hp server tc2120 Operations and Maintenance Guide Troubleshooting Chapter



6 Troubleshooting

If you are having problems installing your HP Server tc2120, there are a number of tools available for troubleshooting, including the information provided in this chapter.

HP's web site at http://www.hp.com to access the most comprehensive support material:

Latest support news - Product and support information on HP Servers.

- Drivers and software downloads for HP Servers.
- HP Instant support Fast, web-based support that is automated and provides quick diagnosis and resolution of most computing problems.
- Step-by-step guides for your system troubleshooting.
- Technical information Data sheets, application notes, configuration guides, installation tips, product papers, reference material, and more.
- Compatibility issues HP Accessories, OS/NOS, HP and third-party parts compatibility information.
- Manuals Easy installation and configuration of your HP Server.
- Parts and service Information on replacement parts, exploded views, and configuration.
- Tape backup support Support for HP's SureStore Tape Backup products.
- HP Server registration.
- Training programs HP STAR worldwide training and certification program.
- · Warranty and enhanced services Your guide to warranty service for your systems.
- Proactive notification HP will e-mail your custom information when it is available.
- Contacts How to get help or provide feedback.

The Startup CD-ROM provides a utility for troubleshooting purposes.

• Diagnostics for Windows – An easy-to-use hardware diagnostic for server verification, burn-in, and rapid troubleshooting. Boot the HP Startup CD-ROM in the server and execute from the Startup CD-ROM. The Diagnostics for Windows utility will automatically launch when the Startup CD-ROM is booted.

The following sections contain general procedures to help you locate installation problems. If you need assistance, HP recommends contacting your reseller or going to the HP web site first at <u>http://www.hp.com/</u>. Refer to the topics listed earlier regarding the HP web site. If you need immediate telephone support, contact the HP Customer Support Center nearest you:

US/Canada phone support: 1-970-635-1000

For all other countries, visit <u>http://www.productfinder.support.hp.com/tps/CLC</u> and click English to see an expanded list of countries.

WARNING	Before removing the server cover, always disconnect the power cord and unplug
	telephone cables. Disconnect telephone cables to avoid exposure to shock hazard from
	telephone ringing voltages. Disconnect the power cord to avoid exposure to high energy
	levels that may cause burns when parts are short-circuited by metal objects, such as tools
	or jewelry.

Preventive Maintenance Procedures

Refer to the following table for preventive maintenance procedures used for the HP Server tc2120. Be sure to turn off power to the server when cleaning it.

Component	Time Frame	Maintenance Procedure
Keyboard	Regularly	Dust with damp, lint-free cloth.
Monitor screen	Regularly	Use "HP Video Screen Cleaning Solution" found in 92193M Master Clean Kit.
Mouse	Regularly	Refer to the mouse's manual for mouse maintenance procedures.
Tape drive heads	Monthly	Use "Magnetic Head Cleaning Solution" found in the 92193M Master Clean Kit.
Cooling fans and grilles	6 Months	Check cooling fan operation and clean the air intake openings on the chassis by removing any dust, lint, and other obstructions to airflow.

CAUTION	Do NOT use petroleum-based cleaners (such as lighter fluid or cleaners containing
	benzene, trichlorethylene, ammonia, dilute ammonia, or acetone. These chemicals could
	damage the keyboard's plastic surfaces).

HP recommends the periodic cleaning of tape heads, capstans, and guides on HP tape drive units and those products using high-density data cartridges and mini-data cartridges. These maintenance procedures prolong tape and head life and helps reduce read/write errors due to dust and oxide.

Troubleshooting

WARNING Before removing a cover, always disconnect the AC power cords. Disconnect them to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry. Disconnect the telephone cables to avoid exposure to shock hazard from the telephone ringing voltages.

WARNING	Do NOT operate the HP Server for more than 10 minutes with any cover (including
	power supplies and disk drives) removed. Otherwise, damage to system components may
	result due to improper cooling airflow. However, you can safely remove a cover while
	the HP Server is running to remove and replace PCI hot-plug boards. For any other
	service activity requiring access to the system board or power distribution board, power
	down the HP Server and observe all safety precautions.

For problems with the disk array controller board, refer to the appropriate HP NetRAID manual.

For problems with the HP Instant Toptools, refer to the HP Instant Toptools Administrator Guide on the HP website at:

www.hp.com/toptools

For general information on HP Server products, refer to:

www.hp.com

and search for the specific product. These instructions do not generally cover third-party components or devices. Refer to the documentation that comes with the third-party device for diagnostic and troubleshooting information.

CAUTION Always wear an antistatic wrist guard when working inside the HP Server.

