XINUOS

SCO OpenServer® 5 Definitive 2018

GETTING STARTED GUIDE

About this Guide

SCO OpenServer® 5 Definitive 2018 (5D2M1) is a new release of the OpenServer 5 operating system from Xinuos, which includes OpenServer 5.0.7; its maintenance packs and supplements; all OpenServer 5.0.7V feature; and additional functionality and maintenance.

SCO OpenServer 5 Definitive 2018, denoted as Definitive 2 Maintenance 1 (**D2M1**), is a successor release to OpenServer 5.0.7 as well as a successor release to OpenServer 5.0.7V and OpenServer 5 Definitive D1M0. This *Getting Started Guide* accompanies the SCO OpenServer 5 Definitive 2018 RELEASE NOTES (September 2018) Both documents are also available for free download at the Xinuos web site portal.

This guide is intended for administrators responsible for servers and storage systems.

Revisions

Revision	Date	Description
00	12/2015	Initial document release – OpenServer5D1M0.
01	09/2018	Update document release – OpenServer5D2M1.

Contents of this Getting Started Guide

Typographical Conventions

This document follows these conventions:

Convention	Usage	Examples
Note:	Important additional information or further explanation of a topic.	**Note:** *A weekly backup is recommended.*
Warning!	The task or operation might have serious consequences if conducted incorrectly or without appropriate safeguards.	**Warning*!*** *Do not change configuration parameters.*
Bold	A command or system input that you type, or text or a button you select on a screen.	Click **HELP** for details on disaster recovery.
Italic	Italic font indicates any of the following: • *A term with a specific meaning* in the context of this document. • *Emphasis* on specific information. • *Reference* to another document. • *Variables* in a syntax statement for which values are substituted.	Detailed information on *disaster recovery* methods is available in the *Administrator Guide*. `tar` *[zxvf]* *file*`.tgz`
`Courier`	System output, file names or path names. Bold Courier for commands typed by user.	`> Recovery in progress` **`tar cvf tarfile *.cc`**
Angle <> Brackets	A required entry or paramete9r	`installer-<`*version#*`>.run`
Square *[ ]* Brackets	An optional entry or parameter.	**`tar`** *[zxvf]* *file*`.tgz`
Curly { } Brackets	A list of choices separated by a vertical bar | from which one must be selected.	Click { **OK** | **Cancel** }.

About SCO OpenServer 5 Definitive 2018

Currently developed, managed and maintained by Xinuos, Inc., the SCO OpenServer™ product line is a family of runtime software, development kits, and optional licenses, products, and services that enable you to tailor a system to meet your computing needs. This chapter provides an overview of this release of SCO OpenServer 5 Definitive 2018.

For more information on the SCO OpenServer 5 product family, go to http://xinuos.com.

SCO OpenServer 5 Definitive 2018 Overview

SCO OpenServer 5 Definitive 2018 is an advanced operating environment optimized for departmental database and application servers typically used by small business customers, and for departmental servers in medium-size organizations to run back office applications and reliably share business critical information with a wide range of client devices.

SCO OpenServer 5 Definitive 2018 Media

SCO OpenServer 5 Definitive 2018 is released on a single DVD media. All optional services and updates are also on the DVD. It can be downloaded from http://www.xinuos.com and can be used to either:

▶ Install a new SCO OpenServer 5 Definitive 2018 system. This system can be a physical system, a VMware™ virtual machine, or a VirtualBox™ virtual machine **running on OpenServer 10**. Such an installation is called an Initial System Load (**ISL**).

▶ Update an existing installation of SCO OpenServer 5.0.7 MP5, SCO OpenServer 5.0.7V, or SCO OpenServer 5 Definitive D1M0 to SCO OpenServer 5 Definitive 2018. This system can be a physical system or a virtual machine running on VMware™ or VirtualBox™.

