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Bell Labs Innovations

CPro-2000

User Manual

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About This Manual

Introduction

Welcome to Lucent Technologies CPro-2000. CPro-2000 provides an intelligent user interface that enables concurrent graphics and text-based interaction with members of Lucent Technologies 2000 Synchronous Optical Network (SONET) product family. CPro-2000 mechanizes provisioning operations at the network element (NE) level, as well as at the subnetwork level.

This manual describes the product features and offers detailed procedures for all CPro-2000 operations. The information is arranged to sequentially follow the CPro-2000 main menu bar and associated menu items.

Intended Audience

This manual is intended for CPro-2000 users of all experience levels. CPro-2000 is applicable for all operations personnel who administer Lucent Technologies SONET NEs, wherever they currently use an American Standard Code for Information Interchange (ASCII) terminal or craft interface terminal (CIT).

Engineering Planners, Craft Personnel, and Maintenance Personnel

Engineering planners, craft personnel, and maintenance personnel typically use an ASCII terminal that is directly connected to the CIT port or X.25 port (also known as the operation system interface [OSI] port) of a SONET NE, through an RS-232 cable, to perform analysis of the subnetwork. Now, the engineer can use a desktop or laptop personal computer (PC) running Microsoft® Windows 95b™, Windows 98™, Windows 2000™, and Windows NT™ 4.0 to access CPro-2000. The appropriate communications (COM) port of the PC running CPro-2000 is connected to the NE's CIT port to operate and analyze the SONET subnetwork.

CPro-2000 provides the following benefits to engineering planners, craft personnel, and maintenance personnel:

- subnetwork view via connection to any NE in the subnetwork
- simplification of most SONET NE commands through the use of a graphical user interface (GUI)

Centralized Work Center Personnel

Work center personnel typically use operations systems (OSs) to access the various components of the network, including the NEs; to analyze, provision, and test the network; and to dispatch the outside plant engineer for any necessary on-site repairs to the NEs. In this case, CPro-2000 can serve as a mini-OS by utilizing the remote capability of the ASCII user interfaces (AUIs) of all Lucent Technologies SONET NEs.

Conventions Used

General Conventions

Listed below are the general text conventions used throughout this manual.

- The word "select" is used to indicate the activation of a menu command or a command button in a dialog box or Help window.
- The phrase "click **OK**" means that you can either click the **OK** button with the mouse or, in most cases, you can press the **Enter** key on the keyboard to carry out the action.
- **Bold** type indicates words, characters, keys, or items that you type, point to, click, or press. Titles of chapters being referenced in this manual also appear in bold type.
- *Italic* type indicates NE commands and important new terms. Titles of external documentation that is referenced also appear in italic type.
- `Computer voice` type indicates system messages shown on your screen.

Mouse Conventions

At a minimum, a two-button mouse is required for operating CPro-2000.

If you have a multiple-button mouse, CPro-2000 assumes that you have configured the left mouse button as the primary mouse button. Any procedure that requires you to click with the mouse refers to the use of this left mouse button, unless otherwise specified.

- "Point" means to position the mouse cursor so that the tip of the cursor rests on the item you want to point to on the screen (for example, "Point to **STS-1**").
- "Click" means to press and immediately release the mouse button without moving the mouse (for example, "Click **VT1.5**").
- "Double-click" means to click the left mouse button twice in quick succession (for example, "Double-click on the **CPro icon** to start CPro-2000").
- "Drag" means to press the left mouse button and to continue pressing while moving the mouse (for example, "Drag the cursor from the source slot of the cross connection to the destination slot").
- "Drop" means to release the mouse button after dragging the cursor to the desired location on the GUI (for example, "Drop the cursor on the destination slot").

Keyboard Conventions

- The names of keys that appear on your keyboard are shown in bold type with an initial capital letter (for example, the **Shift** key or the **Escape** key).
- "Press the **Enter** key" means that you can press either **Enter** or **Return**. This initiates an action in CPro-2000. On most PC keyboards, these two keys perform the same operations. In CPro-2000, they can be used interchangeably unless specifically stated otherwise.
- All the keyboard shortcuts that are valid in any other Windows application are also valid in CPro-2000, such as pressing the **Tab** key to move the cursor from field to field in a window.

Introduction

The Concept of CPro-2000

CPro-2000 is a Windows™ application that provides access to Lucent Technologies SONET NEs from a PC or laptop via a command-based ASCII User Interface (AUI) and Graphical User Interface (GUI).

For DDM-2000, FT-2000, SLC-2000®, and FiberReach NEs, the native AUI available within the CPro-2000 environment is the same ASCII text-based user interface that these NEs provide as an integral part of their generic software. Users have access via an industry-standard VT-100 ™ terminal (also known as an ASCII terminal). However, within the CPro-2000 environment, the ASCII interface provides a number of useful features that may not be available on an ASCII terminal such as user-developed scripts, cut-and-paste capability, and session capture to a file.

The CPro-2000 GUI allows users to execute tasks on the subnetwork, or on specific NEs in the subnetwork, by selecting commands from the menus and objects from the graphical display. Tasks that may normally require typing several long ASCII interface commands can be accomplished with a few mouse clicks in the GUI.

The GUI is developed to be common across several Lucent Technologies SONET products. However, since the ASCII interfaces of each product are slightly different from one another, the graphical layer also provides the important function of minimizing such differences. This enables the users to focus more on the network operations and less on syntax differences between different types of NEs.

CPro-2000 Customer Assistance

Customer assistance and troubleshooting for CPro-2000 are available by calling 1-800-225-4672, Lucent Technologies toll-free hotline number. The hotline is staffed with technical representatives and is operational 24 hours a day, seven days a week. Consult your Lucent Technologies account representative for complete customer service and maintenance information.

Also available for Network Element technical assistance is the Regional Technical Assistance Center (RTAC) at 1-800-225-RTAC. RTAC personnel troubleshoot field problems 24 hours a day over the phone, and if necessary, on site.

Troubleshooting

To resolve any problems that may occur while working with CPro-2000, refer to the **CPro-2000 Software Release Description (SRD)** that accompanies this manual or refer to the Readme file in the CPro-2000 software. To access the Readme file, select CPro-2000 R11.0 from the Start Menu, then choose CPro-2000 R11.0 Readme from the submenu. The Troubleshooting sections of both the SRD and Readme file contain specific information for resolving issues. It is recommended, therefore, that you review these prior to requesting customer assistance.

System Requirements

Hardware

CPro-2000 R11.0 requires the following minimum hardware requirements:

- Intel Pentium processor at 133 MHz with 64 MB of Random Access Memory (RAM) and one available buffered COM port
- CD drive
- hard disk drive with at least 40 MB of available space (after Windows is loaded)
- two-button mouse
- sound card (to enable Audible Alarm)
- modem card (to enable Alarm Pager)
- VGA monitor
- LAN interface (if TCP/IP connection is desired)

NOTE: It is recommended that at least a 256-color mode be used. 128 MB RAM is recommended for use with large networks.

Software

CPro-2000 Release 11.0 runs on the following platforms: Microsoft Windows 95b, Windows 98, Windows 2000, and Windows NT 4.0.

NOTE: CPro-2000 Release 11.0 does not support Microsoft Windows 3.1™ or Microsoft Windows 95a™.

Supported Network Elements

CPro-2000 provides an intelligent common GUI for Lucent Technologies SONET NEs including DDM-2000 OC-3, DDM-2000 OC-12, FiberReach, FT-2000 OC-48, and the SONET functionality of SLC-2000.

CPro-2000 Release 11.0 provides an interface for the following NE Releases:

- DDM-2000 OC-3 — Releases 13.0, 13.5, 15.x
- DDM-2000 OC-12 — Release 7.x
- FiberReach — Releases 3.0, 3.1, and 4.0
- FT-2000 OC-48 — Releases 8.1, 9.0, and 9.1
- SLC-2000 (the SONET portion if installed with OC-3 R13.0) Releases 4.4 and 4.6
- MegaStar – support for the SONET portion only as DDM-2000 OC-3s

NOTE: CPro-2000 Release 11.0 fully supports only the NE Releases listed above.

New Features

Listed below are the significant new features in CPro-2000 Release 11.0:

- ability to connect to an NE either through a serial port or over TCP/IP
- ability to edit the INI file using the INI File Editor
- support for password aging on NEs
- support for DS1 provisioning for IMA/LAN
- ability to recognize and graphically represent Lucent's WaveStar products (as "unsupported" NEs) in the Subnetwork View
- support for audible alarms and alarm paging
- support for network alarm polling in MML on a DDM-2000 shelf supporting RNE Status

Installation

Overview

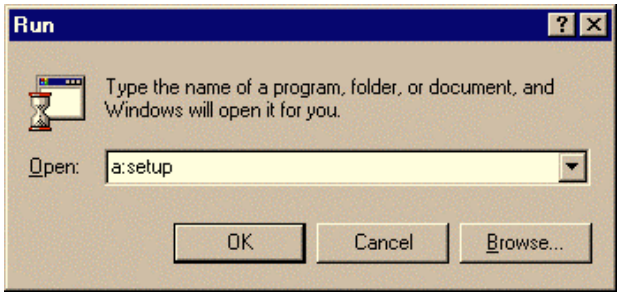
This chapter gives step-by-step details for installing CPro-2000 software. CPro-2000 Release 11.0 software media is available in CD or 3.5-inch high-density diskettes. This chapter also explains how to customize CPro-2000 settings in accordance with your operating environment and preferences.

CPro-2000 Installation

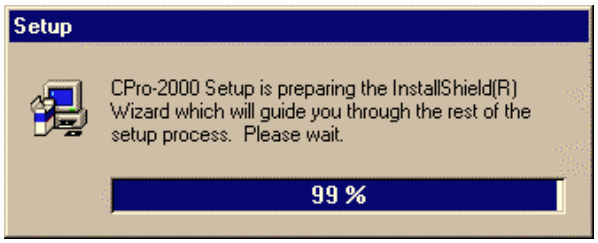
Procedure

1. Boot up your PC.
2. Start Windows 95, 98, or NT (if Windows is not already running).
3. If you are installing a CD, insert the CPro-2000 CD in the appropriate drive on your PC.

   If you are installing diskettes, insert the first of the six CPro-2000 installation diskettes into the 3.5-inch drive.
4. Click on the **Start** button on the taskbar, then click **Run.** The Run dialog box appears.

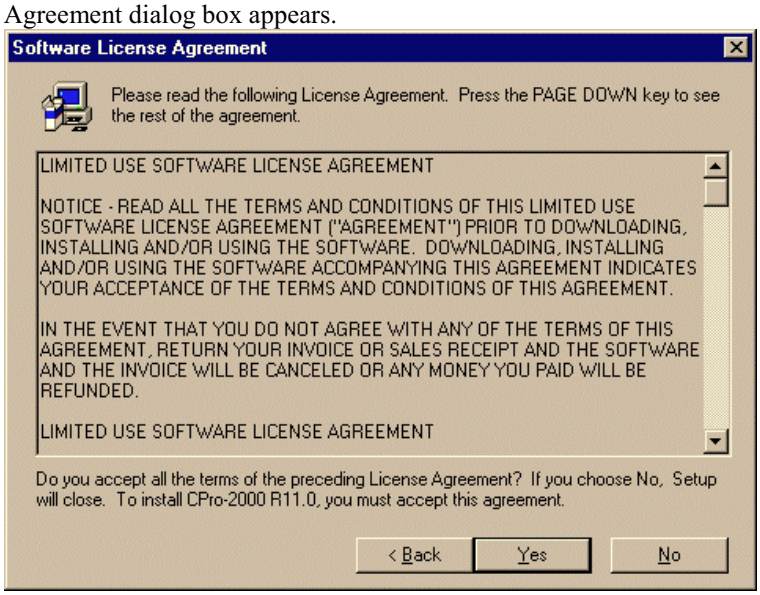


5. Type **x:\setup** in the command line box of the Run dialog box, where "x" is the drive letter for your CD drive or floppy drive. For example, if you are installing a CD, enter **d:\setup** if your CD drive is designated as drive d.
6. Click **OK**. The Setup dialog box appears.



7. Read the text in the Setup dialog box and wait for the window to close. The Welcome window appears.

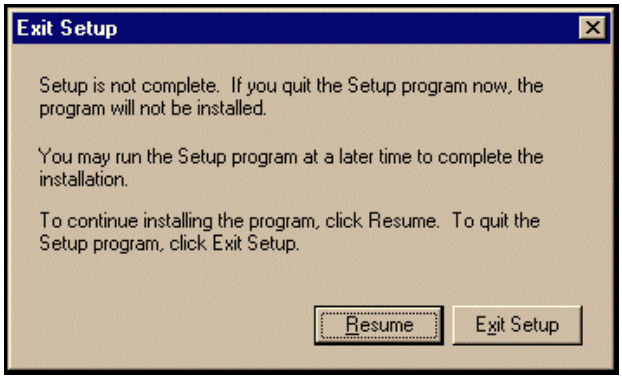
8. Read the text in the Welcome dialog box, then click **Next**. The Software License Agreement dialog box appears.



9. Read the text in the Software License Agreement dialog box, using the down arrow to scroll down to the remaining text.

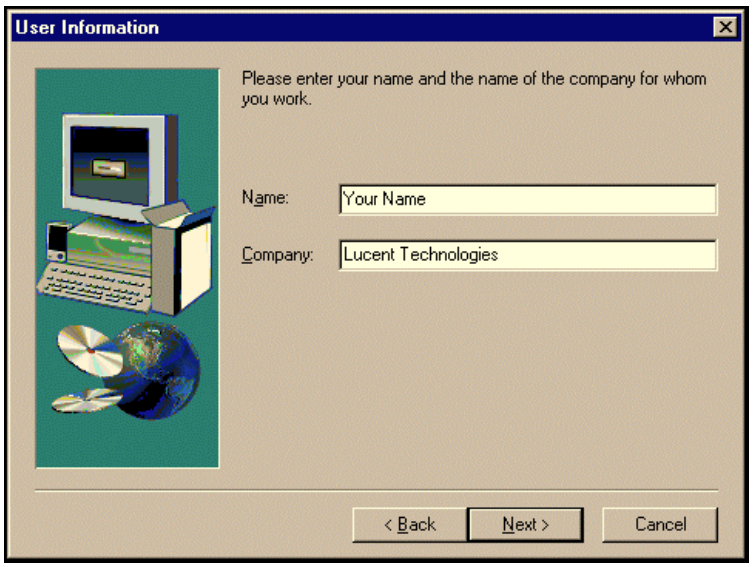
10. Click **Yes** if you accept the terms of the Agreement.

If you do not accept the terms of the Agreement, Click **No**. The Exit Setup box appears.

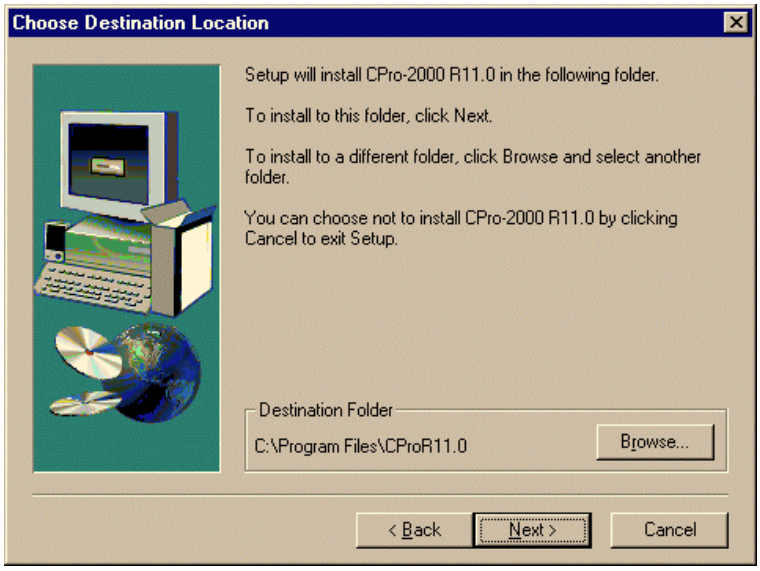


Click **Exit Setup** to exit the installation or click **Resume** to accept the terms of the Agreement and to continue the setup process.

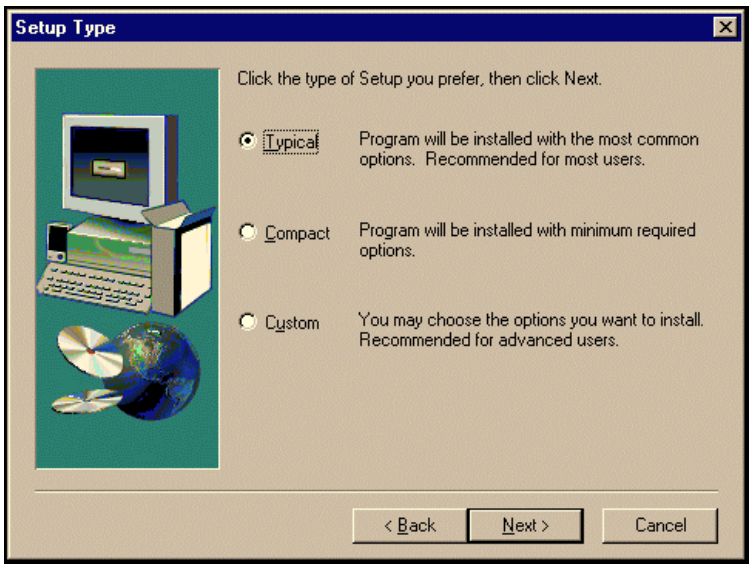
If you accepted the terms of the Agreement, the User Information dialog box appears.



11. Enter your name in the **Name** field, the company name in the **Company** field, then press **Next**. The Choose Destination Location dialog box appears.



12. Click **Browse** to change the directory from the one specified in the Choose a Destination Location dialog box, then click **Next**. To accept the default directory location, click **Next**. The Setup Type dialog box appears.



NOTE: If the CPRO.INI file or the DEFAULT.SCR file already exists from a previous installation in the directory where CPro-2000 is being installed, a message that the existing versions of the files have been saved in different files appears. The earlier CPRO.INI file is saved as cpro2.ini while the earlier DEFAULT.SCR file is saved as default2.scr.

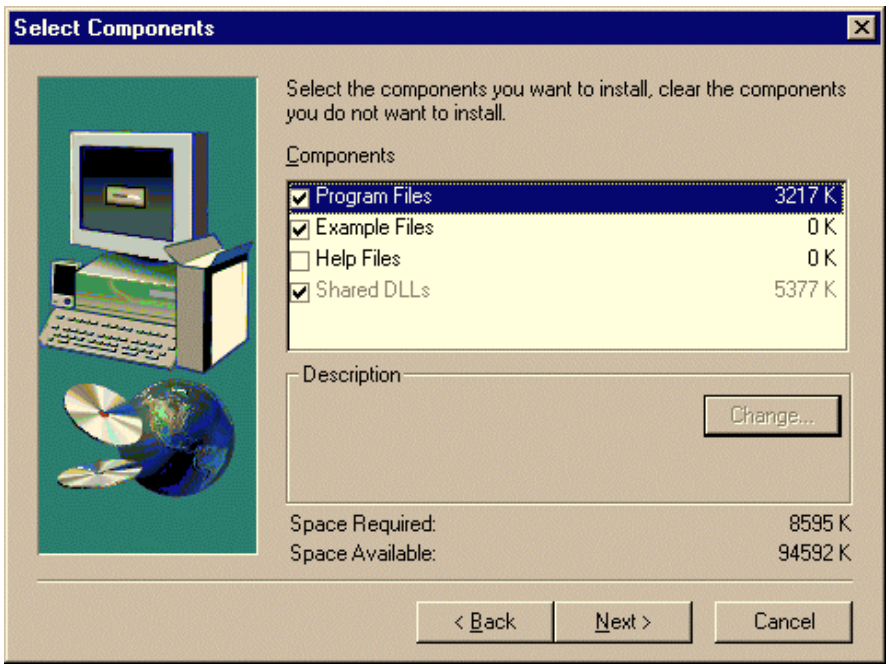
For information on how to customize the CPRO.INI file or the DEFAULT.SCR file, see the "Customizing CPro-2000 Settings" section of this chapter.

13. Select the preferred installation from the following Setup options:

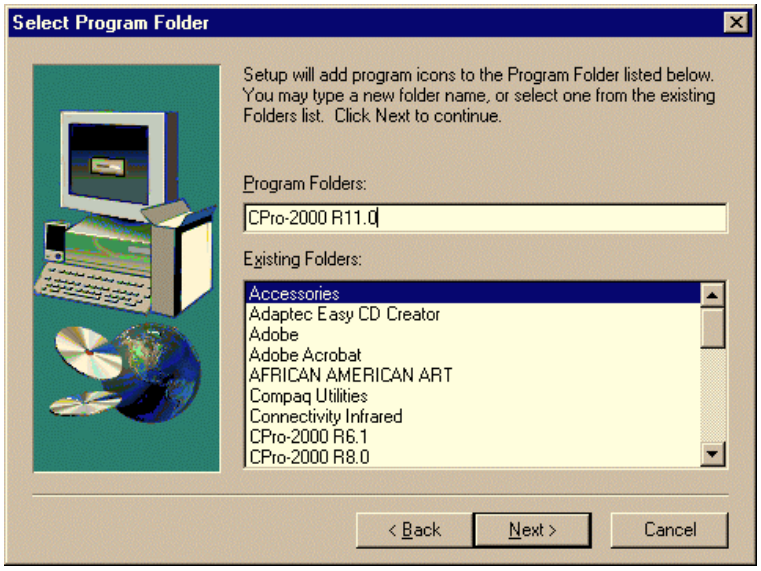
    Typical – installs all CPro-2000 Program Files

    Compact – automatically excludes the Help files from the installation

    Custom – brings up the **Select Components** dialog box. To exclude the Help Files from the installation, leave the Help Files box unchecked.



14. Click **Next** to proceed with the installation. The Select Program Folder dialog box appears.



15. Read the information in the Select Program Folder box, follow the instructions, then click **Next** to continue with setup.

16. If you are installing a CD, skip to Step 18.

    If you are installing diskettes, the Setup Needs The Next Disk dialog box appears.

Follow the instructions provided in the Setup Needs The Next Disk dialog box.

17. Insert remaining CPro-2000 R.11.0 disks at the prompt, then click **OK**.

    Note that if you selected the Compact or Custom options earlier on in the installation process, the system invites you to insert disk #4 after you have inserted disk #2. Disk #3 contains information on the Help files and are not included with the Compact or Custom options.

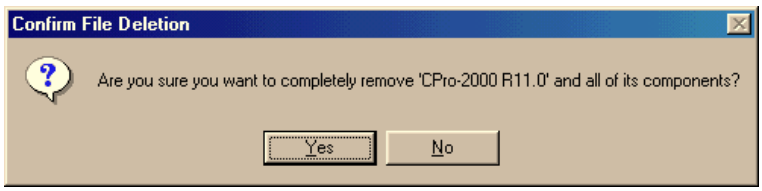
18. For both installation types, click **Finish** in the Setup Complete dialog box to complete the setup.

TIP: For easier access to CPro-2000, we suggest that you create a shortcut for the GUI. It is not necessary to create one for the AUI as it automatically displays whenever the GUI is opened.

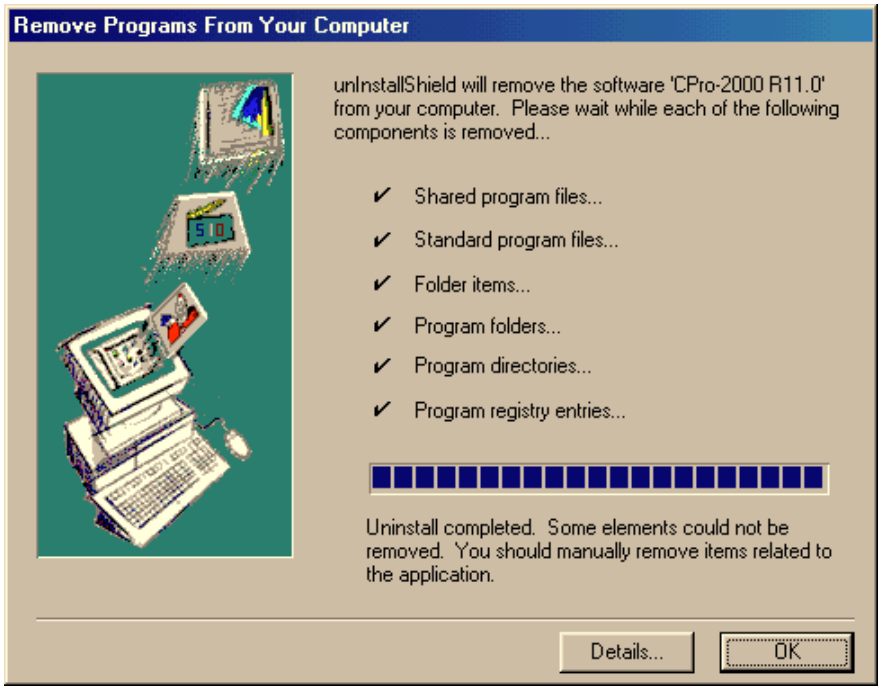
Uninstalling CPro-2000 R11.0

Procedure

1. From the Start button, click **CPro-2000 R11.0**, then select **CPro 11.0 Uninstall** from the submenu. The Confirm File Deletion message box appears.



2. Click **Yes** to continue the uninstall, or click **No** to cancel the uninstall. The Remove Programs From Your Computer window that appears tracks the progress of the uninstall process.



3. Click **OK** to complete the uninstall and exit the Remove Programs From Your Computer window.

   NOTE: Files created after installation such as Backup files may not be deleted during the uninstall process. Manually delete these files and directory by using the Explorer window.

4. Exit any dialog boxes.

   NOTE: If you intend to reinstall CPro-2000, restart your PC at this point to ensure successful reinstallation.

Customizing CPro-2000 Settings

CPRO.INI File

The CPRO.INI file is created in the installation directory when CPro-2000 is installed. This file contains selectable parameters for configuring the manner in which CPro-2000 will operate during an active session. The CPRO.INI file can be customized for your computing environment after installing the CPro-2000 software.

NOTE: Modifications to CPro-2000 will take effect only after a new CPro session is started following changes to the CPRO.INI file.

Customizing the CPRO.INI File

The CPRO.INI file contains the CPro-2000 default settings. To access this file, do the following:

From the **Start** button, select **Programs**. Click **CPro-2000 R11.0** in the submenu that appears, then click **CPRO.INI** in the next submenu.

The CPRO.INI file appears in a Windows Notepad editor window. Each of the entries in this file can be customized for your environment. They include the following:

- FILENAME—This section contains the default script file name.
  - SCRIPT identifies the default data communications script file to be used for login (for example, DEFAULT.SCR).

NOTE: Automatic updating of the SCRIPT field in the Login dialog box is a feature of the CPRO.INI file. If a script name other than the one defined in the CPRO.INI file is entered in the Login window, the CPRO.INI file is automatically updated to contain this new script file name. If no script file name is used on the Login window, then the CPRO.INI file is updated to not contain a default script file name.

- CPRODRV—This section contains entries that determine AUI parameters.
  - TIMEOUT is the amount of time in milliseconds between CPro-2000 sending a command and the time it takes the NE to respond before CPro-2000 times out. For example, 30000 equals 30 seconds, 100000 equals 100 seconds, and 1000 equals 1 second. (This parameter should be increased when circumstances such as a very large network or slow response of the NE are causing CPro-2000 to time out). The default setting for this feature is 60000 (60 seconds).
  - SETTINGS contains the PC settings in the following format:

    "port name: baud rate, parity, data bits, stop bits, handshaking"

    COM1:9600,e, 7, 1, none is an example of the PC settings, where COM1 is the name of the port connected to an NE for use with CPro-2000.

NOTE: The settings listed in your default data communications script (in most cases, it is DEFAULT.SCR) supersede the setting information listed in the CPRO.INI file.

  - LEFT, TOP, RIGHT, BOTTOM are the entries that determine the size of the AUI screen. These entries are saved from the last use of the AUI. The default settings are as follows: Left = 0, Top = 380, Right = 640, Bottom = 480.

- CPROGUI—This section contains entries that determine the size of the GUI window.
  - LEFT, TOP, WIDTH, and HEIGHT are the entries determining the size of the GUI screen and are saved from the last use of the GUI. The default settings are as follows: Left = 0, Top = 0, Width = 1200, Height = 6500.

- PREFERENCE—This section contains entries that determine how cross connections are viewed in a Network Element View and which communications standard, Human-Machine Language (MML) or Transaction Language One (TL1), is the default.
  - SHOWCC can be either TRUE or FALSE. When the entry is FALSE, the slots/ports containing cross connections are displayed in dark blue and the cross-connection lines are not displayed. When the entry is TRUE, the slots/ports containing cross connections are displayed in purple and green. All of the cross-connection lines are displayed as well.
  - NE_IF_DEFAULT can be either MML or TL1, depending on which command response type you are using most of the time. MML is the current default. This variable appears in the tabs at the top of the Login dialog box.

- INVENTORY—This section defines the number of NE inventories permitted before CPro displays a warning messsage regarding system resources.
  - NE_INVENTORY_LIMIT can be set to a value from 1 to 50. The default is 40. When this limit is exceeded, a warning message is posted. Once this limit is exceeded, more NEs can still be inventoried (the warning message will reappear). However, depending on hardware, performance might eventually be reduced.

- TIDS—TID names are only applicable when using TL1 to connect to a subnetwork. For TL1, you must supply a TID.
  - The entries in this section are a compilation of the TID names you use during the login process, such as “NODE1” or “NODE-XYZ.” Each time you type a new TID name into the login screen, the TID is added to the TID list in your CPRO.INI file. The latest entry appears at the top of the list. Each subsequent time you log in, these TID names appear in a down-arrow list by the TID field.

NOTE: If you attempt to delete or renumber the TID list in the CPRO.INI file, ensure that the list is kept in sequential order.

- ALARM POLLING—This section contains entries that determine whether the automatic alarm-polling feature is enabled or disabled and the specified time interval between alarm-polling events. The default setting for this feature is “disabled.”
  - AUTO identifies whether the alarm-polling feature is enabled or disabled. When the entry is YES, the alarm-polling feature is enabled. When this field is NO or blank, the alarm-polling feature is disabled and the time interval is reset to three minutes.
  - INTERVAL is the amount of time in minutes between automatic alarm-polling events. The default time interval is three minutes. The minimum interval allowed is one minute.

- AUTONOMOUS MESSAGES—This section contains the entry to determine whether or not autonomous messages generated by the NE are displayed in the CPro-2000 AUI. These autonomous messages keep users up-to-date with any changing NE conditions. However, they might interfere with an interactive session through the AUI.
  - DISPLAY can be set to a value of 1 or 0. When set to 1, autonomous messages are displayed in the CPro AUI and any interactive session messages are interspersed with the autonomous messages from the NE. When set to 0, autonomous messages are not displayed and an interactive session via the AUI is unaffected by autonomous messages.

The INI File Editor

Overview

The initialization file, CPro.ini, controls the default settings for the user configurable parameters initialized by CPro-2000.

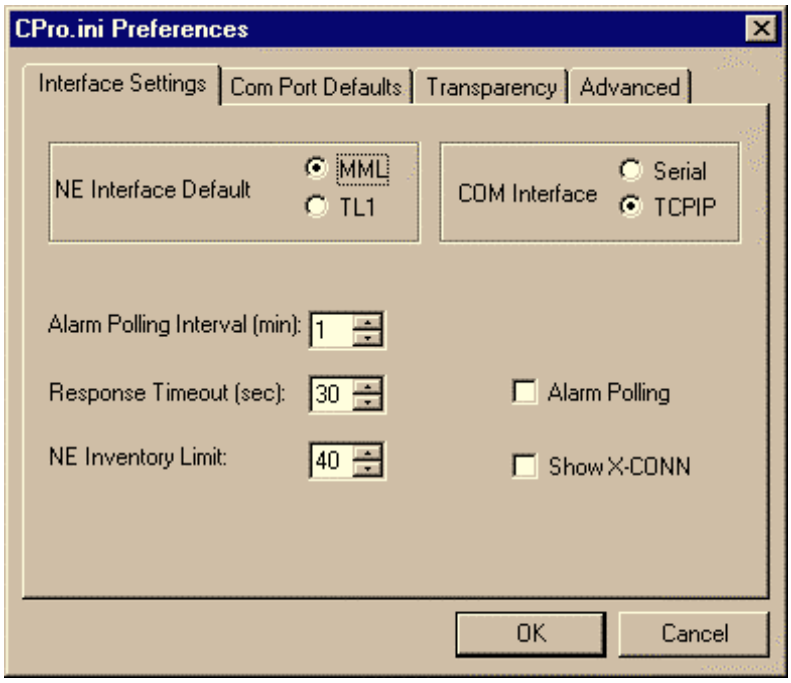
The INI File Editor feature provides a graphical means of editing this file thereby minimizing the risk of corruption to the file. Using the INI File Editor, you can edit parameters in the INI file such as the communication interface, communication mode, and alarm polling, without directly manipulating the contents of the file. Note that the INI File Editor is available only if the Subnetwork View is closed.

The INI File Editor is made up of four tabs, each of which is discussed in the sections that follow:

- Interface Settings
- Com Port Defaults
- Transparency
- Advanced

i. The Interface Settings Tab

Use the Interface Settings tab to perform tasks such as setting the communication mode, setting the communication interface, and setting alarm polling. For a detailed description of the settings in this tab, refer to the “Customizing CPro-2000 Settings” section of this chapter. The following sections explain the tasks you can perform from this tab.



To change the interface settings

1. Bring up CPro-2000 R11.0
2. From the GUI, click the **Access** menu, and then select **Edit CPro.ini**. The CPro.ini Preferences dialog box appears with the Interface Settings tab displayed.
3. Select your options. An explanation of these options is provided in the "Customizing CPro-2000 Setting" sections of this chapter. Note that with the exception of the Com Interface option, changes in this tab take immediate effect.

   The Com Interface option allows you to select the method of connection to the NE. You can choose either a serial link or TCPIP connection. However, changes to the Com Interface take effect only after you exit the current session and restart CPro-2000.
4. Click **OK** to save the current settings and dismiss the CPro.ini dialog box, or click **Close** dismiss the dialog box without saving any settings.

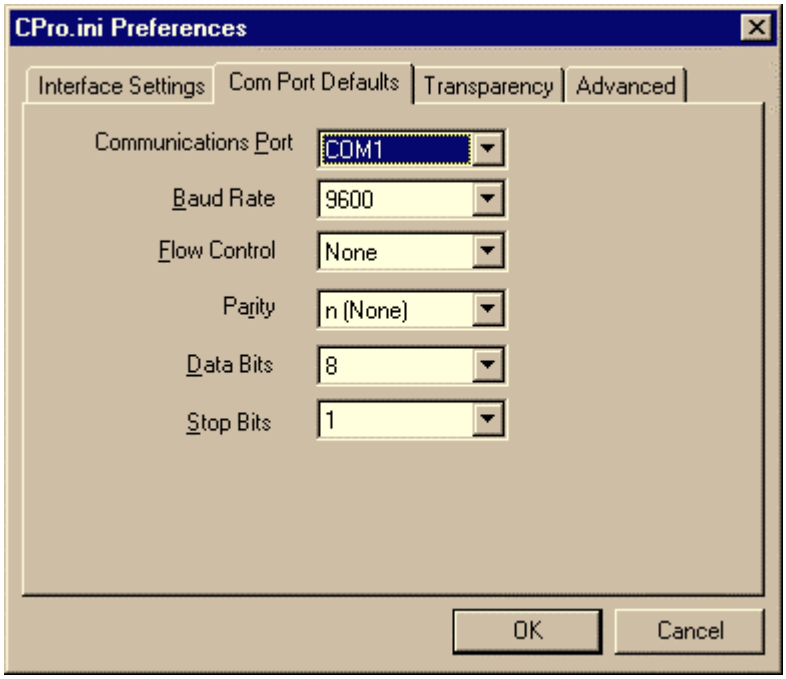
NOTE: Subsequent CPro-2000 sessions open with the last value selected.

ii. The Com Port Defaults Tab

From the Com Port Defaults tab, you can specify your communications options.

To change the com port default settings:

1. Bring up CPro-2000 R11.0
2. From the GUI, click the **Access** menu , then select **Edit CPro.ini**. The CPro.ini Preferences dialog box appears with the Interface Settings tab displayed.
3. Click the **Com Ports Defaults** tab.



4. Select your options. For an explanation of these options, see the "Customizing CPro-2000 Setting" sections of this chapter.

5. Click **OK** to save the current settings and dismiss the CPro.ini dialog box, or click **Close** dismiss the dialog box without saving any settings.

NOTE: Subsequent CPro-2000 sessions open with the last value selected.

iii. The Transparency Tab

CPro-2000 is version specific in terms of the NE releases it supports. The transparency feature allows CPro-2000 to operate against NE features for which it was not specifically designed. Typing the release number of the compatible NE in the Base Release field and the number for the incompatible NE in the New Release field enables CPro-2000 to communicate with the incompatible NE exactly as it would the compatible NE.

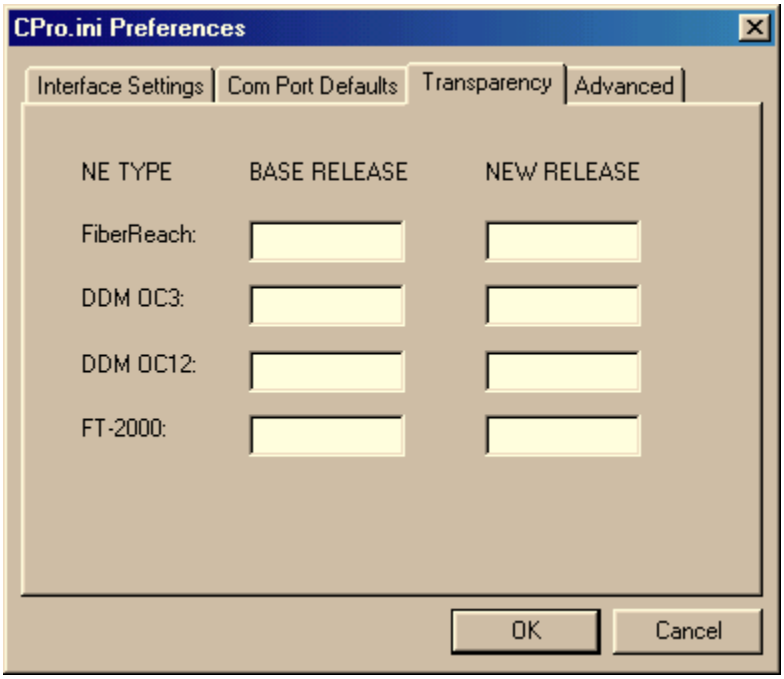
NOTE: Do not use this tab without consulting Customer Technical Support..

To get technical support for CPro-2000, call 1-800-225-4672, Lucent Technologies toll-free hotline number. The hotline is staffed with technical representatives and is operational 24 hours a day, seven days a week.

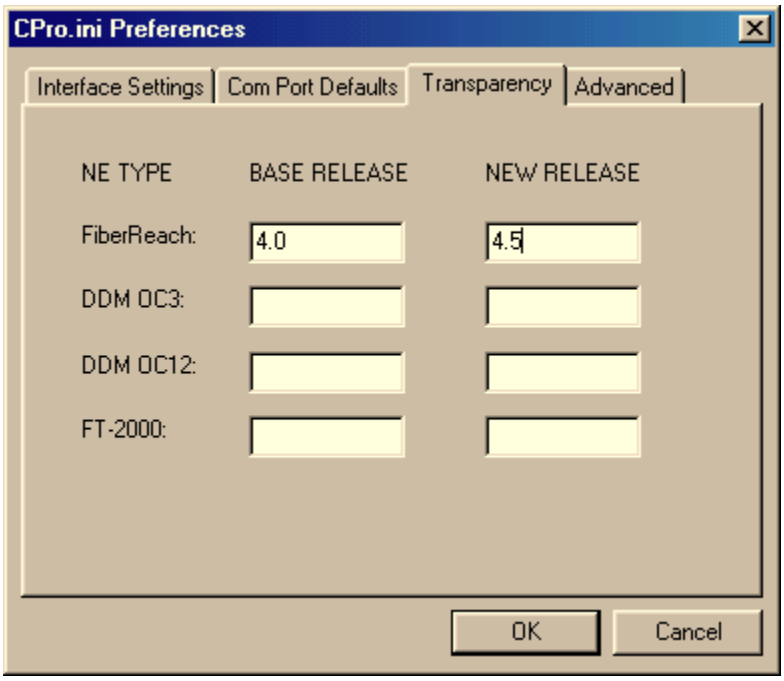
To connect to an NE version that is unsupported by the current CPro-2000 release:

1. From the GUI, click the **Access** menu , then select **Edit CPro.ini**. The CPro.ini Preferences dialog box appears with the Interface Settings tab displayed.

2. Click the **Transparency** tab.



3. Enter the current release in the first field, then enter the new release where indicated, as shown in the example below:



4. Click **OK** to save the current settings to the INI file and dismiss the CPro.ini dialog box, or click **Close** dismiss the dialog box without saving any settings.

iv. The Advanced Tab

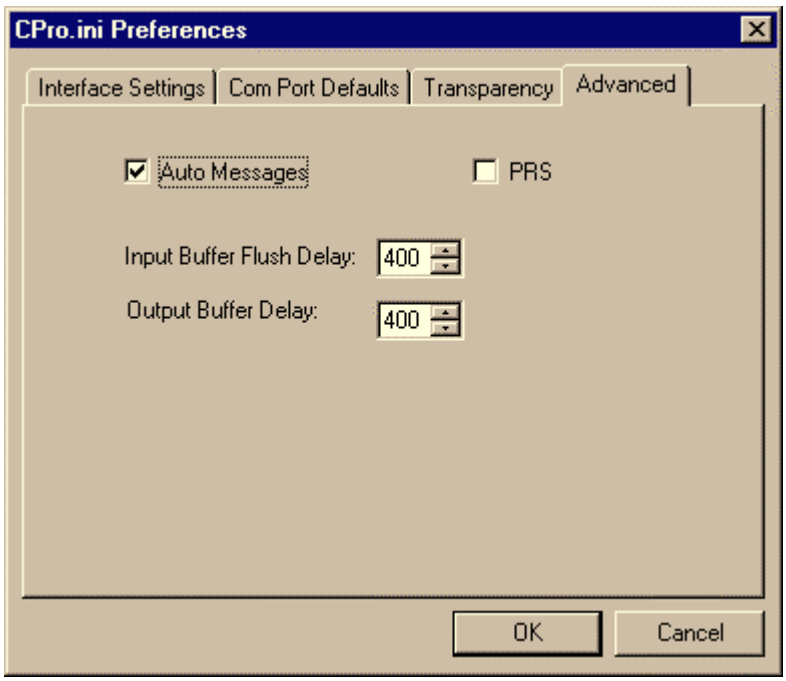
NOTE: The Advanced tab is intended for troubleshooting and debugging purposes only. Do not change its settings unless directed to do so by Customer Technical Support.

To get technical support for CPro-2000, call 1-800-225-4672, Lucent Technologies toll-free hotline number. The hotline is staffed with technical representatives and is operational 24 hours a day, seven days a week.

To view the Advanced tab options:

1. From the GUI, click the **Access** menu , then select **Edit CPro.ini**. The CPro.ini Preferences dialog box appears with the Interface Settings tab displayed.

2. Click the **Advanced** tab.



WARNING: Do not change the setting in this tab without consulting Customer Technical Support.

3. Click **OK** to save the current settings to the INI file and dismiss the CPro.ini dialog box or click **Close** dismiss the dialog box without saving any settings.

CPro-2000 Startup

Overview

CPro-2000 is a user-friendly tool for craft provisioning of SONET subnetworks. This is accomplished by establishing a connection to an NE (known as the local node) in a SONET subnetwork, and communicating to the rest of the subnetwork through this NE, over the data communications channel (DCC) between all NEs in the subnetwork.

NOTE: To access the NE connected to CPro-2000, you must have a user login on the NE. If you do not have a user login on the NE, see your network administrator.

Physical Connections

OC-3, OC-12, and FT NEs have three ports to which CPro can connect.

- The DCE (CIT1) is used for a direct connection.
- The DTE (CIT2) is used for modem access or a direct connection through a null modem (not available on a Fiber Reach shelf).
- The X.25 port is used for X.25 access [an X.25 protocol device such as a packet assembler/disassembler (PAD) or packet-switched network is required]. FiberReach NEs do not support an X.25 port.
- A TCP/IP network connection is used to connect to an NE by initializing a gateway device such as Lucent's NCC™ or a generic terminal server capable of supporting TCP/IP interconnect such as Annex.

TL1 is allowed on the front CIT of DDM-2000 and FiberReach beginning with DDM-2000 Release 15.0 and FiberReach Release 4.0.

For OC-12, the DCE and DTE ports use MML and the X.25 ports use TL1.
CPro-2000 supports both of these.

For FT, the DCE and DTE ports can be set to CIT or TL1. CPro-2000 supports only TL1.

DDM-2000 OC-3, OC-12 and FiberReach Access via CIT Port

For DDM-2000 OC-3 and OC-12 users, establishing a connection to your SONET subnetwork for operations with CPro-2000 is similar to accessing your SONET subnetwork for operations

with an ASCII terminal. Like an ASCII terminal, the COM port of the PC running CPro-2000 can be connected to the craft interface terminal (CIT) port of a node in your subnetwork.

FT-2000 OC-48 Access via CIT Port

FT-2000 users **must** have their CIT port (either DCE located in front, or DTE located in back) provisioned to be a TL1 interface to use CPro-2000. Use the FT-2000 PC-CIT command *security-set-security-port-DCE/DTE* to provision the CIT port as a TL1 interface.

Use one of the following methods to provision the port back to a PC-CIT (non-TL1) port when you have completed your CPro-2000 session:

- Using CPro-2000, select **Set CID Secu** from the Provision pull-down menu and follow the procedure detailed in **The Provision Menu** chapter of this document.
- From the FT-2000 OC-48 PC-CIT, use the FT-2000 PC-CIT command *security-set-security-port* to change the port protocol provisioning from a TL1 port to CIT port. This command must be completed from an NE in the subnetwork other than the one to which CPro-2000 is connected.

DDM-2000 OC-3 and OC-12 Access via X.25 Port

For DDM-2000 OC-3 and OC-12, the X.25 port is always active, and once the cable is hooked up, communication can be established. This provides TL1 commands and responses for all the supported TL1 commands. If you are not using a packet-switched network, then a PAD must be used to connect CPro-2000 directly to an X.25 port.

FT-2000 OC-48 Access via X.25 Port

An FT-2000 OC-48 X.25 port is always provisioned for TL1 and cannot be changed. If you are not using a packet-switched network, then a PAD must be used to connect CPro-2000 directly to an X.25 port.

FiberReach Access via X.25 Port

FiberReach NEs do not support an X.25 port. TL1 FiberReach access is provided through its DDM-2000 OC-3 host over the DCC.

NOTE: TL1 over CIT is available starting with FiberReach R4.0.

Partitioning

CPro-2000 utilizes a concept known as *partitioning*. As the size and complexity of SONET subnetworks continue to grow, working with an entire subnetwork can be cumbersome. Therefore, CPro-2000 partitions the subnetwork into logically divided areas that are easier and faster to work with.

A partition is a logical grouping of NEs all interoperating on the same high-speed SONET media. For example, each group below contains NEs of the same partition:

— each discreet ring within a multi-ring environment

— all linear NEs directly connected to each other including chains, hubs, point to point, or linear extensions

— each open ring subtending from other SONET media of higher bandwidth

Open ring is discussed in greater detail in the section "Ring Transport Service" in the **End-to-End Path Menu** chapter.

The Partition Inventory

Lucent Technologies SONET NEs are designed to possess the intelligence necessary for each NE in the subnetwork to be aware of itself and of the other NEs in the same subnetwork. This SONET NE capability, which is used by CPro-2000 to derive the Partition Inventory, is accomplished simply by querying the NEs.

CPro-2000 does not require interfaces to OSs that have a network database, and it does not require the user to manually create a database. CPro-2000 derives its necessary information by querying the NEs and using this data for subnetwork-level operations. The Partition Inventory is updated for all operations performed from the GUI. If you need to perform subnetwork-level tasks such as creating or deleting an end-to-end path, then taking an inventory of each partition in the subnetwork is essential. If, on the other hand, you need to perform operations on a single node, taking a single NE inventory is sufficient. See the “Inventory (NE View)” section in **The Update Menu** chapter for more information.

If you do not check Partition Map or Partition Inventory, CPro-2000 does the following:

- logs into the local node
- inventories the local node and displays its Network Element View

NOTE: Only one user should operate on a subnetwork at one time. Once the Partition Inventory is performed by that one user, the best way to ensure that the inventory stays accurate is to have only one user logged into the subnetwork at the same time.

WARNING: The Subnetwork View may change if multiple users are logged onto the subnetwork at the same time.

Contents of the Partition Inventory

During a Partition Inventory, CPro-2000 retrieves information about all of the nodes in the partition including topology, equipage, cross connections, and alarms.

Partition Topology —The Lucent Technologies SONET NEs provide a capability for each NE in a partition to list all other NEs in the partition and point out from that list those NEs that are directly connected to it (neighbors) and the local interfaces used for those connections. When such information from all NEs in the partition is put together and analyzed, the layout or the topology of the entire partition can be derived. This information is essential for all subnetwork-level operations such as end-to-end provisioning of paths.

Equipage —The Partition Inventory queries the NEs to determine how each slot is equipped. CPro-2000 displays this information graphically and uses it for commands related to port provisioning and cross connections.

Cross Connections—The Partition Inventory also determines what cross connections exist within the NEs at STS-1, STS-3, and VT1.5 levels, including DS1, DS3, EC-1, OC-1, and OC-3 termination points. These cross connections display graphically.

Alarms—The Partition Inventory also retrieves the current alarm status of all the nodes in the partition on the GUI window.

How to Get a Partition Inventory

To inventory an partition, do one of the following:

- Check **Partition Inventory** in the Login dialog box. The Partition Inventory is taken during the login. Note that only the partition you logged into is inventoried. For more information, see the "Accessing the Subnetwork" section later in this chapter,

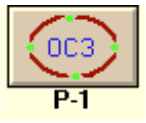
  OR

- Select **Partition Inventory** from the Node Manager window if you did not select **Partition Inventory** at login or to inventory other partitions in the subnetwork. See the "Node Manager" section in **The Access Menu** chapter for more information.

When you choose **Partition Inventory**, CPro-2000 automatically *discovers* a partition. A discovered partition is when CPro-2000 recognizes it as part of the subnetwork and knows its configuration. For MML, the first partition that CPro-2000 discovers contains the local node to which you are logged in. For TL1, any node can be selected by entering its TID in the Login dialog box. As each partition is discovered, it is numbered by CPro-2000 (for example, P-1, P-2).

NOTE: For details on how to customize partition names, see the “Rename Partition” section in the **Edit Menu** chapter**.**

When partitions are initially discovered and therefore displayed in the Subnetwork View, they are in an *unexpanded* format. The unexpanded partition shows only the partition name and the type of NE contained in the partition. The following is an example of a DDM-2000 OC-3 ring partition icon.

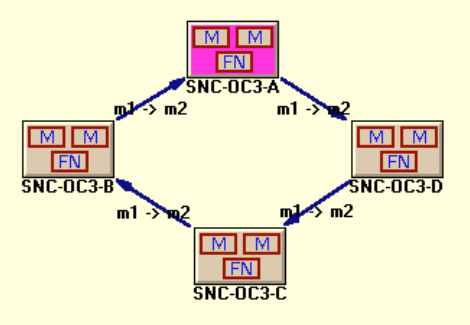


If the partition contains an *unsupported* NE, the partition icon displays with “Unsupported Partition.” The following is an example of an unsupported partition icon.

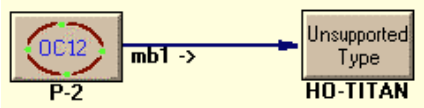
CPro shows two partitions (displays both icons shown above) if it discovers one or more unsupported NEs in a ring. In this case, the user should inventory any closed ring (containing no unsupported NEs) first before others.

NOTE: Although CPro can discover unsupported NEs, their presence restricts CPro functionality. For example, the End-to End Path pull-down menu is disabled when the Subnetwork View contains an unsupported partition. End-to-end paths cannot be created in a partition containing an unsupported NE.

You can display the *expanded* version of a supported partition by double-clicking on the **partition icon** or by using the right-mouse-button pop-up menu in the Subnetwork View. The expanded version shows each NE in the partition, including its Target Identifier (TID) and connectivity to its neighbor nodes, as shown in the example below. The node that is currently selected is highlighted in magenta.



If an unsupported partition is opened, the NE icon displays with “Unsupported Type” and the TID appears beneath. The following is an example:



The Partition Map

Taking a Partition Map is less comprehensive than taking a Partition Inventory. The Partition Map operation allows the user to retrieve the partition topology from all nodes in the current partition and display this information in the Subnetwork View.

Performing a Partition Map operation is sufficient for displaying connectivity information of the NE nodes in a discovered ring. However, for performing subnetwork-level tasks such as creating or deleting an end-to-end path, performing a Partition Inventory is essential.

To map a partition, do one of the following:

- check **Partition Map** in the Login dialog box. The Partition Map is taken during the login. See the "Accessing the Subnetwork" section later in this chapter for more information,

  OR

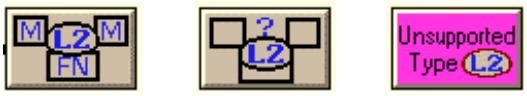
- select **Partition Map** from the Node Manager window if you did not select **Partition Map** at login or to map other partitions in the subnetwork. See the "Node Manager" section in **The Access Menu** chapter for more information.

Level 2 Nodes

NOTE: In CPro-2000, an L2 node is an NE provisioned as a Level 2 router. For further information, see the appropriate NE User Service Manual.

CPro-2000 can be deployed in a subnetwork that is divided into multiple “areas” where the NEs are configured as Level 1 (L1) nodes or Level 2 (L2) nodes. In comparison to L1 nodes, L2 nodes have the additional capability of “seeing” L2 nodes from areas other than their own.

CPro-2000 is able to distinguish between L1 nodes and L2 nodes upon login to a subnetwork. CPro-2000 differentiates any discovered L2 nodes by displaying the following icons/labels in the Subnetwork View and Node Manager:



From left to right, the above icons are representative of an OC-3 or FiberReach L2 node, an L2 unexplored NE, and an L2 unsupported NE.

Starting CPro-2000

Procedure

To start CPro-2000, do one of the following:

- From the **Start** button, click **CPro-2000** then select the GUI, or
- Double-click the CPro-2000 R11.0 GUI shortcut on the desktop (if you created one)

Note that the AUI automatically displays when you open the GUI.

Accessing the Subnetwork

With CPro-2000, configuring data communications to access the subnetwork is very flexible since it is limited only by the facilities available to the user. It is a two-stage process that requires you to select your communications options first before connecting to an NE. You can select your communications options from either the GUI or the AUI.

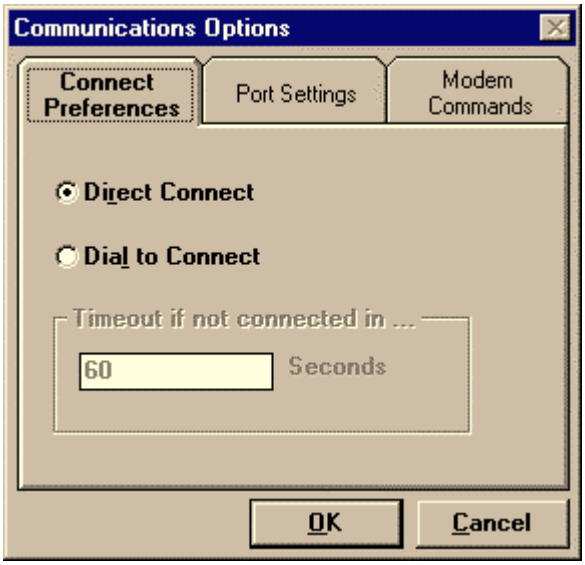
Selecting Communications Options from the GUI

Procedure

1. Start CPro-2000 and from the GUI Access menu, choose **New Subnetwork**. The Login dialog box displays.
2. In the Login dialog box, highlight **DEFAULT.SCR** at the bottom and delete it if "DEFAULT.SCR" displays in the script field. The **Options** button then becomes enabled.

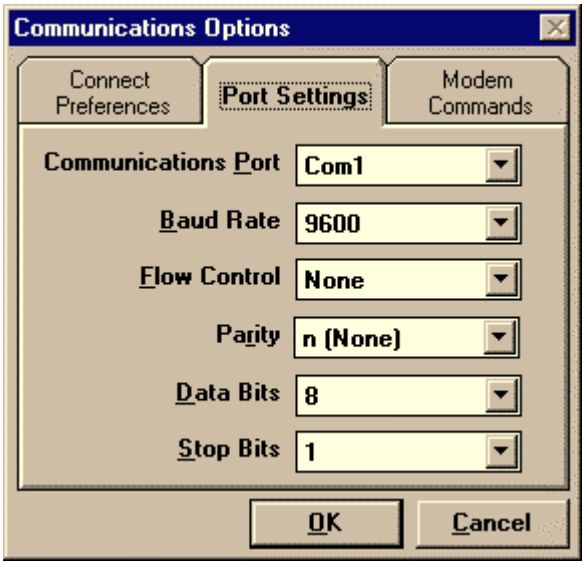
NOTE: The communication settings specified in the default script file will overwrite the current communication settings. To ensure that the settings chosen manually either through the AUI or GUI are not overwritten, remove the file named DEFAULT.SCR from the Script field of the Login dialog box.

3. Click **Options**. The following screen appears.



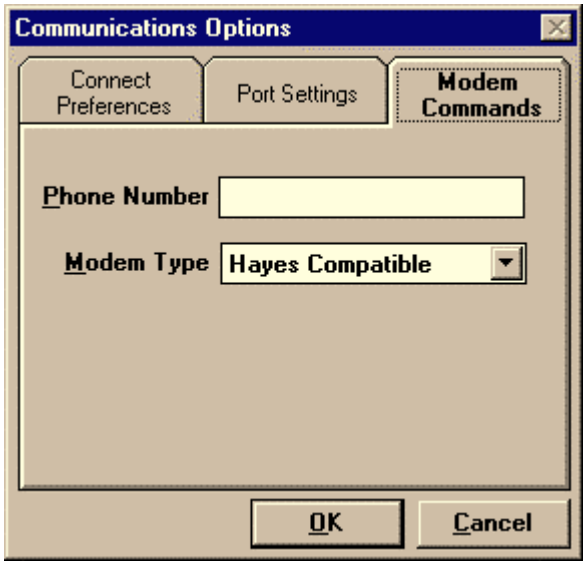
4. **Direct Connect** is the default setting. Choose **Dial to Connect** if a modem is being used. Click **OK**.

5. Click the **Port Settings** tab in the Communications Options window. The following screen appears:



6. Verify that the settings are correct for your PC environment. If not, using the down-arrow lists beside each option, choose the correct settings, such as **Communications Port** and **Baud Rate**. Click **OK**.

   If a modem is being used to connect, click the **Modem Commands** tab in the Communications Options window. The following screen appears:



- Enter the **Phone Number** to be dialed and select the appropriate **Modem Type** from the down-arrow list.

7. Click **OK** to exit the Communications Options dialog box.

Selecting Communications Options from the AUI

Procedure

1. Start CPro-2000 and click anywhere in the **AUI window** to highlight it (give it the focus).
2. From the AUI **Communications** menu, access/modify the communications settings described in the previous section "Selecting Communications Options from the GUI."

NOTE: There are two options in the AUI **Communications>Settings** menu: **Modify** and **From File**. If you choose the **Modify** option, the default communications settings will appear and you can view or configure the settings for your environment. These settings can then be saved to a file using the Save command in the AUI **File** menu. If you choose the **From File** option, a list of all previously saved settings files is displayed. Note, however, that only files saved to the CPro-2000 R11.0 folder are displayed. Select the desired file.

Connecting to an NE via Serial Link

CPro-2000 offers three ways to connect to an NE using a serial link.

i. Connecting to an NE Manually

This procedure details how to access the subnetwork using the AUI without a data communications script. Similar to accessing CPro-2000 via a data communications script, this access method is also used when the PC running CPro-2000 is directly connected to the CIT port of the NE (or the X.25 port of a DDM-2000 or an FT-2000 OC-48, if connected with a PAD).

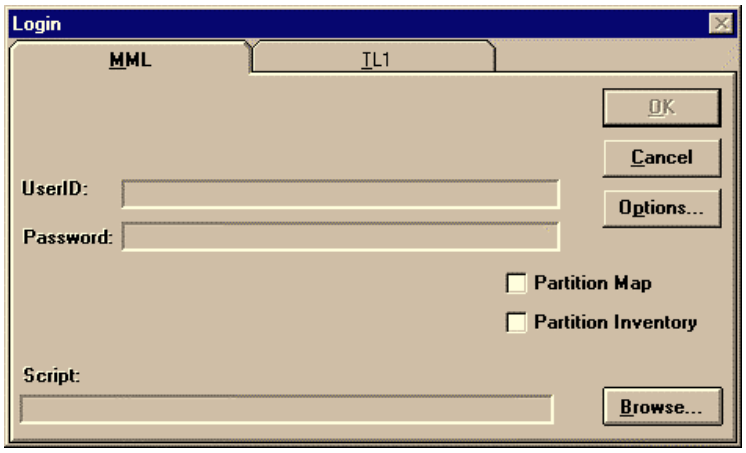
Procedure

1. Make sure that all the communications settings are correct for the type of communications connection being made (see the "Selecting Communications Options" section earlier in this chapter).

2. From the **Communications** pull-down menu of the AUI, select **Connect**. (If the menu choice says Disconnect, you are already connected.)

   You may also connect by clicking on the Connect/Disconnect button in the AUI.

3. From the Access menu, choose either **Open Subnetwork** or **New Subnetwork**. If you select New Subnetwork, the Login dialog box immediately displays. If you select Open Subnetwork, choose the appropriate file from which the subnetwork is to be opened. The Login dialog box displays.



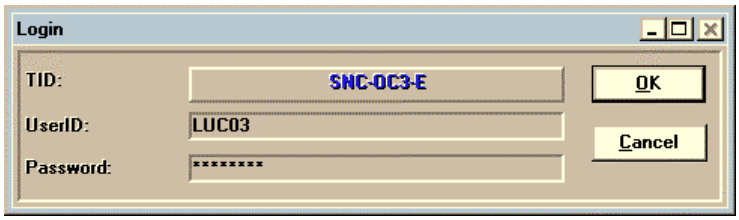
NOTE: It is important to delete any script file name that appears in the **Script:** field. This ensures that CPro-2000 uses any new settings you specified at login.

4. In the Login dialog box, enter the **user ID**, **password** and, if using TL1, the **TID** of the NE.

5. Check **Partition Map** or **Partition Inventory** if you want a graphical display of the topology of the subnetwork you are logged into. Leave both unchecked if you only intend to make provisioning changes to the local node (see the "Partitioning" section earlier in this chapter).

6. If you selected **Partition Map** or **Partition Inventory** from the Login window, CPro-2000 automatically attempts to logs into each of the NEs in the subnetwork.

The following window appears during CPro-2000's the first login attempt into one of the NEs in the subnetwork. Type in the correct **user ID** and **password** and then click **OK**.



Note: For convenience, you can preset the user ID and password for each node in a mixed ring using the **Set Access** feature in the Node Manager. For instructions on how to use this feature, see the "Node Manager" section in **The Access Menu** chapter.

7. Click **OK**. After the login process, the CPro-2000 GUI window that appears displays the appropriate NE View.

ii. Connecting to an NE Using a Login Script

Use this type of connection when the PC running CPro-2000 is directly connected to the CIT port of an NE. Each NE has two CIT ports, one for data communications equipment (DCE port in front) and one for data terminal equipment (DTE port in back). If you are using the DCE CIT port for access, the PC can be directly connected. If you are using the DTE CIT port for access, a null modem must be used to directly connect to the PC COM port. See the appropriate NE User Service Manual for instructions on selecting the modem and settings for your COM port.

Procedure

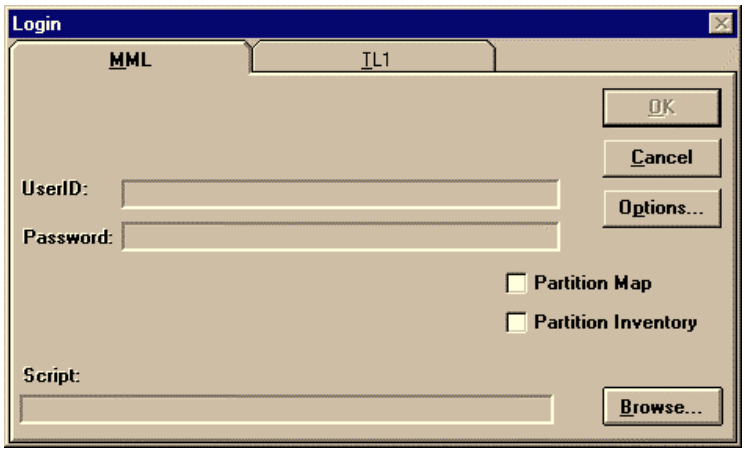
The following procedure explains how to access the subnetwork using the CPro-2000 GUI and a data communications script file.

1. From the Access menu, choose either **New Subnetwork** or **Open Subnetwork**.

NOTE: If you select **New Subnetwork**, the Login dialog box is immediately displayed. If you select **Open Subnetwork**, a list of previously saved files is displayed. Note, however, that only files saved to the CPro-2000 R11.0 folder are displayed. Choose the appropriate file for opening the subnetwork.

2. The Login dialog box is displayed and automatically populated with the following defaults:

   - the tabs at the top of the screen indicate the MML interface is the default
   - the script being used for communication. The Script field may display the DEFAULT.SCR. The DEFAULT.SCR contains default communication settings. You can select another script file using the Browse button or change the communication settings using the AUI. However, you must delete the default script file to ensure that CPro-2000 uses the new settings/file at login.



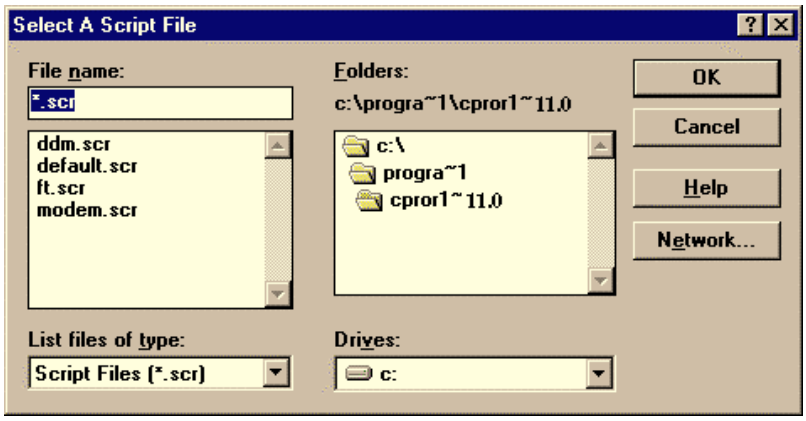
If you have chosen New Subnetwork, you can select Partition Map, Partition Inventory, or leave both unchecked. Selecting either Partition Map or Partition

Inventory tells CPro-2000 to graphically display the topology of the subnetwork into which you are logged (see the "Partitioning" section earlier in this chapter).

NOTE: If the NE interface is TL1, you must either input a TID or select the TID of the initial login node from the down-arrow list.

3. For all NE types, enter your **user ID** and press the **Tab** key. Enter your **password**.

4. If you want to use a script other than the default, click the **Browse** button to display the Select a Script File dialog box. The following screen appears.



5. Navigate to the CPro-2000 installation directory to access the Script Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror11.0.

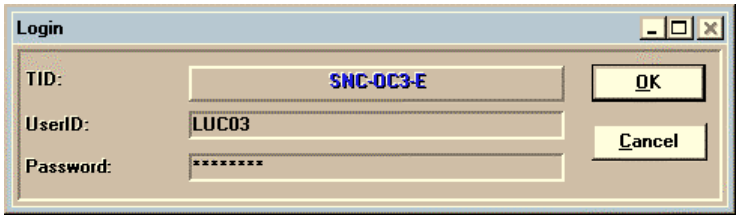
6. Select one of the existing data-communications scripts, depending on your application. Click **OK** to select the script.

NOTE: Although certain default script files are provided with the CPro-2000 software, you can also create scripts (see **Appendix D. Script and Batch Files** for information on writing script files). Settings should be the same in both the CPRO.INI File and the script file being used. Any new script files should be thoroughly tested.

7. The Login dialog box redisplays with the selected script file. Click **OK**.

8. If you selected **Partition Map** or **Partition Inventory** from the Login window, CPro-2000 automatically attempts to logs into each of the NEs in the subnetwork.

The following window appears during CPro-2000's the first login attempt into one of the NEs in the subnetwork. Type in the correct **user ID** and **password** and then click **OK**.



Note: For convenience, you can preset the user ID and password for each node in a mixed ring using the **Set Access** feature in the Node Manager. For instructions on how to use this feature, see the "Node Manager" section in **The Access Menu** chapter.

To connect to an NE from this point, you must either select **Connect** from the **Communications** menu in the AUI or click the **Connect/Disconnect** button in the AUI.

NOTE: To view examples of typical subnetwork and NE representations, see the "GUI Representations" section in **The User Interfaces** chapter.

iii. Connecting to an NE via a Modem

This access application is used where the PC running CPro-2000 employs a modem or a data communications network to access the CIT port of an NE.

CPro-2000 supports three types of modems:

- Hayes®-compatible
- MultiTech®-compatible
- TrailBlazer®-compatible

If you use a modem that is unsupported by CPro-2000, you can still use the AUI to directly send commands to the modem or you can use a script to send commands to your modem.

For modem-to-modem connections, asynchronous modems are used at the SONET subnetwork access point and at the PC running CPro-2000. Both are connected to the telephone network. The subnetwork access point is the CIT or X.25 port of a DDM-2000, the CIT port of a FiberReach, or for an FT-2000, the DCE CIT port, the DTE CIT port, or the X.25 port. A PAD is required for all X.25 connections.

For modem-to-modem connections, the default settings are normally acceptable for the modem at the PC end. However, the NE modem (modem at the NE end) must be set as follows (see the NE User Service Manual for further details):

- connect at 9600 baud
- set to answer
- flow control off

NOTE: If you use a modem script to connect to CPro-2000, then you must hang up the modem manually at the end of your CPro-2000 session. If you have used the AUI Dial-to-Connect modem command to connect to CPro-2000, you do not have to hang up the modem manually. CPro-2000 recognizes that you have used a modem for connection and automatically hangs up the modem.

Procedure

This procedure describes how to connect to the subnetwork using a modem.

1. Make sure that all the communications settings are correct for the type of communications connection being made (see the "Selecting Communications Options from the GUI" section earlier in this chapter).

2. From the Communications pull-down menu of the AUI, select **Connect**. (If the menu choice says Disconnect, you are already connected.)

3. The modem dials the number and after the other modem at the dialed number has answered, you hear the two modems handshake to determine the baud rate at which to communicate with one another. If you have successfully accessed the subnetwork, the modem should display `CONNECT 9600`**,** where `9600` is the baud rate used for the two modems.

4. From the Access menu in the GUI, select **Open** or **New Subnetwork**. The Login dialog box displays immediately if you have selected New Subnetwork. If you selected **Open Subnetwork**, choose the appropriate file from which to open this subnetwork. The Login dialog box displays.

NOTE: It is important to delete any script file name that appears in the **Script:** field. This ensures that CPro-2000 uses any new settings you specified at login.

5. Enter your **user ID**, **password**, and for TL1 access, the node **TID**.

NOTE: There is a 1.5 second delay for dial up connections to TL1 ports.

6. Check **Partition Map** or **Partition Inventory** if you want a graphical display of the topology of the subnetwork you are logged into. Leave both unchecked if you only intend to make provisioning changes to the local node (see the "Partitioning" section earlier in this chapter).

NOTE: Before selecting Partition Inventory, we recommend that you initially connect to the NE and then use the Node Manager to preset the User ID and Passwords for other nodes in the ring. See the "Node Manager" section of **The Access Menu** chapter for instructions on how to use this feature.

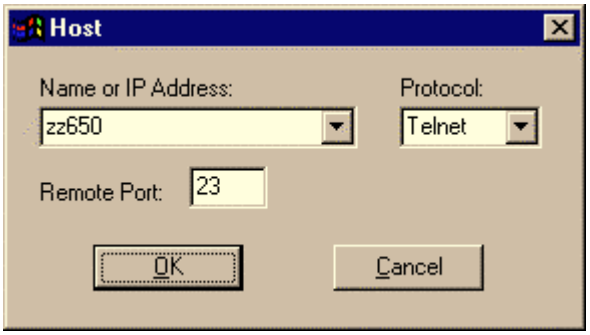
7. Click **OK**. After the login process, the CPro-2000 GUI window appears containing the appropriate Network Element View or Subnetwork View, depending on the view you selected.

Connecting to an NE over TCP/IP

CPro-2000 can connect to an NE over TCP/IP only by initializing a gateway device such as Lucent's NCC, which provides a TL1 TCP/IP/OSI gateway or a generic terminal server, which provides a TCP/IP/serial IO gateway.

NOTE: Before using this feature, make sure your PC is connected to a LAN.

1. From the AUI window, click the Connect button . The Dialog window appears.



2. Enter the appropriate information the fields provided:

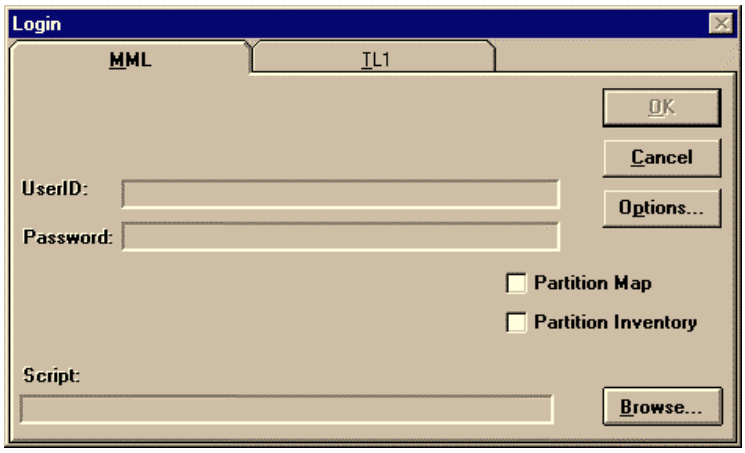
- **Address**: Enter the IP address or name of your NCC or Telnet server.
- **Protocol**: Select the appropriate protocol.
- **Remote Port**: Enter the listening port number of your NCC or Telnet server.

NOTE: The NCC port number is permanently set to 3082.

3. Click **OK** save your current settings, establish the connection, and dismiss the window, or click **Cancel** to dismiss the window the window without saving the settings or establishing the connection.

NOTE: If using a terminal server, you may need to specify the gateway port number in the AUI window before accessing the local node.

4. From the GUI, select the Access menu, and then choose either **New Subnetwork** or **Open Subnetwork**. If you select Open Subnetwork, choose the appropriate file from which the subnetwork is to be opened. If you select New Subnetwork, the Login dialog box immediately displays.



NOTE: It is important to delete any script file name that appears in the **Script:** field. This ensures that CPro-2000 uses any new settings you specified at login.

5. In the Login dialog box, enter the **user ID**, **password** and, if using TL1, the **TID** of the NE.

NOTE: NCC does not support MML. Therefore, when connecting through the NCC make sure you select the TL1 tab.

6. Check **Partition Map** or **Partition Inventory** if you want a graphical display of the topology of the subnetwork you are logged into. Leave both unchecked if you only intend to make provisioning changes to the local node (see the "Partitioning" section earlier in this chapter).

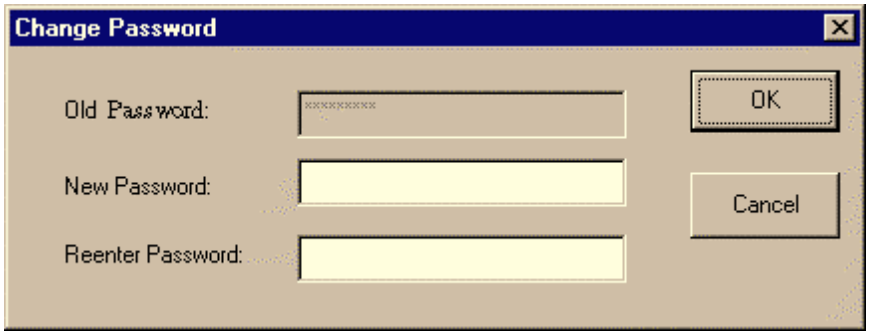
7. Click **OK**. When login is complete, the CPro-2000 GUI window that appears displays the appropriate NE View.

Password Aging (introduced in DDM-2000 OC3 R15.x and FiberReach R4.0)

The password aging feature enhances security by allowing administrators with privileges to set or edit logins that specify the length of time for which the general user's password is valid. At the end of the specified period, the password expires, and the user must change the password to gain access to the networks.

Procedure

1. Log on to CPro-2000 in the usual manner.
2. If you attempt to log on to an NE when your general-user login has expired, the message in the AUI alerts you. The following dialog box also appears:



3. Type the new password in the appropriate field then retype the password where indicated.
4. Press **OK** for the new password to take effect.

Troubleshooting

To resolve any problems that occur while working with CPro-2000, refer to the **CPro-2000 Software Release Description (SRD)** that accompanies this manual or refer to the Readme file in the CPro-2000 software. To access the Readme file, select CPro-2000 R11.0 from the Start Menu, then choose CPro-2000 R11.0 Readme from the submenu. The Troubleshooting sections of both the SRD and Readme file contain specific information for resolving issues. It is recommended, therefore, that you review these prior to requesting customer assistance.

The User Interfaces

Overview

This chapter contains a detailed explanation of CPro-2000's GUI (Graphical User Interface) and AUI (ASCII User Interface). It explains the menus, color conventions, and how to navigate the user interfaces. The GUI section defines the various components it contains, such as the following:

- toolbar icons
- Subnetwork View
- Network Element View
- the status bar and alarm representations

Also provided in this chapter is a section on how to print reports and windows from the user interfaces.

Introduction to the User Interfaces

CPro-2000 provides both a GUI and an AUI to access Lucent Technologies NEs. When you start CPro-2000 by selecting **CPro 11.0 Graphical User Interface** from the Start button, the GUI forms a relationship with the AUI. The AUI receives information from the NE and transfers this information to the GUI. The GUI then presents the information in a graphical display.

The CPro-2000 GUI allows you to execute tasks on the subnetwork, or on specific NEs in the subnetwork, by selecting commands from the menus and objects from the graphical display. Tasks that normally require typing several long ASCII interface commands can be accomplished with a few mouse clicks in the GUI.

You can use the AUI for commands that are unsupported by the GUI. Although the AUI can be used to talk directly to the subnetwork by typing commands, do this with caution. Changes made to the subnetwork via the AUI are not reflected in the GUI unless the CPro-2000 Update Inventory command or Update X-Conn command (for cross connections) is performed. Your GUI and AUI can become unsynchronized or the data in your subnetwork can become inconsistent with the data in CPro-2000. See the "Using the Interfaces Together" section in this chapter for more information on keeping the user interfaces synchronized and consistent.

Using the Interfaces Together

The GUI and AUI work together in CPro-2000. Both are necessary for successful operation of the system. The AUI accepts commands from the GUI and forwards them to the NE. The AUI then accepts the response from the NE and passes that information onto the GUI for storage or presentation.

Communication with the subnetwork is the backbone of CPro-2000. Once communication is established with the local node, CPro-2000 is able to communicate with the other NEs in the subnetwork. All of the information that CPro-2000 provides through the GUI is obtained directly from the NEs themselves. Whenever an action is taken through the GUI, CPro-2000 automatically updates the information that it has stored about the subnetwork.

The CPro-2000 GUI provides information to users based on data that it stores; therefore, it is possible for CPro-2000 to open a Network Element View or to provide reports without ever accessing the NE itself. When CPro-2000 needs to retrieve information from or send information to the NE, CPro-2000 logs into the NE that must be accessed. CPro-2000 automatically accesses the appropriate NE because it keeps track of which NE it is currently logged into and compares that information to the NE that must be accessed.

When communication to a remote NE is lost or when the user accesses NEs via the AUI, the GUI and AUI might indicate that they are logged into different NEs. This can cause CPro-2000 to be unable to complete a specified task. CPro-2000 is designed to correct this situation automatically and access the appropriate NE. However, if a problem occurs and CPro-2000 cannot correct this situation, use the AUI to access the local node. CPro-2000 will then be able to complete the specified task. Note that for MML, if you are logged out of the local node or off the subnetwork entirely, you should also use the AUI to log back into the local node, prior to continuing with your current CPro-2000 session.

The Graphical User Interface

The Graphical User Interface (GUI) consists of a multiple document interface (MDI), which can accommodate a Subnetwork View and several Network Element Views. An MDI consists of one main window that contains multiple subwindows. In this case, the CPro-2000 GUI window is the main MDI window. The Subnetwork View and Network Element Views are the subwindows.

- The *Subnetwork View* is a graphical representation of the subnetwork topology, including partitions. A partition is a logical grouping of NEs interoperating on the same high-speed SONET line.

NOTE: For more information on partitioning, see the “Partitioning” section in the **CPro-2000 Startup** chapter.

- A *Network Element View* is a graphical representation of the cross connections, ports, slots, and tributaries associated with an NE. Several Network Element Views can be displayed at once. Note that a Network Element View must be active to execute NE-level tasks, such as establishing cross connections.

See the “Subnetwork View” and “The Network Element View” sections later in this chapter for further details on the components of these windows and how they are used.

Navigating the GUI

You can switch the focus of the GUI, and toggle between the Subnetwork View and the Network Element Views in any of the following ways: Note that menu items change depending on which part of the GUI has the focus.

- The Node Manager is available from the Access menu and the toolbar. Use the **Open**, **Close**, and **Switch To** commands to switch the focus between the Network Element Views and the Subnetwork View. The Node Manager contains other commands, such as **Login**, **Logout**, **Partition Inventory**, **Partition Map and Set Access**. See the "Node Manager" section in the **The Access Menu** chapter, for further details.

NOTE: The command button functionality in the Node Manager varies according to the type of icon highlighted. Therefore, the buttons will become enabled or disabled accordingly.

- Clicking on the title bar of an open window, either a Network Element View or the Subnetwork View, changes the focus of the GUI to that window.
- While in the Subnetwork View, double-clicking on an NE node opens its Network Element View. The focus of the GUI is then switched from the Subnetwork View to the open Network Element View.
- While in a Subnetwork View, you can rearrange the NE and partition icons by dragging them with the cursor. The NE icons that appear in the Enter End-to-End Path dialog box can be moved in the same way.
- Clicking the right mouse button on a partition icon in the Subnetwork View brings up a pop-up menu containing the following commands: **Open Partition**, **Update Map**, **Update Inventory**, **End To End Path**, **Reports**, and **Rename**.
- Clicking the right mouse button on an NE icon while in the Subnetwork View brings up a pop-up menu containing the following commands: **Open NE View**, **Close Partition**, **Update Map**, **Update Inventory**, **End To End Path**, and **Reports**.

The Toolbar

Use the toolbar for quick access to tasks. The toolbar icons are shown below, although not all of the icons display at the same time. The icons that display at any given time depend on which GUI window has the focus.

The icons (from left to right) represent the following commands: **New Subnetwork**, **Open Subnetwork**, **Save Subnetwork**, **Print**, **Backup Network Element**, **Restore Network Element**, **Node Manager**, **Open Subnetwork** and **Partition Map**, and **Help**.

The Status Bar

CPro-2000 displays a status bar at the bottom of the GUI screen, as shown in the following illustration:

The status bar is made up of three areas:

- **Alarm Status** (left section)—Indicates the most severe alarm present in the current node using the color conventions listed in the following table.

Color	FT-2000 Representation	DDM-2000 Representation
Red	CR (critical) and MJ (major) alarms	CR (critical) and MJ (major) alarms
Yellow	MN (minor) alarms	MN (minor) alarms, NEA (near-end activity), and ABN (abnormal) conditions
Green	No alarms or NA (conditions not reported via CR, MJ, and MN LEDs, office alarms, or parallel telemetry) or NR (conditions not reported via CR, MJ, and MN alarms, office alarms, parallel telemetry, or TL1)	NA (no alarm) or FEA (far-end activity) condition

- **Information Status** (center section)— information that is displayed depends on the task you are performing in the GUI. Information on cross connections (type, address, and signal rate) and slot addresses change dynamically as your cursor moves to different locations in the GUI. The information window also displays messages about in-progress tasks.
- **Trash can Icon** (right section)—is a receptacle for deleted cross connections. You can select and drag a cross-connection line, source, or destination to the trash can icon. A cross-connection deletion box appears confirming that you want to delete the cross connection. See the "Cross-Connection Deletion," section in the **Cross Connections** chapter for further details.

The Cancel Dialog Box

To cancel an operation while in progress, use the Cancel button. While each command is being sent from CPro-2000 to the NEs, a dialog box appears containing the Cancel button. The text in the dialog box changes dynamically as the command progresses.

For example, a CPro-2000 operation can consist of several NE commands (which are sent through the AUI to the NE), such as creating an end-to-end path. The CPro-2000 end-to-end path command consists of the ENT-CRS commands for each cross connection that is part of the path.

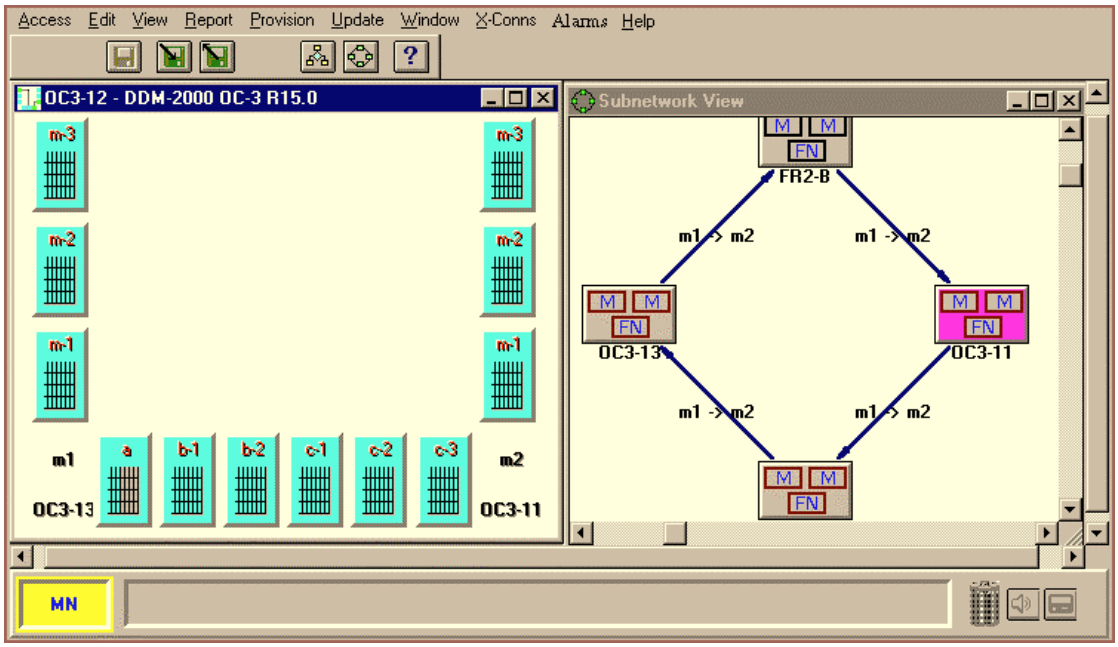
The Cancel dialog box shows each of these commands as they are issued to the NEs. You can press **Cancel** at any time during this process to cancel the CPro-2000 command. This is particularly useful when you are in the middle of a lengthy operation, such as a Partition Inventory, and you want to halt the command process.

CAUTION: Depending on how quickly you cancel a command, some or all of the command might be completed anyway. Check the AUI to see which commands, if any, have been completed. For example, in the case of creating or deleting an end-to-end path, a partial set of cross connections might have been created or deleted. Use the **Cancel** button with care.

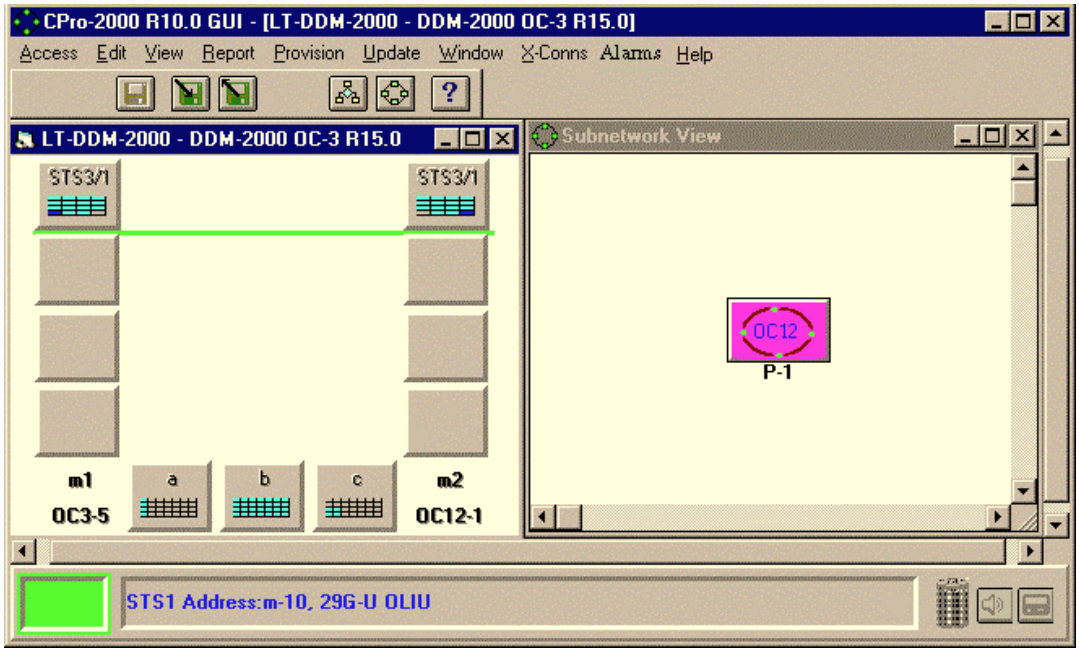
GUI Representations

The following screens show examples of the Network Element View and the Subnetwork View in the CPro-2000 GUI. The menu bar and toolbar are included in the displays.

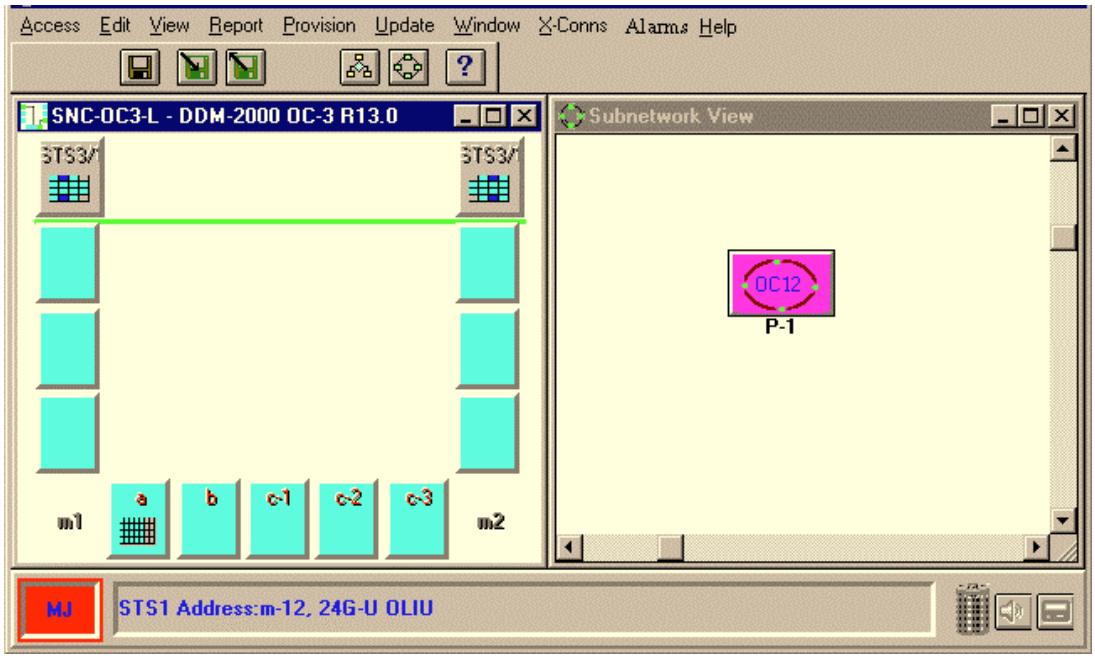
The following is an example of the CPro-2000 GUI when the local node is a DDM-2000 OC-3:



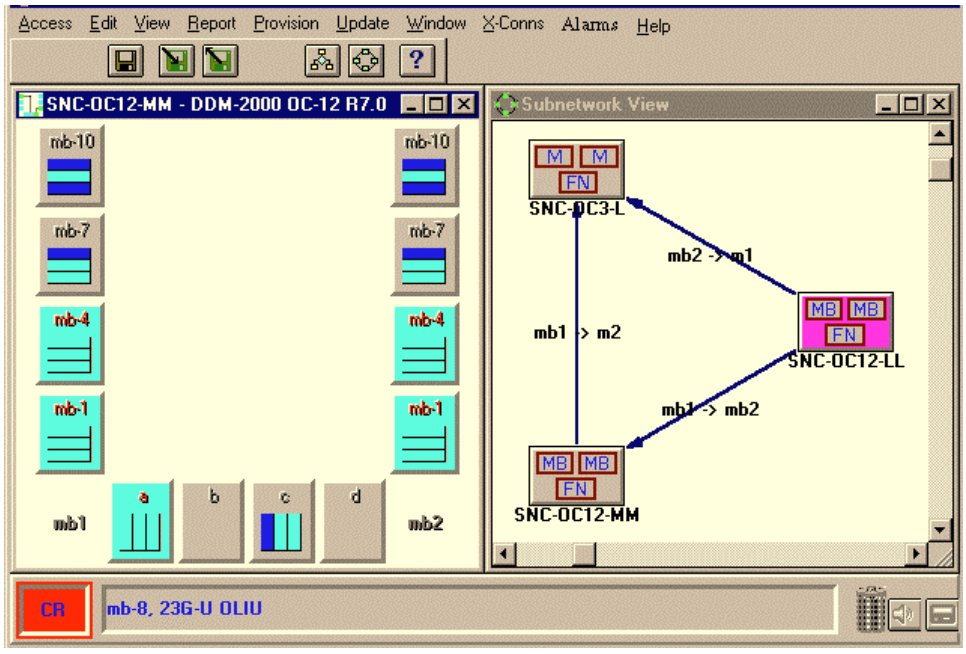
The following is an example of the CPro-2000 GUI when the local node is a DDM-2000 OC-3 with 29G Optical Line Interface Unit (OLIU) circuit pack in the main tributaries:



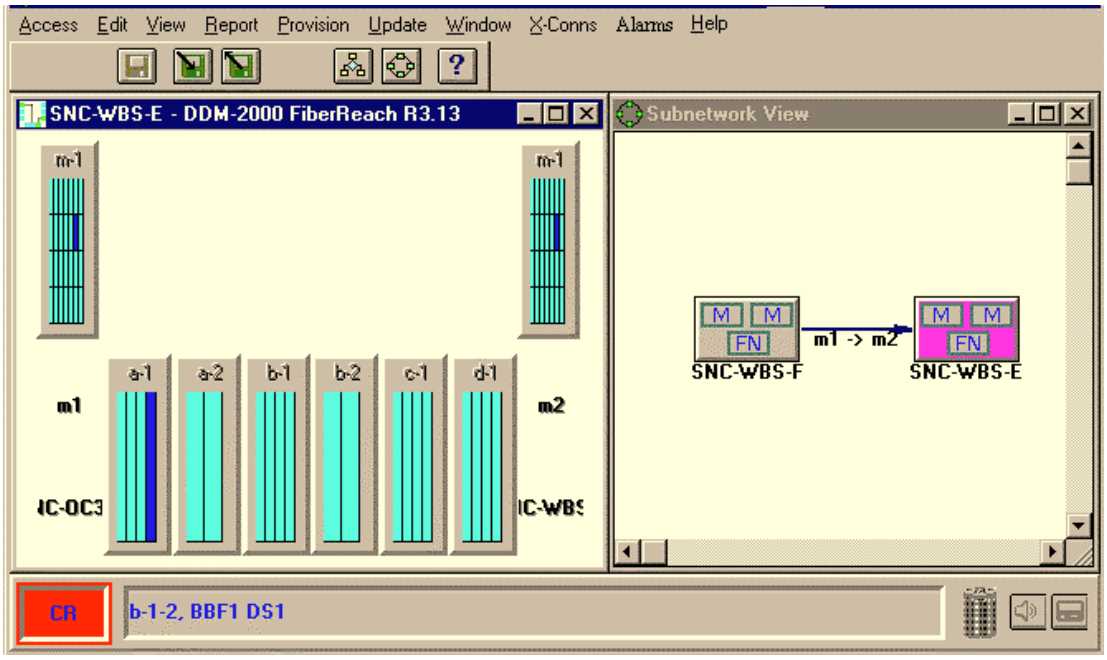
The following is an example of the CPro-2000 GUI when the local node is a DDM-2000 OC-3 with 24G Optical Line Interface Unit (OLIU) circuit pack in the main tributaries:



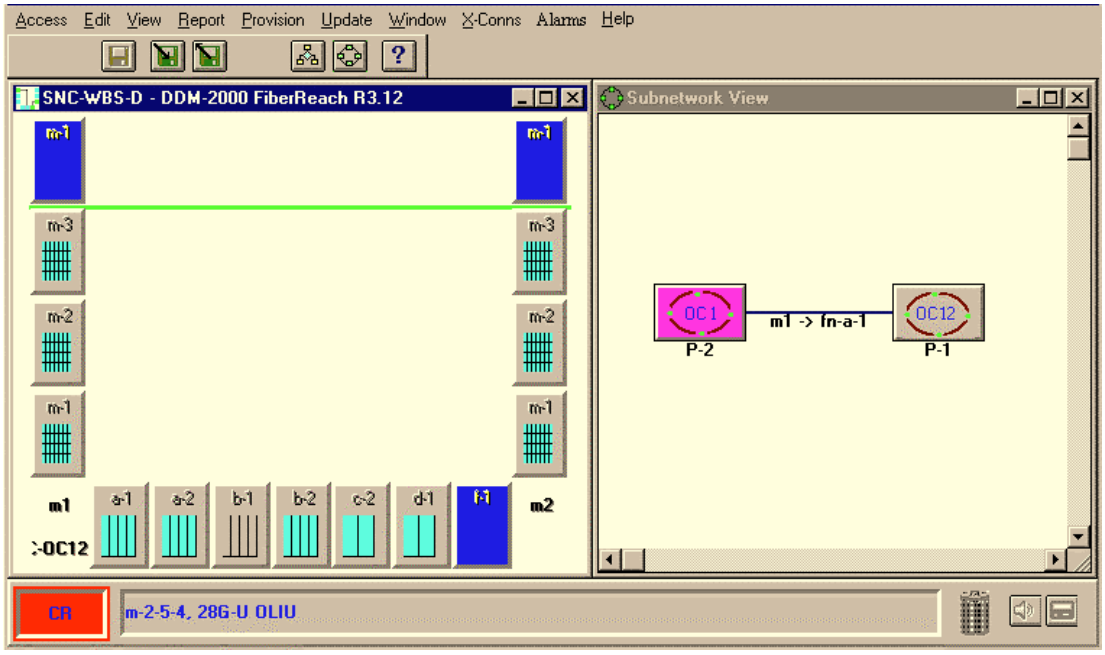
The following is an example of the CPro-2000 GUI when the local node is a DDM-2000 OC-12:



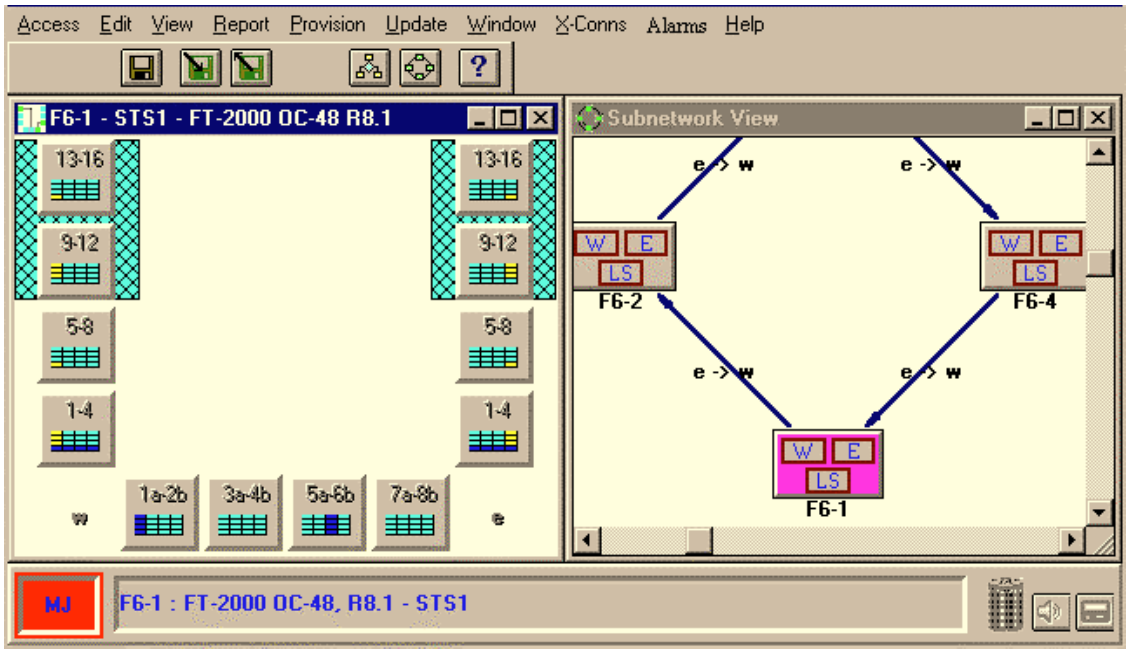
The following is an example of the CPro-2000 GUI when the local node is a FiberReach with 26G2-U OLIU circuit pack in the main tributaries:



The following is an example of the CPro-2000 GUI when the local node is a FiberReach with 28G-U OLIU (OC-3) circuit pack in the main tributaries and 22-type circuit pack in the function slots:



The following is an example of the CPro-2000 GUI when the local node is an FT-2000 OC-48:



The Subnetwork View

The CPro-2000 GUI contains a Subnetwork View representing the subnetwork topology of the NEs, also known as nodes. The Subnetwork View displays any discovered partitions in the subnetwork and the connectivity between them.

The partition icons can be expanded by clicking on them. An expanded partition shows the individual NEs in the partition. A Network Element View can be opened by double-clicking on the box representing the individual NE in an expanded partition.

Subnetwork-level tasks, such as retrieving path reports and bandwidth usage, obtaining the Partition Inventory, and creating/deleting end-to-end paths, can be executed from the Subnetwork View.

NOTE: For details on how to display the Bandwidth Usage report, see **The Report Menu** chapter.

The Network Element View

Each Network Element View window contains a graphical representation of termination points and cross-connection provisioning. The following list details the Network Element View for each type of NE:

- The Network Element View for DDM-2000 OC-3 contains termination points for individual STS-1 or DS3 signals, or up to 28 VT1.5 or DS1 signals per STS-1 signal.
- The Network Element View for DDM-2000 OC-3 equipped with 24G OLIU circuit pack contains termination points for individual STS-3, STS-1, or DS3 signals, or up to 28 VT1.5 or DS1 signals per STS-1 signal.
- The Network Element View for DDM-2000 OC-12 contains termination points for individual STS-1, DS3, or STS-3C signals.
- The Network Element View for FiberReach contains termination points for up to 28 DS1 signals for 1x7 protection, or 16 DS1 signals for 1x1 protection.
- The Network Element View for FiberReach equipped with 28G-U OLIU circuit pack in the mains and 22-type circuit pack in the function slots contains termination points for DS1 signals, as well as termination points for STS-3 signals to function slots f-1 and f-2.
- The Network Element View for an FT-2000 OC-48 contains termination points for up to three STS-1 signals per STS-3 signal.