- Ensure the HP Server is properly configured. Many HP Server problems are the result of incorrect system and SCSI subsystem configuration settings.
- Check the system BIOS Setup Utility by pressing F2 during the boot process.
- Check the SCSI configuration or the disk array configuration by entering the controller's setup utility.
- Boot to the Startup CD for access to configuration tools to help setup the HP Server.
- If it is a network-related error, determine if the user has enough memory and hard disk drive capacity. Run the diagnostics for the NIC. Consult with the network operating system manual.
- If it is a hardware error, follow the instructions to log users off the LAN and power down the HP Server. Reboot and watch for any POST error messages and listen for any beep codes as the HP Server goes through POST then look up the error message in Chapter 5 of this Service manual. If the HP Server passes POST, the HP DiagTools Utility can be used to further test the hardware.
- Use HP DiagTools Utility whenever possible to detect hardware problems. Insert the *HP Startup CD-ROM* into the CD-ROM drive and reboot the HP Server. Run HP DiagTools from the Startup CD-ROM and verify the Server's hardware integrity.
- Besides HP Server DiagTools, use the standard set of tools recommended for troubleshooting:
- HP Server Assistant (NSA): This is a customizable software toolset that helps monitor and manage HP Servers over the network from and HP OpenView console. The NSA software has a server part and a management console, or client part.
- Toptools: HP Instant Toptools provides a set of web-based management tools that can be used to maintain and control the HP Servers that are running Microsoft Windows 2000, Novell NetWare/IntranetWare, or SCO UNIX.

Troubleshooting Checklist

- 1. Verify the error. Make sure it is not an erroneous error message. Is the error repeatable? Is the error message seen affecting the HP Server's operation or performance?
- 2. Always change only one component at a time.
- Always check the most recently added items added, both hardware and software. Remove any thirdparty components.
- 4. Make sure the HP Server BIOS is updated to the latest version posted to HP's external website. Flashing/updating the system BIOS and clearing CMOS will resolve many different issues.
- 5. Make sure the firmware for the hard drives are kept current. Download and run the Hard Disk Drive Firmware Utility to verify if hard drive firmwares need to be updated. This utility is available from HP's external website.
- 6. Make sure all firmware/BIOS revisions on any controllers are kept current.
- Use only HP-provided drivers for any HP devices used in the HP Server. This includes using HP drivers for the initial installation of any NOS (Network Operating System) that is supported on the specific HP Server.
- 8. Check all cable and power connections, including those in the rack. If the HP Server is not powering on, unplug the AC power cords and wait 20 seconds then plug the AC power cords in again and restart the HP Server. Check for normal operation.

9. Verify that all cables and boards are securely plugged into their appropriate connectors and slots.

If the problem still persists:

- 10. Simplify the HP Server's configuration. The minimum required:
 - o Monitor
 - o Keyboard
 - o Mouse
 - o 1 hard drive (may need to disconnect for hardware troubleshooting)
 - o CD-ROM and Flexible disk drive (may need to disconnect for hardware troubleshooting).
- 11. Reconnect the power cords and power on the HP Server. If operational, power back down and reinstall one component at a time and power on the HP Server after the installation of each component to try and determine which component is causing the problem.

If the problem persists, call the HP Customer Support Center for further troubleshooting assistance.

Server Does Not Power On

Follow these steps if the power/activity light does not light green after you press the power-on button.

- 1. Remove the AC power cord, wait 15 seconds, reconnect the power cord, and try again.
- 2. Verify all cables and power cords are firmly plugged into the respective receptacles.
- 3. Select the correct setting on the voltage switch located beside the power connector on the rear panel.
- 4. If the server is plugged into a switched multiple-outlet box, ensure the switch on the outlet box is turned on.
- 5. Plug a different electrical device (such as a printer) into the power outlet, and turn on the device to verify the outlet has power.
- 6. If you hear a series of beeps when you power on the server, refer to Chapter 5 of the Owners and Maintenance Guide.
- 7. Verify that the problem is not caused by an internal device connection:
 - a. Disconnect the power cord.
 - b. Remove the side panel. Refer Chapter 3 of the Owners and Maintenance Guide.
 - c. Verify the power supply is firmly connected to the system board connector.
 - d. Verify the front panel power switch is connected to the system board.
 - e. Remove the power connectors from all internal devices except the system board.
 - f. Reconnect the power cord.
 - g. Verify that the front panel green LED light is on. If it is off, call your HP Customer Support provider.
 - h. If the front panel green LED light is on, reconnect the power connectors one by one to the internal devices in order to see which device or connection is defective.

Ensure that you remove the power cord before you reconnect each internal device. After reconnecting the device, turn the power on again. If the green LED is still on, repeat this step with another device until you find the device that prevents the green LED from turning on. Call your HP Customer Support provider with this information and for further instructions.

Server Passes POST, but Does Not Function

If an error message appears, read the message and refer to Chapter 5 of the Owners and Maintenance Guide. Font for troubleshooting suggestions. If there is no error message, follow the steps in this section to

troubleshoot the problem. If the problem persists, contact your HP Customer Support provider or your reseller.

If there is no error message, follow these steps:

- 1. If you are an experienced user, verify the server is configured correctly in the (BIOS) Setup Utility. To start the (BIOS) Setup Utility, boot or reboot the system and press F10 when prompted.
- 2. If the server still does not work:
 - a. Power off the server and remove all external peripherals, except the monitor and keyboard.
 - b. Test the server for normal operation now.
 - c. If the server still does not work, go to Step 3.
- 3. If the server still does not work, turn off the monitor, the server, and all external devices, and check the internal hardware, as follows:
 - a. Unplug the power cord and all telephone cables.
 - b. Remove the server's left side cover.
 - c. Verify all accessory boards are firmly seated in the respective slots.
 - d. Ensure all disk drive power and data cables are securely and properly connected.
 - e. Verify the mass storage configuration with the descriptions listed in Chapter 3 of the Owners and Maintenance Guide.
 - f. Verify all the DIMMs are HP DIMMs.
 - g. Replace the left side cover, and if necessary, use the lock to secure the cover on the server.
 - h. Replace the power cord and all of the cables.
 - i. Turn on the monitor.
 - j. Turn on the server.
 - k. Check for an error message or beep code.
- 4. Insert the HP Startup CD-ROM into the CD-ROM drive and reboot the server.
- 5. Run the Diagnostics for Windows utility from the Startup CD-ROM and verify the server's hardware integrity.