NOTE: *SCO OpenServer 5 Definitive 2018 does not provide a VMware appliance. To install a new virtual machine running SCO OpenServer 5 Definitive 2018 on VMware or Virtual Box, create a virtual machine and install from the install DVD in much in the same way as you would on a physical system. Or clone your virtual machine and use the **/usr/sbin/guest_conf** utility to re-configure it. For details see Cloning a SCO OpenServer 5 Definitive 2018 System on page 17.*

SCO OpenServer 5 Definitive 2018 Documentation

SCO OpenServer 5 Definitive documentation is available from the following sources:

1. All SCO systems include comprehensive online documentation, available through the DocView documentation server. To access the online documentation:

   o Double-click on the **Help** icon on the desktop.

   o Point any browser at **http://*hostname*:8457**, where *hostname* is the network node name of the system, or **http://**localhost**:8457** if you are logged directly into the system running DocView.

   The SCO OpenServer 5 Definitive 2018 documentation set is organized in collections (or categories) of online topics and manual pages that are linked from this guide.

   You can perform keyword searches of the entire SCO OpenServer 5 Definitive 2018 documentation set using the DocView **Search** function.

   Use the **/usr/bin/docview** command to determine if the server is running, and to start it if necessary. Note, however, that a search index **must first be generated** before the Search function will work.

   To generate the complete index, run **rundig -i -a &** (see the **rundig** manual page for more information).

2. Complete product documentation is also available on the SCO OpenServer 5 Definitive 2018 Documentation web page, at http://www.sco.com/support/docs/openserver.

3. Additional help can be found on the SCO Support web page, at http://www.sco.com/support. In particular, a searchable knowledge database is available at the Knowledge Center: http://www.sco.com/ta

4. Many useful publications by independent authors are available from technical bookstores.

Upgrading from Previous Releases

You can upgrade to SCO OpenServer 5 Definitive 2018 only from the following earlier releases:

▶ SCO OpenServer 5.0.7 Maintenance Pack 5 (included in OpenServer 5.0.7 Supplement 5)

▶ SCO OpenServer 5.0.7V Version 3.0.0

▶ SCO OpenServer 5 Definitive D1M0 (OpenServer5D1M0)

Order of the upgrades

▶ If you are running SCO OpenServer 5.0.7V Version 1.0.0 or Version 2.0.0, first upgrade to OpenServer 5.0.7V Version 3.0.0 and reboot.   Then upgrade to SCO OpenServer 5 Definitive 2018.

▶ If you are running a version of SCO OpenServer 5.0.7 prior to MP5, including any earlier maintenance or update pack, first upgrade to MP5 and reboot before upgrading to SCO OpenServer 5 Definitive 2018.

▶ If you are running a version of SCO OpenServer prior to OpenServer 5.0.7, first upgrade to OpenServer 5.0.7 using the OpenServer 5.0.7 media kit and reboot; next upgrade to SCO OpenServer 5.0.7 MP5 and reboot; and then upgrade to SCO OpenServer 5 Definitive 2018

CAUTION: *A full system backup must be performed prior to performing the upgrades so that the system can be completely recovered if a problem is encountered during the upgrade process.*

Licensing and Registering SCO OpenServer 5 Definitive 2018

SCO OpenServer 5 Definitive 2018 requires a new specific subscription license:

▶ Upgrades from SCO OpenServer 5.0.7 MP5, SCO OpenServer 5.0.7V, and SCO OpenServer 5 D1M0 require a new SCO OpenServer 5 Definitive 2018 Enterprise System license.

▶ During ISL you can provide this license or you can select a thirty-day free evaluation license. You will then need to purchase and register a SCO OpenServer 5 Definitive 2018 Enterprise System license before your evaluation period ends.