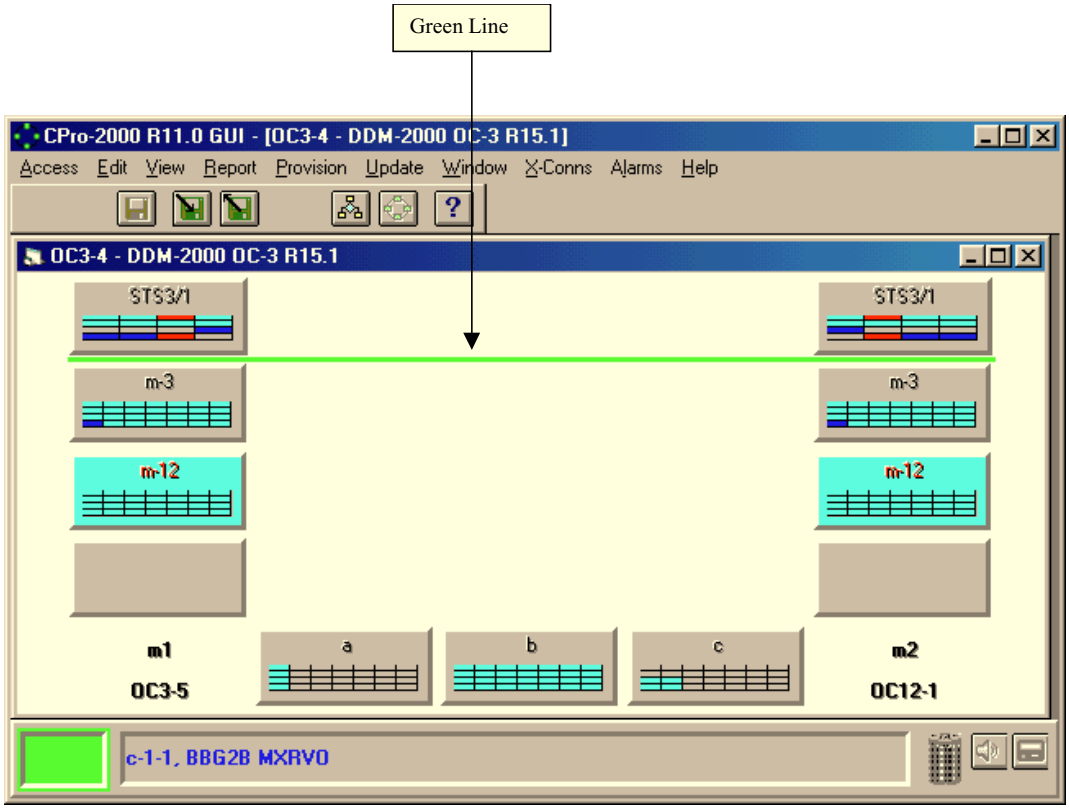
The arrangement of objects in the Network Element View follows these general guidelines:

- For DDM-2000 OC-3, DDM-2000 OC-12, and FiberReach NEs:
  - The vertically stacked boxes on the left side correspond to the transmit fiber from and receive fiber to Main-1 (m1 for DDM-2000 OC-3 and FiberReach, mb-1 for DDM-2000 OC-12).
  - The vertically stacked boxes on the right side correspond to the transmit fiber from and receive fiber to Main-2 (m2 for DDM-2000 OC-3 and FiberReach, mb-2 for DDM-2000 OC-12) in ring configurations.
  - The horizontally arranged boxes at the bottom of the screen correspond to the function units used for add/drop cross connections.

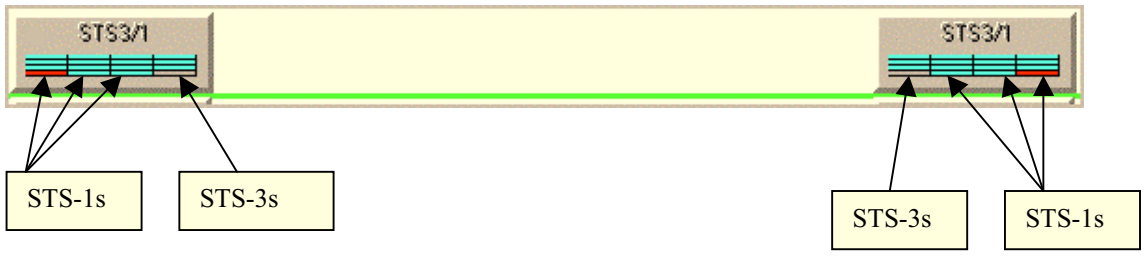
NOTE: If a DDM-2000 OC-3 or SLC-2000 contains 27-type OLIU circuit packs in main slots, CPro-2000 only displays two available STS-1s in the mains, instead of the usual three. These are labeled m1 and m2. If a DDM-2000 OC-3 contains a 21-type OLIU circuit pack in either the mains or the function units, there is no access to the VT1.5s.

NE View for DDM-2000 OC-3 R15.x and FiberReach R4.x Shelves Equipped with 29G or 24G OLIUs

The following section describes the NE view for DDM-2000 0C-3 R15.x and FiberReach R4.x shelves with 29G OLIUs in the main slots.



Boxes above the Green Line:



As the above graphic shows, the left and right boxes above the green line represent STS-3/STS-1 signal interfaces. Each consists of 16 cells in four rows and four columns. Each box consists of 12 STS-1s and 4 STS-3s. In the left box, each of the

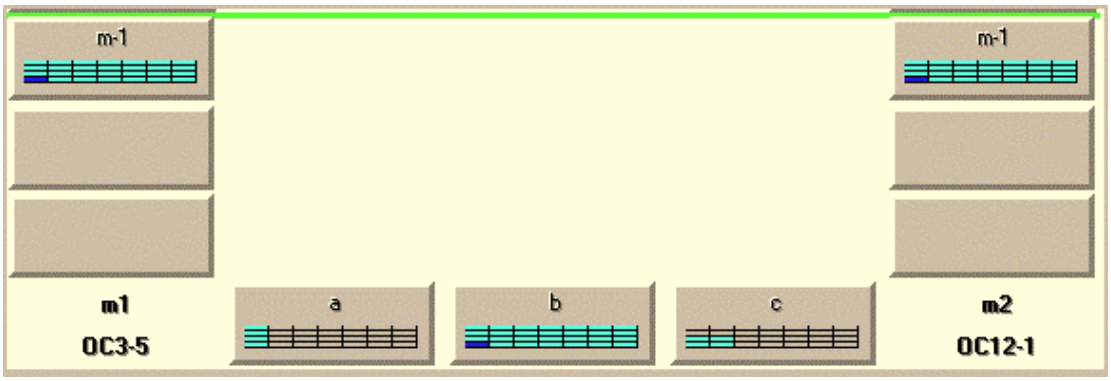
12 boxes in the three columns from left to right represent STS-1s. The last column (the fourth column from the left) represents the STS-3s. The two boxes are mirror images of each other. Therefore, in the right box, the STS-1s occupy the first three columns from right to left.

The STS-1s are sequentially numbered from the bottom row up. In the left box, the numbering starts from the bottom left row (m-1) across to the first box in the third column of the bottom row (m-3). The fourth column represents STS-3s. The numbering then continues from the first column in the second row (m-4) and across the other two rows (m-5 and m-6), and so on. STS-1s in the right box are similarly numbered but in this case, the numbering starts from the bottom box in the right column and goes from right to left. Here again, the fourth column represents the STS-3s.

The address of the four STS-3's in the fourth column correspond to that of the STS-1s in the first column. Therefore, the address of the first STS-3 (bottom right) is m-1. Similarly, the fourth STS-3 (top right) is m-4.

To check the address of a box, hold the cursor over the desired box. The address appears in the status bar.

Boxes below the Green Line:



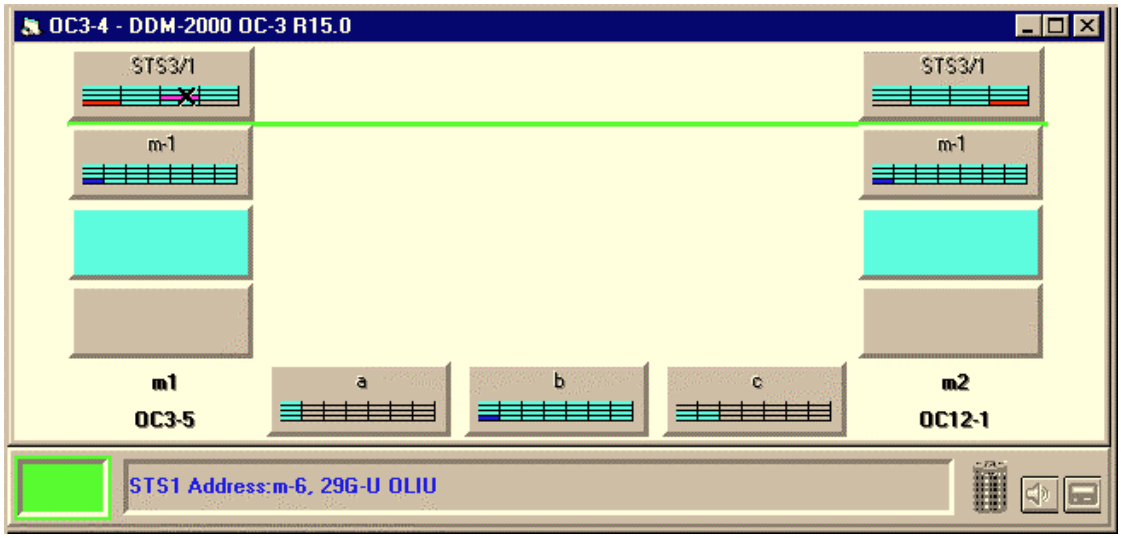
The vertically stacked boxes below the green line are placeholders for STS-1s that have been selected and dragged down from their position above the line for either VT1.5 cross connections or STS-1 add/drop cross connections. Dragging STS-1s down below the green line allows access to 28 VT1.5 signals per STS-1.

For 24G OLIUs a maximum of 3 STS-1s may have VT granularity (any three the user wishes to choose).

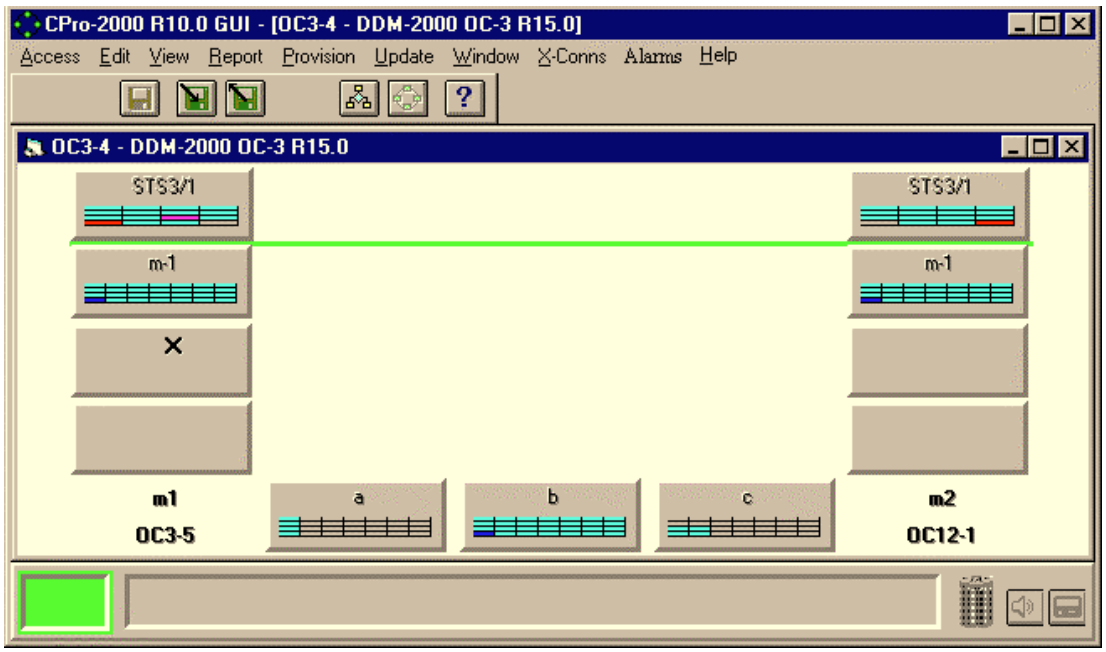
For 29G OLIUs, VT granularity is supported across all 12 STS-1s.

To drag and drop an STS-1 to a box below the green line:

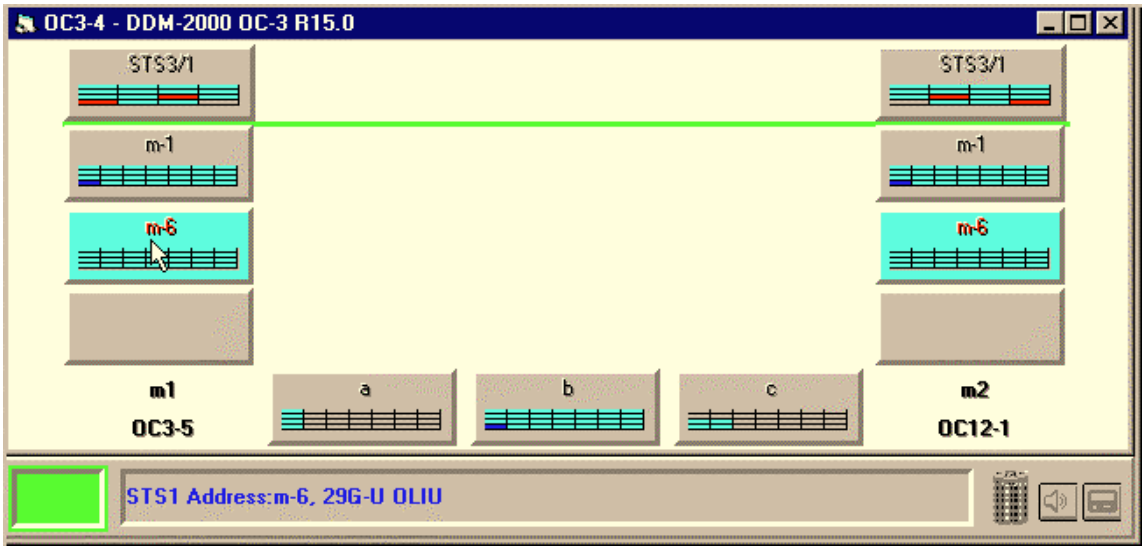
- Click on a desired STS-1 box above the green line. An "X" appears. Notice the address displayed in the status bar.



- While still holding down the left mouse button, drag the "X" to one of the three boxes.



- Release the mouse button. The grid that appears in the box displays the 28 VT1.5 equivalent of the STS-1.



You can drag and drop any of the STS-1s from above the line to any vertically stacked box below the line. The grid that appears displays the VT1.5 equivalent of the newly-inserted STS-1. Blue shading in any cell indicates the existence of cross connections.

Note that unlike the boxes above the green line, the left and right vertically stacked boxes below the green line (m1 and m2) are “clones” of each other. Therefore, the address for the last row of the left column of the left m-6 box, for example, corresponds to the last row of the first column in the right m-6 column.

The horizontally arranged boxes at the bottom of the screen correspond to the function units used for add/drop cross connections.

To remove an existing STS-1 view from the VT box, double-click the heading of that box. Note that removing the view does not delete any associated cross connections.

For DDM-2000 OC-3 NEs equipped with 29G or 24G OLIU circuit pack in the mains:

— The top box on each side represents the STS-1/STS-3 interface. Each of these boxes has four rows and four columns. The four entries in each row represent the STS-3 termination points and the three associated STS-1 termination points.

— The vertically stacked boxes on each side represent the STS-1s that have been selected for either VT1.5 cross connections or STS-1 add/drop cross connections.

— The horizontally arranged boxes at the bottom of the screen correspond to the function units used for add/drop cross connections.

For FT-2000 OC-48 NEs:

— The West side (displayed on the left side) represents interfaces to the west STS-3 high-speed tributaries with three STS-1 tributaries contained in each STS-3.

— The East side (displayed on the right side) represents interfaces to the east STS-3 high-speed tributaries with three STS-1 tributaries contained in each STS-3.

— The horizontally arranged boxes at the bottom of the screen display four groups of low-speed slots (DS3, EC1, or OC3). Each contains four slots. Every low-speed slot contains three STS-1 time slots that represent the DS3 ports on DS3 slot, EC1 ports on EC1 slot, or STS-1 tributaries on OC3 slot.

The Menu Bar

You can access CPro-2000 functions with the menu bar in the GUI window. In addition, you can access some of these commands can be accessed with the right-mouse-button pop-up menu. Listed below are the menu names and the types of commands they contain:

- Items that pertain to logging into or out of the NEs are in the Access Menu. This menu also allows the user to run batch command files, print windows, save the current subnetwork's information to a file, open the Node Manager, and to exit the CPro-2000 application.
- Operations for backing up, restoring, and changing TIDs or passwords are in the Edit Menu.
- Use the View Menu to show or hide cross connections and to change the way the toolbar and status bar in the GUI are viewed. You can also access the Subnetwork View, Report Viewer, and toggle the Auto-Alarm-Polling feature from the View menu.
- Use the Report Menu to retrieve path information, equipment information, alarm status, NE history (MML only), provisioning, and performance-monitoring reports. All of the reports are available in the Report Viewer.
- Use the Provision Menu to modify port/line provisioning and NE options.
- Use the Update Menu to requery the NEs about the current cross connections, Partition or Network Element Inventory, and alarm information.
- Use the Window Menu to arrange the GUI windows to fit viewing needs.
- The End-to-End Path Menu is only available from the Subnetwork View. Use this menu to enter and delete end-to-end paths. Also available in this menu is the capability of modifying the LocA and LocZ values for an FT-2000 OC-48 STS-3 or STS-1 end-to-end path.
- The X-Conns Menu contains instructions on how to enter and delete cross connections, individually or in a range. It does not contain the actual commands. Cross connections are created or deleted by using drag-and-drop functionality. This menu is only available while you are in a Network Element View window.

  For information on how to create cross connections on shelves equipped with 29G OLIU circuit packs in the mains, see the appropriate section in the **Cross Connections** chapter of this User Manual.
- The Help Menu provides the user with help options.

Some menu items are displayed with an arrow (▷) after them. Selection of these menu items displays another level of menus. For example, selecting Port/Slot Options▷ from the Reports pull-down menu displays a submenu.

Some menu items have three bullets (•••) after them. Selection of these menu items displays a dialog box requesting further input from the user. For example, selecting Backup••• invokes the Backup Parameter dialog box, which requests further user input.

Non-Preemptible Protection Access

Non-Preemptible Protection Access (NPPA) is a feature in FT-2000 OC-48 that allows the protection tributaries to serve as non-preemptible unprotected service tributaries while the

corresponding service tributaries become unprotected. FT-2000 is capable of handling NPPA at the STS-1 tributaries level.

The NE views for FT-2000 OC-48 are designed to display the NPPA status of the high-speed tributaries. The following color conventions are used to display the NPPA status:

- Yellow on the lower half of the high-speed tributaries (the normal service tributaries) indicates that the tributary is unprotected.
- Yellow on the upper half of the high-speed tributaries (the normal protection tributaries) indicates that the tributary is in service without any protection and is non-preemptible.

This scheme applies to both STS-1 level and STS-3 level NPPA statuses. In the case of STS-3, all four slots pertaining to an STS-3 level tributary, which includes an STS-3 slot as well as three corresponding STS-1 slots, will turn yellow at the same time. There will not be NPPA status at levels lower than STS-3. In the case of STS-1, individual STS-1 slots have their own NPPA status. If any one of the STS-1 slots is not NPPA enabled, the corresponding STS-3 slot is shown as NPPA disabled. Only if all three of the STS-1 slots that correspond to an STS-3 tributary are NPPA enabled will the corresponding STS-3 slot be shown as NPPA enabled.

Color Conventions for the Network Element View

Listed in the following table are the color conventions displayed in the Network Element View and what they represent. If you are using a monochrome monitor, these colors display in varying degrees of gray tones.

Color	Representation
Gray	Slots that are not equipped or ports/slots that are not a valid selection.
Black	Lines that indicate cross connections; they can be solid or dashed depending on the cross-connection type.
Sky Blue	Port/slots available for cross connections.
Purple	Port/slot that is an endpoint for a displayed cross connection or port/slot that is selected.
Dark Blue	All ports/slots where STS-1 cross connections exist, when the lines representing the cross connections are not being displayed.
Yellow	Signifies NPPA status (FT-2000).
Shelves equipped with 29G or 24G OLIUs	
Dark Blue	An STS-1 cross connection exists on the time slot (DDM-2000 OC-3 or FiberReach).
Dark Grey	One or more VT cross connection exists on the STS-1 time slot (DDM-2000 OC-3 or FiberReach) .

Red	STS-1 Grid cell that is selected and opened at the VT level (DDM-2000 OC-3 with 29G or 24G OLIU).

ASCII User Interface

The ASCII User Interface (AUI) provides access to an NE in the same way that an ASCII terminal provides access. You can type commands into the AUI and receive an immediate response from the NE. This section concentrates on how to use the AUI in conjunction with the GUI, although the AUI can be used as a stand-alone terminal emulator as well.

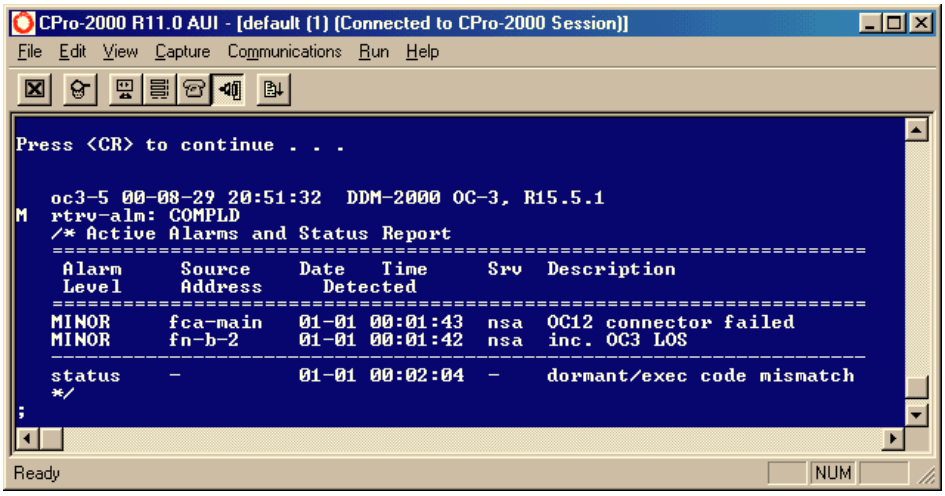
NOTE: An NE cannot talk to the AUI unless the AUI initiates contact. No autonomous messages from an NE are acted upon by CPro-2000.

CPro-2000 uses the AUI to establish communications with the NEs. All commands initiated through the GUI cause information to be sent to and received from the NE. This information is always visible in the AUI.

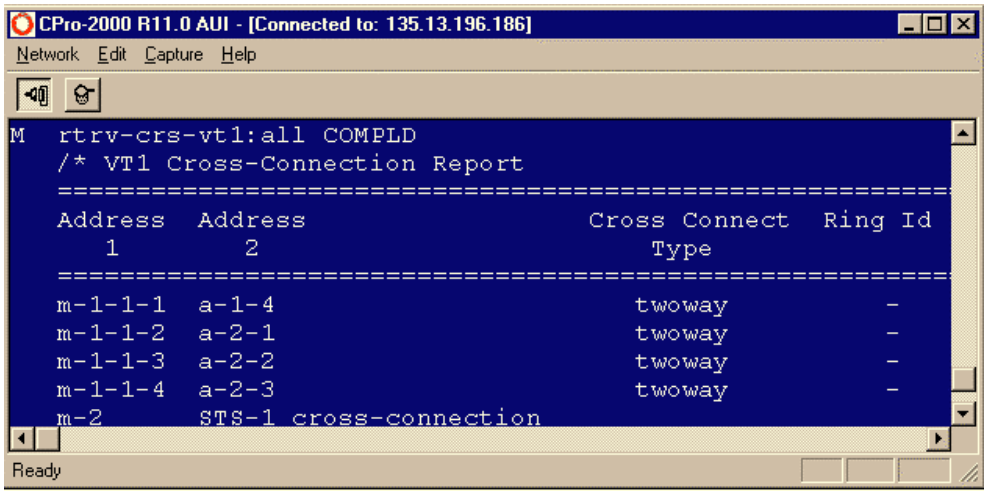
Multiple communication sessions can be running within a single instance of the AUI program. This is called a Multiple Document Interface (MDI) and is similar to how other Windows programs operate.

For CPro-2000, this means that two sessions can use only one AUI program, but have two open window sessions. Sessions are differentiated by names in the title bar of the child window in the AUI; they are named Default1, Default 2, and so on. If you open an AUI session from a settings file, the AUI title bar reflects the name of that settings file.

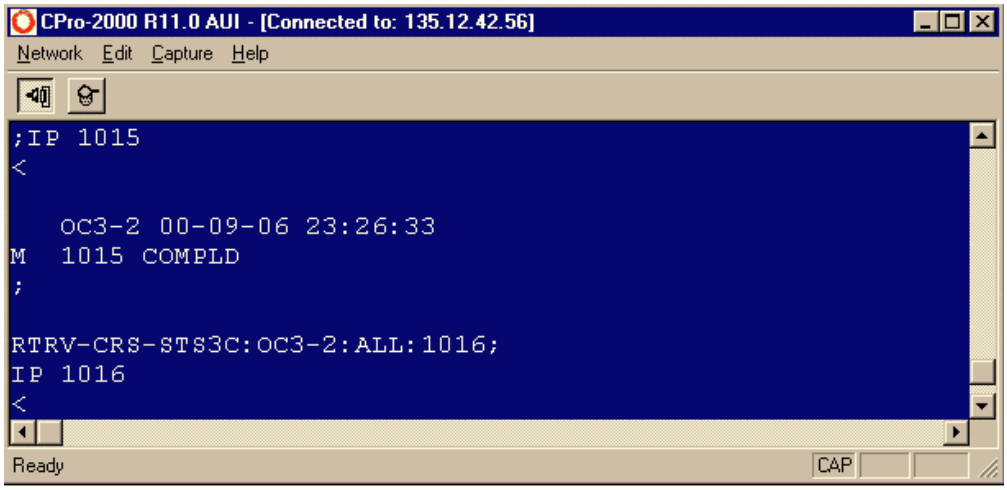
The following sample AUI screen shows MML output from a DDM-2000 NE when connection is via serial link:



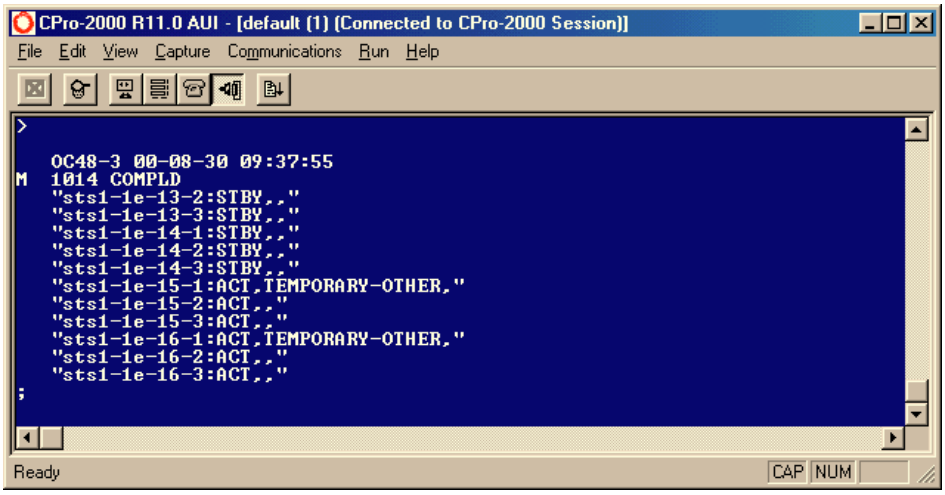
The following sample AUI screen shows MML output from a DDM-2000 NE when connection is over TCP/IP:



The following sample AUI screen shows TL1 output from a DDM-2000 NE when connection is over TCP/IP through an NCC:



The following sample AUI screen shows TL1 output from an FT-2000 NE when connection is via serial link:



The user can benefit from the AUI by using it as a "dumb" terminal connected to an NE. Any functionality that is not yet available in CPro-2000 can be accessed through *expert mode*, which consists of clicking in the AUI window and typing the appropriate commands.

NOTE: You must click inside the AUI window or click one of the AUI menu items to activate the AUI cursor. The cursor does not automatically appear when you change focus to the AUI.

The AUI also provides the user with a powerful terminal emulator that can be used for many tasks other than connecting to a subnetwork.

NOTE: Commands that affect the state of equipment or cross connections in the NE can cause the GUI and the AUI to become unsynchronized. After working in the AUI, it is always advisable to update the GUI by reissuing the Partition Inventory or the NE Inventory command (see the "Using the Interfaces Together" section earlier in this chapter).

The AUI can also be used to set up and save modem specifications through the use of the Communications menu. The user can enter the modem type and dial string in the Modem Commands dialog box. For details, see the "Selecting Communications Options from the AUI" section in the **CPro-2000 Startup** chapter.

SLC-2000 Access

Use the CPro-2000 AUI to control the low-speed side of an SLC-2000. After logging into the SLC-2000, type **dlc** in the AUI (dlc stands for digital loop carrier). You can now issue commands to the low-speed side of the SLC-2000. (See the SLC-2000 documentation for further information.) To exit the low-speed side of the SLC-2000, type **sonet**.

The Menu Bar and Toolbar

The types of menu items displayed in the menu bar depend on whether you are connected to the NE through a serial link or over TCP/IP. Some of these commands are also in the AUI toolbar. The following lists the menu bar options available with both methods of connection.

Serial Link Options

Toolbar options (from left to right):

- Send Delete Character, Capture, Direct or Modem, Modify Communications, Modem Specifications, Connect/Disconnect, and Run Script File.

Menu bar options (from left to right)

- The **File Menu** offers the Exit command for terminating the AUI and all other currently connected sessions, including the GUI.
- When MML connected, the **Edit Menu** provides the Send Break and Del Char commands that can be used to abort a command. This menu also contains the Modify Script File command, which allows the user to open the Notepad editor and make changes to a user-specified script file. This menu also allows the user to copy and paste text that is displayed in the AUI.
- The **View Menu** allows you to change the AUI window according to viewing needs. The options that can be changed include hiding or displaying the status bar, the font size and type, and whether the window is displayed in color, black and white, or gray tones.
- The **Capture Menu** gives you the ability to capture and save commands sent to and received from the NEs as they appear in the AUI. These commands are saved to a file.
- The **Communications Menu** contains commands for choosing connection preferences, terminal emulation type, port settings from an already created file, or modifying the default values (such as stop and data bits), modem settings, and connect/disconnect. See the "Accessing the Subnetwork" section in the **CPro-2000 Startup** chapter for further information on how to use these commands.
- The **Run Script File Menu** enables you to run script files without accessing the CPro-2000 GUI. This menu also provides scripts for system and shelf turnups. The system and shelf turnup scripts must be ordered directly from Lucent Technologies and can be customized for your location. For ordering information, please call 1-800 WE2-CARE.
- The **Help Menu** provides information about the currently-running CPro-2000 release.

TCP/IP Connection Options

Toolbar (from left to right):

- Connect/Disconnect and Capture

Menu bar (from left to right in the toolbar):

- The **Network Menu** allows you to connect to or disconnect from the NE.
- The **Edit Menu** allows you to edit the contents of the AUI window using the Clear command to erase all text from the AUI window, the Copy command to copy a selection to the clipboard, or the Paste command to insert the contents of the clipboard into the AUI or another application.
- The **Capture Menu** is not available in CPro-2000 Release R11.0.
- The **Help Menu** provides information about the currently-running CPro-2000 release.

NOTE: Any settings found in a login script or a batch file override settings provided in the AUI, whether by user entry or a settings file.

Printing Reports and Windows

CPro-2000 can print reports and some windows directly from the GUI. All reports that can be viewed through the Report Viewer, such as the reports created using the Reports menu, can be printed to your local printer. See the "Report Viewer" section in **The View Menu** chapter for additional details.

You can print the Subnetwork View using the Print command in the Access menu or the Print toolbar icon. See the "Print Window" section in **The Access Menu** chapter for additional details.

You can also print other GUI windows and AUI information, such as a Network Element View or a captured AUI screen using Microsoft Paint™ or the Notepad editor. See the following section, "Printing AUI Screens" for instructions on how to capture information in the AUI and print it to your local printer. See the "Printing Windows" section later in this chapter, for instructions on how to print windows from the GUI that are not supported by the Print Window command.

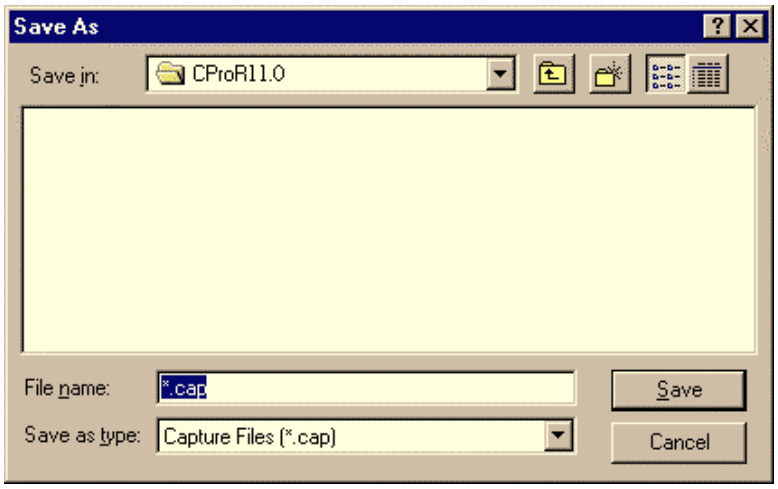
Printing AUI Screens

To print information that appears in the AUI screen, use the following procedure:

Procedure

For connection via serial link

1. In the AUI, from the Capture pull-down menu, select **Visible** or **Standard** and then select **Start.** The following screen appears.



2. Enter a file name as requested.

   Any information displayed in the AUI after **Capture Start** is chosen is saved to the file, until **Capture Stop** is chosen.

3. In the AUI, select **Stop** from the Capture pull-down menu.

4. Access the file created with Notepad or some other Windows word-processing package that accepts text as input.
5. Select **Print Setup** and choose landscape or portrait depending on the page orientation of the report.
6. Select **Print** and click **OK**

For connection over TCP/IP

1. In the AUI, select the desired text.
2. Press **Ctrl+C** to copy the text to the clipboard.
3. Open a text editor such as Notepad, then press **Ctrl+V** to copy the text from the clipboard.
4. Select **Print Setup** and choose landscape or portrait depending on the page orientation of the report.
5. Select **Print** and click **OK**

Printing Windows

To print a window that appears in the GUI, such as a Network Element View, use the following procedure:

NOTE: To print the Subnetwork View, see the "Print Window" section in **The Access Menu** chapter.

Procedure

1. In the GUI, click the window you wish to print.
2. Press the **Print Screen** key on your keyboard to place a copy of the entire screen in the Windows clipboard. To place only the selected window in the clipboard, press **Alt + Print Screen**.
3. Open Microsoft Paint, located in the Accessories Program Group. (You can use any Windows-based graphics package that accepts input from the Windows clipboard.)
4. From the Edit pull-down menu, select **Paste**. A copy of the window appears.
5. From the File pull-down menu, select **Print** and the window is printed.

Task Mapping

How to Accomplish a Task

The best way to accomplish a task that you are unfamiliar with in CPro-2000 is to find the task in the table below and determine which menu contains the commands you need. Each task listed in the table below is described in detail in the next few chapters of this guide. The table here and the detailed descriptions in the subsequent chapters are all organized by menus, accessible from the menu bar at the top of the GUI window.

NOTE: Creating and deleting cross connections is not performed through a menu. These commands are performed using drag-and-drop technology. (The X-Conns menu contains instructions for how to create and delete cross connections; it does not contain a menu of commands.) For the purposes of this Task Map, cross-connection activities are listed under X-Conns.

Task Map

The menu bar at the top of the GUI window contains all of the functionality of CPro-2000. The menus can be accessed by clicking on the appropriate word in the menu bar using the mouse. Each menu contains a grouping of similar tasks. The tasks that can be accomplished via the GUI and its corresponding menus are listed in the following table. Keyboard shortcuts that can also be used to accomplish certain tasks are shown in parentheses with their respective menu items.

Menu Item (Keyboard shortcut)	Task
Access/New Subnetwork	Accesses a subnetwork that has not previously been accessed or has no subnetwork information saved for it.
Access/Open Subnetwork	Accesses a subnetwork that has subnetwork information that has been saved to a file in a previous CPro-2000 session.

Menu Item (Keyboard shortcut)	Task
Access/Close Subnetwork (Ctrl + C)	Disconnects from a subnetwork that is currently being accessed.
Access/Save Subnetwork (Shift + Ins)	Saves a subnetwork's information to a file, so you can restart your next session with this subnetwork without having to requery the NEs.
Access/Save Subnetwork As (Ctrl + U)	Saves a subnetwork's information to a file, when you are saving a subnetwork's information for the first time or when you are saving it to a different file name.
Access/Print Window	Prints out your Subnetwork view to a printer (Subnetwork view only).
Access/Close Window (Ctrl + D)	Closes the window that currently has the focus in the GUI. Does not log you out of an NE or subnetwork.
Access/Close All Windows (Ctrl + A)	Closes all windows that are currently open. Does not log you out of an NE or subnetwork.
Access/Login (Ctrl + L)	Logs into a remote node in the local node's subnetwork (NE View only).
Access/Logout (Ctrl + O)	Logs out of the current node (NE View Only).
Access/Node Manager (Ctrl + N)	Opens, closes, logs in, logs out, or switches to each Network Element View. Can also be used for a partition inventory, partition map, or renaming a partition.
Access/Run Batch Commands (Ctrl + B)	Executes a series of commands using a batch file.
Access/Open (Partition)	Opens the selected partition (Subnetwork View only).
Access/Close (Partition)	Closes the selected open partition (Subnetwork View only).
Access/Open (NE)	Opens the selected NE (Subnetwork View only).
Access/Edit CPro.ini (Ctrl + E)	Allows editing of the INI file from the GUI. Available only if the Subnetwork View is closed.
Access/Exit (Ctrl + X)	Exits the CPro-2000 application.
Edit/Backup (F8)	Backs up equipage, cross connections, and provisionable parameters of the current node to a file.
Edit/Restore (F9)	Restores equipage, cross connections, and/or provisionable parameters from a file to the current node.
Edit/Change TID	Changes the TID of the current NE.

Menu Item (Keyboard shortcut)	Task
Edit/Change Password	Changes the password of the current NE
Edit/Switch DRI	Operates or releases the manual dual-ring interworking (DRI) switch for an FT-2000 OC-48.
Edit/Rename Partition	Changes the default partition name to a customized name of your choice.
View/Status Bar (Ctrl + R)	Hides or shows the status bar at the bottom of the GUI showing the alarm status.
View/Toolbar (Ctrl + T)	Hides or shows the toolbar at the top of the GUI.
View/Show X-conn (Shift +F8)	Displays specified cross connections in the current Network Element View.
View/Hide X-conn	Hides all cross connections in the current Network Element View.
View/Subnetwork View	Opens a window displaying the Subnetwork View.
View/Report Viewer (F12)	Enables a previously saved report to be viewed or printed.
Report/Path	Creates a report in the Report Viewer that contains information about the complete and incomplete paths in the subnetwork (Subnetwork View only).
Report/Timeslot Usage	Creates a report in the Report Viewer that shows which time slots are being used in all NEs in the subnetwork (Subnetwork View only).
Report/Cross Connections	Creates a report in the Report Viewer that shows the cross connections in a single NE (from a Network Element View) or for all inventoried NEs in a subnetwork (from the Subnetwork View).
Report/Map	Displays a report in the Report Viewer that contains connectivity information in relation to the current node (Network Element View only).
Report/Alarms	Displays an alarm summary in the Report Viewer for the current node in the Network Element View.
Report/History	Displays a history of events in the Report Viewer for the current node in the Network Element View (MML only).
Report/Equipment	Displays a report in the Report Viewer that shows the equipage for the current node (Network Element View only).

Menu Item (Keyboard shortcut)	Task
Report/Protection State	Displays a report that shows the NPPA protection-switching state for the current node in FT-2000 OC-48 (Network Element View only).
Report/Port/Slot Options	Provides a list in the Report Viewer of the current DS1, DS3, EC1, NCT/2, OC-1, OC-3, OC-12, and LS port/line/slot options for the current node in the Network Element View. Not all of these options are available for every NE type or release.
X-Conns/Enter/Individual /Range	Provides steps for creating individual or ranges of cross connections.
X-Conns/Delete/Individual /Range	Provides steps for deleting individual or ranges of cross connections.
Provision/DS1 Ports Provision/T1 Ports Provision/DS3 Ports Provision/EC1 Ports Provision NCT/2 Lines Provision/OC-1 Lines Provision/OC-3 Lines Provision/OC-12 Lines Provision/OC-48 Lines	Retrieves current or sets new Port/Line Options for DS1, DS3 T1, EC1, NCT/2 OC-1, OC-3, OC-12, OC-48 and LS. Not all of these options are available for every NE type or release.
Provision/Set NPPA	Displays or sets the value for the Protection Access State for FT-2000 OC-48 NEs.
Provision/Set Date	Displays or modifies the current date or time of the NE.
Provision/Set NE	Sets options for the current NE including some or all of the following: access identifier (AID), TID, Node ID, Directory Services, assignment of gateway network element (GNE) (DDM-2000 only), alarm GNE (AGNE), alarm group (ALMGRP), X.25 packet size (X25ps), type of cross-connection protocol, and data communications channel (DCC).
Provision/Set Feat	Displays or modifies performance-monitoring parameters for DDM-2000 NEs
Provision/Set CID Secu/ DCE/DTE	Displays or modifies the current settings for Set CID DCE and Set CID DTE parameters for FT-2000 OC-48 NEs.

Menu Item (Keyboard shortcut)	Task
Provision/Update NE	Updates the system database on the NE to reflect the existing hardware configuration and incoming signals.
Provision/OSI Stack/ Layer 3/Layer 4	Retrieves current or sets new values for the OSI Stack.
Update/Inventory (Network Element View) (Ctrl + I)	Retrieves the equipage and cross connections of the current NE and updates the Network Element View database.
Update/X-Conn (Ctrl + S)	Retrieves the cross connections of the current NE and updates the Network Element View database.
Update/Alarm	Updates and displays the alarm status on the GUI status bar for the current NE.
Update/Active Users	Retrieves and displays information about users who are logged into an NE via MML.
Update/Map	Retrieves the partition topology from all nodes in the current partition (Subnetwork View only).
Update/Inventory (Subnetwork View)	Retrieves the partition topology, equipage, and cross connections from the current partition (Subnetwork View only).
Window/Cascade (Shift + F4)	Arranges Network Element Views and Subnetwork View in a cascade format.
Window/Tile Horizontal (Shift + F5)	Arranges Network Element Views and Subnetwork View in a horizontal format.
Window/Tile Vertical (Shift + F6)	Arranges Network Element Views and Subnetwork View in a vertical format.
Window/Arrange Icons (Shift + F7)	Arranges iconified windows in an orderly fashion at the bottom of the GUI window.
End-to-End Path/Enter	Establishes an end-to-end path (Subnetwork View only).
End-to-End Path/Delete	Deletes an end-to-end path of any type (Subnetwork View only).
End-to-End Path/Modify LocA/LocZ	Modifies the LocA and LocZ values for an FT-2000 OC-48 STS-3 or STS-1 end-to-end path.
End-to-End Path/Tag Red Line	Displays/modifies paths in FT-2000 OC-48 R8.1 and tag cross connections for Red Line services.
Alarms (Alt + A)	Displays the Alarms menu options.
Alarms/Auto Alarm Polling (Ctrl + A)	Changes existing state of Auto Alarm Polling. Turns feature off if it is on, and vice versa. Check mark is displayed if feature is on.

Menu Item (Keyboard shortcut)	Task
Alarms/Audible Alarm (Ctrl + l)	Sets the audible alarm state. Check mark is displayed if feature is on.
Alarms/Pager (Ctrl + P)	Turns the pager feature on or off. Checkmark is displayed if feature is on.
Alarms/Preferences (Ctrl + r)	Brings up a dialog box from which to: define call list criteria, set audible alarm, auto alarm polling, and modem parameters; and test pager setup.
Alarms/Preferences/Alarm Tab/Audible Repeat Seconds (R)	Controls the frequency or repeat rate of the alarm sound.
Alarms/Preferences/Alarm Tab/Auto Poll Minutes (P)	Controls the frequency with which alarm status is updated.
Alarms/Preferences/Alarm Tab/Modem Comm Port (C)	Specifies communication port that corresponds to the available modem.
Alarms/Preferences/Alarm Tab/Alarm Tab/To access Outside Line, first dial (O)	Displays the prefix required to dial an outside pager number.
Alarms/Preferences/Alarm Tab/View (V)	Displays existing log file.
Alarms/Preferences/Alarm Tab/Delete (D)	Deletes the log file.
Alarms/Preferences/Call List Tab/Name (N)	Displays the name associated with a specific pager number and alarm level.
Alarms/Preferences/Call List Tab/Phone (PIN) (P)	Displays the pager number that corresponds to the name specified in the Name field.
Alarms/Preferences/Call List Tab/Address Type (T)	Specifies the pager type.
Alarms/Preferences/Call List Tab/Add (A)	Adds a new entry to the data file.
Alarms/Preferences/Call List Tab/Edit (E)	Modifies the entries in the Call List window.

Menu Item (Keyboard shortcut)	Task
Alarms/Preferences/Call List Tab/Delete (D)	Removes entries from the Call List window.
Alarms/Preferences/Call List Tab/OK (O)	Confirms a command to edit, add, or delete an entry in the Call List window.
Alarms/Preferences/Call List Tab/Cancel (C)	Cancels a command to edit, add, or an delete entry in the Call List window.
Alarms/Preferences/Pager Test Tab/Message to PIN (P)	Accepts test messages entered by the user.
Alarms/Preferences/Pager Test Tab/Message Text (M)	Dynamically displays progress of the test.
Alarms/Preferences/Pager Test Tab/Send (S)	Transmits the test message.
Alarms/Preferences/Pager Test Tab/Clear (C)	Removes entries from the Message to PIN field and the Message Text field.
Alarms/Preferences/Pager Test Tab/Address Type (T)	Specifies the pager type.
Help/CPro-2000 Help	Provides an on-line version of the CPro-2000 User Manual.

The Access Menu

Overview

The Access Menu contains commands that can open, close, and save subnetworks; open and close Network Element Views; log into and out of network elements; execute batch files; and exit CPro-2000. The Access pull-down menu contains the following command options:

- New Subnetwork
- Open Subnetwork
- Close Subnetwork
- Save Subnetwork
- Save Subnetwork As
- Print Window
- Close Window
- Close All Windows
- Login
- Logout
- Node Manager
- Run Batch Commands
- Open (Partition)
- Close (Partition)
- Open (NE)
- Exit

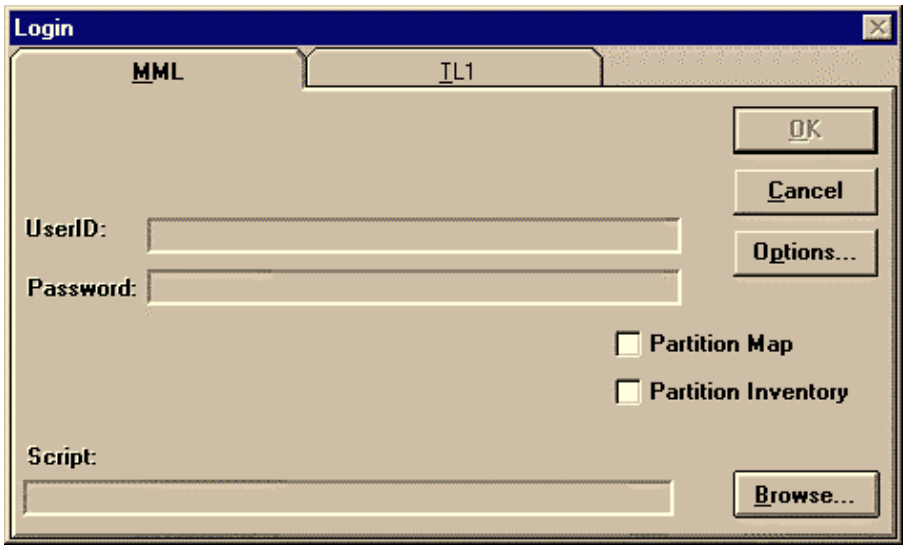
New Subnetwork

Purpose

To access a subnetwork that has not previously been accessed or that has no subnetwork information saved for it. This command is available only when no connection to a subnetwork is currently active.

Procedure

1. From the Access pull-down menu, select **New Subnetwork**. The following Login dialog box appears.



2. Optionally, check **Partition Map** or **Partition Inventory**. See the "Partitioning'' section in the **Startup** chapter for more information on partitions.

   If you do not check **Partition Map** or **Partition Inventory**, CPro-2000 does the following:

   - logs into the local node
   - inventories the local node and displays its Network Element View

   If you select **Partition Inventory**, CPro-2000 gathers information about all the nodes in the partition, including cross connections, equipage, alarms, and topology. If you are going to be doing any type of subnetwork-level task, such as creating an end-to-end path, it is necessary to take a Partition Inventory.

   CPro-2000 users also have the option of choosing whether or not to retrieve a list of L2 nodes when logging into the subnetwork. To exercise this option, click the **Retrieve L2 Nodes** box to place a check mark. See the "Retrieve L2 Nodes" section in the **CPro-2000 Startup** chapter for further details.

3. If the NE Interface is TL1, click the **TL1** tab and either input a **TID** or select the TID of the initial login node from the down-arrow list.

4. For all NE types, enter your **user ID** and press the **Tab** key then enter your **password**.

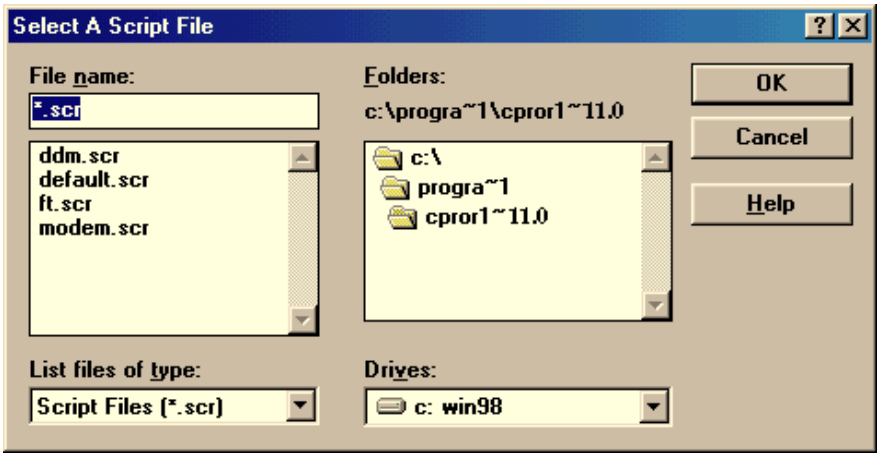
NOTE: See the appropriate NE documentation for procedures on how to change your user ID. See **The Edit Menu** chapter for the procedure on how to change a password or TID.

5. To use the default script file, do not delete the contents of the Script field. But you may specify the communications settings or select a script file. (See the "Accessing the Subnetwork" section in the **Startup** chapter for information on how to select communication options.)

6. OR

   To choose a script other than the default:

   - Click the **Browse** button to display the Select A Script File dialog box. The following screen appears.



   - Navigate to the CPro-2000 installation directory to access the Script Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror1~11.0.
   - Select one of the existing data communications scripts, depending on your application. Click **OK** to select this script

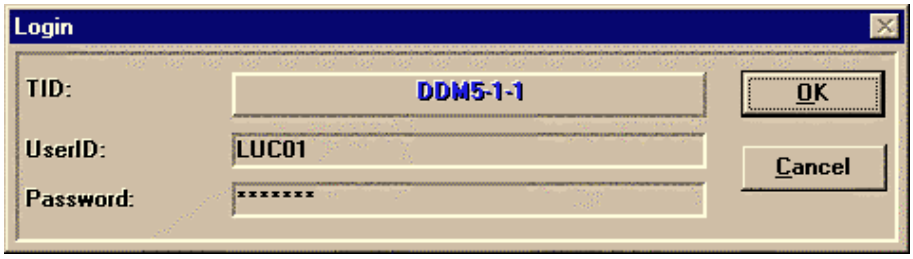
NOTE: Although certain default script files are provided with the CPro-2000 software, the user can also create script files (see **Appendix D, Script and Batch Files** for information on writing script files). Check any created script files thoroughly before use.

7. The Login dialog box redisplays with the appropriate script file. Click **OK**.

NOTE: If you receive an error message at this point, such as `Invalid Port Response`, see the **CPro-2000 Software Release Description** that accompanies this user manual for details.

8. If you selected **Partition Map** or **Partition Inventory** from the Login window, CPro-2000 automatically logs into each of the NEs in the subnetwork using the user ID and password entered into the Login window.

NOTE: The following Login window appears if one of the NEs in the subnetwork uses a different user ID or password other than the local node or if you have not preset the user ID and password for the nodes in the ring.



9. If this window appears, type in the correct **user ID** and **password**. Click **OK**.

   The GUI window appears containing the appropriate Subnetwork View or Network Element Views for the type of NEs in the subnetwork.

NOTE**:** To view examples of typical subnetwork and NE representations, see the "GUI Representations" section in **The User Interfaces** chapter.

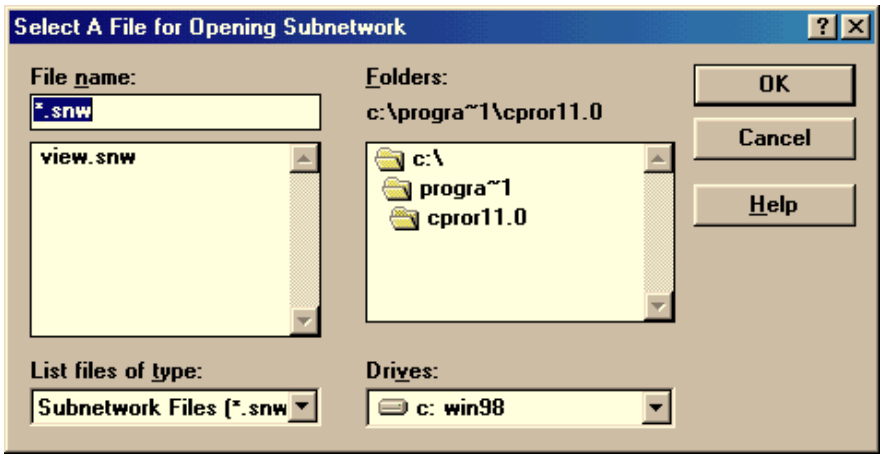
Open Subnetwork

Purpose

To access a subnetwork that has had its subnetwork information saved to a file during a previous CPro-2000 session. All the information that CPro-2000 queries during a session, such as NE equipage, cross connections, and neighbor information, can be saved to a file. When you access the subnetwork using the file, CPro-2000 does not have to requery the NEs in the subnetwork. It uses the information saved in the file. This command is only available when no connection to a subnetwork is currently active.

Procedure

1. From the Access pull-down menu, select **Open Subnetwork**. The following screen appears and prompts you to select the file that contains the previously saved information for this subnetwork.

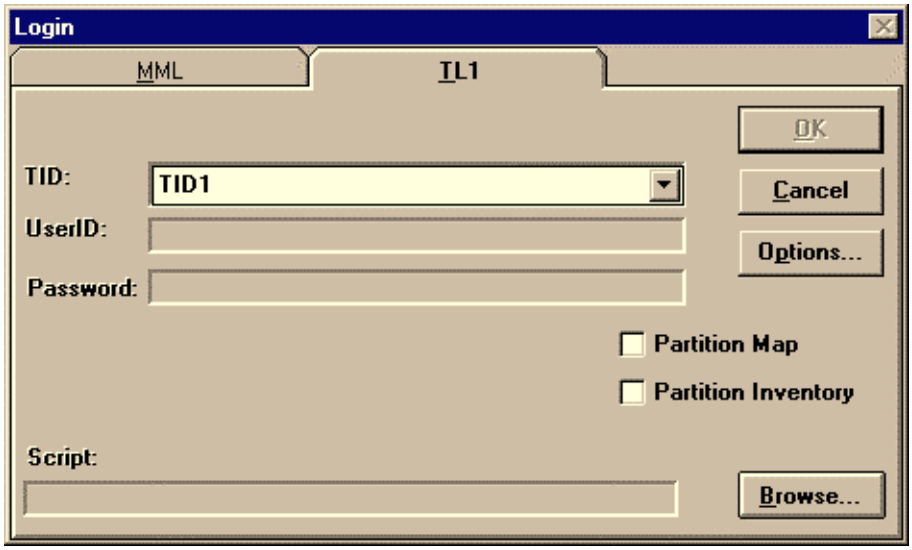


   Navigate to the CPro-2000 installation directory to access the Subnetwork Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror1~ 11.0.

2. Click **OK** to open the subnetwork using the information saved in this file. At any time, you can click **Cancel** to dismiss the window and not open the subnetwork.

NOTE: If CPro-2000 determines that there is a conflict between your saved subnetwork and the current subnetwork due to changes in the subnetwork, a warning message will appear. You then have the option of choosing **Re-Start** to reestablish the subnetwork, **Continue** to keep your saved version (CPro-2000 may not work correctly), or **Cancel** to disconnect from the subnetwork.

3. The following Login dialog box displays. The **Partition Map** and **Partition Inventory** options are not available for selection. Since you are opening a subnetwork using previously saved information, CPro-2000 will not gather new data during login.



NOTE: If you are connecting via TL1, you cannot type a new TID into the dialog box. You must choose from the known TIDs from the saved subnetwork information.

4. Continue with Step 2 in the "New Subnetwork" section earlier in this chapter to complete the login process.

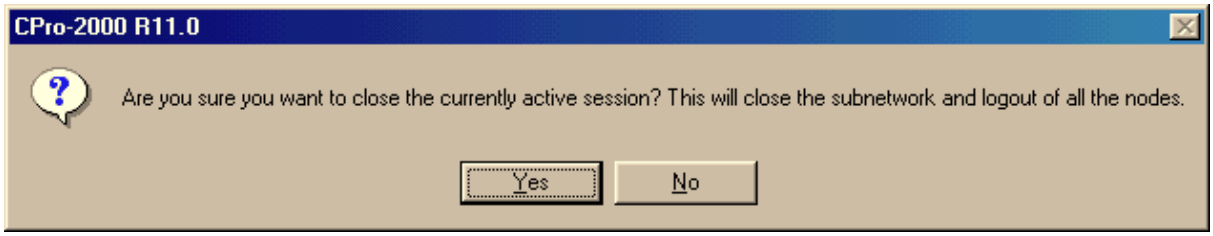
Close Subnetwork

Purpose

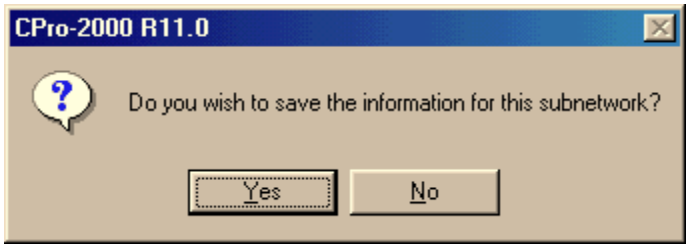
To disconnect from a subnetwork that is currently being accessed.

Procedure

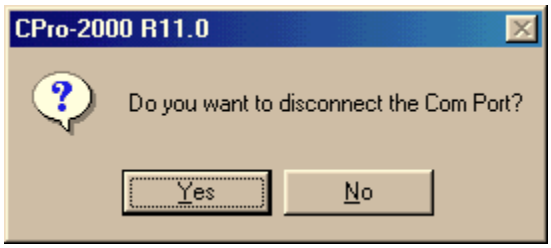
1. From the Access pull-down menu, select **Close Subnetwork**. The following screen appears:



2. Click **No** if you do not want to close the subnetwork. Click **Yes** if you want to close the current subnetwork. Note that this command does not completely exit you out of CPro-2000 (see the "Exit" section later in this chapter). The following screen displays:



3. Click **No** if you do not want to save information about this subnetwork to a file. Click **Yes** if you want to save this subnetwork's information to a file. The following screen displays:



4. Click **NO** to keep the Com Port open to facilitate further connections. Click **Yes** if you want to disconnect the Com Port.

Save Subnetwork

Purpose

To save a subnetwork's information to a file, so that you can restart your next CPro-2000 session using the current subnetwork's information. Use this command when you already have a file for this subnetwork's information and you want to update the file.

Procedure

1. From the Access pull-down menu, select **Save Subnetwork**. The current subnetwork information is saved to the existing subnetwork file.

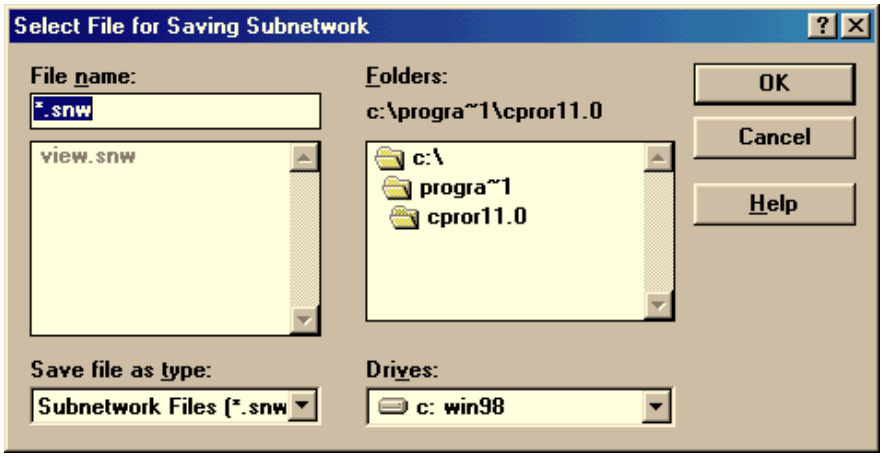
Save Subnetwork As

Purpose

To save a subnetwork's information to a file, so that you can restart your next CPro-2000 session using the current subnetwork's information. Use this command when you are saving a subnetwork's information for the first time or if you want to save the subnetwork's information to a file name that is different from an existing file name.

Procedure

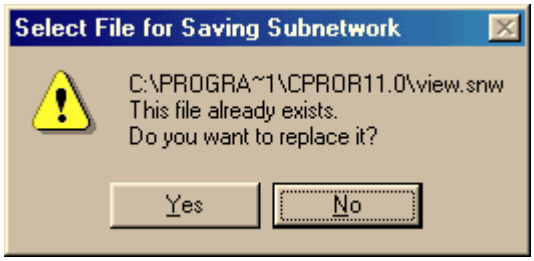
1. From the Access pull-down menu, select **Save Subnetwork As**. The following screen appears:



2. Navigate to the CPro-2000 installation directory to access the Subnetwork Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror1~ 11.0.

3. Type in a new file name or choose one of the other existing file names.

   If you choose a name that is already in use, a warning appears.



   - If you want to replace the existing file with a new one, click Yes.
   - If you do not want to replace the existing file, click No, then rename the new file.

4. Click **OK**, or click **Cancel** if you do not want to save this subnetwork's information to a file. You are returned to the Subnetwork View.

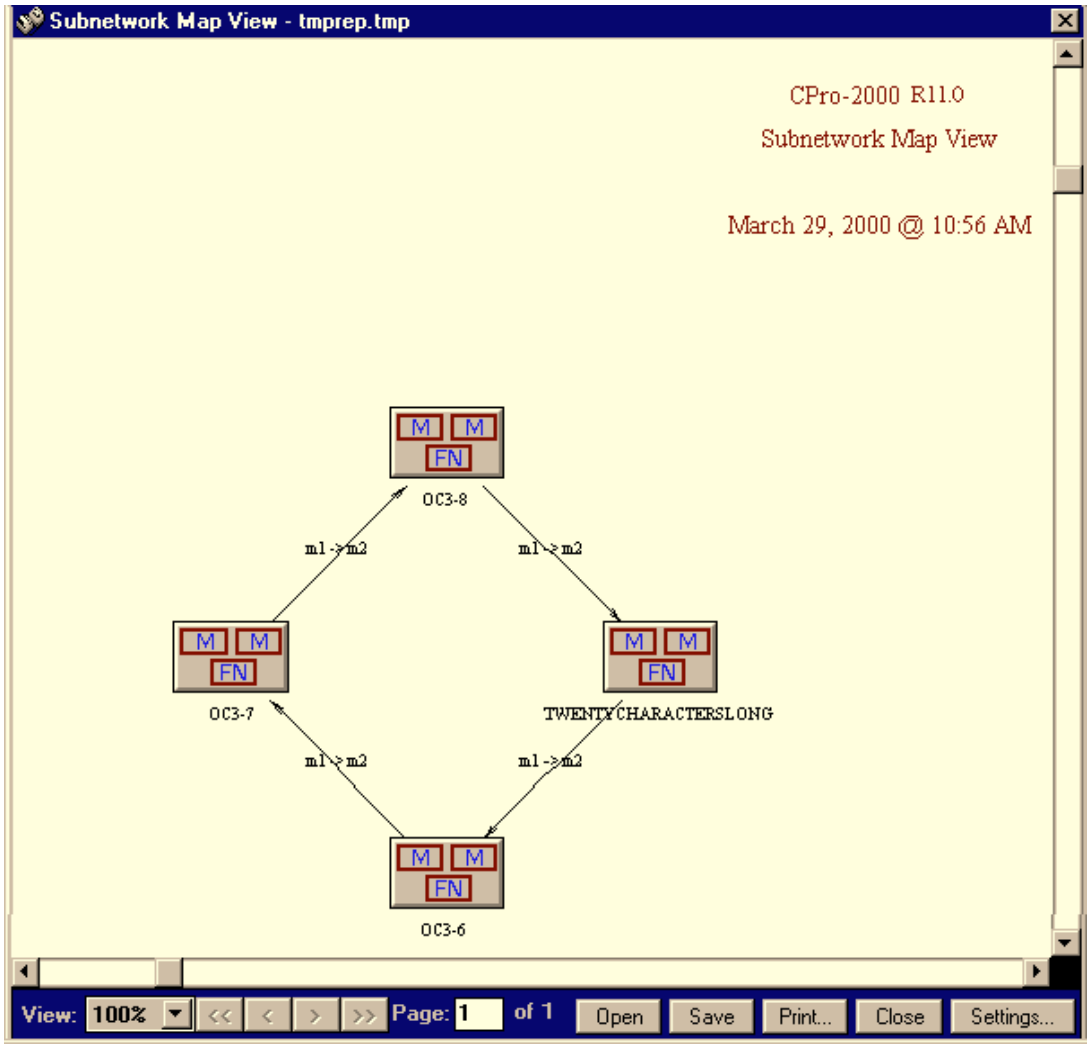
Print Window

Purpose

To print out your current Subnetwork View window.

Procedure

1. From the Access pull-down window, or from the toolbar icon, select **Print Window**. The following window appears:



2. You can perform the following functions on this map capture:

   - The **View** function allows you to make the size of the map capture larger or smaller by selecting a value from the View down-arrow list.
   - The **Print** function brings up an abbreviated Print menu so your map capture can be printed.

- The **Save** function allows you to save your Subnetwork View to a file name, so it can be accessed at a later time through the Report Viewer command in the View menu.
- The **Close** function enables you to close the Subnetwork using the Save function.
- The **Settings** function offers a full selection of print commands. Use the **Close Settings** command to return to the basic functions of the screen, but not close the map capture.

Close Window

Purpose

To close the window that currently has the focus in the GUI. Note that this command does not log a user out of an NE or subnetwork.

Procedure

1. From the Access pull-down menu, select **Close Window**.
2. The window that currently has the focus in the GUI is closed.

Close All Windows

Purpose

To close all the windows, including any Network Element Views and the Subnetwork View that are currently displayed. This command does not log you out of an NE, disconnect you from the subnetwork, or exit you from CPro-2000.

Procedure

1. From the Access pull-down menu, select **Close All Windows**.
2. All open windows are closed.

Login

Purpose

To log into remote nodes in the local node's subnetwork and is only available from an open Network Element View.

Procedure

In the Access pull-down menu, the Login command is enabled if the desired node has been inventoried at least once and you are not already logged into it. Select **Login**. CPro-2000 logs into the node using the user ID and password provided during initial login to the subnetwork.

NOTE: Since the DDM-2000 MML systems require that any remote login session currently in progress must be terminated before another remote login session can be established, CPro-2000 automatically logs out of one remote session and then performs the user-requested remote login.

If you receive an error while logging in, remember to check the information given in the AUI. Sometimes this explains exactly why the login attempt (or any other command) has failed.

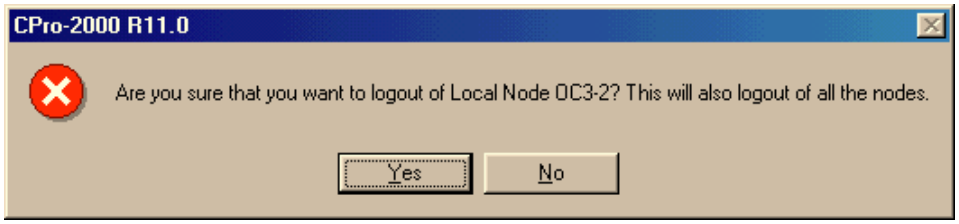
Logout

Purpose

To log out of the current node. For a DDM-2000, it may be either a remote node or a local node. This command is only available from the Network Element View.

Procedure

1. From the Access pull-down menu, select **Logout**.
2. If the NE that you want to logout of is TL1-connected or not a local node (it is not the node to which you logged into when you connected to the subnetwork), you are logged out of the node and the Network Element View is closed if it is the local node.
3. If the NE is MML-connected and is the local node (the node to which you logged into when connecting to the subnetwork), the following dialog box appears:



4. Click **Yes** to log out of the local node and any other open Network Element Views, including the Subnetwork View. Click **No** if you do not want to logout of the local node and close any open windows.

Node Manager

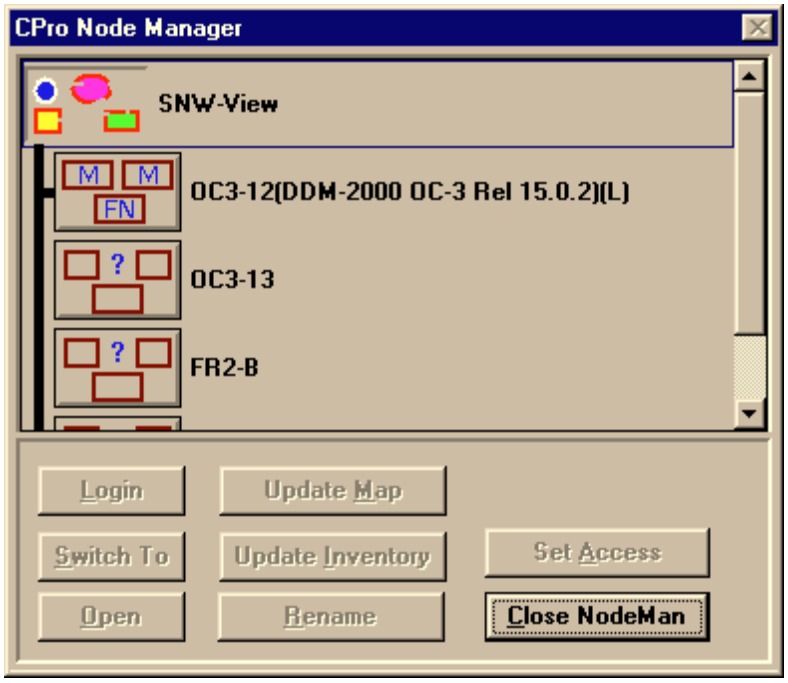
Purpose

To provide easy access to the subnetwork you are logged into and its components, such as partitions and individual NEs. The Node Manager allows you to open and close the Subnetwork View and Network Elements Views. You can expand a partition to show all of its individual NEs, perform a partition map or partition inventory, rename a partition, or open/close a partition. You can also log into NEs, log out of NEs, and preset user IDs and passwords from this window.

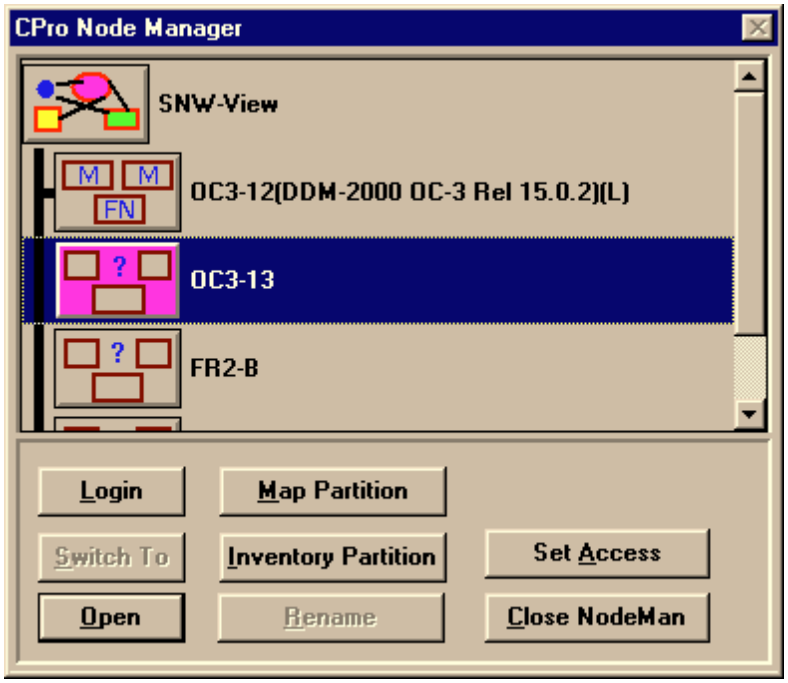
NOTE: The command button functionality in the Node Manager varies according to the type of icon highlighted. Therefore, the buttons will become enabled or disabled accordingly.

Procedure

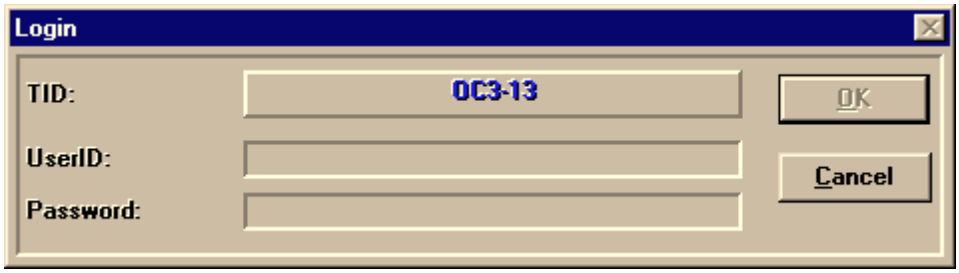
1. From the Access pull-down menu, or by clicking the toolbar icon , select **Node Manager**. The following screen is displayed:



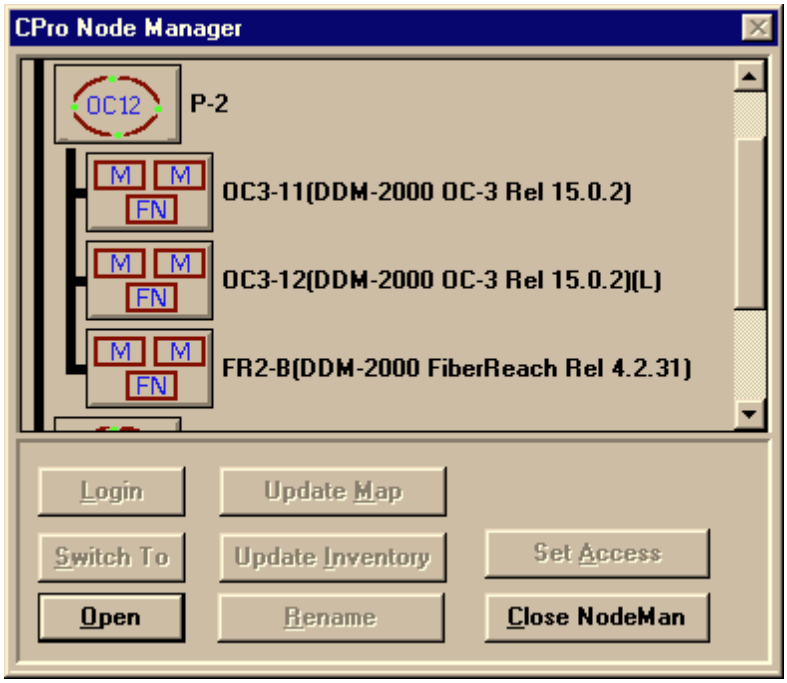
2. There are several different tasks you can accomplish from this point. For example, scroll down and click an NE to select it; **OC3-13** in the following example. The **Map Partition**, **Inventory Partition**, and **Login** buttons become available, as shown in the following screen:

3. 

4. To discover a partition containing this NE, click either **Map Partition** or **Inventory Partition**. The Login window appears.



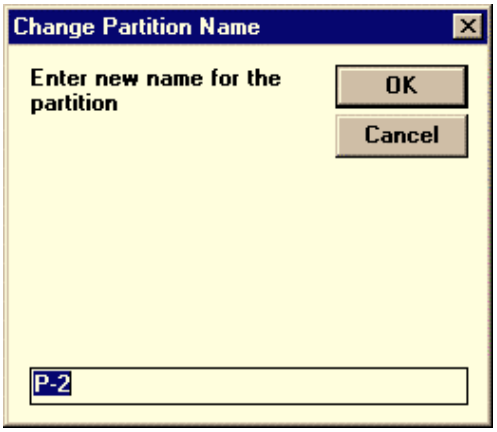
5. Enter your **UserID** and **Password**, then click **OK**. A new partition is created and displayed on the Subnetwork View. The next time you access the Node Manager, it also shows the second discovered partition (P2) in the subnetwork.



6. From this screen, you can select several tasks, as described in the following list. Note that the notation (L) next to an NE means that you are currently logged into it.

   - Click **Open** or **Close** to open or close a Network Element View or the Subnetwork View. (The Open option is only available when Network Element Views or the Subnetwork View are not open.)
   - Click **Switch To** to change the focus of the CPro-2000 GUI to the Subnetwork View or to an NE that is open. The SNW-View icon or an opened NE icon must be selected for **Switch To** to be available.
   - Click **Login** to log into an NE.
   - Click **Logout** to log out of the chosen node. (The Logout option is only available when you are logged into a node.)
   - Click **Close NodeMan** to close the Node Manager. The Node Manager also closes each time you complete a task.

- Click one of the partition icons. The **Set Access**, **Update Map**, **Update Inventory**, and **Rename** buttons are activated.
  - — Click **Set Access** to specify user IDs and passwords for CPro-2000 to use when inventorying or mapping a partition. See the section that follows for more information about this feature.
  - — Click **Update Map** to get an updated view of that partition in the Subnetwork View.
  - — Click **Update Inventory** to update the information for that partition, such as cross connections and port provisioning.
  - — Click **Rename** to give the partition a new name. The following screen displays:



  - — Enter the new partition name and click **OK**. For example, you may want to give the partition a name that reflects the makeup of the partition. Click **Cancel** if you do not want to rename the partition.

Set Access

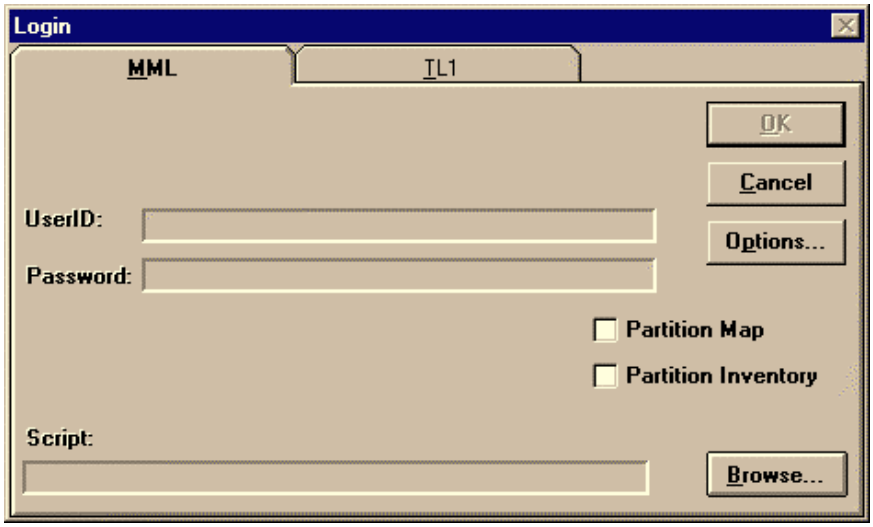
You set access when you predefine user IDs and passwords that CPro-2000 uses during a session to inventory or map a partition. There are three ways to set access in CPro-2000. You can set access from:

- the **Login** window at login
- the **Node Manager**
- a **saved subnetwork**

The following sections provide instructions on how to use each method.

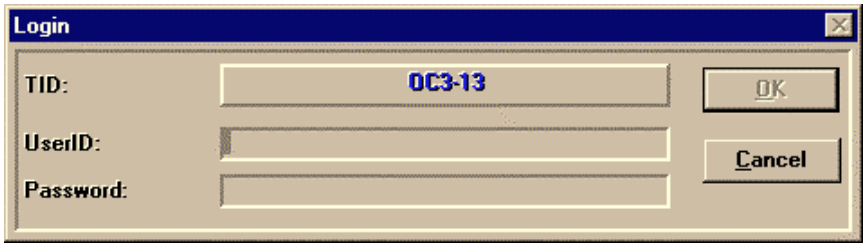
Setting access from the Login window

1. Bring up CPro-2000 R11.0.
2. From the Access Menu, click **New Subnetwork**. The Login window appears.



3. Select the desired Login Script, then check off either **Inventory Partition** or **Partition Map**. (See the **Startup** chapter for more information about the login scripts and partitions).

4. Click **OK**.



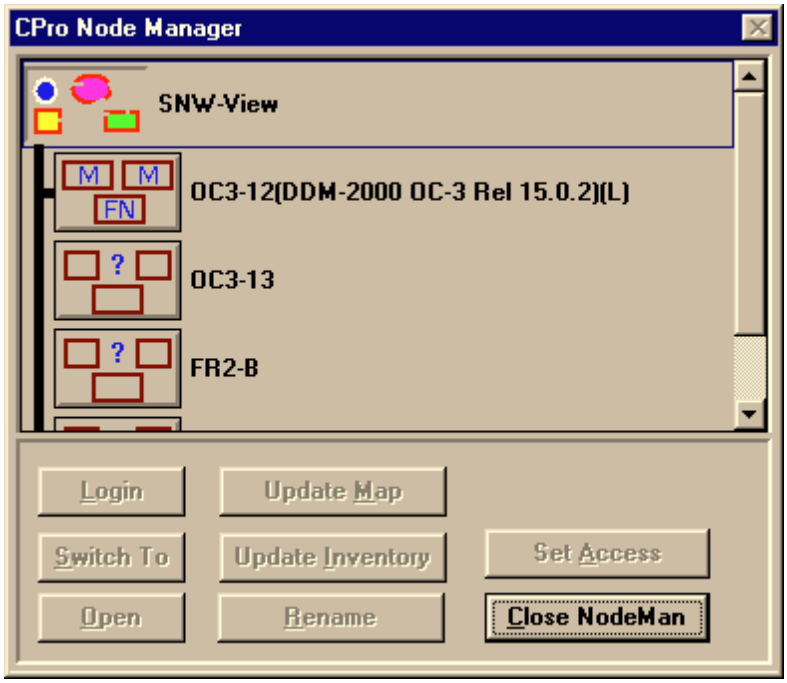
5. Enter the **UserID** and **Password** for each node.

6. Click **OK** after entering the login information for each node. The login window appears for each node in the ring. When you click Map Partition or Inventory Partition later in the session, CPro-2000 will use the login information provided to map or inventories the partitions in the network.

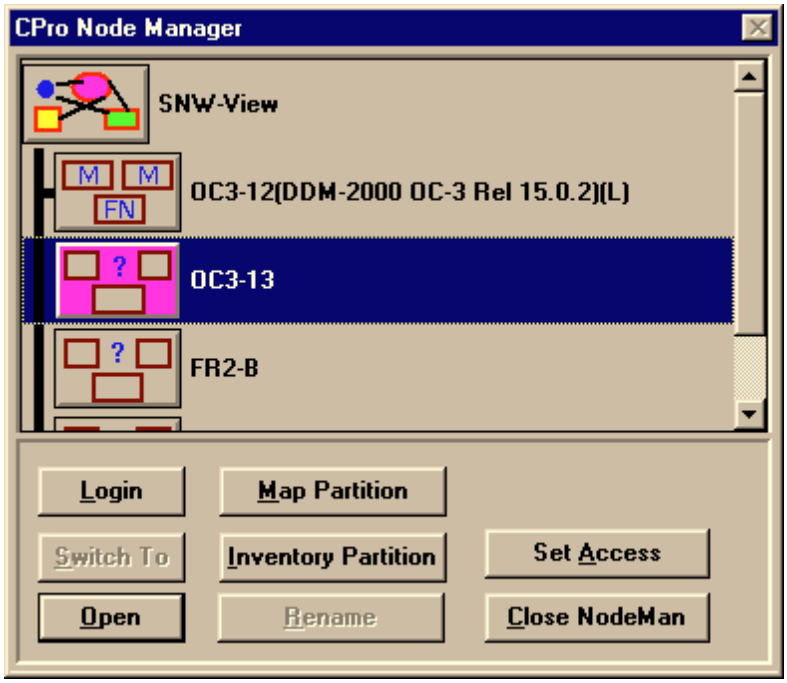
Setting Access from the Node Manager

1. Log onto a network in the usual manner.

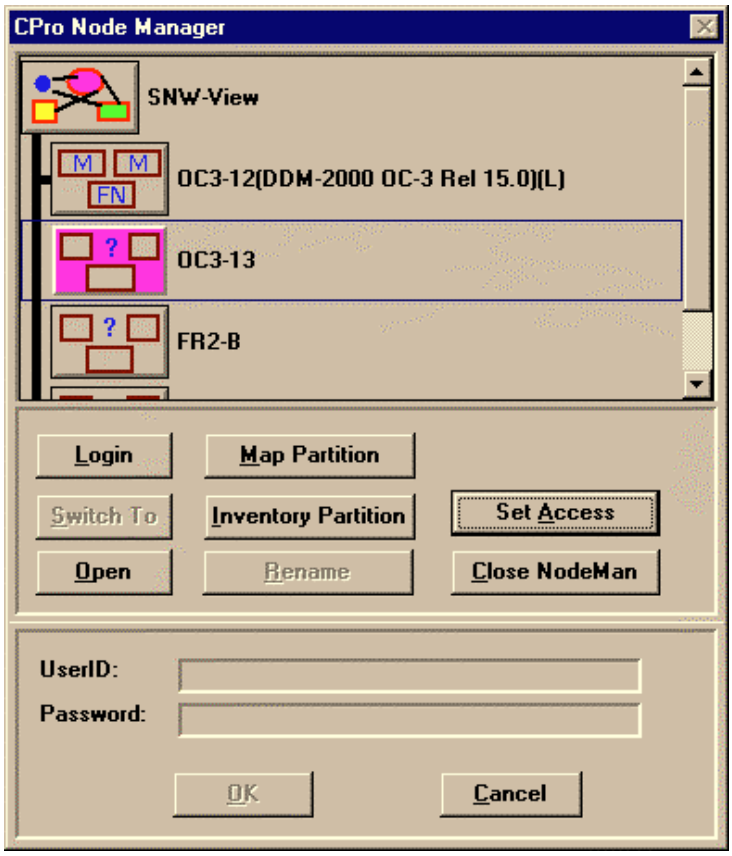
2. Click the **Node Manager** button. The Node Manager screen displays.



3. Click a node other than the local node (the node you are logged into). In this example, the local node is OC3-12, so OC3-13 is the selected node as shown below. Notice that the **Login**, **Open**, **Map Partition**, **Inventory Partition**, **Set Access**, and the **Close NodeMan** buttons are activated. The selected node is outlined in blue.



4. Click **Set Access**. The expanded Node Manager window has an attached panel (the Set Access Panel).



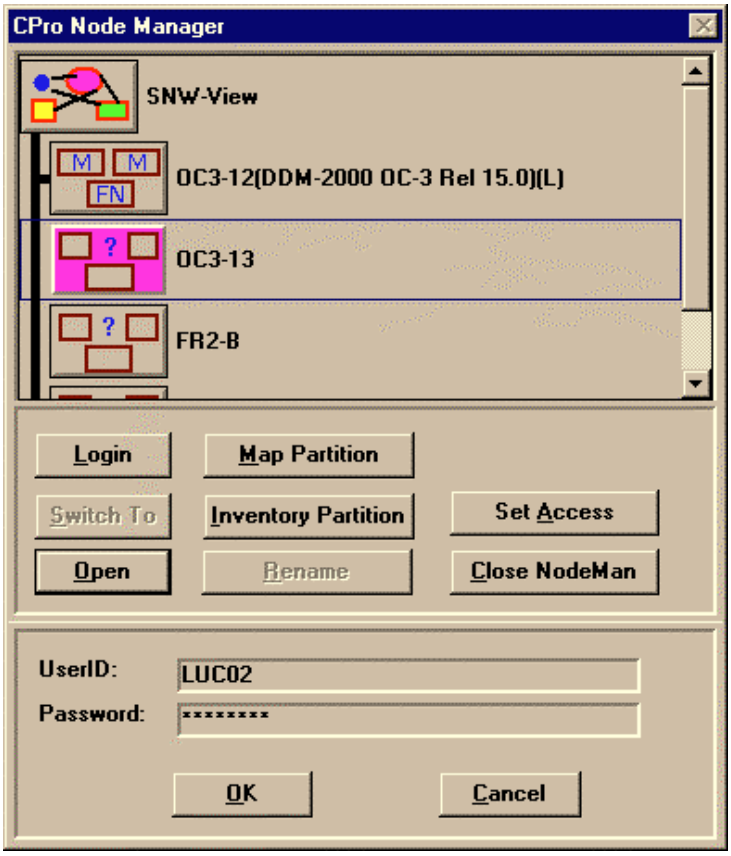
5. Enter the **UserID** and **Password** in the appropriate fields, then Click **OK**.

   OR

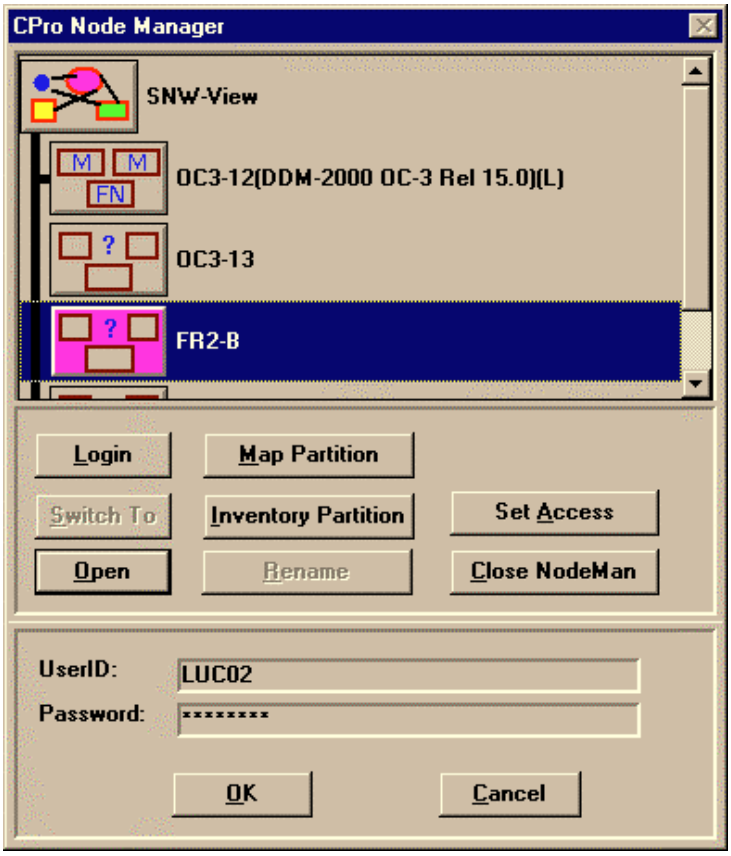
   Click **Cancel** to return to the unexpanded Node Manager screen without establishing the user ID and password.

TIP: If the user IDs and passwords are the same for all the nodes in the network, you can preset access for each of nodes in the ring from this point. To do so:

- Click back on the node for which you just established the user ID and password (OC3-13 in the above axample).
- Click the **Set Access** button. The expanded window redisplays with the last entered userID and password .



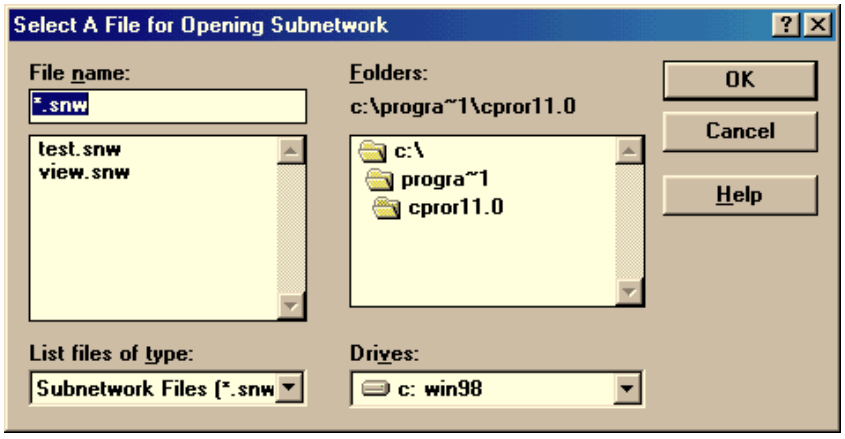
- With the Set Access Panel still open, click the next node in the ring; FR2-B in the above example.



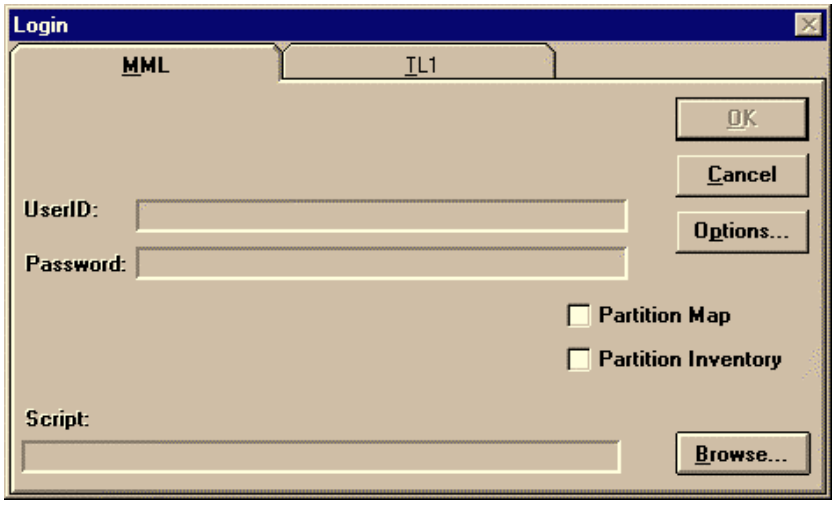
- Click **OK**. The Node Manager window contracts again and CPro-2000 applies the information in the expanded section to the selected node.
- Repeat the steps from the **TIP** to preset the ID and password for all the nodes in the ring. When you press Map Partition or Inventory Partition later in the session, CPro-2000 will use the predefined information to log into each node without prompting for the user ID and password.

Setting access from a saved subnetwork file

1. Bring up CPro-2000.
2. From the Access Menu, click **Open Subnetwork**.



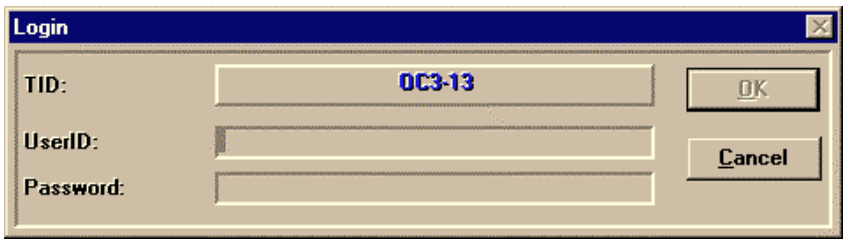
3. Navigate to the desired saved file, and then click **OK**. The Login window appears.



4. Enter the **UserID** and **Password**, and then click **OK**. The unexpanded subnetwork view displays.
5. Double-click the subnetwork view to expand the display.
6. Double-click a node to display the NE view for the desired node.

   If the userID and password for the selected node is the same as that used in the Login window, CPro-2000 uses that information to log into the desired node and display the NE view.

   If the userID and password for the selected node differs from that used in the Login window, the following Login window appears.



   - Enter the **UserID** and **Password** for the selected node, and then click **OK**. The NE view for the selected node displays.
   - You may use the **Set Access** to preset login information for other nodes if they differ from that used in the Login window. To do so, follow the instructions provided earlier this section.

Run Batch Commands

Purpose

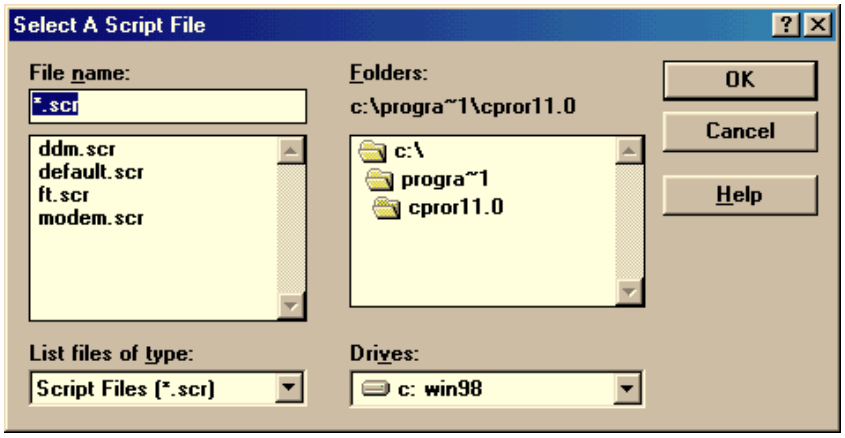
To allow the CPro-2000 user to execute batch files containing groups of commands, such as NE initialization commands or NE options not currently supported in the CPro-2000 menu.

This feature may be used for rapid turnup of new installations, using preestablished local standards.

NOTE: See **Appendix D, Script and Batch Files**, for information on writing script or batch files.

Procedure

1. From the Access pull-down menu, select **Run Batch Commands**. The following screen appears:



   Navigate to the CPro-2000 installation directory to access the Script Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror1~11.0.

2. Choose the script file that you want to execute, and click **OK**.

NOTE: The script or batch files are customized files set up by the CPro-2000 system administrator. Any newly created files should be tested prior to use.

Open (Partition)

Purpose

To expand a selected partition in the Subnetwork View and displays the individual NEs in the partition.

Procedure

1. In the Subnetwork View, click the desired **partition icon** to be expanded.
2. From the Access pull-down menu, select **Open (Partition).**
3. The selected partition is expanded and the individual NEs for the partition are displayed.

Close (Partition)

Purpose

To close an expanded partition in the Subnetwork View.

Procedure

1. In the Subnetwork View, click the desired **partition icon** to be closed.
2. From the Access pull-down menu, select **Close (Partition).**
3. The selected partition is closed and the individual NEs for the partition are no longer displayed.

Open (NE)

Purpose

To displays the Network Element View for a selected NE.

Procedure

1. In the Subnetwork View, click the box representing the individual NE to be displayed. (A partition must be expanded to see the individual NEs).
2. From the Access pull-down menu, select **Open (NE).**
3. The Network Element View is displayed for the NE.

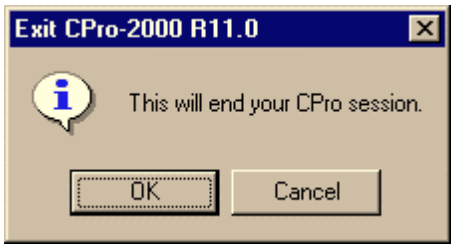
Exit

Purpose

To exit the CPro-2000 session.

Procedure

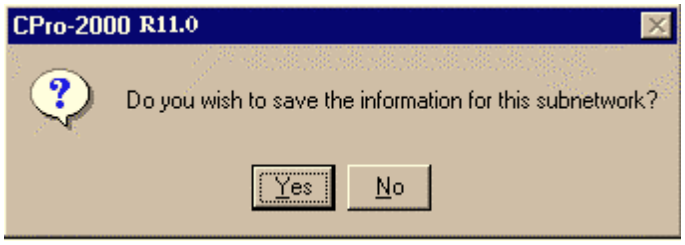
1. Choose this command when you want to terminate a CPro-2000 session. You are prompted to confirm the command with the following dialog box:



2. If you click **Cancel**, you are returned to where you were previously focused in the GUI, and you are not exited from CPro-2000.

   If you choose **OK** and you are not in an active CPro-2000 session, CPro-2000 closes.

If you choose **OK** and you are currently in an active CPro-2000 session, the following screen appears:



3. Choosing **No** closes any open GUI windows, closes the AUI window, and terminates CPro-2000.

   If you choose **Yes**, your subnetwork information is saved, the GUI and AUI close, and CPro-2000 is terminated.

The Edit Menu

Overview

The Edit Menu contains commands that back up and restore information about NEs, change target identifiers (TIDs) and passwords, and execute the dual-ring interworking (DRI) switch for FT-2000 OC-48.

The following commands are available from a Network Element View:

- Backup
- Restore
- Change TID
- Change Password
- Switch DRI (FT-2000 OC-48 only)

The following command is available from a Subnetwork View:

- Rename Partition

Backup

Purpose

To create a backup copy of the current equipage, cross connections, and provisionable parameters of a node to a file. Files created during a backup are used during the Restore command.

In addition to other parameters, CPro-2000 R11.0 supports the following new parameters in files that are backed up using the Backup command:

- The PDIPSW parameter – dictates system reaction to a payload defect. If PDIPSW is disabled, no switching occurs in the event of a payload effect. If PDISW is enabled, switching occurs, with a minor alarm, when a payload defect is detected.
- The EQPDEPRPT parameter – sets the scope of the Equipage Dependent Reports. Parameter can be set so the reports contain either all pre-provisioning information or information based on equipage.
- The PJC threshold parameter - the count of the STS-n pointer adjustments created or absorbed by an NE. This happens when there is a difference in frame rates of the

incoming and outgoing SONET signals. Excessive PJCs indicate network synchronization problems.

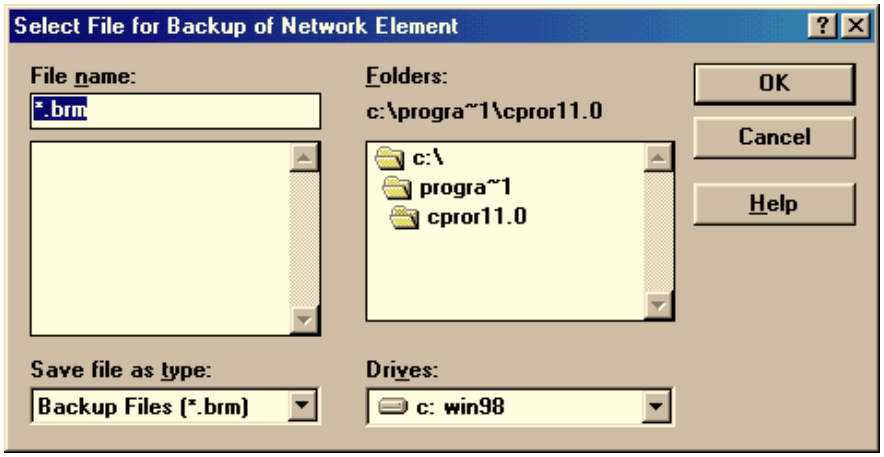
See **Appendix E, Backup/Restore Parameters**, for more details.

NOTE: Only CPro-2000 R7.0, R8.0, R9.0, R10.0, R11.0 backup files can be restored in CPro-2000 R11.0.

The Restore feature for FT-2000 R8.1 supports only files that have been created using CPro-2000 Releases 9.0, 10.0, and 11.0. See **Appendix F**, **Table of NE releases per CPro releases**, for more information about the compatibility between NEs and CPro-2000 releases.

Procedure

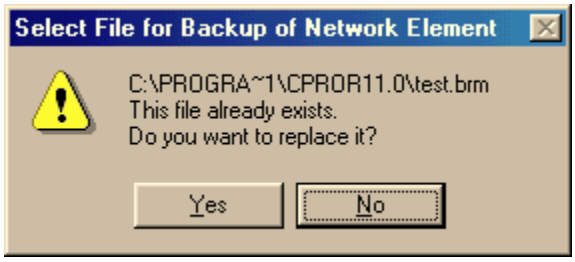
1. After choosing Backup from the Edit pull-down menu, the following screen displays.



   Navigate to the CPro-2000 installation directory to access the Backup Files. If you accepted the default during installation, CPro-2000 will be in C:\progra~1\cpror11.0.

2. Specify a file name for your backup file.

   If you choose a name that is already in use, a warning appears.



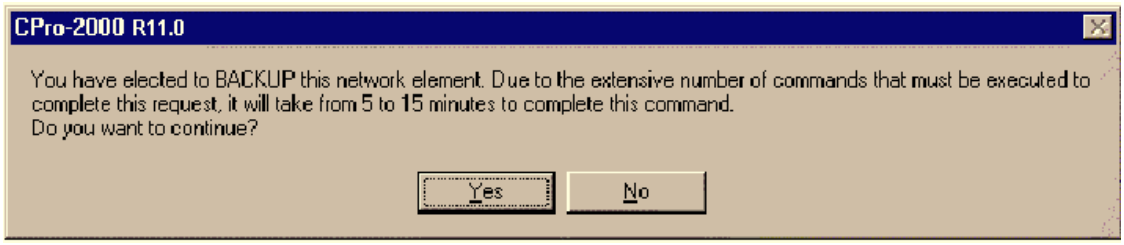
   - If you want to overwrite the existing file with a new one, click **Yes**.
   - If you do not want to replace the existing file, click **No**, then rename the new file.