BIOS Recovery

BIOS Update

Use this procedure if you need to update your server BIOS with the latest BIOS version. HP regularly posts a new version of the HP Server tc2120 BIOS on the website to improve the server's performance.

- 1. Prepare a blank and formatted 3 ¹/₂" disk.
- 2. Insert this diskette to any Windows PC with HTML browser and a connection to the Internet.
- Locate and download the latest HP Server tc2120 BIOS to the server's hard drive from HP's web site at: <u>http://www.hp.com/</u>
- 4. Double-click on the downloaded file and follow the instructions to extract to a flexible disk.
- 5. Boot the server with the BIOS update diskette in the flexible disk drive.
- 6. This action will automatically flash the BIOS from the diskette to the server.
- 7. Remove the BIOS update diskette and then reboot the server and press F10 when prompted to start the (BIOS) Setup Utility.
- 8. Make the changes you wish to make (such as system time, passwords, or boot device priority) to the (BIOS).

- 9. Setup Utility and save the BIOS changes.
- 10. Label, date, and save this flexible diskette for use as a BIOS Recovery diskette.

NOTE	If you do not have convenient access to the Internet, you can create a BIOS
	<i>CD-ROM</i> may not provide the most recent BIOS. To create the BIOS Update/Recovery
	diskette, run the <i>Startup CD-ROM</i> on any Windows PC with an HTML browser and
	follow the menu instructions

BIOS Reset

If you need to reset your BIOS settings to the factory defaults (the HP recommended values) due to possible corruptions, perform the following steps. The default values have been selected to optimize the HP Server's performance.

- 1. Reboot the server in a normal manner and press F10 to enter the BIOS Setup Utility.
- 2. Press <F5> to load default values. It is recommended that you take note of the system setup before making any modifications to the BIOS.
- 3. Press F6 to save changes and exit the BIOS Setup Utility.

BIOS Recovery

Use this procedure if the BIOS has become corrupted and you want to restore the BIOS with the BIOS update/ recovery diskette. Refer to the previous procedure to create the BIOS update/recovery diskette.

- 1. Use the BIOS Update diskette you created in the previous procedure.
- 2. Power off the server.
- 3. Remove the power cord.
- 4. Remove the side cover.
- 5. Set switch 1 to the ON position. For information about switch positions, Chapter 3 of the Operations and Maintenance Manual.
- 6. Insert the diskette into the flexible disk drive.
- 7. Reconnect the power cord and power on the server. The server boots from the diskette and then flashes the BIOS. The screen remains blank during this process. When the BIOS recovery is complete, a long beep is sounded.
- 8. Power off the server and remove the diskette from the drive.
- 9. Remove the power cord.
- 10. Set switch 1 on the configuration switch set to the OFF position, see Chapter 3 of the Operations and Maintenance Manual.
- 11. Replace the cover, reconnect the power cord, and then reboot the server.

Resetting a Lost Password

NOTE If you have forgotten the User Password or the Supervisor Password, your server will function normally, but you will not be able to access the BIOS Setup Utility. If you have enabled the Password-on-Boot feature and have forgotten all the passwords (User and Supervisor) you will not be able to reboot the server successfully.

If you have forgotten the User password, the Supervisor can reset it for you. However, if the Supervisor password has been lost or forgotten you can only reset it by clearing the password dipswitch.

- 1. Power down the server.
- 2. Remove the left side cover.
- 3. To clear the password, set configuration switch 3 to the ON position. See Figure 1.





On (black indicates switch setting)

Figure 1: Configuration Switch Settings - Switch 3 Password Clear

- 4. Power up the server.
- 5. When pressing F10 on POST, a message will appear:
- 6. "Power-On Password The password has been cleared. Power off the Server and set the CLEAR PASSWORD (switch 3) to the OFF position before restarting. System halted."
- 7. Power down the server.
- 8. Set the password switch to the OFF position.
- 9. Replace the left side cover.
- 10. Power on the HP Server.
- 11. Press F10 to enter the BIOS Setup Utility and go through the steps to set the passwords.

"Operating system not found" message appears

- 1. Check for a non-bootable diskette in the flexible disk drive. If found, remove the diskette form the drive.
- 2. Check for a tape in the tape drive. If found, remove the tape cartridge from the drive.
- 3. Power on the HP Server. If the message still appears, reboot the HP Server and when prompted, enter the system BIOS Setup Utility and check that the device boot order is correct.

- 4. If a disk array controller is being used and the NOS is installed on a hardware array/container, verify that the array/container is in an optimal state by accessing and checking the disk array controller's setup utility during startup.
- 5. Boot to a DOS disk and check the partitions to make sure the primary partition is active.

If the problem persists, contact the HP Customer Support Center for further troubleshooting assistance.