► Once your system is installed, log in to your Xinuos account to register your license. If this is your first time registering a license, you can create the account at https://www.xinuos.com. **You must register your system within fourteen days after applying a non-evaluation OpenServer 5 Definitive 2018 license. Otherwise your system will only operate in single-user mode without networking.**

► If you purchased a one-year or three-year subscription license, you can later extend the license by purchasing a renewal license. Before applying a renewal license, the original Enterprise license must be registered.

► Multiple renewal licenses can be applied. The previously applied renewal license must be registered before installing the new renewal license.

WARNING:	*When applying a renewal license, do not remove the initial OpenServer 5 Definitive 2018 license or any previously applied renewal license. The earlier licenses are required for the renewal license to extend the subscription to the end date you purchased.*

► If you choose to provide a license instead of accepting the evaluation license, be sure to provide the new SCO OpenServer 5 Definitive 2018 Enterprise System license and not a renewal license. A license is a Definitive 2018 renewal license if its license data field contains the string **h203/5.7**

Installing Multiple SCO OpenServer 5 Definitive 2018 Virtual Machines

As introduced in SCO OpenServer 5.0.7V, SCO OpenServer 5 Definitive 2018 provides a convenient method for installing multiple similarly configured virtual machines. After installing SCO OpenServer 5 Definitive 2018 on one virtual machine, use the **/usr/sbin/guest_conf** utility to clone the virtual machine. Each virtual machine needs its own SCO OpenServer 5 Definitive 2018 Enterprise System license, system name, and networking parameters. The **guest_conf** utility conveniently prompts for the necessary information and then walks you through the process. See section Cloning a SCO OpenServer 5 Definitive 2018 System on page 17 for details.

Removing the Upgrade

Removing the SCO OpenServer 5 Definitive 2018 upgrade **is not supported**.

Installing a New SCO OpenServer 5 Definitive 2018 System

Before installing on a new system, configure your physical machine hardware or a virtual machine for OpenServer 5 Definitive. Then install OpenServer 5 Definitive 2018.

Configuring Physical Hardware

The recommended configuration is:

- Configure your hardware in the system BIOS:
    - Set the active partition to the partition on which you want to install OpenServer 5 Definitive.
    - If using the **ahci** device driver, set the SATA controller to AHCI and note the port values for the disk and optical drive you want to use for root disk and installation DVD drive. This is needed to construct a boot string. The port numbers will be used as the IDs of the disk and cd device for installation.

        Let's assume you are having the disk on port 0 and the DVD drive on port 4, then the boot string to use is:

        defbootstr Sdsk=ahci(0,0,0,0) Srom=ahci(0,0,4,0)
    - Software and hardware RAID are not supported.
- Disk size of at least 8 GB.
- 1 – 4 CPUs (OpenServer 5 does not scale very well beyond 4 processors/cores).
- Minimum of 512 MB RAM and a maximum of 4 GB RAM.
- DVD drive.
- Disk controller: **aacraid**, **ad320**, **ahci**, or **lsil**.

Configuring a Virtual Box Virtual Machine

Refer to the OpenServer 10 *Installation Guide* for instructions to install OpenServer 10 .

Refer to the VirtualBox Documentation for information on VirtualBox.

The suggested configuration is as follows for installing on VirtualBox virtual machine:

- 1 vCPU (see the *Known Problems* section of the *Release Notes* if not configuring at least two virtual CPUs)

- 512 MB RAM

- 8 GB Disk

- Disk Controller: SATA (AHCI) disk and cd-rom

- NIC: Bridged, HW VIRTIO Gigabit Network

- Under VM System Motherboard Settings 'Enable I/O APIC' check box should be enabled

- Under VM System Motherboard Settings 'Chipset" should be set to PIIX3

- Under VM System Processor Settings Extended Features, 'Enable PAE/NX' check box should be enabled

- Under VM System Acceleration Settings Hardware Virtualization, 'Enable VT-x/AMD-v' and 'Enable Nested Paging' check boxes should be enabled

Configuring a VMware Virtual Machine

The following steps assume that the VMware ESXi Server is already installed, configured, and that you will manage the ESXi Server from a Windows PC using VMware vSphere Client which is already installed and configured.

