



HiPer Network Management Card

Network Application Card
Software Download-2 (Z-Modem)



Part No. 1.024.1350-01
Version Numbers
6.0, 6.1, 6.2



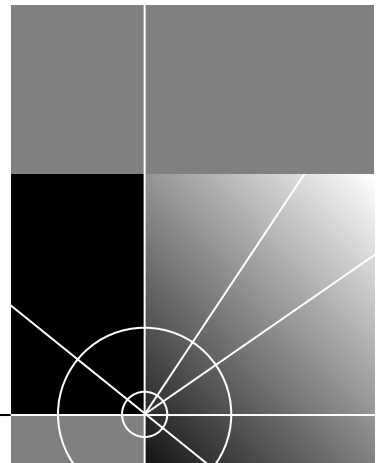


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<http://www.3com.com/>

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COMPLETING A SOFTWARE DOWNLOAD TO THE HiPer NMC

This document contains the instructions for using a software download (SDL-2) to upgrade HiPer NMC software.

Overview

SDL-2 is a utility that allows software download to a HiPer Network Application Card (NAC) to a Total Control chassis locally through the console port or remotely across a LAN or WAN.



Only use SDL-2 when downloading to HiPer NACs. All other software downloads use SDL-1 (PCSDL).

For more information on Total Control Manager, refer to the *Total Control Manager/SNMP Software Guide*.

The Download Process

This section describes what occurs during the download process. You may use one of these methods to complete an SDL-2:

SDL-2 Method	Use
Z-Modem download	Console port download using Z-Modem protocol directly from the host PC to the NAC
SNMP or Total Control Manager	Download across a LAN or WAN to the NMC using TFTP protocol through a MIB browser or Total Control Manager. The file then transfers automatically to the NAC using SNMP .

Typical Z-Modem Download

The typical Z-Modem download is a Z-Modem file transfer from the host PC to the target NAC. Use a terminal emulator package that supports Z-Modem. Upon the completion of the Z-Modem transfer, a result message will be displayed regarding the success or failure of the file transfer. Successful transfer does not necessarily mean that the entire process has completed successfully, since the device may be done with

the file transfer, but it still could encounter an error programming NVRAM.

After the NAC is finished processing the download file, it will wait about five seconds, and an ASCII result string is sent to the serial port. This string displays on the emulator screen.

If the SDL-2 agent aborts the download operation, the final ASCII result message displays after the five-second delay.

Typical SNMP/Total Control Manager TFTP Download

You may also use an SNMP browser or Total Control Manager to download to a chassis NAC. In this case, the download occurs through the NMC, which then distributes the code to the appropriate NAC. When you select multiple devices, they must be of the same type (all HiPer DSP NACs, for example).

When completing this type of SDL-2, select the slots to which you want to download. If you are using a MIB browser, you issue a **set** command in the slot command table for each device selected.

If no TFTP occurs within the timeout, the SDL-2 trigger command aborts. As the TFTP progresses, the NMC distributes the download file contents to each of the selected devices. The final result is indicated in the SNMP command table's command result and command code objects. If you are using Total Control Manager, a "Success" message indicates the download is complete.

Downloading HiPer NAC Software using Z-Modem on the Console Port

You may use the Z-Modem transfer to download software through the console port.

Use this Software Download-2 (SDL-2) procedure if you are installing code to the NAC through the console port. SDL-2 is a utility that allows you to download software to a NAC via a serial link, both locally and remotely.

What You Will Need

To send the new code to the NAC from the console port, you need a standard terminal program that can send files using the Z-Modem protocol.

Checking the Software Version

From the console interface, type **ATI7** at a modem prompt to display product configuration.

To determine the version of software, view the date and revision of the Boot Block, Board Manager, ACP, and DSP.

System Requirements

You need a computer with a serial port capable of link rates up to 115200 bps, and a null modem cable with RJ45 and RS-232 on each end.

Preparing to Download Software

Set your terminal program to 115200 bps, 8 bits per character, no parity, one stop bit, and hardware flow control on.



*HiPer DSP link port speeds are fixed and cannot be changed. Although either port can be used, 3Com recommends using the **Auxiliary port**, which has a standard 115200 bps interface, when downloading software.*

Downloading the Software

Complete these steps to download software:



If power to the NAC is removed during any of these software download steps, you must restart the procedure.