3. Click **Cancel** to cancel the entire operation. Click **OK** to perform the backup.

NOTE: If you are connected to the NE being backed up via MML, the extension appended to the backup file is *.brm (*which stands for backup/restore/MML). If you are connected to the

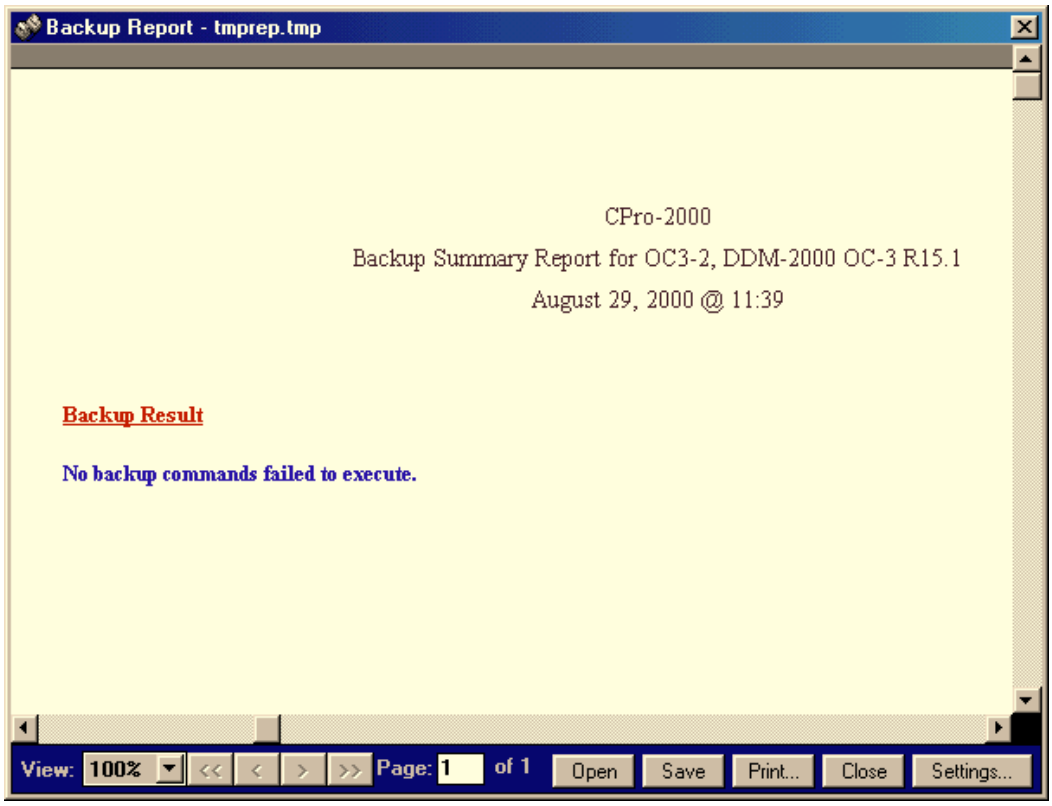
NE being backed up via TL1, the extension appended to the backup file is *.brt* (which stands for back/restore/TL1).

The following screen displays:

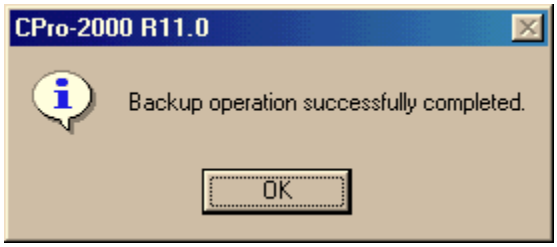


4. Click **Yes** to perform the backup. Click **No** to cancel the backup.

   The following summary report appears when the backup has been successfully completed:



5. Click **Close**. The following screen displays.



6. Click **OK**. Your backup file is now created. A typical backup file contains information similar to the following:

NOTE: The content of a backup file varies with the type and release of NE and its equipage. This following is just a sample of what a backup file may contain.

- The first line of a backup file contains information about the NE. The format is the following:
  - internal ID for NE type
  - ring (1) or linear (0)
  - release number
  - TID of NE at time of backup
  - user ID of user who created file
  - date of file creation (as per the NE)
  - time of file creation (as per the NE)

  A sample first line might look like the following:

  1,1,7.2,NODE-AA, LUC01, 1/4/70, 21:6:32

- The remainder of the backup file consists of lines containing a Data ID and associated data fields, all separated by a comma (,). The following is an example:

  CMD_RTRV_SECU,cit-1,disabled,0,

  The number of fields and their values vary depending on the command.

CAUTION: It is strongly recommended that you do not try to access or modify your backup files. CPro-2000 cannot support backup files that have been manipulated in any way.

NOTE: For a DDM-2000, provisionable parameters can be backed up from one node and restored to a different node as long as the equipage of the nodes and the NE software is compatible. Equipage does not affect the restoration of an FT-2000 node.

The current node must be inventoried prior to using the Backup command. You can inventory the current node during startup, from the **Update** menu, or from the Node Manager.

Restore

Purpose

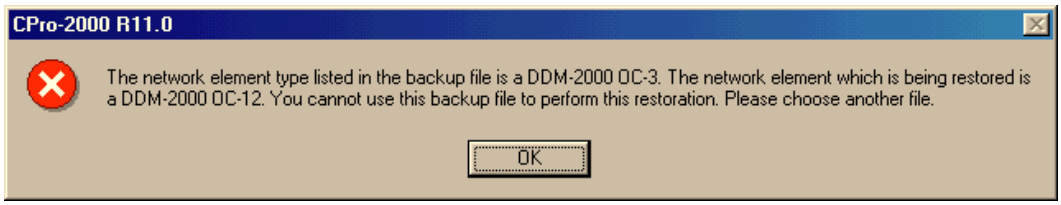
To restore provisionable options previously saved into a file via the Backup command. See **Appendix E, Backup/Restore Parameters**, for more details.

NOTE: Only users with a privileged login can restore an NE. An error message appears if a nonprivileged user attempts this command.

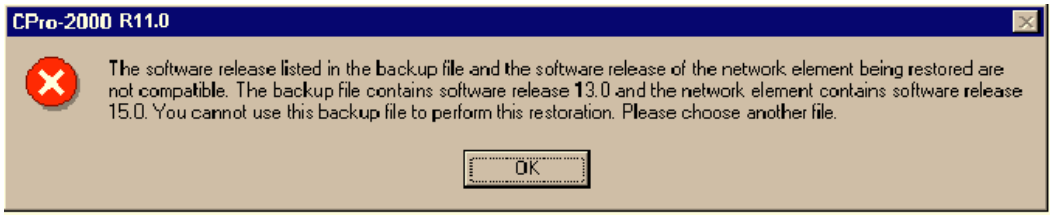
Only CPro-2000 R7.0, R8.0, R9.0 and R10.0 backup files can be restored in CPro-2000 R11.0.

The Restore feature is intended to restore files that have been backed up with the same NE release and the same software release.

- If you attempt to restore files that have been backed up using a different NE, the following message window will be displayed:



- If you attempt to restore files that have been backed up using a different release of the same NE, the following message window will be displayed:



NOTE: Although a backup file may be created remotely, CPro-2000 Release 11.0 does not support a remote restore.

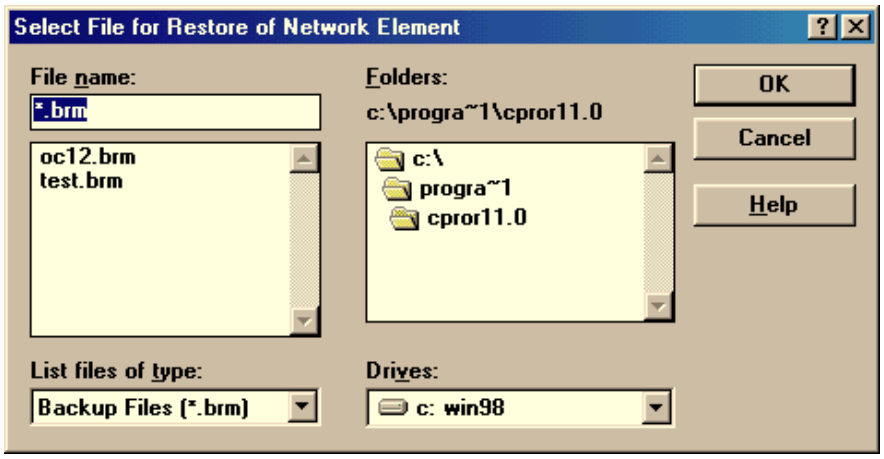
All TARP NE releases automatically restore commands. However, in DDM-2000 OC-3 Releases 13.0, 13.5 and 15.x, DDM-2000 OC-12 Release 7.x, and FiberReach Releases 3.0, 3.1 and 4.0, commands that cause a reset and/or result in the loss of DCC connectivity are displayed in a separate Notepad window and must be manually entered in the AUI to complete the restore process. These commands are listed in the table below:

DDM-2000 MML	DDM-2000 TL1	FT-2000 TL1
set-ne	ent-sys	ent-sys
ent-ulsdcc	ent-ulsdcc	
ent-osacmap	ent-osacmap	
set-x25	ent-x25	
set-security	ent-cid-secu	

Instructions for manually entering these commands are included in the section that follows.

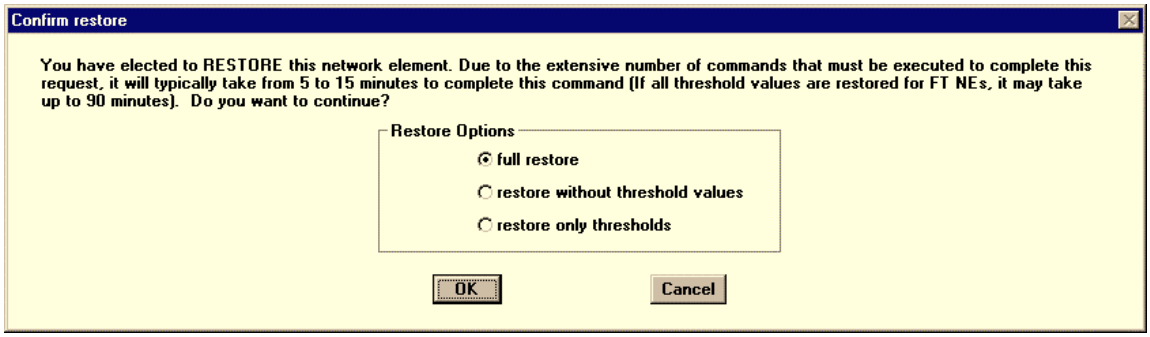
Procedure

1. After choosing **Restore** from the Edit pull-down menu, the following screen appears.



2. Select the appropriate file with which to restore the current NE. Click **OK**.

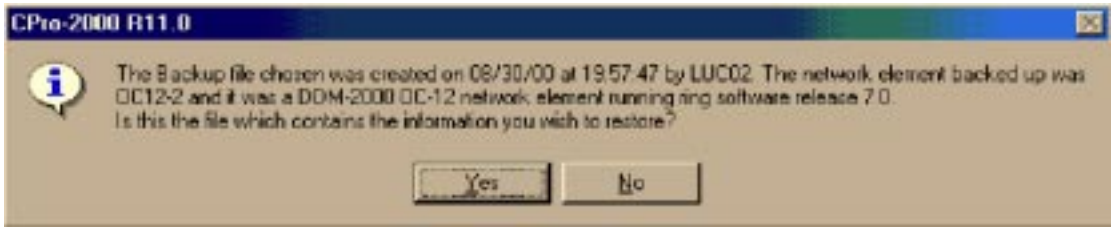
NOTE: For restoring Network Elements, CPro-2000 R11.0 allows the following choices in the message window:



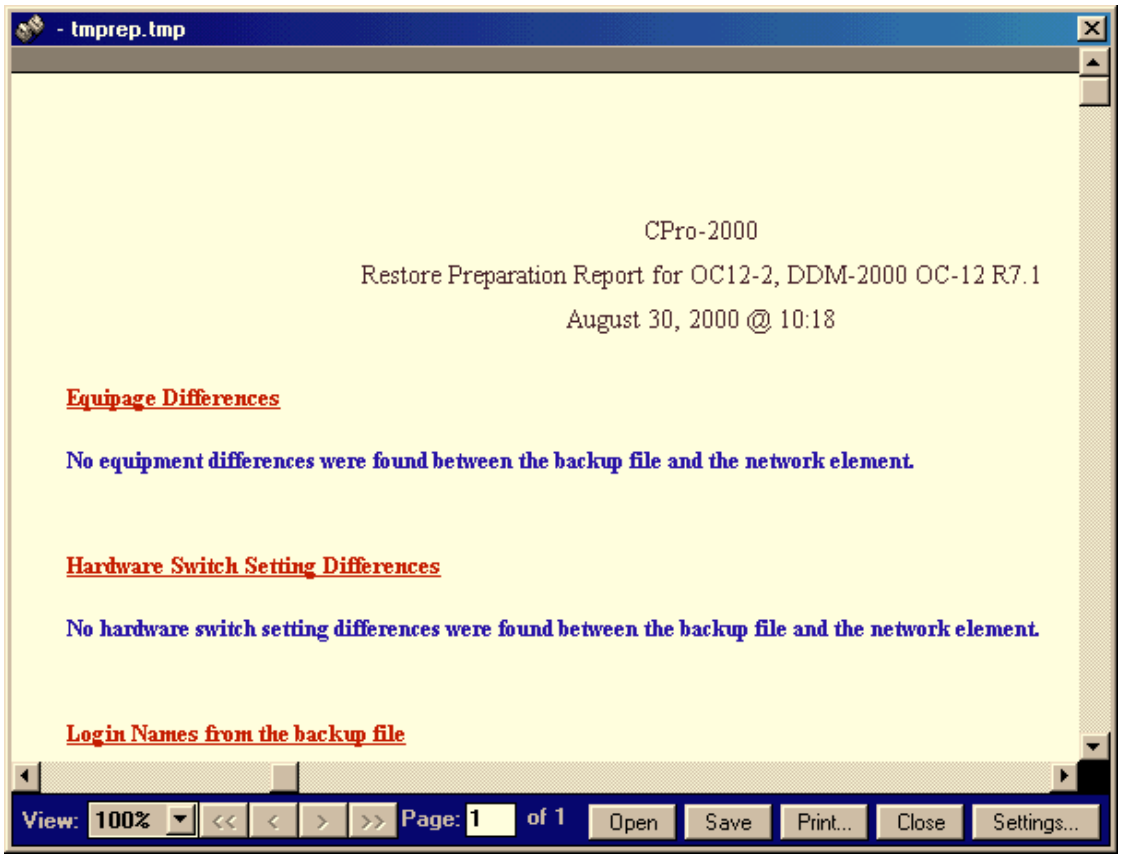
- Select "full restore" for CPro-2000 R11.0 to completely restore the backed up file
- Select "restore without threshold" for the system to restore only non-provisionable threshold parameters.
- Select "restore only thresholds" for the system to restore only provisionable threshold parameters.

3. Select the desired option then click **OK** to perform the restore. Click **No** to cancel the restore.

   If you choose to continue, the following screen displays:

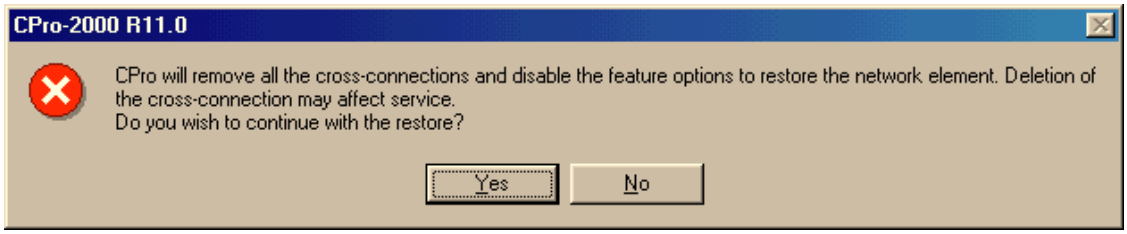


4. Click **Yes** to continue the process. The following report displays:



NOTE: CPro-2000 sends commands to discover the current equipage and hardware switch settings in the selected NE and compares this information with the corresponding information in the existing backup file. The above report is generated to display any differences that are found.

5. Click the **Close** button to close the report. The following screen appears:

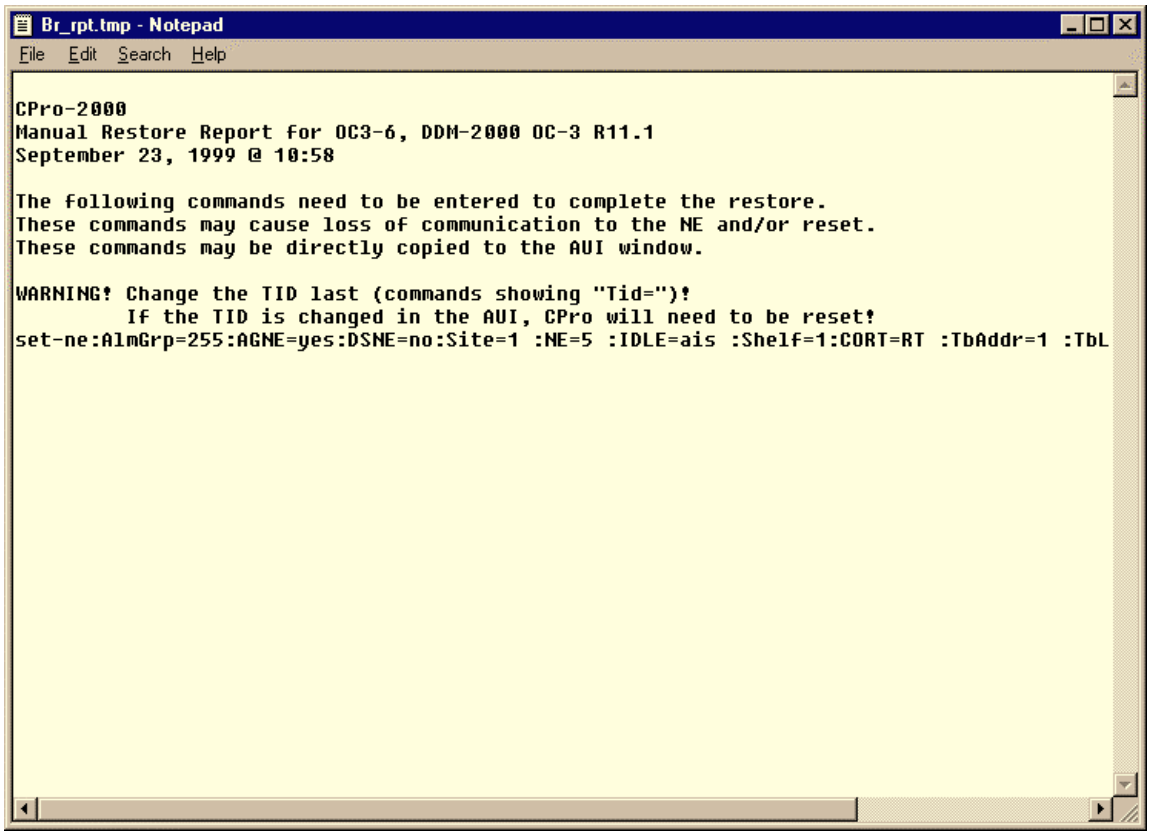


NOTE: To ensure the success of the restore operation, CPro-2000 to removes existing cross connections and feature data as they might conflict with the restore commands. After removing these, CPro-2000 sends the restore commands one by one.

6. Click **Yes** to continue.

NOTE: If any differences have been discovered and reported, the restore operation may be canceled by clicking **No**. The user can then correct any differences before proceeding. Note that if the restore is continued in spite of reported differences, some restore commands may fail.

7. For earlier releases of DDM-2000 and FiberReach, the following window displays if the system detects any commands that would cause a reset and/or result in the loss of DCC connectivity. You must manually copy and paste these commands into the AUI. Instructions are given below.



To complete the restore process, manually enter commands that appear in the Notepad window by doing the following:

- Select the entire command line including the semicolon.
- Copy the command by either pressing **Ctrl+C** or selecting **Copy** from the Edit menu.
- In the AUI window, place the insertion point next to the final prompt. Then press **Ctrl+V** or select **Paste** from the Edit menu to paste the command.
- Follow the prompts in the AUI to execute the command, then press **Enter**.
- Repeat the above procedure for other commands in the Notepad window, copying the commands into the AUI one at a time. When you have entered all the commands into the AUI, close out of CPro-2000, then restart after the last command is executed.

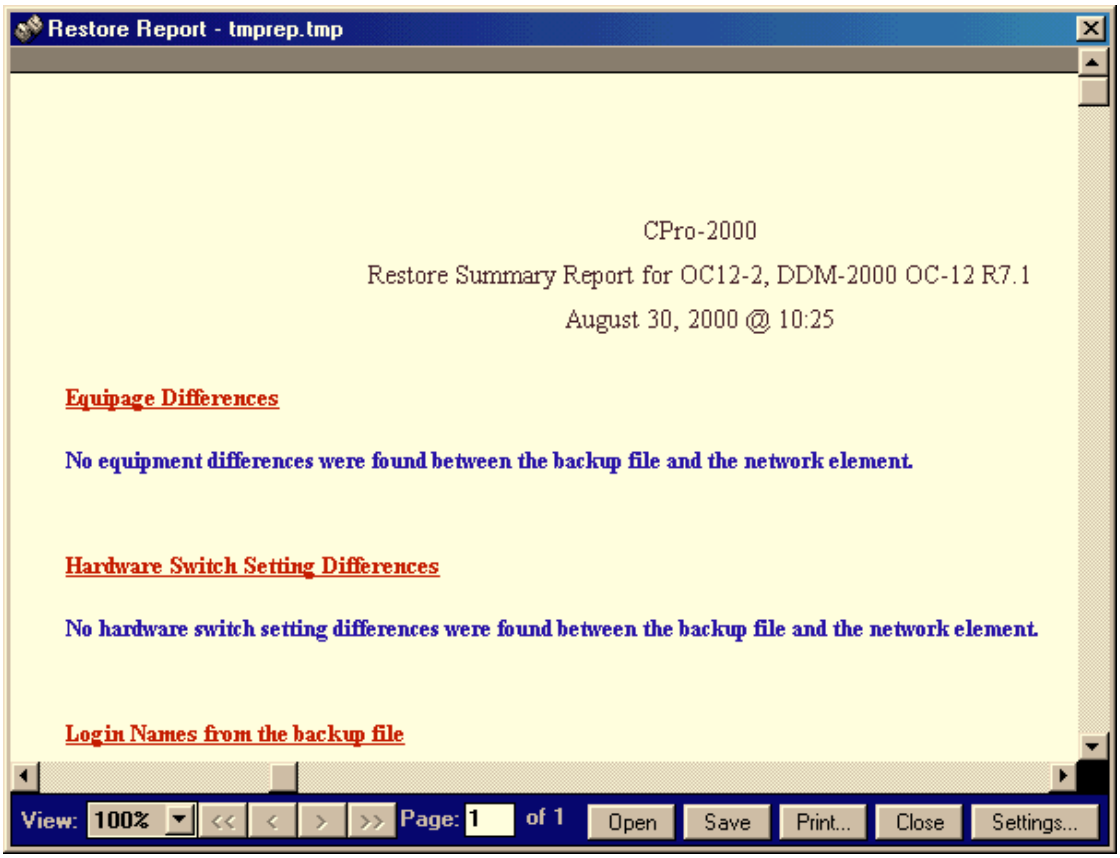
NOTES:

If the command to change the TID ("Tid=") is listed in the Notepad window, place it last in the AUI. Restart CPro-2000 for the process to take effect.

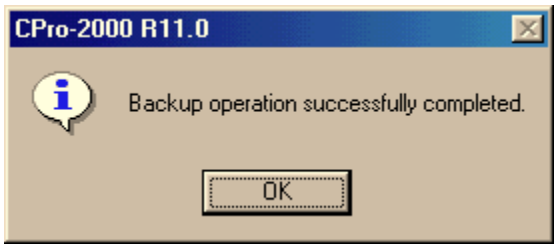
For FT-2000s, if the restore requires the ent-ulsdcc-13 command to be executed, enter this command last in the AUI then restart CPro-2000 for the process to take effect.

For DDM-2000 R15.0 and FiberReach R4.0, CPro-2000 automatically restores all commands.

The following Restore Summary report displays:



8. Click the **Close** button to close the report. The following screen appears.



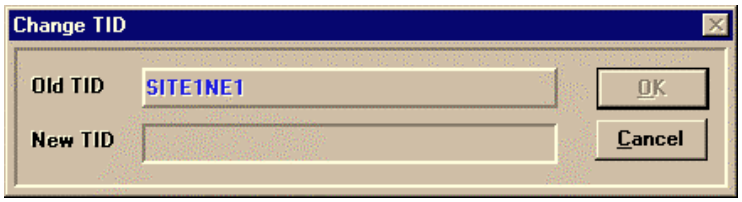
Change TID

Purpose

To change the current network element's TID.

Procedure

1. From the Edit pull-down menu, select **Change TID**. The following Change TID dialog box appears:



2. Type in the new TID. The OK button is enabled.
3. Click **OK**.

NOTE: A TID consists of a string of alphanumeric characters. See the NE documentation for a list of the restrictions on the TID character set.

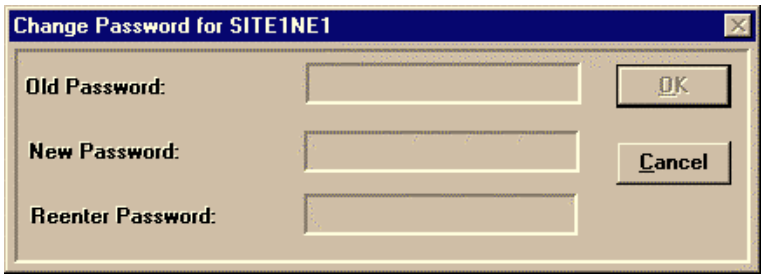
Change Password

Purpose

To change a CPro-2000 user's NE password. This screen also appears when an FT-2000 OC-48 NE password expires.

Procedure

1. From the Edit pull-down menu, select **Change Password**. The following Change Password Dialog box appears:



2. Type in your current password in the **Old Password** field and press the **Tab** key. Note that asterisks appear instead of the actual password. Type in the new password in the **New Password** field and press the **Tab** key. Reenter the new password in the **Reenter Password** field. The OK button is enabled.
3. Click **OK**.

NOTE: The password consists of a string of alphanumeric or symbolic characters. See your NE documentation for a list of the restrictions on the password character set.

4. If any errors were made while typing in the old and new passwords, an error message appears. Reenter the passwords and click **OK**.

Switch DRI

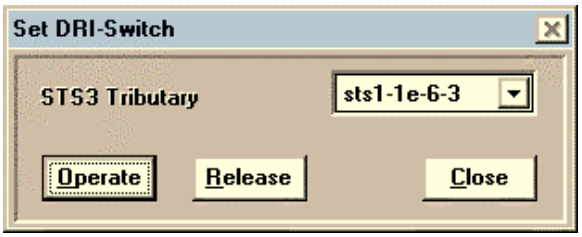
Purpose

To execute the Dual-Ring Interworking (DRI) manual switch in an FT-2000 OC-48.

Procedure

1. From the Edit pull-down menu, select **Switch DRI**.

   The following screen appears:



2. Select the STS3 Tributary address for the DRI switch. (This is the STS-3 tributary that has the solid line connected to it in the Network Element View of the node.)

3. Click **Operate** to enable the DRI switch. Click **Release** to reset the DRI switch. At any time you may click **Close**, and your selection is not executed or saved.

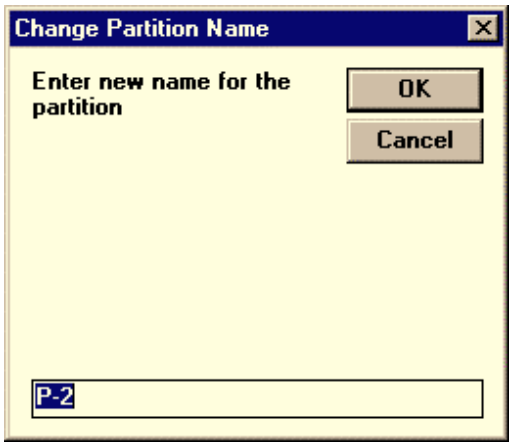
Rename Partition

Purpose

Instead of using the default sequential numbering scheme that CPro-2000 automatically assigns to your partitions, you may decide to rename the partitions. For example, you may decide to give your partition a name that identifies its contents. This command is only available from the Subnetwork View and when a partition has the focus.

Procedure

1. From the Edit pull-down menu, select **Rename Partition**. The following screen appears:



2. Type in the new name for the partition and click **OK**.

The View Menu

Overview

The View Menu contains the following command options:

- Status Bar
- Toolbar
- Show X-Conn
- Hide X-Conn
- Subnetwork View
- Report Viewer

The Status Bar and Toolbar commands are used to show or hide the status bar and the toolbar on the CPro-2000 GUI.

The Show and Hide X-Conn commands enable a CPro-2000 user to either display or hide cross connections in the Network Element View.

The Subnetwork View opens a window to display the Subnetwork View.

The Report Viewer provides the ability to read and print previously saved reports. (See **The Report Menu** chapter for information on how to save a report to a file.)

Status Bar

Purpose

To display or hide (for more room on the screen) the status bar that contains the alarm status, an information window, and trash can icon, at the bottom of the CPro-2000 GUI window.

Procedure

1. From the View pull-down menu, select **Status Bar**. If Status Bar is shown with a check mark, then the status bar is displayed on the GUI. If no check mark is shown with the Status Bar command, the status bar is not displayed.

Toolbar

Purpose

To display or hide (for more room on the screen) the toolbar, which contains shortcut icons for several CPro-2000 menu items, at the top of the CPro-2000 GUI window.

Procedure

1. From the View pull-down menu, select **Toolbar**. If Toolbar is shown with a check mark, then the toolbar is displayed on the GUI. If no check mark is shown with the Toolbar command, the toolbar is not displayed.

Show X-Conn

Purpose

To display cross connections in a Network Element View.

Procedure

1. In the View pull-down menu, click **Show X-Conn**. A drop-down menu appears. Depending on the NE type, the following choices are displayed:

   - Select All—displays all existing cross connections
   - STS-1—displays all STS-1 cross connections (DDM-2000 only)
   - VT1.5—displays all VT1.5 cross connections (DDM-2000 OC-3 and FiberReach only)
   - STS-3C—displays all STS-3C cross connections (DDM-2000 OC-12)
   - STS-3—displays all STS-3 cross connections (FT-2000 only)

The cross connections are then displayed in the current Network Element View.

Hide X-Conn

Purpose

To hide all cross connections while in a Network Element View.

Procedure

1. In the View pull-down menu, click **Hide X-Conn**. On the current Network Element View all cross connections are hidden.

Subnetwork View

Purpose

To display the Subnetwork View.

Procedure

1. In the View pull-down menu, click **Subnetwork View**. A window is opened and the Subnetwork View is displayed.

Report Viewer

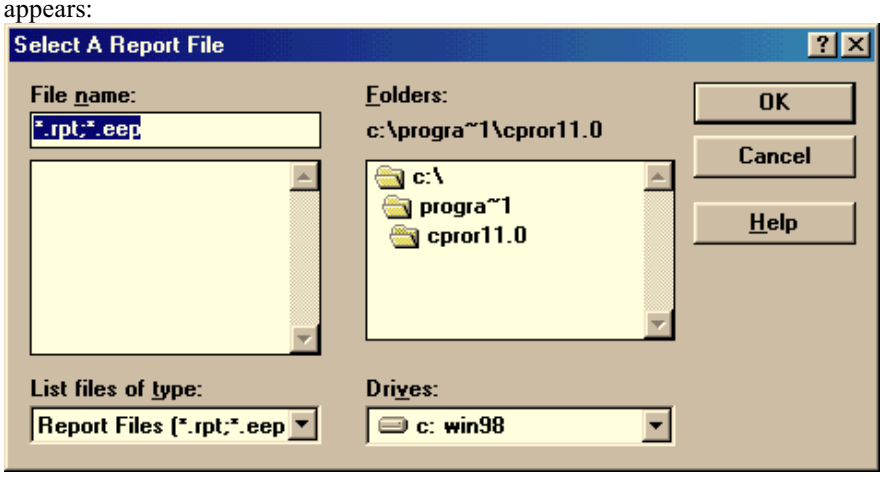
Purpose

To enable a user to perform functions such as viewing or printing a previously saved report or end-to-end path graphic. (See **The Report Menu** chapter for details on how to save a report to a file.)

NOTE: Do not use the Report Viewer to open files that are not report viewer files or end-to-end path graphics. It is recommended that you use the `.rpt` and `.eep` suffixes when saving these types of files to avoid confusion with ordinary text files, such as those with a `.txt` suffix. If you do try to open a non-report file with the Report Viewer, an error message displays and you are prompted to select another file name.

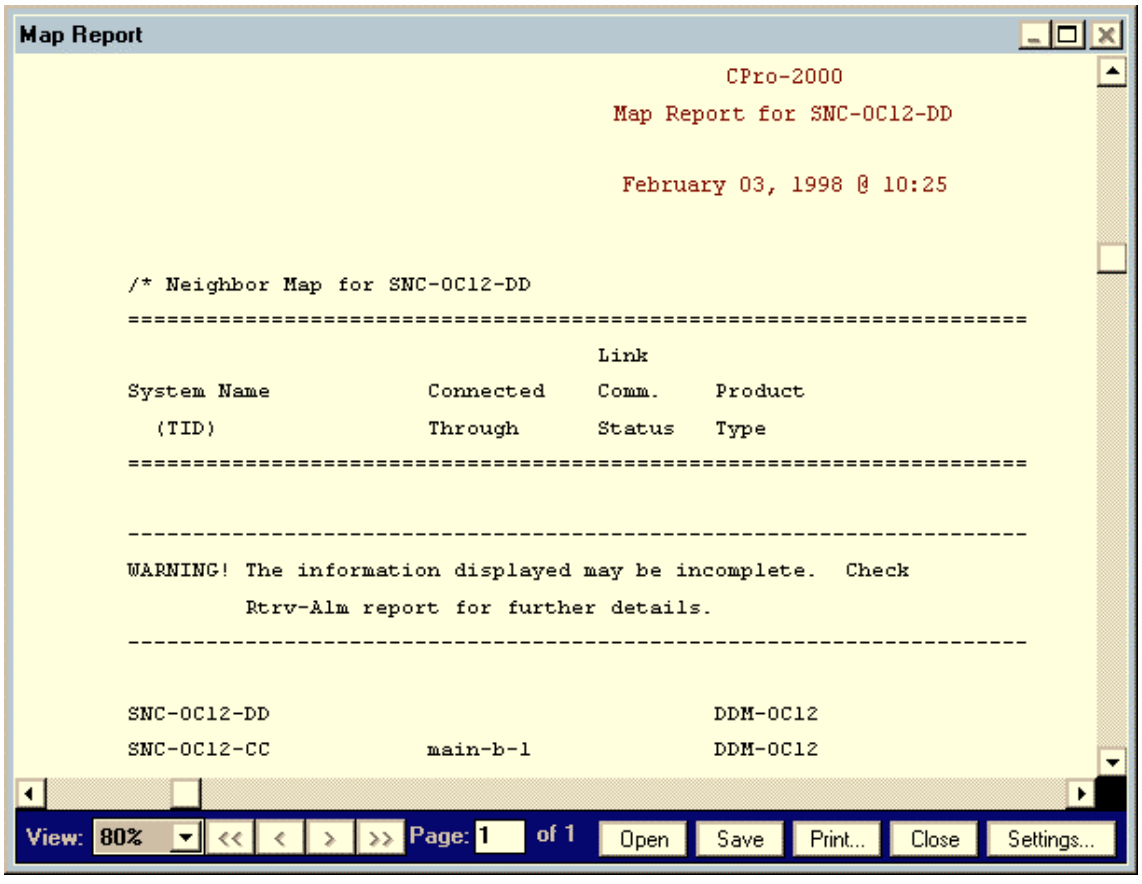
Procedure

1. In the View pull-down menu, click **Report Viewer**. The following screen appears:



2. In the **File Name** field, type in the name of the report you wish to view and click **OK**. You can click **Cancel** at any time to dismiss this screen and return to the CPro-2000 GUI.

3. The report is displayed in a window similar to the following:



You can perform the following functions on the report:

- The **View** function allows you to make the size of the report larger or smaller by selecting a value from the View down-arrow list.
- The **Page** function can be accessed two ways. By using the arrows **(<<, <, >>, >)**, you can go through the report page by page, either backward or forward. You can also click the **Page** box and edit the current page number to the page number you want.

NOTE: The **Page Up** and **Page Down** keys on your PC keyboard do not work in the Report Viewer. Also, the scroll bar appearing on the right side of the Report Viewer does not take you to the next page of the report; the scroll bar only takes you from top to bottom of an individual page. Use the arrows, as described above, to access the next or previous page of the report.

- The **Print** function brings up an abbreviated Print menu so that your report can be printed.
- The **Save** function allows you to save your report to a file name so that it can be accessed at a later time through the Report Viewer command in the View menu.
- The **Close** function enables you to close the report without saving it to a file (unless you have already done so using the Save function).
- The **Settings** function offers a full selection of print settings. Use the **Close Settings** command to return to the basic report functions, but not to close the report.

The Report Menu

Overview

The Report Menu contains commands that display information about end-to-end paths, cross connections, equipment, alarms, port options, and history. Any reports may be saved to a file and accessed at a later time by using the Report Viewer command in the View menu.

There are two ways of accessing report options while in a Subnetwork View. You can use the Report menu on the menu bar, which is the method described in the following procedures. The other method is to select a closed, or unexpanded partition (with a single left-mouse-button click), and click the right mouse button to display a pop-up menu containing a Reports submenu.

From a Subnetwork View, the following report options are available:

- Path
- Cross Connections
- Timeslot Usage
- Bandwidth Usage

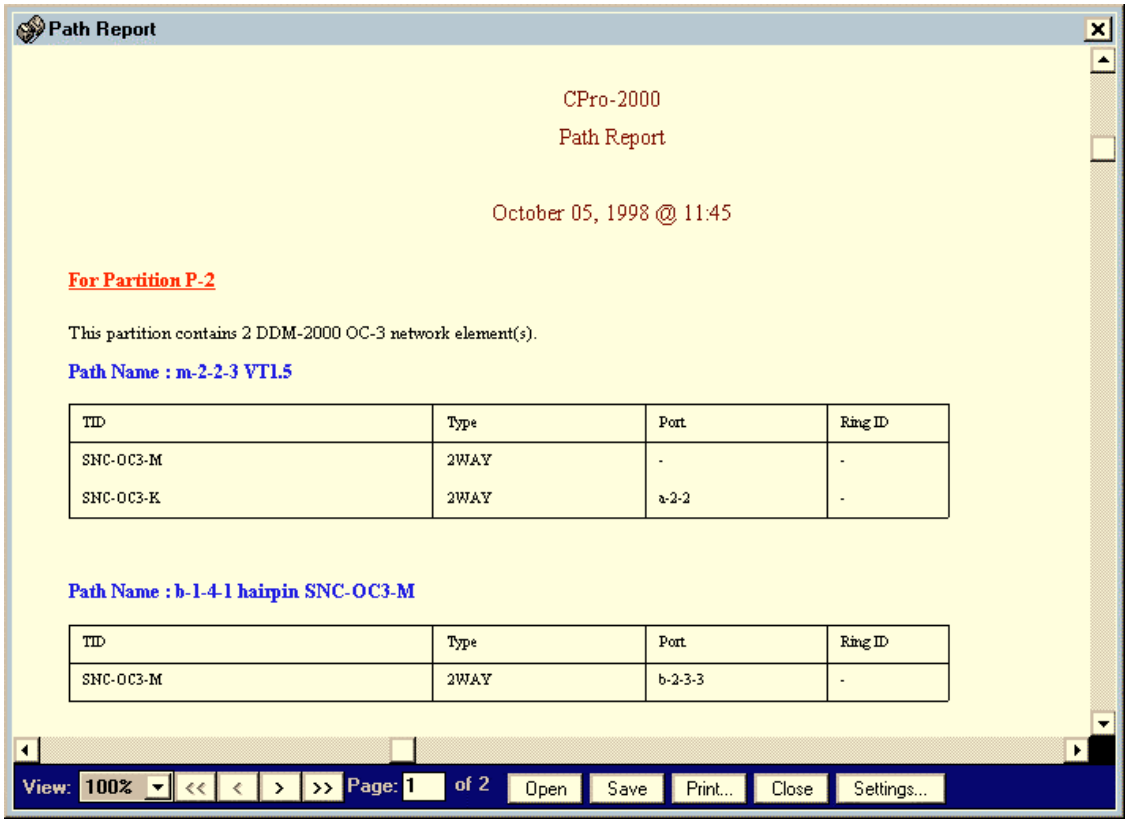
NOTE: Reports generated while in the Subnetwork View contain data for the current or selected partition only. To gather data for the entire subnetwork, a report must be created for each partition in the subnetwork.

From a Network Element View, the following report options are available:

- Cross Connections
- Map
- Alarms
- History
- Equipment
- Protection State (FT-2000 only)
- Port/Slot Options

Report Screen Functions

All CPro-2000 reports are displayed in a window similar to the following:



All report windows contain the following useful functions:

- Use the **View** function to make the size of the report larger or smaller by selecting a value from the View down-arrow list.
- Access the **Page** function by using the arrows (<<, <, >>, >) to go through the report page by page, either backward or forward or by clicking the Page box and editing the page number.

NOTE: The **Page Up** and **Page Down** keys on your PC keyboard do not work in the Report Viewer. Also, the scroll bar appearing on the right side of the Report Viewer does not take you to the next page of the report; the scroll bar only takes you from top to bottom of an individual page. Use the arrows, as described above, to access the next or previous page of the report.

- Use the **Print** function to display an abbreviated Print menu from which to select a print option.
- Use the **Save** function to save your report to a file name so it can be accessed at a later time through the Report Viewer command in the View menu.
- Use the **Close** function to close the report without saving it to a file (unless you have already done so using the Save function).
- Use the **Settings** function to access full selection of print settings. Use the **Close Settings** command to return to the basic report functions, but not to close the report.

Path

Purpose

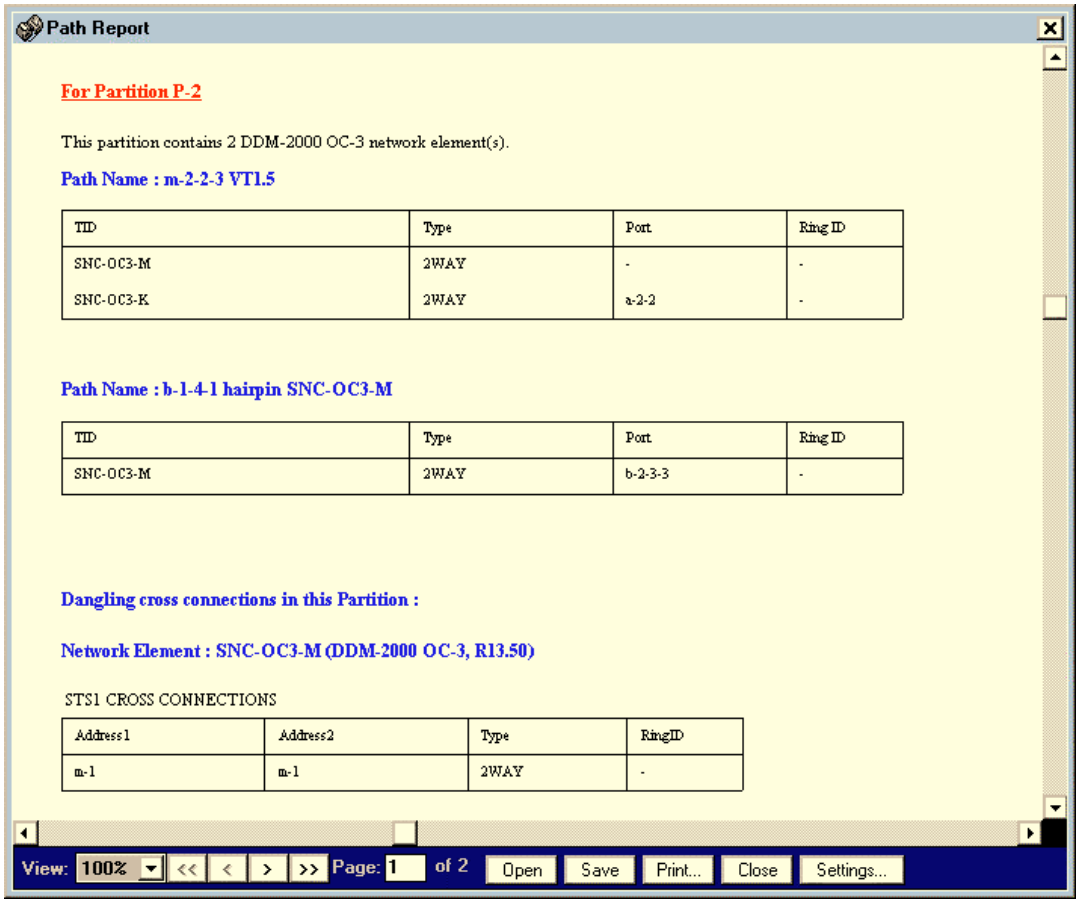
To view a report that contains information about the complete and/or incomplete end-to-end paths in the partition. This command option is only available from the Subnetwork View. The Path report only analyzes paths within an individual ring. The **Partition Inventory** command must be completed before creating a Path report.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

NOTE: All hairpin cross connections will be listed as paths.

Procedure

1. From the Report pull-down menu, select **Path**. A report similar to the following appears:



Cross Connections

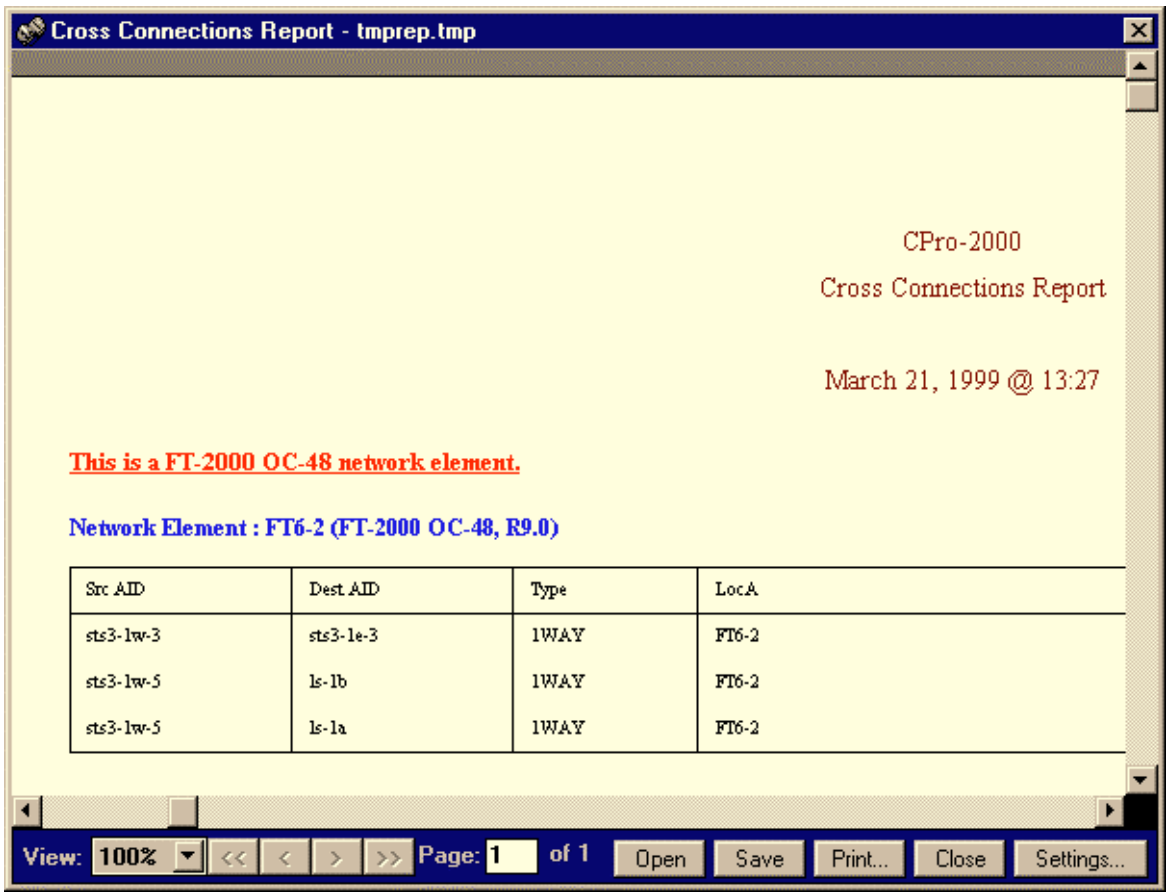
Purpose

When chosen from the Subnetwork View, the cross-connections report shows the cross connections for all NEs in the partition that have been inventoried. When chosen from a Network Element View, this report shows the cross connections for that NE only.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

Procedure

1. From the Report pull-down menu, select **Cross Connections**. A report similar to the following appears:



Timeslot Usage

Purpose

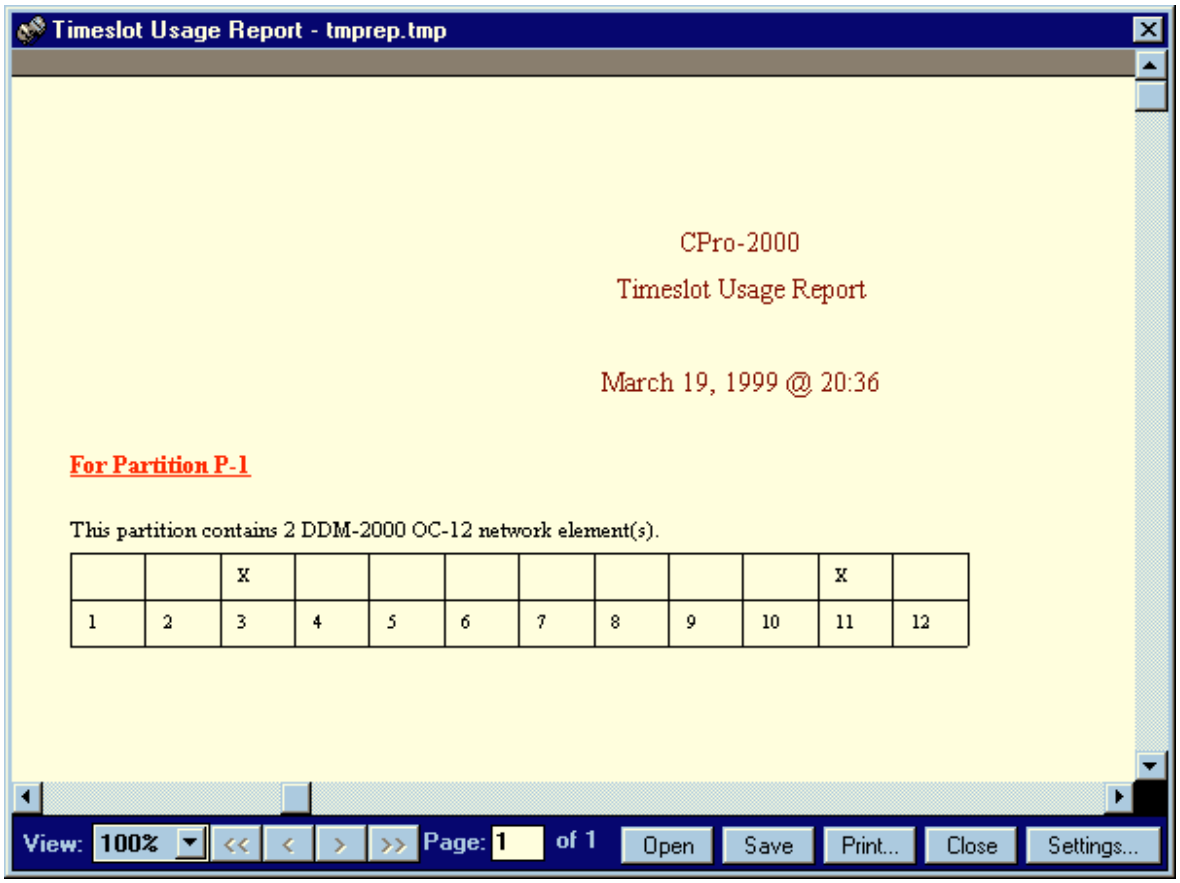
To display a report that indicates where cross connections currently exist and where time slots are available for paths to be created. This command option is only available from the Subnetwork View.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

NOTE: A Partition Inventory must be taken before the Timeslot Usage report can be generated.

Procedure

1. From the Report pull-down menu, select **Timeslot Usage**. A report similar to the following appears:



The following designations appear in the Timeslot Usage report:

- X equals a cross connection that does not form a path, also known as a dangling cross connection.
- P equals a complete, valid path.
- L equals a locked cross connection (DDM-2000 OC-3, R13.0, and FiberReach R3.0 only).

Bandwidth Usage

Purpose

To display a report that details the bandwidth usage between two NEs. As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

NOTE: The Bandwidth Usage report is displayed by clicking the right mouse button on the optical link between NEs in the expanded partition of the Subnetwork View. It is not available through the Report pull-down menu.

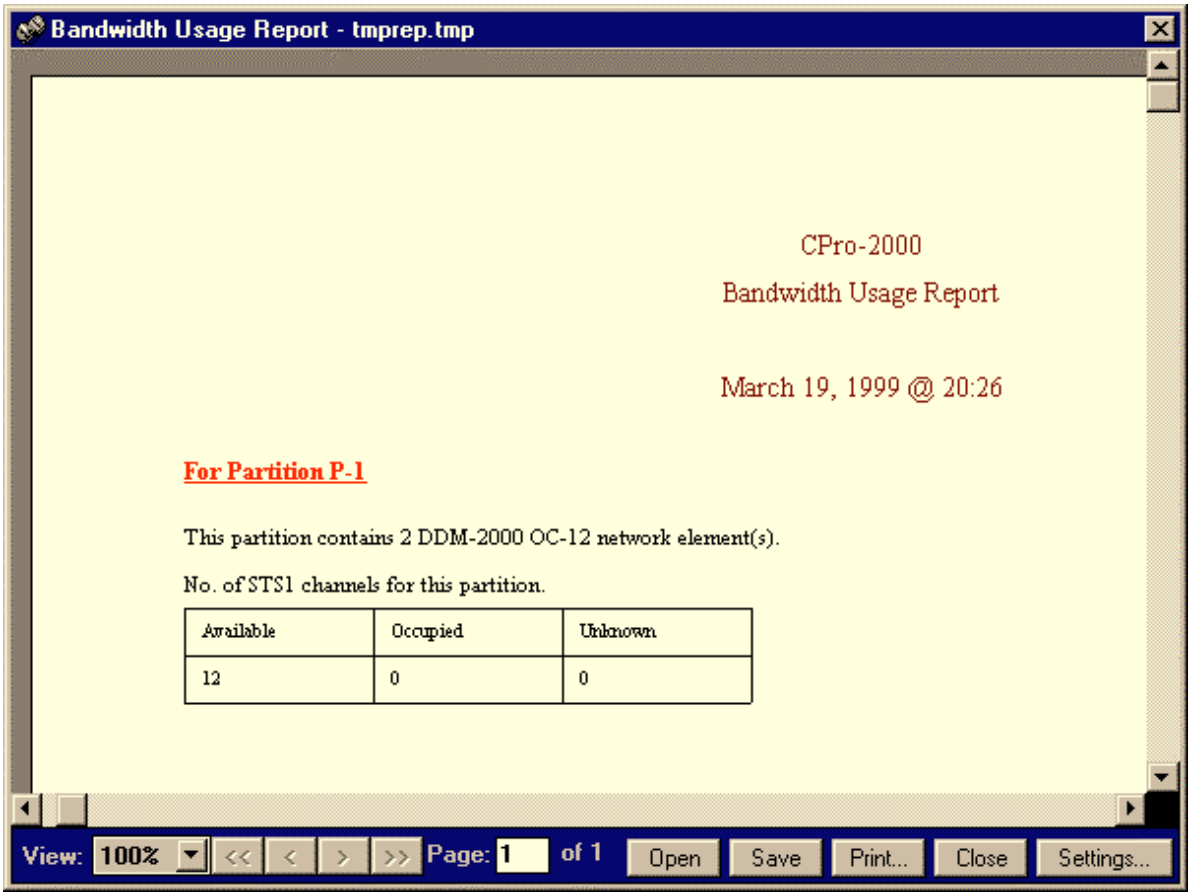
Procedure

1. In the Subnetwork View, click the right mouse button on the **optical link** between the desired NEs. The Bandwidth Usage option appears.

NOTE: The Bandwidth Usage option is enabled only when the entire ring has been inventoried. Otherwise, it will appear grayed out and cannot be selected.

2. Click **Bandwidth Usage**.

   A report similar to the following appears:



Map

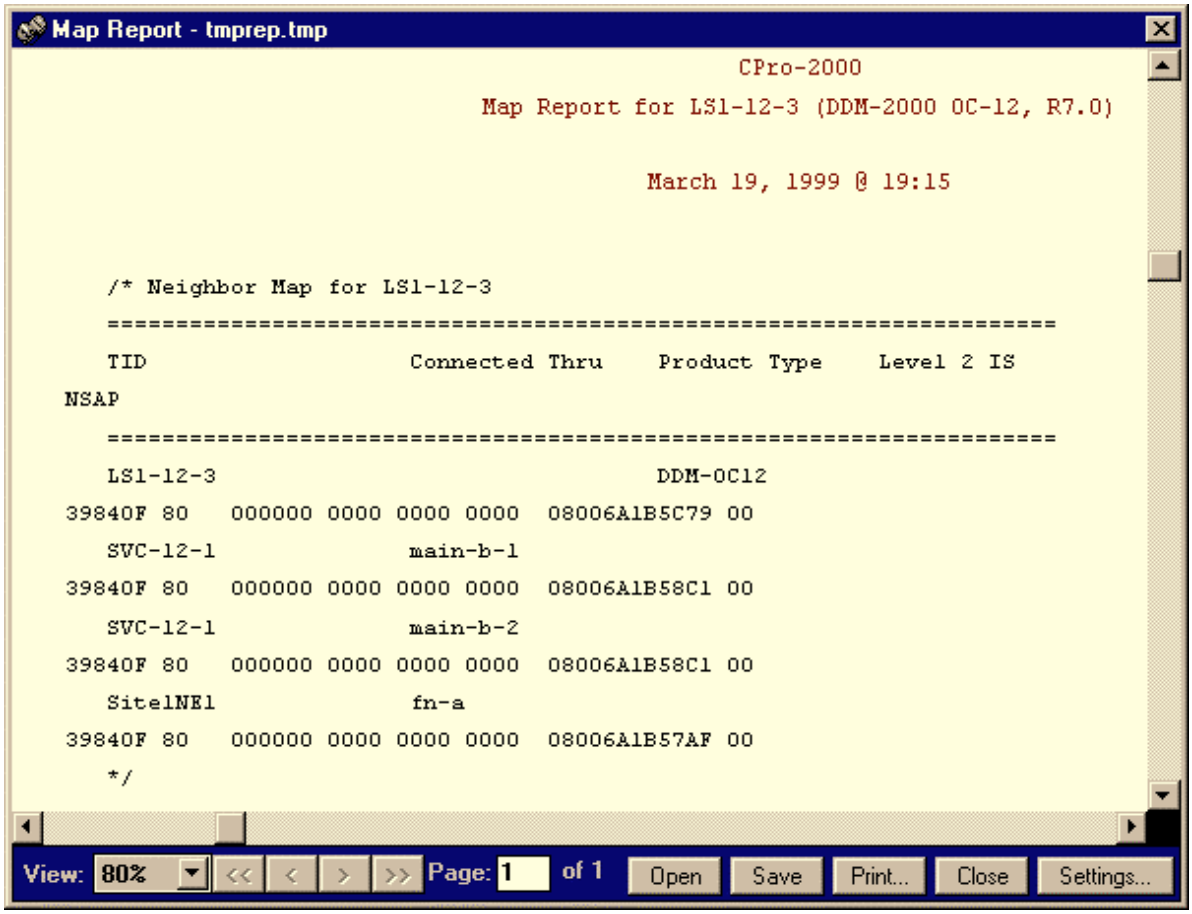
Purpose

To display the connectivity in relation to the current node. The map report option is only available from a Network Element View.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

Procedure

1. From the Report pull-down menu, select **Map**. A report similar to the following appears:


Map Report - tmprep.tmp
CPro-2000
Map Report for LS1-12-3 (DDM-2000 OC-12, R7.0)
March 19, 1999 @ 19:15
/* Neighbor Map for LS1-12-3
TID Connected Thru Product Type Level 2 IS NSAP
LS1-12-3 DDM-OC12
39840F 80 000000 0000 0000 0000 08006A1B5C79 00
SVC-12-1 main-b-1
39840F 80 000000 0000 0000 0000 08006A1B58C1 00
SVC-12-1 main-b-2
39840F 80 000000 0000 0000 0000 08006A1B58C1 00
SiteINE1 fn-a
39840F 80 000000 0000 0000 0000 08006A1B57AF 00
*/
View: 80%
Page: 1 of 1
Open
Save
Print...
Close
Settings...

Alarms

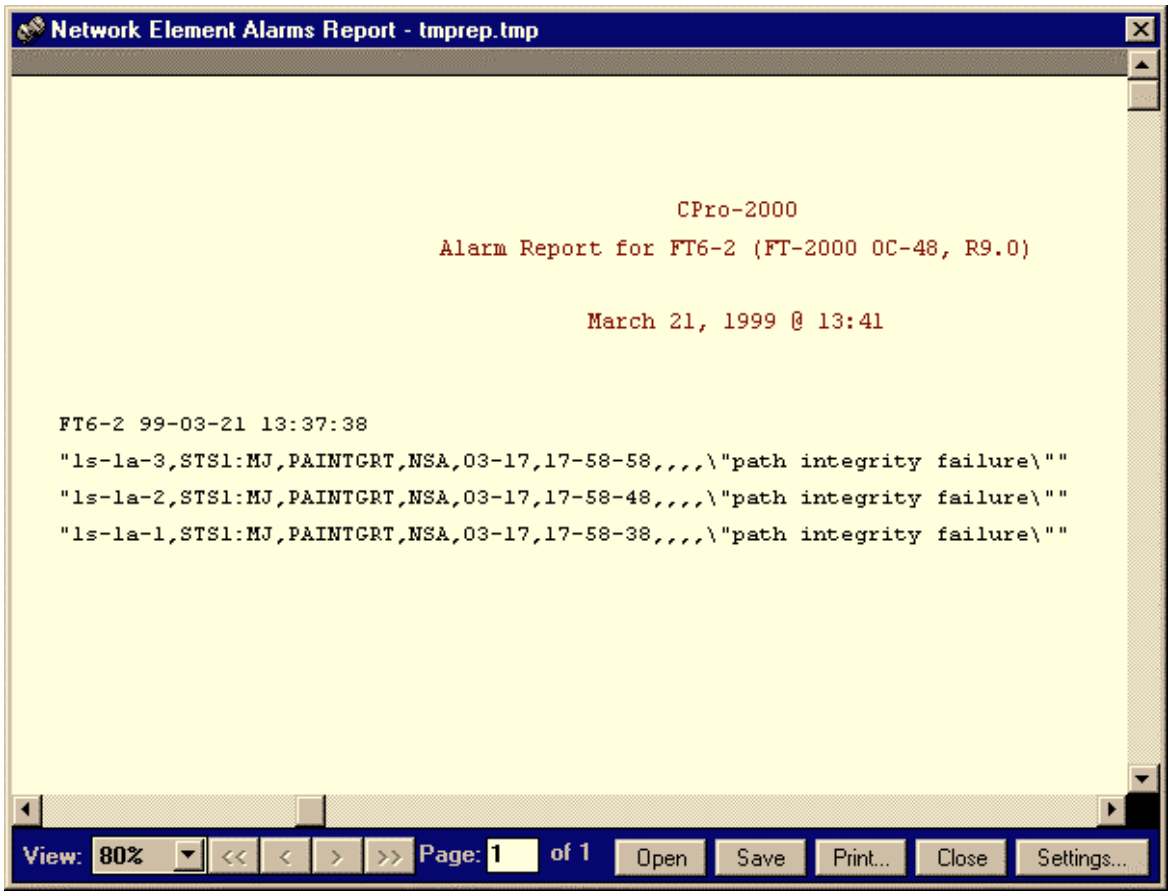
Purpose

To display an alarm summary for the current node. The alarms report option is only available from a Network Element View.

As described in the “Report Screen Functions” section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

Procedure

1. Click the **Alarm Status** area in the Status Bar, or from the Report pull-down menu, select **Alarms**. A report similar to the following appears:



History

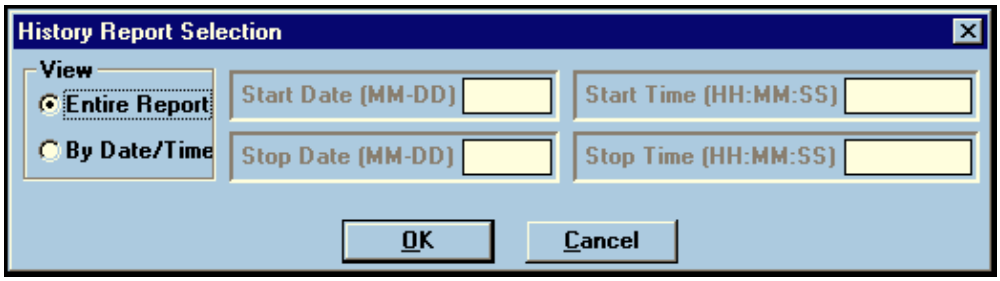
Purpose

To display a history of events for the current node. The history report option is only available from a Network Element View.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

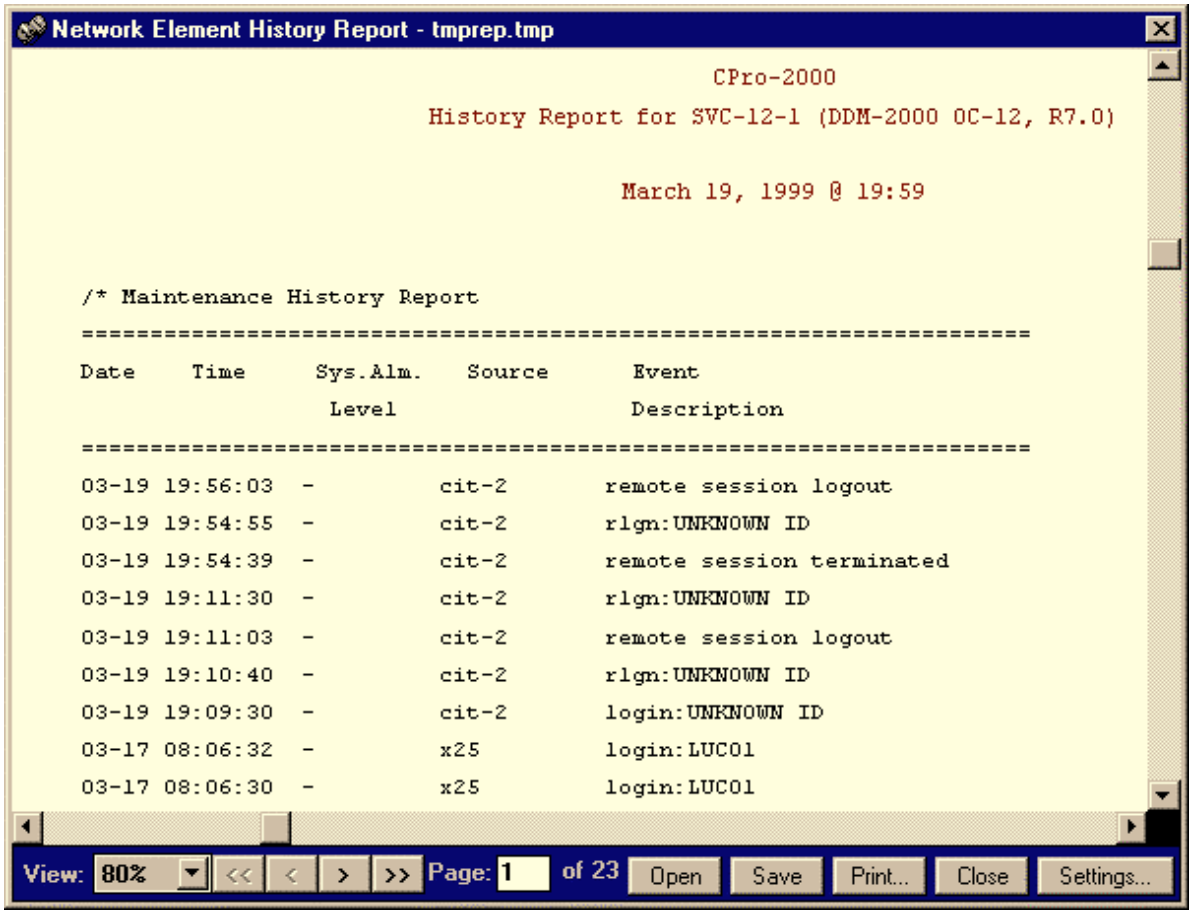
Procedure

1. From the Report pull-down menu, select **History**. The following screen appears:



2. Choose **Entire Report** if you want to view the entire report or choose **By Date/Time** and then enter the desired **Start/Stop Dates** and **Start/Stop Times**. Click **OK**. You may click **Cancel** to close the window and no report is generated.

   A report similar to the following appears:



Equipment

Purpose

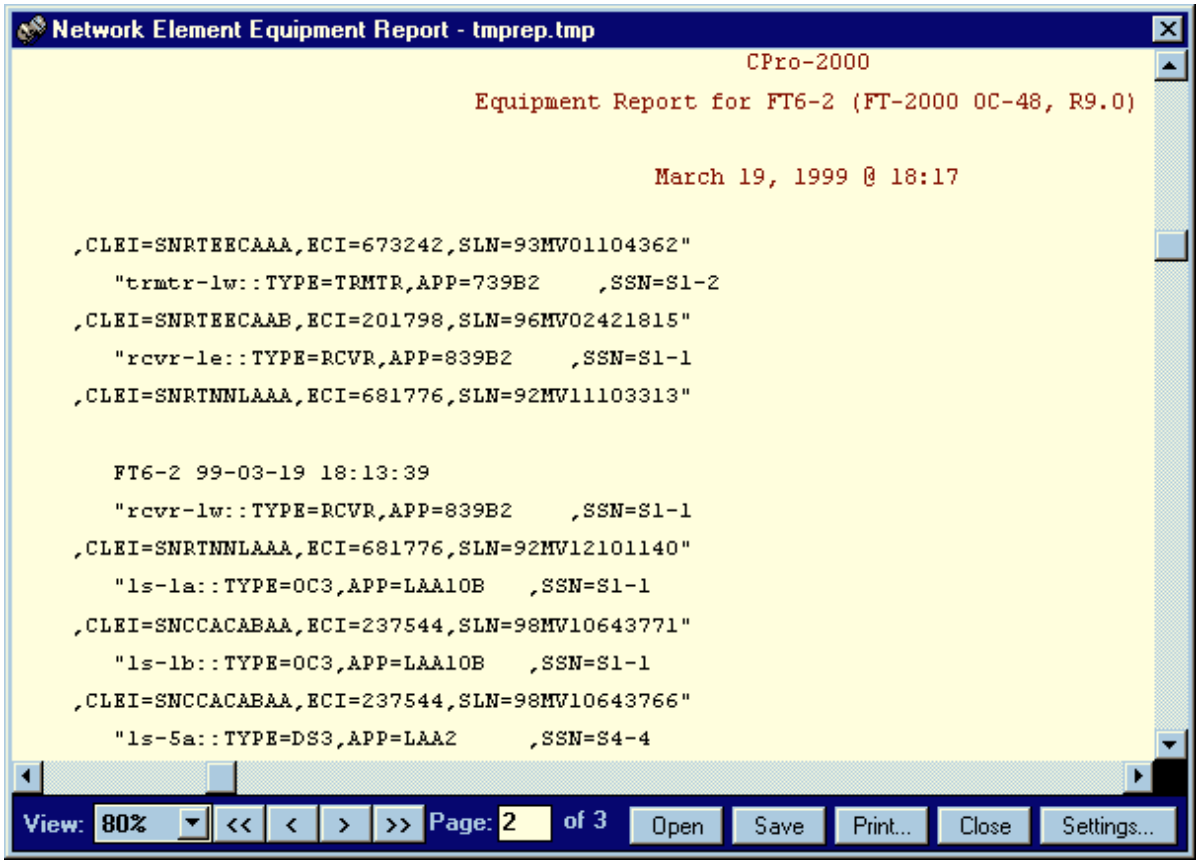
To view a report that shows the equipage for the current node. The equipment report option is only available from a Network Element View.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

NOTE: CPro-2000 obtains network equipment information from the RTRV-EQPT command. If the equipage for the NE has changed, run an update on the NE using the Update Menu to re-inventory the NE in CPro-2000 prior to obtaining a report.

Procedure

1. From the Report pull-down menu, select **Equipment**. A report similar to the following appears:



The circuit pack, Hardware ID **LAA10B**, is listed in this sample Report.

Protection State

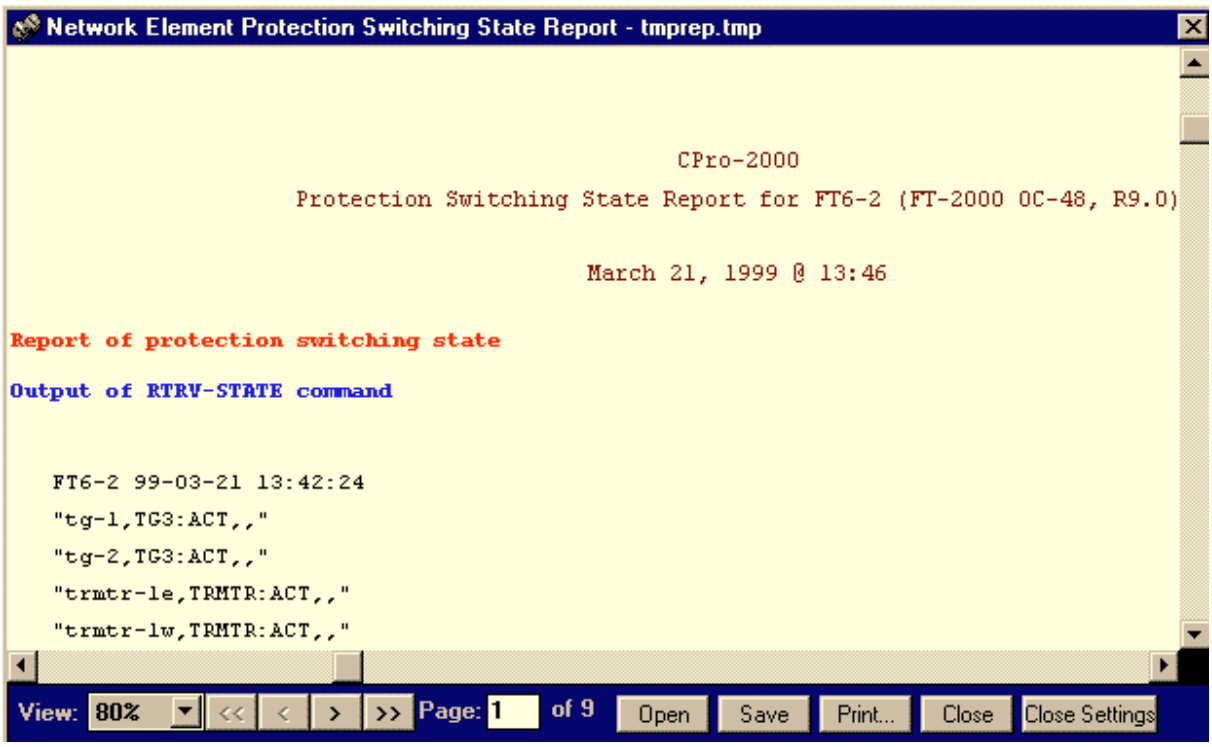
Purpose

To view a report that shows the non-preemptible protection access (NPPA) protection-switching state for the current node. Note that the protection state report is only available from an FT-2000 OC-48 Network Element View.

As described in the “Report Screen Functions” section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

Procedure

1. From the Report pull-down menu, select **Protection State**. A report similar to the following appears:



Port/Slot Options

Purpose

To provide a list of port and/or line options for the current node. The port/slot options report is only available from a Network Element View.

As described in the "Report Screen Functions" section earlier in this chapter, a variety of tasks can be performed on the report, such as saving the report to a file or printing out the report.

The following port and line options are supported:

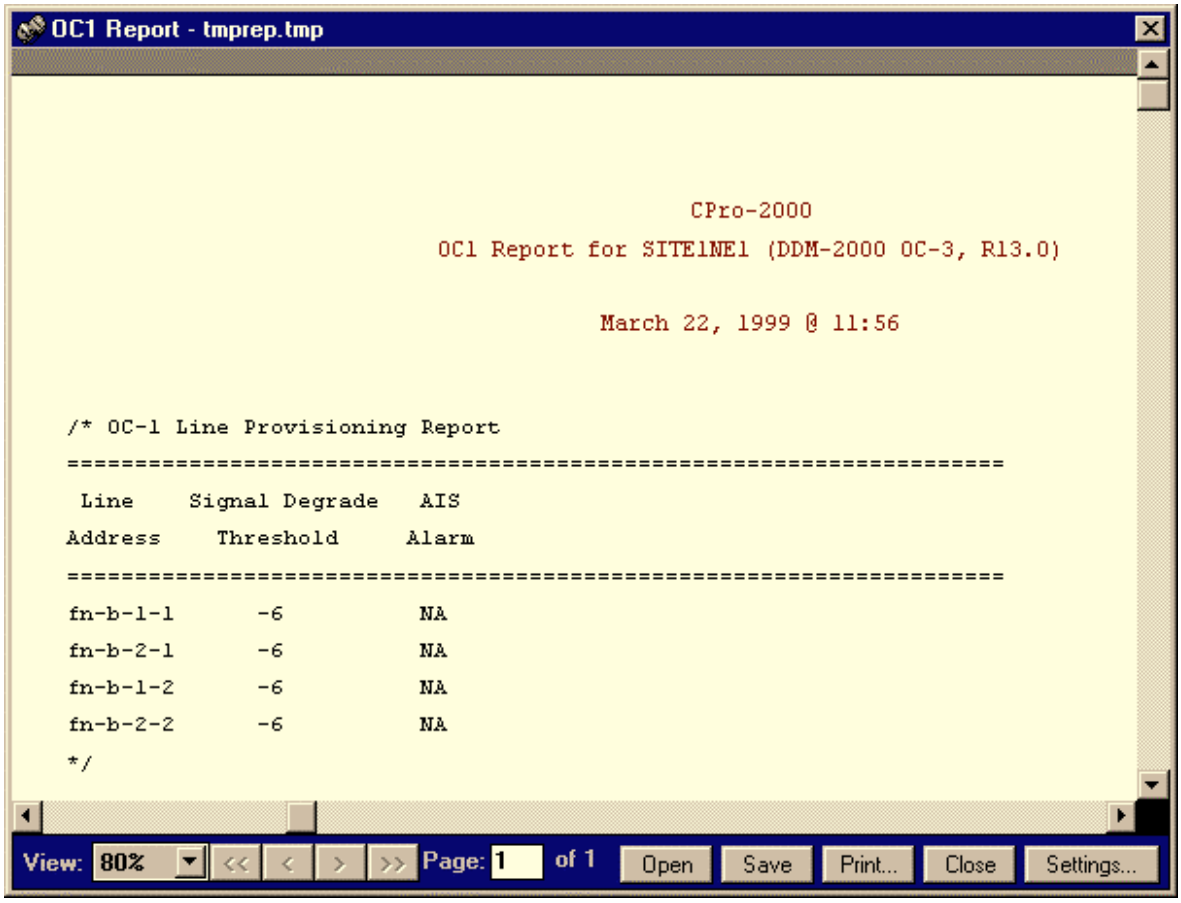
- All DS1 Ports (DDM-2000 OC-3 and FiberReach only)
- All T1 Ports (FiberReach only)
- All DS3 Ports (Not applicable to FiberReach)
- All EC1 Ports (Not applicable to FiberReach)
- All NCT/2 Ports (DDM-2000 OC-3)
- All LS Ports (FT-2000 only)
- All OC-1 Lines (DDM-2000 OC-3 and FiberReach only)
- All OC-3 Lines
- All OC-12 Lines (DDM-2000 OC-12 and FT-2000 only)
- All OC-48 Lines (FT-2000 only)

Procedure

1. From the Report pull-down menu, select **Port/Slot Options**. The Port/Slot Options pull-down menu displays. This menu contains different options, depending on the current node's NE type, as shown in the list below.

   - DDM-2000 OC-3: DS1, DS3, EC1, NCT/2, OC1, OC-3, OC-12
   - DDM-2000 OC-12: DS3, EC1, OC-3, OC-12, OC-48
   - FiberReach: DS1, T1, OC1, and OC3
   - FT-2000 OC-48: DS3, EC1, OC-3, OC-12, OC-48, LS

2. Select the appropriate port option. A report similar to the following appears:



Cross Connections

Overview

CPro-2000 provides the ability to create cross connections from the Network Element View using the "drag-and-drop" technology. This chapter contains instructions for creating and deleting individual or ranges of cross connections.

Creating Cross Connections

Drag-and-drop cross-connection creation consists of selecting an available address for a cross connection, observing an "X" cursor (indicating that you are currently in cross-connection mode), and dragging the X cursor to the destination address of the cross connection. Individual, as well as ranges of cross connections, may be entered and deleted using drag-and-drop methods.

NOTE: If you attempt to enter a cross connection (by selecting a source and dragging the cross connection to a destination) and no cross connection is established, your destination is probably incorrect. Check the validity of your cross-connection addresses. In this situation, CPro-2000 generates an error message in the status bar.

For more specific details on creating cross connections, see the individual procedures in this chapter associated with each of the following cross-connection types:

- One-way (FT-2000)
- Two-way
- Drop and Continue (DDM-2000 OC-3 and OC-12 supported ring releases)
- One-way DRI (FT-2000)
- Two-way DRI (FT-2000)
- Two-way DRI-PRI (FT-2000)
- Two-way DRI-SEC (FT-2000)
- Multi-drop (FT-2000)
- Locked (DDM-2000 OC-3 and FiberReach)
- Dual 0x1 (DDM-2000 OC-3, OC-12, and FiberReach)
- Single 0x1 (DDM-2000 OC-3 and OC-12)

- Video Source (DDM-2000 OC-12)
- Video Sink (DDM-2000 OC-12)
- Hairpin (DDM-2000 OC-3)

Creating Ranges of Cross Connections

In CPro-2000, you can create a range of VT1.5 cross connections in DDM-2000 OC-3 and FiberReach NEs. The range of allowable cross-connections can consist of a contiguous group of addresses, or a noncontiguous group of addresses.

- To create a contiguous range of cross connections, select the starting address from the source addresses then press the **Shift** key. While still holding down the Shift key, click an address at end of the range then release the Shift key. Click the corresponding starting address in the destinations box to complete the process. (The source addresses should be an unbroken group of addresses, such as m-1-1-1, m-1-1-2, m-1-1-3, and so on.)
- To create a noncontiguous range of cross connections select the starting address from the source addresses then press the **Ctrl** key. While still holding down the Ctrl key, click the desired addresses. Selected addresses must be in ascending or descending order, for example, as m-1-1-1, m-1-1-3, m-1-2-1 or as m-1-2-1, m-1-1-3, m-1-1-1. Click the corresponding starting address in the destinations box to complete the process.

NOTE: CPro-2000 R11.0 does not support the creation of ranges of cross connections (contiguous or noncontiguous) for DDM-2000 OC-12 or FT-2000 OC-48.

For details on allowable cross connections, consult the User Manual for the relevant NE.

Creating Cross Connections on shelves equipped with 29G OLIUs

When the main slots of the DDM-2000 OC-3 R15.x shelf or the FiberReach R4.0 shelf are equipped with 29G OLIUs CPro-2000 supports cross connections of full STS-3C, STS-1, and VT granularity.

- STS-3Cs through cross connections are allowable only when created above the green line in the GUI.
- Only Two-Way and Drop and Continue cross connections are allowed.
- To drop an STS-3C signal on a DDM-2000 OC-3 or FiberReach shelf, the Function Unit C (fn-c) slot must be equipped with a 22-type OLIU.
- To drop an STS-3C signal on a DDM-2000 OC-3 shelf, the timeslot must also be configured in *0x1* mode using the Set OC-3 command in the Provisioning Menu.

For details on allowable cross connections, consult the User Manual for the relevant NE.

The "Network Element View" section of **The User Interface** chapter provides a detailed description of the NE view for DDM-2000 OC-3 R15.x and FiberReach R4.0 shelves with 29G OLIU circuit packs in the main slots.

IMA LAN Packs and T1 Repeater Packs

IMA LAN packs have the Apparatus Code BBF9 or BBF10. They occupy two adjacent low-speed slots on a DDM-2000 OC-3 R15 shelf and are made up of 8 DS1s. CPro-2000 supports the same cross connections on an IMA LAN pack as on a DS1 pack, namely end-to-end locked arc, 2-way, 3 node interworking and 4 node interworking VT cross connections.

T1 Repeater packs have the Apparatus Code BBF6. For DDM-2000 OC-3 R15.0 and FiberReach R4.0, CPro-2000 supports the same cross connects on a T1 Repeater pack as on a DS1 pack, namely end-to-end locked arc, 2-way, 3 node interworking and 4 node interworking VT cross connections.

Change LocA/LocZ and Roll STS-3 and STS-1 Cross Connections

CPro-2000 can change the source of a cross connection without affecting service by using the Change LocA/LocZ feature.

In addition, CPro-2000 allows the source of an existing STS-3 or STS-1 cross connection to be moved, or *rolled*, to another source without interruption in service.

For more information regarding these features, see the "Change LocA and LocZ Values for an Existing STS-3 or STS-1 Cross Connection" and "Roll an Existing STS-3 or STS-1 Cross Connection to a New Source" sections in this chapter.

Audit On and Redline On Options (FT-2000 only)

As you create a cross connection, the Cross-Connection Properties box appears with the **Audit On** and **Redline On** options. When **Audit On** is chosen, the alarm feature that notifies the user of any signal problem is activated. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification to it until it is untagged.

To change either setting, double-click on the cross connection in the NE view to display the Change Loca & Locz dialog box. Either feature can be toggled on/off by clicking on its box to insert/remove the check mark prior to clicking on **OK**.

Deleting Cross Connections

To delete a cross connection using the drag-and-drop technology, simply select the cross-connection line you wish to delete by clicking on it (the X cursor appears), and drag the cross connection to the trash can icon appearing at the bottom of the Network Element View. You may also click on the cross-connection line to select it and then press **Delete** on your keyboard. Any cross connection that can be entered via the GUI can be deleted via the GUI.

NOTE: While creating and deleting cross connections, you may see that the arrowheads on the end of a cross connection appear to be lying on their side. The arrowheads are shown like this when there is not enough space to accommodate the arrowhead pointing straight.

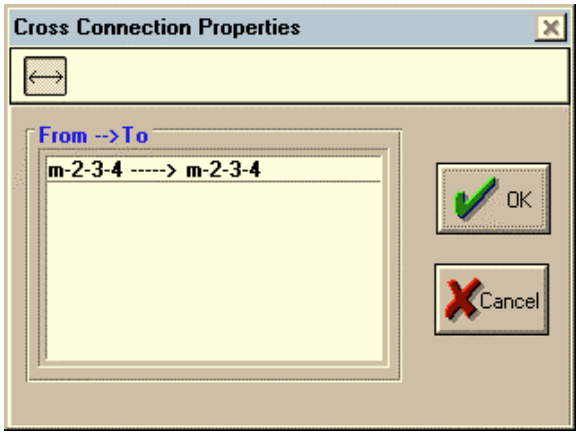
Entering Cross Connections

The following pages show the procedures and screen displays for entering the various types of cross connections in CPro-2000.

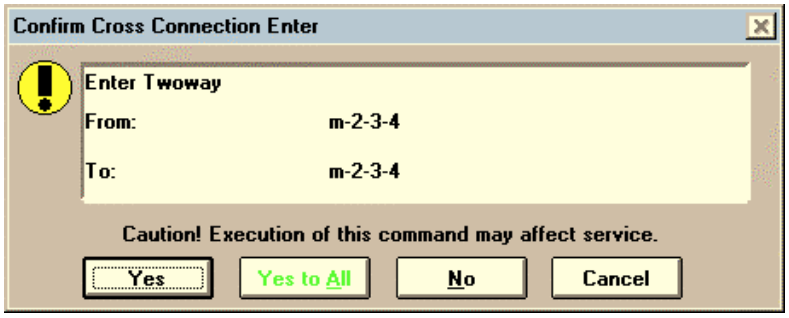
Enter Two-way STS-1 Cross Connection (DDM-2000 OC-3 and OC-12)
or
Enter Two-way VT1.5 Cross Connection (DDM-2000 OC-3 and FiberReach)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The following screen appears when you release the mouse button:

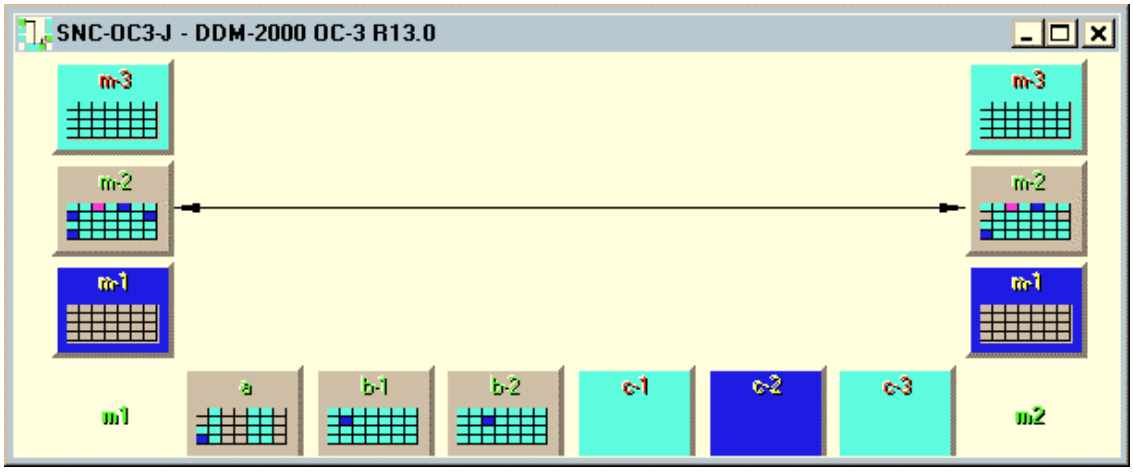


2. You can click **Cancel** if the addresses shown in the screen are incorrect, or click **OK** and the following screen appears:



3. Click **Yes** to create the cross connection. You can click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

4. When created, the cross connection appears in the Network Element View as in the following example:



Enter Hairpin Cross Connection (DDM-2000 OC-3)

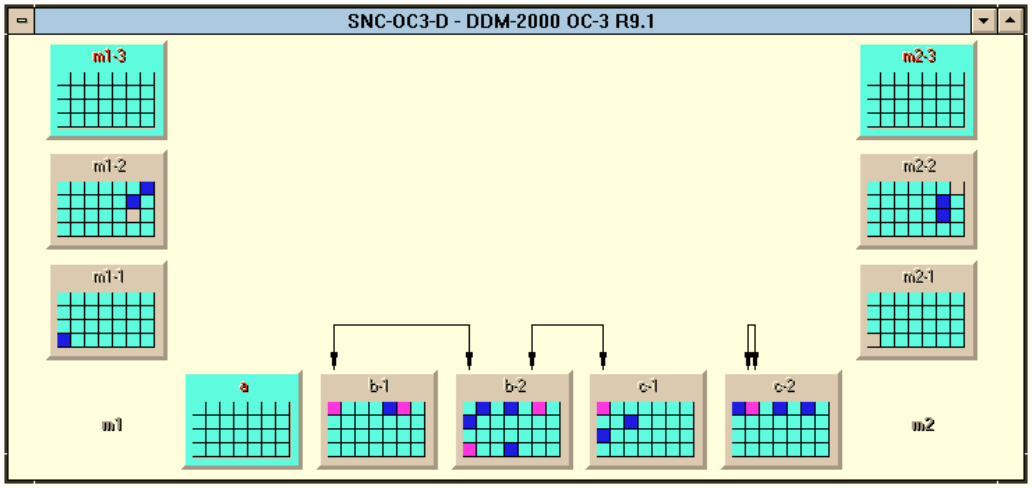
CPro-2000 supports *hairpin* cross connections for DDM-2000 OC-3 NEs, where both the source and the destination of the cross connection are in low-speed slots. Hairpin cross connections are entered using the same procedure as two-way VT1.5 cross connections previously described.

Types of hairpin cross connections that are now supported by CPro-2000 include

- 0x1 Intra-Slot Hairpin Cross Connection—between any addresses except different slots (for example, C-1-1-1 to C-2-1-1, C-1-1-1 to C-2-1-2)
- 0x1 Inter-FN Hairpin Cross Connection—address 1 and address 2 are on different function units
- pass through in FN Slot Pair Cross Connection—address 1 and address 2 are the same

NOTE: For information regarding necessary equipage and restrictions for entering hairpin cross connections, see the *Lucent Technologies DDM-2000 OC-3 Multiplexer User/Service Manual.*

The following screen depicts the types of hairpin cross connections supported by CPro-2000:



Enter Single 0x1 STS-1 Cross Connection (DDM-2000 OC-3 and OC-12)
or
Enter Single 0x1 VT1.5 Cross Connection (DDM-2000 OC-3)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection.

NOTE: The following restrictions must be followed to create a single 0x1 cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.

For DDM-2000 OC-3:

— The low-speed slots must contain a single 27-type OLIU or BBG19 circuit pack.

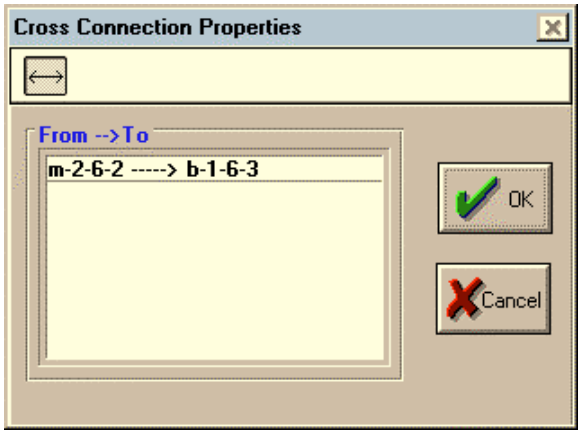
— If both slot pairs are equipped, one must be set to in service (IS) and one must be set to NMON.

For DDM-2000 OC-12:

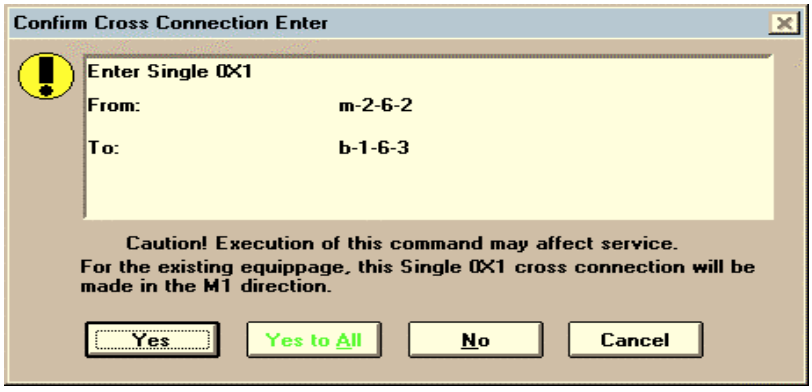
— The low-speed slot must contain only one 21-type OLIU circuit pack.

— The OC-3 line application parameter for the function unit used in the cross connection must be set to *0x1* for TL1 and MML.

2. The following screen appears when you release the mouse button:

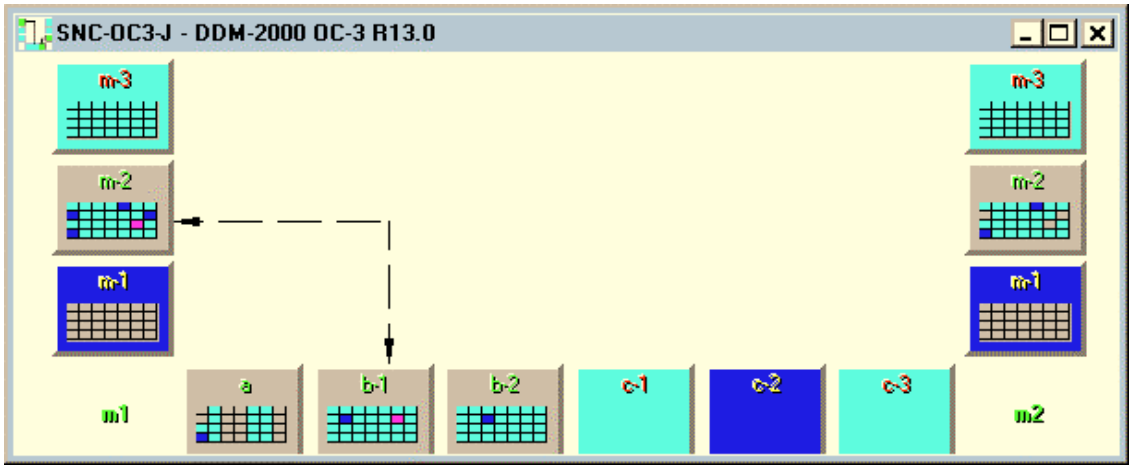


3. You can click **Cancel** if the addresses shown in the screen are incorrect, or click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example:



NOTE: A single 0x1 cross connection is displayed as a dashed line to differentiate it from the solid line of a 1+1 two-way cross connection.

Enter Dual 0x1 STS-1 Cross Connection (DDM-2000 OC-3 and OC-12)
or
Enter Dual 0x1 VT1.5 Cross Connection (DDM-2000 OC-3)
or
Enter Dual 0x1 STS-3 Cross Connection (FiberReach equipped with 22-type circuit pack)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection.

NOTE: The following restrictions must be followed to create a dual 0x1 cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.

For DDM-2000 OC-3:

— The low-speed slot must contain two 27-type OLIU or two BBG19 circuit packs in both service and protection slots.

— The service and protection lines must be set to in service (*IS).*

For DDM-2000 OC-12:

— The low-speed slot must contain two 21-type OLIU circuit packs.

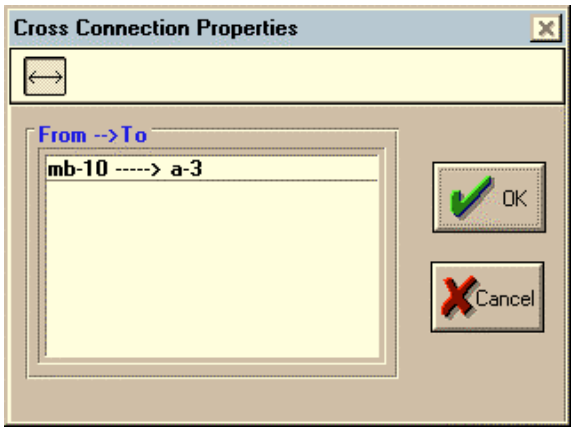
— The OC-3 line application parameter for the function unit used in the cross connection must be set to *0x1* for TL1 and MML.

For FiberReach:

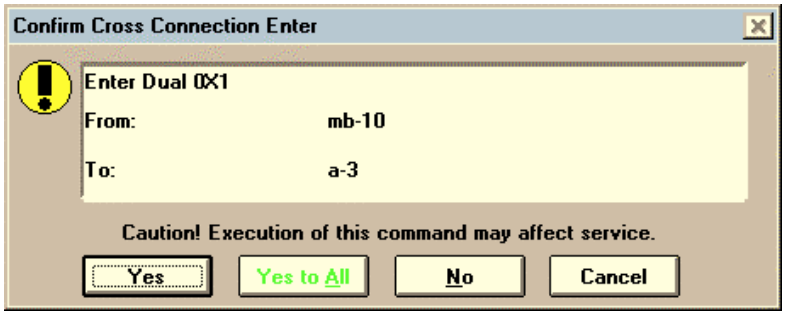
— Must be equipped with 28G-U OLIU circuit pack in the mains and 22-type circuit pack in the function slots.

— The OC-3 line application parameter for the function unit used in the cross connection must be set to *0x1*.

2. The following screen appears when you release the mouse button:

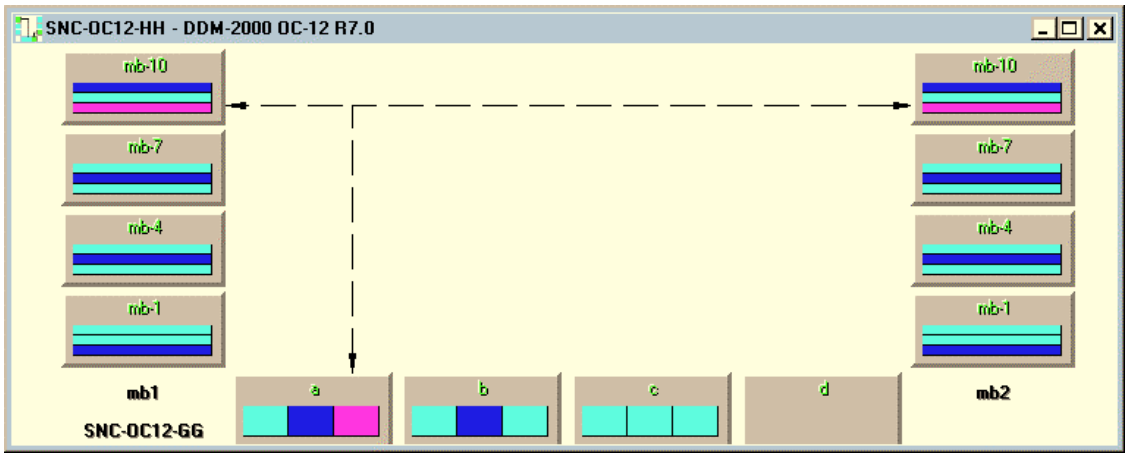


3. You can click **Cancel** if the addresses shown in the screen are incorrect, or click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example:

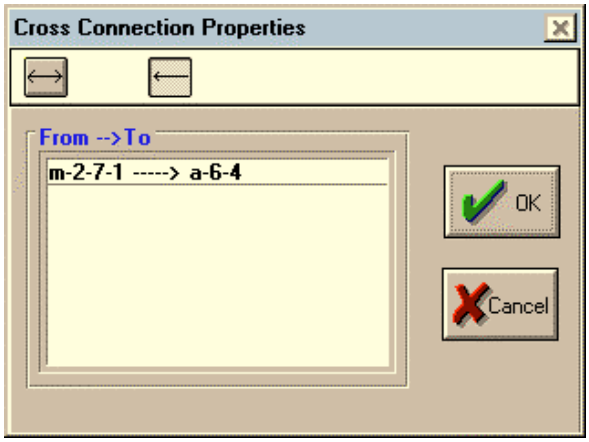


NOTE: A dual 0x1 cross connection is displayed as a dashed line to differentiate it from the solid line of a 1+1 two-way cross connection.

Enter VT1.5 Locked Cross Connections (DDM-2000 OC-3 and FiberReach)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination low-speed slot** of the cross connection. The following screen appears when you release the mouse button:



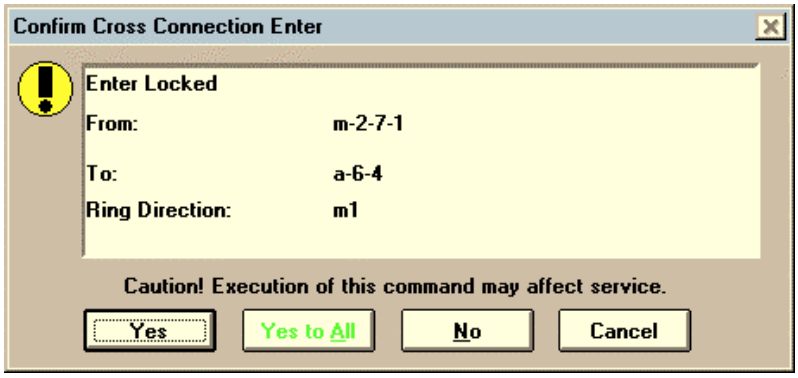
NOTE: The following restrictions must be followed to create a locked cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.
- For DDM-2000 OC-3, the low-speed slot must contain a BBF2B MXRVO circuit pack, a BBG19 circuit pack, or a 26G2-U circuit pack. For DDM-2000 OC-1, the low-speed slot must contain a DS1 circuit pack.

2. You can click **Cancel** if the addresses shown in the screen are incorrect. Otherwise, select the **locked cross connection** icon from toolbar (icon with single arrow pointing to the left).

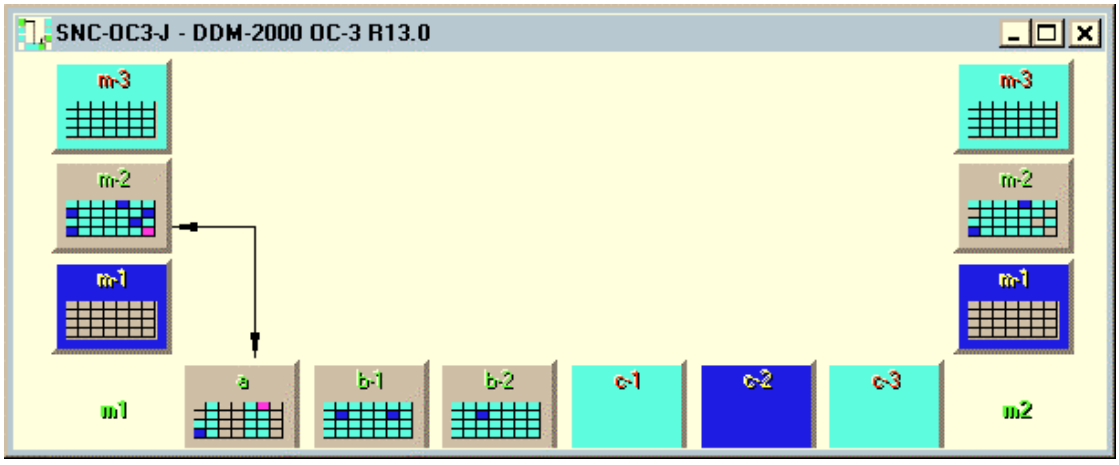
NOTE: The ring direction for the cross connection is specified according to which high-speed side is involved when establishing the cross connection (m1 side versus m2 side).

