**, click on **Full**.
   - **To install a single technology or single drivers**, click on **Partial**. Then select the components you want from the list of available software and click on **Install**. The components are described in "About AHS components" (page 7).

   CAUTION Installing single driver or documentation packages may remove previously configured drivers. See "About SSOs and AHS releases" (page 8).

6. When the installation is complete, select **Exit** from the **Host** menu.
7. If the kernel was relinked, you must reboot your system for the changes to take effect. Type **init 6**, then press ⟨Enter⟩ to reboot your system.

When the system comes up, the new drivers are installed. Store the floppy disks in a safe place.

Installing BTLD and mass storage drivers

The mass storage boot-time loadable drivers (BTLD) included with AHS Release 5.2.0 are:

alad Adaptec 7870 and 7850 Host Adapter Driver; see **alad**(AHS)

ams Advanced Micro Devices; see **ams**(AHS)

arad Adaptec 7770 Host Adapter Driver; see **arad**(AHS)

blc BusLogic SCSI Driver; see **blc**(AHS)

dptr DPT - entire card line; see **dptr**(AHS)

esdi IBM Fixed Disk Adapter/A; see **esdi**(AHS)

iiop Tricord ES5000 Motherboards; see **iiop**(AHS)

slha Symbios Logic Host Adapter Driver; see **slha**(AHS)

smad Adaptec AIC-6x60 Host Adapter Driver; see **smad**(AHS)

wd EIDE Driver; see **wd**(AHS)

The **Sjk** SCSI device (SCSI jukebox driver) and Irwin (**mc**) tape driver cannot be linked at boot time. Instead, use the **Software Manager** as described in "Installing from the CD-ROM distribution" (page 16), "Installing from downloaded files" (page 17), or "Installing from floppy disks" (page 19).

There are two scenarios in which you might need to install the Mass Storage Drivers component:

- To install new hardware that is required for your system at installation time, you may need to add one of the drivers included in the Mass Storage Drivers component before you can install the operating system. See "Using BTLDs at installation time" (page 21).
- To install new hardware after installing the operating system, the Mass Storage Drivers component is treated as a package of drivers that are added to the Link Kit by the **Software Manager**. See "Installing from the CD-ROM distribution" (page 16), "Installing from downloaded files" (page 17), or "Installing from floppy disks" (page 19).

> **NOTE** BTLD drivers installed at ISL are not visible to the **Software Manager** even though they are installed in the link kit. It is possible to **custom**-install a driver that has already been BTLD-installed and this may become recommended practice in future releases of AHS.

See "Installing over previously-installed BTLDs" (page 23) if you are updating a previously-installed BTLD driver.

install.s 21 March 1996 SCCS file: /f/AHSRN/s.install.s SCCS ID: 3252.14 Last delta: 96/03/20 19:03:56

After installing a driver, read the manual page for that driver. Driver-specific manual pages in the AHS section contain configuration notes and known limitations for the individual drivers.

NOTE If you installed individual drivers from the SCO Online Support system, only documentation for the installed drivers is available on your system.

Using BTLDs at installation time

This section describes how to install the new driver which is required for the installation of the SCO OpenServer system. If you need to use your BTLD disk at installation time, you should have already inserted your boot disk. After inserting the boot disk, the boot prompt is displayed; this is the point at which you begin the installation procedure for this SCO BTLD package.

NOTE If you downloaded BTLDs from the SOS system, you must first create a BTLD disk; see "Creating a BTLD disk" (page 13).

At this stage, the boot floppy disk should be in the drive, and the system displays:

```
SCO OpenServer(tm) Release 5

Boot
:
```

1. What you enter at the ":"prompt depends on the driver you are installing:

   ams, **slha**, or **iiop** drivers
   : Enter **link** at the ":" prompt.

   alad, **arad**, **dptr**, **esdi** or **wd** drivers
   : Enter **ahslink**.

   smad driver
   : Enter **defbootstr link disable=spad** (the **smad** driver replaces the older **spad** driver).

   blc driver
   : Enter **defbootstr link disable=ad** (the **blc** adapter may be mistaken for the **ad** driver).

   If you are installing more than one driver, enter the link commands that are appropriate for your drivers:

   defbootstr link="*driver_name* other-btld"
   defbootstr ahslink="*driver_name* other-btld"

2. At the prompt, enter only the packages that are required by the installation. To install the other packages on the disk, use the post-installation procedure as described in "Installing from the CD-ROM distribution" (page 16), "Installing from downloaded files" (page 17), or "Installing from floppy disks" (page 19).

   Next, you see a boot line similar to the following:

   ```
   fd(64)unix ramdisk=f(64) rootfs root=ram(7) ram.preload=7 swap=none
   dump=none nbuf=100 link=pkg btld=fd(x)

   Memory found: 0k - 640k, 1m - 9600k
   ```

   pkg in the line above is replaced by the actual name of the driver package for boot-time loading and ***x*** is replaced by the minor number for your floppy device.

   After a moment, a series of prompts are displayed with trailing dots; these messages progress as software is loaded.

3. Insert the requested volume (the SCO BTLD disk) when prompted. The system prompts for and extracts the contents of the package.

   If the wrong volume is inserted or the drive is empty, the system displays the following:

   ```
   Sorry, that volume does not contain the pkg package
   ```

4. **link**(HW) and **ahslink** perform the linking of the extracted drivers into the kernel and might require more information for the extracted drivers. If the system prompts you for more information about configuring in these drivers, refer to the **link**(HW) manual page.