- 1 Run a terminal program that supports the Z-Modem transfer protocol (such as HyperTerminal).
- 2 Manually reboot the NAC by pulling the card forward and re-inserting it.
- 3 When the "Enter Download Trigger" prompt appears, type **AT{z}** in all capital letters. Using your terminal program, select and send the boot file.



*Use all capital letters when typing **AT{z}**. Begin sending the files before the hardware reboot cycle begins. The hardware reboot cycle begins about 10 seconds after you manually reboot the card.*

The download is complete when you see this message:

```
"0;Download successful: File=file.dmf"
Programming flash
"!!-----> SDL2 for the PPC403 <-----!!"
"__ Enter Download Trigger __"
```



Do not input the trigger when prompted the second time unless you want to re-download the code.

The software download is now complete.

Downloading HiPer NAC Software through an SNMP MIB Browser

You can use an SNMP MIB browser to transfer software across a LAN or WAN to a chassis NAC.

System Requirements

You will need a MIB browser and a TFTP server. Both must be able to communicate with the NMC NIC over an Ethernet or SLIP connection.

Before You Start

- 1 Make a backup copy of the software disk (if you received a disk).
- 2 Set up the MIB browser. Select the *uchasCmdTable* (1.3.6.1.4.1.429.1.1.7.1) table within the *uchasCmd* group of the CHS MIB. This MIB is in the *private.enterprises.usr.nas.MIB.tree*.
- 3 Set up the TFTP server. Set the server to binary transfer mode with a connection to the IP address of the NMC.
- 4 Verify that the NMC NIC is configured for remote access. Refer to the appropriate NIC getting started guide.

Temporarily Copy the Software onto the Management Station

If you are downloading the software from the 3Com website, you need to temporarily copy the files to the management station. If you are using Total Control Manager on the management station, install to *C:\USRSUITE\SDL2*. Otherwise, install the software to an appropriate temporary directory.

Start the Download

Complete these steps:

- 1 Determine the slot number of the HiPer card to which you will download.
- 2 Connect to the chassis.
- 3 Using the MIB browser, select the *uchasCmdFunction* object.
- 4 Choose the index for the slot number of the card to which you will download.
- 5 Issue a **SET** request command to set the object to enumeration 6, which corresponds to *softwareDownload2*. For example, if the card to which you are downloading is in slot number 3, SET *uchasCmdFunction.3* to "6".

- 6 Once the **SET** is issued, and the response is received, the *uchasCmdResult* object will indicate whether the download can proceed.
- 7 Issue a **GET** or **GET-NEXT** request to the *uchasCmdResult* object that contains the index number used in step 3. For example, if the card to which you are downloading is in slot number 3, the **GET** or **GET-NEXT** request will be completed on *uchasCmdResult.3*.
- 8 If the result of the GET or GET-NEXT request is "3", which corresponds to the InProcess enumeration, then continue this procedure. Otherwise, check the status of the card to which you are downloading and begin again at step 3.
- 9 Start the TFTP session.

Checking status of the download

Determine status of the download by checking *uchasCmdResult* as explained in step 4.

The possible *uchasCmdResult* values are:

Enumeration	Download status
none (1)	No result
success (2)	Successful download
inProgress (3)	Download in progress
notSupported (4)	Not supported
unAbleToRun (5)	Unable to complete the download - card may be in a bad state or not accepting the download
aborted (6)	Download file was aborted
failed (7)	Download failed

Downloading HiPer NAC Software through Total Control Manager

You can use Total Control Manager to transfer software across a LAN or WAN to a chassis NAC.

Connect to the NMC

Connect the management station to the NMC NIC through a LAN, WAN, or SLIP connection. Refer to the *NMC Getting Started Guide*. You may also need to configure the NMC SLIP port. Refer to the *NMC Getting Started Guide* or the *Total Control Manager Getting Started Guide*.

Temporarily Copy the Software onto the Management Station

If you are downloading the software from the 3Com website, you need to temporarily copy the files to the management station. If you are using Total Control Manager on the management station, install to C:\USRSUITE\SDL2. Otherwise, install the software to an appropriate temporary directory.