3. Click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example:



NOTE: A locked cross connection takes up an entire time slot in the NE, although the cross connection does not actually pass through the time slot in both mains. As shown in the sample above, the time slot m2-7-2 is grayed out even though it does not contain a cross connection, indicating it is not available for cross connection.

Enter a Range of Two-way VT1.5 Cross Connections (DDM-2000 OC-3 and FiberReach)

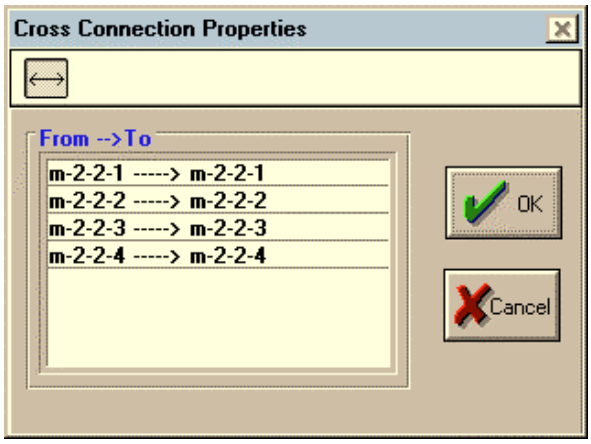
NOTE: CPro-2000 R8.0 does not support the creation of ranges of cross connections (contiguous or noncontiguous) for DDM-2000 OC12, FT-2000 OC-48, or DDM-2000 OC-3 equipped with a 24G-U OLIU circuit pack.

Procedure

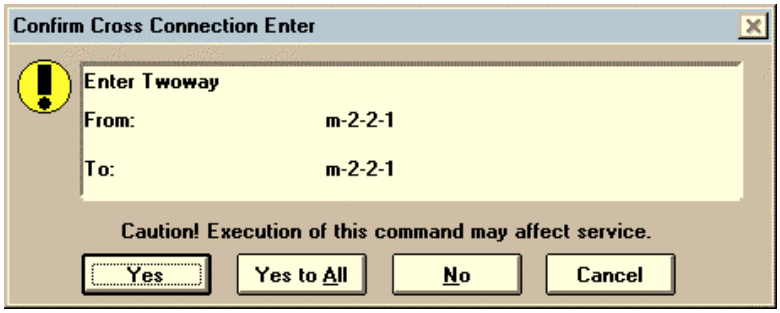
1. From the Network Element View, click the **source slot** of the cross connection.

   - To create a contiguous range (such as m-1-1-1, m-1-1-2, m-1-1-3, and so on) of cross connections, hold the **Shift** key on your keyboard, and click on each of the additional slots, or click on the last slot (the slots in between are automatically chosen) in your range.
   - To create a noncontiguous range (such as m1-1-1, m-1-1-3, m-1-2-1, and so on) of cross connections, hold down the **Control** key and click on each of the additional slots in the range.

2. Release the **Shift** or **Control** key and, while holding down the mouse button, drag the cursor to the **last destination slot** of the range of cross connections. The following screen appears when you release the mouse button:

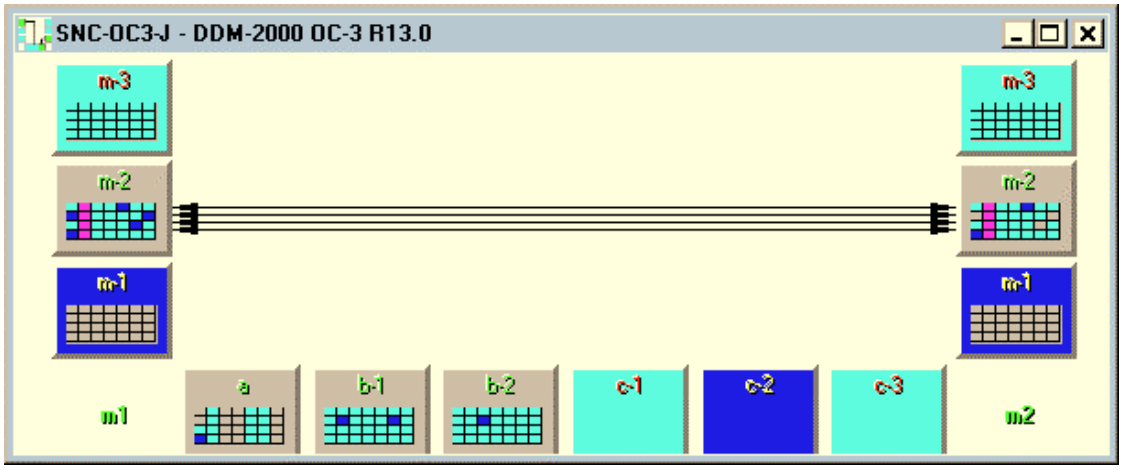


3. You can click **Cancel** if the addresses shown in the screen are incorrect, or click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connections individually. Click **Yes to All** if you want to create the entire range of cross connections in one step. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connections appears in the Network Element View as in the following example:



Enter Video Source (COV) STS-3C Cross Connection (DDM-2000 OC-12)

Procedure

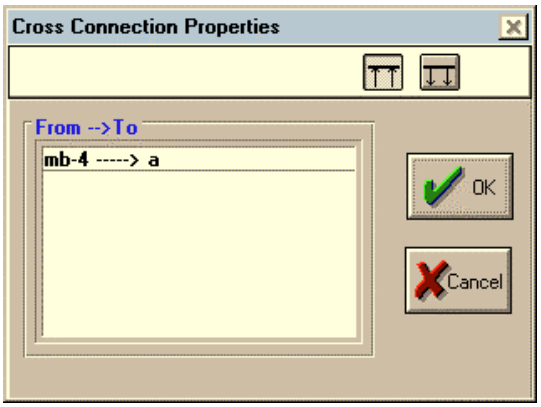
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection.

NOTE: The following restrictions must be followed to create a video source cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.
- The low-speed slot must contain a 21-type OLIU circuit pack.
- The STS-3C feature must be enabled. (This feature is enabled in MML using the SET-FEAT command (supported by CPro) and in TL1 using the ENT-FEAT command. See your *DDM-2000 OC-12 User Service Manual* for complete details.)
- The OC-3 Lines application parameter, in the Provision menu, must be set to *video*.

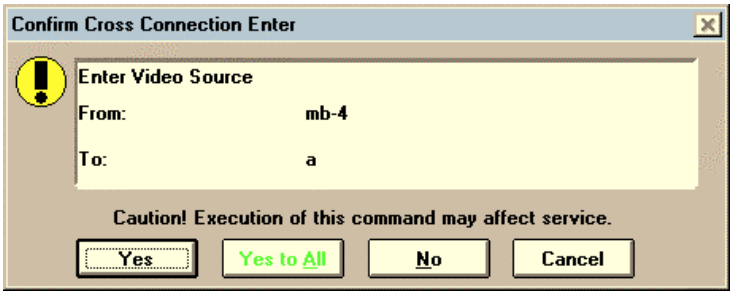
NOTE: When choosing the source and destination slots for the cross connection, be sure to use the STS-3 slots (that is, click and drag to the larger boxes, rather than the smaller STS-1 slots contained within them).

2. The following screen appears when you release the mouse button:



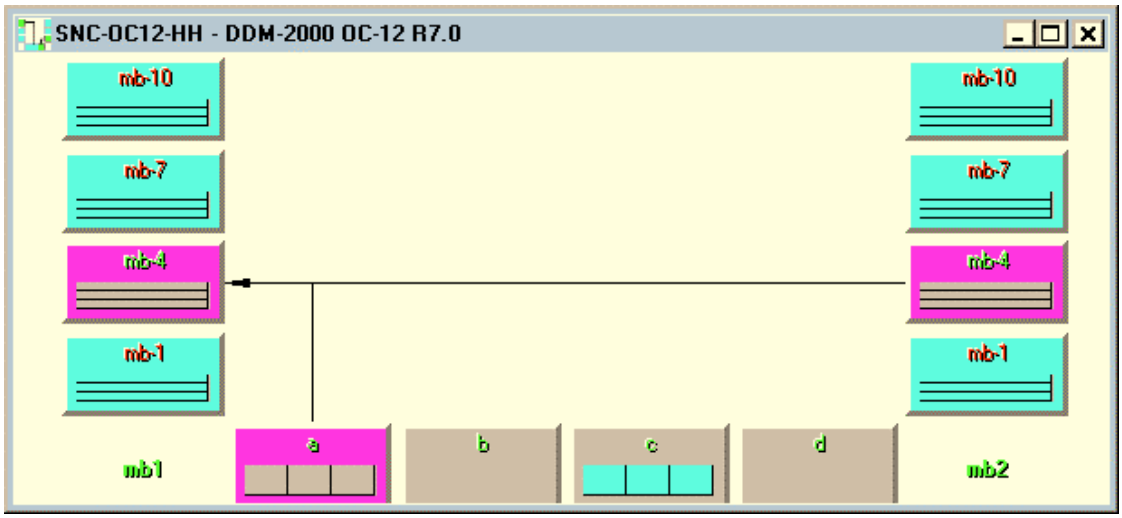
3. You can click **Cancel** if the addresses shown in the screen are incorrect. Otherwise, select the **video source** cross-connection icon (left icon) from the toolbar.

4. Click **OK** and the following screen appears:



5. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

6. When created, the cross connection appears in the Network Element View as in the following example:



Enter Video Sink (RTV) STS-3C Cross Connections (DDM-2000 OC-12)

Procedure

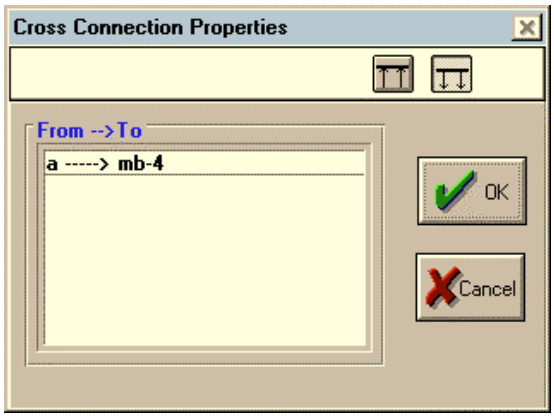
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection.

NOTE: The following restrictions must be followed to create a video source cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.
- The low-speed slot must contain a 21-type OLIU circuit pack.
- The STS-3C feature must be enabled. (This feature is enabled in MML using the SET-FEAT command (supported by CPro) and in TL1 using the ENT-FEAT command. See your *DDM-2000 OC-12 User Service Manual* for complete details.)
- The OC-3 Lines application, in the Provision menu, must be set to *video*.

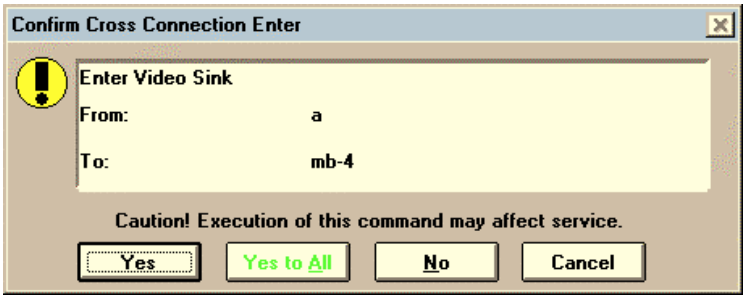
NOTE: When choosing the source and destination slots for the cross connection, be sure to use the STS-3 slots (that is, click and drag to the larger boxes, rather than the smaller STS-1 slots contained within them).

2. The following screen appears when you release the mouse button:



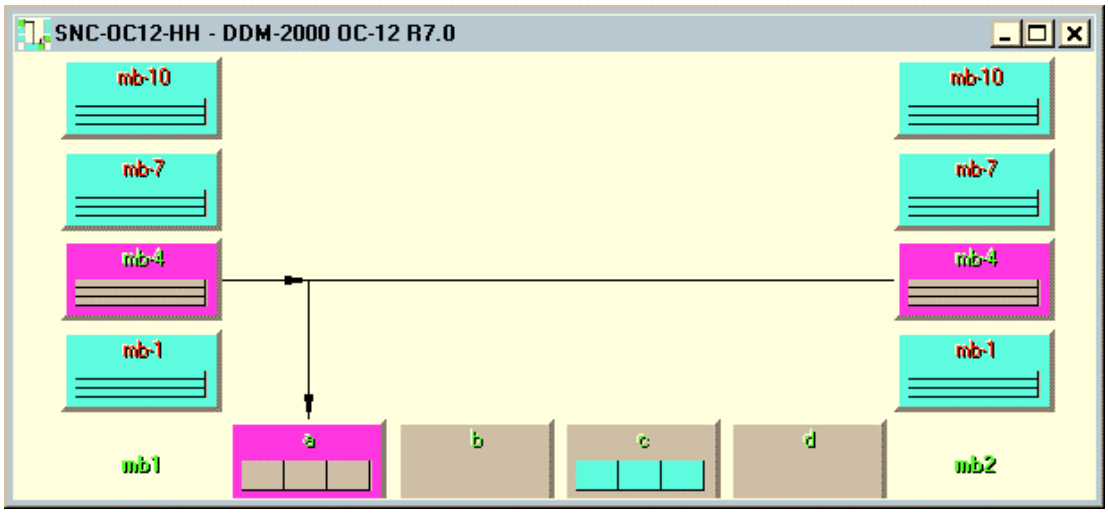
3. You can click **Cancel** if the addresses shown in the screen are incorrect. Otherwise, select the **Video Sink** cross-connection icon (right icon) from the toolbar.

4. Click **OK** and the following screen appears:



5. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

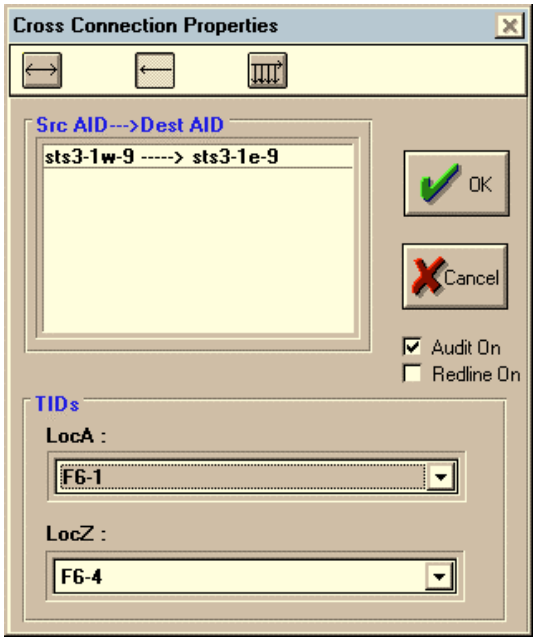
6. When created, the cross connection appears in the Network Element View as in the following example:



Enter One-way STS-3 or STS-1 Cross Connection (FT-2000 OC-48)

Procedure

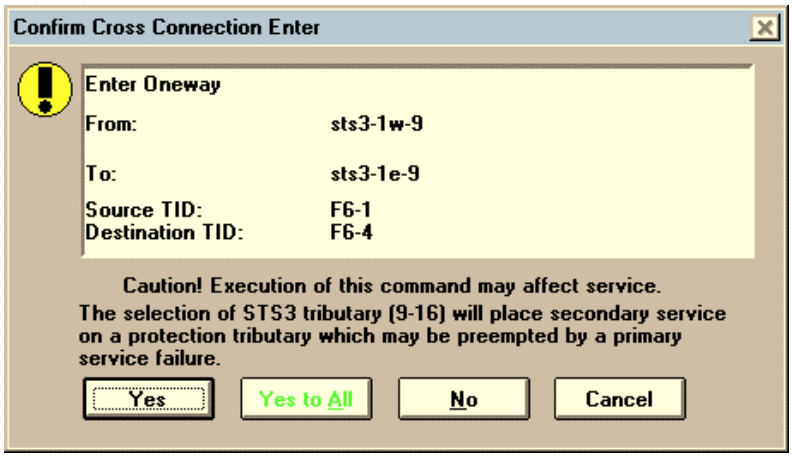
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

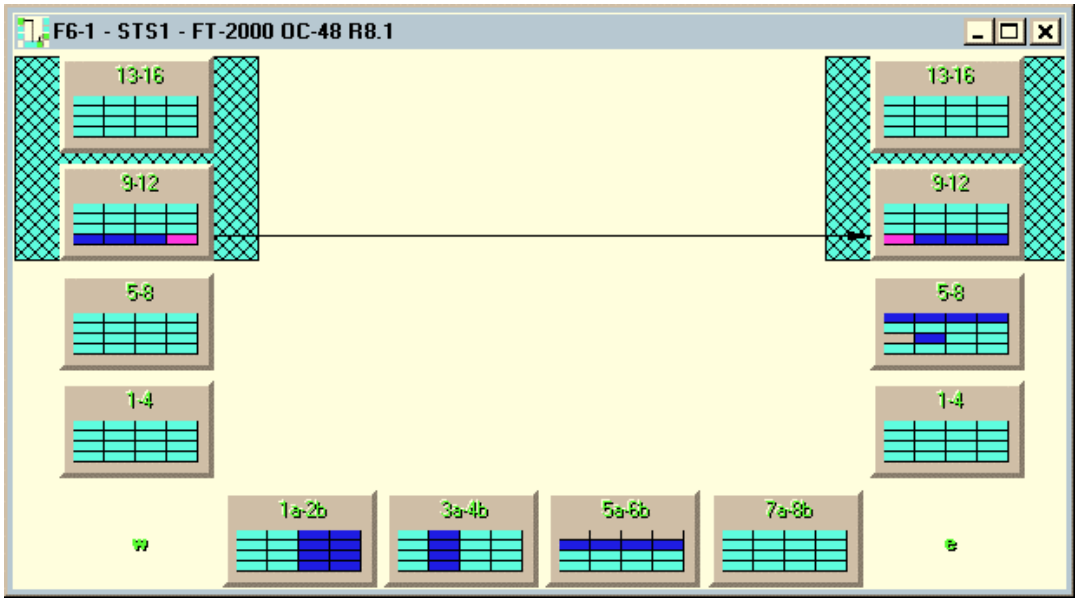
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **one-way cross connection** icon from the toolbar. If available, you can also select Source and Destination TIDs from the down-arrow lists.

3. Click **OK** and the following screen appears:

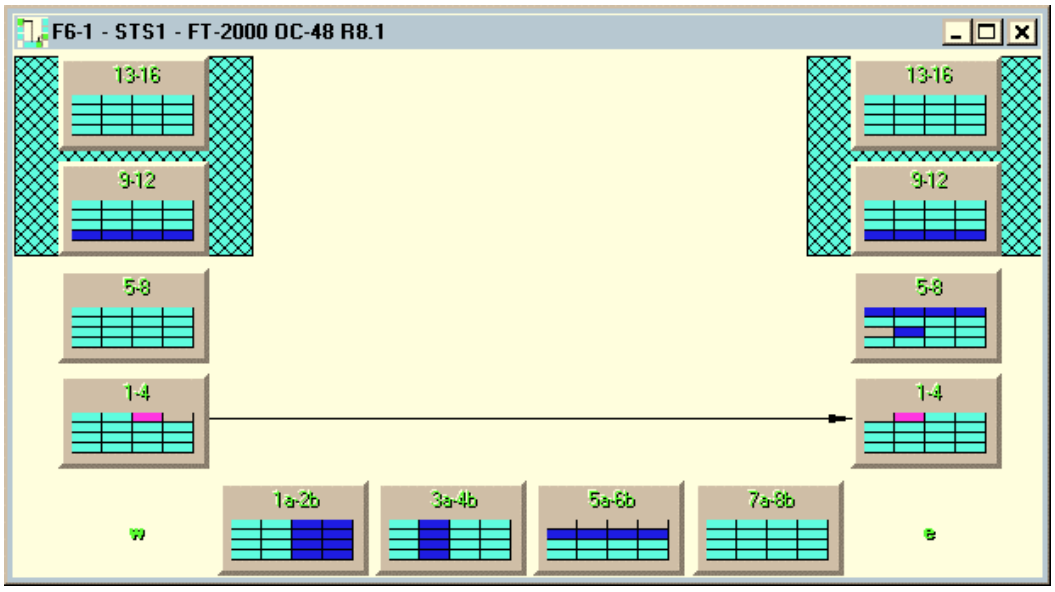


4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example for a one-way STS-3 cross connection:



The following example represents a one-way STS-1 cross connection created by using the same procedure described above for a one-way STS-3 cross connection:

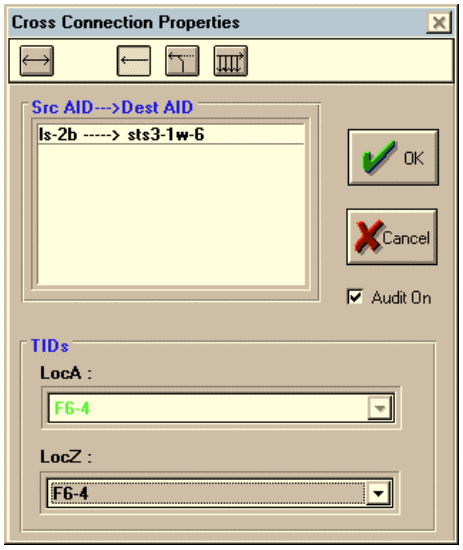


Enter One-way STS-3 or STS-1 1+1 Protected OC-3 Cross Connection (FT-2000 OC-48)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The following screen appears when you release the mouse button:

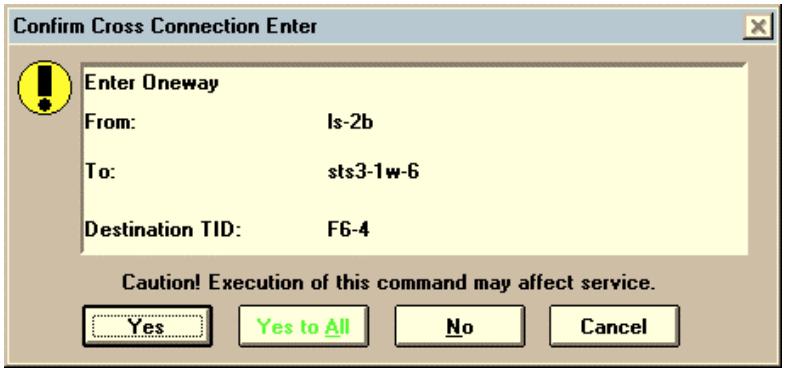
NOTE: The following screens illustrate the process for establishing an STS-3 one-way 1+1 protected OC-3 cross connection for slot pair 2a/2b. Whichever pair of slots you use must be provisioned to be OC-3 1+1 protected, through the Provisioning menu, before creating this type of cross connection.



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

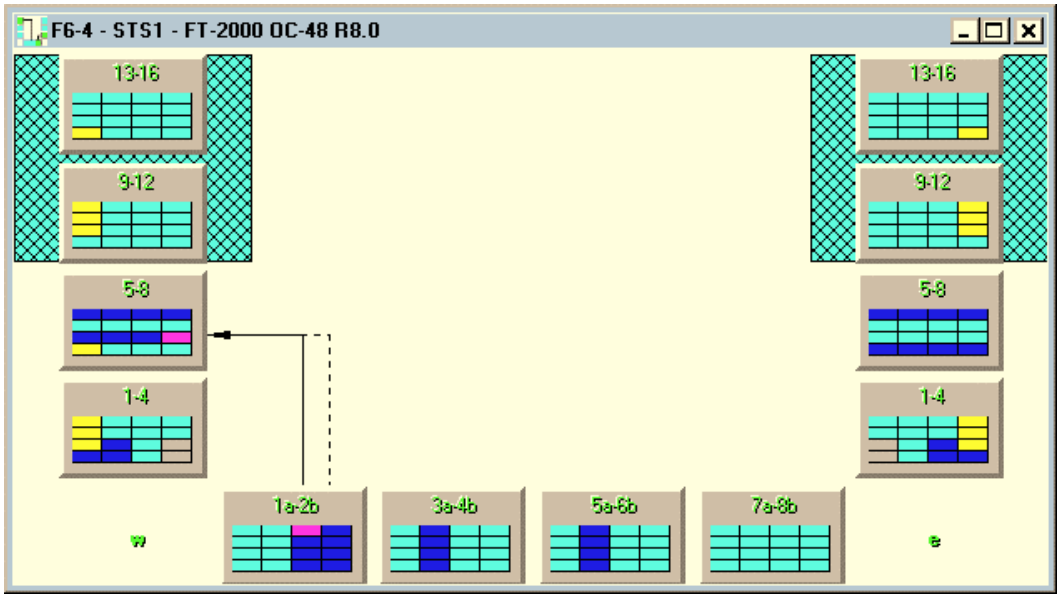
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **oneway cross connection** icon from the toolbar (single arrow). If available, you can also select Source and Destination TIDs from the down-arrow lists.

3. Click **OK** and the following screen appears:

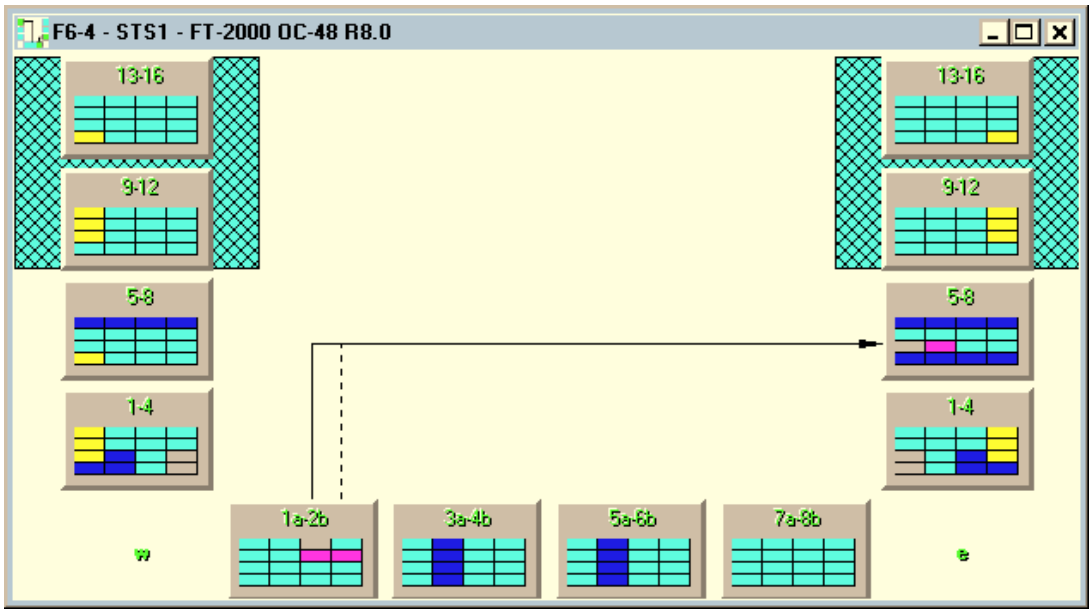


4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example for an OC-3 slot pair, 2a and 2b, for 1+1 protection.



The following example represents a one-way STS-1 1+1 protected OC-3 cross connection created by using the same procedure described above for a one-way STS-3 1+1 protected OC-3 cross connection:

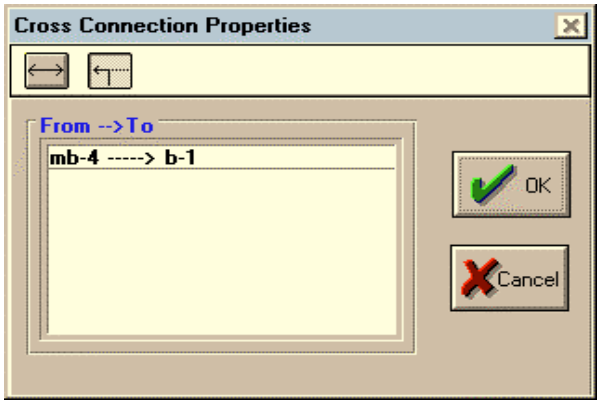


NOTE: The protection X-Conns are entered automatically by the NE if the 1+1 provisioning already exists. If the 1+1 provisioning is entered after the cross connection is created, the NE automatically enters the protection cross connection. CPro-2000 displays the protection cross connection the next time the cross connections are updated.

Enter STS-1 Drop-and-Continue Cross Connection (DDM-2000 OC-3 and OC-12)
or
Enter VT1.5 Drop-and-Continue Cross Connection (DDM-2000 OC-3)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The following screen appears when you release the mouse button:

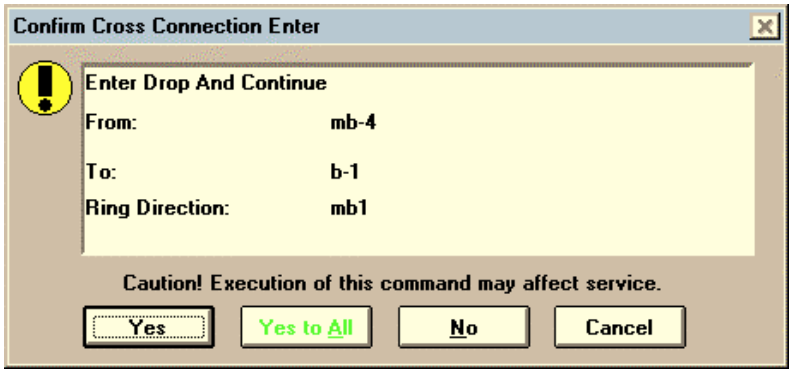


NOTE: The following restrictions must be followed to create a drop-and-continue cross connection:

- One address in the cross connection must be a main and one address must be a low-speed slot.
- For DDM-2000 OC-3 and OC-12, the low-speed slot being used in the cross connection must contain an STS-1E or an OLIU circuit pack.

2. You can click **Cancel** if the addresses shown in the screen are incorrect. Otherwise, select the **drop and continue** icon from the toolbar.

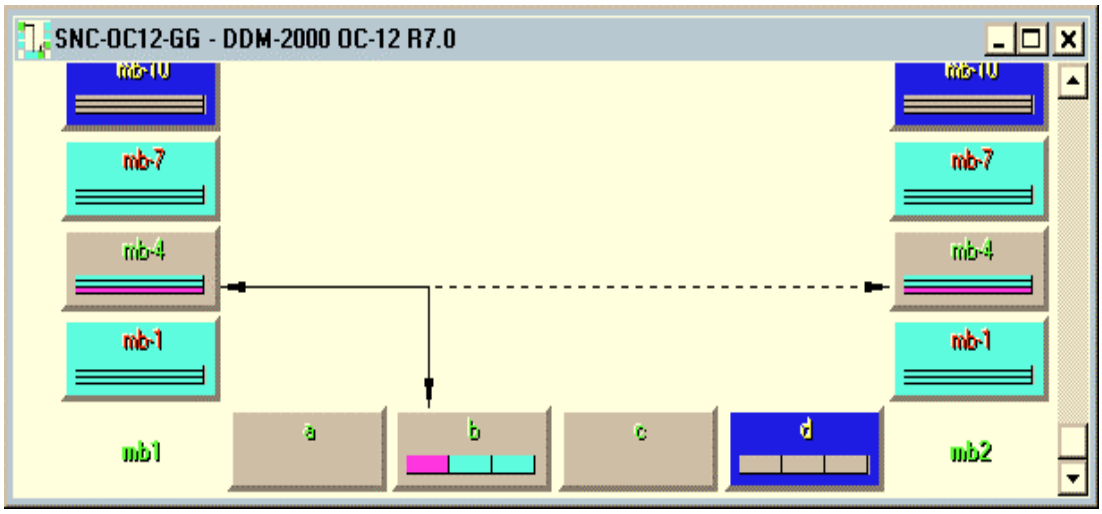
3. Click **OK** and the following screen appears:



NOTE: The ring direction for the cross connection is specified according to which high-speed side is involved when establishing the cross connection (m1, mb1 side versus m2, mb2 side).

4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example:



NOTE: The solid portion of the cross connection points in the direction of the ring ID.

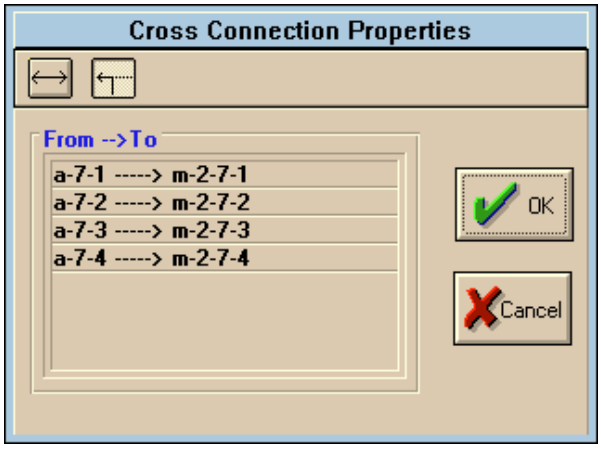
Enter a Range of VT1.5 Drop-and-Continue Cross Connections (DDM-2000 OC-3)

Procedure

1. From the Network Element View, click the **source slot** of the cross connection.

   - To create a contiguous range (such as m-1-1-1, m-1-1-2, m-1-1-3, and so on) of cross connections, hold the **Shift** key on your keyboard, and click on each of the additional slots, or click on the last slot (the slots in between are automatically chosen) in your range.
   - To create a noncontiguous range (such as m1-1-1, m-1-1-3, m-1-2-1, and so on) of cross connections, hold down the **Control** key and click on each of the additional slots in the range.

2. Release the **Shift** or **Control** key and, while holding down the mouse button, drag the cursor to the **first destination slot** of the range of cross connections. The following screen appears when you release the mouse button:

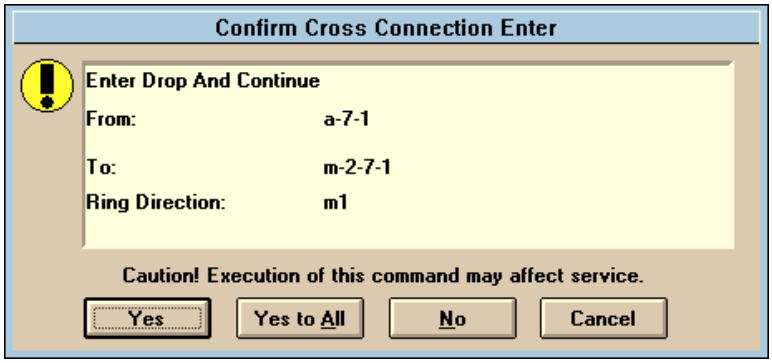


NOTE: The following restrictions must be followed to create a range of drop-and-continue cross connections:

- One address range in the cross connection must be in a main and one address range must be in low-speed slots.

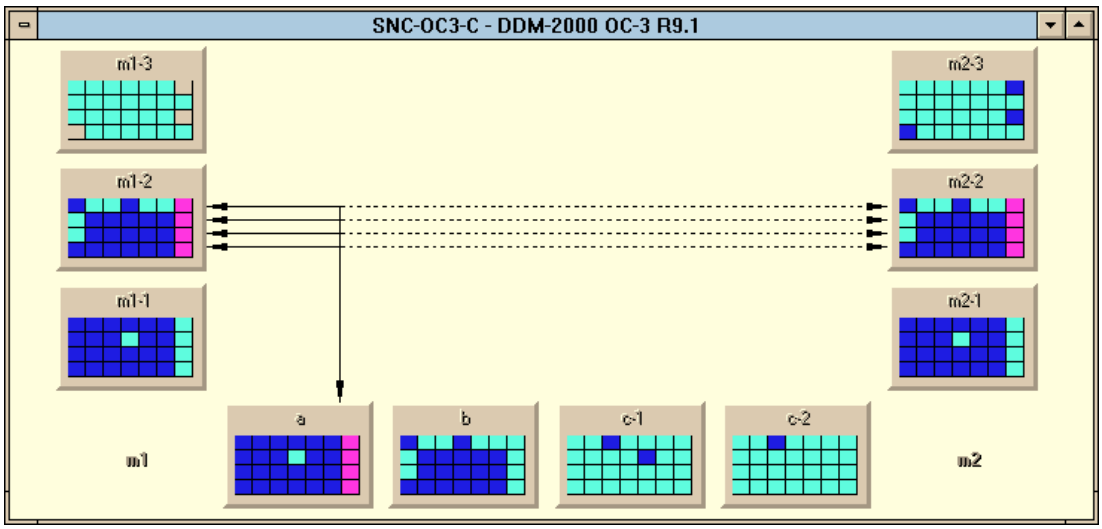
3. You can click **Cancel** if the addresses shown in the screen are incorrect. Otherwise, select the **drop and continue** icon from the toolbar.

4. Click **OK** and the following screen appears:



5. Click **Yes** if you want to create the cross connections individually. Click **Yes to All** if you want to establish the entire range of cross connections in one step. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

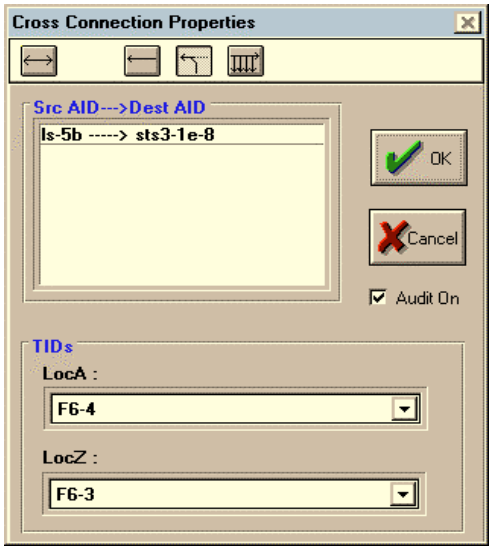
6. When created, the cross connections appear in the Network Element View as in the following example:



Enter One-way STS-3 or STS-1 DRI Cross Connection (FT-2000 OC-48)

Procedure

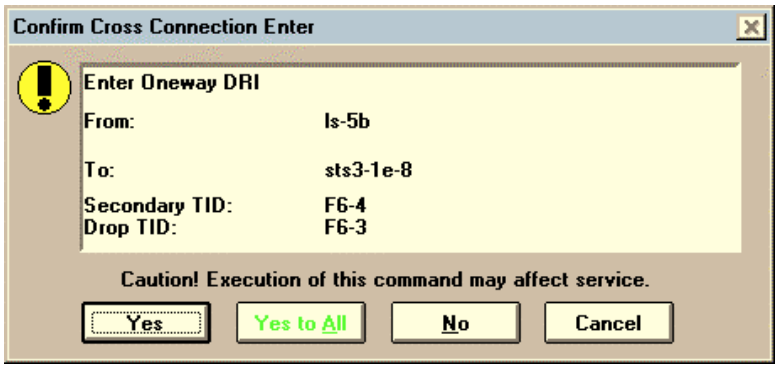
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The cross connection must be established in the Add direction. In other words, the source must be a low-speed slot and the destination must be a tributary. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

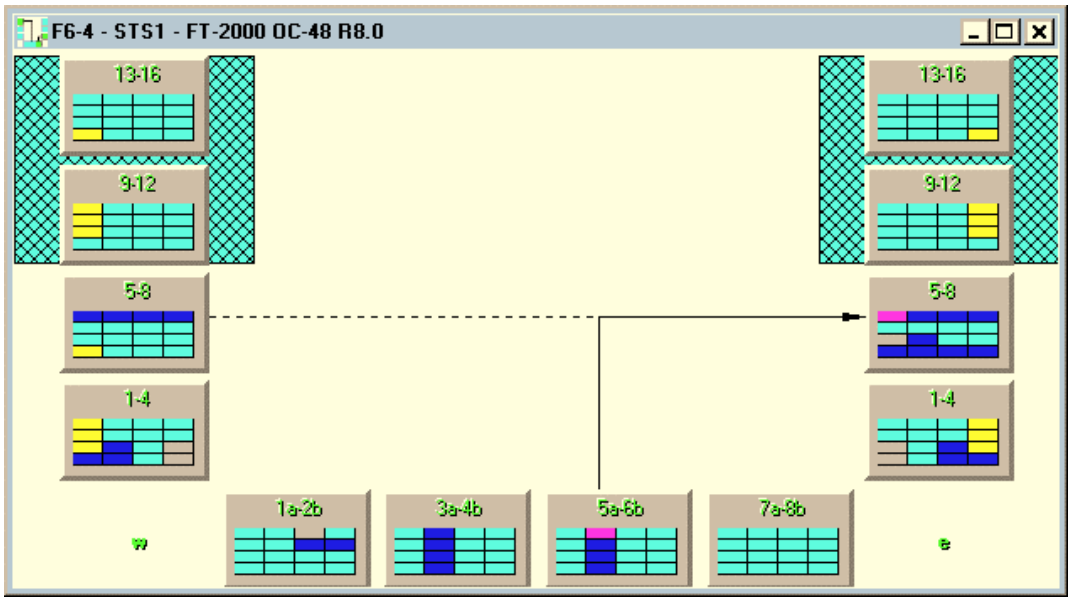
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **DRI** icon (third from left-hand side of toolbar). You can also select the **Source and Destination TIDs** from the down-arrow lists.

3. Click **OK** and the following screen appears:



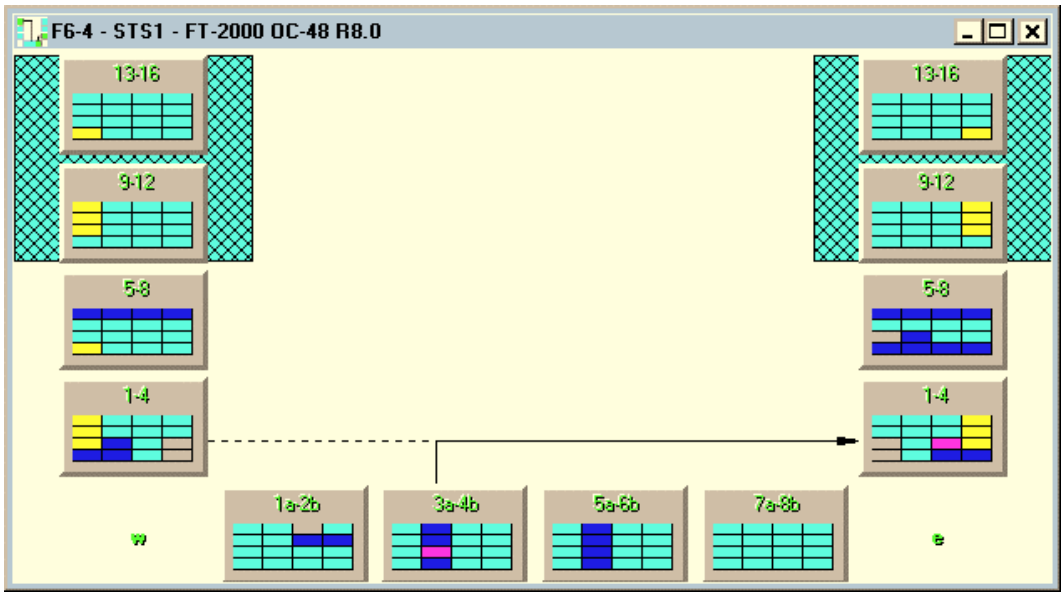
4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

5. When created, the cross connection appears in the Network Element View as in the following example for a one-way STS-3 DRI cross connection:



NOTE: The primary cross connection is shown with a solid black line, and the secondary cross connection is shown with a dashed line.

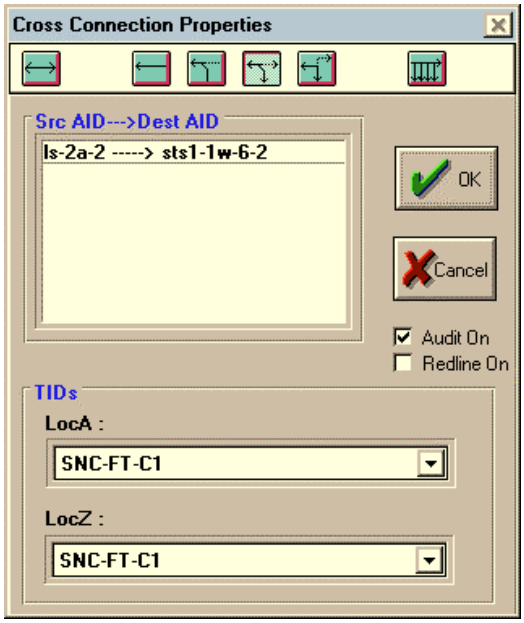
The following example represents a one-way STS-1 DRI cross connection created by using the same procedure described earlier for a one-way STS-3 DRI cross connection:



Enter Two-way STS-3 or STS-1 DRI Cross Connection (FT-2000 OC-48)

Procedure

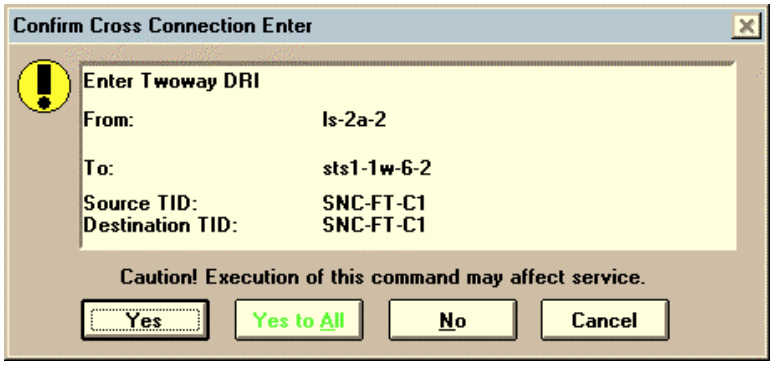
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The cross connection must be established in the Add direction. In other words, the source must be a low-speed slot and the destination must be a tributary. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

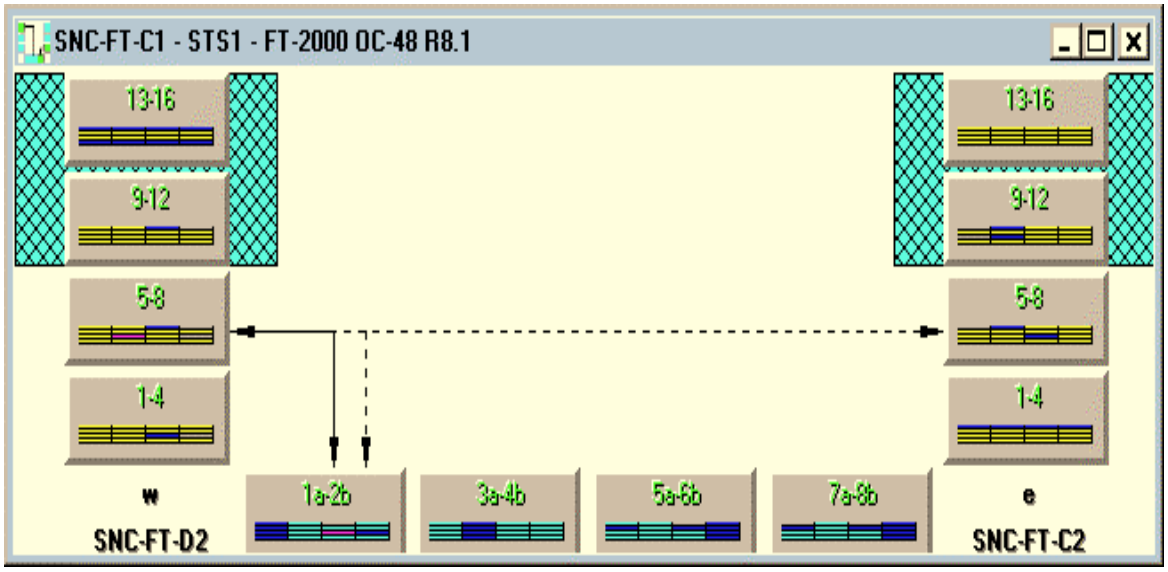
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **DRI twoway** icon (fourth from left-hand side of toolbar). You can also select the **Source and Destination TIDs** from the down-arrow lists.

3. Click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

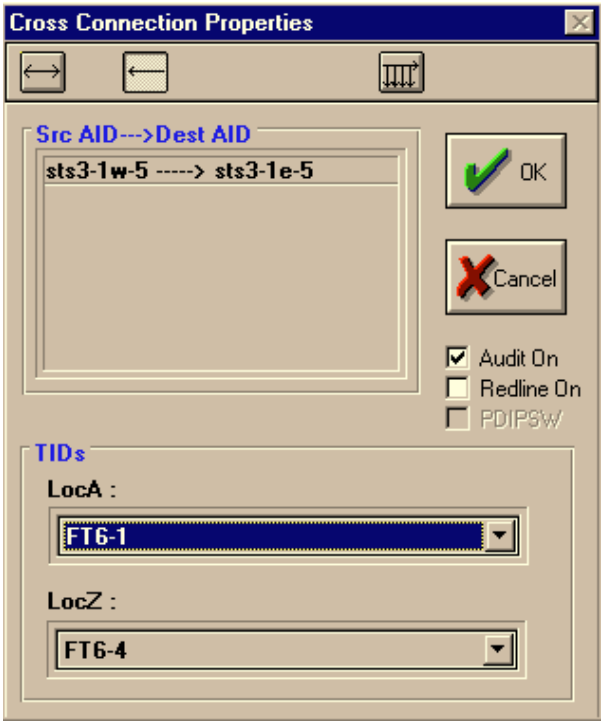
5. When created, the cross connection appears in the Network Element View as in the following example for a two-way STS-1 DRI cross connection:



Enter Two-way STS-3 or STS-1 DRI-PRI Cross Connection (FT-2000 OC-48)

Procedure

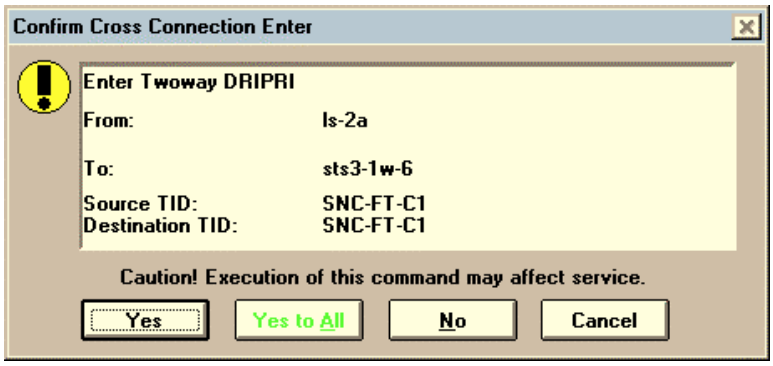
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The cross connection must be established in the Add direction. In other words, the source must be a low-speed slot and the destination must be a tributary. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

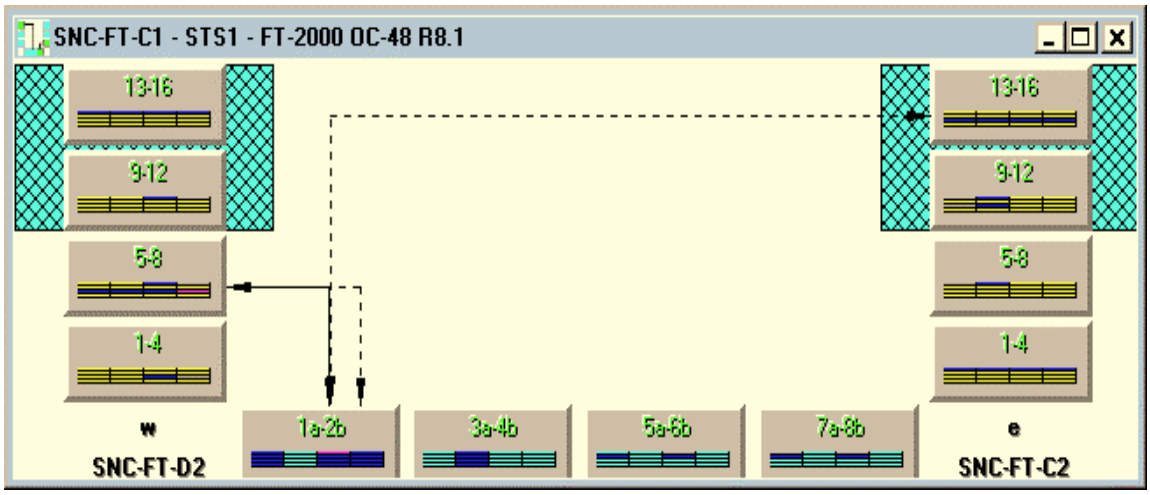
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **DRI-PRI twoway** icon (fifth from left-hand side of toolbar). You can also select the **Source and Destination TIDs** from the down-arrow lists.

3. Click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

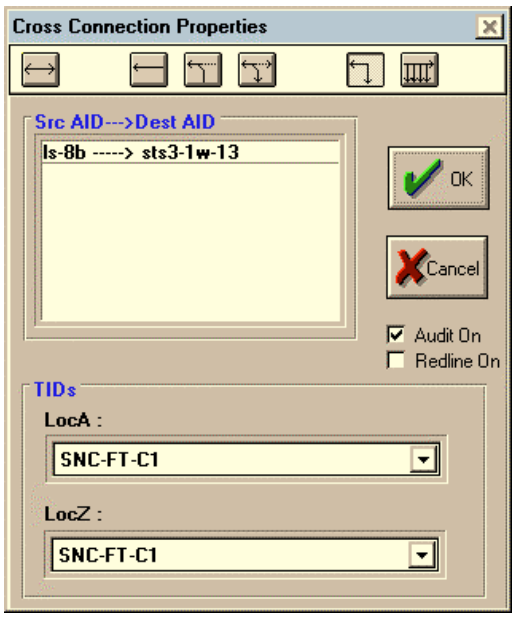
5. When created, the cross connection appears in the Network Element View as in the following example for a two-way STS-3 DRI-PRI cross connection:



Enter Two-way STS-3 or STS-1 DRI-SEC Cross Connection (FT-2000 OC-48)

Procedure

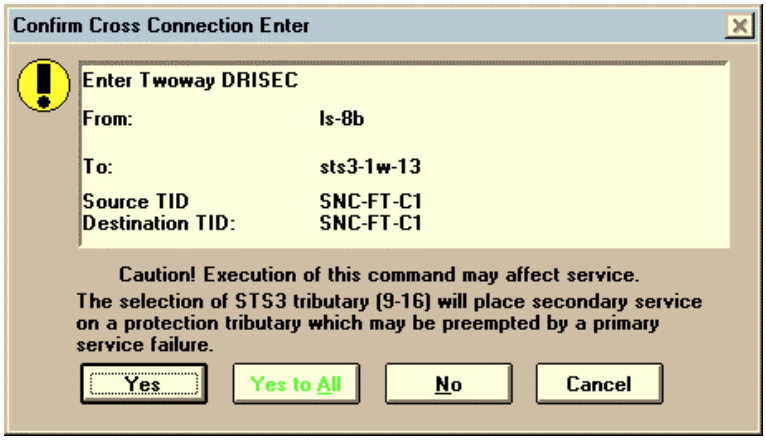
1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The cross connection must be established in the Add direction. In other words, the source must be a low-speed slot and the destination must be a tributary. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

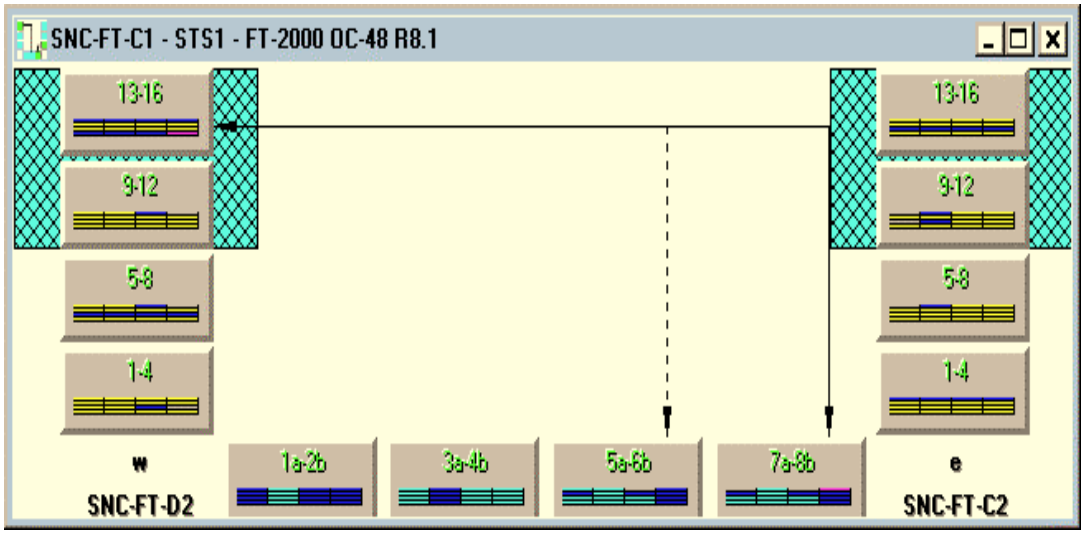
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **DRI-SEC twoway** icon (fifth from left-hand side of toolbar). You can also select the **Source and Destination TIDs** from the down-arrow lists.

3. Click **OK** and the following screen appears:



4. Click **Yes** if you want to create the cross connection. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

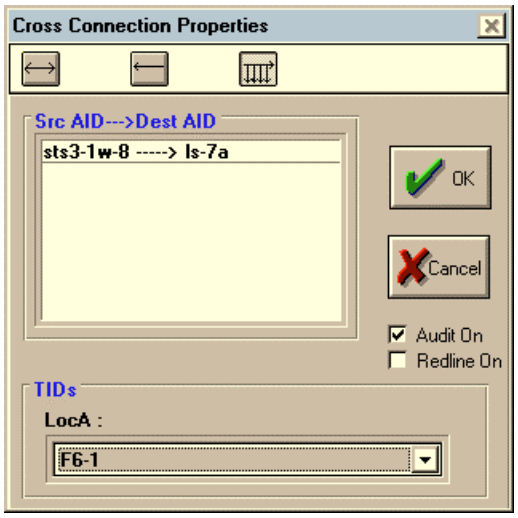
5. When created, the cross connection appears in the Network Element View as in the following example for a two-way STS-3 DRI-SEC cross connection:



Enter One-way STS-3 or STS-1 Multi-drop Cross Connection (FT-2000 OC-48)

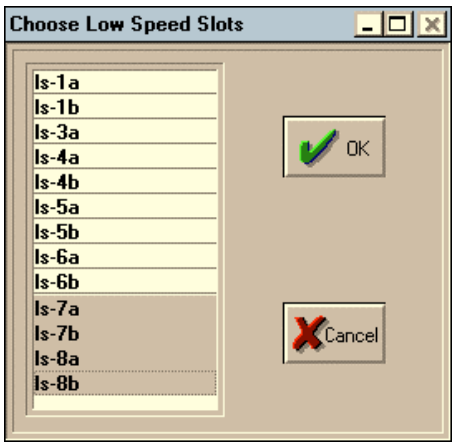
Procedure

1. From the Network Element View, click the **source slot** of the cross connection. While holding down the mouse button, drag the cursor to the **destination slot** of the cross connection. The following screen appears when you release the mouse button:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

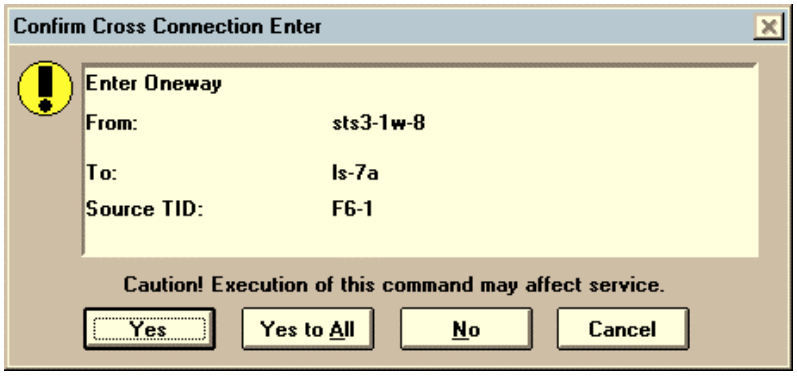
2. You can click **Cancel** if the AIDs shown in the screen are incorrect. Otherwise, select the **Multi-drop** cross connection icon (right-hand side of toolbar). The following screen appears:



3. While holding down the **Shift** key or **Control** key, select the multiple low-speed slots for the cross-connection destination. Click **OK**.

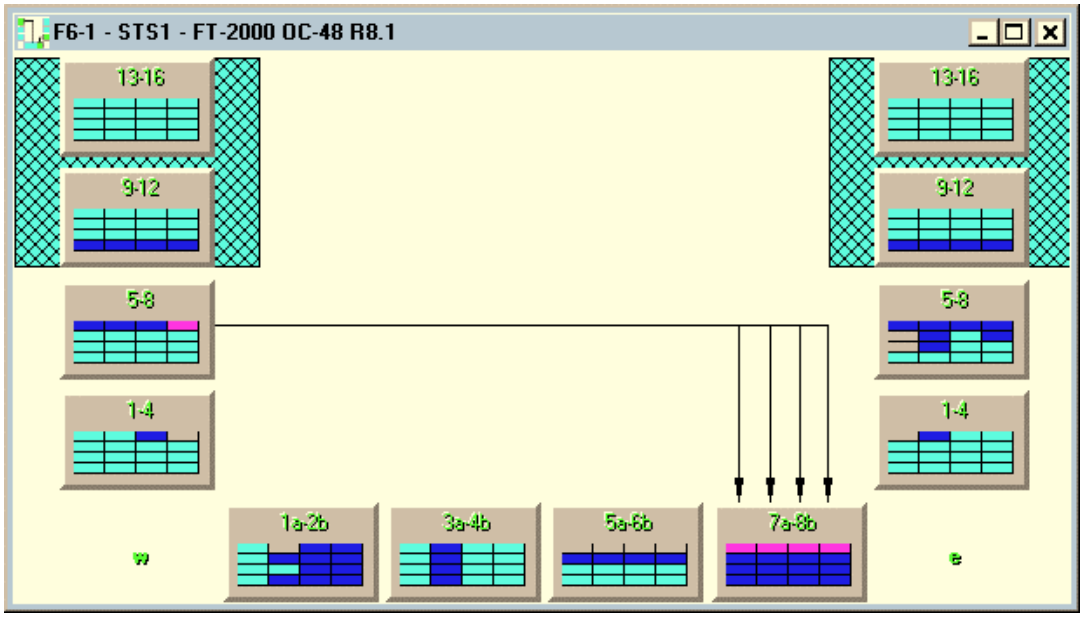
NOTE: Pressing **Shift** allows a contiguous range of slots to be selected with the mouse. Pressing **Control** allows a noncontiguous range to be selected.

4. The Cross Connection Properties box redisplays. Select the **Source TIDs** from the down-arrow list. Click **OK** and the following screen appears:

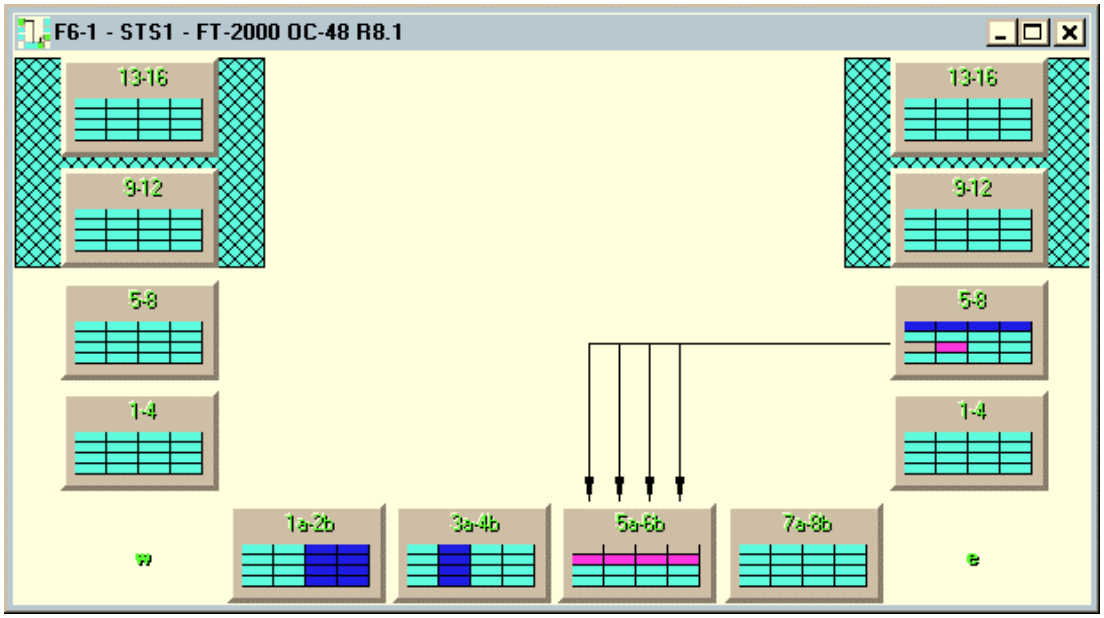


5. Click **Yes** if you want to create the multiple cross connections individually. Click **Yes to All** if you want to establish all the cross connections in the multi-drop. Click **No** if you do not want to establish this cross connection or **Cancel** if you want to cancel the entire operation.

6. When created, the cross connection appears in the Network Element View as in the following example:



The following example represents a one-way STS-1 multi-drop cross connection created by using the same procedure described earlier for a one-way STS-3 multi-drop cross connection:

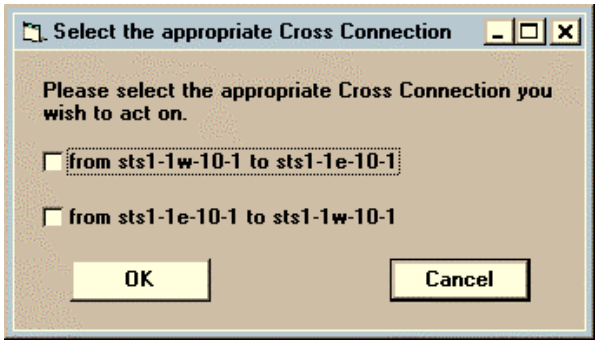


Change LocA and LocZ Values for an Existing STS-3 or STS-1 Cross Connection (FT-2000 OC-48)

Procedure

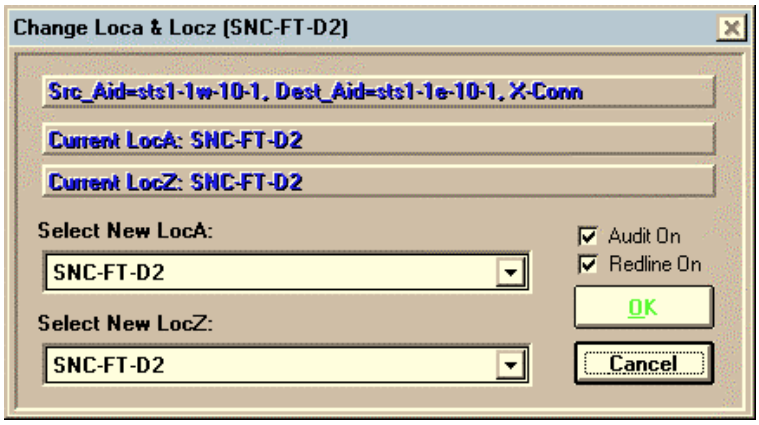
1. Double-click the cross-connection line whose LocA and/or LocZ are to be changed.

NOTE: When two-way or overlapping multiple cross connections exist, the following screen appears first:



2. Select the desired cross connection by clicking on the appropriate box. Click **OK**.

3. The following dialog box displays:



NOTE: When **Audit On** is chosen, an alarm is activated to notify the user of any signal problem. When **Redline On** is chosen, the cross connection is tagged as "Redlined," thus prohibiting any modification until it is untagged. See the "Audit On and Redline On Options" section earlier in this chapter.

To change either setting, double-click on the cross connection in the NE view to display the Change Loca & Locz dialog box. Either feature can be toggled on/off from here by clicking on its box to insert/remove the check mark prior to clicking on **OK**.

4. Depending on the cross-connection type, the dialog box displays one of the following:

   - For a drop cross connection, meaning that the cross connection's source AID is in a tributary and the destination AID is in a slot, the dialog box appears prompting changes to LocA. (The down-arrow list for Select New Destination is grayed-out and not selectable.)
   - For an add cross connection, meaning that the cross connection's source AID is in a slot and the destination AID is in a tributary, the dialog box appears prompting changes to LocZ. (The down-arrow list for Select New Source is grayed-out and not selectable.)
   - For a pass-through or DRI cross connection, meaning that both the source and destination AIDs are in tributaries, the dialog box appears prompting changes

to LocA and/or LocZ. (Both Select New Source and Select New Destination are available to make changes.)

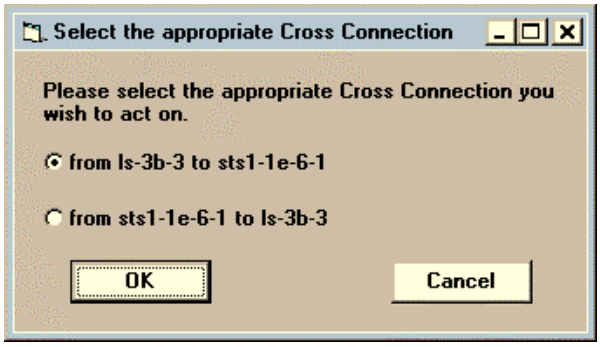
5. Enter the new LocA and/or LocZ value and click **OK**. At any time during this operation, you may click **Cancel** and none of your changes are executed.

Roll an Existing STS-3 or STS-1 Cross Connection to a New Source (FT-2000 OC-48)

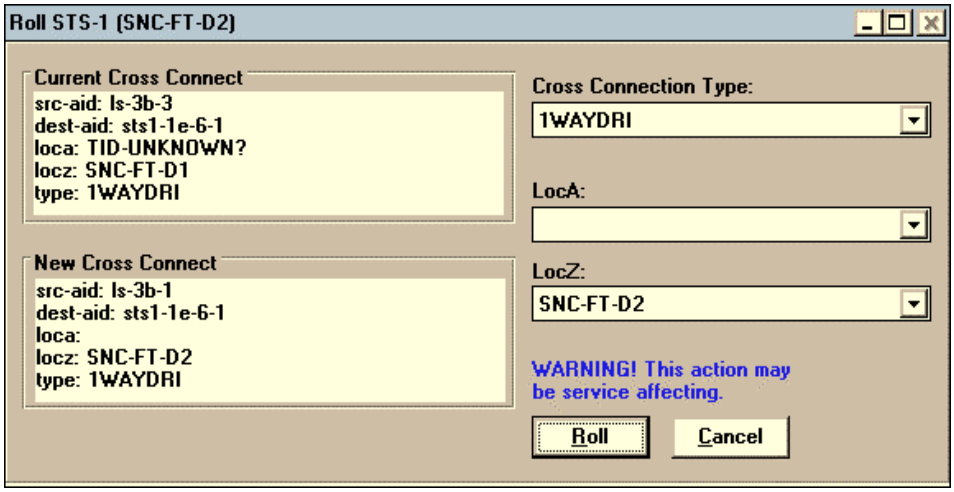
Procedure

1. Click the left mouse button on the line representing the cross connection for which you want to roll the source. The line becomes highlighted.
2. Drag the cross-connection line to a new source and then release the mouse button.

NOTE: When overlapping multiple cross connections exist, the following screen appears first:



3. Select the desired cross connection by clicking on the appropriate box. Click **OK** and the following screen appears:



4. You can change either the cross-connection type or the LocA/LocZ.

NOTE: If the cross connection is a “drop”, the user can change LocA. If the cross connection is an “add”, then the user can change LocZ. Both can be changed for a through connection.

Select the **cross connection type** from the down-arrow list. (The current cross-connection type is shown as the default.)

Or

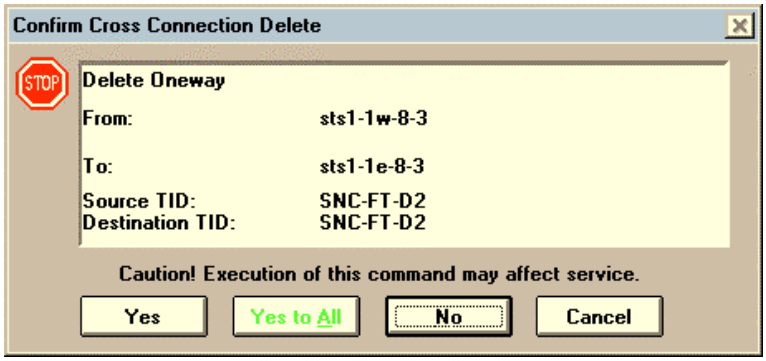
Select the **LocA/LocZ** from the down-arrow list. (The current LocA/LocZ is shown as the default.)

5. If the information displayed in the dialog box is correct, click **Roll** and the new cross connection is created. You may click **Cancel** at any time and no changes are made to the cross connection.

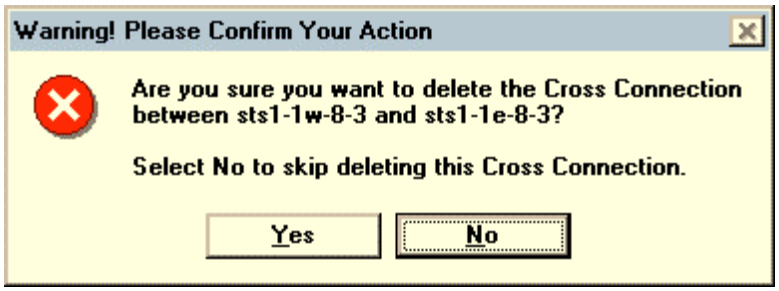
Delete a Cross Connection

Procedure

1. From the Network Element View, click the cross-connection line you wish to delete. Either press **Delete** on your keyboard or drag the cross-connection line to the trash can icon located in the bottom right corner of the GUI.
2. The following screen appears asking you to confirm the cross-connection deletion:

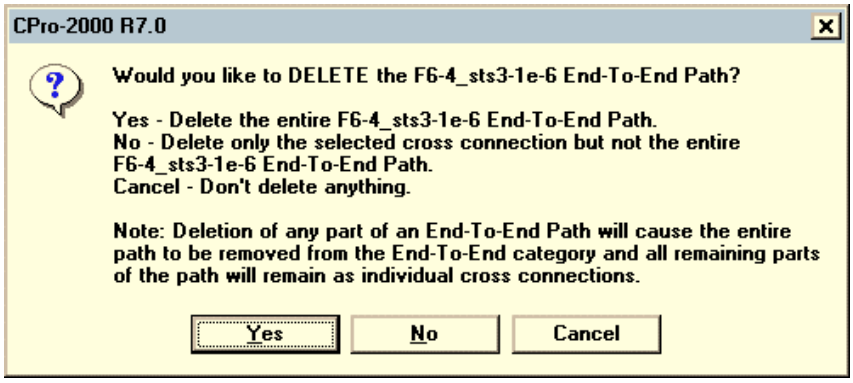


3. Click **Yes** and the following screen appears:



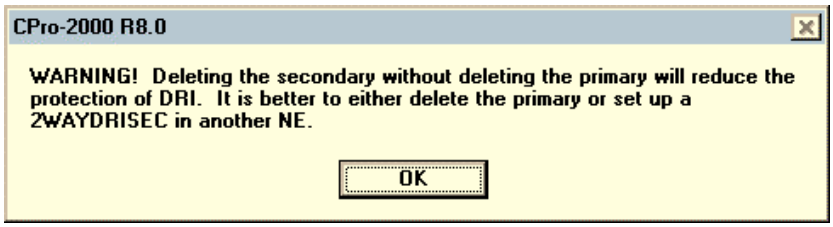
4. Click **Yes** to delete the cross connection.

NOTE: If the cross connection to be deleted is part of an end-to-end path, the following dialog box displays:

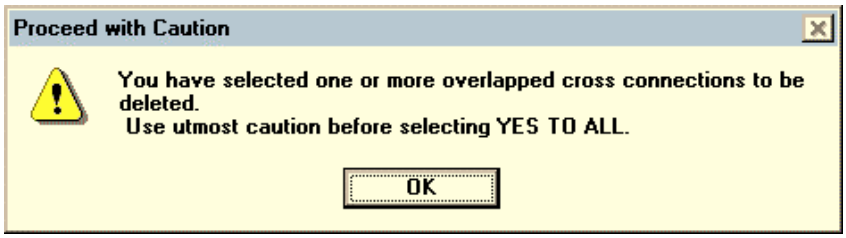


5. Click **Yes** to delete the entire end-to-end path. Click **No** to delete only the selected cross connection or click **Cancel** if you do not want to delete anything.

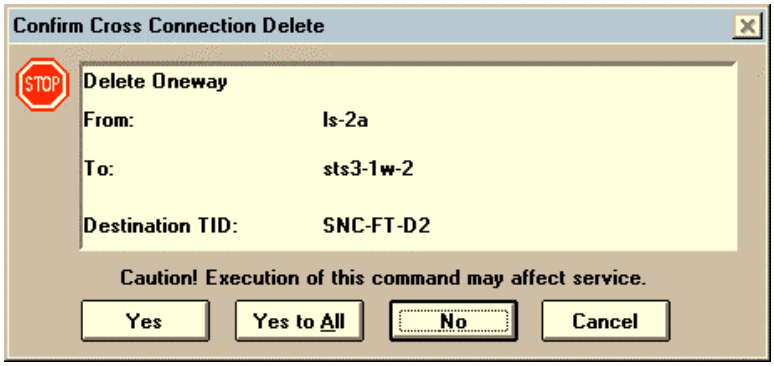
NOTE: If the cross connection to be deleted is a two-way DRI-SEC cross connection, the following screen appears:



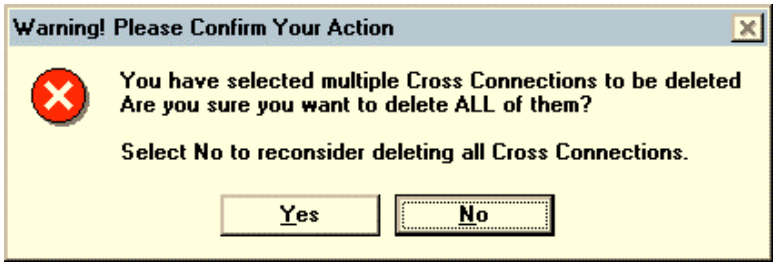
NOTE: When overlapping multiple cross connections exist, the following screens appear during the deletion process:



6. Click **OK**.



7. Click **Yes** to delete only the selected cross connection. Click **Yes to All** to delete all overlapping multiple cross connections and the following screen appears:



8. Click **Yes** to delete all overlapping multiple cross connections.

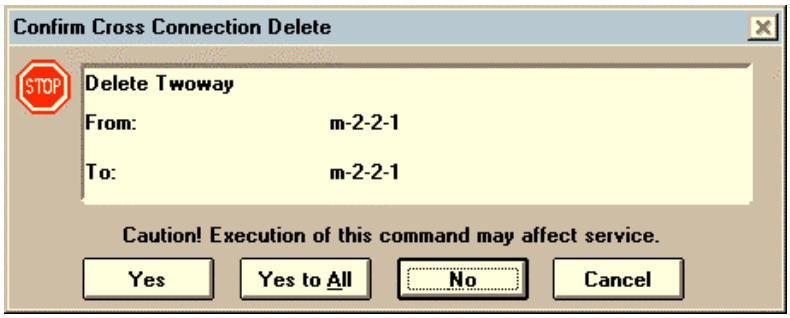
Delete a Range of VT1.5 Cross Connections (DDM-2000 OC-3 and FiberReach)

Procedure

1. Select the source range by clicking on the first cross-connection line in the range and then, while holding down the **Shift** key, click on the end cross-connection line of the range.

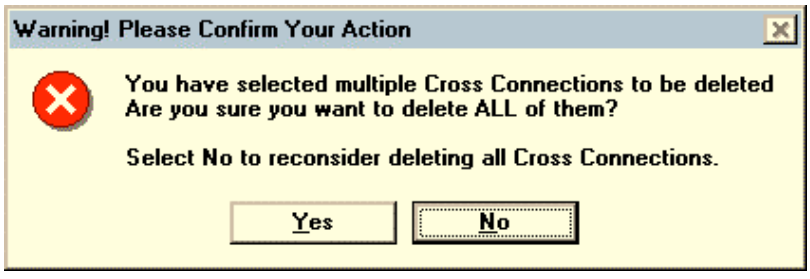
2. Press **Delete** or drag the cross-connection lines to the trash can icon located in the bottom right-hand corner of the GUI.

3. The following screen appears asking the user to confirm the cross-connection deletion:



4. Click **Yes to All** if you want to delete all of the cross connections in the range. Click **Yes** if you want to delete each cross connection in prompted mode. While in prompted mode, click **No** if you do not want to delete one of the cross connections in the range. Click **Cancel** if you want to cancel the entire operation.

5. If you choose to delete multiple cross connections, the following screen appears:



6. Click **Yes** to delete the selected cross connections. Click **No** if you do not want to delete the selected cross connections.

The Provision Menu

Overview

Use the Provision Menu to display port-provisioning options for a given NE and to modify these options as needed. All of the port-provisioning functions are provided as menu items and may vary with NE.

The table below lists all the provisioning options that are available with each network element.

	Network Elements			
Provisioning Options	**DDM-2000 OC-3**	**DDM-2000 OC-12**	**FT-2000 OC-48**	**FiberReach**
DS1/T1 Ports	X			X
DS3 Lines	X	X	X	X
EC1 Ports	X	X	X	
LS Ports			X	
NCT/2 Lines	X			
OC-1 Lines	X			X
OC-3 Lines	X	X	X	X
OC-12 Lines	X	X	X	
OC-48 Lines			X	
Set Date	X	X	X	X
Set OC-3	X			X
Set OC-12	X			X
Set NE	X	X	X	X
Set Security	X			X
Set Lan	X			
Set OC-48			X	
Set Feat	X	X		X
Set NPPA			X	
Set CID Secu			X	

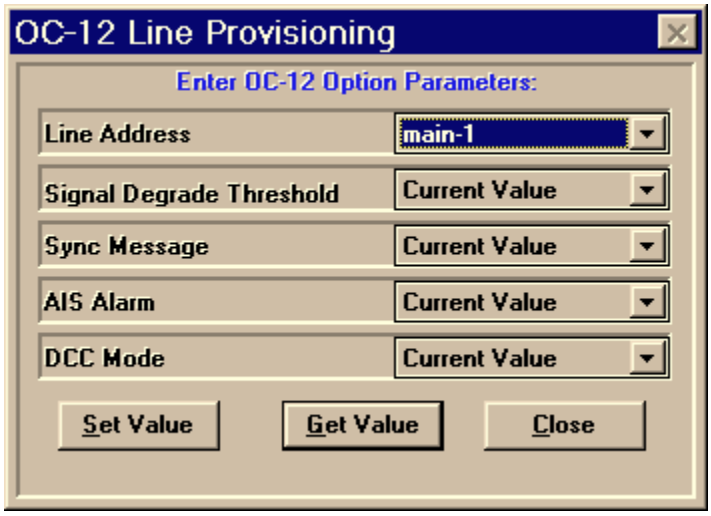
Update NE	X	X	X	X
OSI Stack	X	X	X	X

Note: You cannot specify parameter values by typing directly in the value field. To select parameter values, click the down arrow to the right of the parameter for available options, then select a value from the list of options.
In situations where Line States can be set, CPro-2000 sets the state to *AUTO* if the user selects the *IS* parameter.

Provisioning OC-12 Line Options (DDM-2000 OC-3, DDM-2000 OC-12, and FT-2000 OC-48)

Procedure

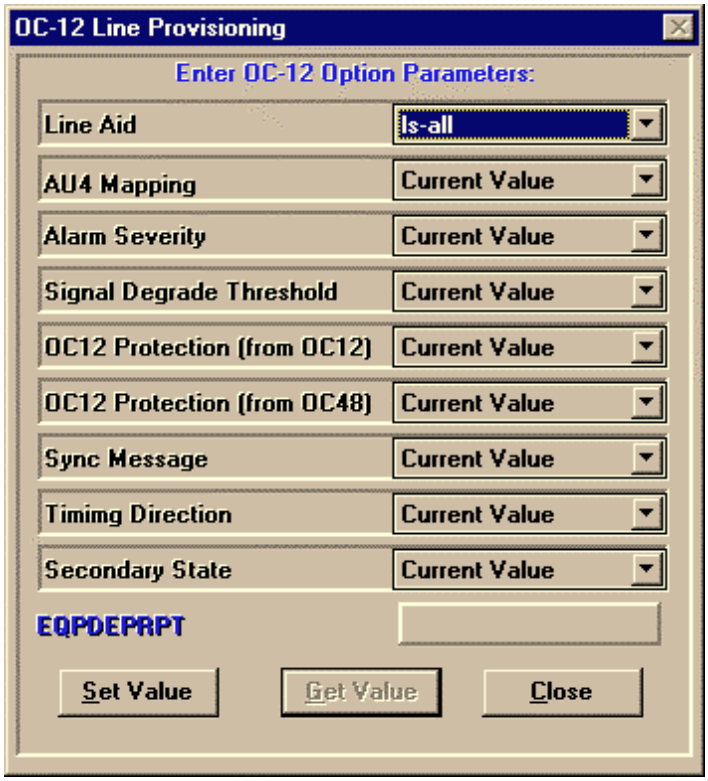
1. From the Provision pull-down menu, select **OC-12 Lines**. The following Line Provisioning dialog box appears for DDM-2000 OC-12 and OC-3.



The **DCC Mode** parameter allows you to set the DCC to either **distinct** or **identical**.

NOTE: To provision an OC-12 Line from OC-3 or FiberReach shelves, the main slots must be equipped with 24G or 29G circuit packs.

The following Line Provisioning dialog box displays for FT-2000 OC-48:



The **EQPDEPRPT** parameter value displayed in the EC1 Port Provisioning dialog box corresponds to the value selected FT-2000 OC-48 NE Options dialog box. Refer to Provisioning Set NE Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach) for more information.

2. Choose a line address by clicking on the down arrow to the right of the line address box. A list of all the OC-12 line addresses for the current node is displayed. Choose one.

3. Once a line address is selected, you can click **Get Value** to see how the line is currently provisioned. If you choose a line address that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

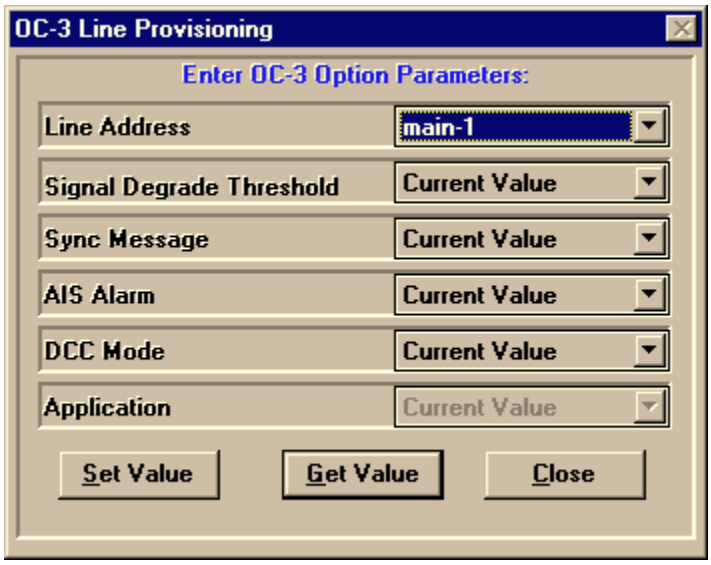
4. To update the values, use the down-arrow list at each text box and select the appropriate values for each parameter.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

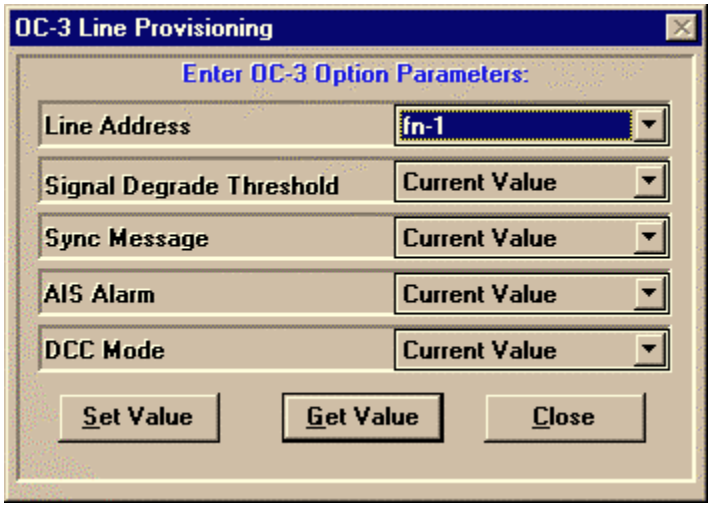
Provisioning OC-3 Line Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

Procedure

1. From the Provision pull-down menu, select **OC-3 Lines**. The following OC-3 Provisioning dialog box displays for DDM-2000 OC-3 Release 15.0:

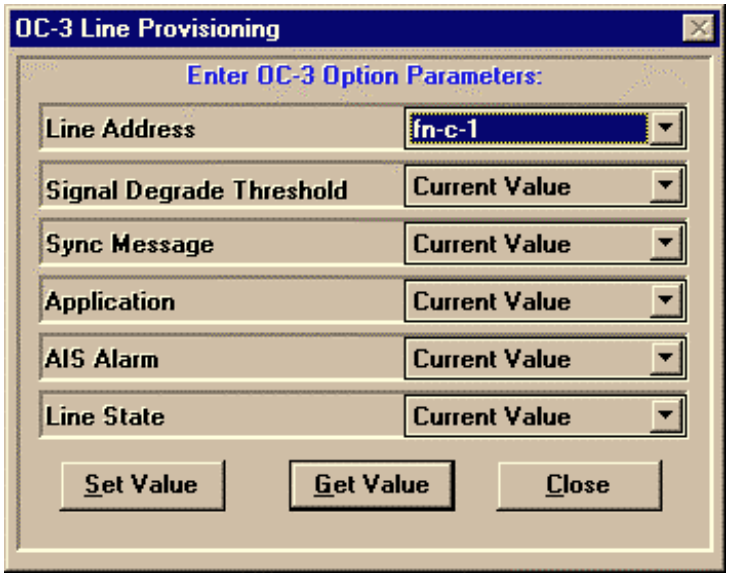


The following OC-3 provisioning dialog box displays for FiberReach Release 4.0:

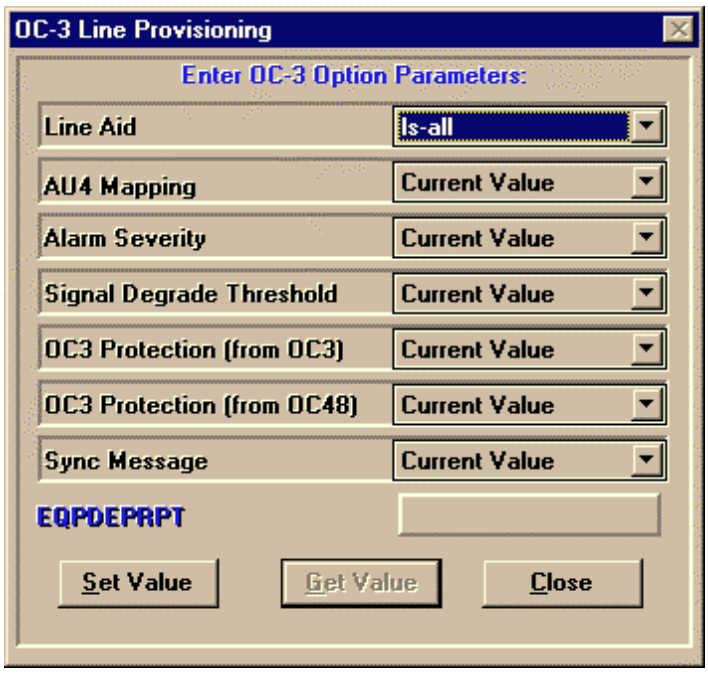


NOTE: To provision an OC-3 Line from FiberReach shelf, the shelf must be equipped with a 28G circuit pack.

The following OC-3 provisioning dialog box displays for DDM-2000 OC-12, ring releases only:



The following OC-3 Provisioning dialog box displays for FT-2000:



NOTE: For more information on how to provision OC-3 Lines from an FT-2000, see the Provisioning OC-48 Line Options
(FT-2000 OC-48) section of this chapter.

2. Choose a line address or AID by clicking on the down arrow to the right of the line address or AID box. A list of all OC-3 line addresses or AIDs for the current node is displayed. Choose one.

3. Once a line address is chosen, click **Get Value** to see how the line is currently provisioned. If a line address or AID is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

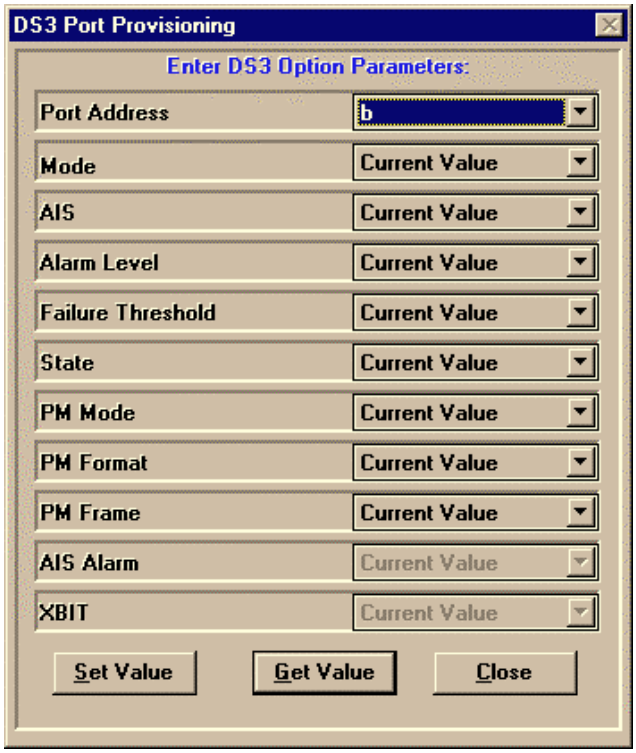
4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

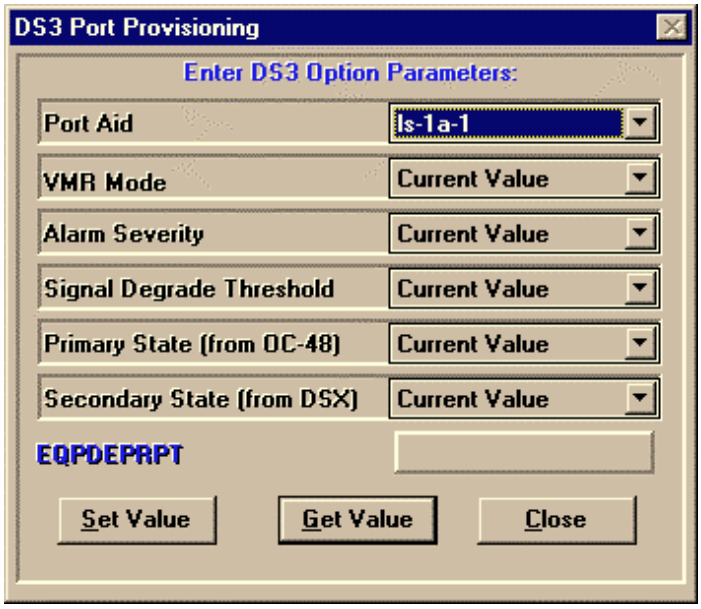
Provisioning DS3 Port Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

Procedure

1. From the Provision pull-down menu, select **DS3 Ports**. The following DS3 Provisioning dialog box appears for DDM-2000:



The following DS3 Provisioning dialog box appears for FT-2000:



NOTE: The **EQPDEPRPT** parameter value displayed in the EC1 Port Provisioning dialog box corresponds to the value selected in the FT-2000 OC-48 NE Options dialog box. Refer to Provisioning Set NE Options
(DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach) for more information.

2. Choose a port address or AID by clicking on the down arrow to the right of the port address or AID box. A list of all DS3 port addresses or AIDs for the current node is displayed. Choose one.

3. Once a port address or AID is chosen, you can click **Get Value** to see how the port is currently provisioned. If a port address or AID is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of port-provisioning parameters.

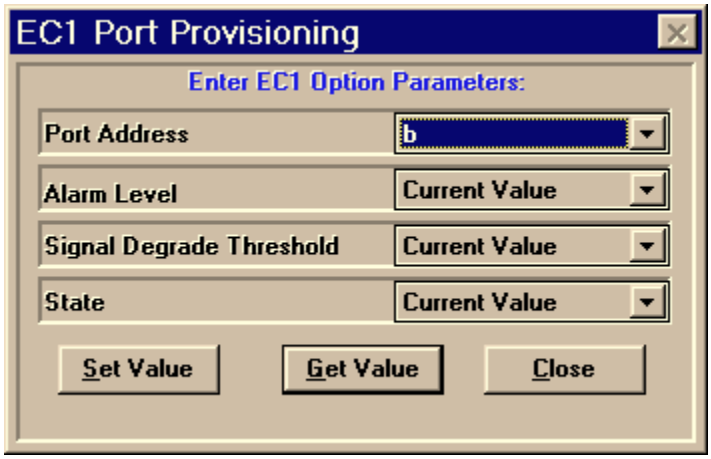
4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

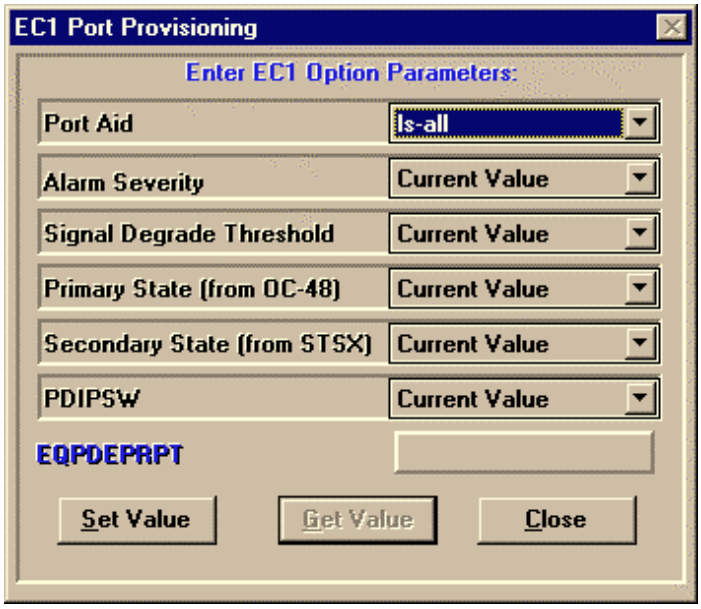
Provisioning EC1 Port Options (DDM-2000 OC-3, DDM-2000 OC-12, and FT-2000 OC-48)

Procedure

1. From the Provision pull-down menu, select **EC1 Ports**. The following dialog box displays for a DDM-2000 OC-3 or DDM-2000 OC-12 (provided that there is at least one STS-1E circuit pack in the current node):



The following dialog box appears for an FT-2000:



NOTE: The **PDIPSW** parameter dictates system reaction to a payload defect. If PDIPSW is disabled, no switching occurs in the event of a payload defect. If PDISW is enabled, switching occurs, with a minor alarm, when a payload defect is detected.

The **EQPDEPRPT** parameter value displayed in the DS3 Port Provisioning dialog box corresponds to the value selected FT-2000 OC-48 NE Options dialog box. Refer to Provisioning Set NE Options
(DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach) for more information.

2. Choose a port address or AID by clicking on the down arrow to the right of the port address or AID box. A list of all EC-1 port addresses or AIDs for the current node is displayed. Choose one.

3. Once a port address or AID is chosen, click **Get Value** to see how the port is currently provisioned. If a port address or AID is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of port-provisioning parameters.

4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

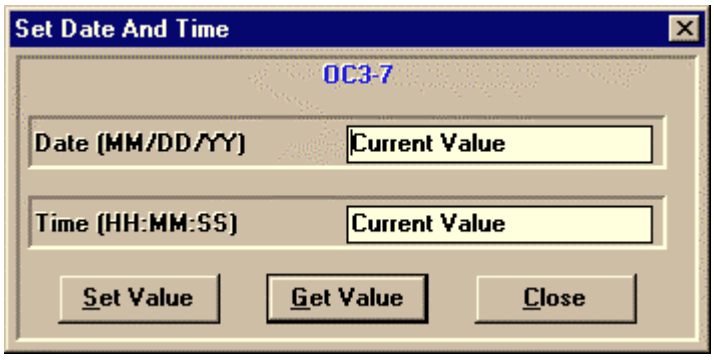
Provisioning Set Date Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

Purpose

To display and/or modify the current date and time of the NE.

Procedure

1. From the Provision pull-down menu, select **Set Date**. The following dialog box displays:



2. Click **Get Value** to see the current settings.

3. To modify the settings, type over them with the desired values and click **Set Value**.

Provisioning Set NE Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

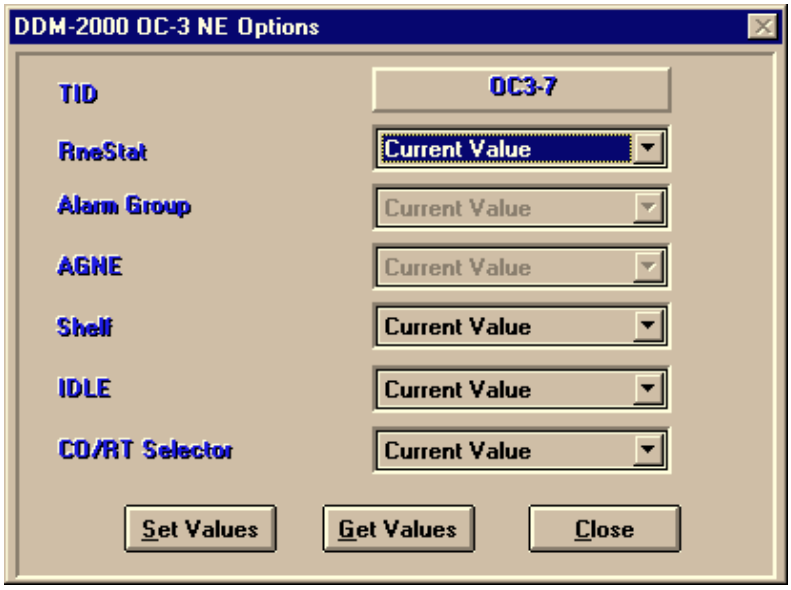
Purpose

To set options for the current NE, depending on the NE type.

Procedure

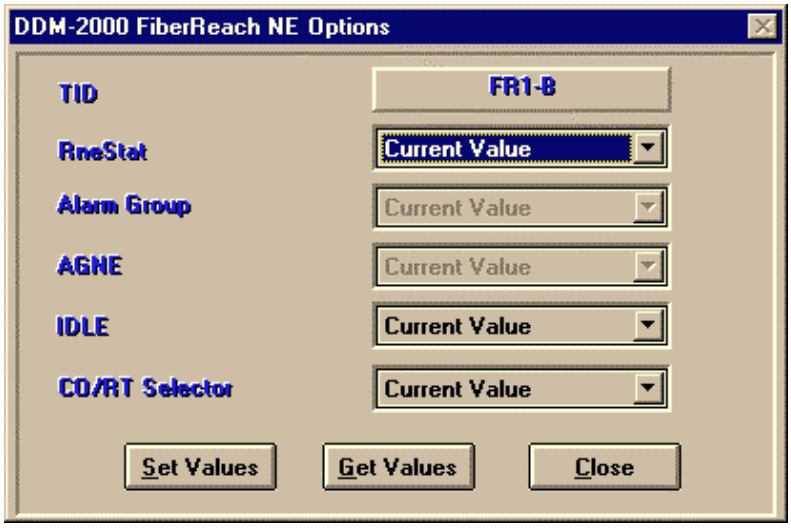
1. From the Provision pull-down menu, select **Set NE**. One of the following screens appears, depending on the NE type.

   A screen similar to the following appears for DDM-2000 OC-3:



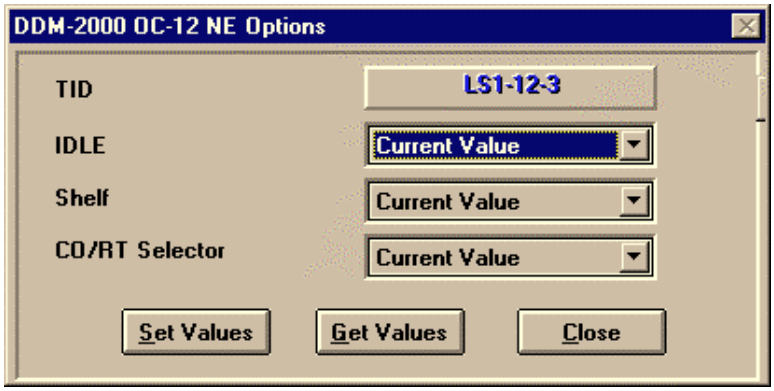
NOTE: Alarm Group and AGNE are only available when RneStat is set to "enabled."

A screen similar to the following appears for FiberReach:

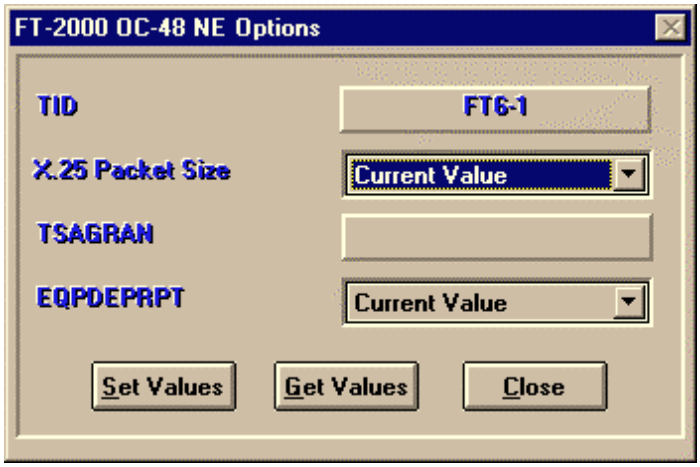


NOTE: Alarm Group and AGNE are only available when RneStat is set to "enabled."

