NAC Software Download 1

Installation Instructions

P/N 1.024.0748-01

Network Application Card Software Download 1 (SDL1)
Installation Instructions

Overview

You have received the latest version of software for a Total Control Network Application Card (NAC). You must install this software on a management station (MS) before installing it to a NAC.

This procedure describes how to install the software into a MS and download it to a NAC from a DOS prompt, MIB browser, or through Total Control Manager (TCM). This procedure does not include instructions for SDL2, which allows remote LAN/WAN software download. Refer to the *HiPer Network Application Card Software Download 2 (SDL2) Installation Instructions.* Troubleshooting information is included at the end of this chapter.

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

If you are downloading to the NMC

If you are downloading HiPer DSP capability use the hd* file. HiPer requires a 16M DRAM/8M FLASH RAM NMC card.

If you are not downloading HiPer DSP capability use the nm* file.

After downloading to the NMC, you must complete these steps before configuring the card:

- Restore the chassis configuration from the defaults
- Save the chassis configuration to NVRAM
- Restore the chassis configuration to NVRAM

Software download from the DOS prompt

Before installing SDL1 for DOS download

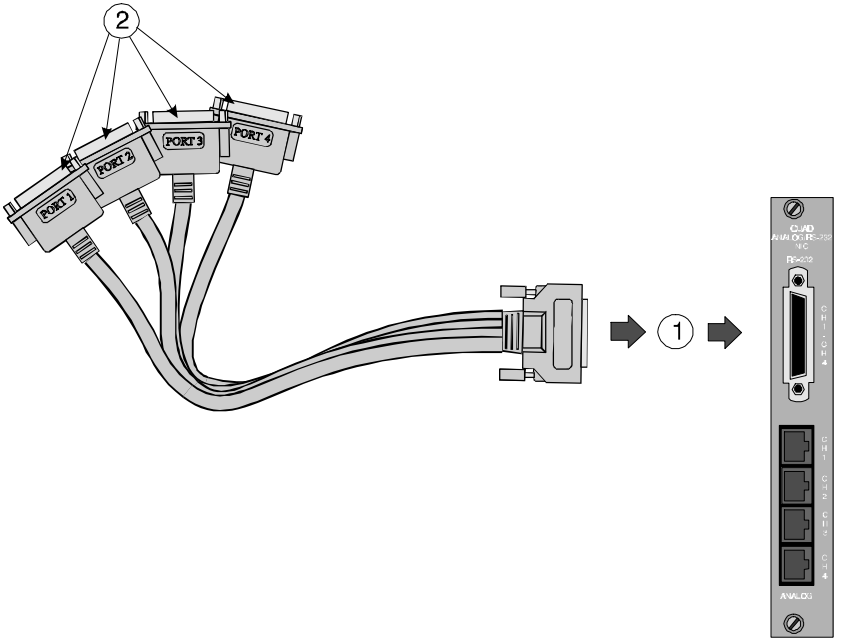
1. Make a backup copy of the disk.
2. Configure the NMC NAC.

   If you are using an NMC Ethernet or Token Ring NIC behind the NMC NAC, refer to the *Hardware Installation Guide* for DIP switch settings.

   If you are using a Quad modem NIC, serial ports shift automatically to the serial rate specified in the command (the pcsdl -r parameter), so no hardware configuration is needed.
3. Verify the cabling between the management station (MS) and the NMC.

   If you are using an NMC Ethernet or Token Ring NIC behind the NMC NAC, refer to the *Hardware Installation Guide.*

   If you are using a Quad modem NIC, you do not need a null modem adapter. Use the DB-50 to DB-25 RS–232 fan cable shipped with the modem NIC. When using pcsdl, the modems on the card must be downloaded to individually. Attach a standard PC serial cable between the appropriate fan cable modem port and the management station serial port.



Number	Description
①	50-pin male RS-232 connector to NIC's RS-232 port
②	DB-25 female connectors modem ports 1-4 to DTE's COM port for modem diagnosis / configuration

Installing SDL1 on a management station

1. Close all applications before installing the SDL software.
2. Copy and install the SDL files to the SDL directory on the management station.

   Note: Unless you specify otherwise, the software installs to the directory C:\USR_SDL. You may specify a different directory when prompted.

Important information about SDL files

After the Install utility copies files to your hard drive, never change the filenames or try to edit the files. This will cause an error message to be displayed when you run the Software Download program.

Starting the DOS software download (SDL)

Note: Before starting a DOS SDL, unload any terminate-and-stay-resident (TSR) programs. TSRs will greatly slow SDL.

1. From the command prompt, type the appropriate SDL command syntax. Refer to the following sections for additional information.
2. Press **ENTER**.