Server stops working (hangs)

Typically, if the HP Server hangs before the end of POST completes, the problem is possibly a hardware problem or failure. If the HP Server hangs after POST completes, the problem is possibly due to an incorrectly configured or corrupt driver, operating system, or application program, or a media (disk drive) error.

If the HP Server stops working or hangs starting up:

- 1. Review the Troubleshooting Checklist in the Operations & Maintenance Guide or the Service Manual for the HP Server before you continue.
- Try to verify exactly where the HP Server is stopping during POST. For example: is the HP Server stopping at the memory count or a SCSI controller? Look for any error messages and listen for any beep codes and make note of them for further assistance in troubleshooting the problem.
- 3. If the failure persists, verify there is not a hardware problem by running HP DiagTools or checking the Hardware Event log on HP Servers that have that option.
- 4. If the failure persists, try removing any recently added hardware and see if the problem still exists. If the problem has disappeared, add one removed hardware component at a time back into the HP Server to try and verify which hardware component is causing the problem.

For further assistance, contact the HP Customer Support Center before replacing any parts.

Power Problems

NOTE The input voltage selector switch is used to adapt the power supply to the input line voltage. The two switch settings are 115 volts or 230 volts. Verify the setting is correct.

- 1. Verify the HP Server's power cord is plugged in to a know good power source.
- 2. Remove the HP Server form any UPS or PDU and connect the HP Server directly to a power source.
- 3. Verify the AC power source is good.
- 4. Verify the circuit breaker for the AC power outlet.
 - a. If the breaker was off, verify all devices connected to the HP Server share the same circuit breaker and are the only devices on it.
 - b. Reset the circuit breaker after reconfiguring the devices if needed.
- 5. Verify the AC power outlet is not faulty by plugging in a known good device.
- 6. Verify the DC power supply cable connected to the system board.
- 7. If the fans (system, power supply, and processor heat sink) are not audible and the above steps are verified:
 - a. Disconnect the power cord/s for five minutes in order to reset the power supply's circuitry.
 - b. With the power cord disconnected, remove the HP Server cover.

Always wear an anti-static wrist guard when working inside the HP Server.

NOTE

- c. Remove all the accessory boards, including any hard disk drive controller board or video board. Disconnect all mass storage power cords and cables.
- d. Plug the power cord/s back in and turn on the HP Server.

Video/Monitor Problems

Symptoms:

- The monitor's power indicator LED is on, but the monitor is blank.
- The wrong size characters appear on the monitor.
- Colors are wrong or there are no colors on the monitor.

Action:

- 1. Verify the video and power cords are connected to the monitor.
- 2. Ensure there is adequate power:
 - a. Verify the display power switch is turned on.
 - b. Verify the display power cord is connected to an AC power outlet and the video cable connected to the server's video connector.
 - c. Plug in a known working device to ensure there is power to the outlet or use the proper testing device to check the power outlet.
 - d. Turn the monitor off and on, and if the monitor has an On/Off LED, see if it lights.
 - e. Check if the problem persists.
- 3. If the problem persists, and if the power cord is detachable, try a known good power cord.
 - a. Unplug the power cord and wait 30 seconds.
 - b. Plug in the power cord and turn on the server.
 - c. Wait a full 2 minutes.
 - d. Verify the monitor starts displaying normally.
- 4. Check the contrast and brightness controls to ensure each is adjusted.
- 5. If the problem persists, remove the monitor connector and check for bent pins on the connector. If you should find bent pins, slowly but carefully straighten each pin. If necessary, replace the cable.
- 6. Turn on the server and wait a full 2 minutes.
- 7. Verify the monitor starts displaying normally.
- 8. If the problem persists, check if the monitor is functioning:
 - a. Turn off the monitor and the server.
 - b. Disconnect the video cable from the video connector.
 - c. Turn on the monitor.

Monitor Notes:

- When most VGA monitors are disconnected from the video connector, if the monitor is working, the screen is white.
- When some monitors (such as HP high-resolution monitors) are disconnected from the video connector, the monitor may be working, although the screen is black.
- d. If a monitor tester is available, use it to check the display.
- e. If you suspect the monitor is faulty, replace it with a known good monitor.

- f. Verify the new monitor is operating properly and then reinstall the original monitor and duplicate the error.
- 9. Verify the monitor is working by plugging it into a known-good server or computer.
- 10. If you are using a video screen saver utility and the screen goes blank while using the keyboard, you may be using an application that turns off the screen even when you are using the keyboard. Refer to the manual provided with the screen saver utility.
- 11. If the monitor displays a badly scrambled image that looks to be the current screen image, then the monitor is not synchronizing correctly. Call your HP Customer Support provider.
- 12. If a message appears such as "INVALID CONFIGURATION," press F10 during the boot process and run the Setup Utility to confirm the server video configuration.
- 13. Verify the other accessory boards do not use the same memory addresses as the embedded video connector. If the problem persists, call your HP Customer Support provider.

Basic Video Troubleshooting Guidelines

These are basic guidelines for troubleshooting video issues. They are arranged in such an order as to be used progressively. The HP Server should not be re-populated with components until video is produced. For each step taken, be certain to unplug the power for 30-60 seconds prior to powering the HP Server back on. For each power up attempt, allow at least 60 seconds for the HP Server to produce video.