Creating the OpenServer 5 Definitive Virtual Machine

Follow these steps to create an OpenServer 5 Definitive virtual machine:

1. Open the VMware vSphere Client

2. Create a New Virtual Machine by clicking **File > New > Virtual Machine**
   This launches the Configuration screen.

3. On the Configuration screen, choose **Custom** and click **Next**.

4. Enter a name for the Virtual Machine, then click **Next**.

5. Select the **Guest** operating system and choose **Other** and then **Other (64-bit)** for the version, then click **Next**.

6. If offered, pick the number of virtual CPU's to allocate to the OpenServer 5 Definitive VM, then click **Next**. Choose between one and four CPUs.

7. Choose the amount of memory to allocate to the VM. At least 512 MB is needed.

8. Choose the VMware host network and adapter – **e1000** is recommended.

9. Verify the **Connect at Power On** is checked, then click **Next**.

10. Select the SCSI controller – choose **LSI Logic SAS** as the SCSI Adapter, then click **Next**.

11. Select a disk – Choose **Create New Virtual Disk** (default), then click **Next**.

12. Enter the amount of disk space you want to use and location for store with the virtual machine - for good performance use **Thick Provision Lazy Zoned**, then click **Next**. At least 8 GB should be allocated.

13. Accept the defaults for **Advanced Options**, then click **Next**; a summary **Ready to Complete** is displayed.

14. Check the **Edit the virtual machine settings before** box and click **Continue**; the **Virtual Machine Properties** panel is displayed.

15. By default, the CD-ROM and Floppy drives are configured to Client Device. If your VMware host has physical devices that you want to use, click on **New CD/DVD (adding)** and then **Host Device,** select **/dev/hda** and check **Connect at power on**.

16. Click on **New Floppy (adding)** and **Host Device,** select **/dev/fd0** and check **Connect at power on**. Note: device names may vary depending on VMware host configuration

17. Recommendation is to define a CD-ROM and Floppy Image on the VMware Host. To do that, check the **Connect at power on** box and **Use existing floppy image in datastore**. Then click the **Browse** button to locate the floppy image in the ESXi server.

18. Use the same method to select the CD-ROM/DVD iso image. Optionally, you can choose the client device for CD-ROM and Floppy - this will use the devices on your Windows PC running VMware vSphere client.

19. At **Virtual Machine Properties** under **Options** tab, select **Boot Options** and check the **Force BIOS Setup** box. Click **Finish** to save the virtual machine settings.

Installing the OpenServer 5 System

NOTE:	*SCO OpenServer 5 Definitive 2018 Initial System Load (ISL) media, unlike the OpenServer 5.0.7 ISL, does not support direct upgrades from OpenServer 5.0.6 or earlier releases. Instead, use OpenServer 5.0.7 media to install OpenServer 5.0.7. Accept the evaluation license. Then upgrade to OpenServer 5.0.7 Maintenance Pack 5. Finally, use your OpenServer 5 Definitive 2018 media and license to upgrade to OpenServer 5 Definitive 2018.*

Before installing SCO OpenServer 5 Definitive on your system, we recommend that you:

- check installation hardware requirements
- read *Late News* for any issues or limitations discovered since the release of Xinuos OpenServer 5 Definitive that may affect your installation or hardware
- assemble information needed for the installation and fill in the Installation Checklist
- have the following ready: `OpenServer5Definitive-2018.iso` - recorded to DVD media or image stored on VMware or Virtual Box host.

Additionally:

If you want to:	Read:
Share your root disk with other operating systems	Using other operating systems with a SCO OpenServer 5 Definitive system
Install your system over the network	Installing and managing software over the network and Supported adapters for network installation

For more information, please see the OpenServer 5.0.7 "Installation and upgrade procedure" web page.