About the SDL command syntax

These guidelines apply to the SDL command syntax:

- Commands can be in either upper- or lower-case letters
- Leave one space after each command line parameter
- The *d* command is optional; the rest are required
- If you type an invalid parameter, or an insufficient number or required parameters, the software will display online help specifying the correct syntax.
- Type **pcsdl -h** to display the online help

To do this:	Type this parameter
Initiate the PC SDL program	**pcsdl**
Select the communication port on the management station cabled to the card (required) possible ports: 1, 2	**-p**
Select the serial port rate (required) possible rates: 9600, 19200, 38400, 57600 bps possible T1 rates: 2400, 9600, 19200, 38400 bps	**-r**
Specify the software download file version .sdl number (required)	**-vsd**
Specify the software operation code version .nac number (required)	**-vna**
Specify the .sdl filename prefix (required)	**-nsd**
Specify the .nac filename prefix (required)	**-nna**
Specify the directory path name (optional) **Note:** If the directory name where the operation and SDL software is stored is different than the default C:\USR_SDL\, also include the directory name.	**-d**

About filename prefixes

Filename prefixes specify the type of .SDL file (software download utility) and the .NAC file (operational code) to use in the download.

This table lists the currently-defined prefixes for .SDL and .NAC files.

Chassis card	.SDL prefix	.NAC prefix
Network Management Card (NMC)	NM (4 MB) HM (16 MB)	NM (4 MB) HM (16 MB)
Quad v.34 Modem (analog, digital, analog / digital)	QF, IF	QF, IF
Quad v.32 *bis* Digital Modem	QM	QM
Quad v.32 *terbo* Modem (analog, digital, analog / digital)	QT	QT
Single-sided Quad Modem	QR, IR, QC	QR, IR, QC
Single T1 Card	T1	ST
Dual T1 Card	T1	T1
Channelized T1 Card	CT	CT
Ethernet TCP / IP Gateway Card	EN	EN
Token Ring TCP / IP Gateway Card	TR	TR
X.25 PAD Gateway Card	XP	XP
NETServer Ethernet Card	TR	LE
NETServer Token Ring Card	TR	LT
NETServer Frame Relay Card	TR	LF
MP / 16 Management Module	PM	PM
MP / 166 v.34 Modem Module	PF	PF
T1 Primary Rate ISDN Card	DP	DP
NETServer ISDN Card	LI	LI
E1 Primary Rate ISDN Card	EP	EP

Chassis card	.SDL prefix	.NAC prefix
MP I-Modem/8 Card MP I-Modem/16 Card	IP	IP
MP NETServer Card	TR	PN
Wireless Gateway NAC	WG	WG
NETServer Card (all prefixes)	TR, LI, LR	LE, LT, LF, LI, LR, DE, DT

Extracting syntax information from the filename

This table shows an example of how to extract syntax information from the filename.

Filename	Prefix	Version #	File type
nm010003.nac	nm (NMC)	1.0.3 (01 00 03)	.NAC
nm010001.sdl	nm (NMC)	1.0.1 (01 00 01)	.SDL

Sample SDL command

This sample command shows SDL syntax:

```
pcdsl -p2 -r57600 -vsd1.0.1 -vna1.0.3 -nsdnm -nnanm
-dc:\usr_sdl <Enter>
```

For this example, note that:

- **n.n.n** represents the version number of the software
- **xx** represents the filename prefix
- The sample management station is using COM2 as the serial port
- The NMC NAC is configured to 57600 bps
- The sample filenames are *nm010003.nac* and *nm010001.sdl*
- The upgrade files are located in the C:\USR_SDL directory

Software download from a MIB browser

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, Token Ring, or SLIP connection.

Before installing SDL

1. Make a backup copy of the 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 *Hardware Installation Guide* and the *NMC Configuration Guide*.

Installing SDL2 on a management station

1. Close all applications before installing the SDL software.
2. Install the files to the appropriate SDL directory on the management station.

   Note: If you are using TCM on the management station, install to C:\USRSUITE\SDL.

Starting the download

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 **5**, which corresponds to softwareDownload. For example, if the card to which you are downloading is in slot number 3, SET uchasCmdFunction.3 to “5.

Once the SET is issued, and the response is received, the uchasCmdResult object will indicate whether the download can proceed.

6 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.

7 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.

8 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

Software Download from TCM

Connect to the NMC

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

Installing SDL1 for TCM

1. Make a backup copy of the disk.
2. Close all applications before installing the SDL software.
3. From the **Start** menu, click **Run**.
4. Type ***drive*:\SETUP**, then press **ENTER**.

   The setup utility installs to the directory C:\USRSUITE\SDL.

Starting the TCM software download (SDL)

Note: Before starting a TCM SDL, unload any terminate-and-stay-resident (TSR) programs. TSRs will greatly slow SDL.