- 1. Test the monitor on another machine to verify the monitor is not faulty.
- 2. Disconnect the HP Server from any console switch box during troubleshooting. Connect a known good monitor, keyboard, and mouse to the HP Server to troubleshoot.
- 3. Verify that the AC power source is good. If suspect, try another power source.

If still no video:

- 4. Power off the HP Server and unplug form the power source and remove the covers.
- 5. Locate and toggle the "CLEAR CONFIG" switch to the "ON" position.
- 6. At the same time, check the processor speed switches to verify that they are set correctly.
- 7. Plug the HP Server into a power source and power on the HP Server. Quite often, just toggling the "CLEAR CONFIG" switch will restore video.
- 8. Verify that fans and hard drives are spinning up.

If there is still no video:

- 9. Power off the HP Server and unplug form the power source and remove the covers.
- 10. Remove all PCI controller cards.

NOTE If using a third-party video controller card and the onboard video controller (if applicable) was disabled, remove this controller card, connect the cable to the onboard video controller then clear the CMOS. This re-enables the onboard video. For instructions on clearing CMOS, refer to the HP Server Operations and Maintenance Guide.

- 11. Remove and reseat the memory and take down to base memory.
- 12. Disconnect power and SCSI connections from tape drives and hard drives.
- 13. Disconnect IDE and flexible disk cables.
- 14. Plug the HP Server into a power source and power on the HP Server.

If video still does not return, power the HP Server back off and unplug the power cord/s.

15. Reseat all major boards and power supplies. Double check the cables that connect the power supplies to the power management board, if one exists.

16. Reinstall remaining components one at a time once video returns. One of the removed components may have been causing the no video problem. After all the components are reinstalled, reset the HP Server's BIOS configuration switch back to the appropriate setting.

Configuration Problems

Symptom:

• The configuration cannot be saved and the battery loses power.

Action:

Refer to this section if the server frequently loses date and time that may be caused by the battery losing power.

- 1. Review the Troubleshooting Checklist before you continue.
- 2. If the server frequently loses the time and date, replace the battery. The battery is attached to the system board.
- 3. Set the new date and time, and reset the configuration parameters using the Setup Utility, if necessary.
- 4. To start the (BIOS) Setup Utility, boot or reboot the system and press F10 when prompted.
- 5. Turn off AC power to the server, then back on again and reboot to see if the date and time was saved.
- 6. If date and time are still requested, and the battery is good, perform the next procedure, below.

WARNING There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Symptom:

• The configuration information is frequently lost and the battery is good.

Action:

If the battery is good and you cannot save system configuration, do the following:

- 1. Review the Troubleshooting Checklist before you continue. BIOS configuration information is saved in the CMOS memory.
- 2. If you continue to lose configuration information and the battery is good, or you cannot save the BIOS information to CMOS memory:
 - Check the battery socket terminals for corrosion or loose connections.

If this does not correct the problem, call your HP Customer Support Center before replacing any more parts.

Printer Problems

If the printer does not work, do the following:

- 1. Verify that the AC power cord is plugged into the power source and the printer.
- 2. Ensure the printer power switch is ON and the AC outlet is working.
- 3. If the printer is plugged into a multiple-outlet box, make sure the switch on the outlet box is turned on and the circuit breaker (if applicable) is not tripped.
- 4. Ensure the printer is online and available for printing.

- 5. Verify the correct cables are being used and that the cables are connected properly. Make sure the cable pins are not bent.
- 6. Try a known good cable.
- 7. If the printer's parallel date cable is plugged into the HP Server after the server is on, reboot the HP Server.
- 8. Examine the printer for a paper jam.
- 9. Run the printer self-test. Refer to the printer's manual for instructions.
- 10. Ensure the correct port setting when configuring the printer.
- 11. Run the system BIOS Setup Utility (F2 on POST when prompted) to verify the I/O port status. Make sure it is not disabled.
- 12. Test another peripheral from the HP Server's parallel port to ensure functionality.

If the printer still does not work, contact the HP Customer Support Center for further assistance

Keyboard and Mouse Problems

Symptoms:

- The keyboard does not work.
- A character is not displayed when a key is pressed.

Action:

- 1. Review the Troubleshooting Checklist before you continue.
- 2. Ensure the keyboard is not locked.
- 3. Check that the keyboard is clean and keys are not stuck.
- 4. Ensure the keyboard cable connections at the rear of the server and at the back of the keyboard are securely and correctly attached.
- 5. If a keyboard/monitor switchbox is used with this server, plug the keyboard directly into the keyboard port of the server and verify the problem.
- 6. If the problem persists, turn off the server and back on by using the power button.
- 7. Try replacing the keyboard with a known good keyboard.
- 8. Verify that you are using the latest BIOS for the HP Server. Refer to BIOS Update earlier in this chapter.
- 9. Try using a USB keyboard.

If the problem persists, contact your HP Support Service Center before replacing the system board.

Symptom:

• The mouse does not work or is intermittent.

Action:

The HP Server automatically detects a mouse when one is installed. If the mouse or other input device is not working, perform the following:

- 1. Review the Troubleshooting Checklist before you continue.
- 2. Check that the mouse cable is properly and securely connected to the server.
- 3. If a keyboard/monitor switchbox is used with this server, plug the mouse directly into the keyboard port of the server. Verify the problem.