Checking the Software Version

Follow these steps to check the currently-installed version of software:

- 1 Open Total Control Manager and select the appropriate chassis.
- 2 From the **Configure** menu, select **Programmed Settings**, then select **Inventory...**
- 3 Check the software version of the appropriate NAC after the inventory is complete.

Start the Software Download

Complete these steps:



Before starting a Total Control Manager SDL-2 , unload any terminate-and-stay-resident (TSR) programs, including Windows. TSRs will greatly slow SDL-2 .

- 1 Launch the Total Control Manager application.
- 2 Establish a connection with the chassis.
- 3 From the device display on the Total Control Manager/SNMP console, select the card(s) to which you want to perform the download.



Once you enter the Software Download window, you may select or deselect cards by their card number.

- 4 On the **Configure** menu, click **Software Download**. Or, click the **Software Download** icon on the toolbar. Refer to *About the Software Download window* for more information.
- 5 Click **Start** to begin the download.
- 6 During the download, progress messages are displayed in the upper-left corner of the Software Download window. A "Success" message indicates the download is complete.

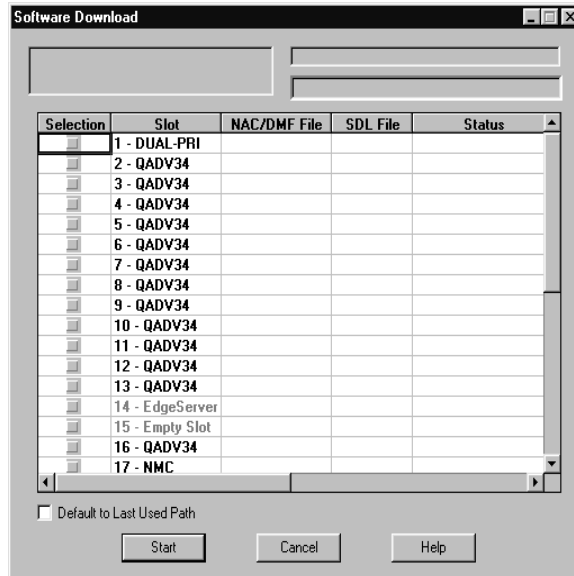


*If you selected more than one card to which to download, and you want to cancel the download before it completes, click **STOP**. The in-progress SDL-2 continues, but the remaining downloads are canceled. Corresponding checkmarks are removed.*



About the Software Download window

This is the software download window that you see when completing SDL-2 from Total Control Manager.



Function	Column name
Allows you to select multiple cards on which to perform downloads. A checkmark appears for every selected card. The device display also shows a checkmark for each selected card.	Selection
Lists the chassis slot number and card name.	Slot
Lists the most current .NAC or .DMF file in the C:\USRSUITE\SDL2 directory. If the software version is more recent than the NAC itself, the entry appears in red.	NAC/DMF File
Lists the most current .SDL file in the C:\USRSUITE\SDL-2 directory. If the software version is more recent than the NAC itself, the entry appears in red.	SDL File
Lists the status of each software download on a card-by-card basis. Messages include "In Progress" and "Complete".	Status



*If you have loaded or moved the .NAC, .DMF, or .SDL files to a directory other than C:\USRSUITE\SDL, position the cursor in the appropriate column in the same row as the desired card. Then, double-click the left mouse button. The **Open** window appears. Select the appropriate file.*

Trouble clearing the Software Download

What Happens During a Download?

When the SDL-2 program begins, the management station sends an AT command sequence to the appropriate NAC to enable SDL-2 mode. Control then transfers to the software loader. While in SDL-2 mode, the NAC's RN/FL LED flashes green. Once the NAC enters SDL-2 mode, no other code applications can run and the NAC is entirely devoted to performing the SDL-2 .



Failure may occur if the NAC is powered up without a NIC installed behind it. Failure is indicated by the NAC RN/FL LED flashing green and red.

The SDL-2 program verifies the initialization and operation software, then begins the download. As the program executes, status messages are displayed.

“Device Not Responding” Error Message

If you receive a “Device Not Responding” error message while trying to download, too much other management traffic may be routing to the chassis. Reduce other operations (including multiple management station access) and try the download again.



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