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

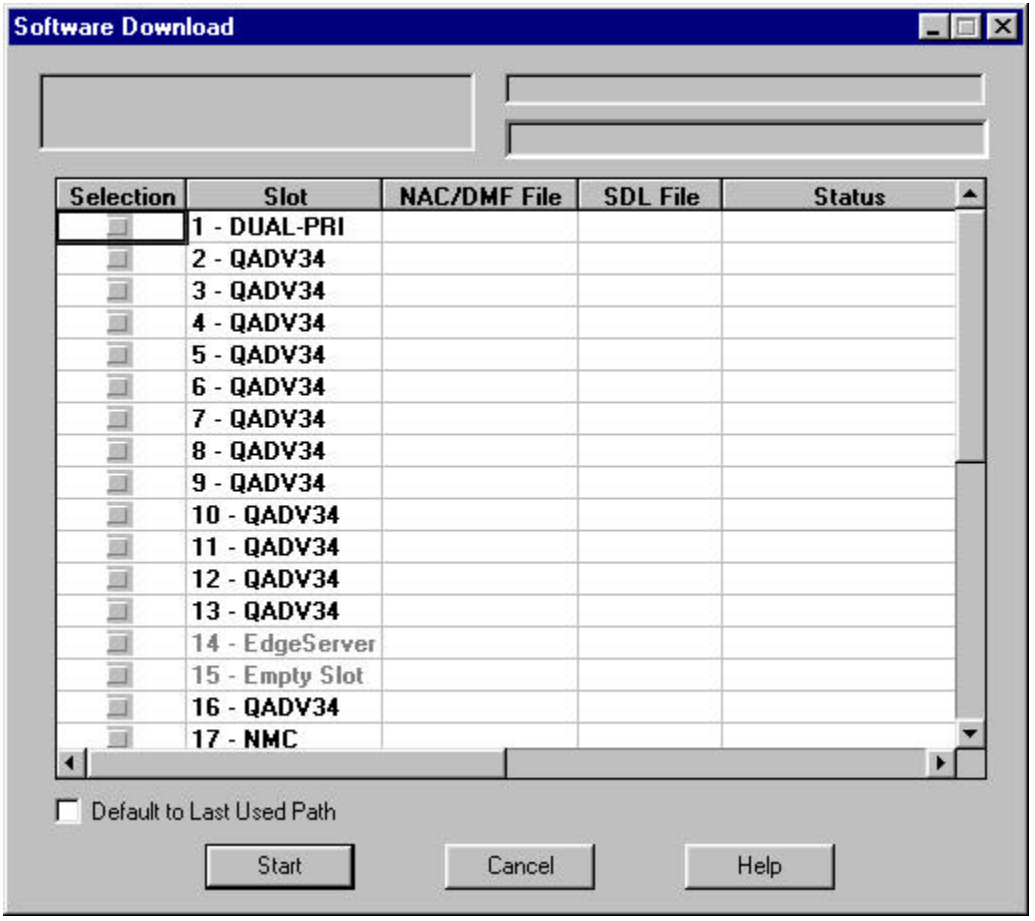
   Note: Once you enter the Software Download window, you may select or deselect cards by their card number.

4. On the **Configure** menu, click **Software Download** Or, on the toolbar, click the **Software Download** icon. Refer to *"About the Software Download window"* for more information.
5. Click **Start** to begin the download.

   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.

Note: 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 will continue, but the remaining downloads will be canceled. Corresponding checkmarks will be removed.

About the Software Download window



Function	Column name
Allows you to select multiple cards on which to perform downloads. A checkmark will appear for every selected card. The device display will also show 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\SDL directory. If the software version is more recent than the NAC itself, the entry appear as red.	**NAC/DMF File**
Lists the most current .SDL file in the C:\USRSUITE\SDL directory. If the software version is more recent than the NAC itself, the entry appear as red.	**SDL File**
Lists the status of each software download on a card-by-card basis. Messages include “In Progress” and “Complete”.	**Status**

Note: 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 will appear. Select the appropriate file.

Troubleshooting the SDL

What happens during a download?

This information is provided for your reference.

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

Note: 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 program verifies the initialization and operation software, then begins the download. As the program executes, these messages are displayed:

```
C:\USR_SDL>pcadl -p2 -r57600 -vsd3.2.0 -vne4.1.0 -tsdnm -tnenm

Verifying Initialization Program File:     100%  /
Verifying Operation Program File:     100%  /
Establishing Communication . . . . . .
Downloading Initialization Program:     100%  /
Initiating Software Download . . . . . .
Downloading Operation Program:     69%
Erasing Flash ROM . . . . .
Programming Flash ROM . . . . . .
Downloading Operation Program:     100%  /
Programming Flash ROM . . . . . .
Checking Downloaded Program CRC . . . . . .
Software Download Successful !
```

"Device Not Responding" error message

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