- 4. In (BIOS) Setup Utility, ensure mouse's port does not have a resource conflict. To start the (BIOS) Setup Utility, boot or reboot the system and press F10 when prompted.
- 5. Ensure correct mouse driver has been installed onto the boot drive. Refer to the mouse installation manual or the operating system manual.
- 6. Replace the mouse with a known-good unit.
- 7. Try using a USB mouse.

If the problem persists, contact your HP Support Service Center before replacing the system board.

Flexible Disk and Flexible Disk Drive Problems

If the HP Server cannot boot from, write to, or format a flexible disk, do the following:

- 1. Try booting from a known good flexible disk.
- 2. Press F8 and select "Boot from A drive."
- 3. If there is a bootable CD in the CD-ROM drive, remove it. By default, the CD-ROM drive is first in the boot order, so if there is a CD-ROM disk in the drive, the HP Server will not boot to a bootable flexible disk.
- 4. Select the system BIOS Setup Utility (F10 on POST when prompted) and verify the mass storage configuration is correct.

NOTE If for some reason the system BIOS Setup Utility cannot be accessed, clear the CMOS.

- 5. Ensure the disk is not write protected.
- 6. Ensure that the disk drive is trying to be accessed. Look for an activity light on the drive.
- 7. Try another flexible disk.
- 8. Boot to the HP Navigator CD and try creating a disk form the Diskette Library. This will eliminate the NOS causing the problem since the Navigator is only using DOS.

Flexible Disk Drive Problems

- 1. Verify that the internal drive cables are securely attached and functional by inspecting the cables and reseating the connections at both ends.
- 2. If the cables are securely attached, and the drive still does not work, replace the cable with a known good cable.
- 3. If the problem persists, check for environmental problems that could damage disk media and disk drive heads.

Environmental problems result from:

- Radiated Interference: Sources include communications and radar installations, radio/TV broadcast transmitters, and hand-held receivers.
- Airborne Contaminants: Sources include dust, smoke, and ashes. Steam from duplication equipment may result in intermittent disk errors.

If the problem persists, call the HP Customer Support Center for further assistance before replacing any parts.

CD-ROM Problems

Symptom:

• The CD-ROM drawer will not open.

Action:

If the CD-ROM drawer fails to open when you press the Eject Button or with software commands, do the following:

1. Turn off all power to the server. To open the drawer, insert a pointed object, such as a paper clip, into the emergency eject hole and push in about 1.75 inches (40 mm).



- 2. Remove the disk and close the drawer.
- 3. After you remove the disk, start the server and try to open the drawer again with the Eject Button or software commands.
- 4. If the drawer still will not open, replace the CD-ROM drive with a working unit.

Symptom:

• The CD-ROM drive is not working properly.

Action:

The CD-ROM drive provided with this HP Server (SCSI or IDE models) is IDE CD-ROM. If the CD-ROM drive does not work, do the following:

1. Review the basic IDE installation guidelines to ensure a proper configuration.

In addition, check the following:

- 2. Verify correct drivers are installed.
- 3. Verify there is a CD-ROM disk in the CD-ROM drive.
- 4. Verify all internal drive cables are securely attached and functional.
- 5. Try installing a known good CD-ROM disk.
- 6. Verify that the Local Bus IDE Adapter item is correctly configured in the Setup program:
 - Power up the server and press F10 at startup.
 - o Select Enter Setup, and go to the Advanced menu.
 - o Check that "Both" is selected in the Local Bus IDE Adapter field.
- 7. If the problem persists, check for environmental problems that could damage disk media and disk drive heads.

Environmental problems result from:

- Radiated Interference: Sources include communications and radar installations, radio/TV broadcast transmitters, and hand-held receivers.
- Airborne Contaminants: Sources include dust, smoke, and ashes. Steam from duplication equipment may result in intermittent disk errors.

If the problem persists, call the HP Customer Support Center for further assistance before replacing any parts.

Symptom:

• The server will not boot from the CD-ROM.

Action:

Use the (BIOS) Setup Utility to ensure the CD-ROM drive is bootable:

- 1. Place a known, bootable CD-ROM in the drive.
- 2. Review the Troubleshooting Checklist and Boot Device Priority.
- 3. Reboot the server and run the (BIOS) Setup Utility (press F10 during the boot process).
- 4. Select the Boot menu and the Boot Device Priority submenu.
- 5. If necessary, move the CD-ROM up the boot list. This ensures the CD-ROM will boot before any of the hard disk drives (IDE or SCSI)
- 6. Save and exit the Setup Utility.

SCSI Problems

Symptom:

• The SCSI Boot Controller BIOS Has Trouble Loading The Boot Logical Drive (NOS drive)

Action:

- 1. Verify the SCSI boot controller is bannering (displaying) on POST.
- 2. Ensure that the SCSI boot controller's BIOS is enabled. Check this from the SCSI Setup Utility. To access this utility, enter CTRL C when a Symbios controller banners on POST or CTRL A when an Adaptec controller banners on POST.
- 3. Determine what the boot order is for the HP Server. To verify that the SCSI boot controller board is in the correct position in the boot order, enter F2 on POST to access the system BIOS Setup Utility. The boot order can be viewed and changed from this utility. If necessary, change the slot (if applicable) that the SCSI controller is in to change the location in the boot order.