The installation procedure

Follow these steps to install OpenServer 5 Definitive 2018 on physical hardware or in a virtual machine as configured above.

1. If installing from DVD, insert the DVD into the DVD drive.
   If you are using the recommended virtual images, make sure you have set the browse locations to CD-ROM ISO image in the above virtual machine configuration.

2. Power on your physical system and enter the BIOS. Or start the OpenServer 5 Definitive VM, which will enter the virtual BIOS: Enable 32bit access to Virtual CD-ROM.

3. Set the Boot order to:
   CD-ROM
   Removable Devices
   Hard Drive
   Network Boot

4. Save and exit BIOS. You should now see the OpenServer 5 Definitive Boot prompt. You may have to enter a boot string; for example:

   - If using the AHCI device driver you need to enter a boot string based on the Sdsk and Srom values. Please see details as given above on page 8 for AHCI bootstrings.

   - If you are using a USB device then we recommend entering this boot string:

     ```
     defbootstr disable=usb_ehci,usb_uhci,usb_ohci
     ```

5. Press Enter at the boot prompt.

6. Answer the installation prompts and configure your system just as if you were performing an OpenServer 5.0.7 ISL installation. You can either enter your OpenServer 5 Definitive 2018 license here or you can choose a thirty-day evaluation license.

   WARNING: *Do not enter a renewal license.*

   If you are using the eeG networking device driver on VMware, defer selection of the network device driver at this point.

7. When installation is complete, remove the physical DVD or virtual CD-ROM image and reboot.

8. If you deferred networking during ISL:

   When the system reboots, open scoadmin network and add network adapter (for

example, the **eeG** nor **bxii** device driver) and configure according to your needs. Follow up with additional user, printer, environment and application configuration. Reboot your system.

9. The system should now be operational.

Upgrading from a Previous OpenServer 5.0.7 MP5, OpenServer 5.0.7V, or OpenServer 5 Definitive D1M0 System

Upgrades to SCO OpenServer 5 Definitive 2018 are only supported from OpenServer 5.0.7 MP5, OpenServer 5.0.7V, or OpenServer5D1M0. All other SCO system installations require a fresh install of SCO OpenServer 5 Definitive 2018.

To upgrade from these releases, do the following:

1. **Prior** to starting the upgrade:

    a. Obtain an SCO OpenServer 5 Definitive 2018 Enterprise System license. Do **not** proceed until you have this license. Contact your local sales representative if you need assistance with licensing.

    b. The upgrade process is **not** reversible. So:
        Perform a full backup of your system and verify the integrity of the backup before you install the upgrade. Have a full system backup available before beginning any system update procedure. If you are installing in a virtual machine, the quickest and easiest way to do this is to create a snapshot of your system.

    c. See the *Release Notes* for information about package versions, features, and fixes since the prior installed release on your system, and configuration-specific upgrade notes.

    d. If you want to configure a mouse after the installation is complete, note that you cannot do so while the X server is running. Before attempting to run **mkdev mouse**, be sure that you run scologin stop to turn off the X server. After you have made the mouse configuration modifications that you desire, turn the X server back on by running scologin start.

        You may need to reboot the system if the X server fails to start due to not detecting the newly configured mouse.

2. Mount the SCO OpenServer 5 Definitive 2018 DVD or ISO image.

   From physical media, insert the OpenServer 5 Definitive 2018 installation DVD into the DVD drive. If your mount point is */mnt*, then:

   ```
   mount -o ro /dev/cd0 /mnt
   ```

   From an ISO image on your system, if the image is in *ISODIR* and the mount point is */mnt* (replace with the actual locations), run:

   ```
   cd ISODIR
   marry –a OpenServer5D2M1-DVD.iso
   mount -o ro /dev/marry/`pwd`/OpenServer5D2M1-DVD.iso /mnt
   ```

   The following error may be displayed:

   ```
   mount: cannot open /dev/rmarry/OpenServer5DM1-DVD.iso, will
   mount first session: Not a directory (error 20)
   ```

   This error is typically benign; please check by running the **mount** command and confirming that the ISO is mounted.