   > **NOTE** If there are any errors during this extraction (linking) process, the process is aborted and you are forced to reboot.

5. After a series of messages culminating in a notice that your driver loaded successfully, you will see a message prompting you to re-insert the boot disk.

   > **NOTE** You can safely ignore the following message if it appears:
   >
   > `... Characteristic '...' not supported;`

   The Mass Storage Drivers component has been installed, and you return to the installation procedure for SCO OpenServer.

   During the installation of the SCO OpenServer system you will be asked whether you want to customize your operating system. At the very least, you must install the SCO OpenServer Run Time System (RTS) and the BASE and LINK packages of the SCO OpenServer Extended Utilities.

Installing over previously-installed BTLDs

If a different version of a driver with the same name as an AHS driver is found during installation using the **Software Manager**, you will be prompted to keep the driver already installed or overwrite it with the AHS version.

If you answer yes to overwrite the driver, the third-party driver and its configuration information is overwritten. However, the new AHS driver will not be configured into the kernel. You will need to turn on the driver by changing 'N' in the driver's entry in */etc/conf/sdevice.d* to 'Y'. Relink the kernel before rebooting.

Installing multiprocessing drivers

Before installing the multiprocessing component, you must have:

- The SCO OpenServer system installed with SCO Symmetrical Multiprocessing Support (SMP®). This product can be found on the original installation media tape or CD-ROM and accessed using the **Software Manager**).
- If you are installing the Tricord PowerFrame (TPF) package, you must have already installed and configured the **iiop** BTLD package. If it is not, the MP component will be installed, but the TPF driver will be disabled. In this case, install the **iiop** package, then enable the TPF driver by changing the setting the second field of the */etc/conf/sdevice.d/tpf* file from ***N*** to ***Y***. For information about installing the **iiop** package, see "Using BTLDs at installation time" (page 21).

You can install on one of the following configurations:

- a clean distribution (SCO OpenServer and no MP drivers)
- a distribution which already has a vendor EFS (it is not generally necessary to remove the EFS prior to installing the SCO Multiprocessing Drivers Release 5.2.0)

The AHS Multiprocessing Drivers component can be removed and any vendor EFS or SCO OpenServer files will be restored (if you want to save them).

To install AHS Multiprocessing Drivers components, see "Installing from the CD-ROM distribution" (page 16), "Installing from downloaded files" (page 17), or "Installing from floppy disks" (page 19).

Chapter 3

Removing the AHS software

The Advanced Hardware Supplement (AHS) Release 5.2.0 software is not normally removed once it is installed from the system and full roll-back capability is not supported. The software can be removed using the **Software Manager**, but you will then need to reinstall portions of software from the original SCO OpenServer Release 5 media.

WARNING The system should be in system maintenance mode when removing and restoring AHS software. Specifically, be sure that no NFS automounts are active when removing these components. During the removal process, TCP will be deconfigured, which can cause problems if there are active NFS mounts.

To remove AHS Release 5.2.0 software:

1. As *root*, enter the following to bring your machine into system maintenance mode:

   /etc/shutdown -i1

2. In the **Software Manager**, select **SCO Advanced Hardware Supplement** from the list of installed software, then select **Remove** from the **Software** menu. Click on **OK** to confirm the removal.
3. Select **Exit** from the **Host** menu. AHS Release 5.2.0 software has now been removed.

NOTE If you remove a large number of drivers from an SCO OpenServer Release 5.0.0 system using the **Software Manager** or you allow the **Software Manager** to run for an extended period, the removal procedure may fail with a `cannot fork process` message. This is caused by a known memory problem with the **Software Manager**. To work around this problem, restart the **Software Manager** and remove drivers in smaller groups, restarting the **Software Manager** if necessary.

Restoring software after removing AHS Release 5.2.0

After removing the Graphics Drivers or Network Drivers packages from AHS Release 5.2.0 as described in Chapter 3, "Removing the AHS software" (page 25), you will need to restore files from the original SCO OpenServer Release 5 release media to return your system to the state it was in before installing the AHS software.

1. From the list of available software in the **Software Manager**, record which SCO OpenServer Release 5 system you are using (Enterprise, Host, or Desktop).
2. Select **Install New** from the **Software** menu. Select the current host, identify the media device (tape or CD-ROM), and insert your original SCO OpenServer Release 5 distribution media.
3. The media contains several SCO products. Select the SCO OpenServer Release 5 system that you already have installed (recorded from the main window of the **Software Manager**).
4. Specify a **Partial** installation, then:
   - restore the Graphics Drivers by expanding the **SCO OpenServer Graphics** item and selecting **Graphics Drivers**.
   - restore the Network Drivers by expanding the **SCO OpenServer Connectivity** item and selecting **Network Drivers**.
5. Click on the **Install** button. The **Software Manager** will install just these two components, restoring your system to the original SCO OpenServer Release 5 versions.
6. Reconfigure your network and graphics software using the:
   - **Video Configuration Manager**; see Chapter 1, "Configuring video adapters" in *Configuring Video Adapters*.
   - **Network Configuration Manager**; see Chapter 1, "Configuring network connections" in *Configuring Network Connections*.

remove.s 21 March 1996 SCCS file: /f/AHSRN/s.remove.s SCCS ID: 520.9 Last delta: 96/03/20 19:03:27