If the problem persists:

- 4. Clear CMOS and flash the system BIOS. See the HP Server Operations and Maintenance Guide on the proper procedure to do this.
- 5. Repeat step 3.
- 6. If you installed more than one SCSI controller, try disabling the BIOS on all other SCSI controller except for the SCSI boot controller. This lets the SCSI BIOS for the boot controller load and prevents conflicts with the other SCSI controllers. If necessary, remove all the other SCSI controller boards except the SCSI boot controller until the issue is resolved.

Symptom:

• The SCSI device stop working.

Action:

- 1. Verify the device banners on POST or is seen in the SCSI Select Utility.
- 2. Run DiagTools and verify:
 - o SCSI IDs and any relevant switch settings.
 - o SCSI bus information.
- 3. If an accessory board was added recently, check for a resource conflict between the new board and an existing accessory boards.
 - o Remove the board and restart the HP Server.
 - If this corrects the problem, the new board is either defective or it is trying to use a system resource used by another SCSI controller board.

- 4. Check for any recent changes or upgrades to the software. For example, has anyone moved, removed, or changed the configuration files or drivers? Refer to the software documentation for more information.
- 5. If you suspect hardware failure and there are no system error messages, check each component associated with the failure. Equipment failure is probably the most unlikely reason for a SCSI device failure.

Contact the HP Customer Support Center for further troubleshooting assistance before replacing any parts.

Symptom:

• A SCSI Controller Does Not Work At Initial Installation

Action:

Many SCSI controller problems are caused by an incorrect configuration rather than by faulty hardwre. If the SCSI controller does not work after installation, do the following:

- 1. Verify the SCSI controller BIOS is bannering (displaying) on POST.
 - If more than one SCSI controller was installed, verify that each adapter is set to a separate BIOS address or diable the BIOS on all of the adapters except the boot controller.
 - Make sure there are no resource conflicts.
 - For each device on the SCSI controller, check:
- 2. Verify that each device has a unique SCSI address. Do not set any device to SCSI ID 7. This is usually the controller SCSI ID.

If the SCSI banner still does not banner on POST, check the following:

- 3. If the SCSI controller is an adapter board:
- Power off the HP Server. Unplug the power cord/s from the power source and remove the covers.

CAUTION Wear an anti-static wrist guard when working inside the HP Server.

- Reseat the SCSI controller board in its slot.
- Replace the covers, plug the power cords back into a power source, and power on the HP Server.
- If the SCSI controller still does not banner on POST:
 - 4. Do all the previous to power off the HP Server then move the SCSI controller board into another slot.
- If this still does not resolve the issue:
 - 5. Clear CMOS (See the HP Server Operations and Maintenance Guide or Service manual for instructions.)
 - 6. Flash the system BIOS (See the HP Server Operations and Maintenance Guide or Service manual for instructions.)

Contact the HP Customer Support Center for further troubleshooting assistance before replacing any parts.

Symptom:

A SCSI Device Does Not Work After Installation

Action:

NOTE The SCSI controller board supplied with some HP Servers come with a single channel SCSI controller board and cannot support internal and external SCSI devices on the same controller.

If a SCSI device does not work after installation, do the following:

1. If using a single channel SCSI controller for external devices, make sure not internal devices are connected on the internal channel of the SCSI controller. HP does not support using both internal and external connections on a single-channel controller, and a second SCSI controller board must be purchased for use with the external SCSI device.

Refer to the documentation provided with the SCSI device for any specific information regarding installation.

- 2. Verify the switch settings on the SCSI device/s are correct.
- 3. Verify each SCSI device is assigned a unique SCSI ID.
- 4. Ensure no SCSI device is set to SCSI ID 7. This SCSI address is generally used by the SCSI controller.
- 5. Ensure all installed SCSI controllers are configured correctly.
- 6. If the SCSI devices installed in an external connected to the HP Server operate in Ultra SCSI or FAST SCSI mode, this may cause a problem. The SCSI controller board and the internal SCSI devices normally provided with the HP Servers operate in Ultra 160 SCSI mode. The external SCSI devices may be slowing down or causing the internal SCSI controller board to be ineffective and therefore non-operational.
- 7. Check the SCSI cables for problems that may caused by any recent HP Server maintenance, hardware upgrades, or physical damage.
- 8. Check the system BIOS version to ensure it is the most recently issued version. The most recent version is listed on HP's website.
- 9. Verify the SCSI BIOS is being executed properly.

The internal and external SCSI device controllers display a banner during startup. The BIOS then checks for valid devices on the SCSI bus, and reports which devices are found. If the SCSI devices are installed and configured correctly, a list confirming the devices will banner on POST after the controller banners.

NOTE Some tape drives do not banner on POST but will show up in the SCSI BIOS Utility for the controller and in the operating system.

If the banner is not displayed, the SCSI controller is not recognized.

10. Verify the SCSI bus is terminated at both ends. By default, HP Server SCSI controllers in external enclosures are terminated. When a device is connected to a connector on the SCSI bus, bus termination for that connector is disabled. Verify the last device on the bus is terminated.

Contact the HP Customer Support Center for further troubleshooting assistance before replacing any parts.

IDE Problems

Symptom:

• The IDE devices stop working.