3. Run the **upgrade.sh** shell script by either:

   > **cd** */mnt*
   > **./upgrade.sh**

   or:

   > */mount_point***/upgrade.sh**

   If you want to run a full system custom verify before and after the upgrade, include the **-v** option on the command line.   Output files with the results of these scans can be found after the installation in the **/** root directory.

4. Answer the questions at the start of the installation. Once the software begins to install the installation should proceed uninterrupted until you get a successfully installed message.

5. At the end of the installation you may be prompted with one or two SSH messages:

   ```
   A newer /etc/ssh/filename has been installed. Your modified
   <filename> has been saved as /etc/ssh/<filename>.PRE_D2M1
   You may want to integrate your modifications before rebooting.
   ```

   Here filename is *ssh_config* or *sshd_config*. If both files were modified prior to this upgrade, then a message for each will be explained.

   If the above prompt appears, edit the file(s) to include the appropiate prior edits.

6. If installing from a physical DVD, **umount** the DVD and remove the DVD from the
    DVD drive. Then reboot your system via:

            shutdown –i6 –g0 -y

    If installing from an ISO image, you can directly run the above shutdown command
    to reboot.

    If installing on a virtual machine using a virtual disk, shut down the VM via:

            shutdown –i0 –g0 -y

    Then unmount the virtual disk and reboot.

7. When your system reboots, run **patchck** to install any updates that were posted
    after the OpenServer 5 Definitive 2018 initially shipped.

Cloning a SCO OpenServer 5 Definitive 2018 System

If you installed a SCO OpenServer 5 Definitive 2018 virtual machine on VMware or VirtualBox, then it is easy to create a second, similarly configured system. To do so:

1. Shut down the source SCO OpenServer 5 Definitive 2018 virtual machine.

2. Use the VMware or VirtualBox software to clone the source system.

> **Note:** *On VirtualBox, you will need to change the MAC address on the cloned system. Please consult the VirtualBox documentation for information on how to do this.*

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3. Reboot the cloned system. When the Xinuos countdown boot prompt appears, press Enter to bring up the OpenServer 5 Definitive user-mode question. Enter single-user mode by providing root password.

4. When the system boots, log in as root and run the **guest_conf** utility by typing:

    ```
    /usr/sbin/guest_conf
    ```

5. Answer the questions to configure the new system. You will be prompted for the system name, the networking parameters, and a new SCO OpenServer 5 Definitive 2018 Enterprise System license (you will need a new distinct SCO OpenServer 5 Definitive 2018 subscription license).

6. Reboot your new SCO OpenServer 5 Definitive 2018 virtual machine.

7. Restart the original SCO OpenServer 5 Definitive 2018 source machine.

8. Register the license for your just created SCO OpenServer 5 Definitive 2018 virtual machine.

After Installing SCO OpenServer 5 Definitive 2018

After installing or upgrading to SCO OpenServer 5 Definitive 2018, please do the following:

1. Register your license by following the instructions at https://www.xinuos.com.

2. Review Xinuos OpenServer 5 administration procedures

    In particular:

    *   If you selected to use DHCP during the installation, you can now check the DHCP and Address Allocation Servers on your network to see if an IP address was allocated to your machine as expected. After your system is completely installed, check the system startup messages in *var/adm/syslog* for an indication that the system successfully obtained an IP address from the DHCP server.

        See the Configuring a Dynamic Host Configuration Protocol (DHCP) server web page for more information.