A screen similar to the following appears for DDM-2000 OC-12:



A screen similar to the following appears for FT-2000:



NOTE: For FT-2000, you use the **EQPDEPRPT** parameter to set the Equipage Dependent Report. Set this parameter to "enable" if you want a report on all pre-provisioning information. Set EQPDEPRPT to "disable" for information based on equipage. CPro-2000 displays the selected status in the provision dialog boxes of: DS3 Port, EC1 Port, OC-3 Line, and OC-12 Line.

2. On the screen that appears for your NE type, click **Get Values** to display how the node is currently configured.

3. Using the down-arrow lists, select the options appropriate for the node you are configuring.

4. Click **Set Values** to activate the new NE options.

CAUTION: Clicking on **Set Values** after changing the values of certain parameters will cause the NE to reset. This temporarily halts the communication between CPro-2000 and the NE. CPro-2000 displays a message box describing the situation. When the reset is complete, click **OK** in the dialog box. CPro-2000 then attempts to establish communication with the NE.

If you are logged off the node, try to reconnect to the node through the AUI. If you are unable to reconnect through the AUI, close the subnetwork from the GUI, select New Subnetwork from the Access Menu, then enter the UserID and Password in the Login window.

5. Click **Close** at any time to end the session. If you close the session before clicking on **Set Value,** your changes will not be saved.

Provisioning Update NE Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

Purpose

Updates the system database on the NE to reflect the existing hardware configuration and incoming signals. This menu item is not available for all NEs.

Procedure

From the Provision pull-down menu, select **Update NE** and the system database is updated.

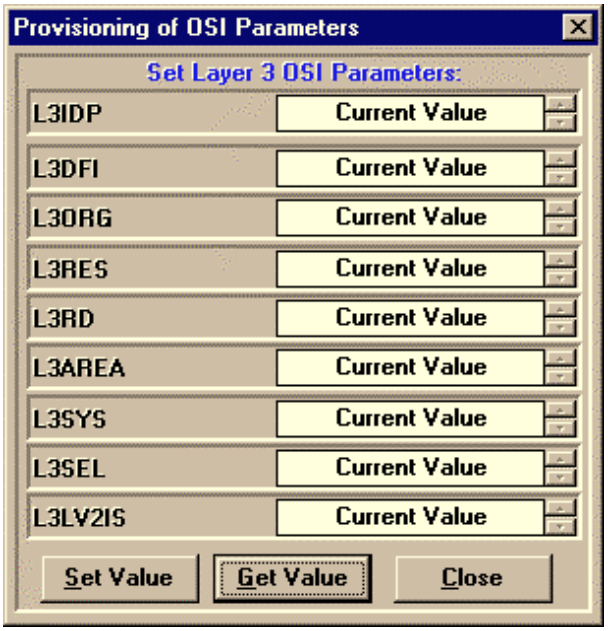
Provisioning OSI Parameters (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach)

Procedure

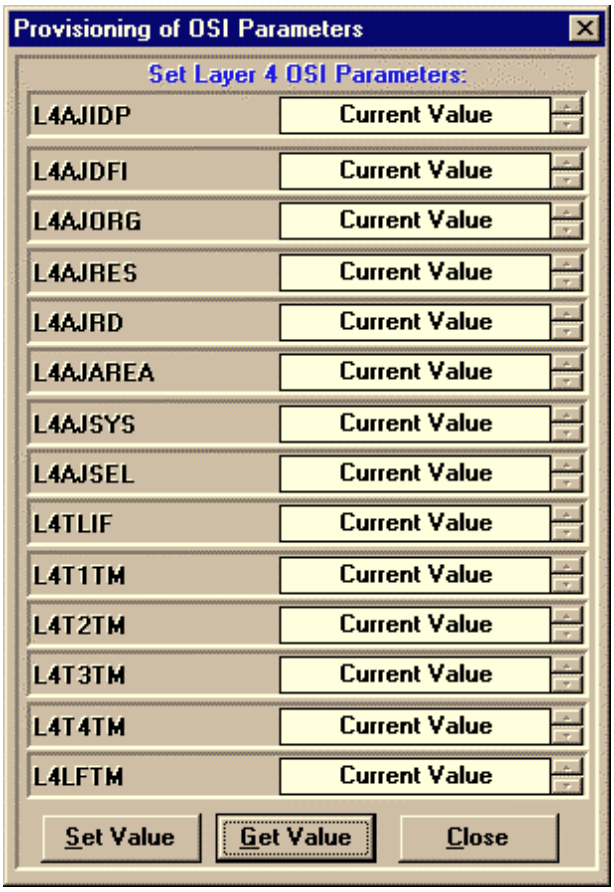
1. From the Provision pull-down menu, select **OSI Stack** and then select **Layer 3** or **Layer 4**.

CAUTION: Changing some Layer 3 parameters such as "L3Area" affects DCC connectivity. If connectivity is interrupted, check the Software Release Description or the ReadMe file for information on how to reestablish connection.

The following dialog box displays for Layer 3:



The following dialog box displays for Layer 4:



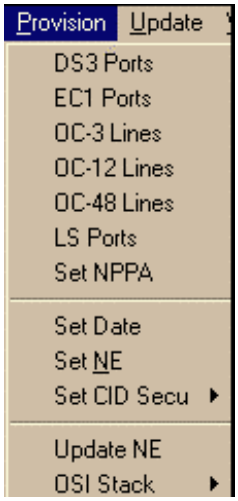
2. Click **Get Value** to see the current settings.
3. To modify the settings, type over them with the desired values and click **Set Value**.

NOTE:

Some parameters are read-only and cannot be changed. See the appropriate *Lucent Technologies User/Service Manual* for further details and acceptable values.

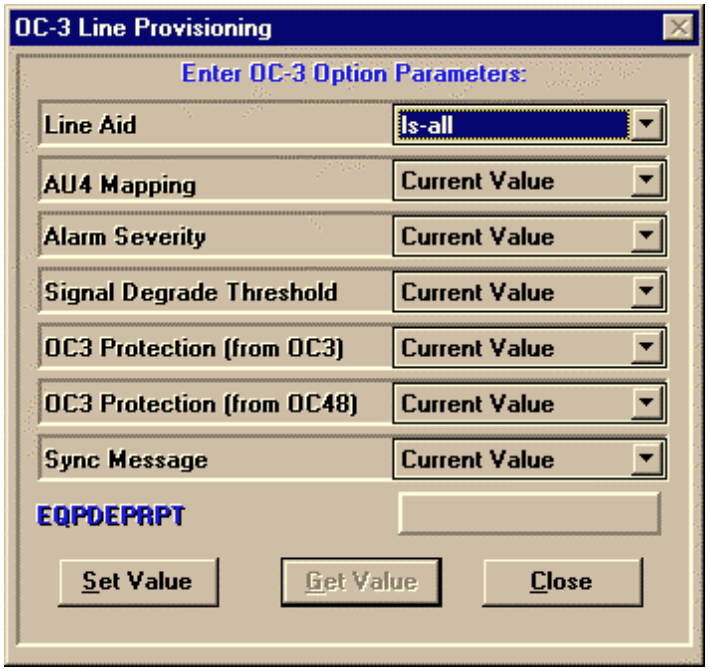
Provisioning OC-3 Line Options (For FT-2000 OC-48 Only)

The FT-2000 Provision Menu



Procedure

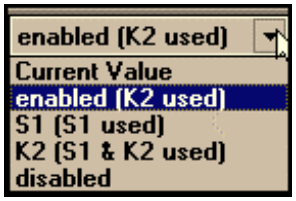
1. From the Provision pull-down menu, select **OC-3 Lines**. The OC-3 Line Provision dialog box appears.



The **EQPDEPRPT** parameter value displayed in the OC-3 Line Provisioning dialog box corresponds to the value selected in the FT-2000 OC-48 NE Options dialog box. Refer to Provisioning Set NE Options (DDM-2000 OC-3, DDM-2000 OC-12, FT-2000 OC-48, and FiberReach) for more information.

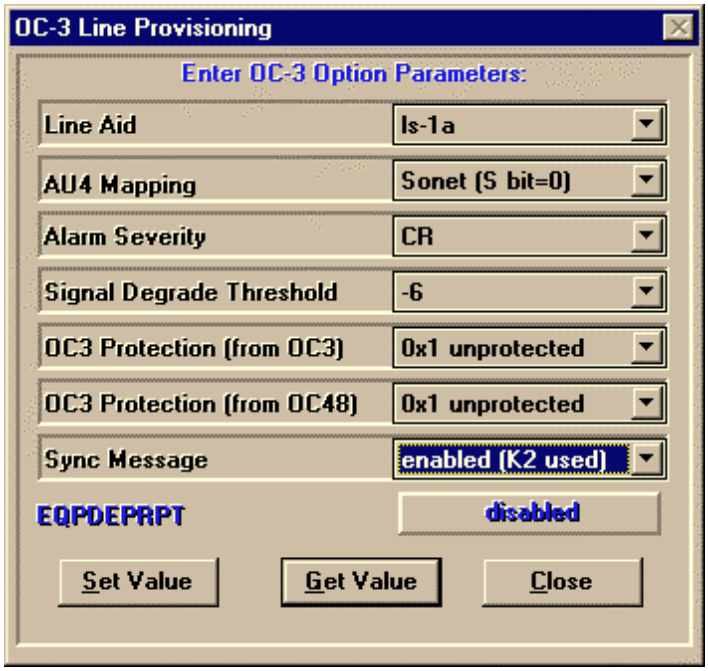
2. Choose a low speed slot by clicking on the down arrow to the right of the **LINE AID** field. A list of all the OC-3 Line AIDs for the current node is displayed. Choose one. **Get Value** is enabled.

3. Click the **Sync Message** down arrow for a listing of all available sync message parameters.



NOTE: About S1 and K2 – although these two parameters are available for provisioning OC-3 Lines from an FT-2000 OC-48, make sure that you are consistent with your selection throughout the **entire** network. For example, if you select S1, S1 must be used throughout that network.

4. Click Get Value to see how the line is currently provisioned. Note that choosing the default Line AID – Is-all – disables the Get Value button, as it applies to more than one set of line-provisioning parameters.



Notice that the **EQPDEPRT** parameter is listed as disabled. This parameter enables or disables the Equipage Dependent Reports and can be set using the Set NE command from the Provision Menu.

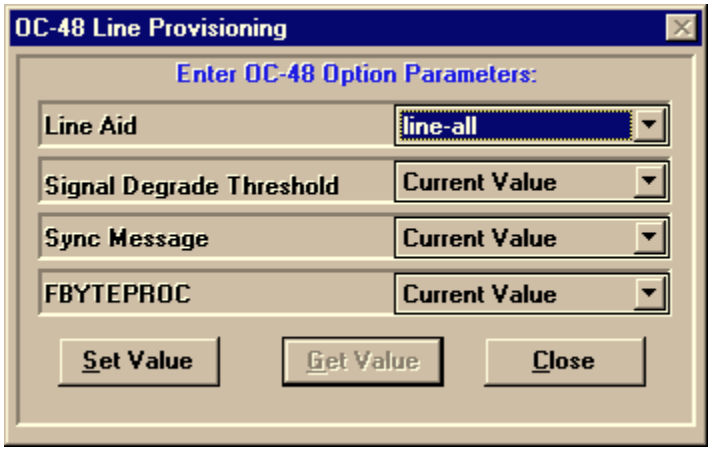
5. To update the values, use the down-arrow list at each text box and select the appropriate values for each parameter.

6. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning OC-48 Line Options (FT-2000 OC-48)

Procedure

1. From the Provision pull-down menu, select **OC-48 Lines**. The following Line Provisioning dialog box appears.



2. Choose a Line AID by clicking on the down arrow to the right of the Line AID box. A list of all the OC-48 line AIDs for the current node is displayed. Choose one.

3. Once a line address is selected, you can click **Get Value** to see how the line is currently provisioned. If a line address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

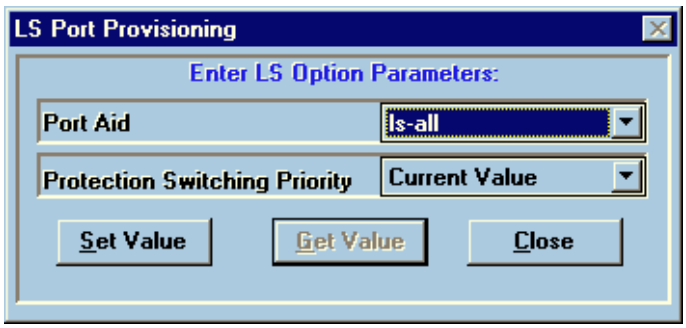
4. To update the values, use the down-arrow list at each text box and select the appropriate values for each parameter.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning LS Port Options (FT-2000 OC-48)

Procedure

1. From the Provision pull-down menu, select **LS Ports**. The following dialog box displays (provided that there is at least one low-speed circuit pack in the current node):



2. Choose a port AID by clicking on the down arrow to the right of the port AID box. A list of all port AIDs for the current node is displayed. Choose one.

3. Once a port AID is chosen, click **Get Value** to see how the port is currently provisioned. If a port AID is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of port-provisioning parameters.

4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

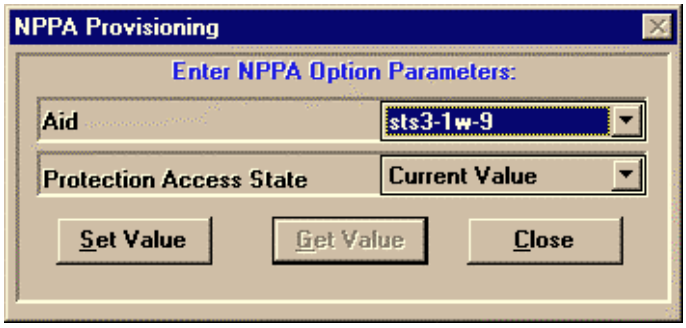
Provisioning Set NPPA Options (FT-2000 OC-48)

Purpose

To display and/or modify the current value for NPPA. The NPPA can be applied to either direction and will affect the whole ring.

Procedure

1. From the Provision pull-down menu, select **Set NPPA**. The following dialog box displays:



NOTE: If an STS-3 AID is selected, the Get Value button is disabled. The Get Value button is enabled only when an STS-1 address is selected.

2. Choose the AID by clicking on the down arrow to the right of the AID box. A list of all the AIDs for the current node is displayed. Choose one.

3. Once an AID is selected, you can click **Get Value** to see how the AID is currently provisioned. If a line address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

4. To update the value, use the down-arrow list and select the appropriate value.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning Set CID Secu Options (FT-2000 OC-48)

Purpose

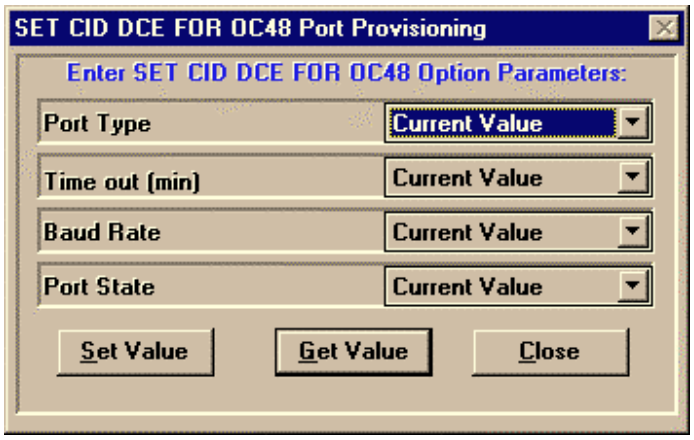
To display and/or modify the settings for the current port or to change the DTE port. Also to change the protocol back to CIT.

CAUTION: Improper setting of this parameter will interrupt communications.

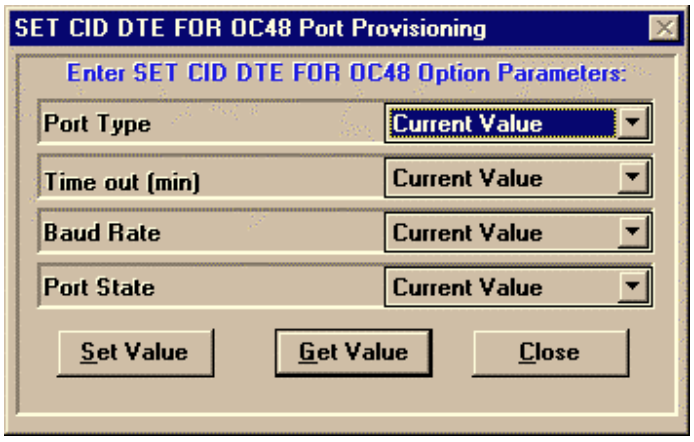
Procedure

1. From the Provision pull-down menu, select **Set CID Secu** and then select **DCE** or **DTE**.

   The following dialog box displays for DCE:



   The following dialog box displays for DTE:



2. Click **Get Value** to see the current settings.
3. To update the value, use the down-arrow list and select the appropriate value.
4. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

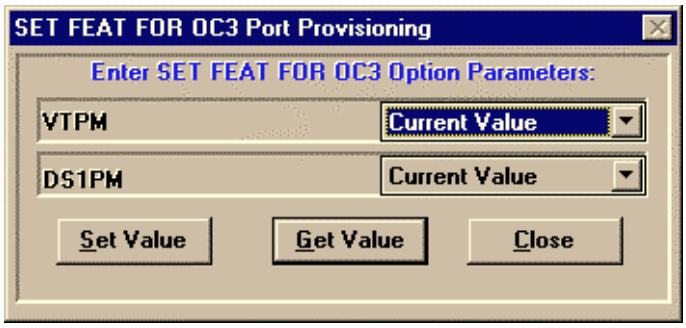
Provisioning Set Feat Options (DDM-2000 OC-3 and DDM-2000 OC-12)

Purpose

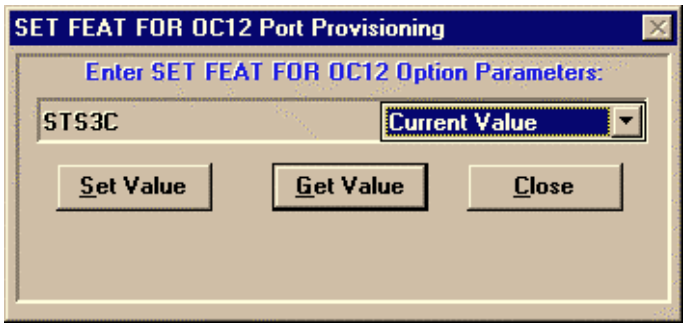
To display and/or modify the current settings for OC-3 VTPM, OC-3 DS1PM, and OC-12 STS-3C parameters.

Procedure

1. From the Provision pull-down menu, select **Set Feat**. The following dialog box displays for OC-3:



The following dialog box displays for OC-12 STS-3C:

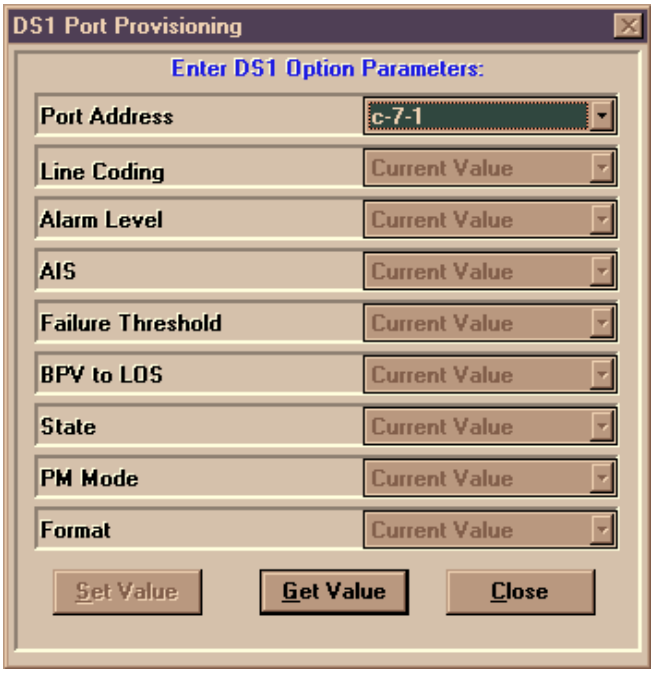


2. Click **Get Value** to see the current settings.
3. To update the value, use the down-arrow list and select the appropriate value.
4. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning DS1 Ports (DDM-2000 OC-3)

Procedure

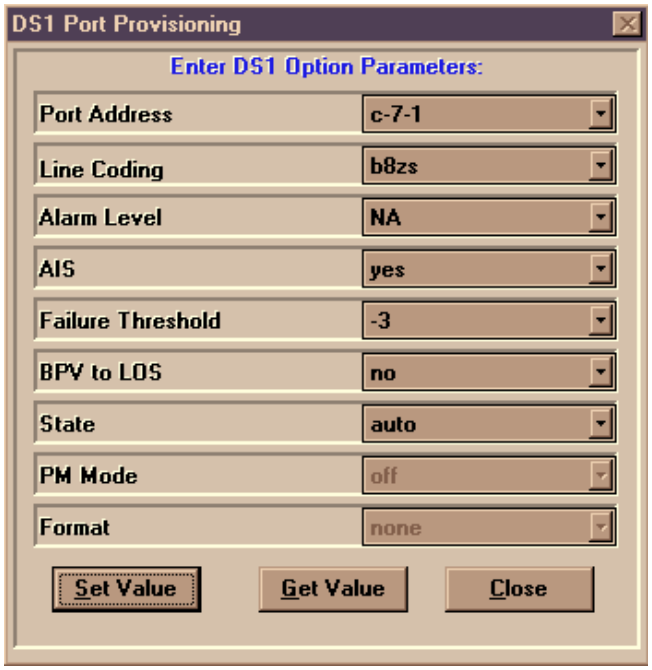
1. From the Provision pull-down menu, select **DS1 Ports**. The following dialog box displays:



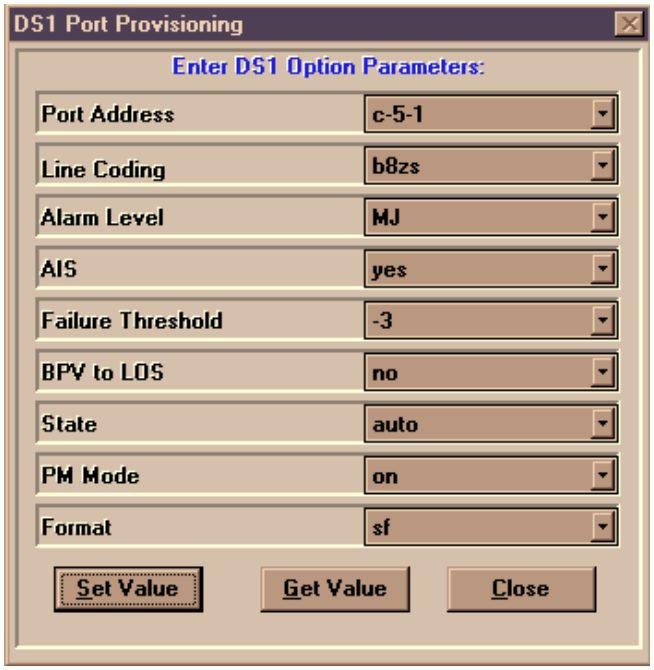
2. Choose a port address by clicking on the down arrow to the right of the port address box. A list of all DS1 port addresses for the current node is displayed. Choose one.

3. Once a port address is chosen, click **Get Value** to see how the port is currently provisioned. If a port address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of port-provisioning parameters.

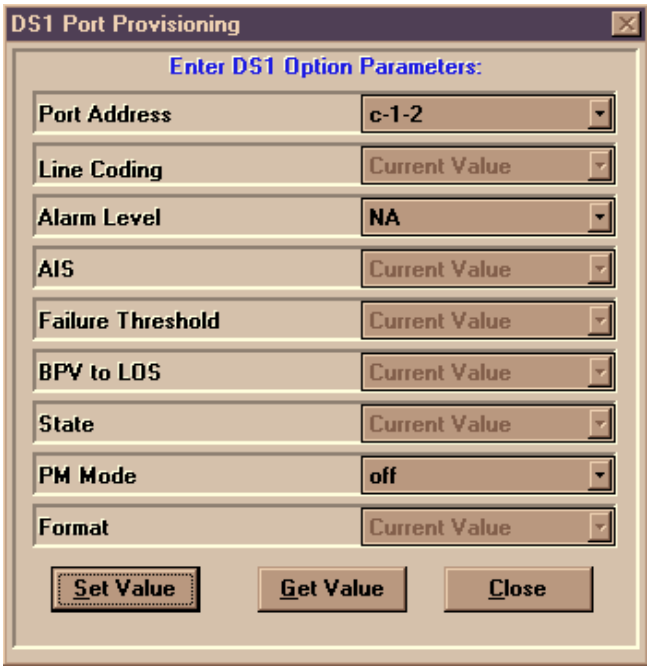
For a DS1 circuit pack, the following screen appears:



For a DS1 circuit pack with performance monitoring or a T1EXT pack, the following screen appears:



For IMA LAN packs, the following screen appears:



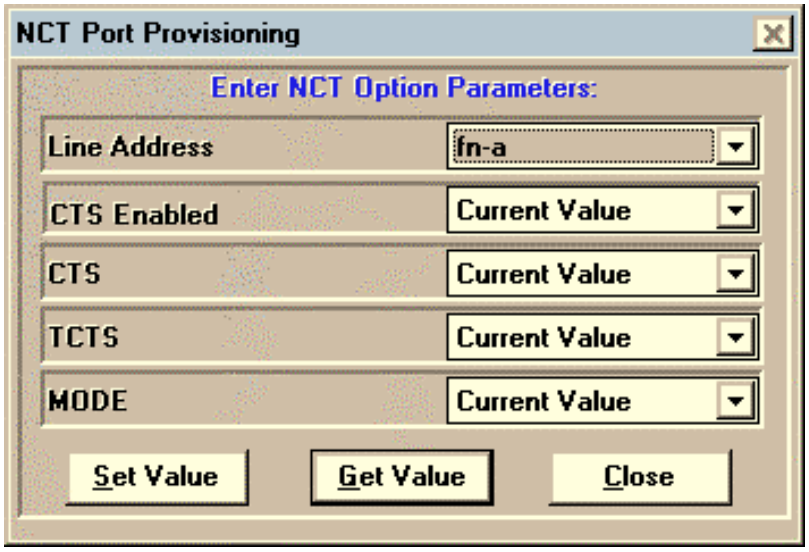
4. To update values, use the down-arrow lists at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning NCT/2 Line Options (DDM-2000 OC-3)

Procedure

1. From the Provision pull-down menu, select **NCT/2 Lines**. The following dialog box displays:



2. Choose a line address by clicking on the down arrow to the right of the line address box. A list of all NCT/2 line addresses for the current node is displayed. Choose one.

3. Once a line address is chosen, click **Get Value** to see how the line is currently provisioned. If a line address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

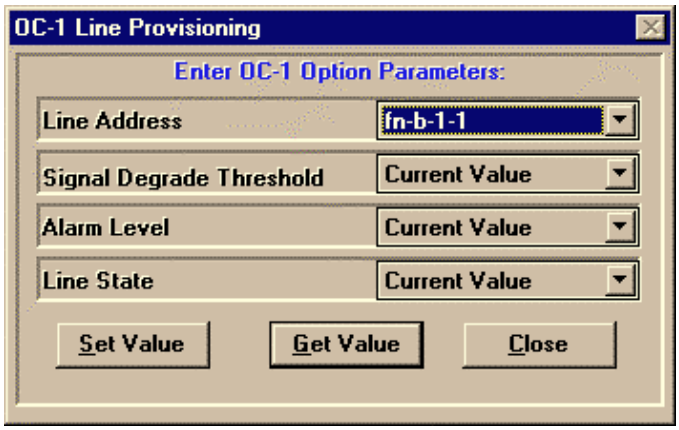
4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

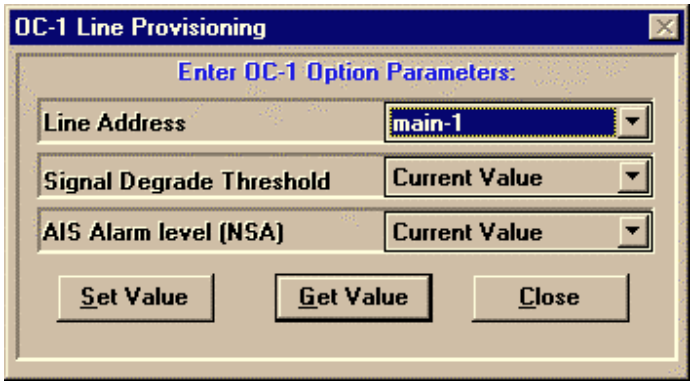
Provisioning OC-1 Line Options (DDM-2000 OC-3 and FiberReach)

Procedure

1. From the Provision pull-down menu, select **OC-1 Lines**. The following OC-1 Provisioning dialog box displays for DDM-2000:



The following OC-1 Line provisioning dialog box displays for FiberReach:



2. Choose a line address by clicking on the down-arrow to the right of the line address box. A list of all OC-1 line addresses for the current node is displayed. Choose one.

3. Once a line address is chosen, click **Get Value** to see how the line is currently provisioned. If a line address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of line-provisioning parameters.

4. To update values, use the down-arrow list at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

Provisioning Set Lan (DDM-2000 OC-3 Release 15.0

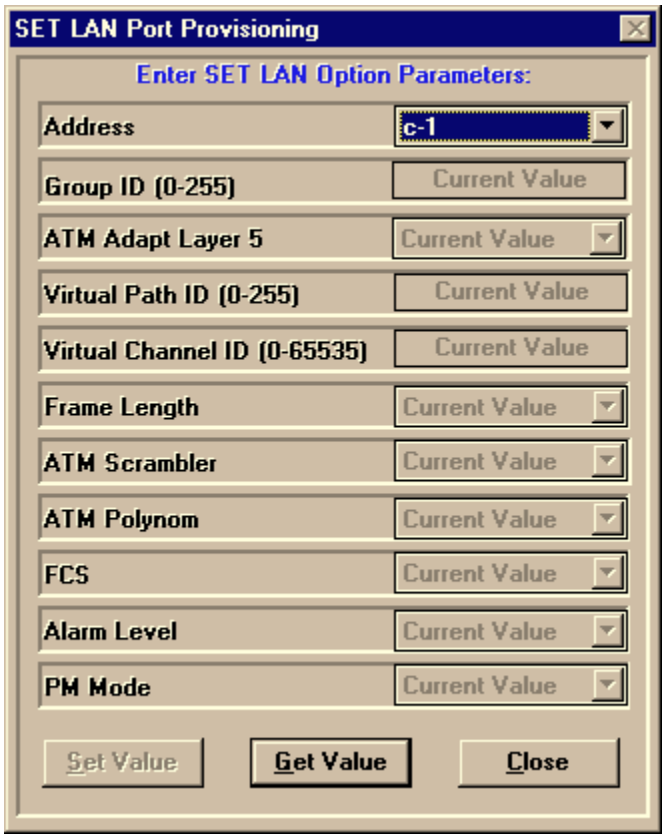
Purpose

To provide LAN (Local Area Network) connectivity between networks in different locations.

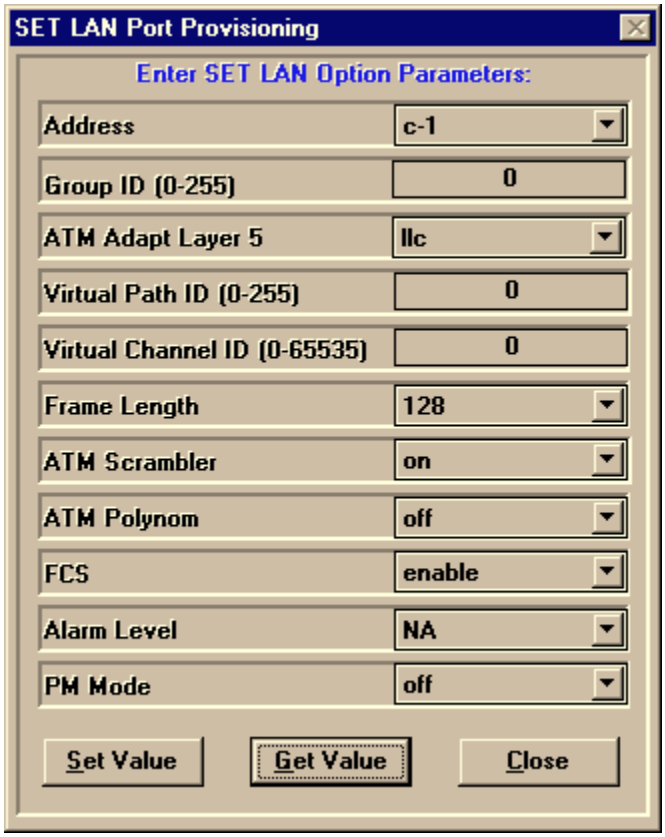
Procedure

1. From the Provision pull-down menu, select **Set LAN**.

   The following screen appears for DDM-2000 OC-3 Release 15.0:



2. Click **Get Value** to display how the node is currently configured.



3. Use the down-arrow lists to select the options appropriate for the node you are configuring.

NOTES:

- The LAN Address “all” is not vailid in TL1 mode.
- If cross connects are present in the network, values for Group ID and Length are not changeable.

4. Click **Set Value** to activate the new security options.

5. Click **Close** at any time to end the session. If you close the session before clicking on **Set Value,** your changes will not be saved.

Provisioning Set Security (DDM-2000 OC-3 Release 15.0 and FiberReach Release 4.0)

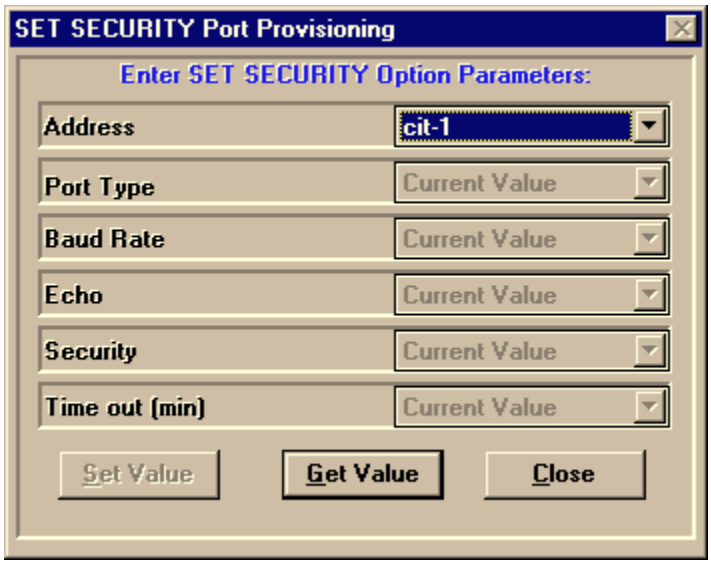
Purpose

To conveniently provision port security and to configure the front and rear CIT from CIT (MML) to TL1 and back again from within a CPro session. From this window, users can to any of the following change the port configuration from MML mode to TL1 and back to TL1 without exiting a CPro-2000 session.

Procedure

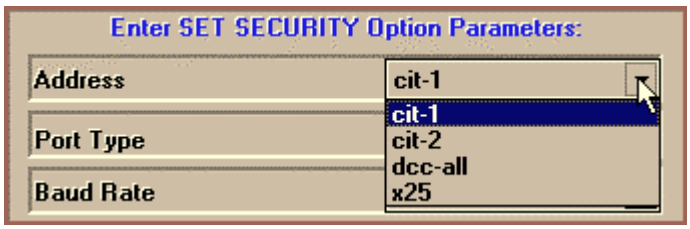
1. From the Provision pull-down menu, select **Set Security**.

   The following screen appears for DDM-2000 OC-3 Release 15.0 and FiberReach Release 4.0:



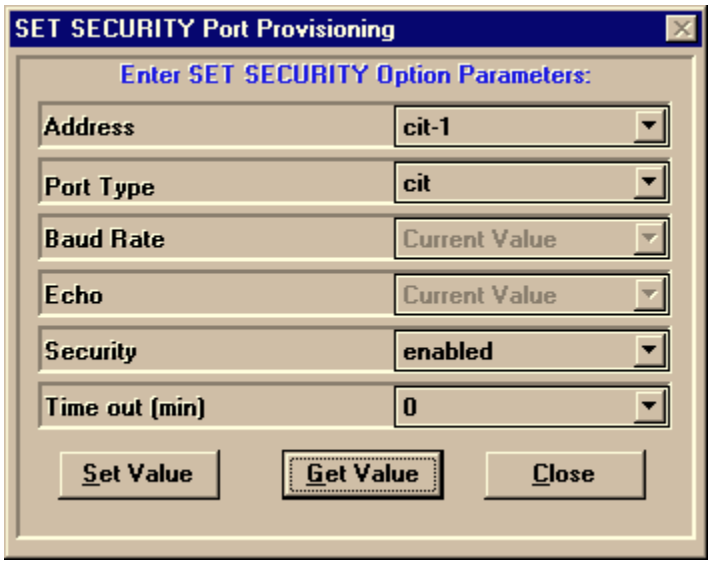
NOTE: Although the Set Security screen for DDM-OC3 R15.0 and FiberReach R4.0 appear identical, the Address options differ as shown below:

Address options for DDM-OC3 R15.0:



Address options for FiberReach R4.0:

2. Click **Get Value** to display how the node is currently configured.

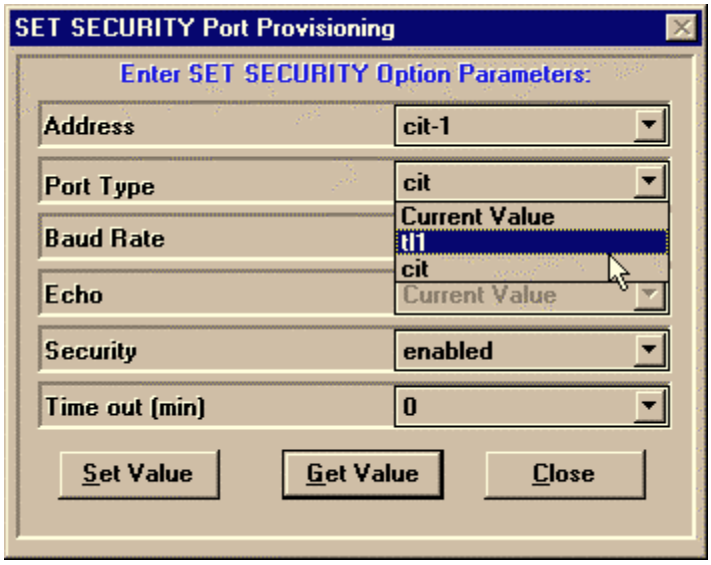


NOTES:

- Available parameters depend on settings for Address and Port Type. For example, The Baud Rate and Echo parameters are unavailable when the Port Type is set to CIT. The Security parameter is also unavailable when the Port Type is set to TL1.
- A Port Type of CIT indicates MML.
- Only one port can be configured for TL1 at any given time.
- For FiberReach Release 4.0, the Address value "dcc-all" is not a valid option for TL1.

3. Use the down-arrow lists to select the options appropriate for the node you are configuring.

4. To change the interface language, click the **Port Type** down arrow then select the desired mode.



5. Click **Set Value** to activate the new security options.

CAUTION: Clicking on **Set Values** after changing the Port Type parameter causes the NE to reset. This temporarily halts the communication between CPro-2000 and the NE. CPro-2000 displays a series of message boxes describing the situation. Carefully read and follow the instructions in each message box. When the reset complete, click **OK** in the dialog box. CPro-2000 will attempt to re-establish communication with the NE at this point.

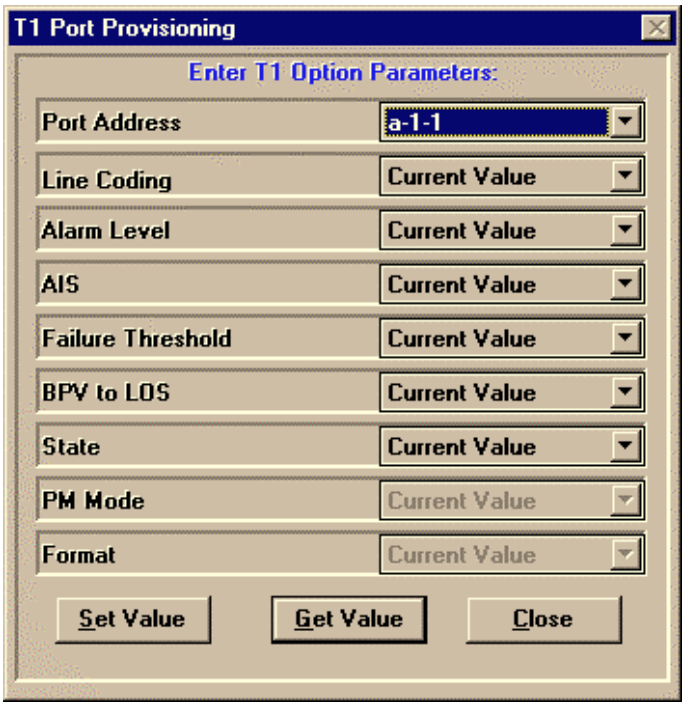
If you are logged out of the node, reconnect to the node through the AUI. If you are unable to reconnect through the AUI, close the subnetwork from the GUI, select New Subnetwork from the Access Menu, then enter the UserID and Password in the Login window.

6. Click **Close** at any time to end the session. If you close the session before clicking on **Set Value,** your changes will not be saved.

Provisioning T1 Ports (FiberReach)

Procedure

1. From the Provision Pull-down menu, select T1 Ports. The following dialog box displays



2. Choose a port address by clicking on the down arrow to the right of the port address box. A list of all T1 port addresses for the current node is displayed. Choose one.

3. Once a port address is chosen, click **Get Value** to see how the port is currently provisioned. If a port address is chosen that contains the value "all," then the Get Value button is not available because it applies to more than one set of port-provisioning parameters.

4. To update values, use the down-arrow lists at each text box and choose the appropriate values for each option.

5. Click **Set Value** to activate the new provisioning options. You can click **Close** at any time to end the provisioning session. If you close the session before clicking on **Set Value**, no changes will be made.

The Update Menu

Overview

From a Network Element View, you can update the following information in CPro-2000 using the Update Menu:

- Inventory
- X-Conn
- Alarm
- Active User

From the Subnetwork View, you can update the following information in CPro-2000 using the Update Menu:

- Update Map
- Update Inventory

These menu items are detailed in the following procedures.

Inventory (NE View)

Purpose

To retrieve the NE equipage and update the Network Element View accordingly. CPro-2000 maintains all information relating to the Update Inventory command in a temporary data location. When the Update Inventory command is completed successfully, the Network Element View is redisplayed.

This menu item is only available from a Network Element View.

Procedure

1. From the Update pull-down menu, select **Inventory**. The current NE's inventory is updated and the Network Element View is redisplayed.

X-Conn (NE View)

Purpose

To retrieve the NE cross connections and update a Network Element View by displaying the current cross connections. CPro-2000 maintains all information relating to the Update X-Conn command in a temporary data location. When the Update X-Conn command is completed successfully, the information is moved to the data cache and the Network Element View is redisplayed.

This menu item is only available from a Network Element View.

Procedure

1. From the Update pull-down menu, select **X-Conn**. If cross connections exist in the current NE, the NE View is updated to show the current cross connections.

Alarm (NE View only)

Purpose

To update and display the alarm state for the current NE.

Procedure

1. From the Update pull-down menu, select **Alarm**. The current NE's alarm state is updated, thereby redisplaying the alarm status in the lower, left-hand corner of the GUI window.

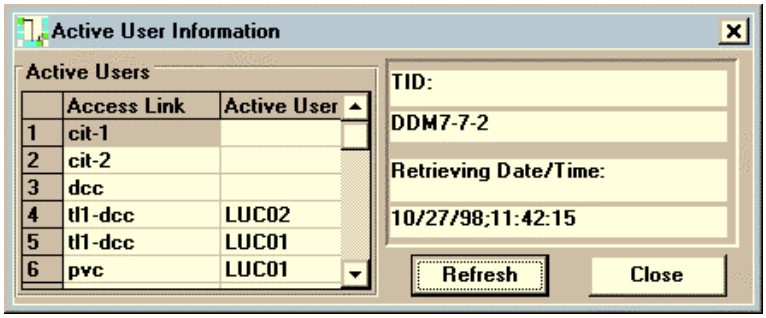
Active User

Purpose

To retrieve and display information about users who are logged into an NE.

Procedure

1. From the Update pull-down menu, select **Active User**. The following form appears.



2. Click **Refresh** to update active user information. You can click **Close** at any time to close the form.

Map (Subnetwork View)

Purpose

To update the Subnetwork View by retrieving the topology from all the nodes in the selected partition. This menu item is only available from the Subnetwork View.

Procedure

1. From the Update pull-down menu, select **Update Map**. The Subnetwork View is updated with the topology of the current partition.

Inventory (Subnetwork View)

Purpose

To retrieve the equipage, cross connections, and partition topology from all the nodes in the selected partition. When the Update Inventory command is completed successfully, the Subnetwork View is redisplayed.

This menu item is only available from the Subnetwork View.

Procedure

1. From the Update pull-down menu, select **Update Inventory**. See the "Partitioning" section in the **CPro-2000 Startup** chapter for specific details on a Partition Inventory and its contents.

The Window Menu

Overview

The Window Menu allows the user to have a more flexible environment in which to use CPro-2000. This menu gives the user the capability of changing how the information is presented on the screen. The Window Menu commands include the following features:

- Cascade
- Tile-Horizontal
- Tile-Vertical
- Arrange Icons
- Window Toggle

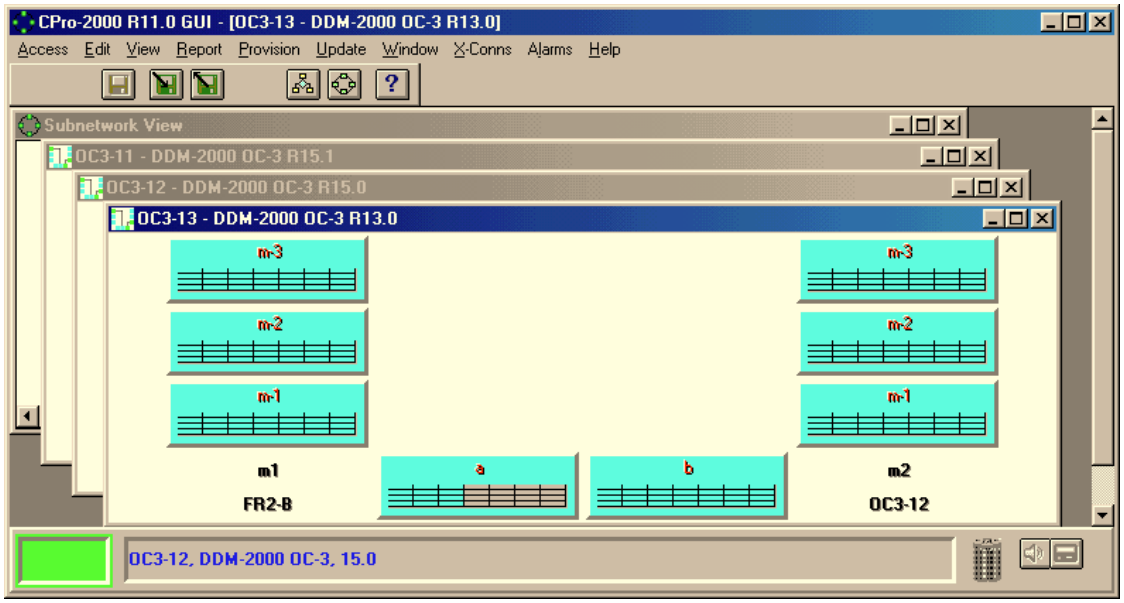
Cascade

Purpose

To display the open windows on the CPro-2000 GUI in a cascade format.

Procedure

1. From the Window pull-down menu, select **Cascade**. The open windows are displayed as shown in the following screen:



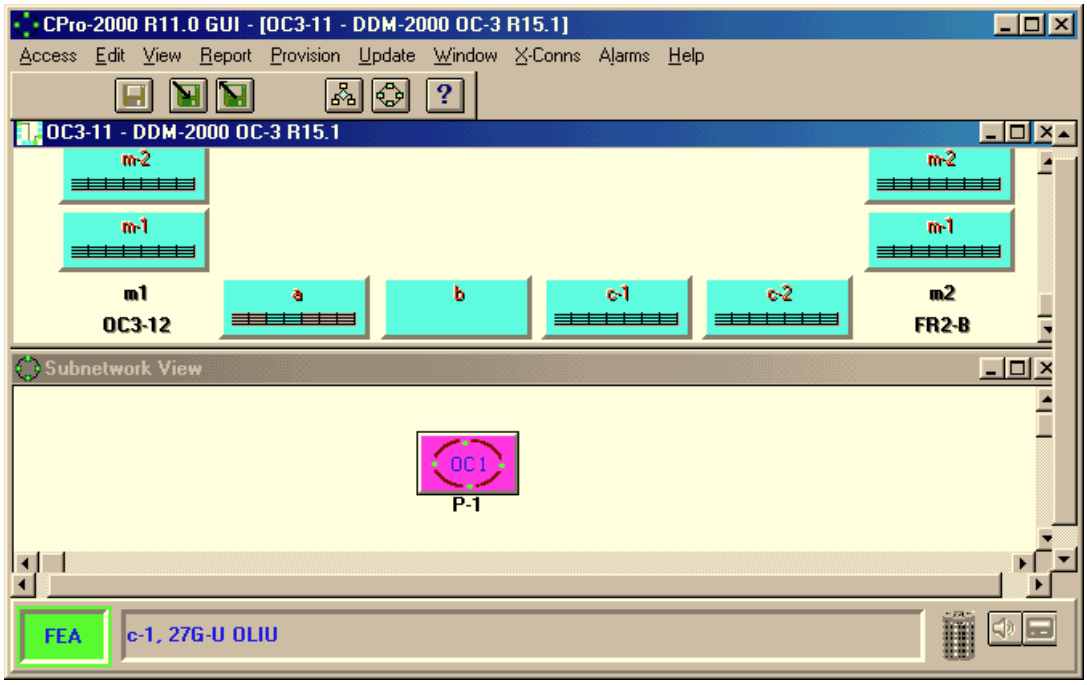
Tile-Horizontal

Purpose

To display the open windows on the CPro-2000 GUI in a horizontal format.

Procedure

1. From the Window pull-down menu, select **Tile-Horizontal**. The open windows are displayed as shown in the following screen:



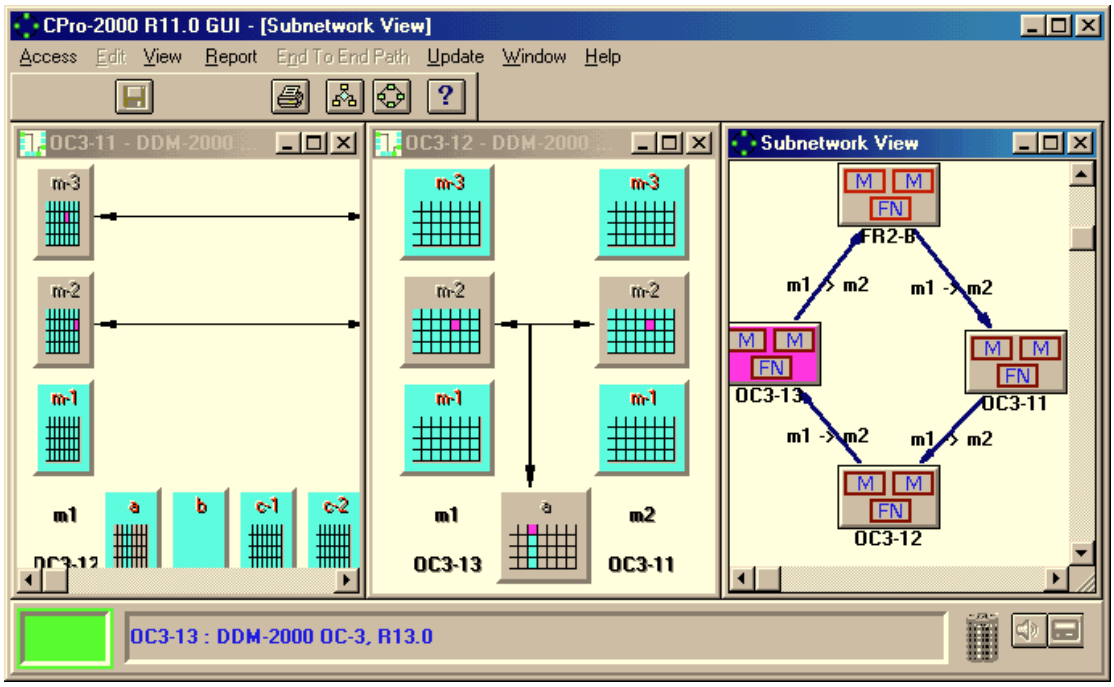
Tile-Vertical

Purpose

To display the open windows on the CPro-2000 GUI in a vertical format.

Procedure

1. From the Window pull-down menu, select **Tile-Vertical**. The open windows are displayed as shown in the following screen:



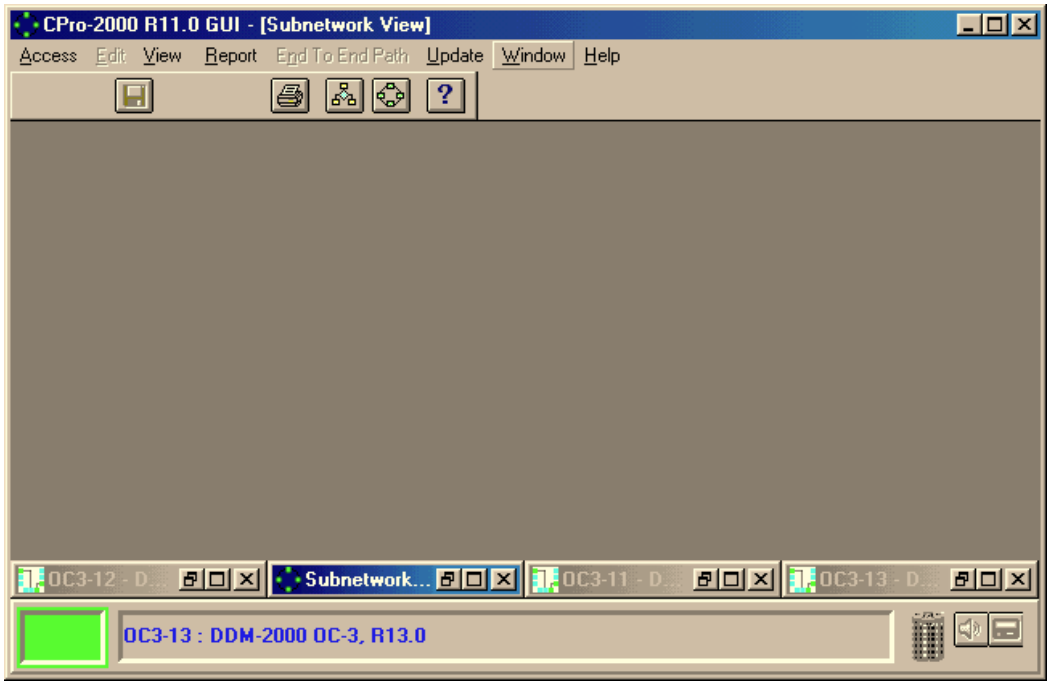
Arrange Icons

Purpose

To arrange all iconified windows in an orderly fashion in the CPro-2000 GUI window.

Procedure

1. From the Window pull-down menu, select **Arrange Icons**. All iconified windows, including both Network Element Views and the Subnetwork View, are arranged in an orderly fashion as shown in the following screen:



Window Toggle

Purpose

This feature allows the user to toggle easily between any open and iconified windows in the CPro-2000 GUI.

Procedure

1. At the bottom of the Window pull-down menu, the names of any open or iconified windows are displayed. Click on your selection. If the window is open, it appears in front of any other windows. If the window is iconified, it is opened and displayed in front of any other open windows.

The End-to-End Path Menu

Overview

The End-to-End Path Menu is available when the cursor is pointing to an unexpanded partition in a Subnetwork View and you press the right mouse button, or from the menu bar at the top of the CPro-2000 GUI.

NOTE: End-to-end paths cannot be created in linear configurations or rings containing an unsupported NE.

There are many different environments in which end-to-end paths are commonly created. In the simplest situation, the traffic originates and terminates within a ring. Frequently, however, traffic is routed over a complex multi-ring environment.

CPro-2000 can be used to create and validate several types of end-to-end paths, as well as modify the LocA and/or LocZ values in an existing STS-3 or STS-1 path in an FT-2000 OC-48. CPro-2000 supports the following path types:

- two-endpoint end-to-end path, including ring transport service, across a single ring
- video service at an STS-3C signal rate in a single ring (DDM-2000 OC-12 only)
- locked path at a VT1.5 signal rate in a single ring (DDM-2000 OC-3 and FiberReach only)

In creating end-to-end VT cross connects, CPro-2000 makes cross connects at every node in the DDM-2000 ring. At the two add/drop nodes, CPro-2000 always makes a VT cross connect. However, at the through nodes, CPro-2000 can make either an STS or VT through cross connects depending on the types of optical packs in the main.

Equipping the main slots of a DDM-2000 OC-3 or a FiberReach shelf with 24G type OLIUs allows the shelf to transmit at an OC-12 rate. Instead of VT cross connects, CPro-2000 makes through cross connects as STS-1. Note, however, that the 24G type OLIU is restricted to making VT cross connects in 3 of the 12 STS's, allowing the ring to use more of the limited VT bandwidth for VT drops.

Equipping the main slots of a DDM-2000 OC-3 or a FiberReach shelf with 29G type OLIUs allows the shelf transmit at an OC-12 rate. CPro-2000 supports full STS-3C, STS-1, and VT cross connects with this shelf configuration. Note, however, that STS-3C cross connections can be created only if the Function Unit C (fn-c) is equipped with a 22-type OLIU. Unlike 24G OLIUs, the NE equipped with 29G OLIUs can make through cross connections with VT granularity.

End-to-end paths can be established only after taking a Partition Inventory. However, with an FT-2000 OC-48, the user may enter end-to-end paths between nodes that have open Network Element Views and have had individual NE inventories from the Update Menu.

To create an end-to-end path within a subnetwork, you are prompted through a simple sequence of on-line forms. Once the path addresses have been chosen, CPro-2000 creates the cross connections in the NEs to form the end-to-end path.

Users creating end-to-end paths with CPro-2000 should be familiar with the procedures outlined in the user service manuals for the NE equipment. The procedures in this manual are not a substitute for the user's skill and understanding of the process involved with creating paths in NEs. In fact, neither this manual nor CPro-2000 provide the test procedures necessary to verify the proper functioning of a newly created path. You must implement the test procedures from the appropriate user service manuals.

NOTE: No changes are made to any NE until the user has chosen **OK**. Therefore, the user can cancel the operation or clear the current information at any time prior to clicking the **OK** button.

Two-Endpoint End-to-End Path Across a Single Ring

Setting up a two-endpoint end-to-end path around a single ring using CPro-2000 is accomplished by accessing the End-to-End Path Menu while in the Subnetwork View.

NOTE: The procedures in this section also apply to paths created in open rings, which may only contain one endpoint.

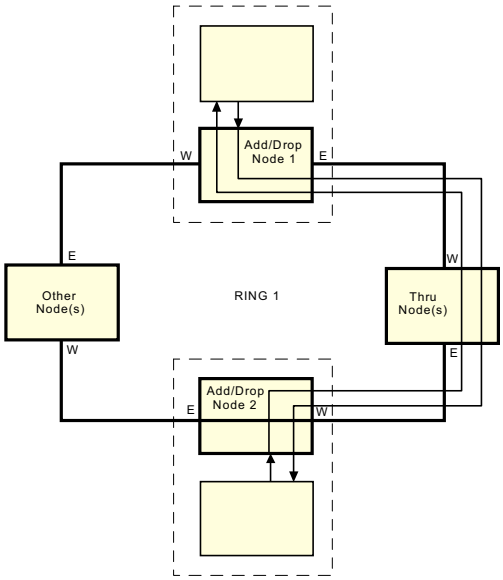
A form appears prompting the selection of the signal rate and path type. The selection of these two options dynamically changes the form to reflect the information needed to create that specific type of path. CPro-2000 supports the following types of two-endpoint end-to-end paths across a single ring:

- VT1.5 Two-way/Ring Transport (DDM-2000 OC-12, OC-3, and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U or 29G-U OLIU, and FiberReach)
- VT1.5/T1 Two-way (FiberReach)
- STS-1 Two-way/Ring Transport (DDM-2000 OC-12, OC-3, and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U or 29G-U OLIU)
- STS-3C Two-way (DDM-2000 OC-12 and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U or 29G-U OLIU)
- STS-3 Two-way (FT-2000 OC-48)
- STS-3 One-way (FT-2000 OC-48)
- STS-1 Two-way (FT-2000 OC-48)
- STS-1 One-way (FT-2000 OC-48)

The procedures following this section provide specific instructions on creating the various types of two-endpoint end-to-end paths across a single ring. For each type of path, one sample is provided. Please note that there may be some minor differences from the samples, depending on the NE type.

NOTE: If the path being configured is a ring with linear extensions, the path around the ring and the individual linear extension cross connections are created separately.

See the following figure for a generic illustration of a two-endpoint two-way end-to-end path across a single ring in a subnetwork containing FT-2000 OC-48 NEs.

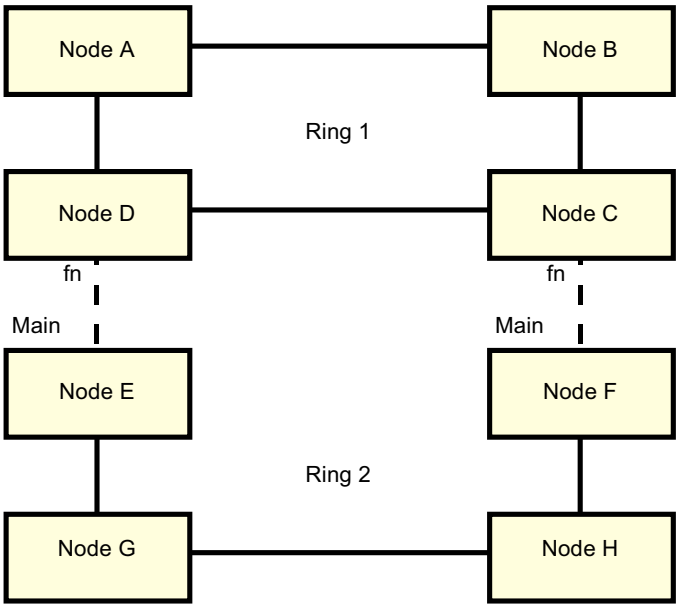


Ring Transport Service

In Ring Transport Service, the NEs in one ring are used to provide service for NEs in another ring. One ring is at a higher signal rate than the other ring. The function units in one or two of the NEs in the ring with the higher signal rate connect to the mains of one or two NEs in the ring with the lower signal rate. Since connectivity is established through the mains, the connection is always optical. The ring at the higher signal rate is called the parent, and it is this ring that provides the transport for the other ring (shown as Ring 1 in the following illustration). The other ring, the child ring, is incomplete without the parent ring, because the fibers in the child ring do not form a complete circle on their own. This is known as an open ring. Ring Transport Service is applicable to the following configurations:

- FT-2000 OC-48 can provide transport to a DDM-2000 OC-3 ring.
- DDM-2000 OC-3 can provide transport to a FiberReach ring.
- DDM-2000 OC-12 can provide dual- and single-homed transport to a DDM-2000 OC-3 ring.

The following sample illustration shows two NEs in the parent ring connected to two NEs in the child ring. This is called dual-homing. Single-homing is when the function unit of one NE in the parent ring is connected to two mains in the child ring.



There are special cross connections for the parent ring of a DDM-2000 parent ring, called dual and single 0x1 cross connections. These cross connections *only* exist in the parent ring, never in the child ring. A single 0x1 cross connection puts the signal on one rotation in the parent ring. A dual 0x1 cross connection puts the signal on both rotations of the parent ring.

NOTE: To create a Ring Transport Service path in a DDM-2000 OC-12 (as differentiated from a regular two-endpoint path), the OC-3 line application parameter must be set to *0x1* in all of the nodes in the parent ring. This parameter is set using the Provisioning Menu. There is no special parameter setting in order to create a Ring Transport Service path in a DDM-2000 OC-3 or FT-2000 OC-48 parent ring.

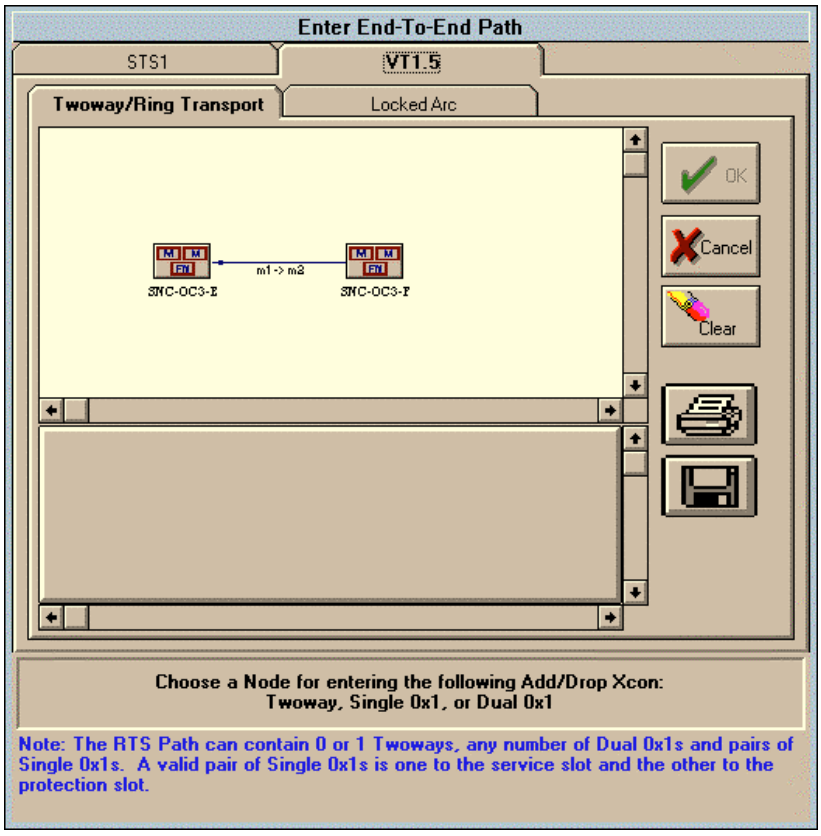
Enter a VT1.5 Two-way/Ring Transport Service End-to-End Path (DDM-2000 OC-3, FiberReach, and DDM-2000 OC-3/OC-12 mixed ring when OC-3 is equipped with 24G-U or 29G OLIU circuit pack)

NOTE: The following restrictions must be met to create a VT1.5 Ring Transport Service path (and not a regular two-way path):

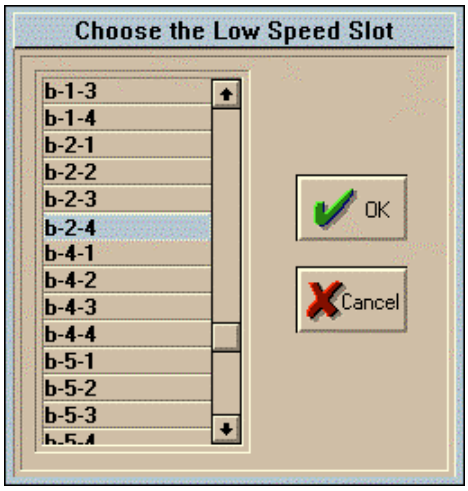
- Only the FiberReach ring can be the child ring.
- A low-speed slot of the add/drop nodes must contain a 27-type OLIU circuit pack.

Procedure

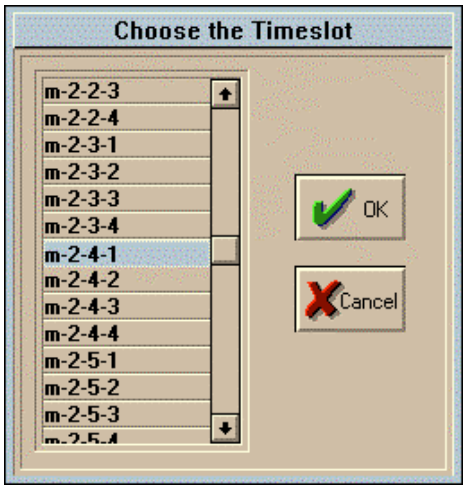
1. From the Subnetwork View, select the **End-to-End Path** pull-down menu (or click the right mouse button and select **End-to-End** from the pop-up menu) and then select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **VT1.5** signal rate and **Twoway/Ring Transport**.



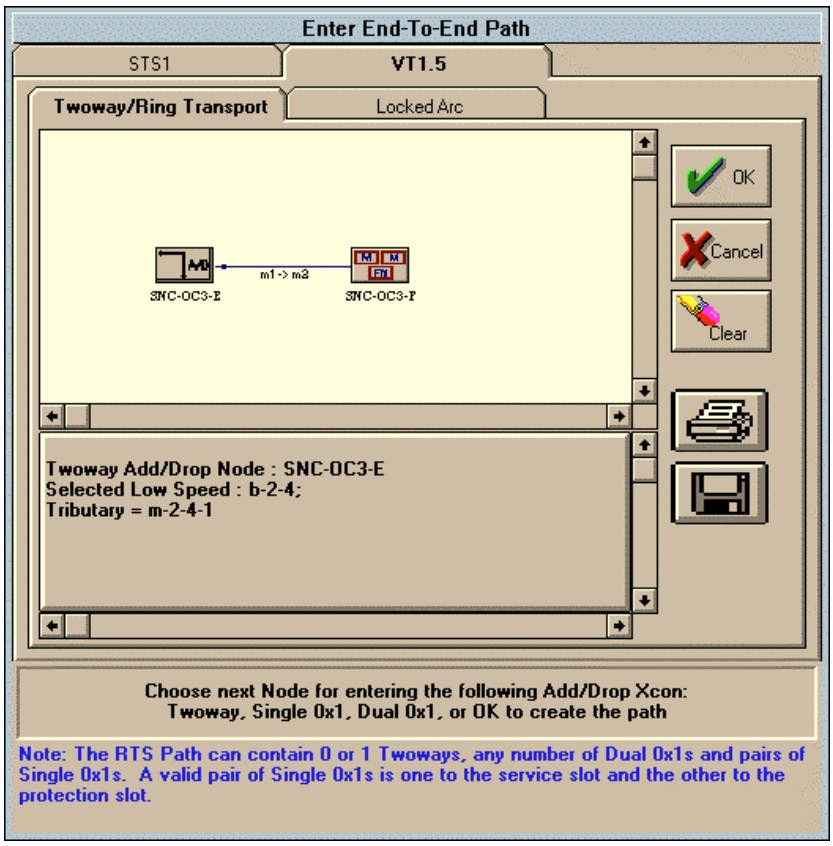
2. Near the bottom of the form in the dialog box, you are prompted to choose an add/drop node. Double-click the desired node displayed within the form. The following screen appears:



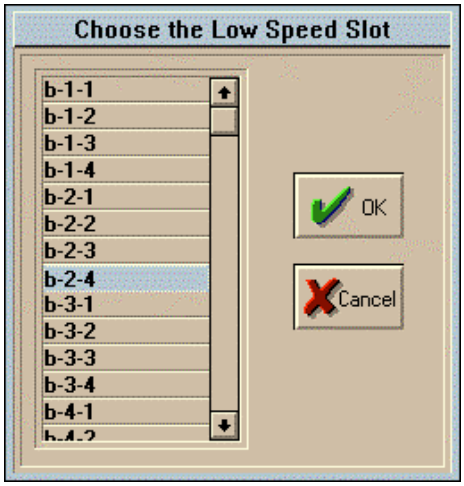
3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



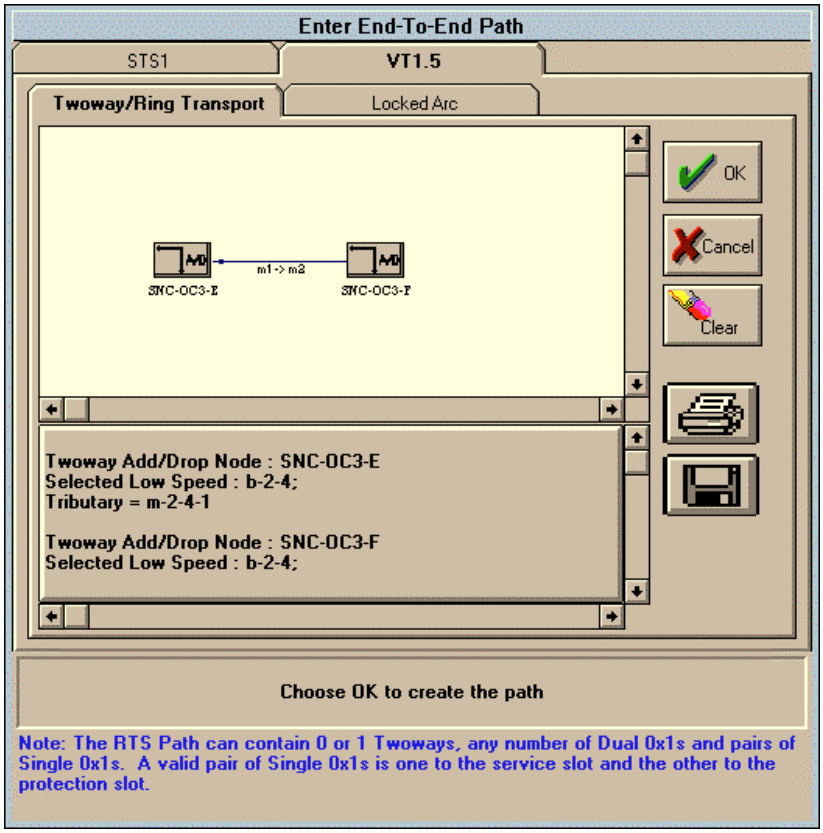
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



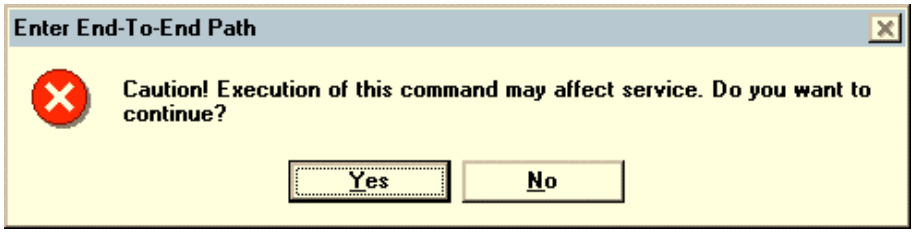
5. You are prompted to select the next add/drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form appears:

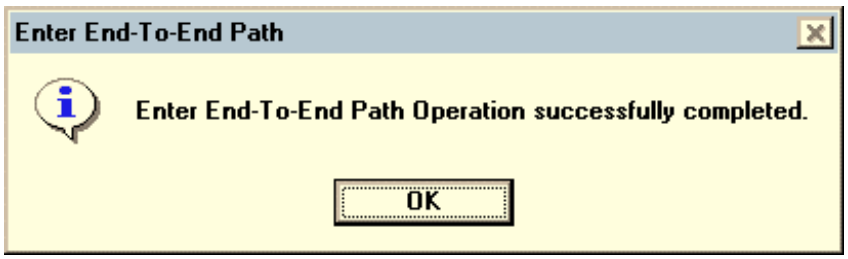


7. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.

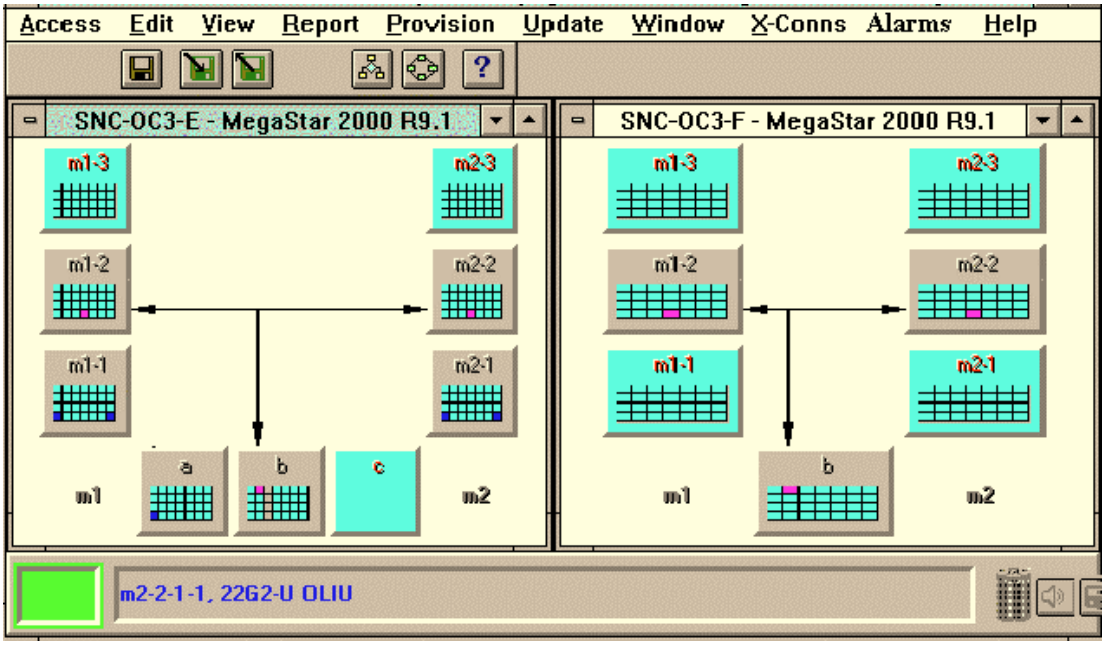


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



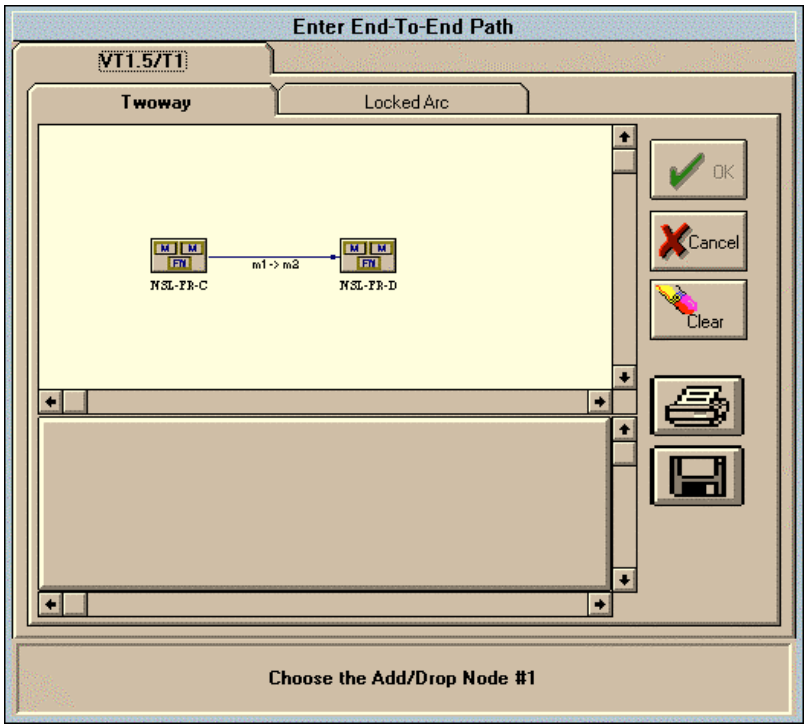
10. The following screen shows a graphical representation of the newly created end-to-end path.



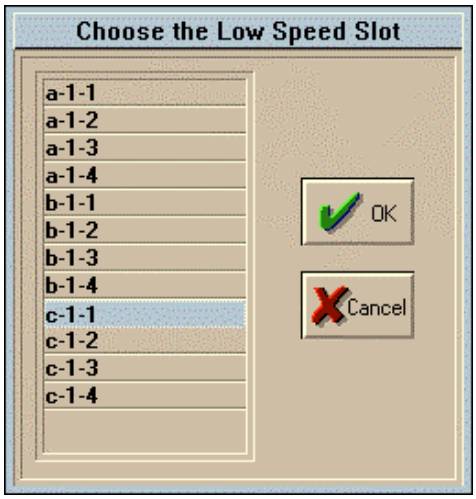
Enter a VT1.5/T1 Two-way End-to-End Path (FiberReach)

Procedure

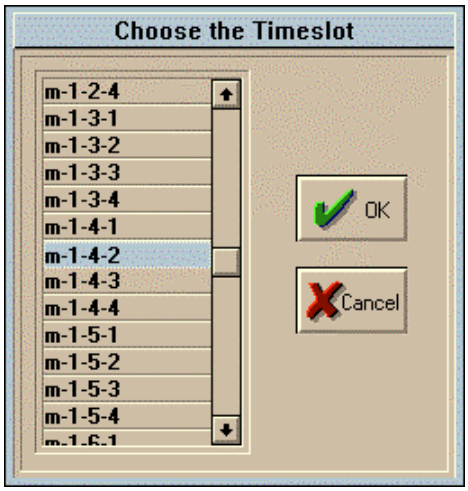
1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **VT1.5/T1** signal rate and **Twoway** path type.



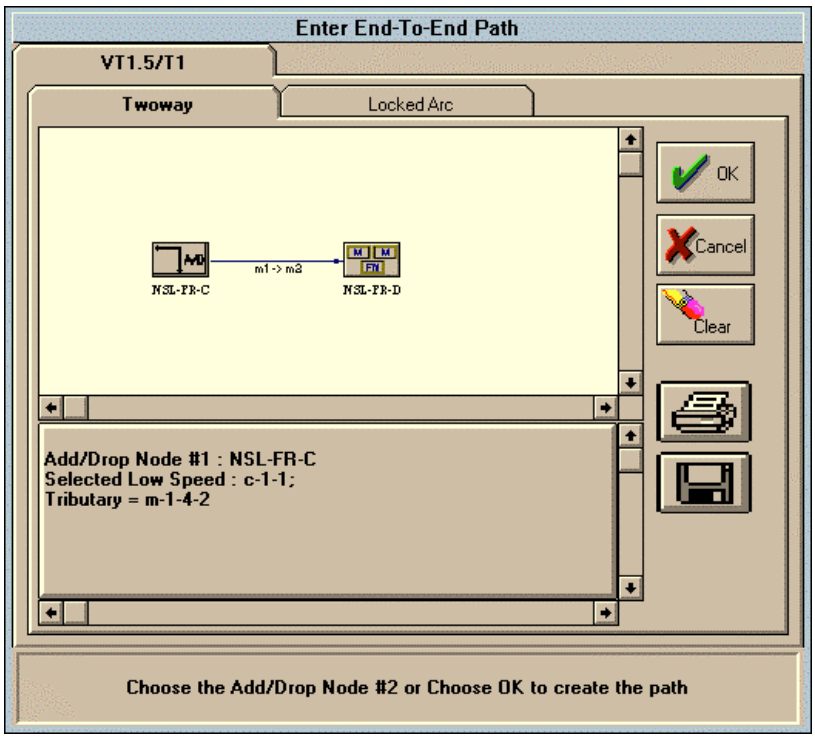
2. At the bottom of the form in the dialog box, you are prompted to choose the first add/drop node. Double-click the desired node displayed within the form. The following screen appears:



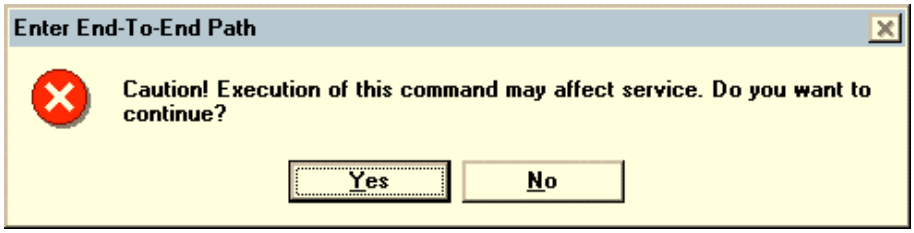
3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:

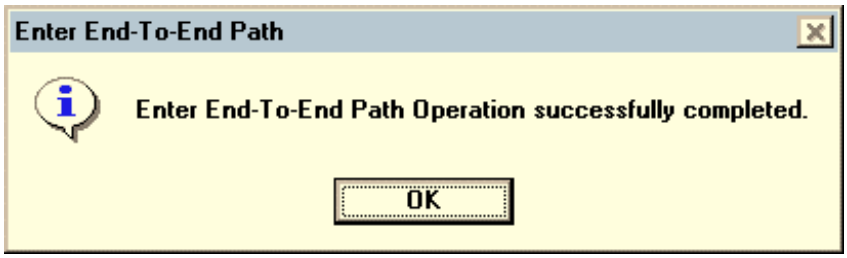


5. You are prompted to choose a second add/drop node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears:

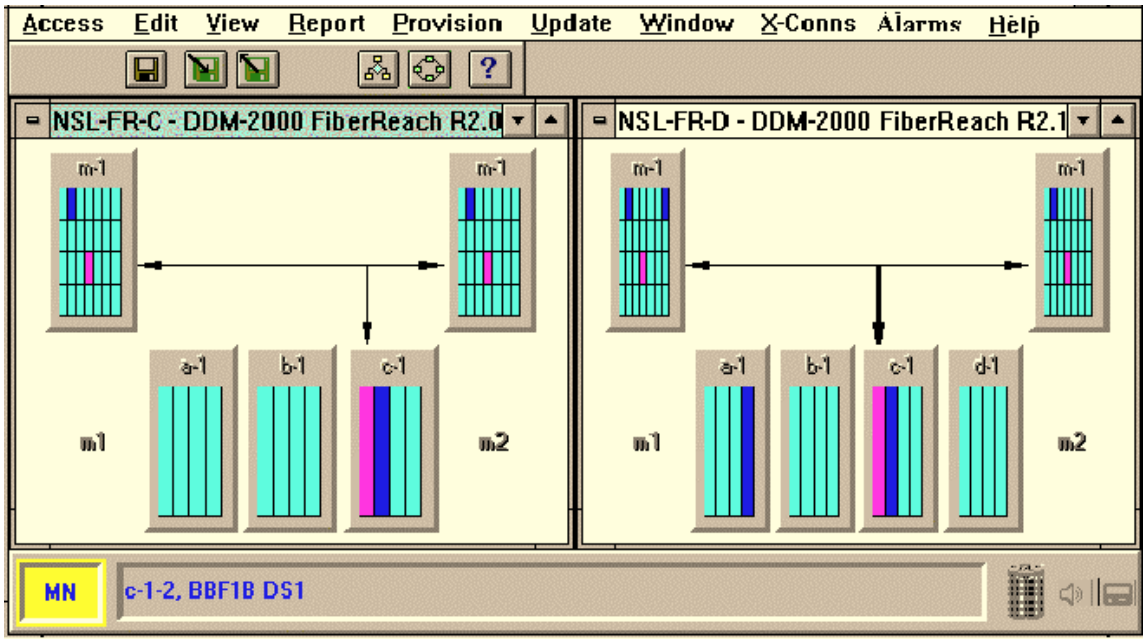


6. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

7. When your path has been successfully completed, the following screen appears. Click **OK**.



8. The following screen shows a graphical representation of the newly created end-to-end path.



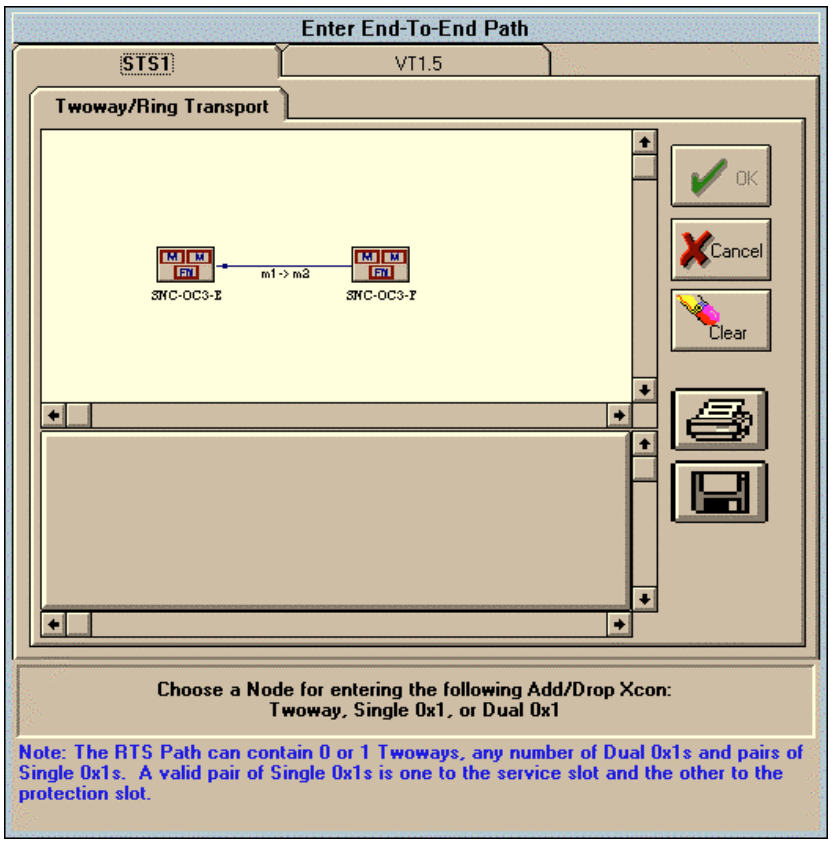
Enter an STS-1 Two-way/Ring Transport Service End-to-End Path (DDM-2000 OC-12, OC-3, and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U or 29G OLIU)

NOTE: To create a Ring Transport Service path (and not a regular two-way path), the following restrictions must be met:

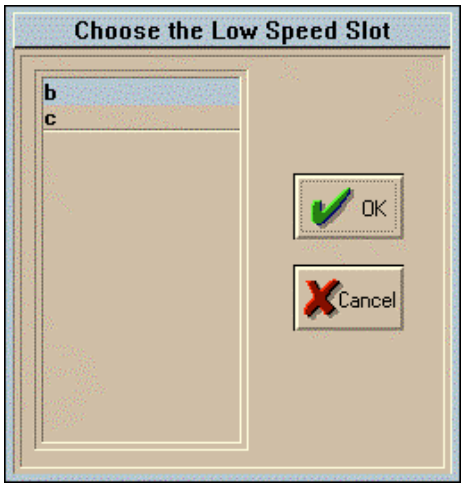
- Only a DDM-2000 OC-3 ring can be the child ring (so the Ring Transport Service path is being created in the DDM-2000 OC-12 ring).
- A low-speed slot in the add/drop nodes of the parent ring must contain a 21-type OLIU circuit pack.
- The OC-3 line application parameter must be set to *0x1* for all nodes in the parent ring. This is set in the Provision Menu.

Procedure

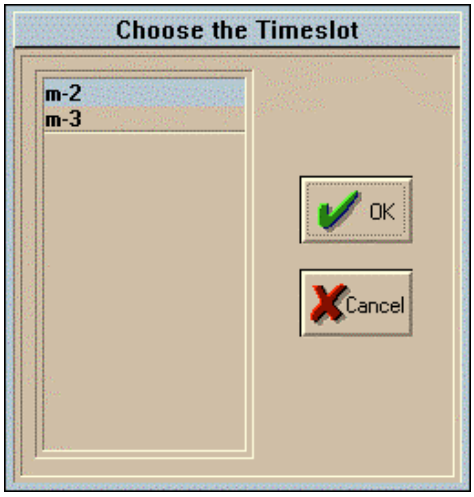
1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS1** signal rate and **Twoway/Ring Transport**.



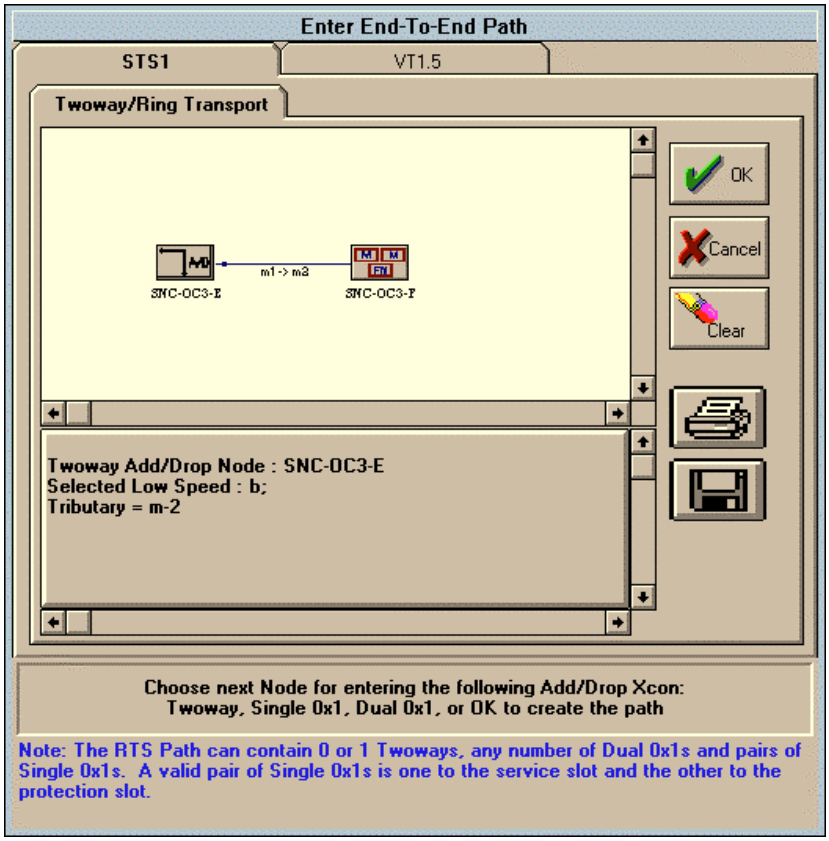
2. Near the bottom of the form in the dialog box, you are prompted to choose an add/drop node. Double-click the desired node displayed within the form. The following screen appears:



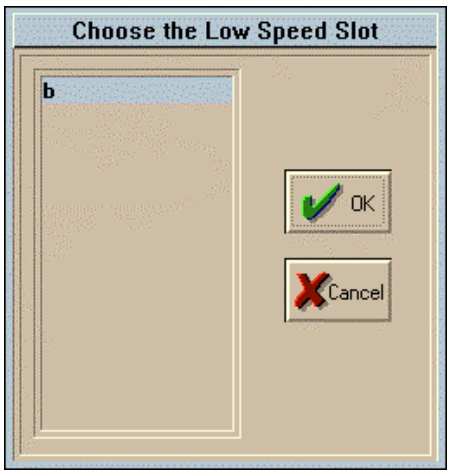
3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The Cancel button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



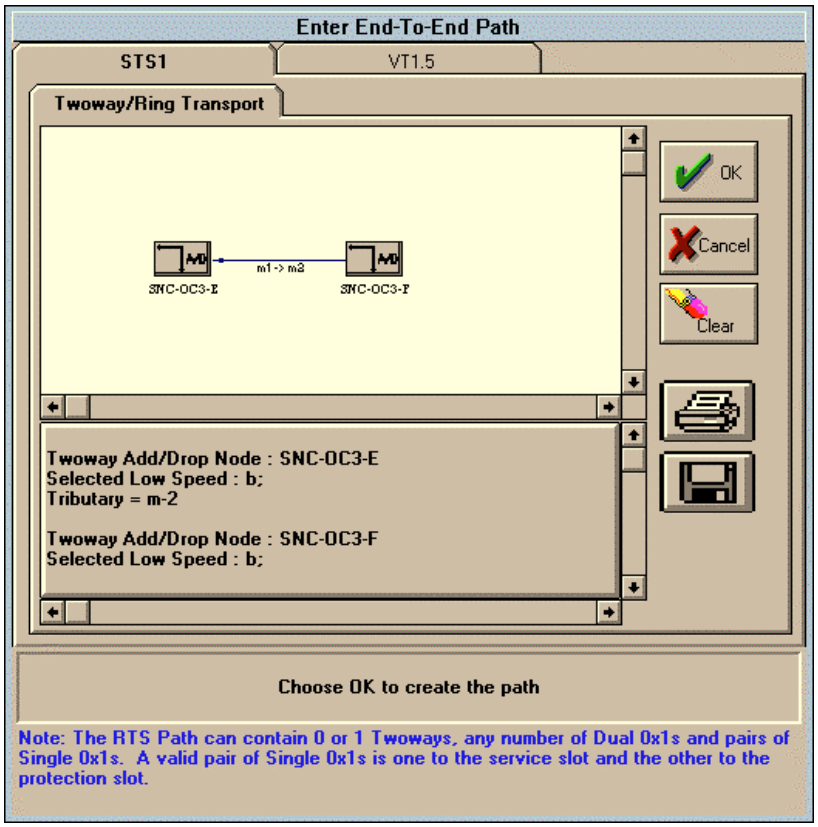
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



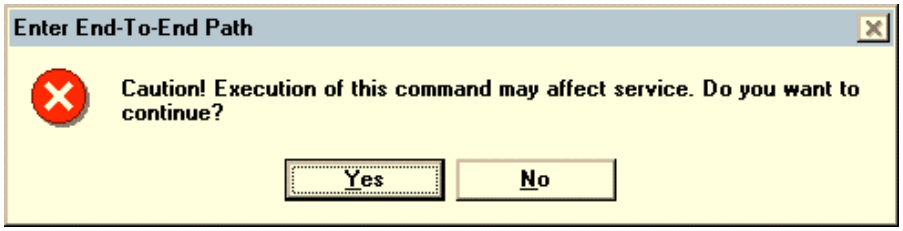
5. You are prompted to select the next add/drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form appears:

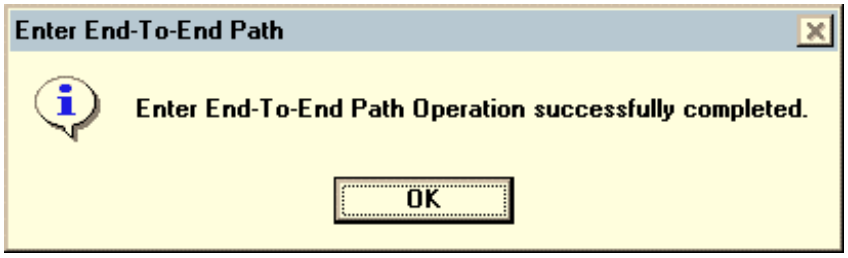


7. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.

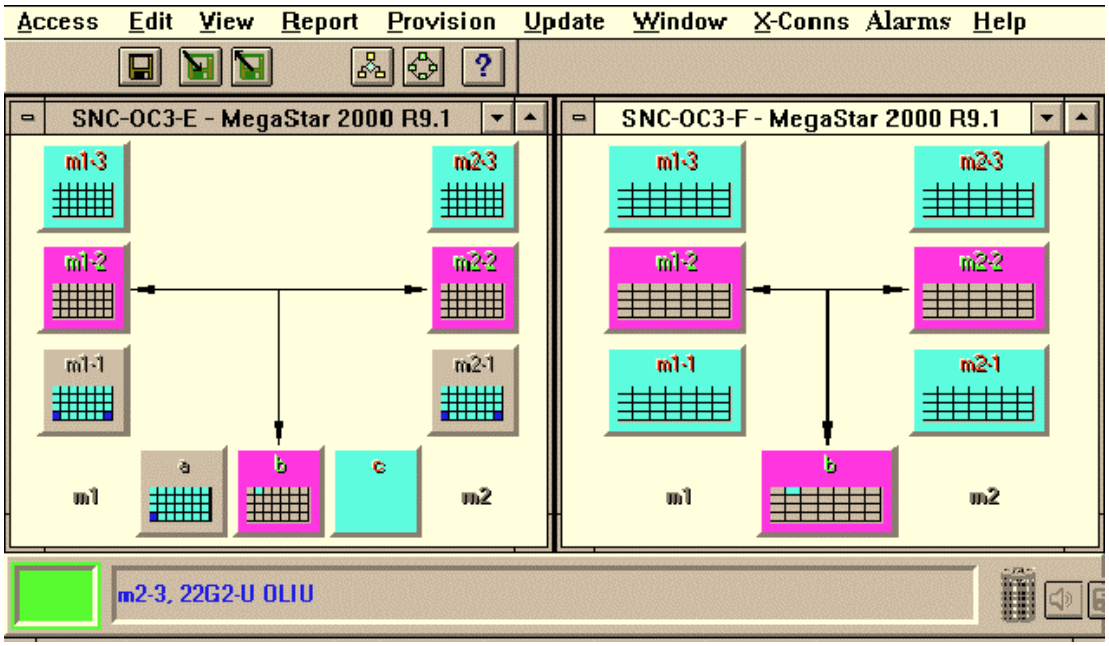


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



10. The following screen shows a graphical representation of the newly created end-to-end path.



Enter an STS-3C Two-way End-to-End Path (DDM-2000 OC-12 and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U or 29G OLIU)

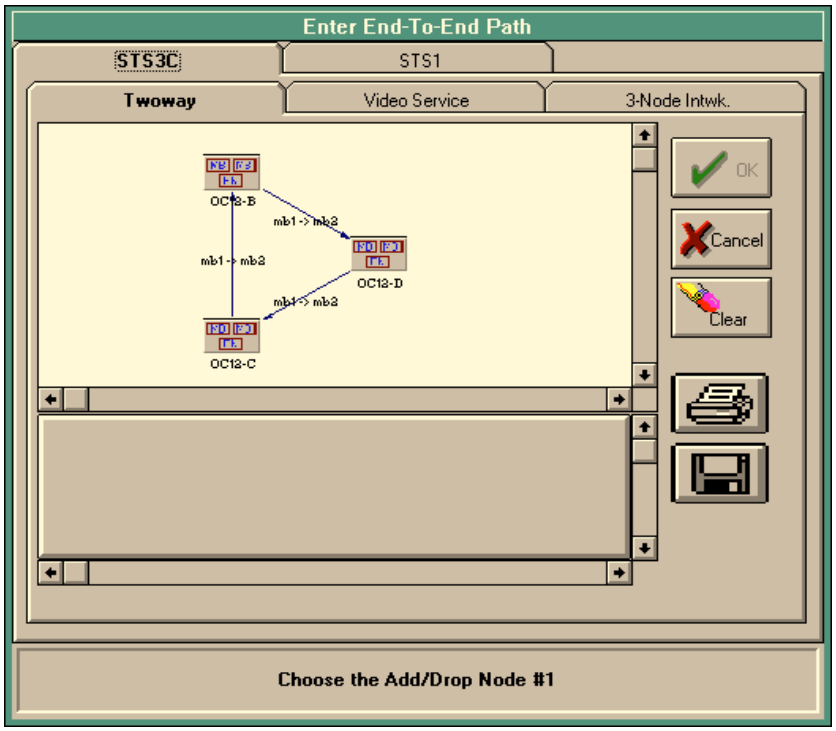
NOTE: For the STS-3C path type to be available, the following restrictions must be followed:

- A low-speed slot in the add/drop nodes must contain a 21-type OLIU circuit pack.
- The OC-3 line application parameter must be set to *1+1* for each add/drop node in the ring. This is set in the Provision Menu.
- For shelves equippped with 29G OLIUs the Function Slot C (fn-c) must be equipped with a 22-type OLIU.
- The STS3-C feature must be enabled for each node in the ring. (This feature is enabled in MML using the SET-FEAT command (also available in the Provision Menu) and in TL1 using the ENT-FEAT command. See your *DDM-2000 OC-12 User/Service Manual* for complete details.)

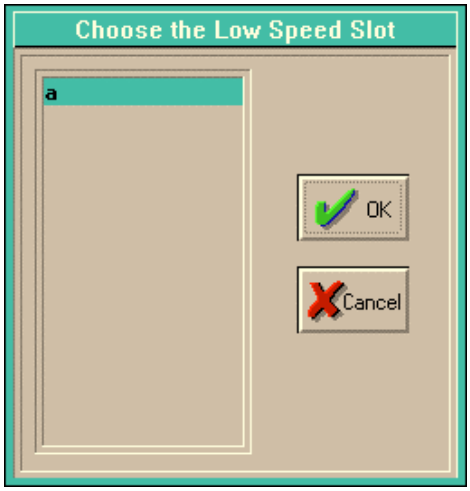
On a DDM-2000 OC3 shelf equipped with the 29G OLIU, CPro-2000 R11.0 supports setting the OC-3 line application parameter to *0x1*.

Procedure

1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS3C** and **Twoway** path type.