Action:

- 1. Review the Troubleshooting Checklist and Mass Storage Guidelines before you continue.
- 2. Reboot the server and run the (BIOS) Setup Utility (press F10 during the boot process).
- 3. Select the Boot menu and Boot Device Priority submenu. Make sure the device is not disabled.
- 4. Run the Diagnostics for Windows utility and:
 - Verify the IDE IDs and any relevant switch settings are correct.
 - Verify the problem is the IDE bus, by looking for specific information.
- 5. If an accessory board was added recently, check for a resource conflict between the new board and an existing accessory boards.

- 6. Also, if you have changed the options on an existing board, there may be a resource conflict:
 - o Remove the new board and restart the Server.
 - If this corrects the problem, the board is either defective or it is trying to use a system resource used by the IDE controller board.
 - Check if the board is using memory, I/O addresses, or interrupt lines that are also used by the IDE controller board.
- 7. Check for any recent changes or upgrades to the software. For example, has anyone moved, removed, or changed the configuration files or drivers? Refer to the software documentation for more information.
- 8. If you suspect hardware failure and there are no system error messages or beep codes, check each component associated with the failure.

Equipment failure is probably the most unlikely reason for a IDE devices failure.

Processor Problems

Symptoms:

• The server is overheating.

Action:

Processor problems in the HP Server tc2120 are typically problems of overheating due to incorrect installation of the heat sink-cooling fan on the processor or a damaged thermal patch.

1. Verify the cooling fan is connected to its power connector properly and there is voltage to the fan.

Contact your Hp Customer Support Center for further assistance.

Memory Problems

NOTE The HP Server tc2120 only supports HP PC2100 DDR 266 MHz ECC DIMMS

The memory modules used for the HP Server tc2120 are DIMMS:

- 1. Review the troubleshooting checklist from this manual before you continue.
- 2. If memory problems are being experienced, power the HP Server off and on gracefully. This performs a "cold" restart rather than a "warm" restart by doing a CTRL-ALT-DELETE.
- 3. Verify that all the DIMMS are HP DIMMS.
- 4. Verify that all the DIMMS are the correct HP DIMMS for this particular HP Server.
- 5. Verify that all the memory is counted during the Power On Self Test (POST).
- 6. Run the HP DiagTools memory test.

CAUTION Wear an anti-static wrist guard when working inside the HP Server.

If the problem persists:

- 1. Power off the HP Server, unplug the power cord from the power source and remove the left side cover.
- 2. Locate and reseat the memory modules.
- 3. Plug the power cord back into the power source and power on the HP Server.
- 4. Verify that all the memory is counted during the Power On Self Test (POST).

If the problem still persists:

- 1. Power off the server and unplug the power cord for the power source.
- 2. Remove all but one DIMM.
- 3. Plug the power cord back into the power source and power on the HP Server.
- 4. If the error is not present, power off and unplug the server then add another DIMM, continuing this process until all the DIMMS are installed or a failure occurs.
- 5. Verify the failure by reinstalling the DIMM by itself and attempt to duplicate the error.
- 6. Try the faulty DIMM in another memory slot to confirm that the slot is not defective.
- 7. Replace the defective DIMM.

Contact the HP Customer Support Center for further troubleshooting assistance if needed.

Network Interface Card (embedded or card) Problems

LEDs Are Lit on the NIC

If the HP Server cannot connect to the network and all the LEDs are lit on the NIC:

- 1. Ensure the cabling is installed properly.
- 2. Verify there are no resource conflicts between the NIC and any other accessory. Do this from the system BIOS Setup Utility (F10 on POST when prompted).
- 3. Reboot the HP Server and log into the NOS.
- 4. Ensure the latest and correct HP drivers are being used for the NIC.
- 5. Ensure the port on the switch or hub (or other device) has the same speed and duplex settings as on the NIC.

CAUTION Setting an incorrect duplex mode can degrade performance, cause data loss, or result in lost connections

- 6. Test the NIC as directed in the installation tasks for each NOS. This information is the HP Server's Installation Manual. Also check the README files on the support driver's disk.
- 7. Directly connect two devices (with no hub, switch, or other device) using a "crossover" cable. Try the PING command.

If the problem persists, contact the HP Customer Support Center for further troubleshooting assistance.

LEDs Are Not Lit on the NIC

NOTE No lit LEDs probably indicates a bad network cable, hub connection, or other network error.

If the NIC LEDs are not lit on the HP Server, and the HP Server cannot connect to the network, do the following:

- 1. Ensure that the cabling is installed correctly:
 - a. Try another known good network cable.
 - b. Try another network connection (another hub, switch, etc.).
 - c. Connect the NIC to a know good network connection.

If there are still no lit LEDs, do the following:

CAUTION Always wear an antistatic wrist guard when working inside the HP Server

- 2. Power off the HP Server and unplug the power cord/s from the power source. Remove the covers.
 - a. Locate the NIC and reseat it in its slot.
 - b. Replace the covers; plug in the power cord/s to a power source, and power on the HP Server.
 - c. If the problem persists, perform previous step 2 but move the NIC to another slot.
 - d. Replace the covers; plug in the power cord/s to a power source, and power on the HP Server.

If the problem persists, call the HP Customer Support Center for further troubleshooting assistance before replacing any parts.