    *   We recommend enabling Network Time Protocol (NTP) on your OpenServer 5 Definitive servers, especially those that are virtual machines. To do so see either of these Technical Articles:

        o   http://www.sco.com/ta/111921

        o   http://www.sco.com/ta/127547

3. The following precautions should be taken in case that your system later encounters a hardware problem or software/user data lost:

    *   Make a copy of the installed kernel. After the system reboots for the first time, run:

        ```
        # /etc/btmnt -w
        # cp -p /stand/unix /stand/unix.good
        # /etc/btmnt -r
        ```

        This kernel can be used in case successive kernel relinks produce kernels that do not boot. After installing, licensing, and configuring your system, create a complete system backup. Also, implementing a regular backup schedule is recommended.

    *   Keep a copy of the completed Installation checklists with the system log to help system administration, troubleshooting, and future upgrades go smoothly.

Trouble shooting

This section describes troubleshooting procedures for some of the problems that might occur during, or immediately following, installation of your SCO OpenServer 5 Definitive 2018 and additional SCO OpenServer 5 products.

Sometimes errors occur during the installation procedure that cause problems as you install the software or when you boot immediately after installation. The problem is usually not with the software or the procedure itself. Occasionally, there is a hardware problem, but typically such problems are minor, such as an improperly connected cable.

If you cannot solve your problem and you must contact your support provider for help, be sure to record your system information as described below at <u>Before Calling for Help</u>.

During the installation procedure, do not assume that you know what is about to happen, even if you have installed the system before. There may have been changes to the installation process, so you should read the installation documentation closely.

Solving undocumented installation problems

Even if your problem is not described in this book, this section can help you to isolate, identify, and solve the problem.

First, you must determine whether you have a software or hardware problem. In general, hardware problems are intermittent, while software problems are consistent.

▶ Hardware and operating systems

The fact that a given piece of hardware works under operating systems such as Microsoft Windows or Linux is no guarantee that it works with SCO OpenServer. Contact your support representative with any questions regarding supported hardware.

▶ Identifying the problem

If the system hangs mysteriously, either at boot time, during installation, or shortly thereafter, use these steps to isolate and identify the problem:

1. Confirm that your hardware is supported.

2. If possible, check a suspected component on another machine with the same configuration (for example, using SCO OpenServer 5 Release 5.0.7).

3. If any third-party drivers are installed, such as those supplied with multiport cards, remove both the driver and the hardware that it controls, relink the kernel, and see if the problem persists.

4. Make certain that your devices are recognized at boot time. Watch the boot display, use **cat**(C) or **vi**(C) to look at the */usr/adm/messages* and */usr/adm/syslog* files, or use the **hw**(ADM) utility.

5. Check for hardware conflicts between components, including DMA, interrupt vectors, and memory addresses.

6. If your machine has features such as shadow RAM or memory caching, disable them.

Before calling For Help

If your problem is not discussed in this book, in the *Known Problems* section of the *Release Notes*, the rest of the SCO OpenServer 5 documentation set, and you cannot isolate the problem using Solving undocumented installation problems, check the Xinuos Knowledge Center to see if you can find an answer to your problem. The Knowledge Center is available at: http://www.sco.com/ta.

If the problem persists, call your support provider for help. Before calling please make a copy of the following trouble report forms and your installation checklist from Installation and upgrade checklist. Then, write down the critical information about your system, including a description of your problem and system configuration, so that the support personnel can analyze your problem quickly:

► A description of the problem

Write down a complete description of your problem, including the precise series of commands or steps that you took that led to the problem. Include the exact text of any error messages displayed.

► System configuration

Knowing the hardware and software configuration of your system is vital to a correct diagnosis of your problem. If this information is readily available when you speak to your support provider, the diagnostic process is much easier and less time-consuming. Make sure that you list *all* the hardware components, including brand names and model numbers, when you fill out the hardware configuration trouble report worksheet. On the software configuration worksheet, check the SCO OpenServer 5 product that is installed, the installed components (if a subset of the SCO OpenServer 5 system is installed), any additional SCO OpenServer 5 products, and list all applications and non-SCO OpenServer 5 device drivers that you installed.

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