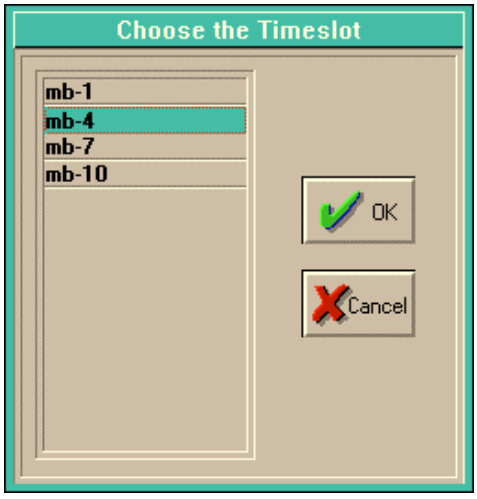


2. At the bottom of the form in the dialog box, you are prompted to choose the first add/drop node. Double-click the desired node displayed within the form. The following screen appears:

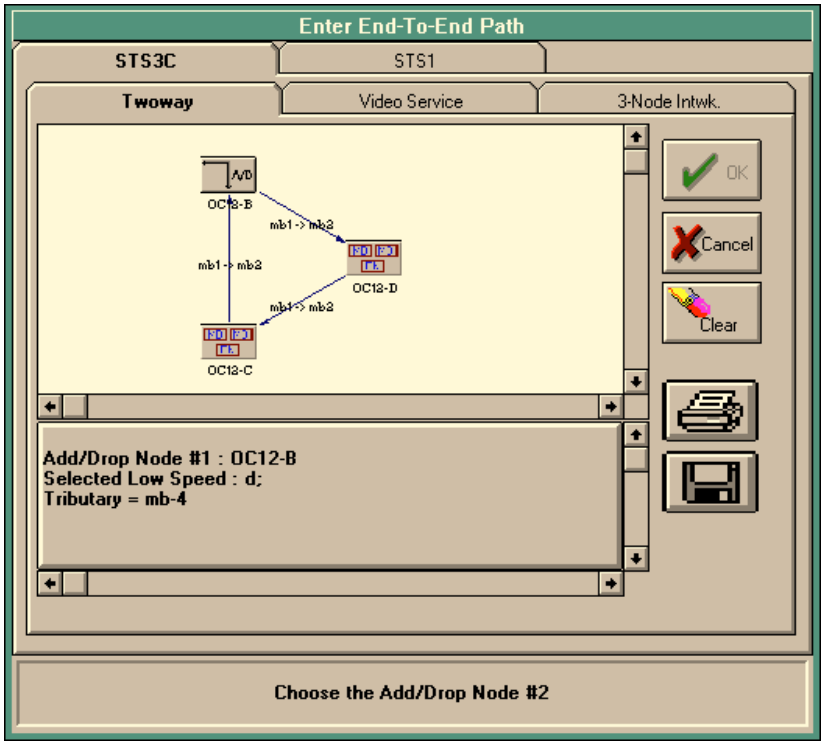


3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to

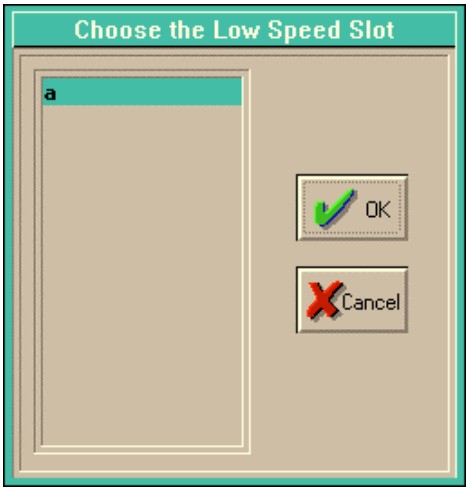
cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



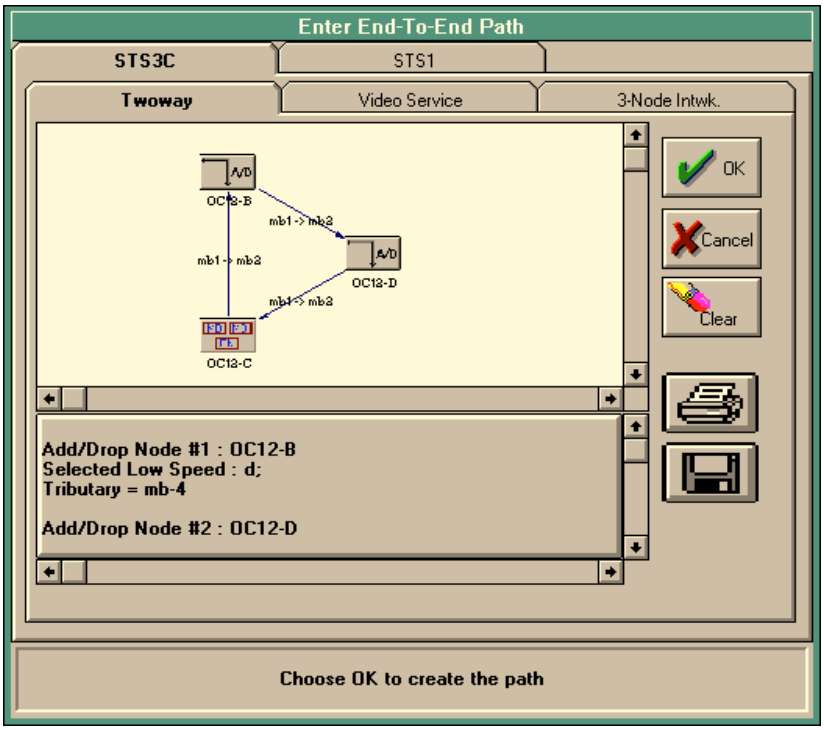
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



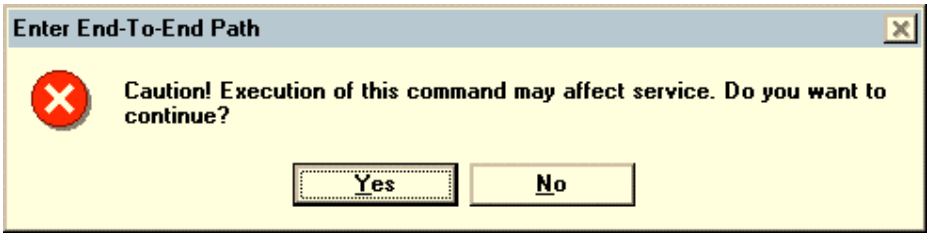
5. You are prompted to select the next add/drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form appears:

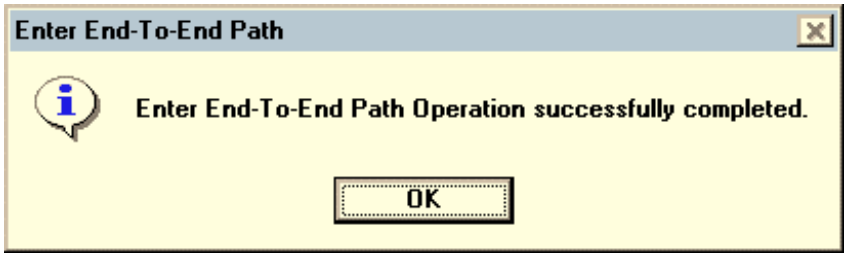


7. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.

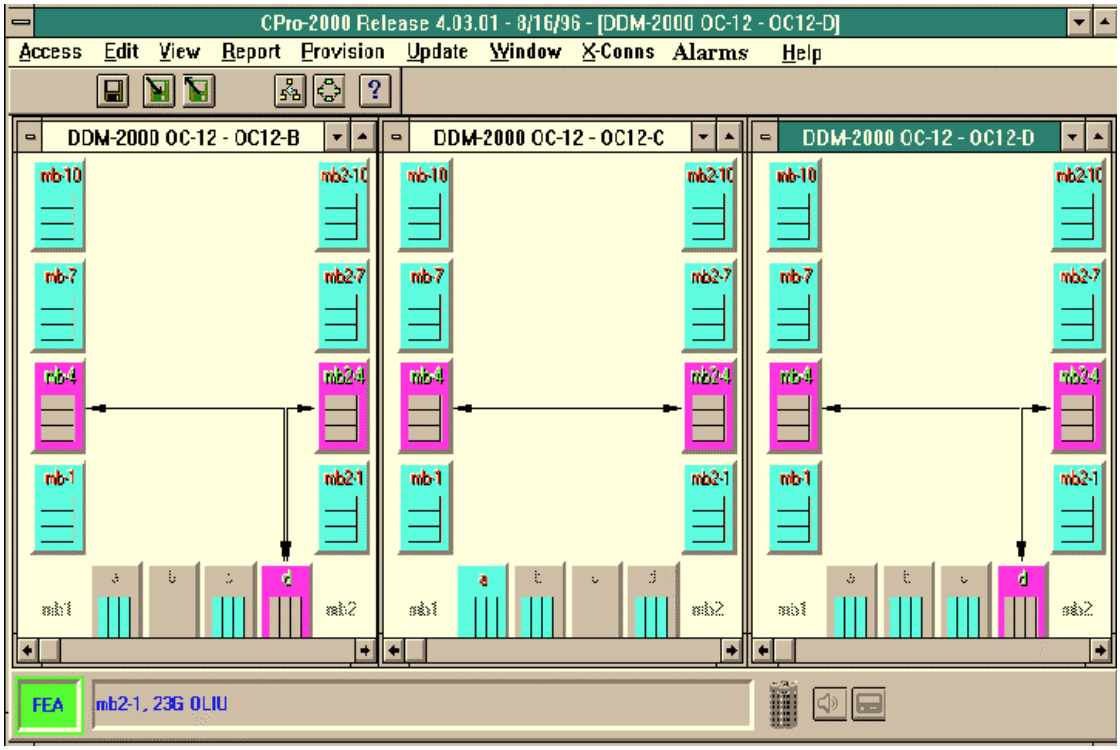


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



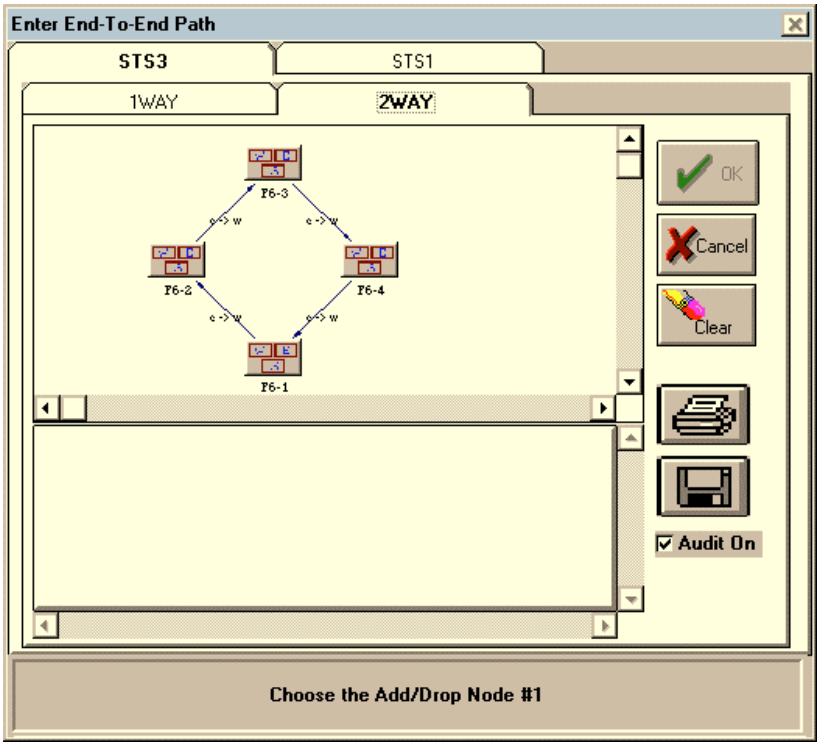
10. The screen below shows a graphical representation of the newly created end-to-end path.



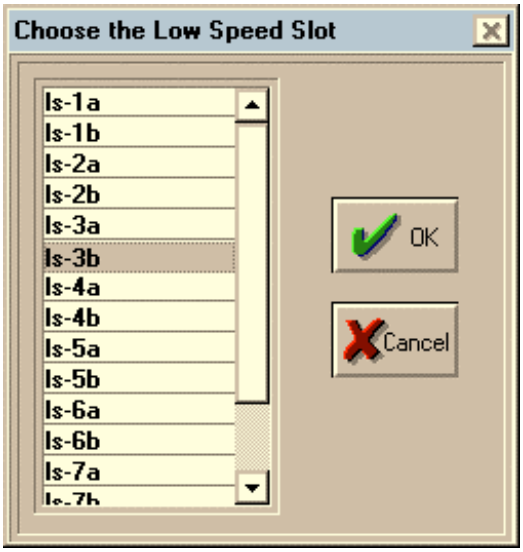
Enter an STS-3 Two-way End-to-End Path (FT-2000 OC-48)

Procedure

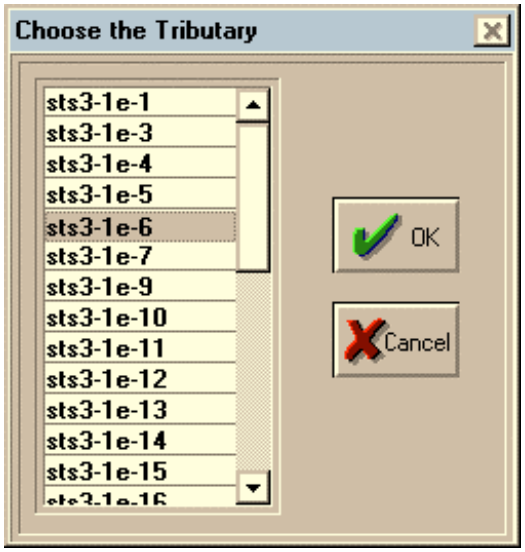
1. From the Subnetwork View, select the **End-to-End Path** pull-down menu (or click the right mouse button and select **End-to-End** from the pop-up menu) and then select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS3** signal rate and **2WAY** path type.



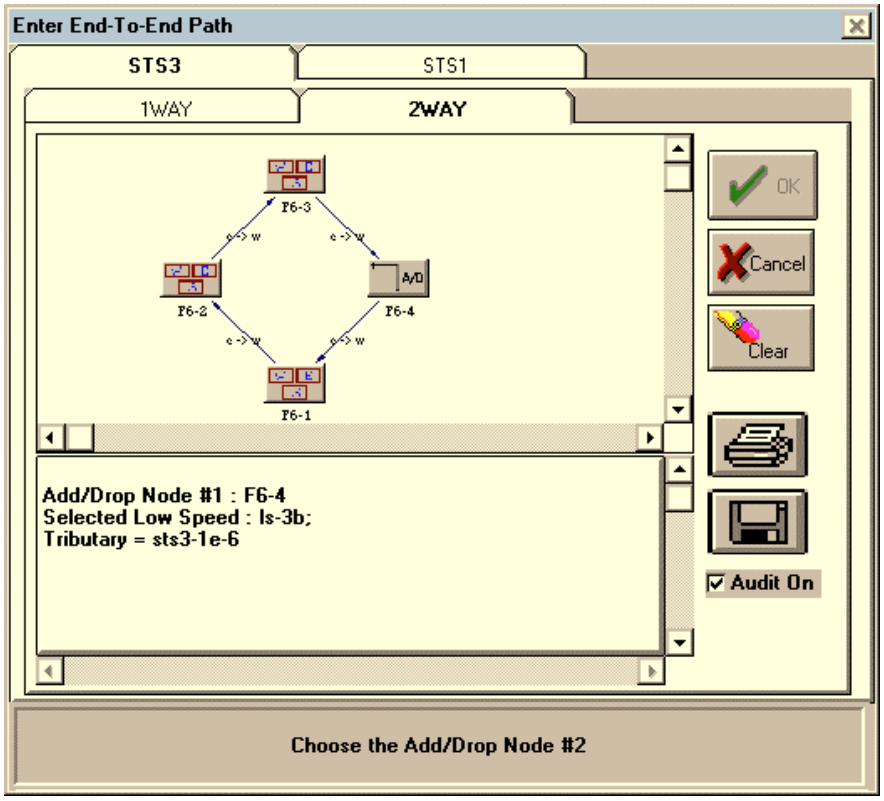
2. At the bottom of the form in the dialog box, you are prompted to choose the first add/drop node. Double-click the desired node displayed within the form. The following screen appears:



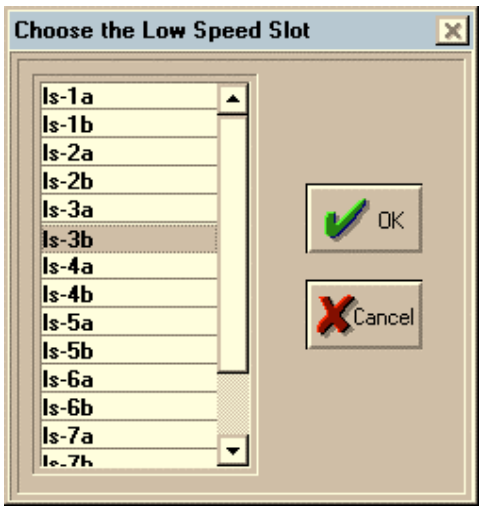
3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



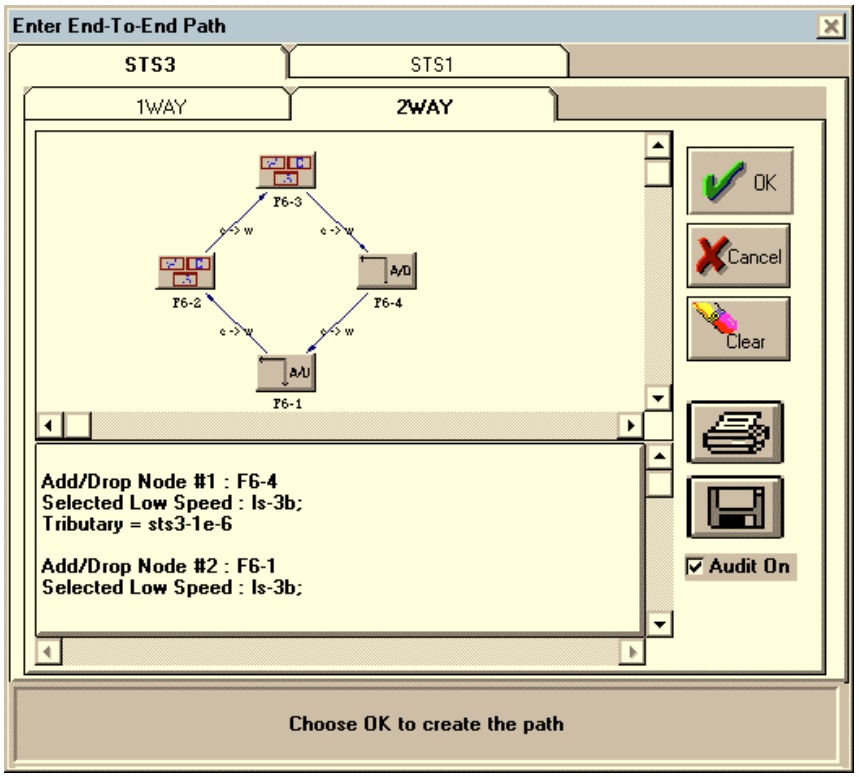
4. Select the tributary that the end-to-end path will follow around the ring. Only valid tributary numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



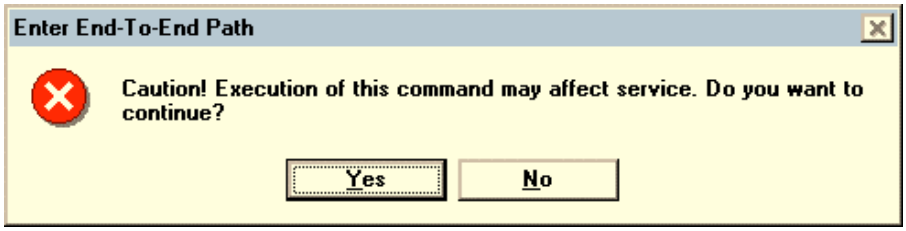
5. You are prompted to choose a second add/drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form displays:

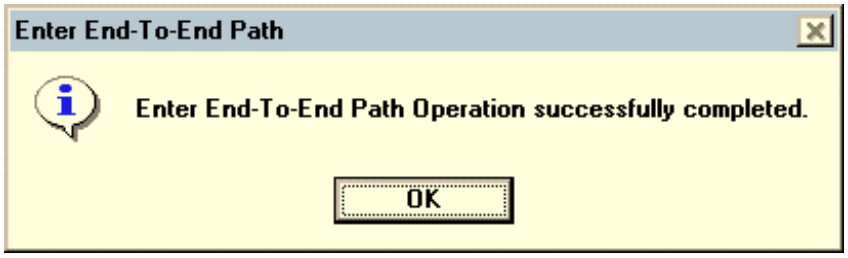


7. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.

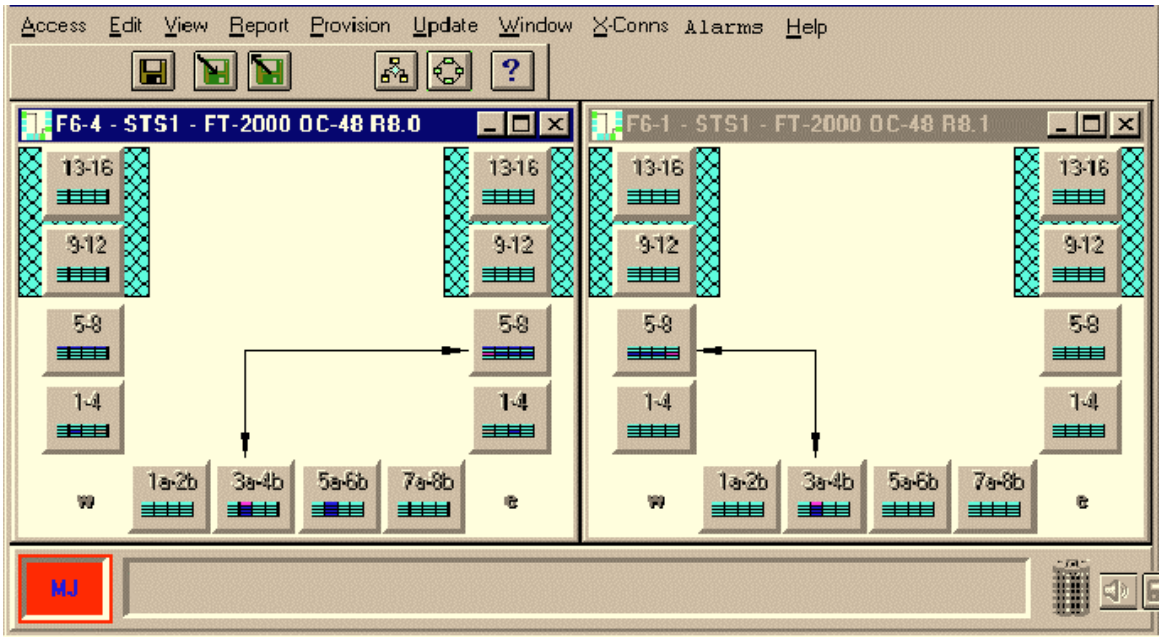


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



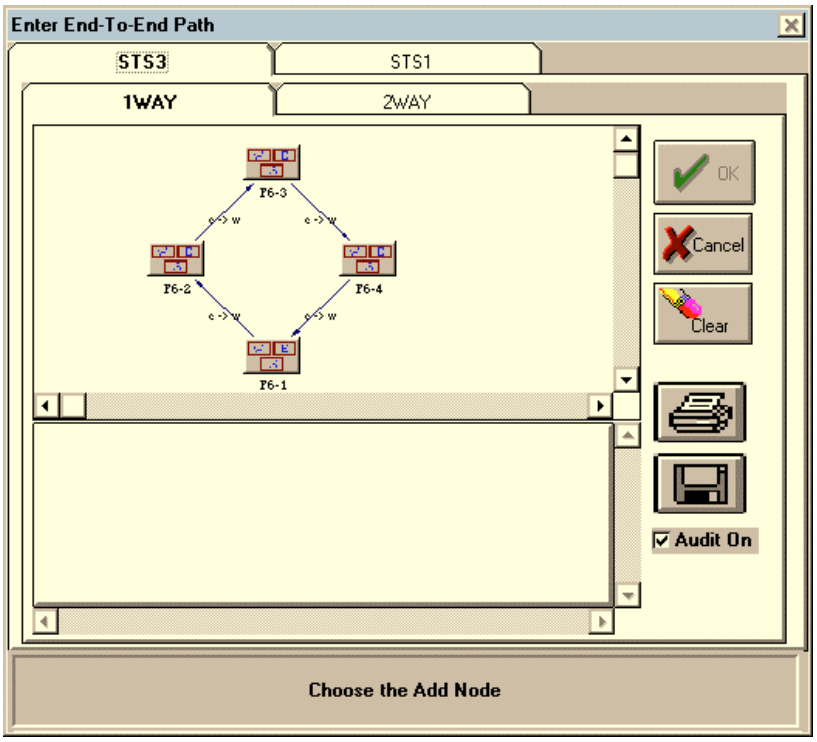
10. The screen below shows a graphical representation of the newly created end-to-end path.



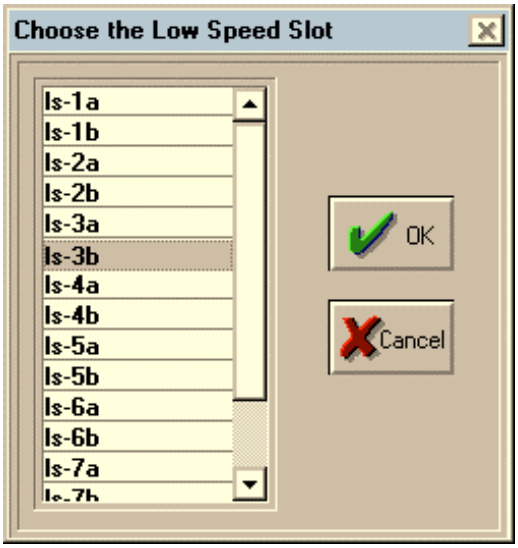
Enter an STS-3 One-way End-to-End Path (FT-2000 OC-48)

Procedure

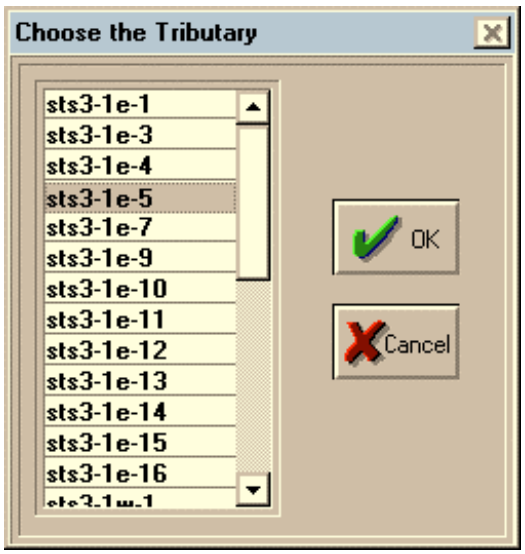
1. From the Subnetwork View, select the **End-to-End Path** pull-down menu (or click the right mouse button and select **End-to-End** from the pop-up menu) and then select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS3** signal rate and **1WAY** path type.



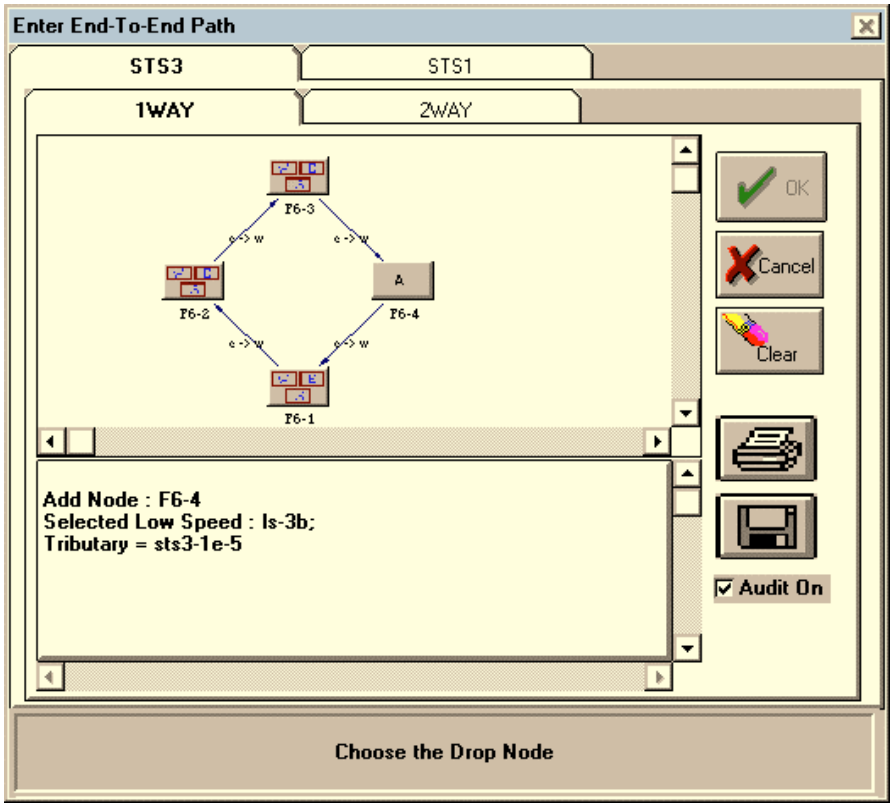
2. At the bottom of the form in the dialog box, you are prompted to choose an add node. Double-click the desired node displayed within the form. The following screen appears:



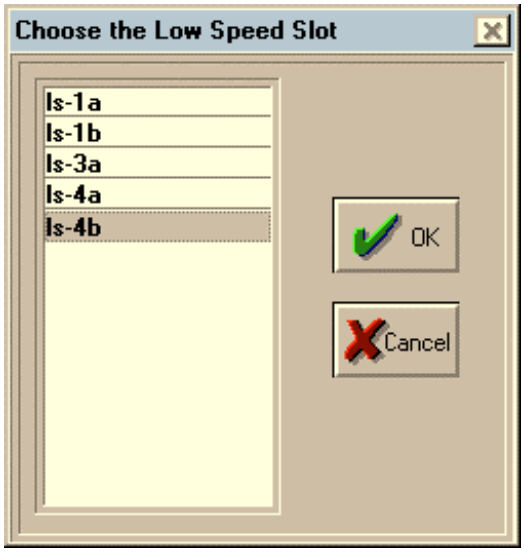
3. Select the low-speed slot to be used for this add node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



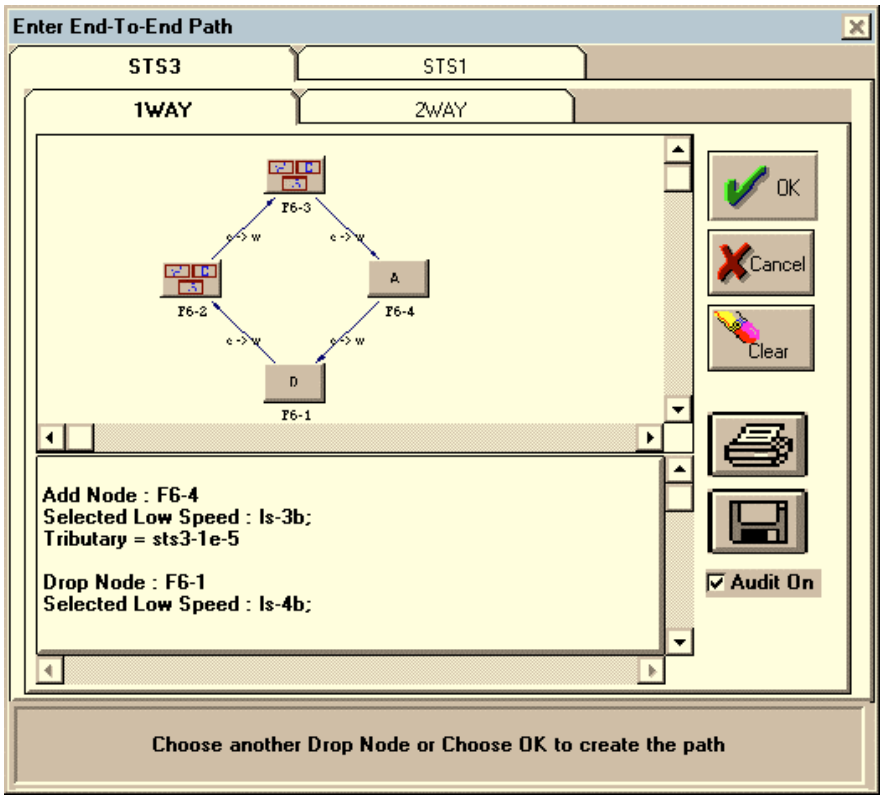
4. Select the tributary that the end-to-end path will follow around the ring. Only valid tributary numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



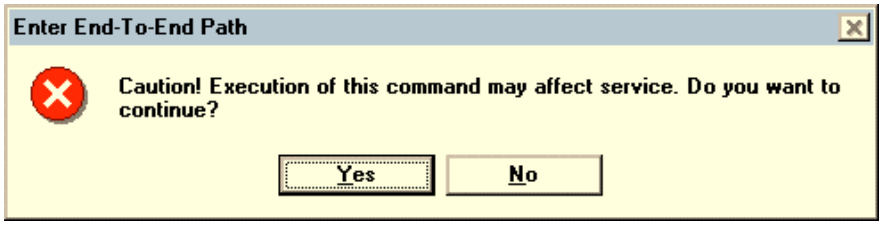
5. You are prompted to choose the drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this drop node. Click **OK**. The main end-to-end path form displays:

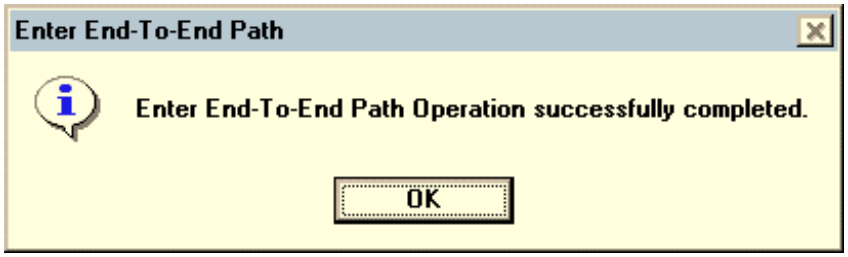


7. You are prompted to choose another drop node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears.

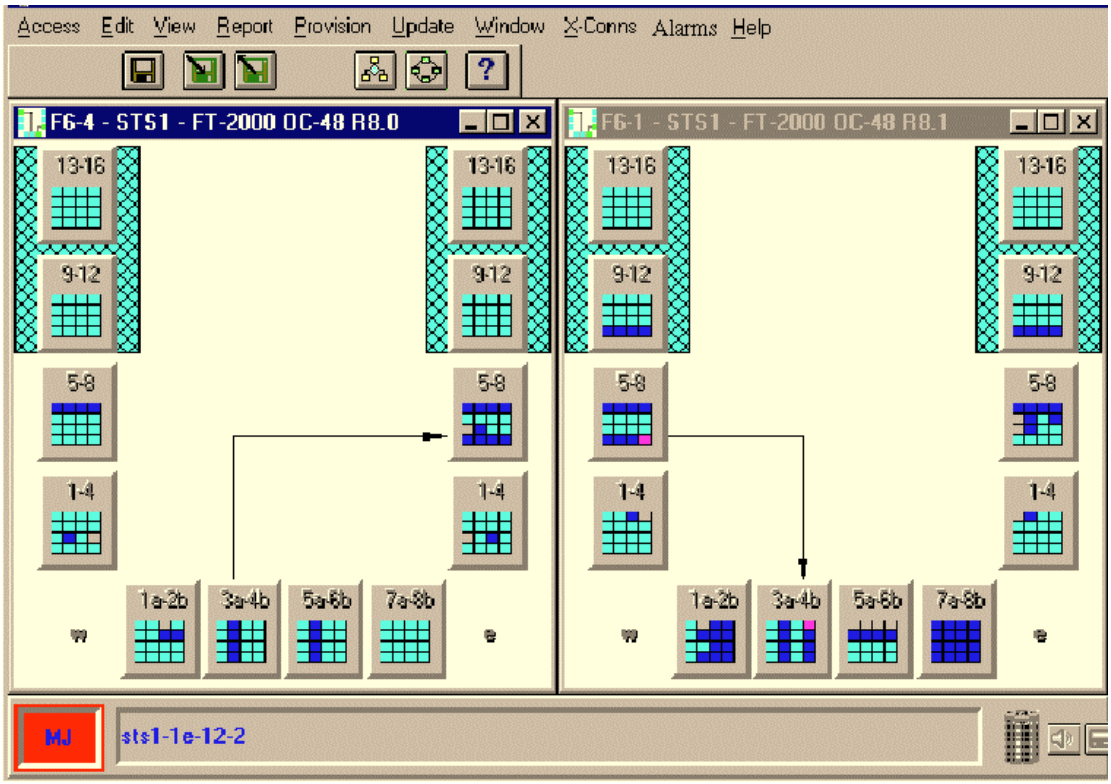


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



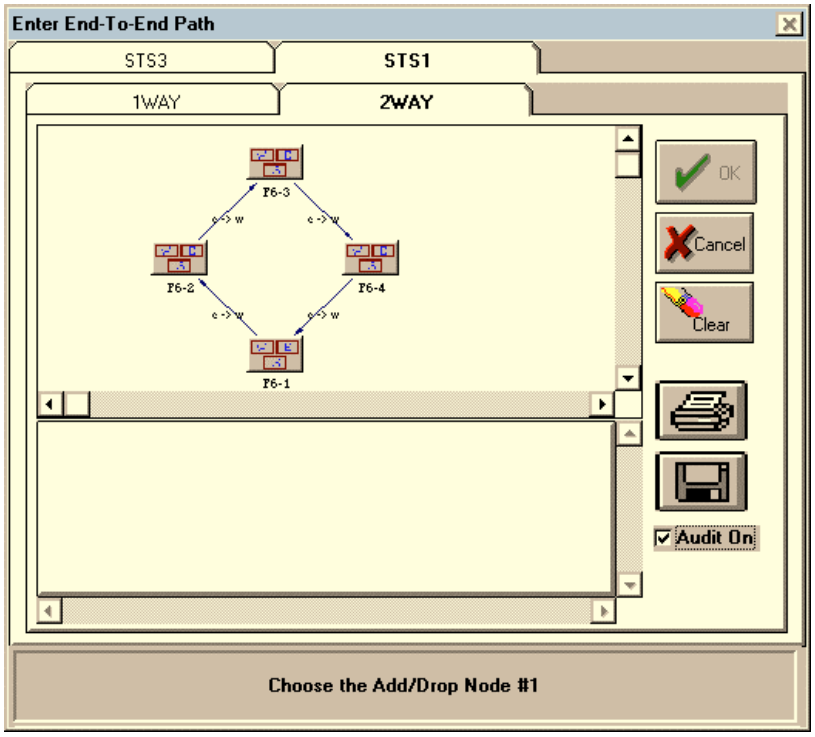
10. The screen below shows a graphical representation of the newly created end-to-end path:



Enter an STS-1 Two-way End-to-End Path (FT-2000 OC-48)

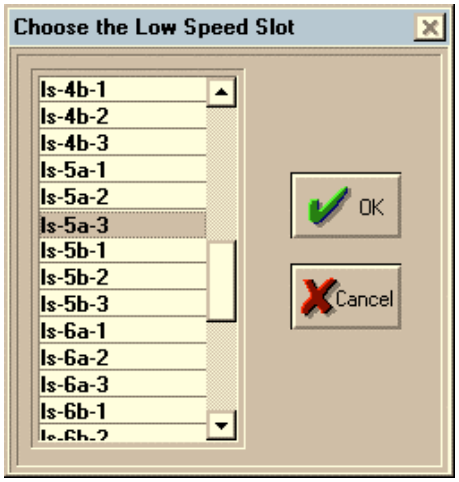
Procedure

1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS1** signal rate and **2WAY** path type.

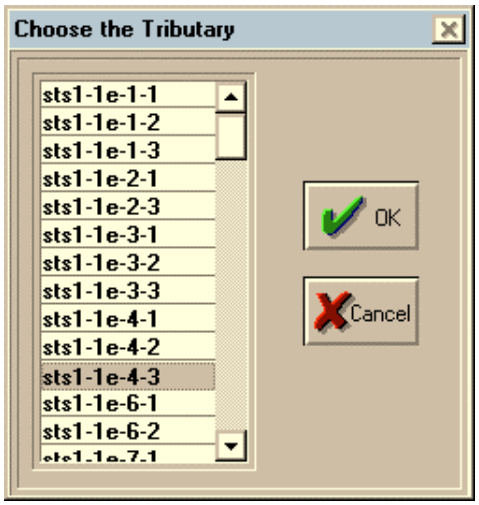


NOTE: When the Audit On box is checked, the alarm feature that notifies the user of any signal problem is activated. To turn off this feature, click the box to remove the check mark.

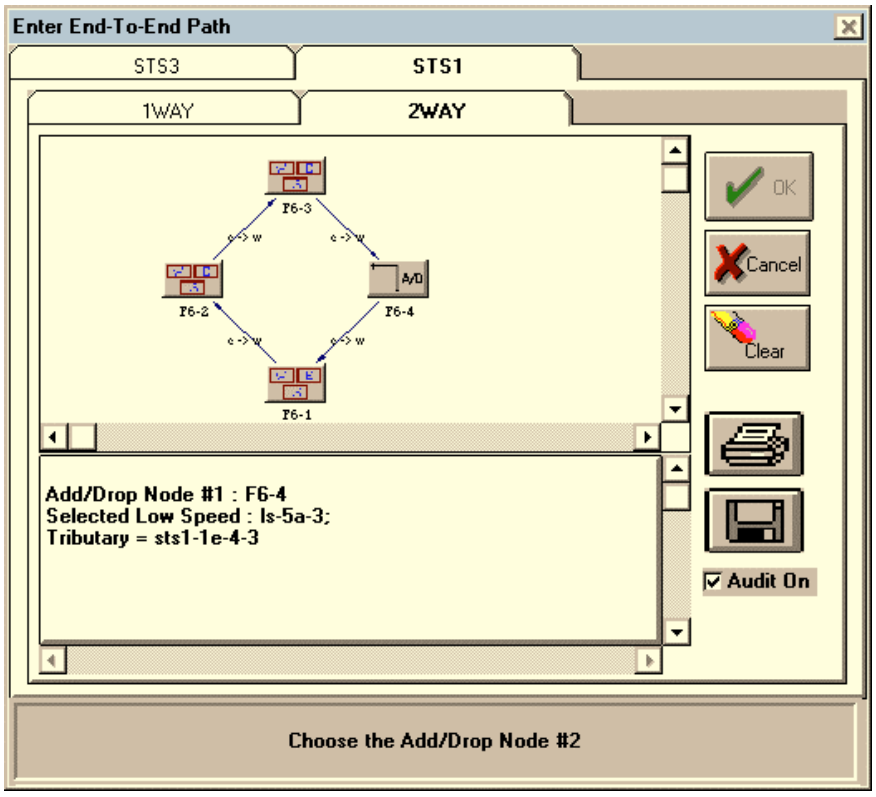
2. At the bottom of the form in the dialog box, you are prompted to choose the first add/drop node. Double-click on the desired node displayed within the form. The following screen appears:



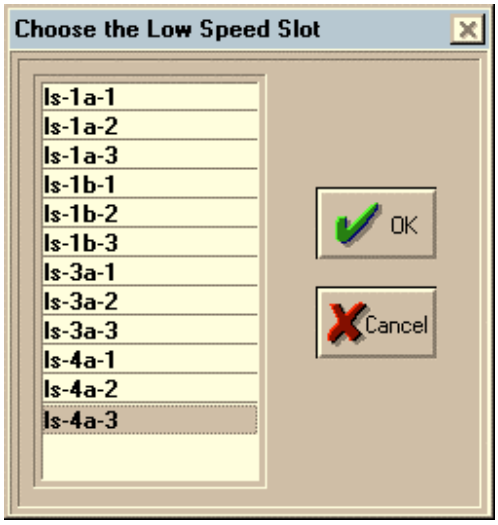
3. Select the low-speed slot to be used for this add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



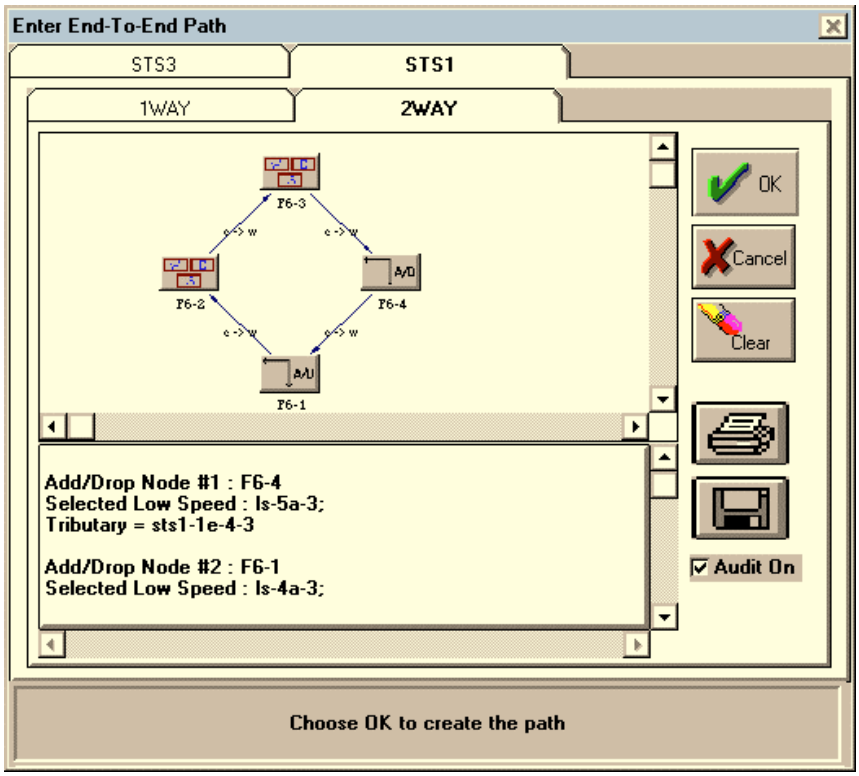
4. Select the tributary that the end-to-end path will follow around the ring. Only valid tributary numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



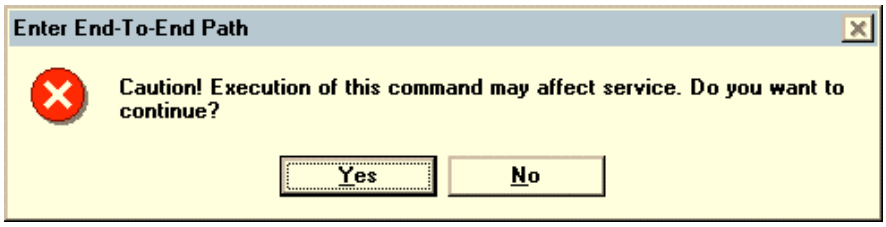
5. You are prompted to choose a second add/drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form displays:

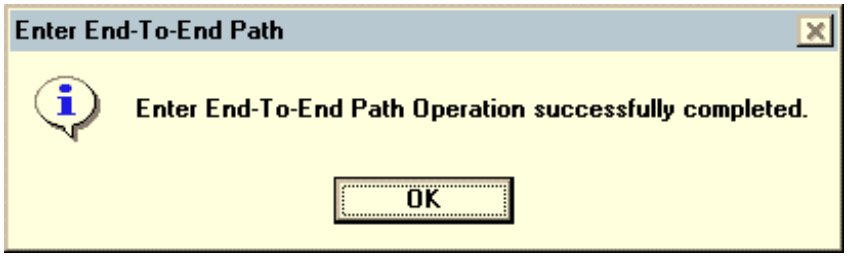


7. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears:

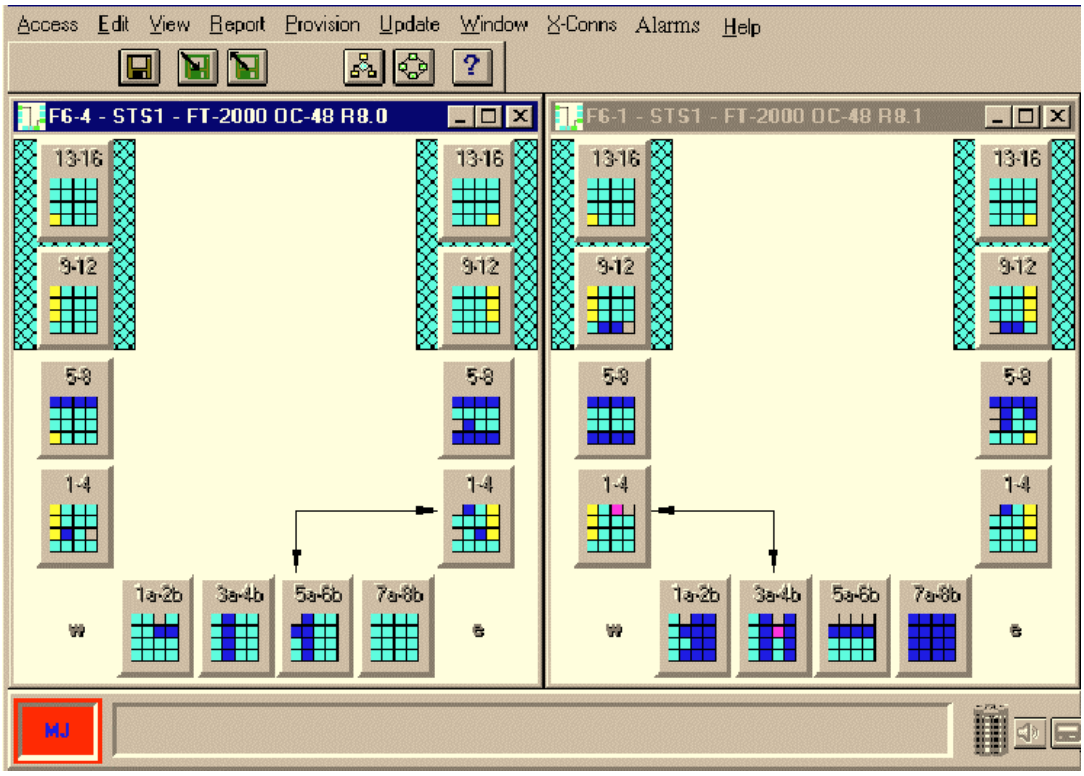


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



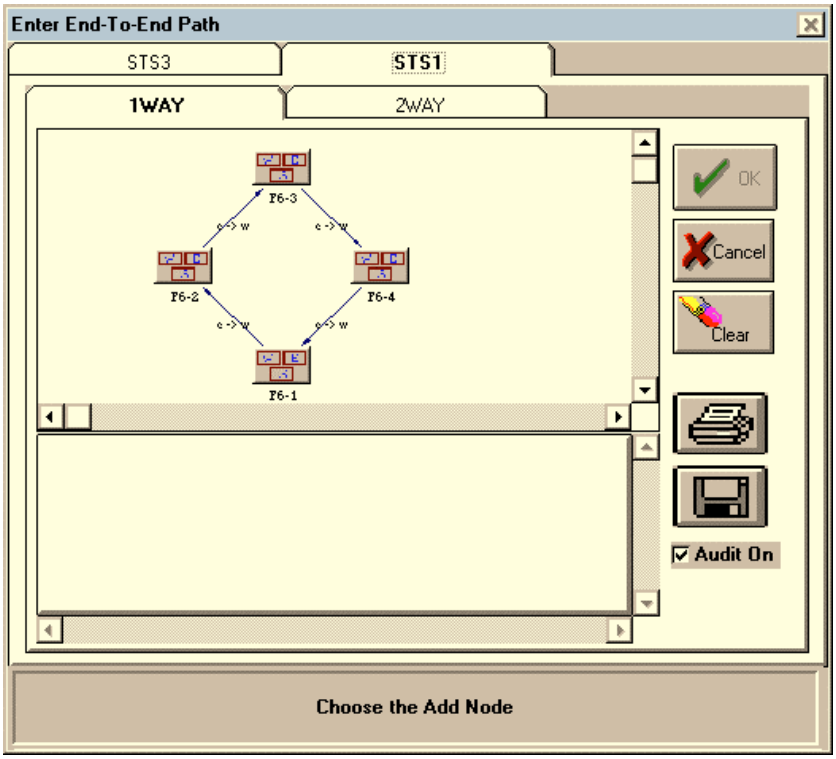
10. The screen below shows a graphical representation of the newly created end-to-end path.



Enter an STS-1 One-way End-to-End Path (FT-2000 OC-48)

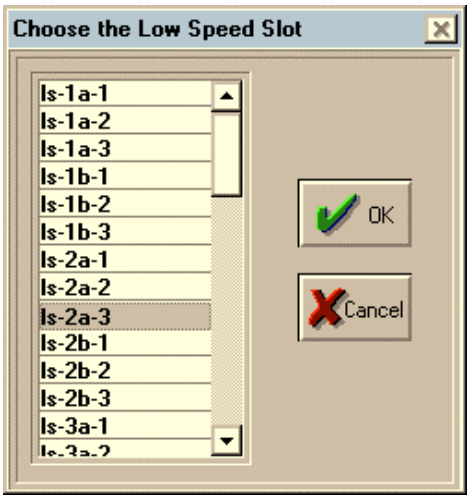
Procedure

1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS1** signal rate and **1WAY** path type.

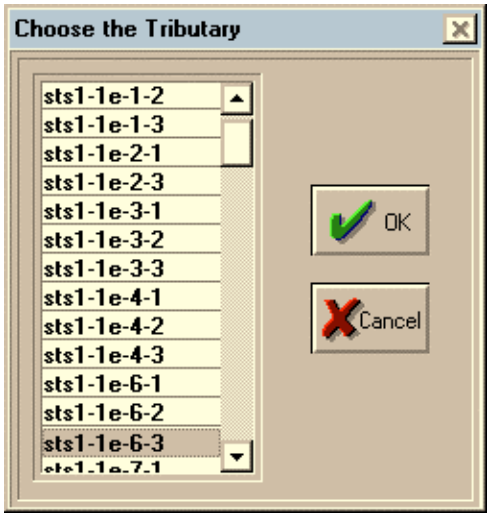


NOTE: When the **Audit On** box is checked, the alarm feature, which notifies the user of any signal problem, is activated. To turn off this feature, click the box to remove the check mark.

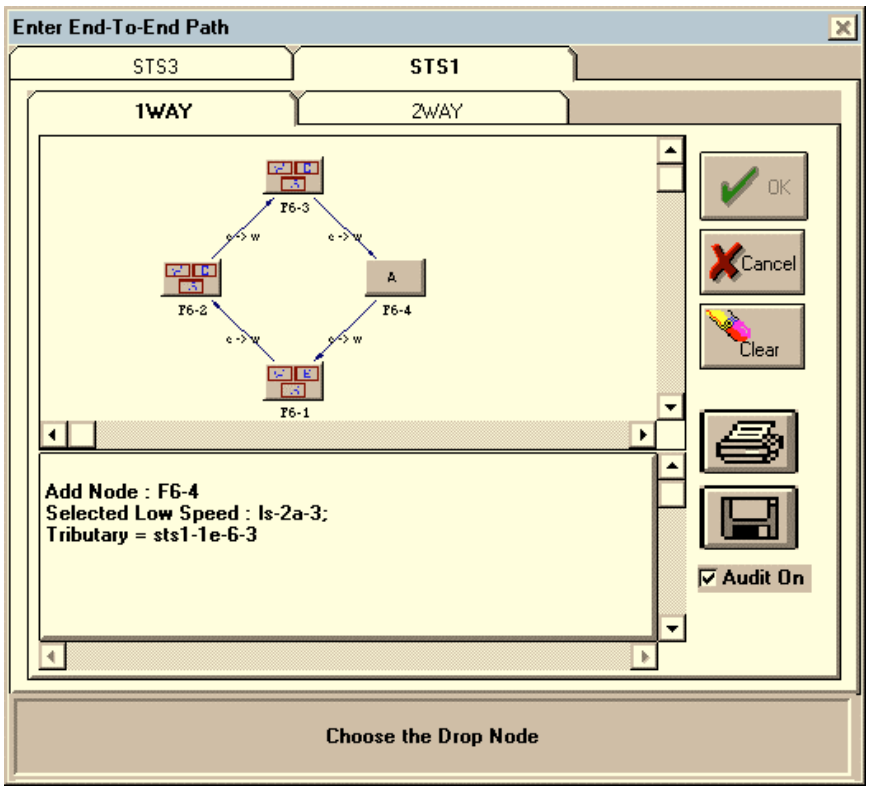
2. At the bottom of the form in the dialog box, you are prompted to choose an add node. Double-click the desired node displayed within the form. The following screen appears:



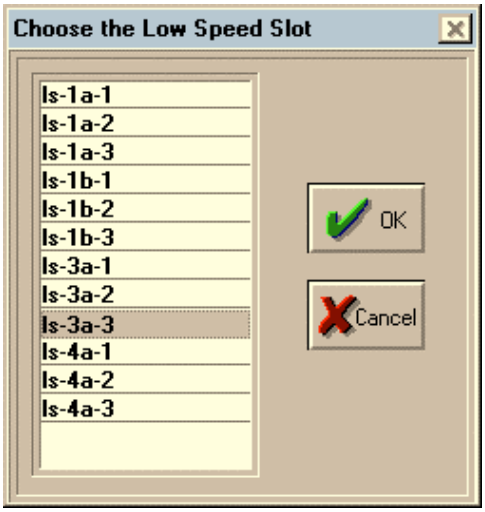
3. Select the low-speed slot to be used for this add node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



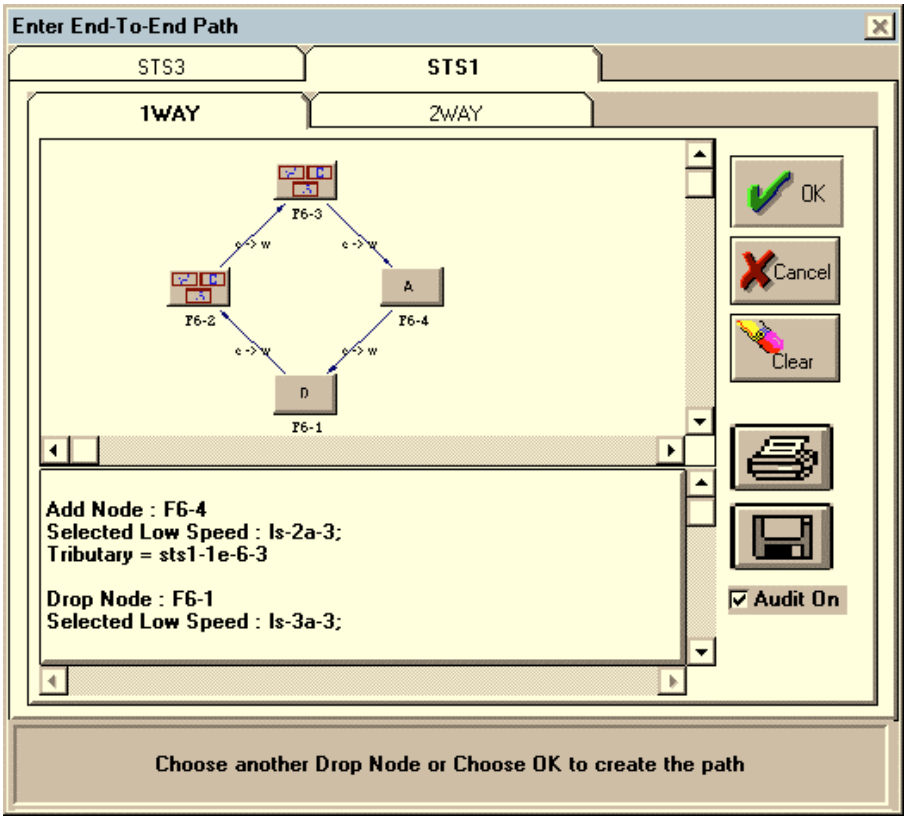
4. Select the tributary that the end-to-end path will follow around the ring. Only valid tributary numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



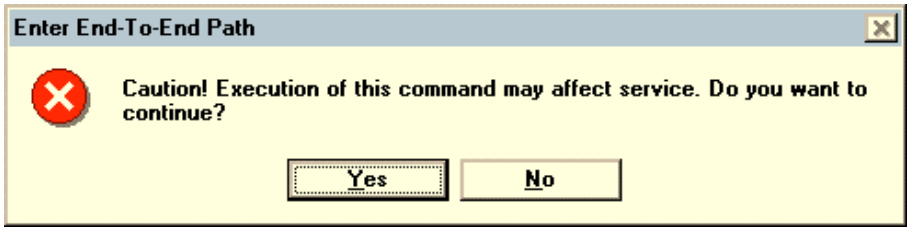
5. At the bottom of the form, you are prompted to choose the drop node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this drop node. Click **OK**. The main end-to-end path form displays:

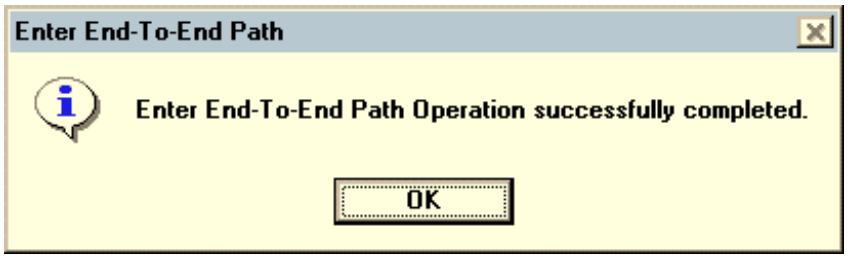


7. You are prompted to choose another drop node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears:

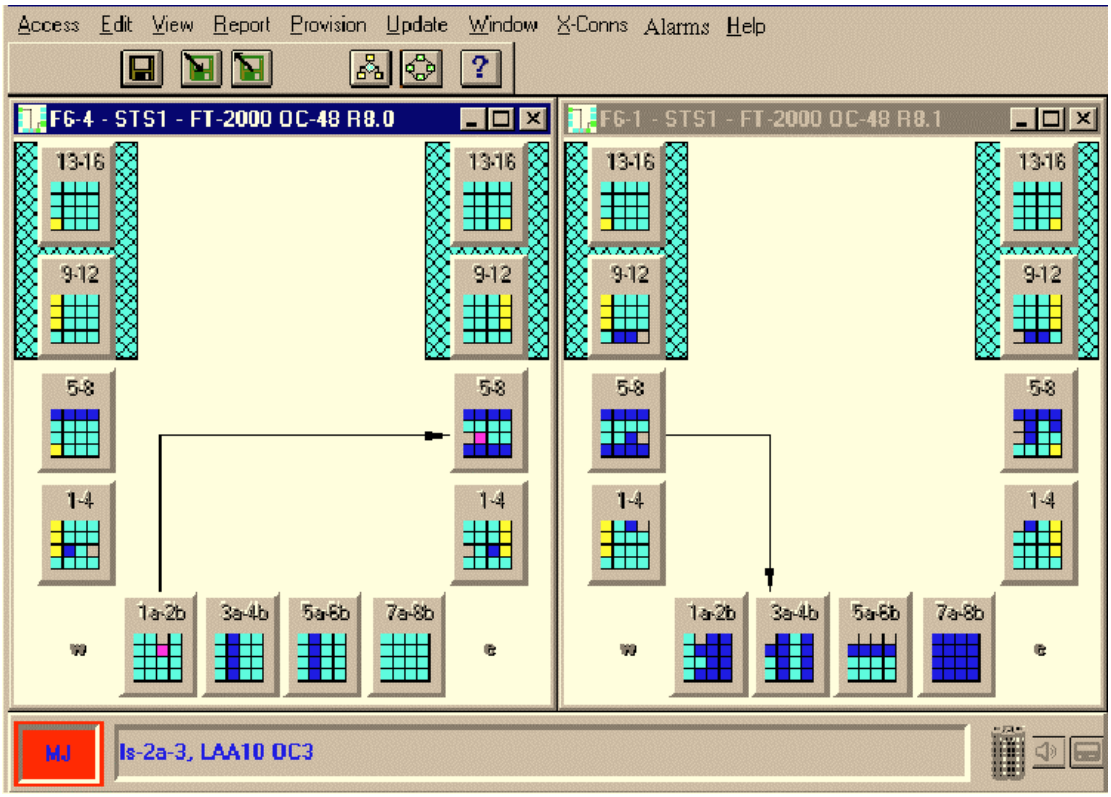


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



10. The screen below shows a graphical representation of the newly created end-to-end path.



Video Service End-to-End Paths

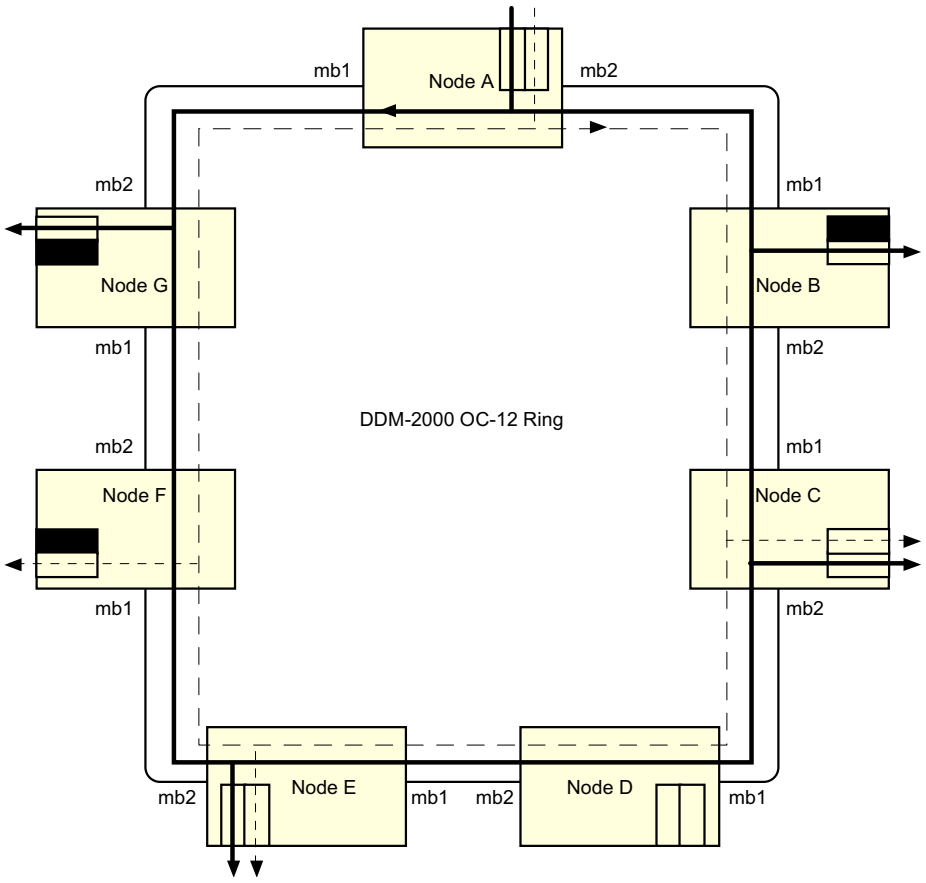
CPro-2000 offers the feature of Video Service Paths in DDM-2000 OC-12 NEs. Video paths are created using STS-3C cross connections.

NOTE: You must purchase the DDM-2000 OC-12 STS-3C feature package to have this capability. See your Lucent Technologies' account representative for details.

The STS-3C feature allows concatenation of three STS-1 signals into a single STS-3C signal and cross connection at the STS-3C rate. Two cross-connection types support Video Service paths: Video Source and Video Sink.

Video paths look like one-way paths, because they only use one rotation of the ring. They always contain one source at the add location and a sink at the drop location.
There can be more than one sink (or drop) in a video path, as shown in the following illustration. Because a video path only uses one rotation of the ring, a single time slot may contain two video paths.

The following illustration shows two Video Service paths. The first path, denoted by the solid line, shows the signal being added at Node A (the source) and put on Rotation 2, through circuit pack mb1. It follows the ring dropping at Nodes G, E, C, and B. The second path, denoted by the dashed line, is put on Rotation 1, through circuit pack mb2. It follows the ring dropping at Nodes C, E, and F.



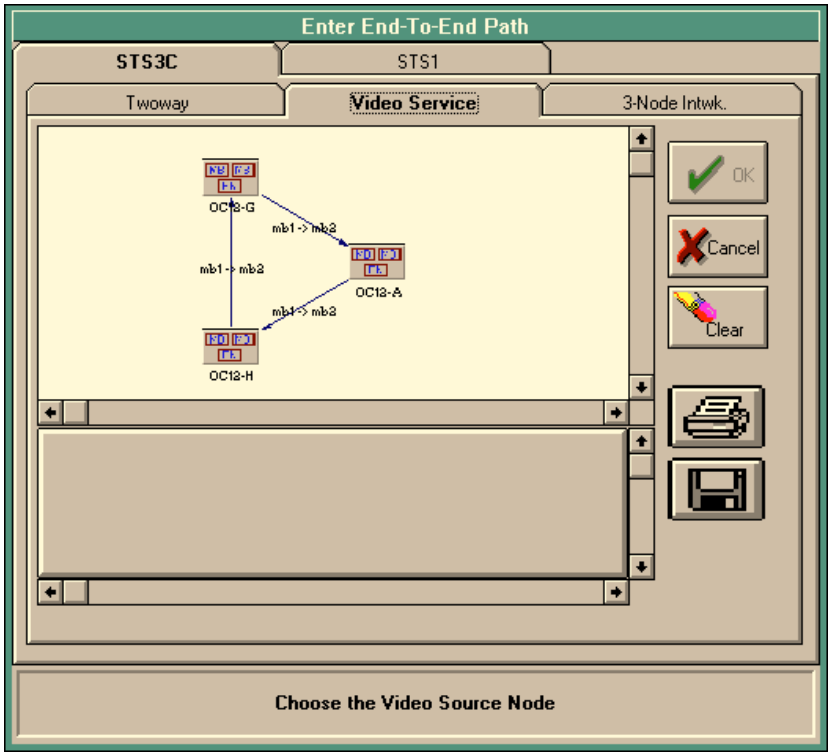
Enter an STS-3C Video Service End-to-End Path (DDM-2000 OC-12 and OC-12/OC-3 mixed ring when OC-3 is equipped with 24G-U OLIU)

NOTE: For the STS-3C path type to be available, the following restrictions must be followed:

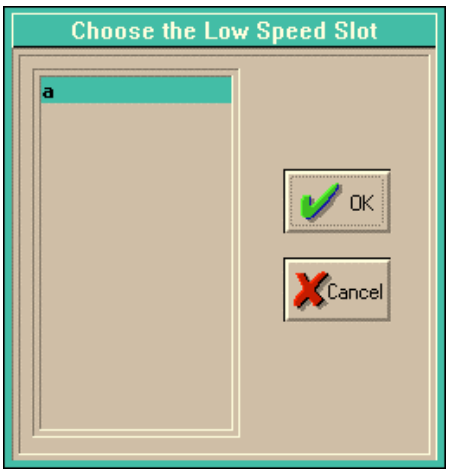
- A low-speed slot in the Video Source and Video Sink nodes must contain a 21-type OLIU circuit pack.
- The OC-3 Lines application parameter in the Provision menu must be set to *Video* for each Video Source and Video Sink node in the ring.
- The STS-3C feature must be enabled for each node in the ring. (This feature is enabled in MML using the SET-FEAT command (also available in the Provision Menu) and in TL1 using the ENT-FEAT command. See the *DDM-2000 OC-12 User/Service Manual* for complete details.)

Procedure

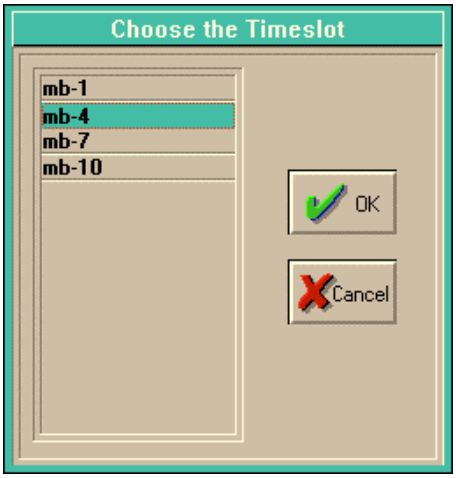
1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS3C** signal rate and **Video Service**.



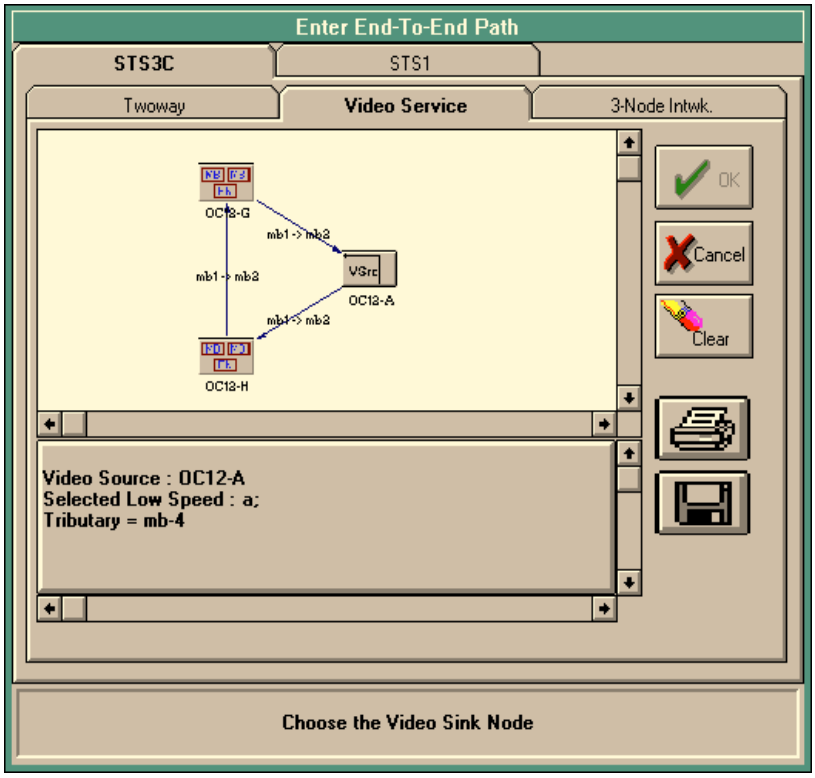
2. At the bottom of the form in the dialog box, you are prompted to choose the video source node. Double-click the desired node displayed within the form. The following screen appears:



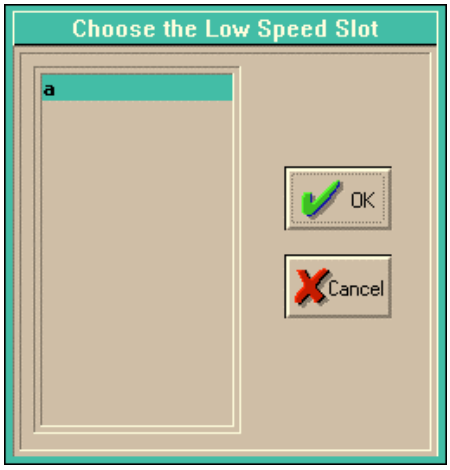
3. Select the low-speed slot to be used for this video source node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



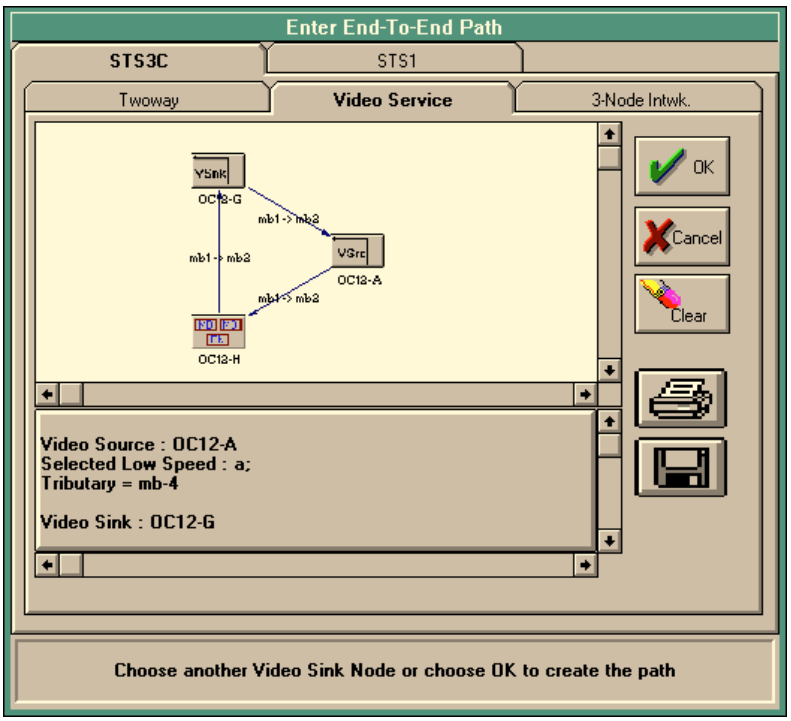
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



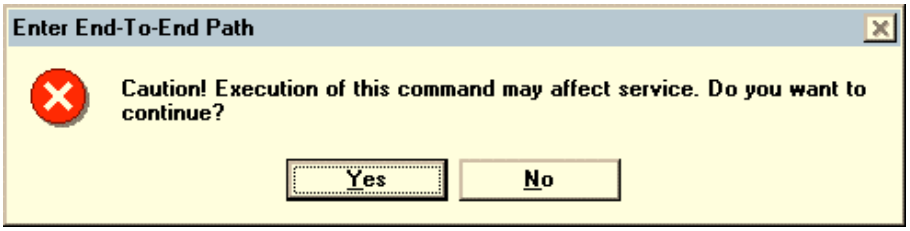
5. You are prompted to choose the video sink node. Double-click the desired node. The following screen appears:



6. Select the low-speed slot for this video sink node. Click **OK**. The main end-to-end path form displays:

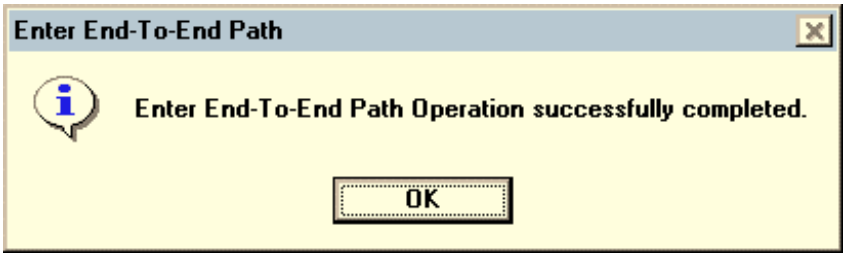


7. You are prompted to choose another video sink node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears.

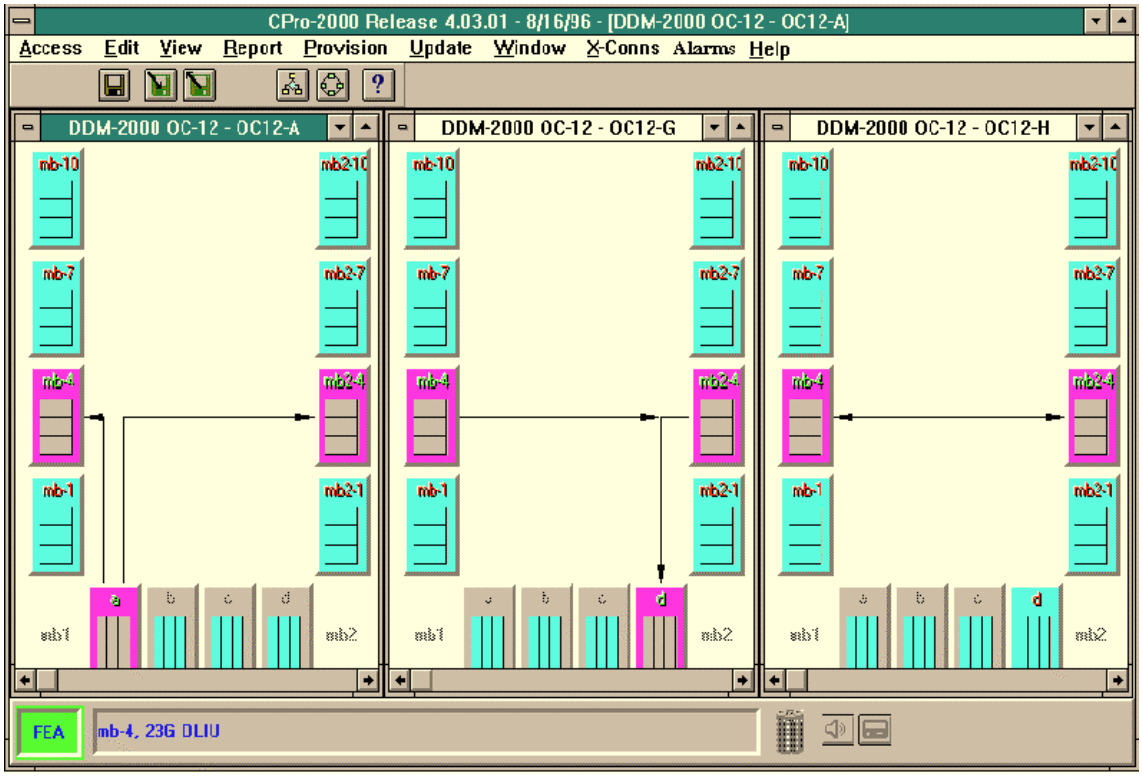


8. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

9. When your path has been successfully completed, the following screen appears. Click **OK**.



10. The screen below shows a graphical representation of the newly created end-to-end path.

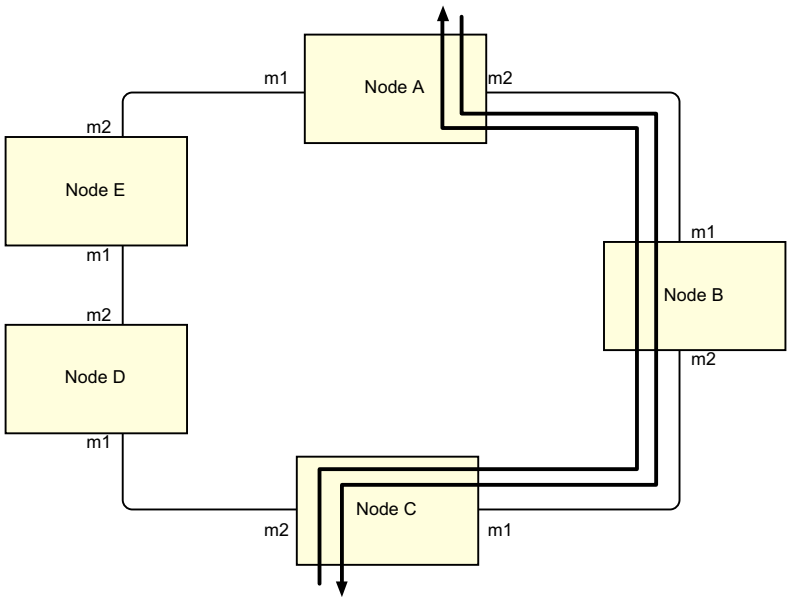


Locked Arc End-to-End Paths

A Locked Arc path must be at the VT1.5 signal rate and is only applicable to DDM-2000 OC-3 and FiberReach NEs. A locked path provides a fixed path for signals that have rigid timing requirements. A locked path contains locked cross connections, which only transmit a signal to and receive a signal from one OLIU circuit pack in the mains. The signal uses both rotations of the ring, but only a portion of the ring is being used for the path. Because a locked path uses a set path for the signal, the amount of time it takes the signal to go from point A to point B is always the same.

The following illustration shows a Locked Arc path in a single DDM-2000 OC-3 ring. The add/drop cross connection at Node A is a locked cross connection and the signal is being passed through the circuit pack in slot m2. At Node B, there is a two-way pass-through cross connection. At Node C, there is another add/drop cross connection that is also locked. This cross connection takes the signal through the circuit pack in m1 and drops it. It also takes incoming signal.

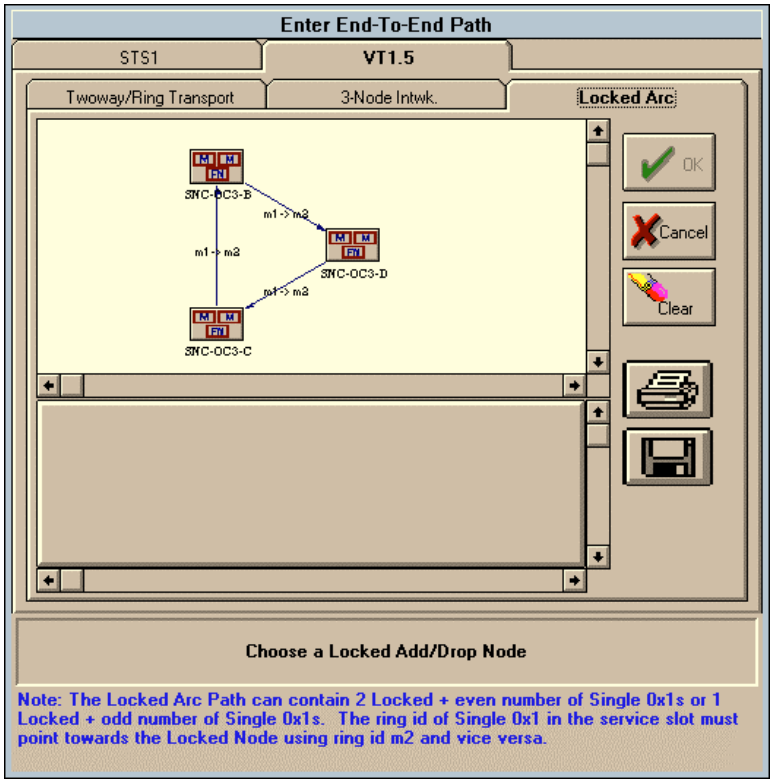
Locked cross connections use the Ring ID to designate which main slot is to be used to transmit and receive the signal. For this path, the Ring ID at Node A is m2 and the Ring ID at Node C is m1.



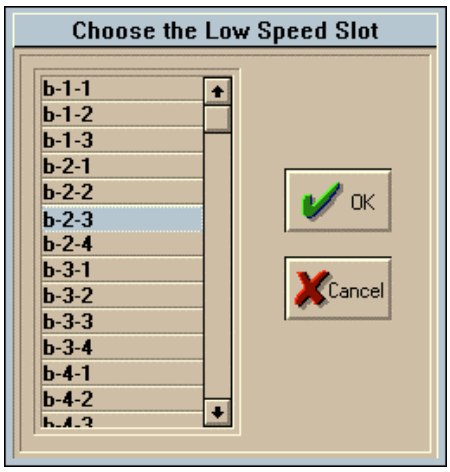
Enter a VT1.5 Locked End-to-End Path (DDM-2000 OC-3, and FiberReach)

Procedure

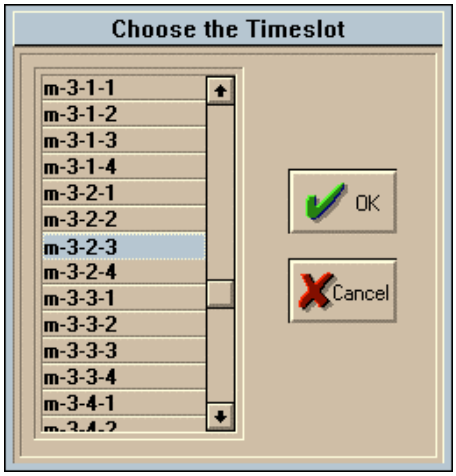
1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **VT1.5** signal rate and **Locked Arc** path type.



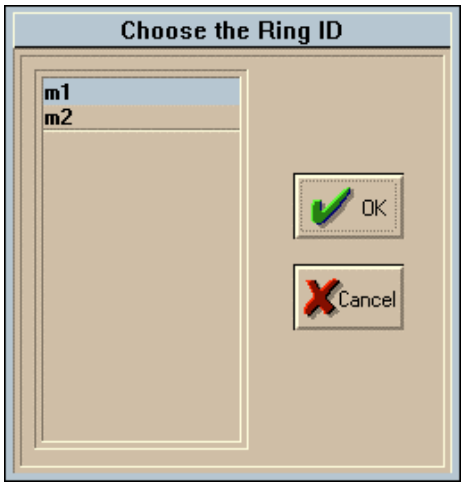
2. Near the bottom of the form in the dialog box, you are prompted to choose a locked add/drop node. Double-click the desired node displayed within the form. The following screen appears:



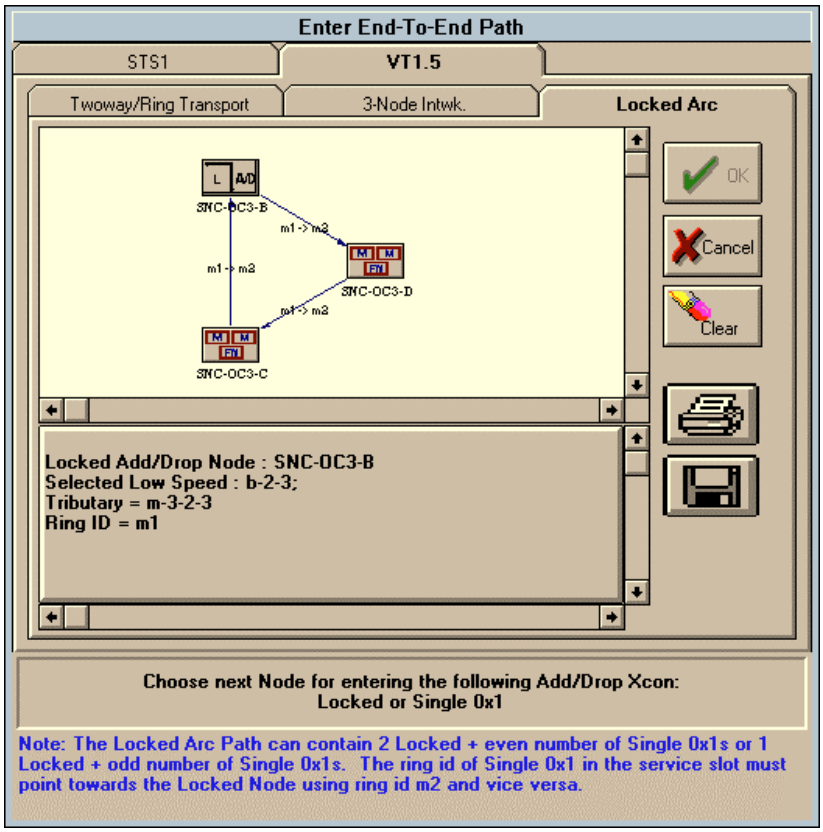
3. Select the low-speed slot for this locked add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



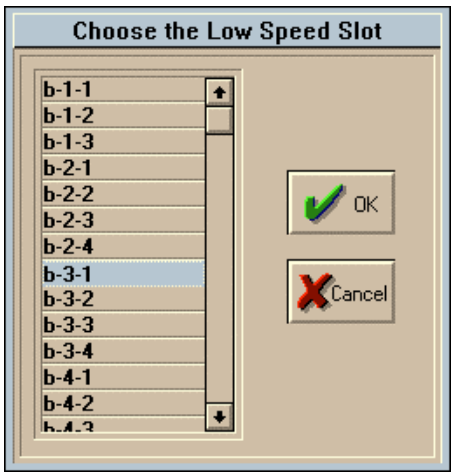
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The following screen appears:



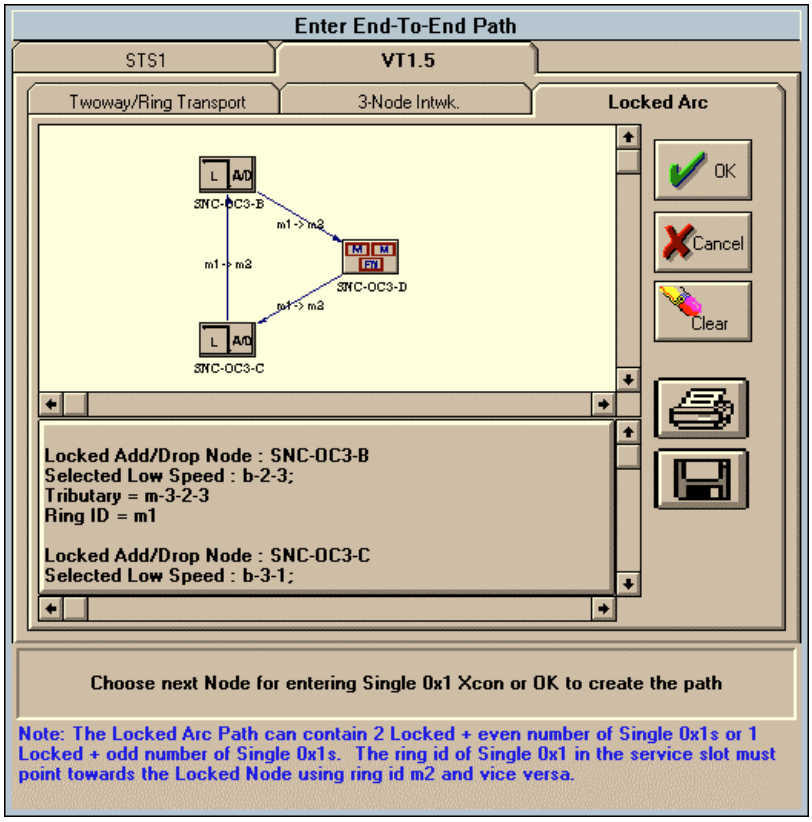
5. Select the Ring ID. The Ring ID establishes which way the pass-through cross connections, which are between the locked cross connections, should be created. It also determines on which side the locked cross connections leave an NE. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



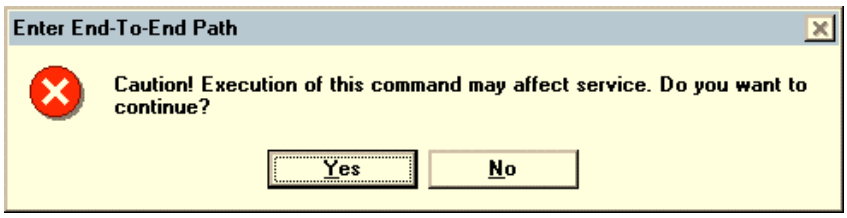
6. You are prompted to choose the next add/drop node. Double-click the desired node. The following screen appears:



7. Select the low-speed slot for this add/drop node. Click **OK**. The main end-to-end path form appears:

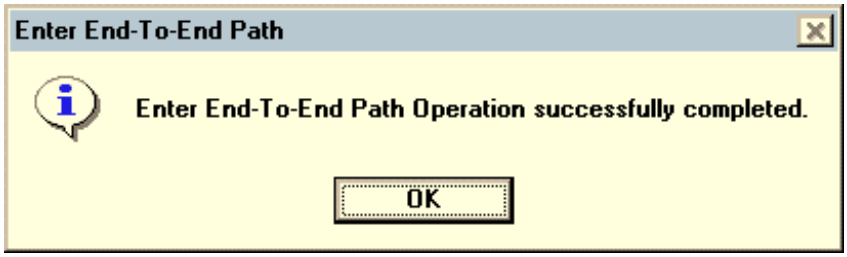


8. You are prompted to choose another node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears.

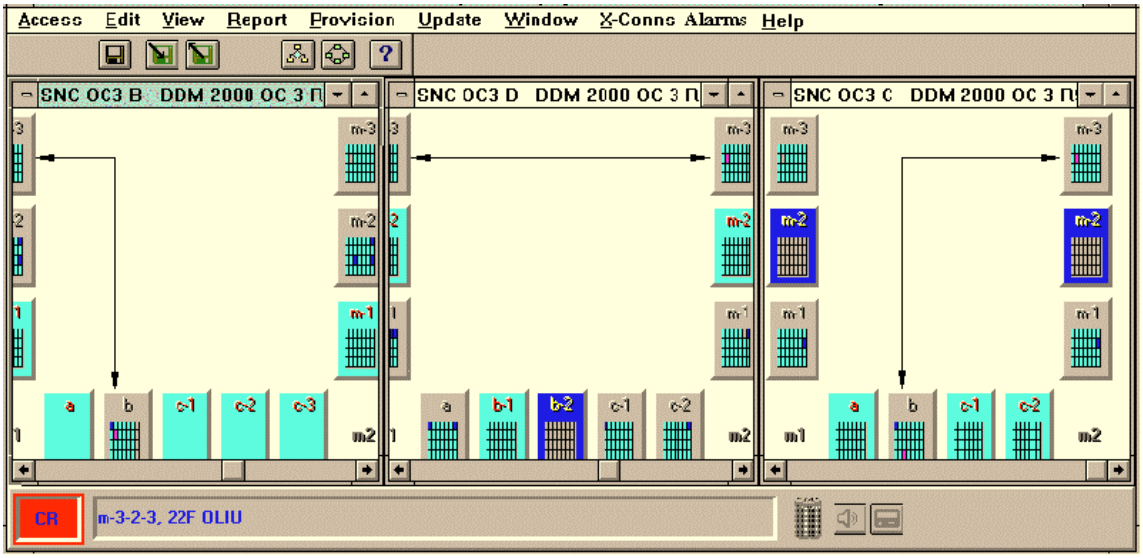


9. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

10. When your path has been successfully completed, the following screen appears. Click **OK**.



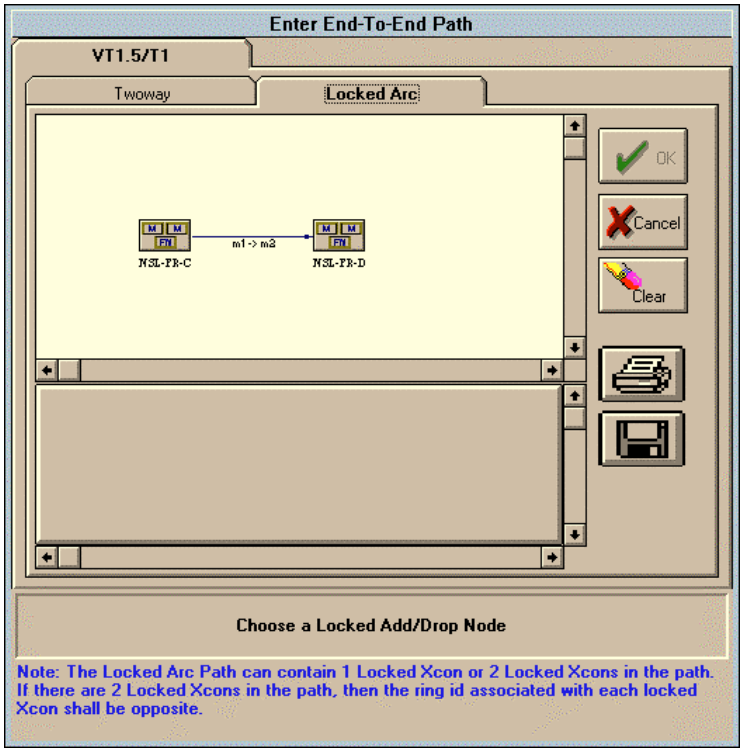
11. The screen below shows a graphical representation of the newly created end-to-end path.



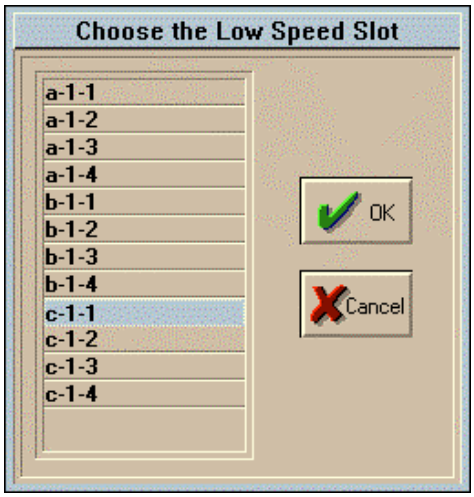
Enter a VT1.5/T1 Locked End-to-End Path (FiberReach)

Procedure

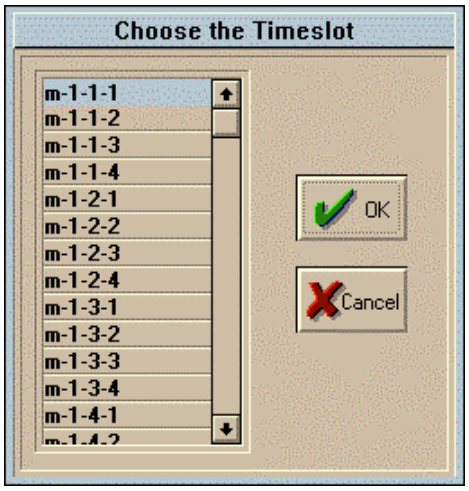
1. From the End-to-End Path Menu, select **Enter**. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **VT1.5/T1** signal rate and **Locked Arc** path type.



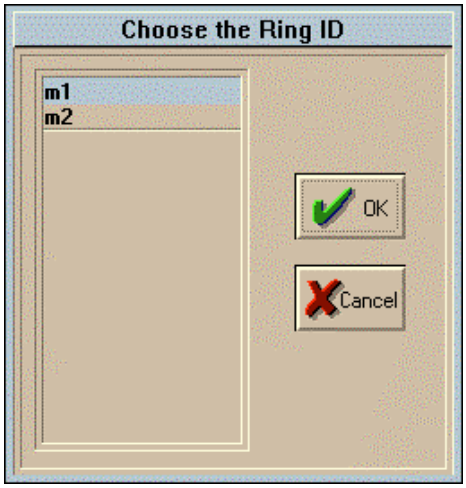
2. Near the bottom of the form in the dialog box, you are prompted to choose a locked add/drop node. Double-click the desired node displayed within the form. The following screen appears:



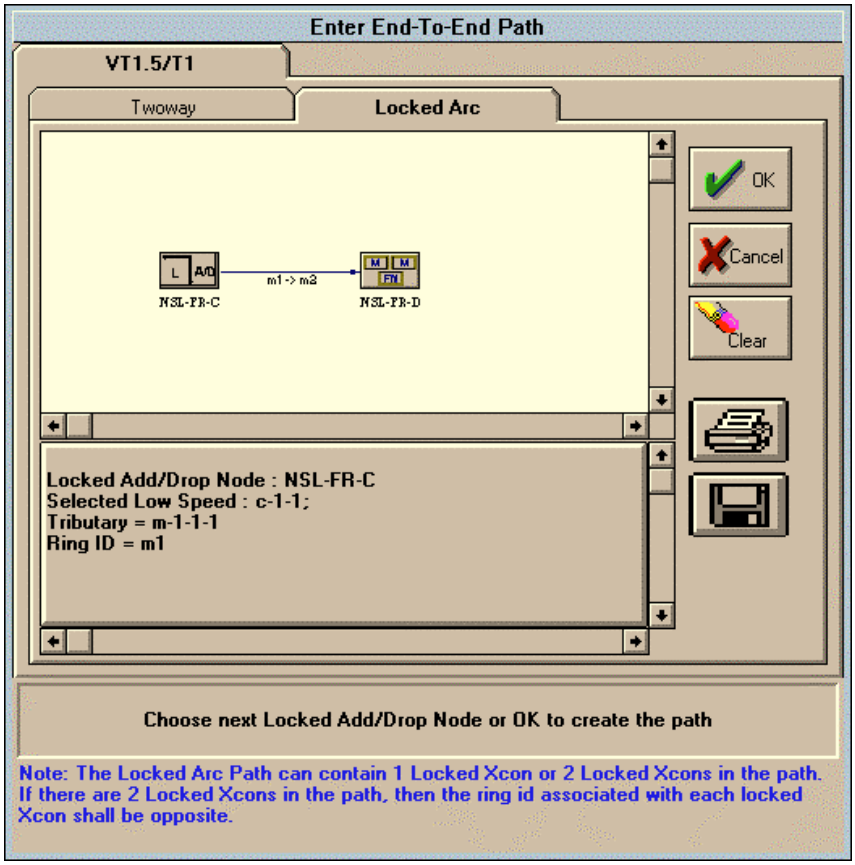
3. Select the low-speed slot for this locked add/drop node. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



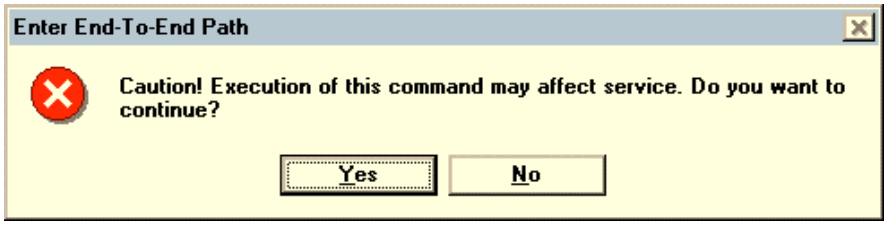
4. Select the time slot that the end-to-end path will follow around the ring. Only valid time slot numbers are displayed. Click **OK**. The following screen appears:



5. Select the Ring ID. The Ring ID establishes which way the pass-through cross connections, which are between the locked cross connections, should be created. It also determines on which side the locked cross connections leave an NE. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:

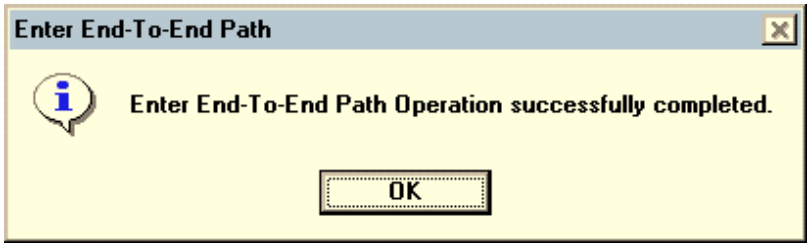


6. You are prompted to choose another node (for creating a multi-drop path), or to create the end-to-end path. When ready to create the path, click **OK**. The following screen appears.

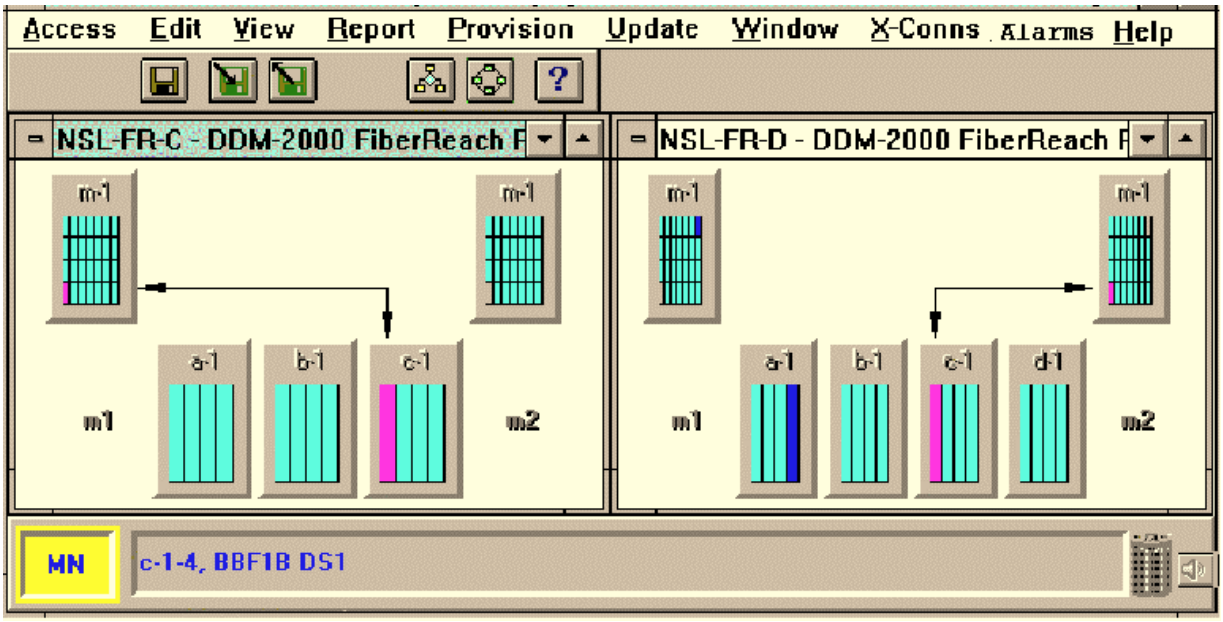


7. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**.

8. When your path has been successfully completed, the following screen appears. Click **OK**.



9. The screen below shows a graphical representation of the newly created end-to-end path.



Three-Node Interworking End-to-End Paths (Access Ring Application)

A form in the CPro-2000 End-to-End Path menu supports the creation of a three-node interworking end-to-end path, which is often used for access ring applications. The path is provisioned over an access ring that interconnects to another ring via two colocated pairs of nodes. This type of arrangement allows the end-to-end path to survive multiple failures.

To create a three-node interworking end-to-end path, access the End-to-End Path menu while in the Subnetwork View. A form appears prompting the selection of the signal rate and path type. The selection of these two options dynamically changes the form to reflect the information needed to create that specific type of path. There are two types of three-node interworking end-to-end paths supported by CPro-2000:

- STS-1 three-node interworking (DDM-2000)
- VT1.5 three-node interworking (DDM-2000 OC-3 only)

NOTE: CPro-2000 R11.0 does not support three-node interworking end-to-end paths on an FT-2000.

All low speed connections for DDM-2000 use the following packs:

- OC-3 or STS-1E

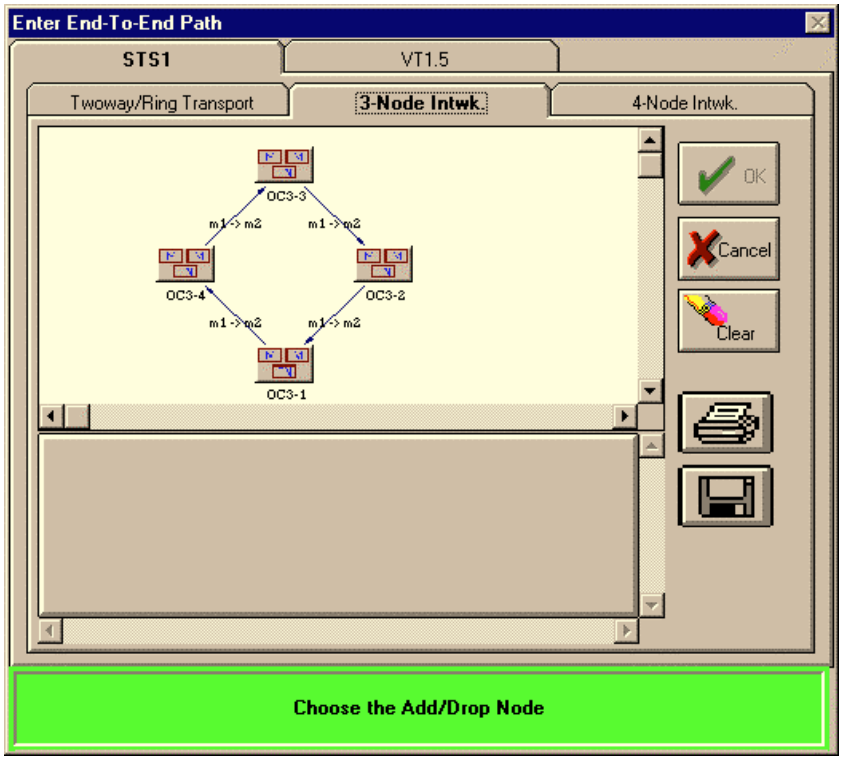
The following procedures provide specific instructions on creating the four types of three-node interworking end-to-end paths in an access ring application.

NOTE: If the path being configured is a ring with linear extensions, the path around the ring and the individual linear extension cross connections are created separately.

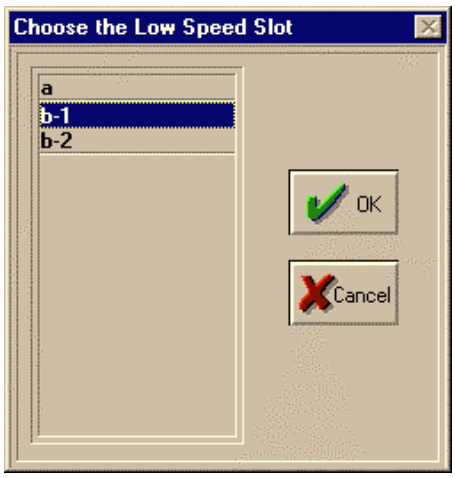
Enter an STS-1 Three-Node Interworking End-to-End Path (DDM-2000 only)

Procedure

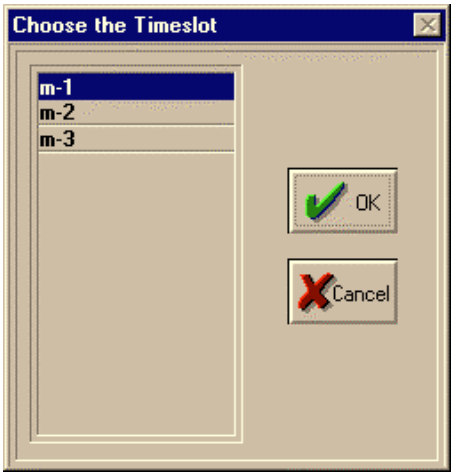
1. From the End-to-End Path menu, select Enter. The following form appears. Only valid signal rates and path types are available to select. Click the **STS1 and 3-Node Intwk**. tabs.



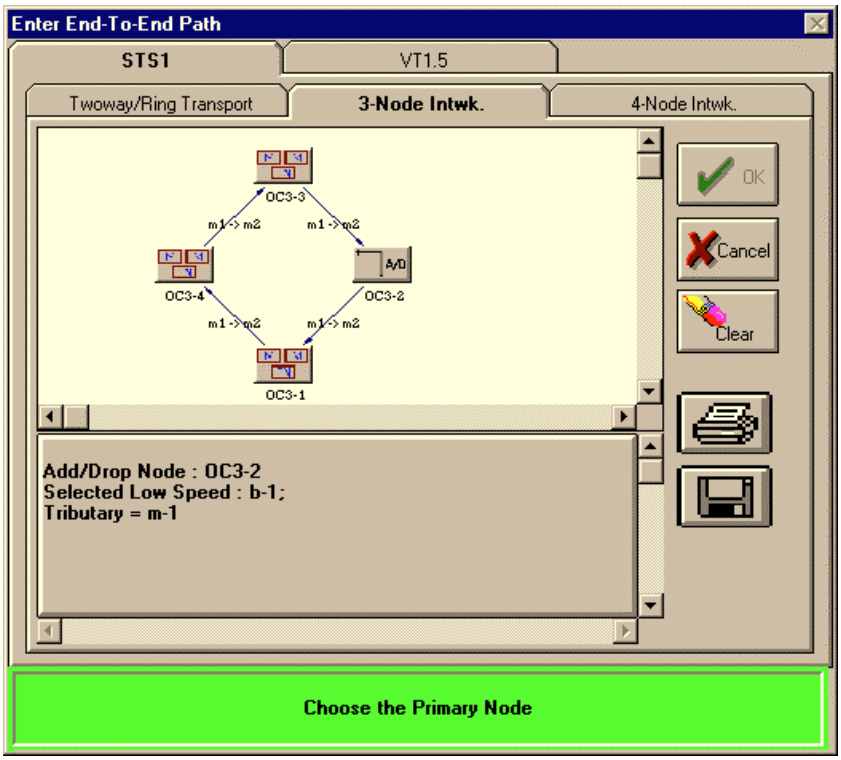
2. At the bottom of the form, you are prompted to choose the Add/Drop Node. Double-click the node you have selected. The following screen displays:



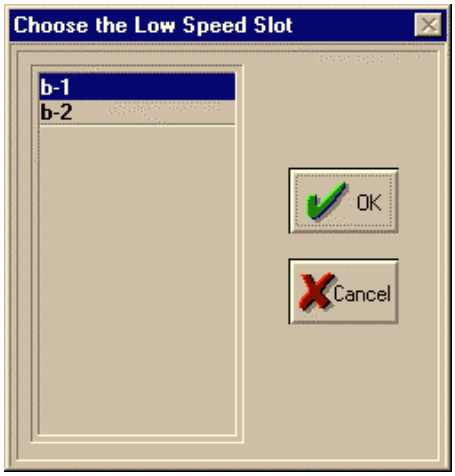
3. Select the low-speed slot for the Add/Drop Node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The following screen appears:



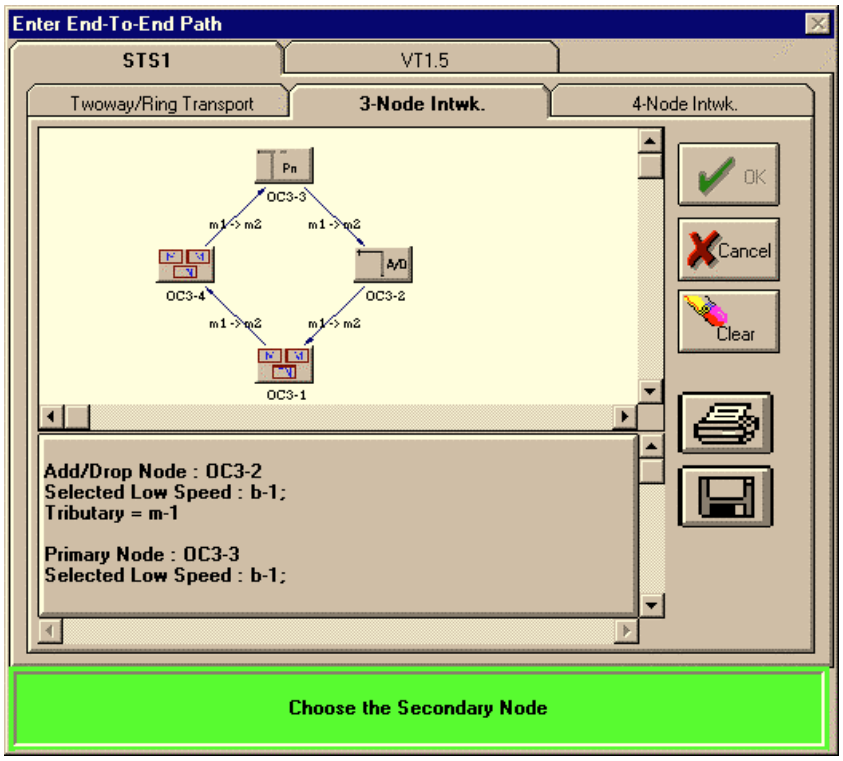
4. Select the timeslot that the end-to-end path will follow around the ring. Only valid timeslot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the Add/Drop Node information you have selected:



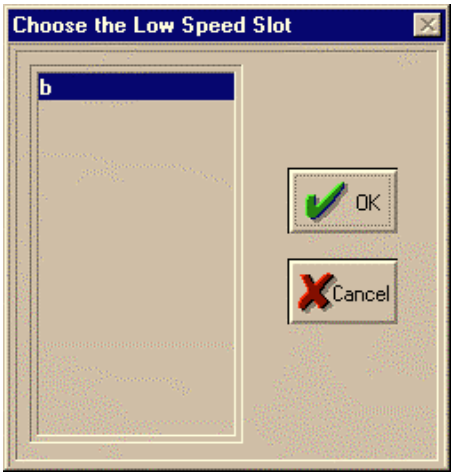
5. At the bottom of the form, you are prompted to choose the Primary Node. Double-click the node you have selected. The following screen appears:



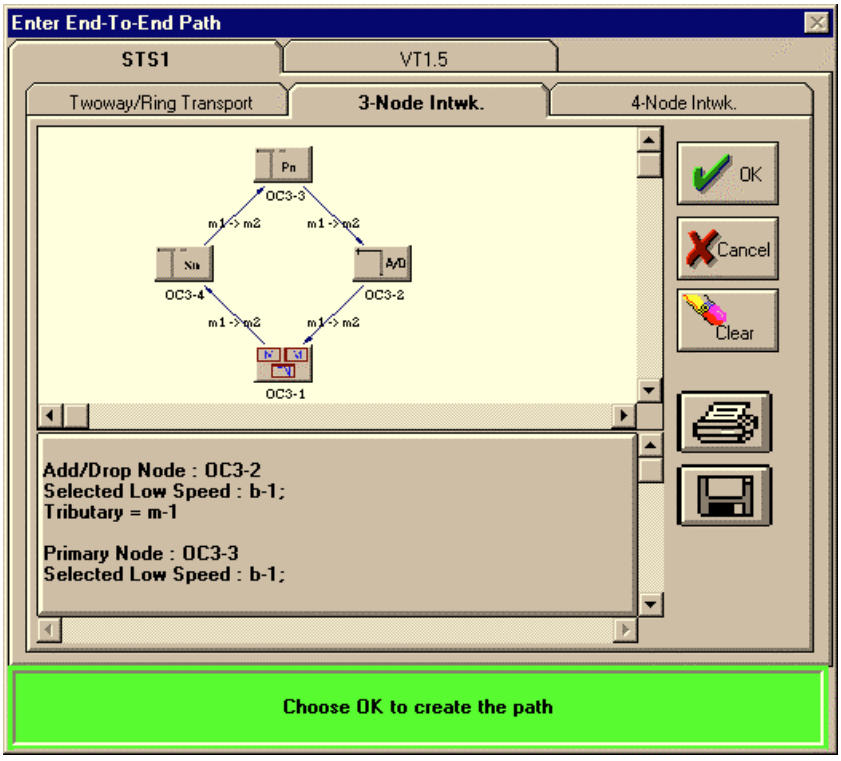
6. Select the low-speed slot for the Primary Node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the Primary Node information you have selected:



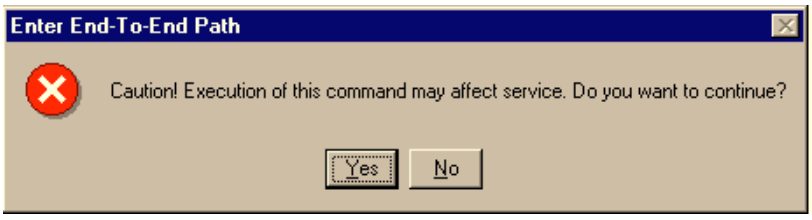
7. At the bottom of the form, you are prompted to select the Secondary Node. Double-click the node you have selected. The following screen appears:



8. Select the low-speed slot for the Secondary Node. Click **OK**. The main end-to-end path form displays:



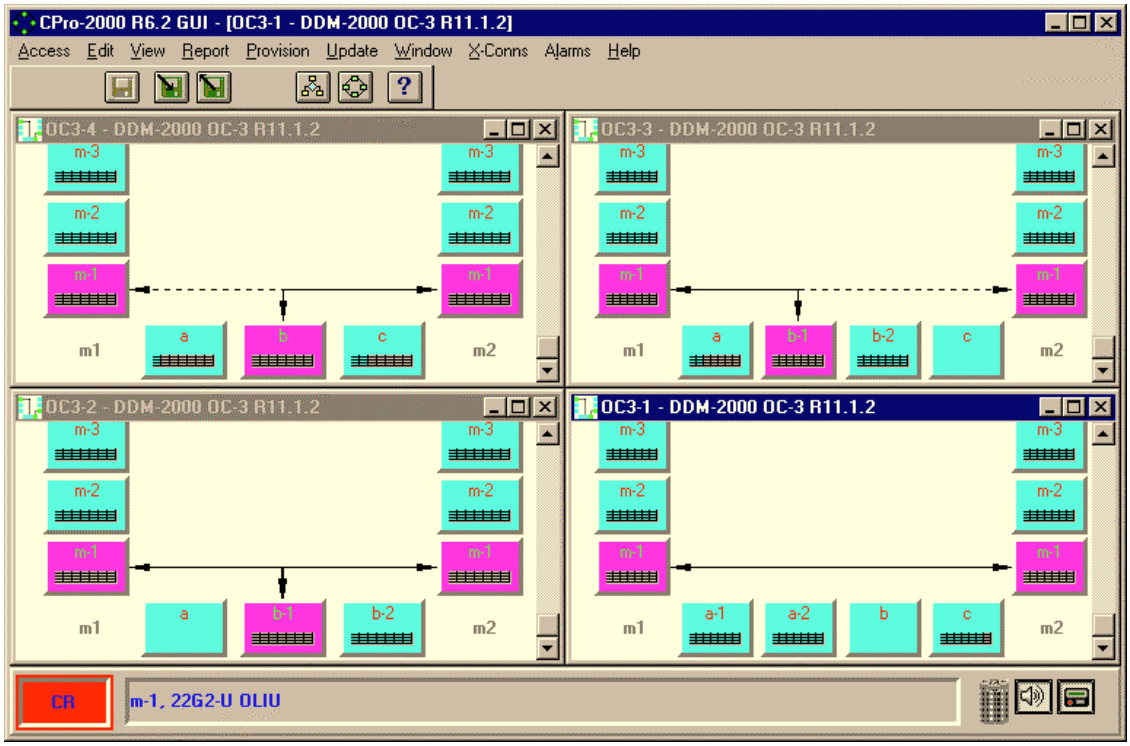
9. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.



10. You may click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**. The following message box displays..

11. Click **OK,** then click **Cancel** in the End-to-End Path dialog box to complete the process.

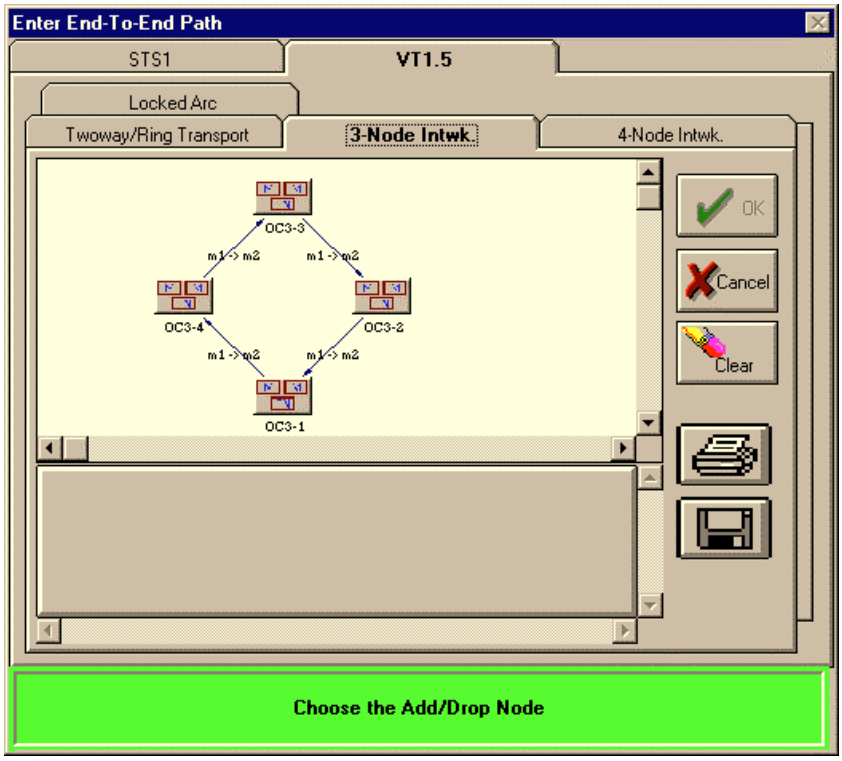
    The screen below shows a graphical representation of the newly created end-to-end path.



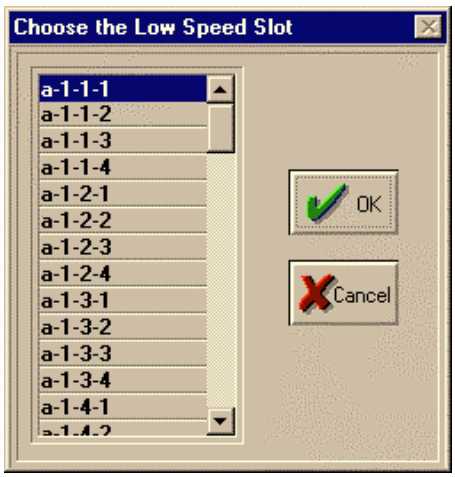
Enter a VT1.5 Three-Node Interworking End-to-End Path (DDM-2000 OC-3 and FiberReach only)

Procedure

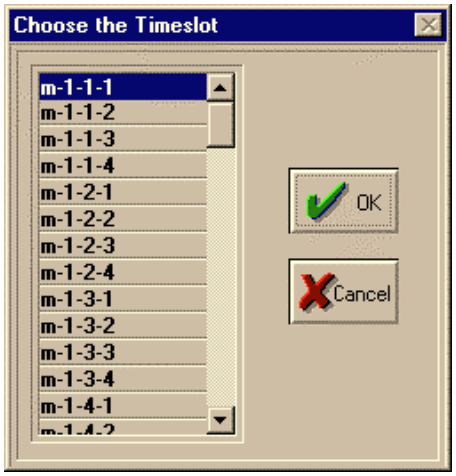
1. From End-to-End Path menu, select Enter. The following form appears. Only valid signal rates and path types are available to select. Click the **VT1.5 and 3-Node Intwk.** tabs.



2. At the bottom of the form, you are prompted to choose the Add/Drop Node. Double-click the node you have selected. The following screen displays:

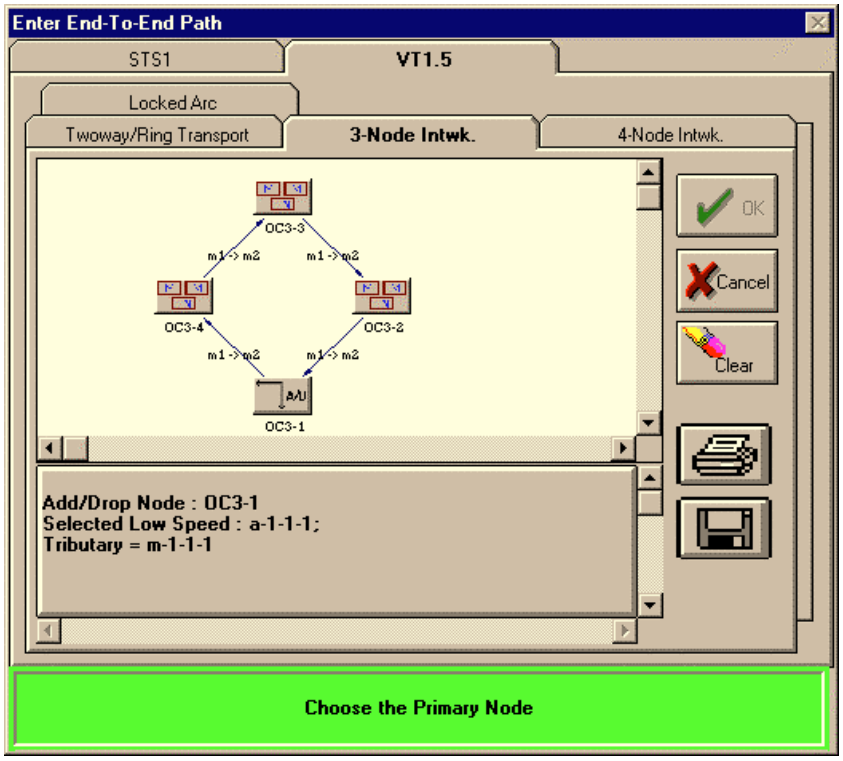


3. Select the low-speed slot for the Add/Drop Node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The following screen appears:

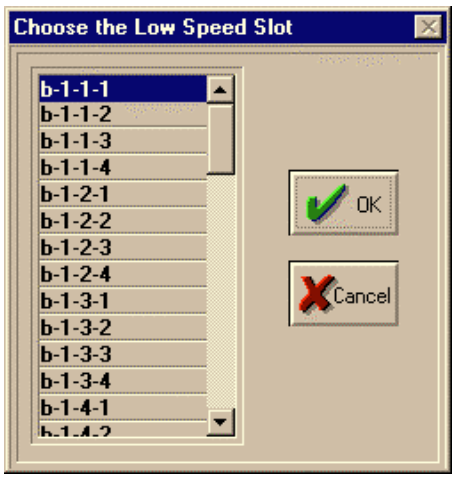


4. Select the timeslot that the end-to-end path will follow around the ring. Only valid timeslot numbers are displayed. Click **OK**.

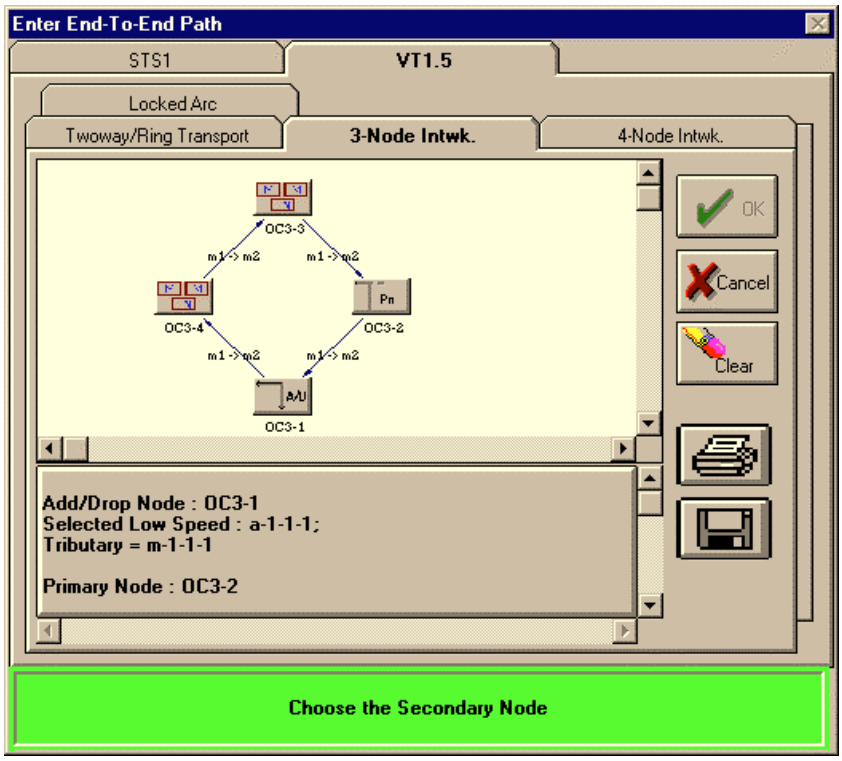
5. The main end-to-end path form displays, updated with the Add/Drop Node information you have selected:



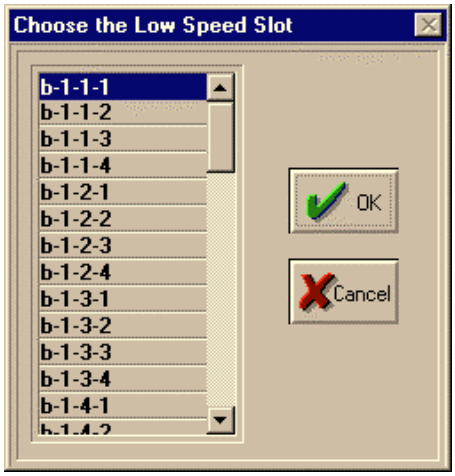
6. At the bottom of the form, you are prompted to choose the Primary Node. Double-click the node you have selected. The following screen appears:



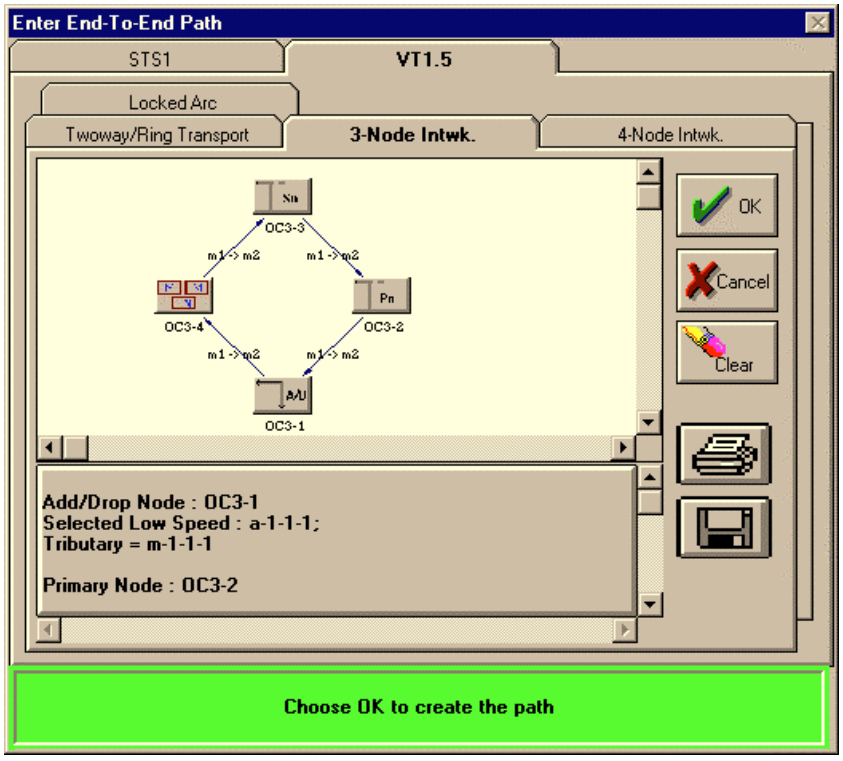
7. Select the low-speed slot for the Primary Node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the Primary Node information you have selected:



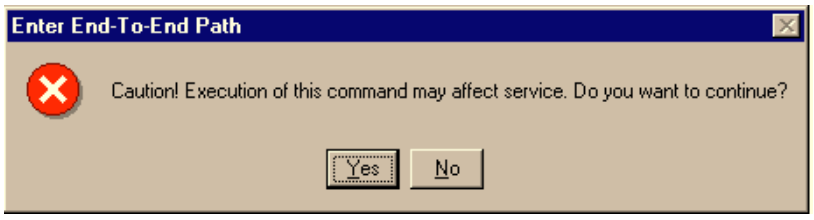
8. At the bottom of the form, you are prompted to select the Secondary Node. Double-click the node you have selected. The following screen appears:



9. Select the low-speed slot for the Secondary Node. Click **OK**. The main end-to-end path form displays:



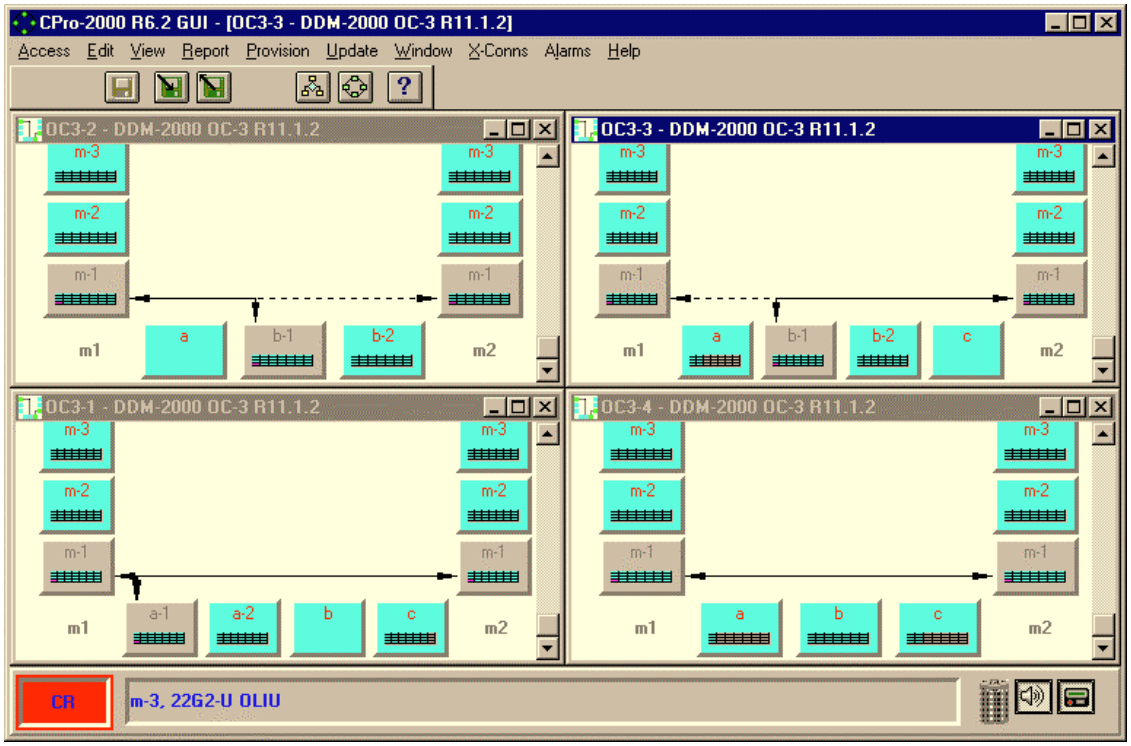
10. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.



11. You may click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**. The following message box displays.

12. Click **OK,** then click **Cancel** in the End-to-End Path dialog box to complete the process.

    The following screen shows a graphical representation of the newly created end-to-end path.



Enter an STS-3C Three-Node Interworking End-to-End Path (DDM-2000 OC-12 only)

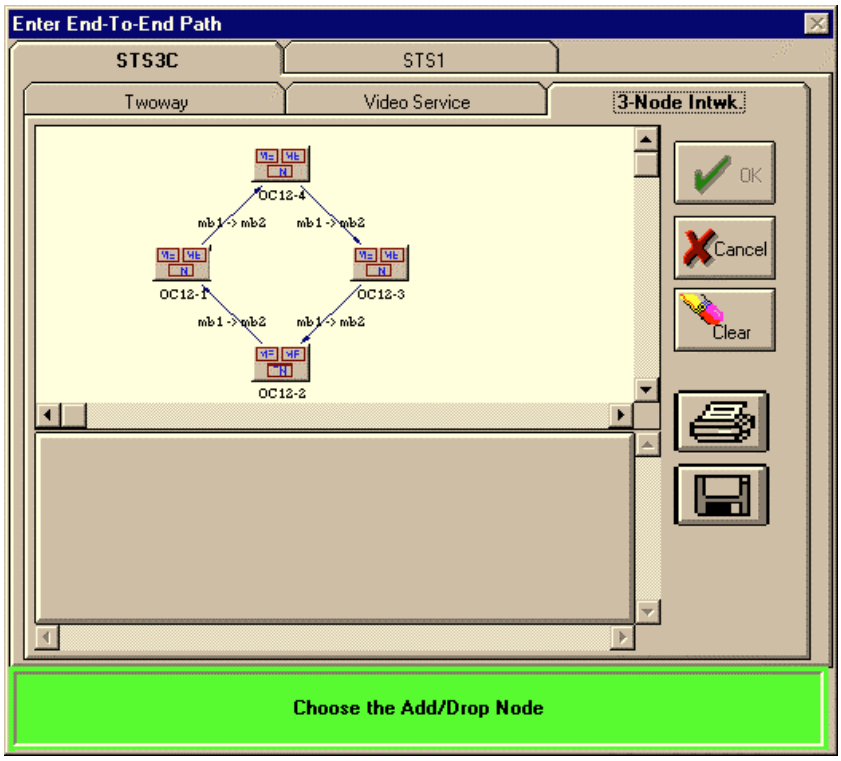
Procedure

1. From the End-to-End Path menu, select Enter. The following form appears. Only valid signal rates and path types are available to select; unsupported signal rates and path types for your current subnetwork are grayed-out. Click the **STS3C and 3-Node Intwk.** tabs.

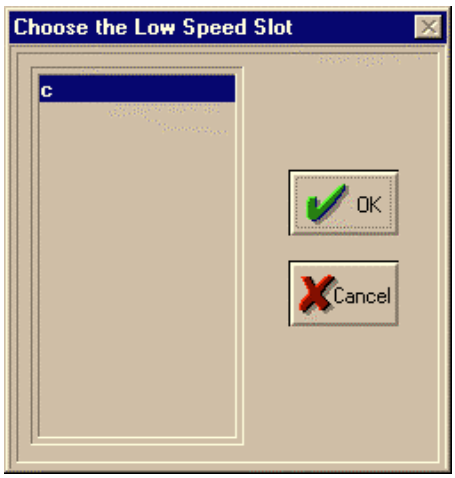
NOTE: In order for the STS-3C path type to be available, the following restrictions must be followed:

- A low-speed slot in the Add/Drop, Primary, and Secondary nodes must contain a 21-type OLIU circuit pack.
- The OC-3 Lines application parameter, in the Provision menu, must be set to *1+1* for the Add/Drop, Primary, and Secondary nodes in the ring.
- For shelves equippped with 29G OLIUs the Function Slot C (fn-c) must be equipped with a 22-type OLIU.
- The STS3-C feature must be enabled for each node in the ring. (This feature is enabled in MML using the SET-FEAT command and in TL1 using the ENT-FEAT command. See your *DDM-2000 OC-12 User Service Manual* for complete details.)

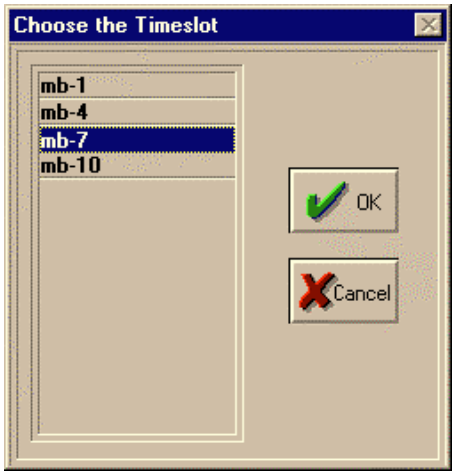
On a DDM-2000 OC3 shelf equipped with the 29G OLIU, CPro-2000 R11.0 supports setting the OC-3 line application parameter to *0x1*.



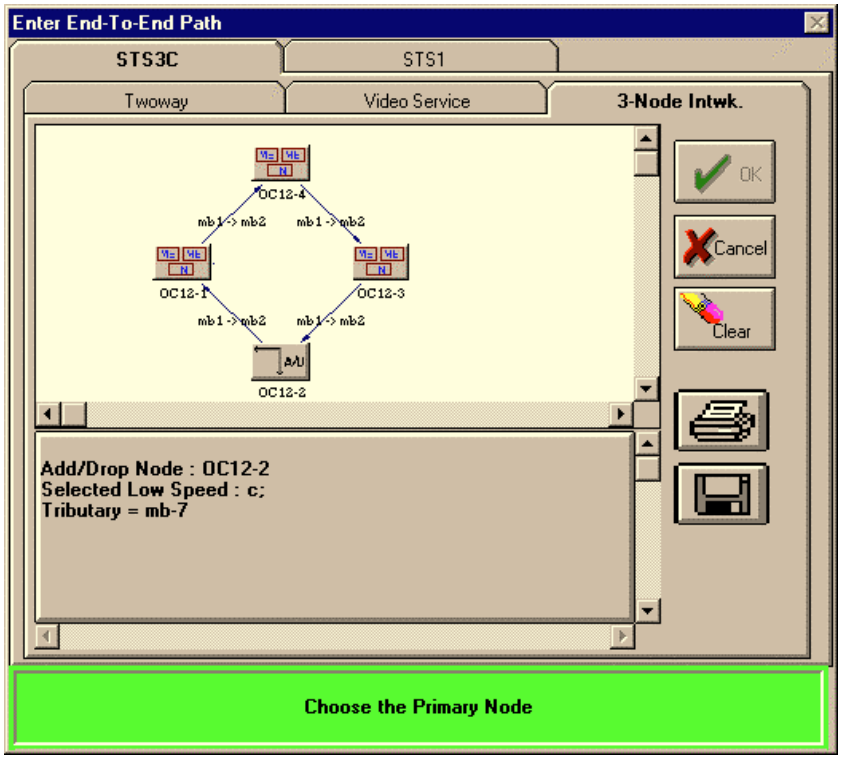
2. At the bottom of the form, you are prompted to choose the Add/Drop Node. Double-click the node you have selected. The following screen displays:



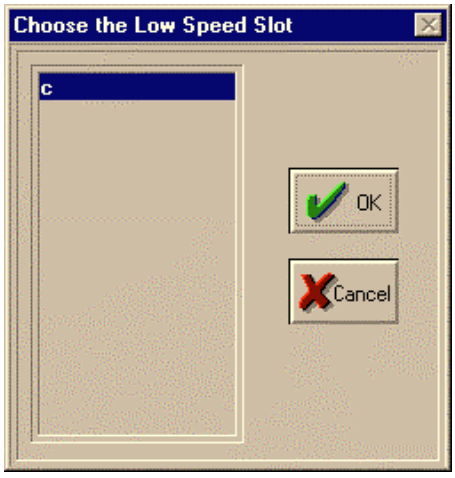
3. Select the low-speed slot for the Add/Drop node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The following screen appears:



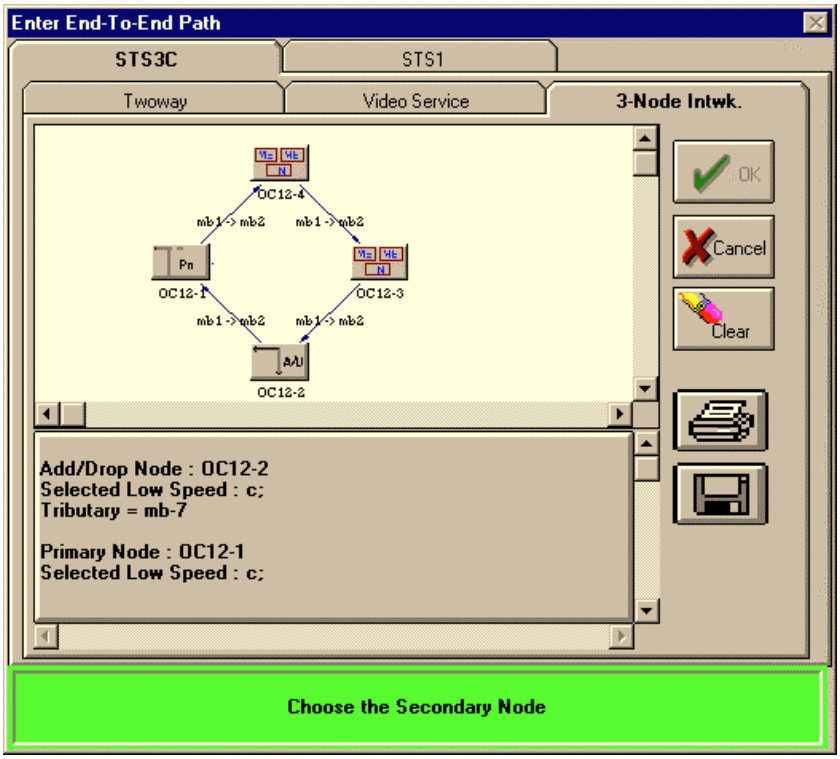
4. Select the timeslot that the end-to-end path will follow around the ring. Only valid timeslot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the Add/Drop node information you have selected:



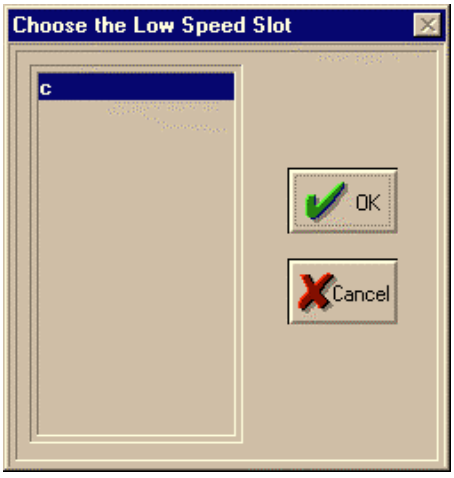
5. At the bottom of the form, you are prompted to choose the Primary Node. Double-click the node you have selected. The following screen appears:



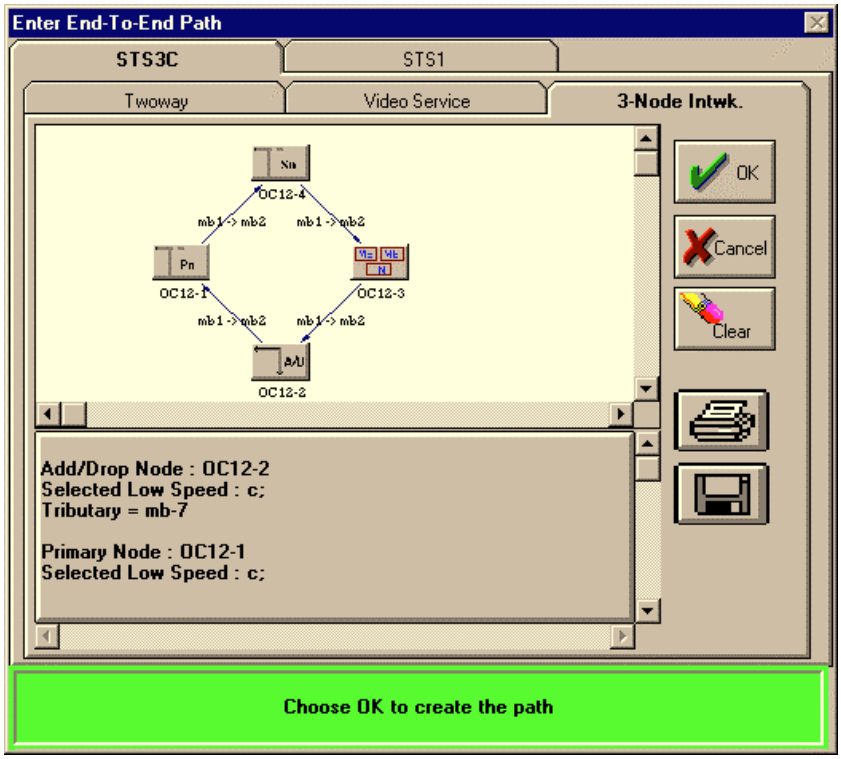
6. Select the low-speed slot for the Primary Node from the scroll list. Only valid slot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the Primary Node information you have selected:



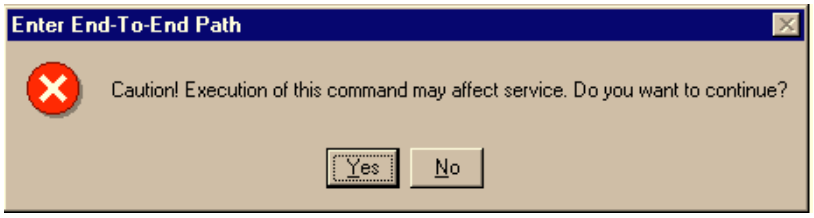
7. At the bottom of the form, you are prompted to select the Secondary Node. Double-click the node you have selected. The following screen appears:



8. Select the low-speed slot for the Secondary Node. Click **OK**. The main end-to-end path form displays:



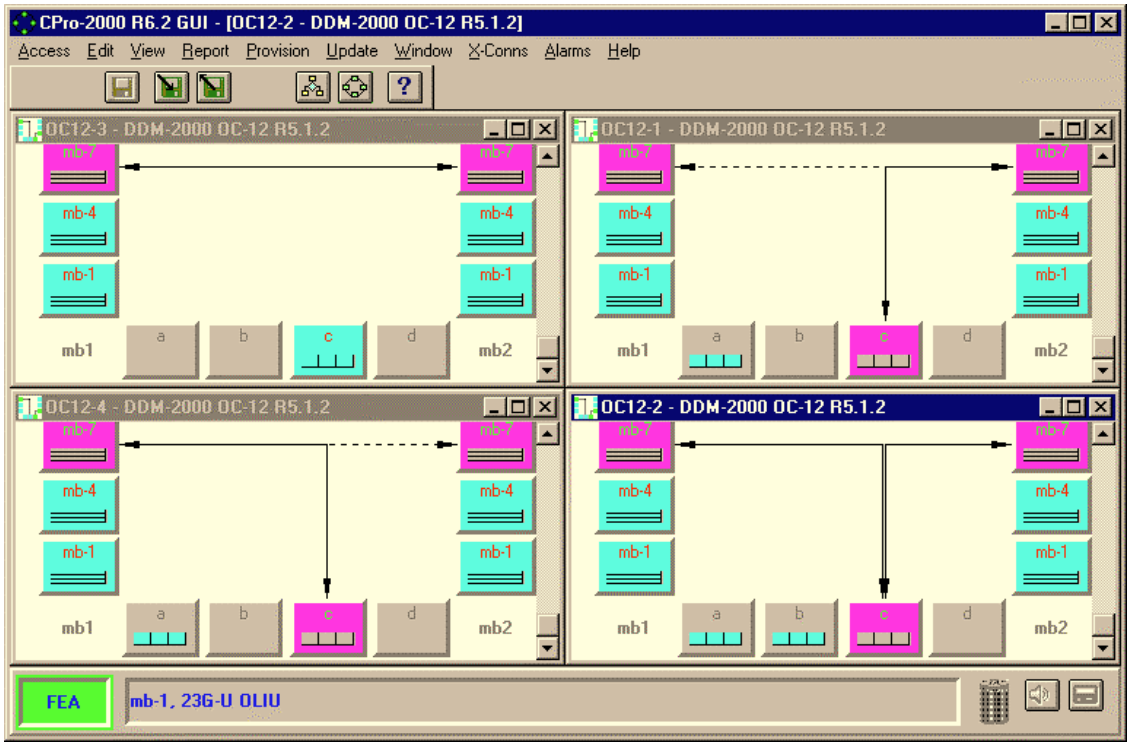
9. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.



10. You may click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**. The following message box displays.

11. Click **OK,** then click **Cancel** in the End-to-End Path dialog box to complete the process.

    The screen below shows a graphical representation of the newly created end-to-end path.



Four-Node Interworking End-to-End Paths (Interoffice Ring Application)

A form in the CPro-2000 End-to-End Path menu supports the creation of a four-node interworking end-to-end path, which is used for interoffice ring applications.

To create a four-node interworking end-to-end path, access the End-to-End Path menu while in the Subnetwork View. A form appears prompting the selection of the signal rate and path type. The selection of these two options dynamically changes the form to reflect the information needed to create that specific type of path. There are two types of four-node end-to-end paths supported by CPro-2000:

- STS-1 four-node interworking (DDM-2000)
- VT1.5 four-node interworking (DDM-2000 OC-3 Releases 7.2, 9.0, 11.0, 11.1, and 15.0)

NOTES: CPro-2000 R11.0 does not support the following:

- Four-node interworking end-to-end paths on an FT-2000.
- The establishment of STS-1 or VT1.5 four-node interworking end-to-end paths when an intervening node exists between either the primary and secondy nodes one ring (Ring A) or between the primary and secondary nodes another ring (Ring B).

When constructing interoffice rings, it is necessary to have exact information on which TID performs which function prior to creating the individual cross connections that make up a four-node interworking ring. TIDs must be identified for the following four functions: primary node ring A, primary node ring B, secondary node ring A, and secondary node ring B. It is also critical that the direction in which the DRI cross connections are to be added is identified in advance for successful subnetwork functionality.

All low speed connections for DDM-2000 use the following packs:

- OC-3 or STS-1E

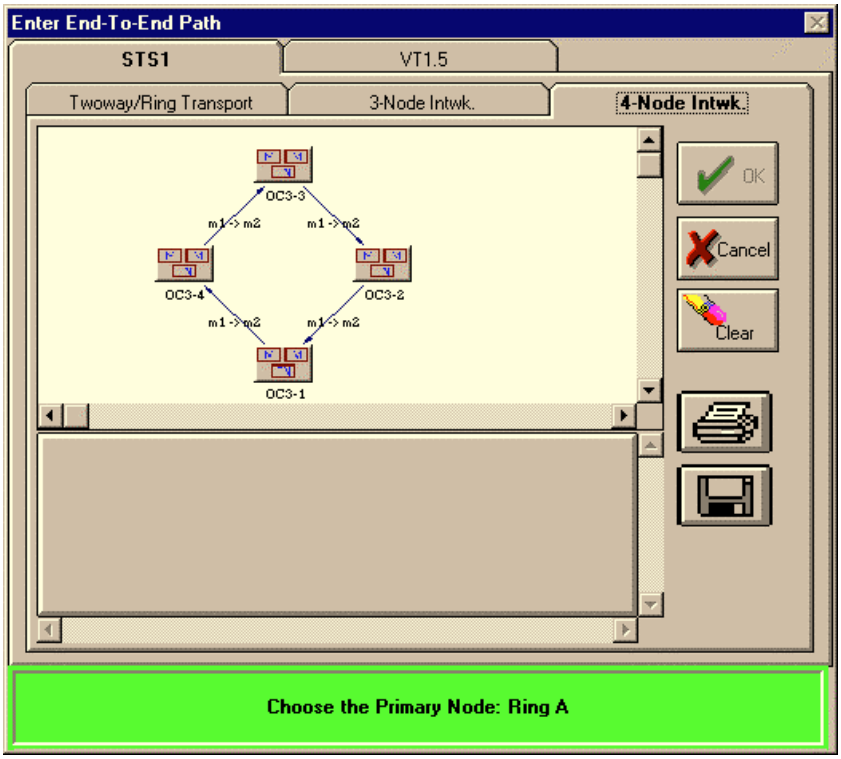
DDM-2000 Interoffice Rings

When the interoffice ring is a DDM-2000 OC-3 ring or DDM-2000 OC-12 ring, two drop-and-continue nodes are used to connect to each of the two access rings or to a single access ring and then off the network (for example, connecting to a point of presence [POP] to a long-distance carrier) where traffic terminates.

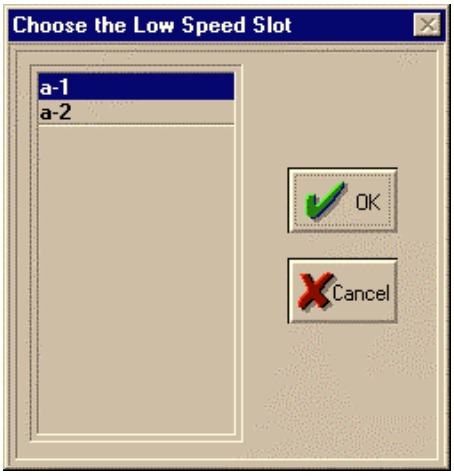
Enter an STS-1 Four-Node Interworking End-to-End Path (DDM-2000 only)

Procedure

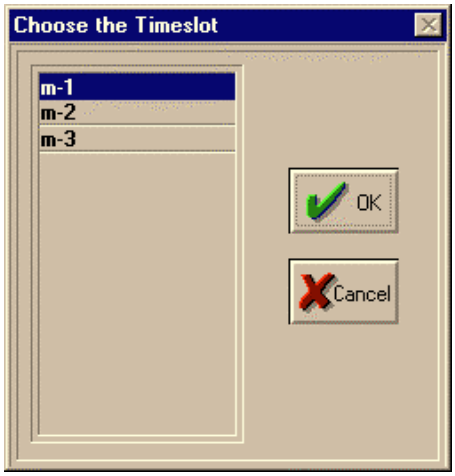
1. From the End-to-End Path menu, select Enter. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **STS1 signal rate and 4-Node Intwk.** path type.



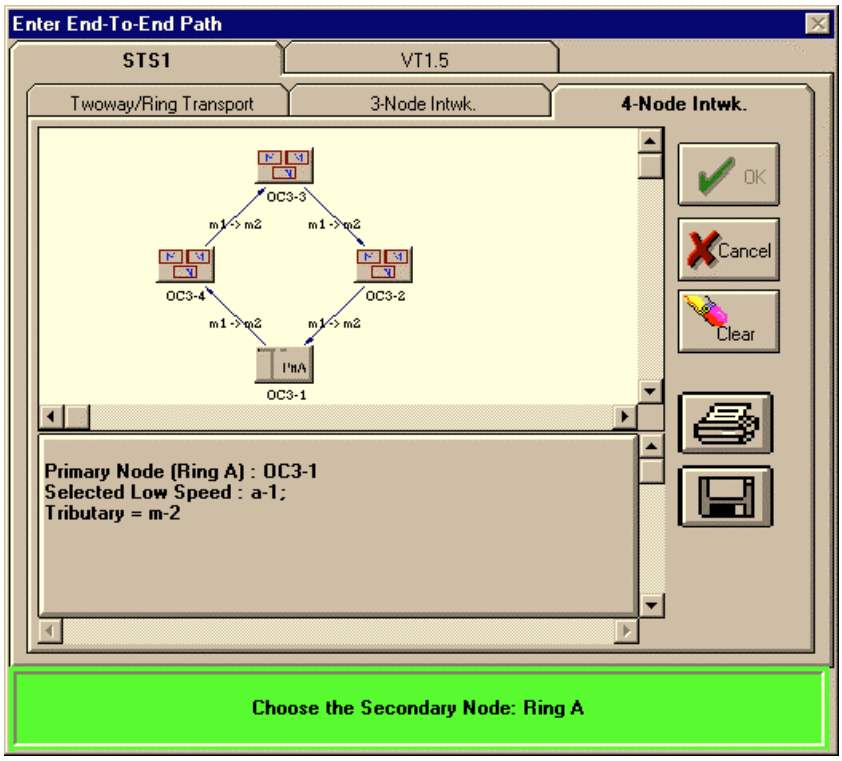
2. At the bottom of the form in the dialog box, you are prompted to choose the primary node for Ring A. Double-click the desired node displayed within the form. The following screen appears:



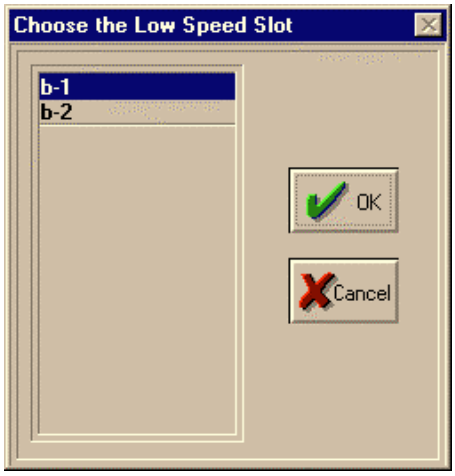
3. Select the low-speed slot for the primary node for Ring A. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to cancel the operation. If the slot you have chosen is correct, click **OK**. The following screen appears:



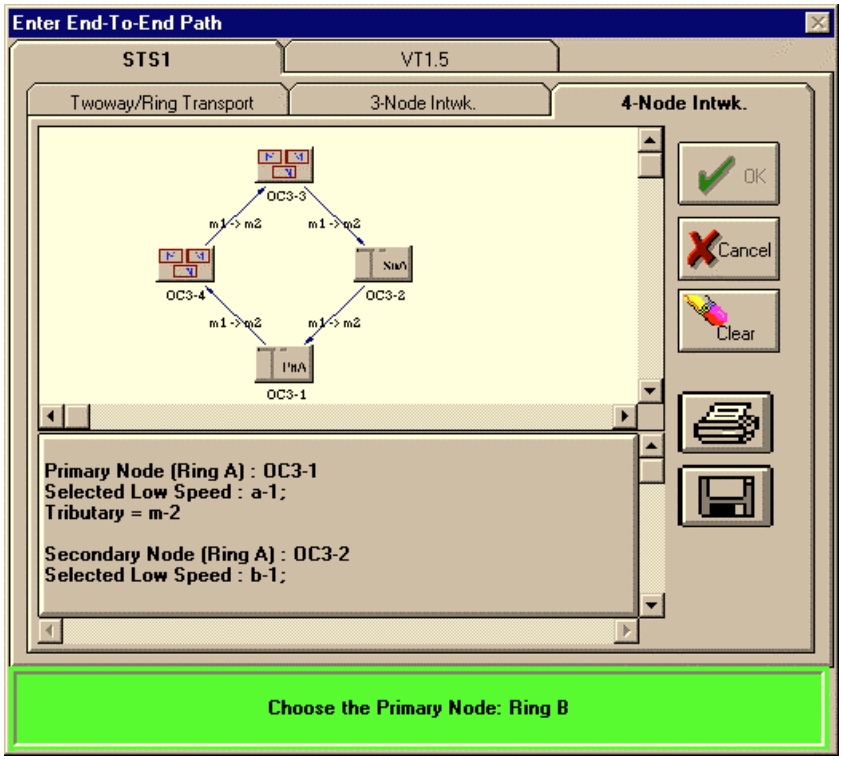
4. Select the timeslot that the end-to-end path will follow around the ring. Only valid timeslot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



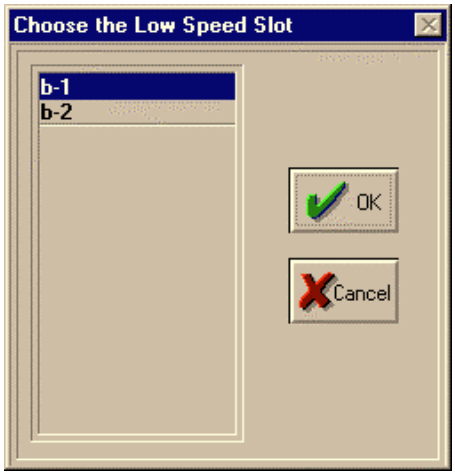
5. You are prompted to choose the secondary node in Ring A. Double-click the desired node. The following screen appears:



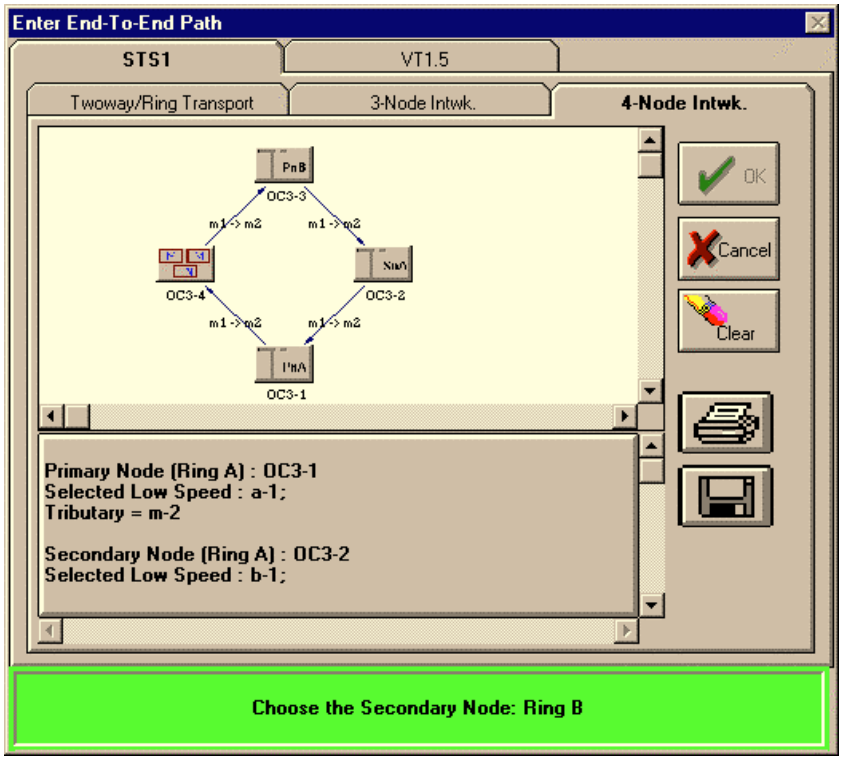
6. Select the low-speed slot for the secondary node in Ring A. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



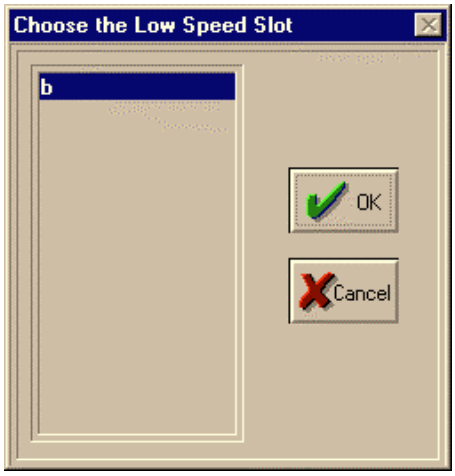
7. You are prompted to choose the primary node for Ring B. Double-click the desired node. The following screen appears:



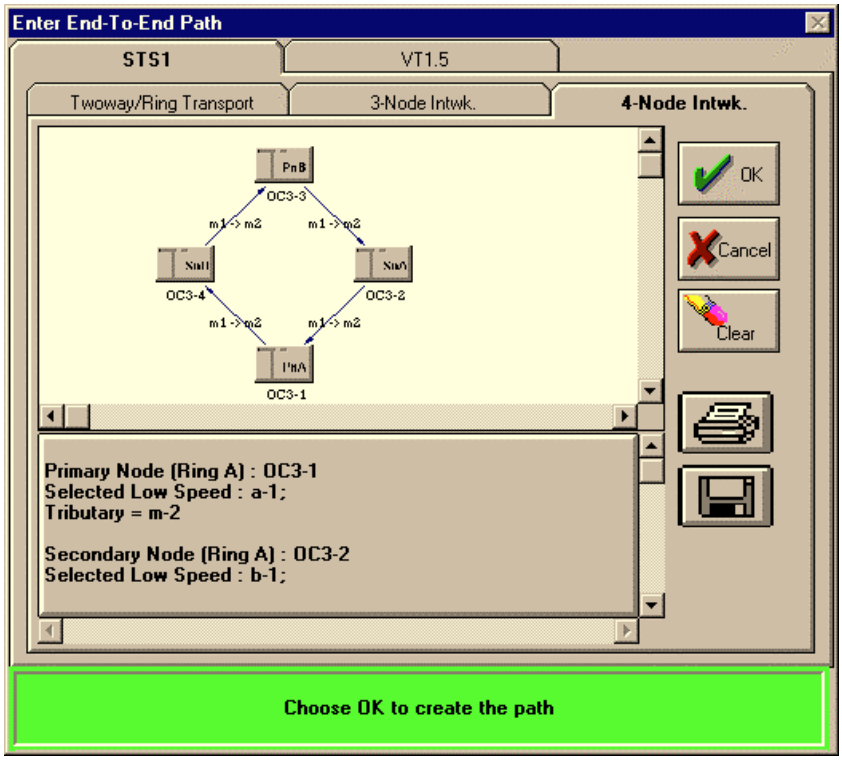
8. Select the low-speed slot for the primary node in Ring B. Click **OK**. The main end-to-end path form appears:



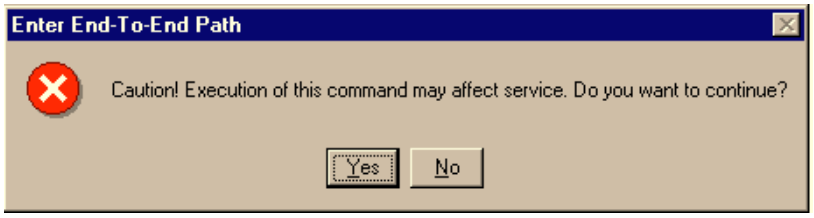
9. You are prompted to select the secondary node for Ring B. Double-click the desired node. The following screen appears:



10. Select the low-speed slot for the secondary node in Ring B. Click **OK**. The main end-to-end path form appears:



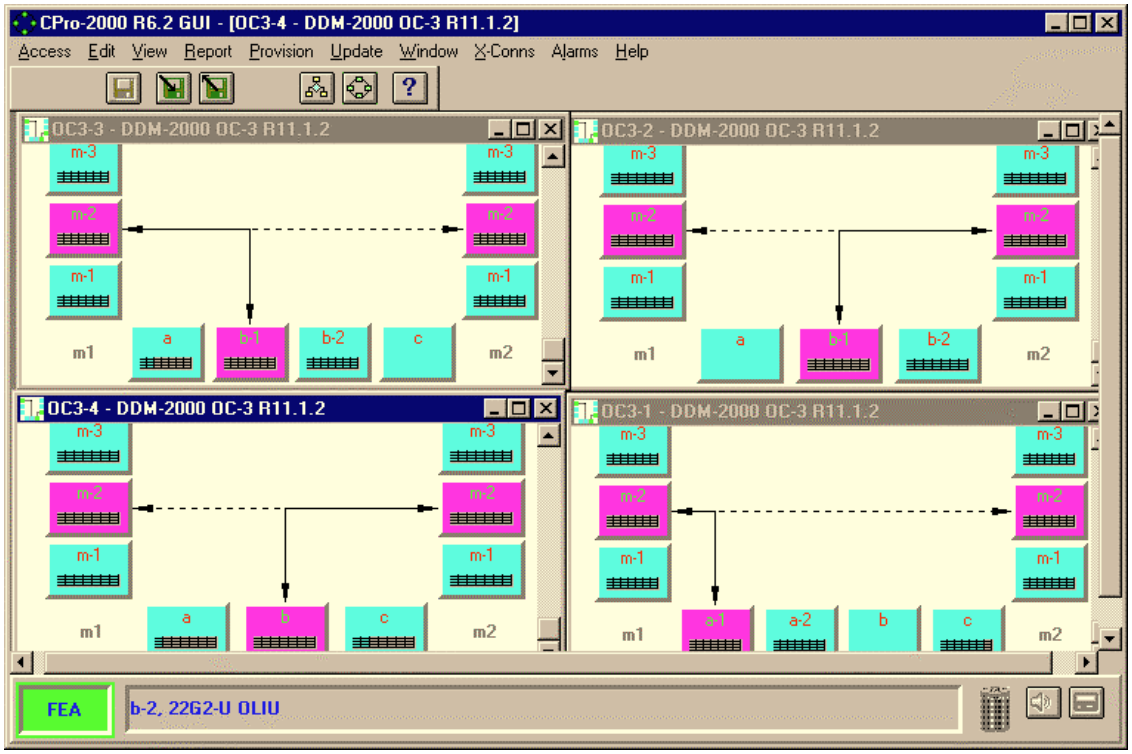
11. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.



12. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**. The following message box displays.

13. Click **OK,** then click **Cancel** in the End-to-End Path dialog box to complete the process.

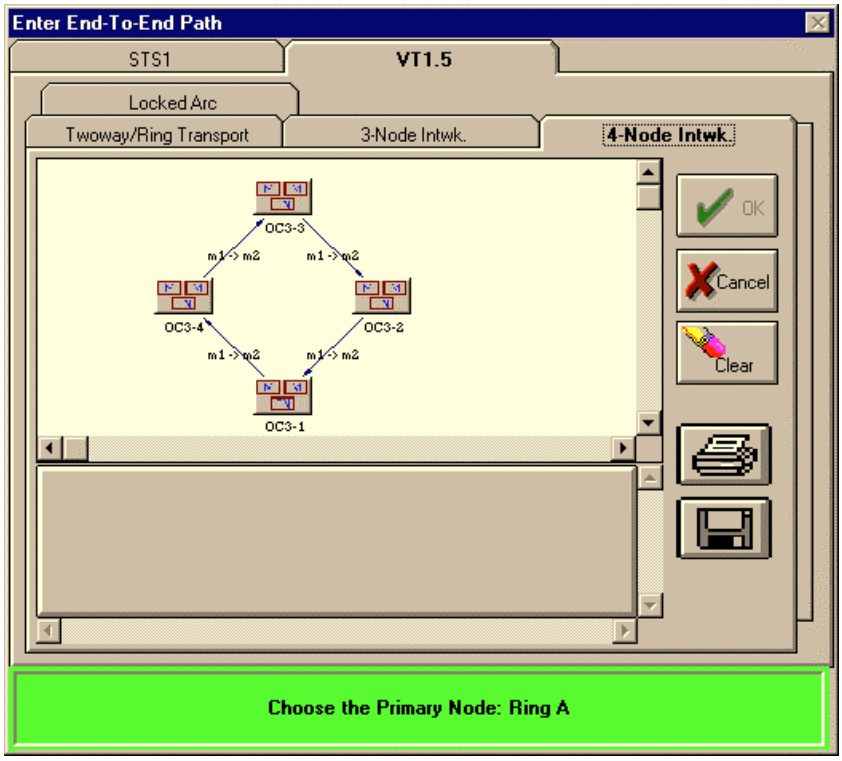
    The following screen shows a graphical representation of the newly created end-to-end path.



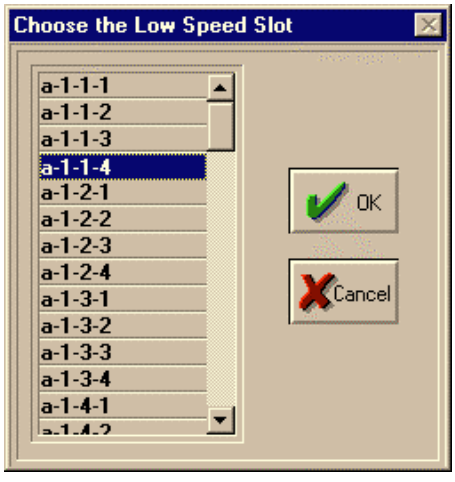
Enter a VT1.5 Four-Node Interworking End-to-End Path (DDM-2000 OC-3 only)

Procedure

1. From the End-to-End Path menu, select Enter. The following form appears. Only valid signal rates and path types are available for selection. Click the tabs for **VT1.5** signal rate and **4-Node Intwk.** path type.

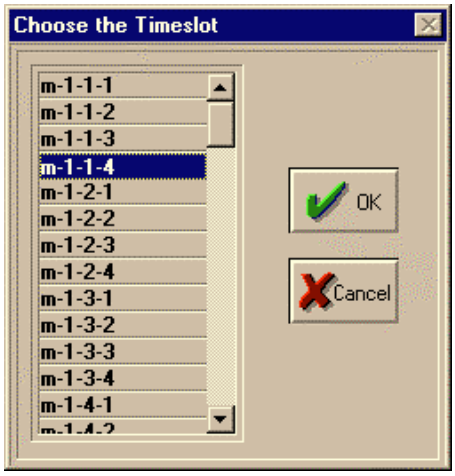


2. At the bottom of the form in the dialog box, you are prompted to choose the primary node in Ring A. Double-click the desired node displayed within the form. The following screen appears:

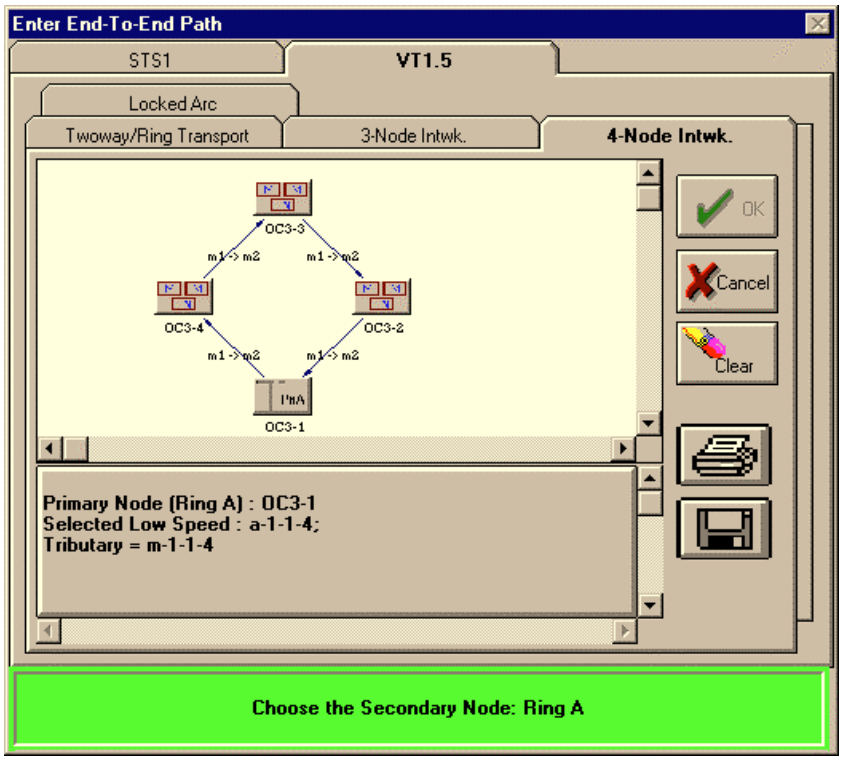


3. Select the low-speed slot for the primary node for Ring A. Note that only valid slot addresses are displayed. The **Cancel** button can be clicked at any time to

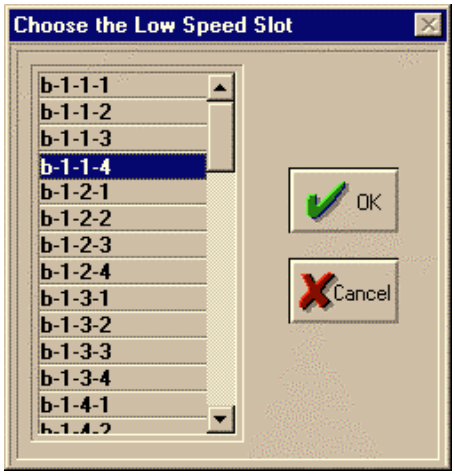
cancel the operation. If the slot you have chosen is correct, Click **OK**. The following screen appears:



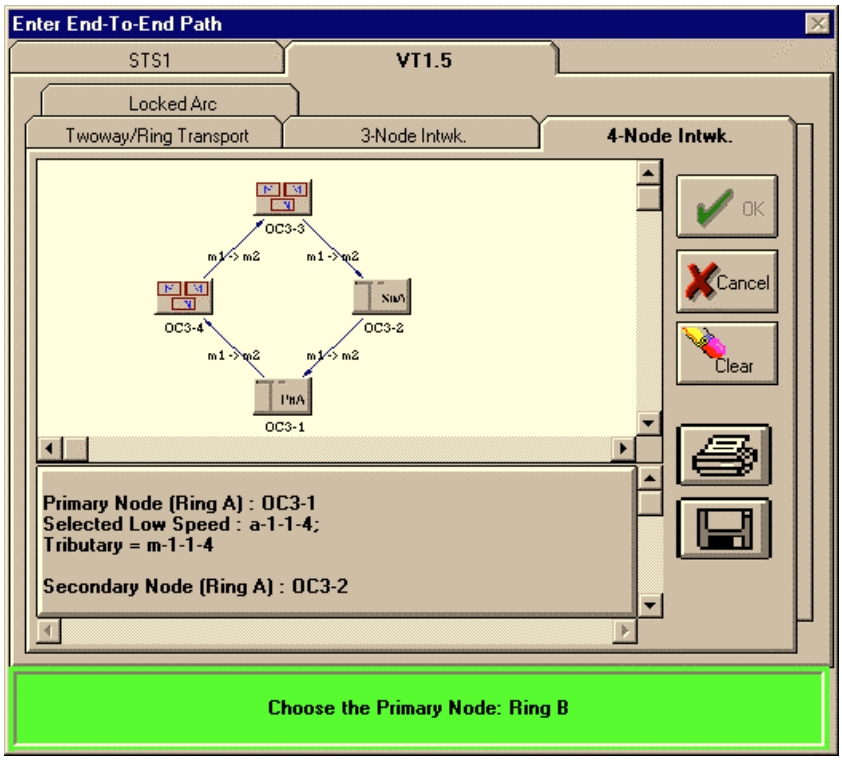
4. Select the timeslot that the end-to-end path will follow around the ring. Only valid timeslot numbers are displayed. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



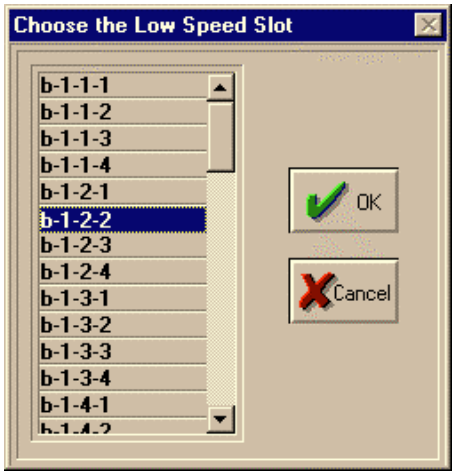
5. You are prompted to choose the secondary node in Ring A. Double-click the desired node. The following screen appears:



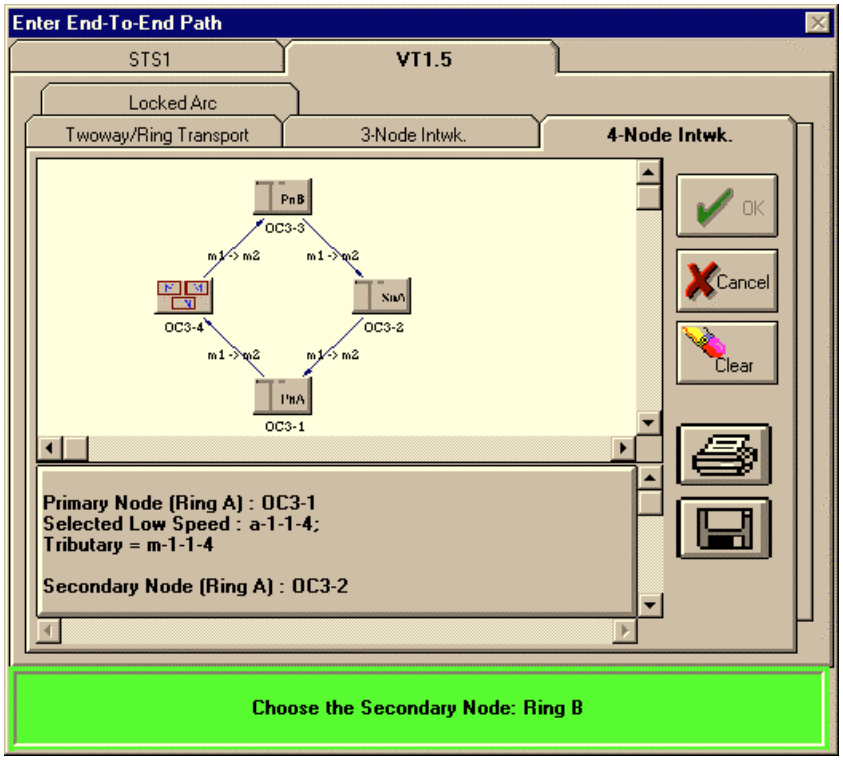
6. Select the low-speed slot for the Secondary Node in Ring A. Click **OK**. The main end-to-end path form displays, updated with the information you have selected:



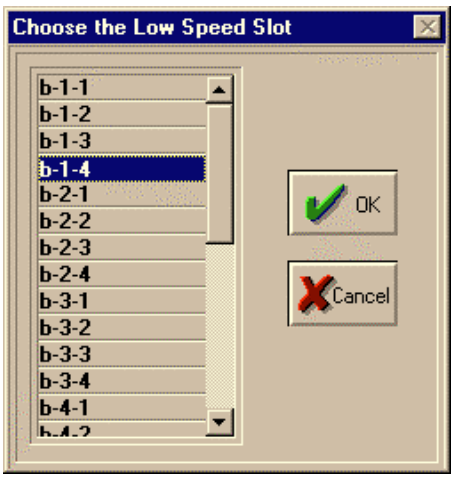
7. You are prompted to select the primary node for Ring B. Double-click the desired node. The following screen appears:



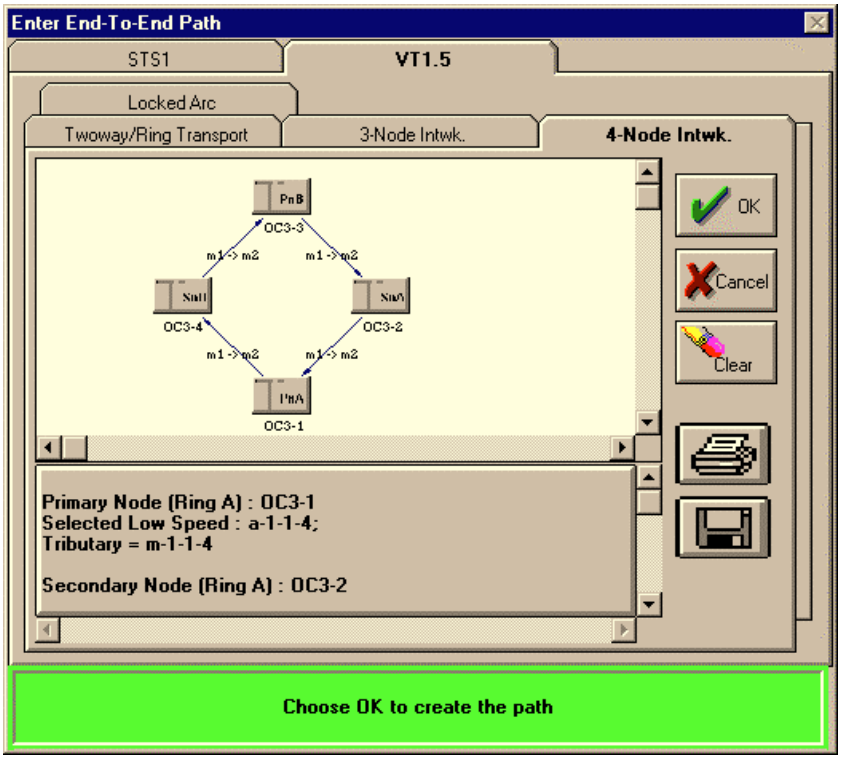
8. Select the low-speed slot for the primary node in Ring B. Click **OK**. The main end-to-end path form appears:



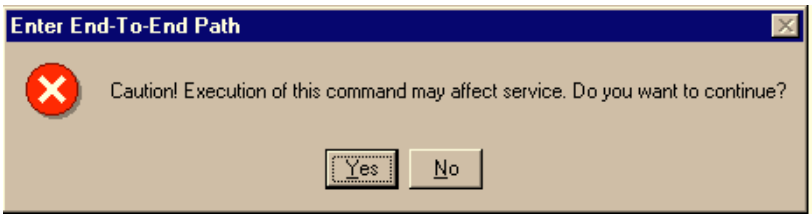
9. You are prompted to select the secondary node for Ring B. Double-click the desired node. The following screen appears:



10. Select the low-speed slot for the secondary node in Ring B. Click **OK**. The main end-to-end path form appears:



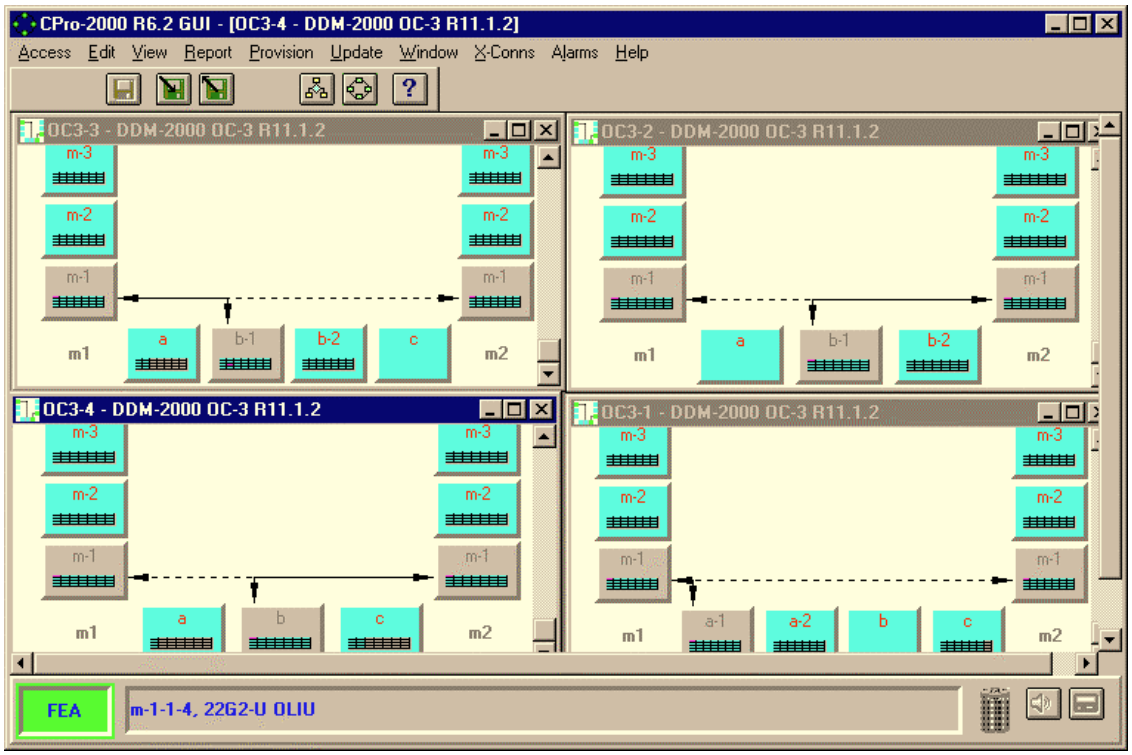
11. If the information you have selected is correct, click **OK** to create the end-to-end path and the following screen appears.



12. Click **No** if you do not want to create the end-to-end path (none of your selections will be implemented). If you want to proceed, click **Yes**. The following message box displays.

13. Click **OK, t**hen click **Cancel** in the End-to-End Path dialog box to complete the process.

    The following screen shows a graphical representation of the newly created end-to-end path.



Delete End-to-End Path

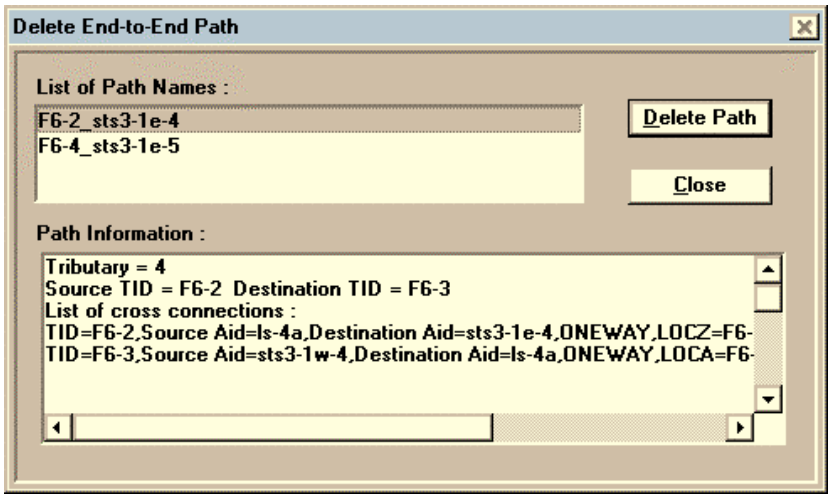
Purpose

To delete an end-to-end path, the Subnetwork View must be the current window so the End-to-End Path menu is available.

NOTE: If you have created a locked arc end-to-end path containing two 0x1 cross connections, CPro-2000 recognizes this as two separate paths. You must delete each path individually.

Procedure

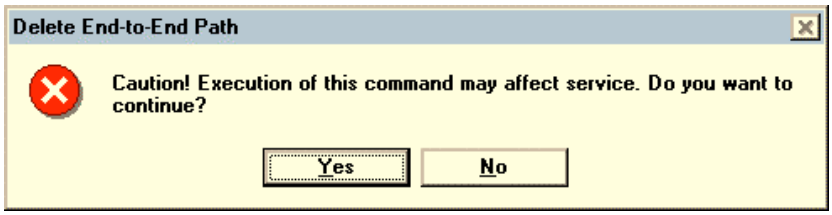
1. From the End-to-End Path menu, select **Delete**. The following screen appears:



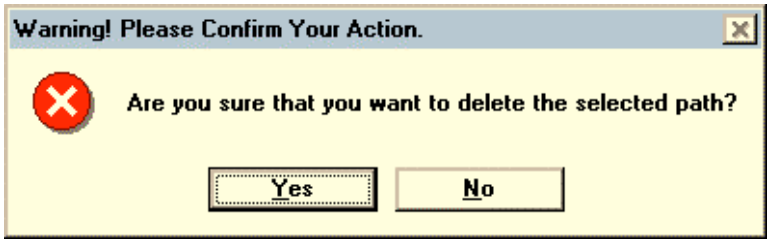
2. Click the path name you want to delete. The path name is highlighted.

NOTE: For paths containing both active and standby cross connections (for example, DRI and OC-3 1+1), only the active cross connections are listed in the path index list. Standby cross connections are not displayed in the list, even though they are displayed in the Network Element View and are also deleted.

3. Click **Close** if you do not want to delete a path and you want to end this operation. Click **Delete Path** to delete the path and the following screen appears:

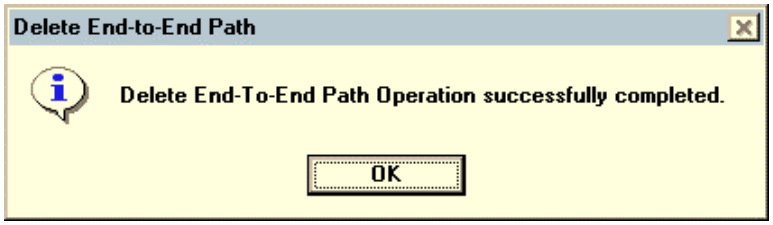


4. Click **No** if you do not want to delete the selected end-to-end path and you want to end this operation. Click **Yes** if you want to delete the selected end-to-end path. The following screen appears:



5. Click **No** if you want to abort the command and end this operation. Click **Yes** if you want to delete the selected end-to-end path.

6. When your path has been successfully completed, the following screen appears:



7. Click **OK**.

Modify LocA/LocZ

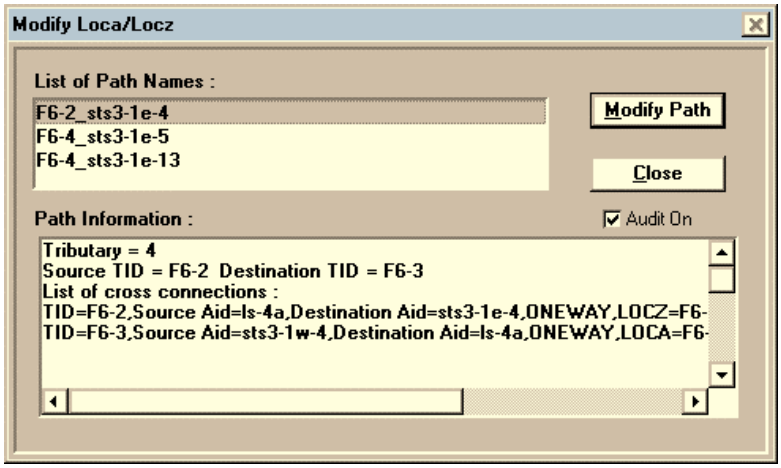
Purpose

The End-to-End Path menu also enables you to correct the LocA and/or LocZ values of an FT-2000 OC-48 STS-3 or STS-1 path. Use this command if you find LocA and/or LocZ errors in your Path Provisioning Error report. When you use the Modify LocA/LocZ command, CPro-2000 determines what the correct LocA and LocZ values should be and adjusts the values accordingly. See the *Lucent Technologies FT-2000 OC-48 User/Service Manual* for further details on path provisioning errors.

Procedure

1. From the End-to-End Path menu, choose **Modify LocA/LocZ**.

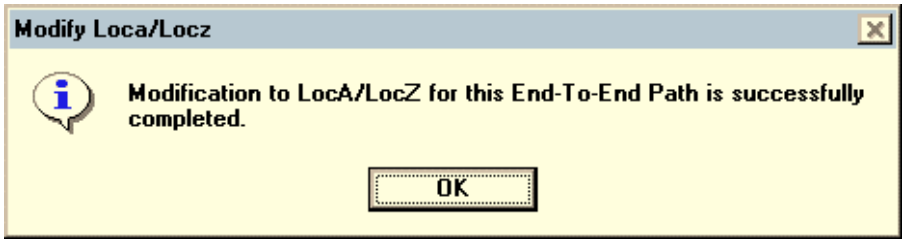
2. The following path listing displays:



NOTE: When the **Audit On** box is checked, the alarm feature that notifies the user of any signal problem is activated. To turn off this feature, click the box to remove the check mark.

3. Select the path you want to update from the List of Path Names field. Each path name consists of the source TID and tributary of the path. The Path Information box displays all the important information about the path.

4. Click **Modify Path** and the following dialog box appears indicating that the modifications to LocA and LocZ are complete. If at any time you want to cancel this operation, click **Close**.



5. Click **OK**.

Tag Red Line

Purpose

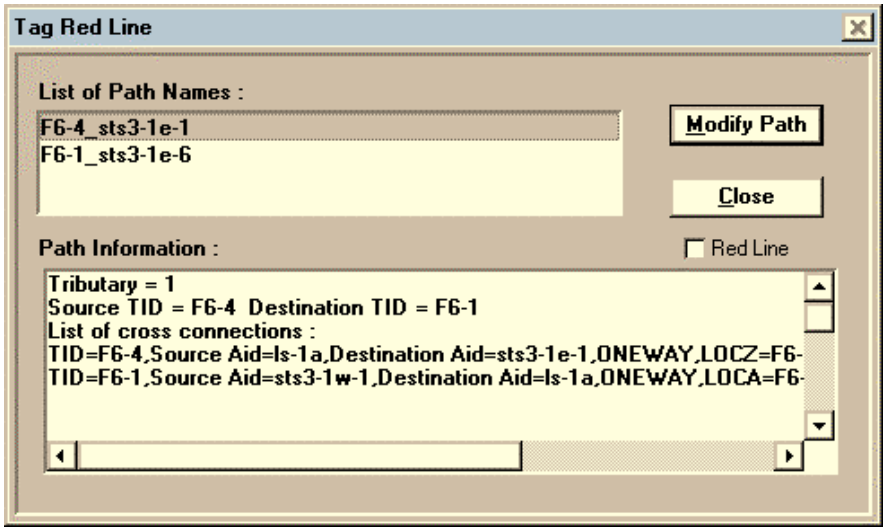
The End-to-End Path menu contains the **Tag Red Line** menu item. This enables the user to protect against the accidental deletion of a path used for high-priority services. By selecting this menu item, the user can tag an end-to-end path as "Redlined," This status then applies to all cross connections in the path.

When tagged as Redlined, the end-to-end path cannot be deleted without first being untagged. If an attempt is made to delete a Redlined end-to-end path, a message informs the user that the path is Redlined and cannot be deleted.

The Redline status of a cross connection can be seen in the GUI status bar when the cross connection is highlighted (single-clicked). Redline status is also indicated in the reports that can be generated for cross connections and end-to-end paths.

Procedure

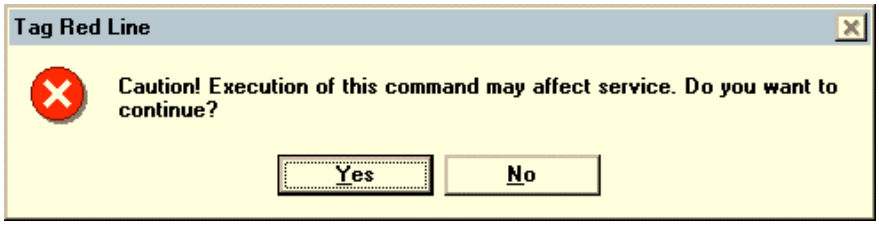
1. From the End-to-End Path menu, select **Tag Red Line**. The following screen appears:



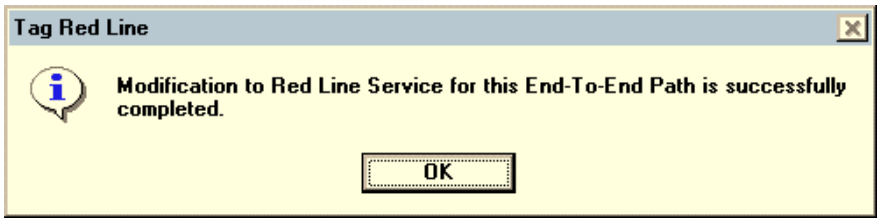
2. Click the path name to be red lined. The path name is highlighted.

3. Click **Close** if you want to end this operation without making any changes. To red line the path, place a check mark in the box next to **Red Line** by clicking in the box.

4. Next, click **Modify Path** and the following screen appears:



5. Click **No** if you do not want to red line the selected end-to-end path and the operation is ended. Click **Yes** if you want to red line the selected end-to-end path. The following screen appears:



NOTE: An end-to-end path can be untagged (Redline status removed) by clicking on **Modify Path** when the Red Line box is unchecked.

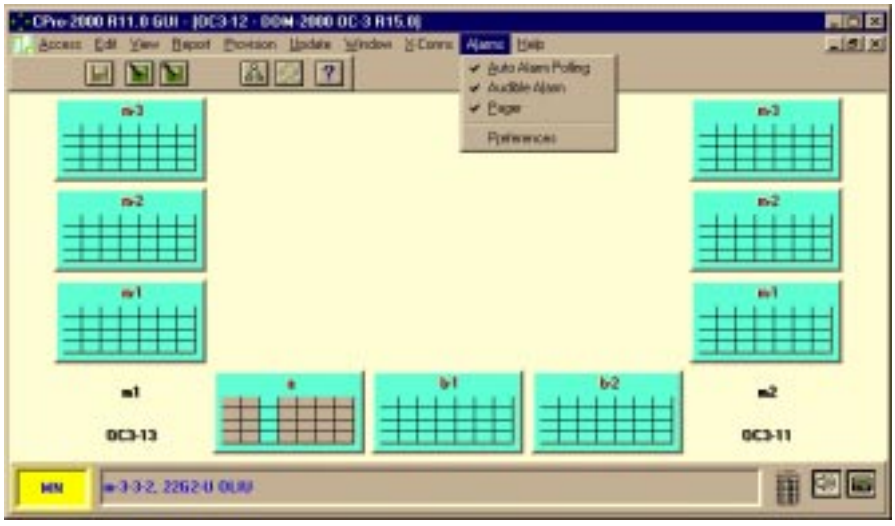
The Alarms Menu

Overview

The Alarms menu allows you to activate the auto alarm polling feature, set parameters for the audible alarms and pager, test the pager set up, and set other network monitoring preferences. Specific activities that you can perform with this feature include enabling, disabling, or silencing the audible alarm, and configuring the audible alarm and pager. You can access the alarm menu options from the GUI menu bar or by using shortcut key combinations. (See the **Task Mapping** section for a listing of menu items and shortcut key commands.)

The Alarms menu commands are:

- Auto Alarm Polling
- Audible Alarms
- Pager
- Preferences



The Alarm feature in CPro-2000 Release 11.0 supports two types of alarm reporting: local and network.

For local alarm reporting, CPro-2000 Release 11.0 supports the following NE releases:

- DDM-2000 OC-3 - Releases 13.0, 13.5, and 15.x
- DDM-2000 OC-12 - Releases 7.0 and 7.1
- DDM-2000 FiberReach - Releases 3.0, 3.1, and 4.0
- FT-2000 OC-48 - Releases 8.1, 9.0, and 9.1

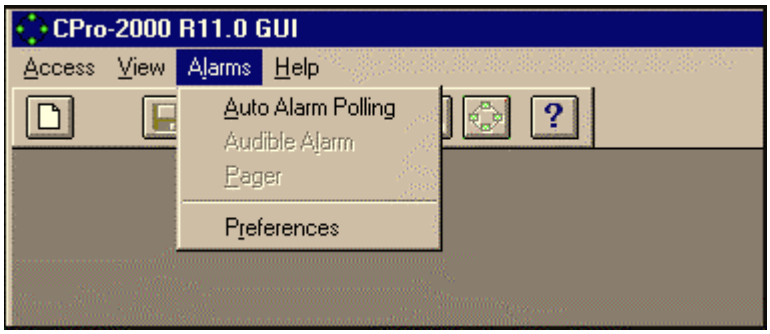
For network alarm reporting, CPro-2000 Release 11.0 supports the following NE releases:

- DDM-2000 OC-3 - Releases 15.x
- DDM-2000 FiberReach - Release 4.0 and above

In reporting network alarms, CPro-2000 reports the highest level of alarm in the polled network. However, the following conditions must exist for CPro-2000 to report network alarms:

- The RNE must be enabled for each node to be monitored
- The network must have at least one AGNE
- The network must be in the same alarm group

NOTE: The Audible Alarm and Pager features are only available when Auto Alarm Polling is enabled (turned on). Therefore, the Audible Alarm and Pager options are grayed out when Auto Alarm Polling is disabled.



Auto Alarm Polling

Purpose

To enable or disable automatic updating of alarm status at specific time repeat intervals for the selected network element.

The Auto Alarm Polling feature is enabled when it is shown with a check. If there is no check mark against the Auto Alarm Polling command, then the feature is disabled. The default setting for this feature is "disabled." You can change the auto alarm polling state from either the **Alarms** menu or by using the **INI File Editor** from the Access menu.

When the feature is enabled, the polling interval defaults to the last saved setting.

The Auto Alarm Polling feature updates the alarm status for the node in view. You must, therefore, ensure that the NE view is displayed on your monitor when this feature is enabled.

The default auto alarm polling interval is three minutes. You can change this to a minimum of one minute and up to a maximum of 90 minutes using the Preferences option in the Alarm menu. Change this interval using the INI File Editor from the Access menu or follow the instructions in the **Preferences** section of this chapter.

The interval in Auto Polling Minutes field overrides the corresponding values specified in the CPRO.INI file.

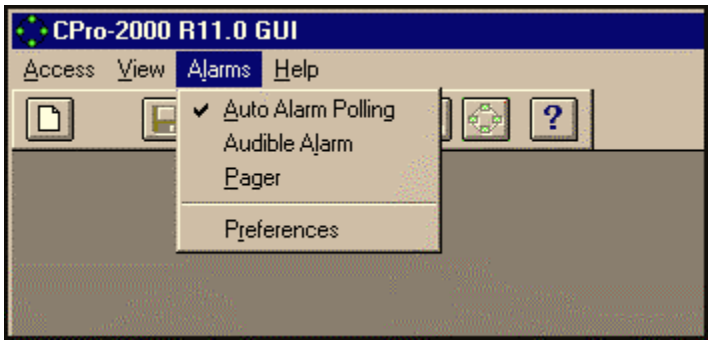
The system writes and saves the values in the Auto Polling Minutes field into the CPRO.INI file when you log out of CPro. CPro-2000 uses these previously-saved values when the system is started for a new session.

Alarm polling is temporarily disabled when any CPro- 2000 function such as a backup or a restore is in progress.

NOTE: CPro-2000 displays the highest alarm level reported back by the NE in the bottom left corner of the GUI window.

Procedure

1. From the GUI, click **Alarms**.
2. Select **Auto Alarm Polling** from the list of options.



Audible Alarms

Purpose

To alert the user to the alarm status of the network by sounding the appropriate audible alarm when an alarm is detected in the network. The default repeat interval, the number of seconds that pass from the start of one alarm sound to the start of the next alarm sound, is three seconds. To change this repeat interval to a maximum of 30 seconds, use the Preferences option in the Alarms menu. Refer to the **Preferences** section of this chapter for instructions on how to change this repeat interval.

NOTES:

- The Audible Alarms feature is only available when Auto Alarm Polling is enabled (turned on).

- A sound card must be installed in your PC for this feature to be available. If an alarm is detected when a sound card is not installed, CPro-2000 displays a message similar to the following :

- The default setting for this feature is "off" or disabled.
- CPro-2000 does not support alarm polling with the audible alarm or the alarm pager when the local node is a DDM-2000 shelf using TL1 connections. In this case, the audible alarms and alarm pager features are unavailable for selection.
- For FT-2000s Remote Activity Reporting CPro-2000 automatically enables the FT-2000 from which the alarm status is retrieved (the first node logged into) for the network element alarm status to be reported when logged in via TL1.
- CPro-2000 R11.0 provides specific default sounds (WAV files) for each alarm severity levels - critical, major, and minor. These WAV files are referenced in the CPRO.INI file. You can substitute your own WAV files by editing the CPRO.INI file using the Notepad editor.

Procedure

1. To change the audible alarm status in a network, do one of the following:

   - From the Alarms menu, select **Audible Alarms**, or
   - Click the **Audible Alarm** button located in the lower right corner of the screen.

   The feature is enabled if a check mark is visible against the Audible Alarms option and if the Audible Alarms button is pushed in.

Acknowledging an Alarm

When an alarm condition is detected in the network, the system sounds the appropriate audible alarm for that alarm level and displays the **Network Alarm Detected on** dialog box. The title bar of this dialog box identifies the detected alarm level. For example, if a minor alarm is detected in the network, the name of the dialog box is "MINOR Network Alarm Detected on." Network alarms are classified as minor, major, or critical.

To acknowledge an alarm

- When an alarm is detected in the NE, a dialog box similar to the following appears:

Title Bar – displays the level of the alarm detected.

TID - identifies the name of the network.

- Click the **Silence** button or press the space bar to acknowledge the alarm and dismiss the dialog box.

Pager

Purpose

To alert users to network alarms by calling a pager number associated with the alarm level.

NOTES:

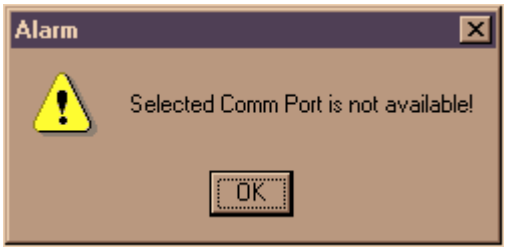
- Before you use the Pager feature, you must ensure that a modem is installed according to the manufacturers recommendations.
- The Pager features are only available if Auto Alarm Polling is enabled (on). The default pager setting is "off".
- The pager feature supports only alpha-numeric pagers with SkyTel® subscriber service.

Procedure

1. Within the Alarm Preferences menu, select the comm port that corresponds to your modem in the Modem Comm Port field of the Alarm page.
2. Activate the pager feature by doing one of the following:
   - From the Alarms menu, select **Pager**, or
   - Click the **Pager** button located in the lower right corner of the GUI.

   The feature is enabled if a check mark is visible against the Pager option and if the Pager button is pushed in.

   If the system does not recognize the comm port, for example, if the selected comm port is connected to another device such as a mouse or CPro-2000 serial communications link, the following message appears.



Alarm Preferences

Introduction

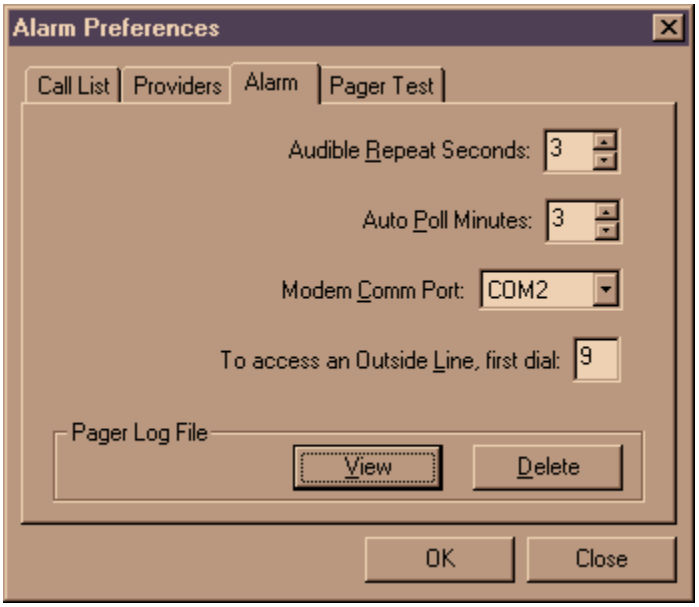
The Alarm Preference option is central to the alarms feature in CPro-2000. The four tabs of the Alarm Preferences dialog box are:

- Alarm
- Call List
- Providers
- Pager Test

The Alarm Preferences dialog box also provides two buttons: **OK** saves your settings, **Close** dismisses the dialog box without saving your settings. The sections that follow describe the functions on each of the tabbed pages in the Alarm Preferences dialog box.

i. The Alarm Tab

Use this tab to adjust the repeat interval between alarm sounds, change auto alarm polling repeat interval, set the communication port for your modem, specify a prefix to dial for an outside line and to view or delete the pager log. The following sections explain the tasks you can perform from the Alarm Tab of the Alarm Preferences dialog box.



Changing the alarm sounds repeat interval

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Change **Audible Repeat Seconds** to the desired repeat interval (from 3 to 30 seconds) using the up and down arrows. The repeat interval is the number of

seconds that pass from the start of one alarm sound to the start of the next alarm sound.

3. Click **OK** to save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

NOTE: Subsequent CPro-2000 sessions open with the last value selected.

Adjusting the alarm polling repeat interval

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Change **Auto Poll Minutes** to the desired repeat interval (from 1 to 90 minutes) using the up and down arrows. The default repeat interval is 3 minutes.
3. Click **OK** to save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

NOTES:

- The alarm polling repeat interval can also be changed using the INI File Editor from the Access menu.
- Subsequent CPro-2000 sessions open with the last value selected.

Selecting the modem communication port

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Click the down arrow next to the **Modem Comm Port** field to display a list of available comm ports.
3. Select the comm port that corresponds to your modem.
4. Click **OK** to save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

NOTE: Subsequent CPro-2000 sessions open with the last selected port number.

Specifying a number prefix for an outside line

In some settings, a prefix might be required in order to access an outside phone line. The **To access an Outside Line, first dial** field is where you specify a prefix the system must dial to access an outside phone line. To specify a number prefix:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Type the prefix in the **To access an Outside Line, first dial** field.
3. Click **OK** to save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

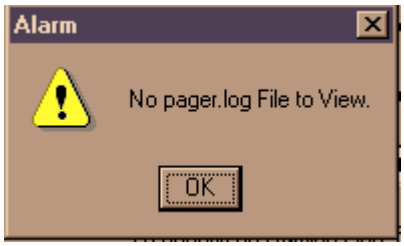
NOTE: Subsequent CPro-2000 sessions open with the last value selected.

Viewing the Pager Log File

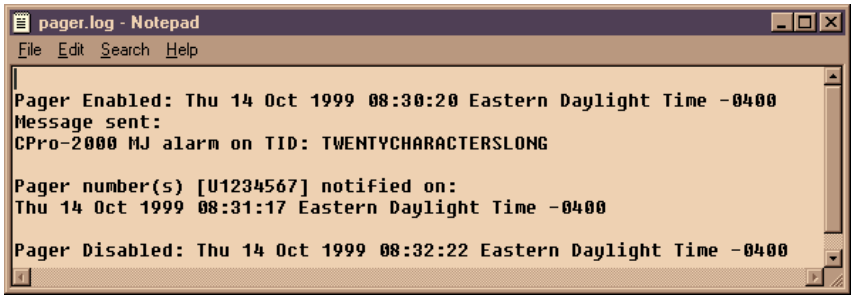
The Pager Log File tracks the activities of the pager. To view the log file:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Select **View** from the Pager Log File section.

   If no Pager Log File exists, the follow message appears.



   If a Pager Log File exists, a text file similar to the following appears.



   - **Pager Enabled** - Date and time pager feature was enabled.

     If an alarm is detected in the networks while pager is enabled, the following information is also displayed:

     - Message sent: Alarm type and TID

     - Pager number(s): Pager number called, and date and time of alarm notification.

   - **Pager Disabled** - Date and time pager feature was disabled.

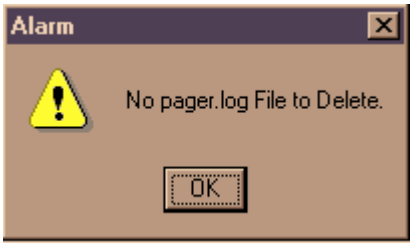
3. Close this window from the **File** menu or by using the **Close** button.

Deleting a pager log file

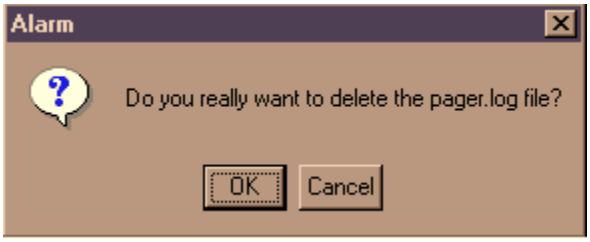
To delete a log file:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Click **Delete** in the Pager Log File.

   If no Pager Log File exists, the follow message appears.



If a Pager Log File exists, the following confirmation message appears.



3. Click **OK** to proceed, or **Cancel** to withdraw the command.

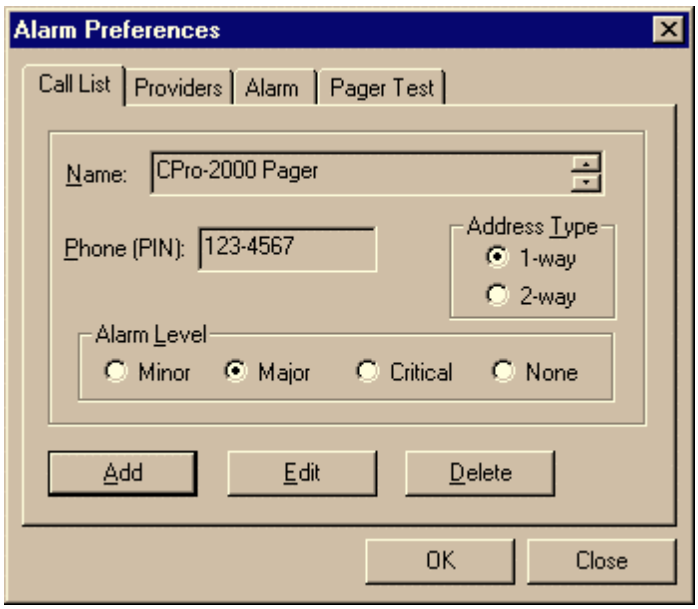
NOTE: The system permits deletions of Pager Log Files only after the pager service is disabled.

ii. The Call List Tab

From the Call List tabbed page, you can:

- specify a pager number
- type in a name to associate with that pager number
- select the pager type, and
- specify alarm levels to be associated with that pager number.

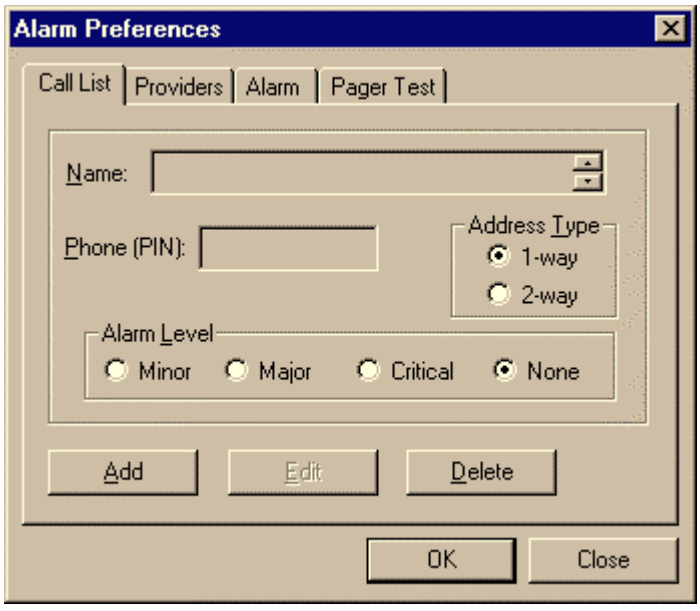
In addition, you can add, edit, or delete the names and phone numbers from the call list.



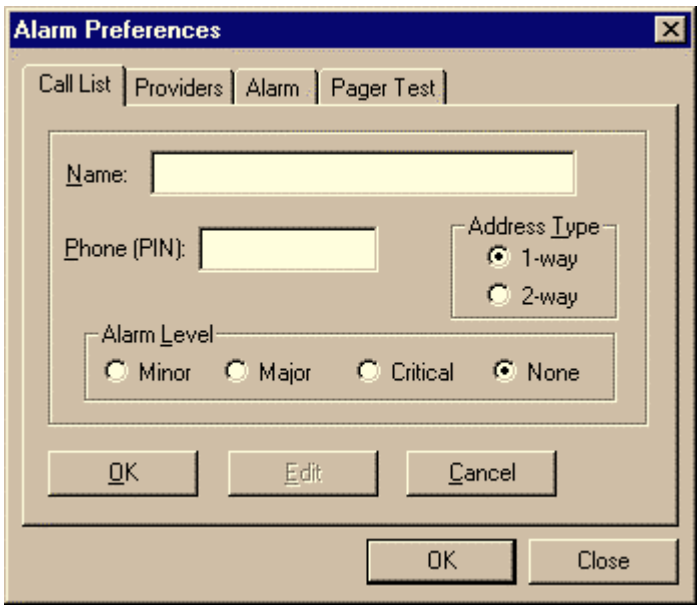
Defining the call list parameters

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.

2. Click the **Call List** tab. The following page appears.



3. Click **Add** to activate the fields. The new window should look like this:



4. In the **Name** field, type a name associated with the pager number.

NOTE: It is recommended that you type a name in the Name field if one pager number is associated with one person. However, you can leave the Name field blank if more than one person is responsible for monitoring the pager.

The following message box appears if you do not enter a name in the Name field.

5. To proceed without an entry, click **OK**.
6. In the **Phone (PIN)** field, type the pager number using the format (dashes are optional):

   000-0000

   PIN = Pager Identification Number

   This is a required field; the system will not permit you to proceed until you type a phone number in this field.

7. If you attempt to proceed without entering a phone/PIN number in this field, the following warning appears .

8. In the **Address Type** section, select the appropriate pager type. Click 1-way for a one-way pager and 2-way for a two-way pager.

9. In the **Alarm Level** section, select the desired alarm level to be associated with the pager number. The option are: Critical, Major, Minor, or None. Selecting None excludes an entry from search list. The number is not called if a network alarm is detected, but the entry remains in the Call List.

Important: It is recommended that you specify a pager number for every alarm level. This ensures that for every network alarm, the appropriate call list number is paged.

NOTE: You can associate the same pager user name and pager number with one or more alarms. For example, a pager user John Doe with a pager number 222-2222 can be associated with both major and critical alarms. To do so, enter John Doe's name and number twice, associating the first entry with major alarms and the second entry with critical alarms. The system calls John Doe's pager number only if either a major or a critical alarm is detected.

10. Click **OK** from within the Call List page to save your entries.

Viewing the Call List

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.

2. Click the **Call List** tab to display the call list.

3. Click the **Up** or **Down** arrows to view the names in the call list.

4. To edit the Call List, press **Edit**. To add more entries to the list, click **Add.** To delete the entry, click **Delete**. For detailed information on how to perform each of these tasks, see the appropriate sections of this chapter.

Editing call list entries

To change any of the parameters associated with a pager user name:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.

2. Click the **Call List** tab to display the call list page.

3. Click **Edit** to activate the fields in this window.

4. Change parameters as follows:

To change ……..	Click …….
A user name	the Name field. Type the new name in the selected field.
A phone or PIN number	the Phone (PIN) field, select the existing information, then type the replacement.
The alarm level	a different alarm option in the Alarm Level section.
An pager type	the correct pager type in the Address Type section

5. From within the Call List page click **OK** to save the current settings and exit the Alarm Preferences dialog box or click **Close** exit the dialog box without saving any settings, .

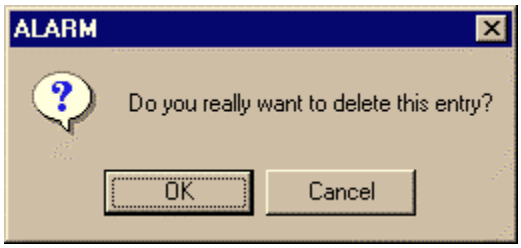
Deleting call list entries

To delete call list entries:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Click the **Call List** tab to display the call list page.
3. Select an entry you want removed from the list.

NOTE: Choosing either a name or phone number removes all data associated with that entry from the list.

4. Click **Delete**. The following confirmation message box appears.

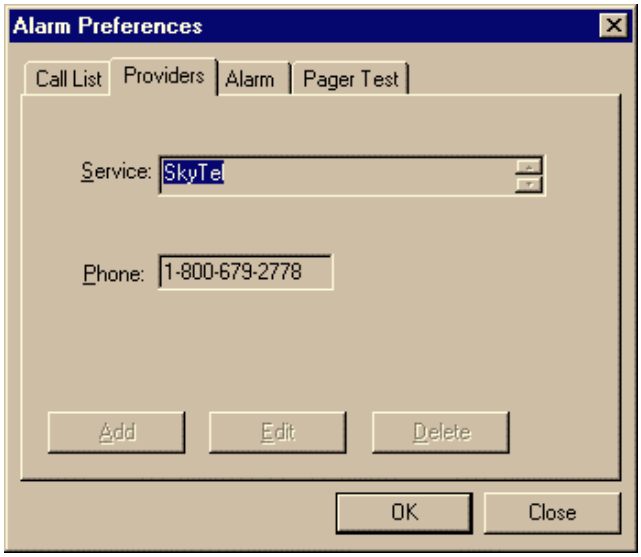


5. Click **OK** to delete the entry or click **Cancel** to withdraw the command.
6. Click **OK** save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

iii. The Providers Tab

This is a read-only tab that displays the name and phone number of the pager service provider. To view this information:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.
2. Click the **Providers** tab. The following window appears:



NOTES:

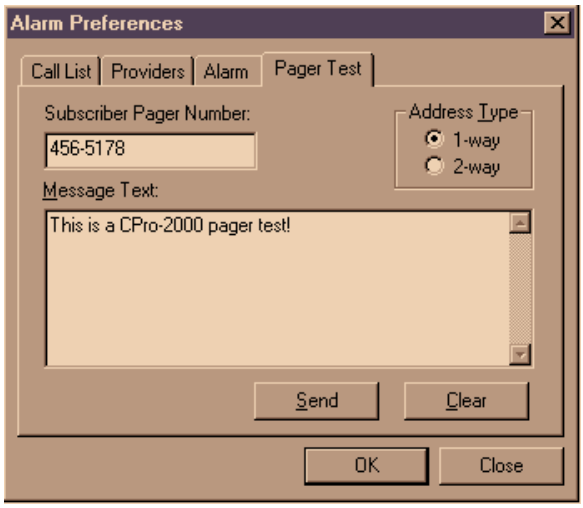
- The Providers tabbed page is read-only and cannot be edited.
- The name and telephone number for the pager service provider as shown in the above window.
- The **Add**, **Edit**, and **Delete** buttons are grayed out and unavailable in CPro-2000 Release 11.0.
- Clicking either **OK** or **Close** exists the Alarm Preferences dialog box.

iv. The Pager Test Tab

The Pager Test tab allows you to test your new pager setup. Use this tab to send a test message to a new pager setup and to view the results. To test a new pager setup:

1. From the Alarms menu, select **Preferences**. The Alarm Preferences dialog box appears with the Alarm tab displayed.

2. Click the **Pager Test** tab. The following window appears:



3. In the **Subscriber Pager Number** field, type the PIN number of the pager to which you would like the test message sent.

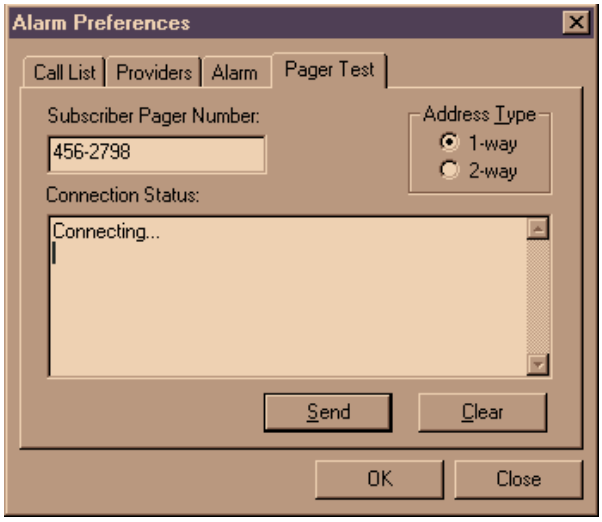
4. In the Message Text section, type the test message. Note that the test message should not exceed 240 characters.

5. In the Address Type section, select the appropriate pager type. Click **1-way** for a one-way pager and **2-way** for a two-way pager.

6. Click **Send** to start to send the text message to the specified pager number. You should hear a dial tone and the sound of the modem dialing as it attempts to make a connection, or

   Click **Clear** to remove any entries from both the Subscriber Pager Number and the Message Text fields.

   If you clicked Send, the following message appears:



   If you click Send again while transmission is in progress, the following message appears:

7. Click **OK** to return to the Pager Test page. Notice that the Message Test field title has changed to reflect the current status of the transmission.

8. Click **OK** to save the current settings and dismiss the Alarm Preferences dialog box or **Close** dismiss the dialog box without saving any settings.

The Help Menu

Overview

The Help Menu contains on-line help topics based on the contents of this user manual. The on-line help consists of the following topics:

- About This Manual
- Introduction
- Installation
- CPro-2000 Startup
- The User Interfaces
- Task Mapping
- The Access Menu
- The Edit Menu
- The View Menu
- The Report Menu
- Cross Connections
- The Provision Menu
- The Update Menu
- The Window Menu
- The End-to-End Path Menu
- The Alarms Menu
- The Help Menu

The Help Menu also contains **About CPro-2000**, which provides information about the current release.

CPro-2000 Help

Purpose

To provide an on-line version of the User Manual.

Procedure

1. From the Help pull-down menu, select **CPro-2000 Help**. A help window displays a sublevel of topics. Select the underlined topic for which you need help information.

NOTE: Also included in the help window are standard Microsoft Windows help tools, such as File, Edit, Bookmark, Help, Contents, Search, Back, and History. See your Microsoft Windows documentation for a detailed explanation of these standard features. A glossary of terms is also available from the help window.

About CPro-2000

Purpose

To display the version number and NE applicability of CPro-2000.

Procedure

1. From the Help menu, select **About CPro-2000**. A banner appears containing the title, version number, and NEs supported in the current release.

Appendix A.
DDM-2000 OC-3 Commands

DDM-2000 OC-3 User Service Manual Command Set

Purpose

The purpose of this section is to provide a cross-reference between the Commands and Reports section of the *Lucent Technologies DDM-2000 OC-3 User/Service Manual* and the menu items of CPro-2000.

Commands Cross-Reference Table

DDM-2000 OC-3 commands/reports that do not have an entry in the CPro-2000 Menu column are not supported in CPro-2000. However, please keep in mind that since CPro-2000 allows concurrent access to both the GUI and AUI, you can always enter the commands that are not supported on the CPro-2000 menus from the AUI window.

CIT Command	Description	CPro-2000 Menu Item
CNVT-CRS	Convert Cross-Connection	
CPY-PROG	Copy Program	
DLT-ASNE	Delete Alarm Services NE	
DLT-CRS-STS1	Delete Cross-Connection STS-1	X-Conn/ Network Element/ Delete
DLT-CRS-VT1	Delete Cross-Connection VT1.5	X-Conn/ Network Element/ Delete
DLT-TADRMAP	Delete TID Address MAP	
ENT-CRS-STS1	Enter Cross-Connection STS-1	X-Conn/ Network Element/Enter

CIT Command	Description	CPro-2000 Menu Item
ENT-CRS-VT1	Enter Cross-Connection VT1.5	X-Conn/ Network Element/Enter
ENT-ULSDCC	Enter Upper Layer Section DCC	
?	Help	Help
INIT-PM	Initialize Performance Monitoring	
INIT-SYS	Initialize System	
INS-PROG	Install Program	
LOGOUT	Logout	Access/Logout
OPR-ACO	Operate Alarm Cutoff	
OPR-LPBK-EC1	Operate Loopback EC1	
OPR-LPBK-T1	Operate Loopback T1	
OPR-LPBK-T3	Operate Loopback T3	
RESET	Reset	
RLGN	Remote Login	Access/Login
RLS-LPBK-EC1	Release Loopback EC1	
RLS-LPBK-T1	Release Loopback T1	
RLS-LPBK-T3	Release Loopback T3	
RTRV-ALM	Retrieve Alarm and Status Conditions	Reports/Alarms
RTRV-ATTR-ALM	Retrieve Attribute Alarm	
RTRV-ATTR-CONT	Retrieve Attribute Control	
RTRV-ATTR-ENV	Retrieve Attribute Environment	
RTRV-CRS-STS1	Retrieve Cross-Connection STS-1	Update/Cross Connections
RTRV-CRS-VT1	Retrieve Cross-Connection VT1.5	Update/Cross Connections
RTRV-EC1	Retrieve EC-1	Reports/EC1
RTRV-EQPT	Retrieve Equipment	Update/ Network Element Inventory
RTRV-FEAT	Retrieve Feature	
RTRV-FECOM	Retrieve Far-End Communications	
RTRV-HSTY	Retrieve History	Reports/History
RTRV-LGN	Retrieve Login	
RTRV-LINK	Retrieve Link	
RTRV-NE	Retrieve Network Element	
RTRV-NMAP	Retrieve Network Map	
RTRV-OC3	Retrieve OC-3	Reports/OC-3
RTRV-PASSWD	Retrieve Password	
RTRV-PM-LINE	Retrieve Performance-Monitoring Line	
RTRV-PM-SECT	Retrieve Performance-Monitoring Section	
RTRV-PM-STS1	Retrieve Performance-Monitoring STS-1	Reports/PM Data/STS1PM
RTRV-PM-T1	Retrieve Performance-Monitoring T1	Reports/PM Data/DS1
RTRV-PM-T3	Retrieve Performance-Monitoring T3	Reports/PM Data/DS3PM
RTRV-PM-TCA	Retrieve Performance-Monitoring TCA	

CIT Command	Description	CPro-2000 Menu Item
RTRV-PM-VT1	Retrieve Performance-Monitoring VT1.5	Reports/PM Data/VT1PM
RTRV-PMTHRES-LINE	Retrieve Performance-Monitoring Threshold Line	
RTRV-PMTHRES-SECT	Retrieve Performance-Monitoring Threshold Section	
RTRV-PMTHRES-STS1	Retrieve Performance-Monitoring Threshold STS-1	
RTRV-PMTHRES-T1	Retrieve Performance-Monitoring Threshold T1	
RTRV-PMTHRES-T3	Retrieve Performance-Monitoring Threshold T3	
RTRV-PMTHRES-VT1	Retrieve Performance-Monitoring Threshold VT1.5	
RTRV-SECU	Retrieve Security	
RTRV-STATE	Retrieve State	
RTRV-STATE-EQPT	Retrieve State Equipment	
RTRV-STATE-PATH	Retrieve State Path	
RTRV-STATE-STS1	Retrieve State STS-1	
RTRV-STATE-VT1	Retrieve State VT1.5	
RTRV-STS1	Retrieve STS-1	
RTRV-SYNC	Retrieve Synchronization	
RTRV-T1	Retrieve T1	Reports/DS1
RTRV-T3	Retrieve T3	Reports/DS3
RTRV-ULSDCC	Retrieve Upper Layer Section DCC	
RTRV-VT1	Retrieve VT1.5	
SET-ATTR-ALM	Set Attribute Alarm	
SET-ATTR-CONT	Set Attribute Control	
SET-ATTR-ENT	Set Attribute Environment	
SET-DATE	Set Date	
SET-EC1	Set EC-1	Provision/EC1
SET-FEAT	Set Feature	
SET-FECOM	Set Far-End Communications	
SET-LGN	Set Login	
SET-LINK	Set Link	
SET-NE	Set Network Element	Provision/Set NE
SET-OC3	Set OC-3	Provision/OC-3
SET-PASSWD	Set Password	
SET-PMTHRES-LINE	Set Performance-Monitoring Threshold Line	
SET-PMTHRES-SECT	Set Performance-Monitoring Threshold Section	
SET-PMTHRES-STS1	Set Performance-Monitoring Threshold STS-1	
SET-PMTHRES-T1	Set Performance-Monitoring Threshold T1	
SET-PMTHRES-T3	Set Performance-Monitoring Threshold T3	

CIT Command	Description	CPro-2000 Menu Item
SET-PMTHRES-VT1	Set Performance-Monitoring Threshold VT1.5	
SET-STATE-EC1	Set State EC1	
SET-STATE-STS1	Set State STS-1	
SET-STATE-T1	Set State T1	
SET-STATE-T3	Set State T3	
SET-STS1	Set STS-1	
SET-SYNC	Set Synchronization	
SET-T1	Set T1	Provision/DS1
SET-T3	Set T3	Provision/DS3
SET-VT1	Set VT1.5	
SWITCH-FN	Protection Switch Function Unit	
SWITCH-LINE	Protection Switch Line	
SWITCH-LS	Protection Switch Low Speed	
SWITCH-PATH-STS1	Switch Path STS-1	
SWITCH-PATH-VT1	Switch Path VT1.5	
SWITCH-SYNC	Protection Switch Synchronization	
TEST-ALM	Test Office Alarm	
TEST-AUTO	Test Auto Turnup	
TEST-LED	Test LED Indicators	
TEST-SYSCTL	Test System Controllers	
TEST-TLM-PAR	Test Telemetry Parallel	
TEST-TLM-SER	Test Telemetry Serial	
TEST-TRMSN-T1	Test Transmission T1	
TEST-TRMSN-T3	Test Transmission T3	
TOGGLE (Ctl-T)	Toggle	
UPD	Update	

DDM-2000 OC-3 User Service Manual Task-Oriented Procedures

Purpose

The purpose of this section is to provide a cross-reference between the Task-Oriented Procedures (TOPs) section of the *Lucent Technologies DDM-2000 OC-3 User/Service Manual* and the menu items of CPro-2000.

Cross-Reference Table for Tasks Supported in CPro-2000

The following table provides a cross-reference between the CPro-2000 capabilities and the DDM-2000 OC-3 TOPs. Not every step in every one of the identified TOPs may be supported in CPro-2000. The following table only means that significant steps of the TOPs identified in the following table will be helped by the use of CPro-2000. Wherever the TOP calls for use of a particular craft interface terminal (CIT) command that is not supported in the CPro-2000 menu, it is assumed that the user will enter such commands directly from the AUI window.

TOP Number Supported by CPro-2000	Description
NTP-002	Establish DDM-2000 OC-3c (STS-3c) Service
NTP-004	Establish Initial End-to-End DS1 Service (Group Equipped But Not In Service)
NTP-005	Establish Initial End-to-End DS3 Service (Group Equipped But Not In Service)
NTP-006	Add New DS1 Service (Group Already In Service)
NTP-007	Add New DS3 Group for DS3 Service (System In Service)
NTP-008	Add New MXRVO Group for DS1 Service (System In Service)
NTP-009	Convert DS1 Group Service to DS3 Group Service
NTP-010	Convert DS3 Group Service to DS1 MXRVO Group Service
NTP-011	Discontinue End-to-End DS1 Service
NTP-012	Discontinue End-to-End DS3 Service
NTP-026	Add New DDM-2000 OC-3 Node (Shelf) To DDM-2000 OC-3 Path-Switched Ring
NTP-027	Discontinue DDM-2000 OC-3 Node (Shelf) From DDM-2000 OC-3 Path-Switched Ring Network
NTP-034	Establish Initial EC-1 Service (Group Equipped With STS1E But Not In Service)
NTP-035	Add New STS1E Low-Speed Group for EC-1 Interface (System In Service)
NTP-036	Discontinue EC-1 Interface
NTP-038	Convert DS1 Group Service to EC-1 Group Service
DLP-531	Retrieve Generic Software Version ID
DLP-545	Make VT1.5 (DS1) or STS1 (DS3) Cross Connections Using CIT Linear or Add/Drop Configuration
DLP-546	Make VT1.5 (DS1) or STS1 (DS3) Cross Connections Using CIT Single-Ring Configuration
DLP-550	Make VT1.5 (DS1) or STS1 (DS3) Cross Connections Using CIT Dual-Ring Interworking Configuration (Release 7)

Appendix B.
DDM-2000 OC-12 Commands

DDM-2000 OC-12 User Service Manual Command Set

Purpose

The purpose of this section is to provide a cross-reference between the Commands and Reports section of the *Lucent Technologies DDM-2000 OC-12 User/Service Manual* and the menu items of CPro-2000.

Cross-Reference Table

DDM-2000 OC-12 commands/reports that do not have an entry in the CPro-2000 Menu column are not supported in CPro-2000. However, since CPro-2000 allows concurrent access to both the GUI and AUI, you can always enter the commands that are not supported on the CPro-2000 menus from the AUI window.

OC-12 CIT Command	Description	CPro-2000 Menu Item
CPY-PROG	Copy Program	
DLT-CRS-STS1	Delete Cross-Connection STS-1	X-Conn/Network Element/Delete
DLT-TADRMAP	Delete TID Address MAP	
ENT-CRS-STS1	Enter Cross-Connection STS-1	X-Conn/ Network Element/Enter
ENT-ULSDCC	Enter Upper Layer Section DCC	
?	Help	Help
INIT-PM	Initialize Performance Monitoring	
INIT-SYS	Initialize System	
INS-PROG	Install Program	
LOGOUT	Logout	Access/Logout
OPR-ACO	Operate Alarm Cutoff	

OC-12 CIT Command	Description	CPro-2000 Menu Item
OPR-LPBK-EC1	Operate Loopback EC1	
OPR-LPBK-T3	Operate Loopback T3	
RESET	Reset	
RLGN	Remote Login	Access/Login
RLS-LPBK-EC1	Release Loopback EC1	
RLS-LPBK-T3	Release Loopback T3	
RTRV-ALM	Retrieve Alarm and Status Conditions	Reports/Alarms
RTRV-ATTR-ALM	Retrieve Attribute Alarm	
RTRV-ATTR-CONT	Retrieve Attribute Control	
RTRV-ATTR-ENV	Retrieve Attribute Environment	
RTRV-CRS-STS1	Retrieve Cross-Connection STS-1	Update/Cross Connections
RTRV-EC1	Retrieve EC-1	Provision/EC1
RTRV-EQPT	Retrieve Equipment	Update/Network Element Inventory
RTRV-FEAT	Retrieve Feature	
RTRV-FECOM	Retrieve Far-End Communications	
RTRV-HSTY	Retrieve History	Reports/History
RTRV-LGN	Retrieve Login	
RTRV-LINK	Retrieve Link	
RTRV-NE	Retrieve Network Element	Update/Network Element Inventory
RTRV-NMAP	Retrieve Network Map	
RTRV-OC12	Retrieve OC-12	Provision/OC-12
RTRV-OC3	Retrieve OC-3	Provision/OC-3
RTRV-PM-LINE	Retrieve Performance-Monitoring Line	
RTRV-PM-SECT	Retrieve Performance-Monitoring Section	
RTRV-PM-STS1	Retrieve Performance-Monitoring STS-1	Reports/PM Data/STS1PM
RTRV-PM-T3	Retrieve Performance-Monitoring T3	Reports/PM Data/DS3PM
RTRV-PM-TCA	Retrieve Performance-Monitoring TCA	
RTRV-PMTHRES-LINE	Retrieve Performance-Monitoring Threshold Line	
RTRV-PMTHRES-SECT	Retrieve Performance-Monitoring Threshold Section	
RTRV-PMTHRES-STS1	Retrieve Performance-Monitoring Threshold STS-1	
RTRV-PMTHRES-T3	Retrieve Performance-Monitoring Threshold T3	
RTRV-SECU	Retrieve Security	
RTRV-STATE	Retrieve State	
RTRV-STATE-EQPT	Retrieve State Equipment	
RTRV-STATE-PATH	Retrieve State Path	
RTRV-STATE-STS1	Retrieve State STS-1	
RTRV-STS1	Retrieve STS-1	Reports/STS1
RTRV-SYNC	Retrieve Synchronization	

OC-12 CIT Command	Description	CPro-2000 Menu Item
RTRV-T3	Retrieve T3	Reports/DS3
RTRV-ULSDCC	Retrieve Upper Layer Section DCC	
SET-ATTR-ALM	Set Attribute Alarm	
SET-ATTR-CONT	Set Attribute Control	
SET-ATTR-ENV	Set Attribute Environment	
SET-DATE	Set Date	
SET-EC1	Set EC-1	Provision/EC1
SET-FEAT	Set Feature	
SET-FECOM	Set Far-End Communications	
SET-LGN	Set Login	
SET-LINK	Set Link	
SET-NE	Set Network Element	Provision/Set NE
SET-OC12	Set OC-12	Provision/OC-12
SET-OC3	Set OC-3	Provision/OC-3
SET-PASSWD	Set Password	Edit/Change Password
SET-PMTHRES-LINE	Set Performance-Monitoring Threshold Line	
SET-PMTHRES-SECT	Set Performance-Monitoring Threshold Section	
SET-PMTHRES-STS1	Set Performance-Monitoring Threshold STS-1	
SET-PMTHRES-T3	Set Performance-Monitoring Threshold T3	
SET-SECU	Set Security	
SET-STATE-EC1	Set State EC1	
SET-STATE-T3	Set State T3	
SET-STS1	Set STS-1	Reports/STS1
SET-SYNC	Set Synchronization	
SET-T3	Set T3	Provision/ DS3
SWITCH-FN	Protection Switch Function Unit	
SWITCH-LINE	Protection Switch Line	
SWITCH-PATH-STS1	Switch Path STS-1	
SWITCH-SYNC	Protection Switch Synchronization	
SWITCH-TSI	Protection Switch Time Slot Interchange	
TEST-ALM	Test Office Alarm	
TEST-AUTO	Test Auto Turnup	
TEST-LED	Test LED Indicators	
TEST-SYSCTL	Test System Controllers	
TEST-TLM-PAR	Test Telemetry Parallel	
TEST-TLM-SER	Test Telemetry Serial	
TEST-TRMSN-T3	Test Transmission T3	
TOGGLE (Ctl-T)	Toggle	
UPD	Update	

DDM-2000 OC-12 User Service Manual Task-Oriented Procedures

Purpose

The purpose of this section is to provide a cross-reference between the TOPs section of the *Lucent Technologies DDM-2000 OC-12 User/Service Manual* and the menu items of CPro-2000.

Cross-Reference Table for Tasks Supported in CPro-2000

The following table provides a cross-reference between the CPro-2000 capabilities and the DDM-2000 OC-12 TOPs. Not every step in every one of the identified TOPs may be supported in CPro-2000. The following table only means that significant steps of the TOPs identified in the following table will be helped by the use of CPro-2000. Wherever the TOP calls for use of a particular CIT command that is not supported in the CPro-2000 menu, it is assumed that the user will enter such commands directly from the AUI window.

TOP Number Supported by CPro-2000	Description
NTP-004	Establish Initial End-to-End DS3 Service (Group Equipped But Not In Service)
NTP-005	Add New DS3 Group for DS3 Service (System In Service)
NTP-006	Discontinue End-to-End DS3 Service
NTP-021	Add New DDM-2000 OC-12 Node (Shelf) To DDM-2000 OC-12 Path-Switched Ring
NTP-022	Discontinue DDM-2000 OC-12 Node (Shelf) From DDM-2000 OC-12 Path-Switched Ring Network
NTP-023	Establish Initial EC-1 Service
NTP-024	Add New STS1E Low-Speed Group for EC-1 Interface (System In Service)
NTP-025	Discontinue EC-1 Interface
NTP-026	Convert DS3 Group Service to EC-1 Group Service
DLP-541	Edit, Delete, or Enter a User's Login
DLP-546	STS1 (DS3) Cross Connections Using CIT Switched-Ring Configuration
DLP-549	Make STS1 (DS3) Cross Connections Using CIT Dual-Ring Interworking Configuration

Appendix C.
FT-2000 OC-48 TL1 Commands

FT-2000 OC-48 User Service Manual Command Set

Purpose

The purpose of this section is to provide a cross-reference between the Commands and Reports section of the *Lucent Technologies FT-2000 OC-48 User/Service Manual* and the menu items of CPro-2000.

Cross-Reference Table

FT-2000 OC-48 TL1 commands/reports that do not have an entry in the CPro-2000 Menu column are not supported in CPro-2000. However, please keep in mind that since CPro-2000 allows concurrent access to both GUI and AUI, you can always enter the TL1 commands that are not supported on the CPro-2000 menus from the AUI window.

TL1 Command	Description	CPro-2000 Menu Item
ACT-USER	Activate User	Access/Login
ALW-MSG	Allow Message	
CANC-USER	Cancel User	Access/Logout
CPY-PRGM	Copy Program	
DLT-CRS-STS3	Delete Cross-Connection STS-3	X-Conn/ Network Element/ Delete
DLT-TADRMAP	Delete TID Address Map	
DLT-USER-SECU	Delete User Security	
ED-DAT	Edit Date	
ED-PID	Edit Password	Edit/Change Password
ED-USER-SECU	Edit User Security	
TL1 Command	**Description**	**CPro-2000 Menu Item**
ENT-CRS-STS3	Enter Cross-Connection STS-3	X-Conn/ Network Element/Enter

ENT-PROT-rr	Enter Protection rr	
ENT-PROTN-LINE	Enter Protection Line	
ENT-PROTN-LS	Enter Protection Low Speed	
ENT-ROLL-STS3	Enter Roll STS-3	
ENT-rr	Enter rr	
ENT-STS1	Enter STS-1	Provision/Port Options
ENT-SYS	Enter System	Edit/Change TID Provision/Set NE
ENT-ULSDCC	Enter Upper Layer Section DCC	
ENT-USER-SECU	Enter User Security	
INH-MSG	Inhibit Message	
INIT-REG	Initialize Register	
INIT-SYS	Initialize System	
OPR-ACO	Operate Alarm Cutoff	
OPR-EXT-CONT	Operate External Control	
OPR-LPBK-EC1	Operate Loopback EC1	
OPR-LPBK-OC3	Operate Loopback OC-3	
OPR-LPBK-T3	Operate Loopback T3	
OPR-PROTNSW-OC12	Operate Protection Switch OC-12	
OPR-PROTNSW-OC3	Operate Protection Switch OC-3	
OPR-PROTNSW-OC48	Operate Protection Switch OC-48	
OPR-PROTNSW-STS3	Operate Protection Switch STS-3	Edit/Set DRI
OPR-PROTNSW-SWFBR	Operate Protection Switch on Switch Fabric	
OPR-SYNCSW	Operate Synchronization Switch	
RLS-EXT-CONT	Release External Control	
RLS-LPBK-EC1	Release Loopback EC1	
RLS-LPBK-OC3	Release Loopback OC-3	
RLS-LPBK-T3	Release Loopback T3	
RLS-PROTNSW-OC12	Release Protection Switch OC-12	
RLS-PROTNSW-OC3	Release Protection Switch OC-3	
RLS-PROTNSW-OC48	Release Protection Switch OC-48	
RLS-PROTNSW-STS3	Release Protection Switch STS-3	Edit/Set DRI
RLS-PROTNSW-SWFBR	Release Protection Switch on Switch Fabric	
RLS-SYNCSW	Release Synchronization Switch	
RTRV-AO	Retrieve Autonomous Output	
RTRV-ALM	Retrieve Alarm and Status Conditions	
RTRV-ALM-ENV	Retrieve Alarm Environment	
RTRV-ATTR-ALM	Retrieve Attribute Alarm	
RTRV-ATTR-CONT	Retrieve Attribute Control	
RTRV-rr	Retrieve rr	
RTRV-ATTR-rr	Retrieve Attribute	
RTRV-CKT-rr	Retrieve Circuit rr	

TL1 Command	Description	CPro-2000 Menu Item
RTRV-COND	Retrieve Condition	Update/Alarms
RTRV-CRS-STS3	Retrieve Cross-Connection STS-3	Update/Cross Connections
RTRV-EQPT	Retrieve Equipment	Update/ Network Element Inventory
RTRV-HDR	Retrieve Header	
RTRV-MAP	Retrieve Map Ring	
RTRV-MAP-NEIGHBOR	Retrieve Map Neighbor	
RTRV-MAP-NETWORK	Retrieve Map Network	
RTRV-MAP-RING	Retrieve Map Ring	Update/ SubNetwork Map
RTRV-PM	Retrieve Performance Monitoring	Reports/PM Data
RTRV-PROT-rr	Retrieve Protection rr	
RTRV-PROTN-LINE	Retrieve Protection Line	
RTRV-PROTN-LS	Retrieve Protection Low Speed	
RTRV-PTHTRC-rr	Retrieve Path Trace rr	
RTRV-rr	Retrieve rr	Provision/Port Options
RTRV-SYS	Retrieve System	
RTRV-TH	Retrieve PM Thresholds	
RTRV-TMSLT-rr	Retrieve Timeslot rr	
RTRV-ULSDCC	Retrieve Upper Layer Section DCC	
RTRV-USER-SECU	Retrieve User Security	
SET-ATTR-rr	Set Attribute rr	
SET-ATTR-ALM	Set Attribute Alarm	
SET-ATTR-CONT	Set Attribute Control	
SET-ATTR-ENV	Set Attribute Environment	
SET-SID	Set Site ID	
SWITCH-TOPROTN	Switch to Protection	
SWITCH-TOWKG	Switch to Working	
UPDATE-SYS	Update System	

FT-2000 OC-48 User Service Manual Task-Oriented Procedures

Purpose

The purpose of this section is to provide a cross-reference between the TOPs section of the *Lucent Technologies FT-2000 OC-48 User/Service Manual* and the menu items of CPro-2000.

Cross-Reference Table for Tasks Supported in CPro-2000

The following table provides a cross-reference between the CPro-2000 capabilities and the FT-2000 OC-48 TOPs. Not every step in every one of the identified TOPs may be supported in CPro-2000. The following table only means that significant steps of the TOPs identified in the following table will be helped by the use of CPro-2000. Wherever the TOP calls for use of a particular TL1 command that is not supported in the CPro-2000 menu, it is assumed that the user will enter such commands directly from the AUI window.

TOP Number Supported by CPro-2000	Description
Circuit Order:	
NTP-002	Add DS3 and/or EC1 Low-Speed Port(s)
NTP-003	Delete DS3 and/or EC1 Low-Speed Port(s)
NTP-010	Add OC3 Low-Speed Slot(s)
NTP-011	Delete OC3 Low-Speed Slot(s)
Operation:	
NTP-003	Establish Dual-Ring Interworking (DRI) Connections
NTP-004	Disconnect Dual-Ring Interworking (DRI) Connections
Detailed Level:	
DLP-517	Provision Low-Speed Slot and Port Parameters
DLP-522	Change a User's Login
DLP-536	Enter/Delete/Edit STS-3 Cross Connections at Network Element for 2-Fiber Ring Network

Appendix D.
Script and Batch Files

Overview

CPro-2000 supports user-created files. These files, known in CPro-2000 as script and batch files, are created using the same set of command statements. These are described in the following section, "Supported Statements." Although script and batch files are essentially similar, CPro-2000 differentiates between them as follows:

- Script files may be used effectively with CPro-2000 for the initial connection to the subnetwork.
- Batch files are used to execute a series of commands without the need for user input.

Script and batch files may be run from the AUI under the Run/Script menu, or from the GUI under the Access/Run Batch Commands menu.

See the "Script Files" and "Batch Files" sections later in this chapter for a description of how these two types of user-created files can be used effectively with CPro-2000.

NOTE: The following rules apply to script and batch files:

- Commands are NOT case-sensitive.
- Indentations are permitted.
- There are no special naming conventions for a script or batch file, although it is recommended that you append a *.scr* extension to your script file names.
- Special characters, such as \r (which equals a carriage return), can be included in the file.

Supported Statements

TRANSMITT string

Outputs *string* at the COM port, where *string* is any string of text enclosed between double quotations. If transmitting a TL1 command, a WAITFOR statement must follow the TRANSMITT *string*.

Examples:

```
TRANSMITT "ho/port1"
transmitt "rtrv-eqpt:all\r"
waitfor "\0;\0"
```

DIALNUMBER string

Connects to the COM port and dials the given telephone number with pulse or tone mode, where *string* is enclosed between double quotations and consists of two parts. The first part is either P for Pulse or T for Tone mode. The second part is the phone number, which may contain dashes or spaces.

If an error occurs, this command raises the DIALNUMBER-FAIL flag.

Examples:

```
DIALNUMBER "P 1-908-555-1212"
dialnumber "T 1 908 555 1212"
```

NOTE: This command connects to the COM port, so do not attempt to connect to the COM port before running this command.

WAITFOR string

Waits for any of a list of tokens from the COM port, where *string* is enclosed between double quotations and contains up to 20 tokens separated by \0.

If an error occurs, this command raises the WAITFOR-FAIL flag.

Examples:

```
WAITFOR "DESTINATION:\0login<\0"
waitfor "<\0"
```

PAUSE nWaitTime

Waits for specified milliseconds, where *nWaitTime* is a specified wait time in milliseconds with a maximum of 2,147,483,647.

Example:

```
PAUSE 1000
```

DIALCANCEL

Disconnects the phone connection established through DIALNUMBER.

IF condition

The IF statement allows statements under "IF" to be included between { and }. On condition false, it goes to an ELSE statement or to the next statement. C*ondition* can be one of the following: WAITFOR-FAIL, DIALNUMBER-FAIL, or CONNECT-FAIL.

Examples:

```
IF WAITFOR-FAIL
      {
      user-msg "Token not received"
      transmitt "\r"
      }
if connect-fail
      {
      error-msg "Unable to connect the COM port:exiting"
      exit
      }
```

ELSE

This is a "C" like ELSE statement that allows statements under ELSE to be included between { and }. On condition false, the execution goes to the ELSE statement.

Examples:

```
IF WAITFOR-FAIL
      {
      user-msg "Token not received"
      transmitt "\r"
      WAITFOR "DESTINATION: \0"
      }
      ELSE
      {
      user-msg "Logging into the system"
      transmitt "\r"
      pause 500
      }
if connect-fail
      {
      error-msg "Unable to connect the COM port: exiting"
      exit
      }
      else
      user-msg "Connected to the COM port"
```

USER-MSG string

Puts message box on screen containing the string, where *string* is any string of text enclosed between double quotations.

Example:

```
USER-MSG "Command completed successfully"
```

ERROR-MSG string

Puts error message box on screen containing the string, where *string* is any string of text enclosed between double quotations.

Example:

```
ERROR-MSG "Cannot log into the system"
```

EXIT

Terminates script execution with error.

END

Terminates script execution normally.

TEMP_EXIT

Provides a recallable exit point from the script file and stops the script execution temporarily. CPro-2000 keeps a marker (LAST_EXIT_POINT) where the execution is halted. When you execute the same script again, it optionally allows you to run it from the point where it halted previously. This statement should be used with STEP_*label*, where *label* is any word.

NOTE: The TEMP_EXIT statement syntax is similar to the GOTO statement and can be used the same way.

Example:

```
#STEP_START
; If this step fails: quit, fix error, and execute this
; step again from its beginning
TEMP_EXIT
```

NOTE: The *label* must be specified in the script file; it should be preceded by a "#" and appended by a colon (for example "advice:").

GOTO label

This is a "C" like GOTO statement that starts execution from the next line label, where *label* is any word.

Examples:

```
GOTO CONNECT-ERROR
goto advice
```

NOTE: The *label* must be specified in the script file; it should be preceded by a "#" and appended by a colon (for example "#advice:").

CONNECT

Connects to the COM port.

NOTE: COM port settings are specified with the SETTINGS command. The default settings are "COM2:9600,e,7,1,none."

SETTINGS string

Sets the COM port to given settings, where *string* is enclosed between double quotations and contains the following, in sequence:

1. COM port name (for example, COM1 or COM2) (This setting may be excluded.)
2. colon (This is excluded if the COM port name is not specified.)
3. baud rate (for example, 9600 or 4800)
4. comma
5. parity (for example, e, o, or n)
6. comma
7. data bits (for example, 7 or 8)
8. comma
9. stop bits (for example, 1 or 2)
10. comma
11. handshaking

This command can be used before or after connecting to a COM port.

Examples:

```
SETTINGS "COM1:9600,e,7,1,none"
settings "4800,8,2"
```

DISCONNECT

Disconnects from the COM port.

{

The open bracket symbol used in an IF or ELSE statement.

}

The close bracket symbol used in an IF or ELSE statement.

;string

A semicolon symbol used at the beginning of a statement that indicates that this line contains a comment, where *string* is the comment.

Example:

```
;This is a comment
```

Functions

The use of functions is supported in CPro-2000 script and batch files. Functions can be used to do repetitive blocks of commands.

The following conditions apply to using functions in a CPro-2000 script or batch file:

- Function definitions should be kept at the very end of a script or batch file, following END or EXIT statements.
- A maximum of 10 parameters are permitted in a function.
- Do not use a GOTO statement inside of a function, unless it is within a compound statement like IF.
- A GOTO statement cannot be used to go to a label outside the function definition.
- You can nest other functions calls within a function.
- If a TEMP_EXIT is called from inside a function, it searches for the exit label that appears before the start of the function call, **not** from before its definition.
- If you use < or > as part of your parameter, you must precede them with a backslash (\).

Function Syntax

A function definition appears as shown below.

```
FUNCTION function_name (no_of_parameters)
{
; executable function script lines
; the parameters are referenced by their order
; the nth parameter is referenced as % (n)
; a function does not return any value
}
```

A function calling appears as shown below.

```
CALL "function_name<parameter list,each enclosed in two< >s >"
```

Function Example

Shown below is an example of how a function can be used in a script or batch file. A function can be used in all situations where a WAITFOR statement is going to be used. In this example, the function is handling the time spent waiting for a response from an NE.

```
FUNCTION WAITING (2)
{
       waitfor "%(1)'
       ifwaitfor-fail
       {
              user-msg "%(2)"
              exit
       }
}
```

The call to this sample function might look something like the following:

```
CALL "WAITING<DESTINATION:><Destination prompt not found.>"
```

Macros

Macros provide the ability to put a variable into the body of a script file, supply a prompt string for the variable, and supply a default value for the variable. When the script is run, the user is prompted (using the prompt string provided) for a value of the variable, or the default value is entered by CPro-2000. So whenever user input is desired, you can use a macro.

Macros should be used like mini-functions. For example, macros can be used if the user needs to enter a login ID and password. The macro definitions would look like the following:

```
LOGIN_ID=Enter your login ID here:,
PASSWORD=Enter your password here:,
```

Since these macro definitions have no default value and no range of valid values, they contain a colon (:) at the end of them. The following is an example of how to use the sample macro definitions listed above:

```
transmitt "$(LOGIN_ID)\r"
transmitt "$(PASSWORD)\r"
```

These commands cause the login ID and a carriage return to be sent to the NE. Then the password and another carriage return are sent to the NE.

Macros may also be used inside commands that are used to modify parameter values on an NE. The following example macro definition asks the user to enter the value for a parameter:

```
PARAMETER=Enter User Side/Network Side Value:,us
```

This macro definition has no range of values, but it contains the default us. The following is an example of how this macro definition might be used:

```
transmitt "no(PARAMETER);"
```

The following conditions apply to using macros in a script or batch file:

- Any number of macros can be used in one script line.
- A macro can be used anywhere in a script, any number of times; however, there can only be one definition for each macro.
- The input range shown in the dialog box (see "Macro Example") does not apply any validation for the value typed in by the user.
- There is no data type associated with the input value. It is treated as a character string.

Macro Syntax

To define a macro, place a macro definition statement at the end of the script file. When CPro-2000 is r
necessary information to prompt the user for a value or to supply a default value.

A macro is called into a script using the following syntax

any_script_statement "....$(MACRO_NAME)..."

where the macro name is enclosed by parentheses and preceded by a $ sign. MACRO_NAME gets a value returned from the macro definition and uses that value to execute the script statement.

Macro definition statement syntax is shown below

```
MACRO_NAME=Prompt line:Range of valid values, [Default value]
```

where the syntax contains the following elements:

- macro name followed by "="
- prompt line terminated by a ":"
- string containing a range of values followed by a ","
- default value (optional)

Macro Example

First the macro call appears in the script file, as shown in the following sample:

```
transmitt "set-attr-alm:almdel=$(ALARM_DELAY);"
```

The macro definition appears at the end of the script file, as shown in the following sample:

```
ALARM_DELAY=Enter the alarm holdoff delay (in seconds):0-32,2
```

This macro example causes a dialog box to display (if you are in Expert mode) with the message prompt "Enter the alarm holdoff delay (in seconds)" and an input range of values of 0-30. A text input field for typing in the value also appears in the dialog box. Press **Return** to accept the value.

Using Functions and Macros Together

Macros can be used to allow the user to supply values to a function during its execution. In the following example, when the function is called, the user is asked for the value of the DSNE parameter, the value of the AGNE parameter, and to enter three additional parameters and values. (If the user does not have three additional parameters to enter, they can send carriage returns for each prompt.)

The function definition:

```
 FUNCTION MY_SET_NE(5)
{
  transmitt "set-ne:dsne=%(1),agne=%(2),%(3),%(4),%(5);"
  CALL "WAITING <Execute?><The set-ne command had problems.>
  transmitt "y\r"
  CALL "WAITING<<><The set-ne command failed.>"
}
```

The function call:

```
CALL "MY_SET_NE<$(DSNE_Vlaue)><$(AGNE_Value)><$(ANY_PARA)>
<$(ANY_PARA)><$(ANY_PARA)>
```

The macro calls:

```
DSNE_Value=Enter DSNE Value (Yes/No):.No
AGNE_Value=Enter AGNE Value (Yes/No):,No
ANY_PARA=Enter the parameter and its value, like this --
 TID=newtid;,
```

CAPTURE Command

The CAPTURE command provides the ability to capture terminal output to a file.

The syntax of the CAPTURE command is shown below

`CAPTURE "`*`filename`*`"`

where *`filename`* is any valid file path name. If the file name is OFF, then the current capturing, if ON, is stopped.

An example is shown below.

```
CAPTURE "myrep.log"
```

NOTE: If the specified file name already exists, the user is asked whether the file should be overwritten.

Script Files

CPro-2000 script files may contain data communications parameters, such as PC settings, dial-up commands, and information for connecting to the local node. The script file should not include any commands that actually log the user into CPro-2000. The script file should only get the user to the point where the CPro-2000 GUI starts the login process.

A simple data communications script is provided with CPro-2000, called DEFAULT.SCR. (For aExample Data Communications Script File, see the sample at the end of this appendix.) CPro-2000 uses this script unless a different script file name is specified.

The DEFAULT.SCR file contains the following lines:

```
settings " com1:9600,e,7,1,none"
connect
if connect-fail
{
   user-msg " Could not connect to COM1."
   exit
}
end
```

This simple script file allows the user to access the communications port on the PC and then stops. Listed below is a detailed explanation of each line in the script file.

- settings "com1:9600,e,7,1,none"

  This line is usually the first line of any script file. It indicates which line communicates with the subnetwork.

  - `com1` is the communications port on the PC that is used to connect the NE.
  - `9600` indicates that the communications are at 9.6 Kbps.
  - `e` indicates that the parity is even.
  - `7` indicates that there are 7 data bits.
  - `1` indicates that there is 1 stop bit.
  - none indicates that there is no handshaking.

- connect

  This line causes the AUI to access the communications port identified in the settings command, using the speed, parity, data, and stop bit information provided.

- if connect-fail

  This line allows the user to define what happens if the AUI is unable to connect to the communications port on the PC.

- {

  user-msg "Could not connect to COM1."

  exit

}

  The open (`{`) and close (`}`) brackets are used with any command that begins with `if`. The brackets always stand alone on a line as shown above. In this case, the brackets indicate that execution of the commands between the brackets is optional. The commands between the brackets are executed only if no connection is made. If the connection attempt is successful, the next command following the brackets is executed (in this example, the `end` command).

  The command `user-msg` prints a message to the screen indicating to the user that the connection attempt was unsuccessful. The text in quotation marks following this command is displayed on the GUI window until the user clicks on the OK button in the message box.

The `exit` command causes the script file to stop.

- end

  This line indicates to CPro-2000 that there are no more lines in the script file to be executed and that the login process can now begin.

Batch Files

Batch files are similar to script files. The same commands used in a script file are often found in a batch file, but are used in different ways. Examples of how batch files are used include the following:

- installation commands necessary for a technician to do a rapid turnup of a network element, including any initialization tasks
- a group of commands that may or may not be supported by CPro-2000

The batch file allows a user to do many commands by executing one file, such as polling the subnetwork twice a day and displaying an NE alarm report at each node.

Troubleshooting Script and Batch Files

The following paragraphs contain useful information for creating and using script or batch files.

General Problems

Although timing problems are the most common, users should be aware of other types of script or batch file problems:

- incorrect port settings, login IDs, and passwords
- syntax problems, such as missing brackets around optional command groups and the correct use of the TRANSMITT command (For a DDM-2000, if certain commands being sent with the transmitt command end with a semicolon, they should not be followed by a carriage return (\r). However, this is not true for all DDM-2000 commands or for any FT-2000 commands.)

Timing Problems

The most difficult aspect of creating a script or batch file is to ensure that there are appropriate PAUSE and WAITFOR commands in the file, as described in the following paragraphs. The best way to verify that the timing is effective is to set up the file and test it. Continue to test and make modifications to the timing until the file is correctly established.

Command Output

If a user is sending a command to an NE and wants to see the NE's response to the command in the AUI, a WAITFOR command must follow the TRANSMITT command in the script or batch file.

Typically, for an FT-2000 OC-48 NE, the WAITFOR statement contains a semicolon (;) and for a DDM-2000, the WAITFOR statement contains a greater than sign (>). The semicolon and > are the prompts used by an NE to indicate that it is ready for further user input.

The Pause Command

The pause command, used in the format PAUSE ####, can be used to tell CPro-2000 not to ~~send anything to~~ an NE for a defined period of time. The number that follows pause is a quantity of microseconds. For example, PAUSE 1000 means wait for one second and PAUSE 40000 means wait for 40 seconds. The pause quantity should be modified to meet your specific needs.

The most common use of the PAUSE command is for a WAITFOR "XXX" statement, where XXX is an action that may not work correctly. For example, after logging into a DDM-2000, but before the user prompt appears, the system requests the user to supply a carriage return. Instead of using WAITFOR "carriage return to continue," the script can simply PAUSE 1000.

Example Data Communications Script File

The text shown below is a sample data communications script file.

```
;----------------start of script--
settings "com2:9600,n,8,1,none"
connect
pause 500
transmitt "\r"
pause 500
if connect-fail
{
   user-msg "The connection attempt to the comport failed."
   exit
}
transmitt "\r"
pause 1000
transmitt "\r"
pause 1000
transmitt "\r"
pause 1000
```

```
waitfor "DESTINATION: \0"
if waitfor-fail
{
   error-msg "No DESTINATION: prompt was found."
   goto DISCONNECT
}
pause 500
; In the following line, you can replace the macro call
$(CONNECT_STRING)
; with an actual connection string.
; Alternatively enter a default value in the macro definition below
transmitt "$(CONNECT_STRING)\r"
pause 500
transmitt "\r"
pause 500
transmitt "\r"
pause 500
transmitt "\r"
pause 1000
end

#DISCONNECT:
disconnect
exit

;You can create a default for this macro by entering a value
;following the last ,
CONNECT_STRING=Enter the connect string:{a-z...},

;----------end of script
```

Example Modem Script File

This sample modem script file works with Hayes-compatible fax/data modems. This script, called *modem.scr*, is included with your CPro-2000 software and can be modified to work with other modem types.

```
settings " com1: 9600, e, 7, 1, none"

connect

; At the following line, replace phone_number with actual phone
;number

transmitt " atdtphone_number\r"

WAITFOR " login<\0"

if waitfor-fail

{

   WAITFOR " login<\0"

   if waitfor-fail

   {

      WAITFOR " login<\0"

      if waitfor-fail

      {

      error-msg " No login< prompt was found..."

         disconnect

         exit

      }

   }

}

user-msg " End of script"

end
```

Appendix E. Backup/Restore Parameters

Backup/Restore Overview

The CPro-2000 Backup command is used to create backup files of the current equipage, cross connections, and provisionable parameters of a network element node. The files created during a backup can then be used by the CPro-2000 Restore command for restoration of this data at a later date. (See the **Edit Menu** chapter for information on how to backup and restore files.)

Cross-Reference Tables for CPro-2000 Backup/Restore Commands

The following tables provide a cross-reference between the CPro-2000 Backup/Restore command parameters and the supported network element releases. For more information on the commands used in backup and restore, see the *Lucent Technologies User Service Manual* for the appropriate network element release.

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with TL1

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
System	ent-sys	rtrv-sys	new_tid		x	x	x
			rnestat				**x**
			almgrp				**x**
			agne				**x**
			co/rt		x	x	x
			idle		x	x	x
System	ent-cid-secu	rtrv-cid-secu	state		x	x	x
			tmout		x	x	x
			porttype				**x**
			echo				**x**
			baudrate				**x**
System		rtrv-user-secu	uid		x	x	x
			uap		x	x	x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid		x	x	x
			msgtype		x	x	x
Comm		rtrv-ulsdcc-l3	l3idp		x	x	x
			l3dfi		x	x	x
			l3sys		x	x	x
			l3sel		x	x	x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org		x	x	x
			l3res		x	x	x
			l3rd		x	x	x
			l3area		x	x	x
			l3lv2is		x	x	x
Comm	ent-ulsdcc-l4	rtrv-ulsdcc-l4	l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Comm	ent-ulsdcc-l4		l4ajnsap	Manual Adjacency	x	x	x
		rtrv-ulsdcc-l4	l4ajorg		x	x	x
			l4ajres		x	x	x
			l4ajrd		x	x	x
			l4ajarea		x	x	x
			l4ajsys		x	x	x
Comm	ent-ulsdcc-l4		l4tdctid	TARP Data Cache	x	x	x
			l4tdcnsap		x	x	x
		rtrv-ulsdcc-l4	l4etdc		x	x	x
			l4tdctid		x	x	x
			l4tdcorg		x	x	x
			l4tdcres		x	x	x
			l4tdcrd		x	x	x
			l4tdcarea		x	x	x
			l4tdcsys		x	x	x
Comm	ent-fecom	rtrv-fecom	communications	Only for the local NE	x	x	x
			side		x	x	x
Feature	ent-feat	rtrv-feat	vtpm		x	x	x
			ds1pm		x	x	x
Sync	ent-syncn	rtrv-syncn	syncnmode		x	x	x
			syncfunction		x	x	x
			sync auto config			x	x
Alarm	set-attr-alm	rtrv-attr-alm	almdel		x	x	x
			clrdel		x	x	x
			pmn		x	x	x
Alarm	set-attr-env	rtrv-attr-env	ntfcnde	RT only	x	x	x
			almmsg		x	x	x
			almtype		x	x	x
Alarm	set-attr-cont	rtrv-attr-cont	conttype	RT only	x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Port & Line	ent-t1	rtrv-t1	linecde		x	x	x
			ntfcncde		x	x	x
			bpv		x	x	x
			ais		x	x	x
			sfthr		x	x	x
			pmmd		x	x	x
			fmt		x	x	x
			pst		x	x	x
Port & Line	ent-t3	rtrv-t3	ntfcncde	With DS3 in fn slots		x	x
			ais			x	x
			sfthr			x	x
			vmr mode			x	x
			fmt			x	x
			pmmd			x	x
			frame			x	x
			linecode			x	x
			pbit			x	x
			xbit			x	x
			pst			x	x
Port & Line	ent-oc12	rtrv-oc12	**sfthr**	If main slots are equipped with 29G			**x**
			syncmsg				**x**
			aisnc				**x**
			dccmode				**x**
Port & Line	ent-oc3	rtrv-oc3	sfthr	If main slots are equipped with 28G		x	x
			syncmsg			x	x
			aisnc			x	x
			dccmode				**x**
Port & Line	ent-oc1	rtrv-oc1	aisnc		x	x	x
			sfthr		x	x	x
			pst				
Channel	ent-crs-vt1	rtrv-crs-vt1			x	x	x
Channel	ent-crs-sts1	rtrv-crs-sts1			x	x	x
Channel	ent-vt1	rtrv-vt1	sfthr		x	x	x
			aisncsa		x	x	x
			alsnc		x	x	x
			pst		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Channel	ent-sts1	rtrv-sts1	sfthr				
			sfail		x	x	x
			aisncsa		x	x	x
			aisnc		x	x	x
			pst		x	x	x
			lop	22 type OLIU in fn slot		x	x
Perf		rtrv-th-all			x	x	x
Perf	set-th-sts1		b3 cv p	see SpecCond-630	x	x	x
			b3 es p		x	x	x
			b3 esa -p		x	x	x
			b3 esb -p		x	x	x
			b3 ses p		x	x	x
			b3 uas p		x	x	x
Perf	set-th-vt1			ENT-FEAT VT1pm enabled See SpecCond-630			
			v5 es p		x	x	x
			v5 ses p		x	x	x
			v5 uas p		x	x	x
Perf	set-th-t1			ENT-FEAT DS1pm enabled See SpecCond-630			
			cvp	modifier = SF	x	x	x
			cvp	modifier = ESF	x	x	x
			esp		x	x	x
			sesp		x	x	x
			uasp		x	x	x
			cvpfe		x	x	x
			espfe		x	x	x
			sespfe		x	x	x
			uaspfe		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Perf	set-th-t3	rtrv-th-t3	cv l es l esa –l esb –l ses l uas l oof	When DS3 in function slot		x x x x x x x	x x x x x x x
Perf	set-th-oc1		cv l es l esa -l esb -l ses l uas l oof	See SpecCond-630	x x x x x x x	x x x x x x x	x x x x x x x
Perf	set-th-oc3		cv l es l esa –l esb –l ses l uas l oof	Equipped with 28G-U only		x x x x x	x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with MML

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
System	set-ne	rtrv-ne	tid		x	x	x
			co/rt		x	x	x
			rnestat				**x**
			almgrp				**x**
			agne				**x**
			idle channel signal		x	x	x
Security	set-secu	rtrv-secu	security		x	x	x
			timeout		x	x	x
			porttype				**x**
			echo				**x**
			baudrate				**x**
Security	rstr-psswrd	rtrv-psswrd	login		x	x	x
			user type		x	x	x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid		x	x	x
			message type		x	x	x
			action		x	x	x
Comm		rtrv-ulsdcc-l3	l3idp		x	x	x
			l3dfi		x	x	x
			l3sys		x	x	x
			l3sel		x	x	x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org		x	x	x
			l3res		x	x	x
			l3rd		x	x	x
			l3area		x	x	x
			l3lv2is		x	x	x
Comm	ent-ulsdcc-l4	rtrv-ulsdcc-l4	l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Comm	ent-ulsdcc-l4	rtrv-ulsdcc-l4	l4ajnsap	Manual Adjacency	x	x	x
			l4ajorg		x	x	x
			l4ajres		x	x	x
			l4ajrd		x	x	x
			l4ajarea		x	x	x
			l4ajsys		x	x	x
Comm	ent-ulsdcc-l4	rtrv-ulsdcc-l4	l4tdctid l4tdcnsap l4etdc l4tdctid l4tdcorg l4tdcres l4tdcrd l4tdcarea l4tdcsys l4tdcsel	Not required to handle TARP Date Cache			
Comm	set-fecom	rtrv-fecom	communication	Only for the local NE	x	x	x
			dcc ns/us		x	x	x
Feature	set-feat	rtrv-feat	feature option		x	x	x
			action		x	x	x
Sync	set-sync	rtrv-sync	mode switching		x	x	x
			syn source		x	x	x
			autoconfiguration			x	x
Alarm	set-attr-alm	rtrv-attr-alm	alarm delay		x	x	x
			clear delay		x	x	x
			pmn		x	x	x
Alarm	set-attr-env	rtrv-attr-env	alarm	RT only	x	x	x
			alarm type		x	x	x
Alarm	set-attr-cont	rtrv-attr-cont	description	RT only	x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Port & Line	set-t1	rtrv-t1	line code		x	x	x
			alarm level		x	x	x
			ais		x	x	x
			failure thrshld		x	x	x
			dlcbpv to los		x	x	x
			state		x	x	x
			pm mode	Need DS1 PM pack	x	x	x
			format		x	x	x
Port & Line	ent-t3	rtrv-t3	ntfcncde	With DS3 in fn slots		x	x
			ais			x	x
			sfthr			x	x
			vmr mode			x	x
			fmt			x	x
			pmmd			x	x
			frame			x	x
			linecode			x	x
			pbit			x	x
			xbit			x	x
			pst			x	x
Port & Line	set-oc12	rtrv-oc12	**nsa ais**	Main slots equipped with			**x**
			sig degrade thres	29G-U			**x**
			syncmsg				**x**
			dccmode				**x**
Port & Line	set-oc3	rtrv-oc3	nsa ais	Main slots equipped with		x	x
			sig degrade thres	28G-U		x	x
			syncmsg			x	x
			dccmode				**x**
Port & Line	set-oc1	rtrv-oc1	nsa ais		x	x	x
			sig degrade thres		x	x	x
Port & Line	set-state-t1	rtrv-t1	primary state		x	x	x
Port & Line	set-state-t3	rtrv-t3	primary state			x	x
Port & Line	ent-crs-vt1	rtrv-crs-vt1			x	x	x
Port & Line	ent-crs-sts1	rtrv-crs-sts1			x	x	x
Channel	set-vt1	rtrv-vt1	signaldegradethres		x	x	x
			sa ais		x	x	x
			nsa ais		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Channel	set-sts1	rtrv-sts1	signaldegradethres		x	x	x
			signal failure				
			sa ais		x	x	x
			nsa ais		x	x	x
Channel	set-state-vt1	rtrv-vt1	primary state		x		
Channel	set-state-vt1	rtrv-state-vt1	primary state			x	x
Channel	setstate-sts1	rtrv-state-sts1	primary state			x	x
Channel	set-state-stst1	rtrv-sts1	primary state		x		
Perf	set-pmthres-sect	rtrv-pmthres-sect	ses	See SpecCond-630	x	x	x
Perf	set-pmthres-line	rtrv-pmthres-line		See SpecCond-630			
			b2 cv (oc3)	OC3 for 28G-U only	x	x	x
			b2 cv (oc1)		x	x	x
			b2 es		x	x	x
			b2 esa		x	x	x
			b2 esb		x	x	x
			b2 ses		x	x	x
			uas				
Perf	set-pmthres-sts1	rtrv-pmthres-sts1		See SpecCond-630			
			b3 cv		x	x	x
			b3 es		x	x	x
			b3 esa		x	x	x
			b3 esb		x	x	x
			b3 ses		x	x	x
			b3 uas		x	x	x
Perf	set-pmthres-vt1	rtrv-pmthres-vt1		See SpecCond-630			
			v5 es		x	x	x
			v5 ses		x	x	x
			v5 uas		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FiberReach with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	3.0	3.1	4.0
Perf	set-pmthres-t1	rtrv-pmthres-t1		See SpecCond-630			
			es l		x	x	x
			cv p sf		x	x	x
			cv p esf		x	x	x
			esp		x	x	x
			sesp		x	x	x
			uasp		x	x	x
			cvpfe		x	x	x
			espfe		x	x	x
			sespfe		x	x	x
			uaspfe		x	x	x
Perf	set-pmthres-t3	rtrv-pmthres-t3	cvl	For DS3 in fn slots		x	x
			es l			x	x
			sesl			x	x
			sefs			x	x
			pcv			x	x
			fmcv			x	x
			cp			x	x
			esp			x	x
			sesp			x	x
			uasp			x	x
			sefsfe			x	x
			cpfe			x	x
			espfe			x	x
			sespfe			x	x
			uaspfe			x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Switch		rtrv-sys	product id		x	x	x
Switch		rtrv-ow	orderwire mode	Need BBG10	x	x	x
System	ent-sys	rtrv-sys	new_tid		x	x	x
			rnestat				**x**
			almgrp				**x**
			agne				**x**
			shelf		x	x	x
			cort		x	x	x
			idle		x	x	x
			x25ps		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
System	ent-cid-secu	rtrv-cid-secu	state		x	x	x
			tmout		x	x	x
			porttype				**x**
			echo				**x**
			baudrate				**x**
System		rtrv-user-secu	uid		x	x	x
			uap		x	x	x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid		x	x	x
			msgtype		x	x	x
Comm	ent-osacmap	rtrv-osacmap	vc		x	x	x
			snpa		x	x	x
			acid		x	x	x
Comm		rtrv-ulsdcc-l3	l3idp		x	x	x
			l3dfi		x	x	x
			l3sys		x	x	x
			l3sel		x	x	x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org		x	x	x
			l3res		x	x	x
			l3rd		x	x	x
			l3area		x	x	x
			l3lv2is		x	x	x
Comm	ent-ulsdcc-l4		tdc		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Comm		rtrv-ulsdcc-l4	l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajnsap		x	x	x
			l4tdctid		x	x	x
			l4tdcnsap		x	x	x
Comm	ent-ulsdcc-l4		l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajorg		x	x	x
			l4ajres		x	x	x
			l4ajrd		x	x	x
			l4ajarea		x	x	x
			l4ajsys		x	x	x
Comm	set-fecom	rtrv-fecom	communications	Local restoration only	x	x	x
			side		x	x	x
Feature	ent-feat	rtrv-feat	sts3				
			vtpm		x	x	x
			ds1pm		x	x	x
Sync	ent-syncn	rtrv-syncn	syncnmode		x	x	x
			syncfunction		x	x	x
			aisthres		x	x	x
			mdsw		x	x	x
			src	main1 or main2	x	x	x
Switch		rtrv-syncn	provisioned mode		x	x	x
Alarm	ent-attr-alm	rtrv-attr-alm	almdel		x	x	x
			clrdel		x	x	x
			pmn		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Alarm	ent-attr-env	rtrv-attr-env	ntfcnde	RT only	x	x	x
			almmsg		x	x	x
			almtype		x	x	x
Alarm	ent-attr-cont	rtrv-attr-cont	conttype	RT only	x	x	x
Port & Line	**ent-lan**	**rtrv-lan**	**grpid**				**x**
			aal5				**x**
			vpi				**x**
			vci				**x**
			frm_lgth				**x**
			scrambler				**x**
			polynom				**x**
			fcs				**x**
			almlvl				**x**
			pmmd				**x**
Port & Line	ent-nct	rtrv-nct	ctsenabled		x	x	x
			cts		x	x	x
			tcts		x	x	x
			mode		x	x	x
Port & Line	ent-oc3	rtrv-oc3	syncmsg		x	x	x
			aisnc		x	x	x
			sfthr	not applicable OC-3	x	x	x
			concat	MegaStar only	x	x	x
			radio		x	x	x
			application				**x**
			dccmode				**x**
Port & Line	ent-oc12	rtrv-oc12	syncmsg	Only if equipped with	x	x	x
			aisnc	24G or **29G** OLIU	x	x	x
			sfthr		x	x	x
			dccmode				**x**
Port & Line	ent-t1	rtrv-t1	linecde	HW, with override	x	x	x
			ntfcncde		x	x	x
			bpv		x	x	x
			ais		x	x	x
			sfthr		x	x	x
			pmmd		x	x	x
			fmt	only DS1 PM	x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Port & Line	ent-t3	rtrv-t3	ntfcncde		x	x	x
			ais		x	x	x
			sfthr		x	x	x
			vmr mode				
			fmt		x	x	x
			pmmd		x	x	x
			frame		x	x	x
			linecode		x	x	x
			pbit		x	x	x
			xbit	DS3-out from BBG20	x	x	x
			aisalm	for BBG20	x	x	x
Port & Line	ent-ec1	rtrv-ec1	sfthr		x	x	x
			ntfcncde		x	x	x
Port & Line	ent-oc1	rtrv-oc1	aisnc		x	x	x
			sfthr		x	x	x
Port & Line	ent-t1	rtrv-t1	pst		x	x	x
Port & Line	ent-t3	rtrv-t3	pst		x	x	x
Port & Line	ent-ec1	rtrv-ec1	pst		x	x	x
Port & Line	ent-oc1	rtrv-oc1	pst		x	x	x
X-conn	ent-crs-sts3C	rtrv-crs-sts3c		Only with 24G or **29G**	x	x	x
X-conn	ent-crs-sts1	rtrv-crs-sts1			x	x	x
X-conn	ent-crs-vt1	rtrv-crs-vt1			x	x	x
Channel	ent-vt1	rtrv-vt1	sfthr		x	x	x
			aisncsa		x	x	x
			alsnc		x	x	x
			pst		x	x	x
Channel	ent-sts1	rtrv-sts1	sfthr				
			sfail		x	x	x
			aisncsa		x	x	x
			aisnc		x	x	x
Channel	ent-sts1	rtrv-sts1	pst		x	x	x
Perf		rtrv-th-all		See SpecCond-630	x	x	x
Perf	set-th-oc3		pwr		x	x	x
			bias		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Perf	set-th-oc3		oof	See SpecCond-630			
			b2 cv l		x	x	x
			b2 es l		x	x	x
			b2 esa -l		x	x	x
			b2-esb -l		x	x	x
			b2 ses l		x	x	x
			b2 uas l		x	x	x
			psc-l		x	x	x
Perf	set-th-sts1			See SpecCond-630			
			cv p		x	x	x
			es p		x	x	x
			esa -p		x	x	x
			esb -p		x	x	x
			ses p		x	x	x
			uas p		x	x	x
Perf	set-th-t3		p-bit ec				
			sefs				
Perf	set-th-t3			See SpecCond-630			
			oof (fend)		x	x	x
			cvp (fend)		x	x	x
			esp (fend)		x	x	x
			sesp (fend)		x	x	x
			uasp (fend)		x	x	x
			sesf				
Perf	set-th-t3			See SpecCond-630			
			cvl (nend)		x	x	x
			esl (nend)		x	x	x
			sesl(nend)		x	x	x
			oof (nend)				
			cvp (nend)				
			esp (nend)				
			sesp (nend)				
			uasp (nend)				
Perf	set-th-vt1			See SpecCond-630			
			v5 es p		x	x	x
			v5 ses p		x	x	x
			v5 uas p		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Perf	set-th-t1			See SpecCond-630			
			day esl (nend)		x	x	x
			day cvp (nend)		x	x	x
			day esp (nend)		x	x	x
			day sesp (nend)		x	x	x
			day uasp (nend)		x	x	x
			day cvp (fend)		x	x	x
			day esp (fend)		x	x	x
			day sesp (fend)		x	x	x
			day uasp (fend)		x	x	x
Perf	set-th-t1			See SpecCond-630			
			qh esl (nend)		x	x	x
			qh cvp (nend)		x	x	x
			qh esp (nend)		x	x	x
			qh sesp (nend)		x	x	x
			qh uasp (nend)		x	x	x
			qh cvp (fend)		x	x	x
			qh esp (fend)		x	x	x
			qh sesp (fend)		x	x	x
			qh uasp (fend)		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Switch		rtrv-ne	Product ID		x	x	x
Switch		rtrv-ow	Orderwire mode	BBG10 OHCTL needed	x	x	x
System	set-ne	rtrv-ne	tid		x	x	x
			co/rt		x	x	x
			idle channel signal		x	x	x
			shelf		x	x	x
			rnestat				**x**
			agne				**x**
			almgrp				**x**
System	set-x25	rtrv-x25	PKT (size)		x	x	x
Security	set-secu	rtrv-secu	security		x	x	x
			timeout		x	x	x
			porttype				**x**
			echo				**x**
			baudrate				**x**
Security	set-lgn	rtrv-lgn	login		x	x	x
			User Type		x	x	x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid		x	x	x
			msgtype		x	x	x
			action		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Comm	ent-osacmap	rtrv-osacmap	vc type		x	x	x
			snpa address		x	x	x
			acid		x	x	x
Comm		rtrv-ulsdcc-l3	l3idp		x	x	x
			l3dfi		x	x	x
			l3sys		x	x	x
			l3sel		x	x	x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org		x	x	x
			l3res		x	x	x
			l3rd		x	x	x
			l3area		x	x	x
			l3lv2is		x	x	x
Comm	ent-ulsdcc-l4		tdc_rpt				
Comm		rtrv-ulsdcc-l4	l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajnsap				
			l4tdctid	Not required to handle			
			l4tdcnsap	TDC			

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Comm	ent-ulsdcc-l4		l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajorg	CPro parser issue	x	x	x
			l4ajres	resolved in R8.0	x	x	x
			l4ajrd		x	x	x
			l4ajarea		x	x	x
			l4ajsys		x	x	x
Comm	ent-ulsdcc-l4		l4etdc	Not required to handle			
			l4tdctid	TDC			
			l4tdcorg				
			l4tdcres				
			l4tdcrd				
			l4tdcarea				
			l4tdcsys				
			l4tdcsel				
Comm	set-fecom	rtrv-fecom	communication	Local restore only	x	x	x
			DCC NS/US		x	x	x
Feature	set-feat	rtrv-feat	vtpm		x	x	x
			ds1pm		x	x	x
Sync	set-sync	rtrv-sync	mode switching		x	x	x
			syn src		x	x	x
			syn auto reconfig		x	x	x
			omd	BBF2B, line-timed, and src set to fn-c	x	x	x
			aisthres	BBF2B, line-timed, sync out	x	x	x
Switch		rtrv-sync	provisioned mode		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Alarm	set-attr-alm	rtrv-attr-alm	alarm delay		x	x	x
			clear delay		x	x	x
			pmn		x	x	x
Alarm	set-attr-env	rtrv-attr-env	alarm	RT only	x	x	x
			almtype		x	x	x
			desc		x	x	x
Alarm	set-attr-cont	rtrv-attr-cont	desc	RT only	x	x	x
Port & Line	set-t1	rtrv-t1	line coding		x	x	x
			alarm level		x	x	x
			dlc bpv tolos		x	x	x
			ais		x	x	x
			failure threshold		x	x	x
			pm mode	only in PM pack	x	x	x
			format	only in PM pack	x	x	x
Port & Line	set-t3	rtrv-t3	alarm level		x	x	x
			ais		x	x	x
			failure threshold		x	x	x
			mode		x	x	x
			format		x	x	x
			pm mode		x	x	x
			frame		x	x	x
			xbit	DS3-out from BBG20	x	x	x
			aisalm	for BBG20	x	x	x
Port & Line	set-ec1	rtrv-ec1	alarm level		x	x	x
			signal degrade		x	x	x
Port & Line	**set-lan**	**rtrv-lan**	**grpid**				**x**
			aal5				**x**
			vpi				**x**
			vci				**x**
			length				**x**
			scrambler				**x**
			polynom				**x**
			fcs				**x**
			alm				**x**
			pmmd				**x**
Port & Line	set-nct	rtrv-nct	ctsenabled			x	x
			cts			x	x
			tcts			x	x
			mode			x	x
Port & Line	set-oc1	rtrv-oc1	nsa ais		x	x	x
			signal degrade thr		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Port & Line	set-oc3	rtrv-oc3	syncmsg (or type) signal degrade thr nsa ais **application** **dcc mode**		x x x	x x x	x x x **x** **x**
Port & Line	set-oc12	rtrv-oc12	syncmsg (or type) signal degrade thr nsa ais **dcc mode**	Only if equipped with 24G or **29G** OLIU	x x x	x x x	x x x **x**
Port & Line	set-state-t1	rtrv-t1	primary state		x	x	x
Port & Line	set-state-t3	rtrv-t3	primary state		x	x	x
Port & Line	set-state-ec1	rtrv-ec1	primary state	fails if x-conn exist	x	x	x
Port & Line	set-state-oc1	rtrv-state-oc1	primary state		x	x	x
Port & Line	set-state-vt1	rtrv-state-vt1	primary state		x	x	x
X-conn		rtrv-crs	x-connection type ring id				
X-conn	ent-crs-sts3C			Only with 24G or **29G**	x	x	x
X-conn	ent-crs-sts1				x	x	x
X-conn	ent-crs-vt1				x	x	x
Channel	set-vt1	rtrv-vt1	signaldegrade thr sa ais nsa ais		x x x	x x x	x x x
Channel	set-sts1	rtrv-sts1	signal degrade thr signal failure sa ais nsa ais		x x x x	x x x x	x x x x
Channel	set state-sts1	rtrv-state-sts1	primary state		x	x	x
Perf	set-pmthres-sect	rtrv-pmthres-sect	 xmtr pwr 1db xmtr pwr 2db laser bias sefs	See SpecCond-630	 x x x x	 x x x x	 x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Perf	set-pmthres-line	rtrv-pmthres-line		See SpecCond-630			
			b2 cv oc3		x	x	x
			b2 cv oc1		x	x	x
			b2 cv ec1		x	x	x
			b2 es		x	x	x
			b2 esa		x	x	x
			b2 esb		x	x	x
			b2 ses		x	x	x
			b2 uas		x	x	x
			psc-l		x	x	x
Perf	set-pmthres-sts1	rtrv-pmthres-sts1		See SpecCond-630			
			b3 cv		x	x	x
			b3 es		x	x	x
			b3 esa		x	x	x
			b3 esb		x	x	x
			b3 ses		x	x	x
			b3 uas		x	x	x
Perf	set-pmthres-t3	rtrv-pmthres-t3		See SpecCond-630			
			cv-l		x	x	x
			es-l		x	x	x
			ses-l		x	x	x
			sefs		x	x	x
			pbit cv-p		x	x	x
			cv-p				
			fmbit cv p		x	x	x
			cbit cv p		x	x	x
			es-p		x	x	x
			ses-p		x	x	x
			uas-p		x	x	x
			sesfe		x	x	x
			cbit cv p fe		x	x	x
			es p fe		x	x	x
			ses p fe		x	x	x
			uas p fe		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-3 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	13.0	13.5	15.0
Perf	set-pmthres-vt1	rtrv-pmthres-vt1		See SpecCond-630			
			v5 es		x	x	x
			v5 ses		x	x	x
			v5 uas		x	x	x
Perf	set-pmthres-t1	rtrv-pmthres-t1		See SpecCond-630			
			day es-l		x	x	x
			day cvpsf		x	x	x
			day cvpesf		x	x	x
			day esp		x	x	x
			day sesp		x	x	x
			day uasp		x	x	x
			day cvpfe		x	x	x
			day espfe		x	x	x
			day sespfe		x	x	x
			day uaspfe		x	x	x
Perf	set-pmthres-t1	rtrv-pmthres-t1		See SpecCond-630			
			qh es-l		x	x	x
			qh cvpsf		x	x	x
			qh cvpesf		x	x	x
			qh esp		x	x	x
			qh sesp		x	x	x
			qh uasp		x	x	x
			qh cvpfe		x	x	x
			qh espfe		x	x	x
			qh sespfe		x	x	x
			qh uaspfe		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Switch		rtrv-sys	product id		x
System	ent-sys	rtrv-sys	new_tid cort idle shelf x25ps		x x x x x
System	ent-cid-secu	rtrv-cid-secu	state tmout		x x
System		rtrv-user-secu	uid uap		x x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid msgtype		x x
Comm	ent-osacmap	rtrv-osacmap	vc snpa acid		x x x
Comm	ent-ulsdcc	rtrv-ulsdcc	l3org l3res l3rou		

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Comm		rtrv-ulsdcc-l3	l3idp l3dfi l3sys l3sel		x x x x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org l3res l3rd l3area l3lv2is		x x x x x
Comm	ent-ulsdcc-l4		tdc		x
Comm		rtrv-ulsdcc-l4	l4tlif l4t1tm l4t2tm l4t3tm l4t4tm l4lftm l4ajnsap l4tdctid l4tdcnsap		x x x x x x x x x
Comm	ent-ulsdcc-l4		l4tlif l4t1tm l4t2tm l4t3tm l4t4tm l4lftm l4ajorg l4ajres l4ajrd l4ajarea l4ajsys		x x x x x x x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Comm	ent-ulsdcc-l4		l4etdc l4tdctid l4tdcorg l4tdcres l4tdcrd l4tdcarea l4tdcsys l4tdcsel	Not required to handle TDC	x x x x x x x x
Comm		rtrv-fecom	communications side	Local restore only	x
Sync	ent-syncn	rtrv-syncn	syncnmode syncfunction aisthres mdsw src omd track	 with BBS2B cct pac	x x x x x x x
Switch		rtrv-syncn	provisioned mode		x
Alarm	set-attr-alm	rtrv-attr-alm	almdel clrdel pmn		x x x
Alarm	set-attr-env	rtrv-attr-env	ntfcnde almmsg almtype	Only RT	x x x
Alarm	set-attr-cont	rtrv-attr-cont	conttype	Only RT	x
Alarm	ent-asne				
Port & Line	ent-t3	rtrv-t3	pbit ntfcncde ais sfthr pst fmt pmmd linecde	 Enter separately	x x x x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Port & Line	ent-ec1	rtrv-ec1	pbit		x
			ntfcncde		x
			ais		
			sfthr		x
			pst	Enter separately	x
			fmt		x
			pmmd		x
Port & Line	ent-oc3	rtrv-oc3	kbyte		
			syncmsg (type)		x
			sfthr		x
			concat	Only for linear rel	
			pst	Enter separately	x
			int applications		x
			aisnc		x
Port & Line	ent-oc12	rtrv-oc12	kbyte		
			syncmsg (type)		x
			sfthr		x
			aisnc		x
Port & Line	ent-t3	rtrv-t3	pst		x
Port & Line	ent-ec1	rtrv-ec1	pst		x
Port & Line	ent-oc3	rtrv-oc3	pst		x
Feature	ent-feat	rtrv-feat	sts3c	CONCAT enabled	x
X-conn	ent-crs-sts3c	rtrv-crs-sts3c			x
X-conn	ent-crs-sts1	rtrv-crs-sts1			x
Channel	ent-sts1	rtrv-sts1		x-conn must exist	
			sfthr	AID must be “all”	x
			aisncsa		x
			aisnc		x
Channel	ent-sts3c	rtrv-sts3c		x-conn must exist	
				feat sts3c enabled	
			sfthr	AID must be “all”	x
			aisncsa		x
			aisnc		x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Channel	ent-sts1	rtrv-sts1	pst		x
Channel	ent-sts3c	rtrv-sts3c	pst		x
Perf	set-th-oc12	rtrv-th-oc12		See SpecCond-630	
			oof	"all" can be used to	x
			cv l	retrieve all these	x
			es l	parameters-s	x
			esa -l		x
			esb -l		x
			ses l		x
			uas l		x
			psc-l	Starts from R8.0	
Perf	set-th-oc3	rtrv-th-oc3		See SpecCond-630	
			oof	"all" can be used to	x
			cv l	retrieve all these	x
			es l	parameters-s	x
			esa -l		x
			esb -l		x
			ses l		x
			uas l		x
			psc-l		x
Perf	set-th-sts1	rtrv-th-sts1		See SpecCond-630	
			cv p	"all" can be used to	x
			es p	retrieve all these	x
			esa -p	parameters-s	x
			esb -p		x
			ses p		x
			uas p		x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Perf	set-th-t3	rtrv-th-t3		See SpecCond-630	
			cvl (nend)	"all" can be used to	x
			esl (nend)	retrieve all these	x
			sesl (nend)	parameters-s	x
			oof (nend)		x
			cvp (nend)		x
			esp (nend)		x
			sesp (nend)		x
			uasp (nend)		x
			oof (fend)		x
			cvp (fend)		x
			esp (fend)		x
			sesp (fend)		x
			uasp (fend)		x
Perf	set-th-ec1	rtrv-th-ec1		See SpecCond-630	
			cvl (nend)	"all" can be used to	x
			esl (nend)	retrieve all these	x
			sesl (nend)	parameters-s	x
			oof (nend)		x
			cvp (nend)		x
			esp (nend)		x
			sesp (nend)		x
			uasp (nend)		x
			oof (fend)		x
			cvp (fend)		x
			esp (fend)		x
			sesp (fend)		x
			uasp (fend)		x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC12 with MML

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Switch		rtrv-ne	product id		x
Switch		rtrv-ne	co/rt selector		
System	set-ne	rtrv-ne	tid co/rt idle channel sig shelf		x x x x
System	set-secu	rtrv-secu	security timeout		x x
Comm	set-fecom	rtrv-fecom	communication dcc ns/us	Local restore only	x x
Comm	ent-tl1msgmap	rtrv-tl1msgmap	acid tl1maintenance tl1memoryadministration tl1test tl1peercom tl1other1 tl1other2		x x x x x x x
Comm	ent-osacmap	rtrv-osacmap	vc type snpa address acid		x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Comm	ent-ulsdcc	rtrv-ulsdcc	l3org l3res l3rou		
Comm		rtrv-ulsdcc-l3	l3idp l3dfi l3sys l3sel		x x x x
Comm	ent-ulsdcc-l3	rtrv-ulsdcc-l3	l3org l3res l3rd l3area l3lv2is		x x x x x
Comm	ent-ulsdcc-l4		tdc_rpt		
Comm		rtrv-ulsdcc-l4	l4tlif l4t1tm l4t2tm l4t3tm l4t4tm l4lftm l4ajnsap l4tdctid l4tdcnsap	 Not required to handle TDC	x x x x x x x
Comm	ent-ulsdcc-l4		l4tlif l4t1tm l4t2tm l4t3tm l4t4tm l4lftm l4ajorg l4ajres l4ajrd l4ajarea l4ajsys	 Parser issue resolved in CPro R8.0	x x x x x x x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Comm	ent-ulsdcc-l4		l4etdc l4tdctid l4tdcorg l4tdcres l4tdcrd l4tdcarea l4tdcsys l4tdcsel	Not required to handle TDC	
System	set-x25	rtrv-x25	pkt		x
Sync	set-sync	rtrv-sync	mode switch syn source syn auto reconfig		x x
Switch		rtrv-sync	provisioned mode		x
Feature	set-feat	rtrv-feat	sts3c	CONCAT enabled	x
Alarm	set-attr-alm	rtrv-attr-alm	alarm delay clear delay pmn		x x x
Alarm	set-attr-env	rtrv-attr-env	alarm almtype desc	RT only	x
Alarm	set-attr-cont	rtrv-attr-cont	desc	RT only	x
Alarm	ent-asne				
Port & Line	set-t3	rtrv-t3	mode ais alarm level failure thrshld state fmt format pm mode frame format		x x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Port & Line	set-state-t3	rtrv-t3	primary state		x
Port & Line	set-ec1	rtrv-ec1	alarm level signal degrade thr		x x
Port & Line	set-state-ec1	rtrv-ec1	primary state		x
Port & Line	set-oc3	rtrv-oc3	kbyte message syncmsg (or type) signal degrade thr concat mode application (os3 i) nsa ais		 x x x x
Port & Line	set-state-oc3	rtrv-oc3	primary state		x
Port & Line	set-oc12	rtrv-oc12	kbyte message syncmsg (or type) signal degrade nsa ais		 x x x
Channel	set-sts1	rtrv-sts1	signal degrade sa ais nsa ais	xconn must exist AID must be "all"	x x x
Channel	set-state-sts1	rtrv-sts1	primary state		x
Channel	set-sts3c	rtrv-sts3c	signal degrade sa ais nsa ais	xconn must exist & feat sts3c enabled. AID must be "all"	x x x
Channel	set-state-sts3c	rtrv-sts3c	primary state		x
X-conn	set-crs	rtrv-crs	x connection type ring id		x x
X-conn	set-crs-sts3c	rtrv-crs-sts3c			x
X-conn	set-crs-sts1	rtrv-crs-sts1			x
Perf	set-pmthres-sect	rtrv-pmthres-sect	 txpwr1db txpwr2db laser bias sefs qhour sefs day	See SpecCond-630	 x x x x x

Backup/Restore Commands, Parameters and Release Relation Table for DDM OC-12 with MML (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	7.0
Perf	set-pmthres-line	rtrv-pmthres-line		See SpecCond-630	
			b2 cv oc12		x
			b2 cv oc3		x
			b2 cv ec1		x
			b2 es		x
			b2 esa		x
			b2 esb		x
			b2 ses		x
			b2 uas		x
			psc-l		x
Perf	set-pmthres-sts1	rtrv-pmthres-sts1		See SpecCond-630	
			b3 cv		x
			b3 es		x
			b3 esa		x
			b3 esb		x
			b3 ses		x
			b3 uas		x
Perf	set-pmthres-t3	rtrv-pmthres-t3		See SpecCond-630	
			cvl		x
			esl		x
			sesl		x
			sefs		x
			pcv		x
			cv-p		
			fmcv		x
			cp		x
			esp		x
			sesp		x
			uas-p		x
			sefsfe		x
			cbit cv pfe		x
			espfe		x
			sespfe		x
			uaspfe		x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
System		rtrv-sys	tid		x	x	x
			agne_address				
			dsne_address				
			tsagran		x	x	x
			sadd		x	x	x
			dce	tl1 or cit			
			dte	tl1 or cit			
			baud_tl1-dce				
			baud_tl1-dte				
System	ent-sys		new_tid	use value of tid			
System	ent-sys	rtrv-sys	nid				
			dsne	Kills remote logins if			
			gne	changed			
			agne				
			almgrp	0 to 255			
			x25ps	256 or 128	x	x	x
			protocol				
Security	ent-ne-secu	rtrv-ne-secu	alw_uid		x	x	x
			page		x	x	x
			uout		x	x	x
Security		rtrv-cid-secu	portstat	Not all parameters apply	x	x	x
			gnetid	to dte, dce, dcc, and x25.	x	x	x
			uid	Backup those reported	x	x	x
Security	ent-cid-secu	rtrv-cid-secu	tmout	Only restore backup	x	x	x
			porttype	parameters	x	x	x
			baudrate		x	x	x
			chan		x	x	x
			ostype		x	x	x
			calladdr		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Security	ent-cid-secu		portacc	Only for dte and vc0 of dcc.	x	x	x
Security		rtrv-user-secu	uid		x	x	x
			uap		x	x	x
			type		x	x	x
			expdat		x	x	x
Comm	ent-asgnmt-dcc	rtrv-asgnmt-dcc	dcc_chan	drops remote links	x	x	x
			ortn		x	x	x
Comm	ent-fecom	rtrv-fecom	rar	local restore only			
			roa				
Comm		rtrv-ulsdcc-l3	l3idp		x	x	x
			l3dfi		x	x	x
			l3sys		x	x	x
			l3sel		x	x	x
Comm	entulsdcc-l3	rtrv-ulsdcc-l3	l3org		x	x	x
			l3res		x	x	x
			l3rd		x	x	x
			l3area		x	x	x
			l3lv2is		x	x	x
Comm	ent-ulsdcc-l4		tdc		x	x	x
Comm		rtrv-ulsdcc-l4	l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajnsap		x	x	x
			l4tdctid		x	x	x
			l4tdcnsap		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Comm	ent-ulsdcc-l4		l4tlif		x	x	x
			l4t1tm		x	x	x
			l4t2tm		x	x	x
			l4t3tm		x	x	x
			l4t4tm		x	x	x
			l4lftm		x	x	x
			l4ajorg		x	x	x
			l4ajres		x	x	x
			l4ajrd		x	x	x
			l4ajarea		x	x	x
			l4ajsys		x	x	x
Comm	ent-ulsdcc-l4		l4etdc		x	x	x
			l4tdctid		x	x	x
			l4tdcorg		x	x	x
			l4tdcres		x	x	x
			l4tdcrd		x	x	x
			l4tdcarea		x	x	x
			l4tdcsys		x	x	x
			l4tdcsel		x	x	x
Sync		rtrv-sync					
			input_msg		x	x	x
			output_msg		x	x	x
			oper_e		x	x	x
			oper_w		x	x	x
			tg1_clk_sts		x	x	x
			tg2_clk_sts		x	x	x
Sync	ent-syncn	rtrv-syncn	syncnmod		x	x	x
			src		x	x	x
			pds1_iof		x	x	x
			sds1_iof		x	x	x
			pds1_ilc		x	x	x
			sds1_ilc		x	x	x
			ds11_equ		x	x	x
			ds12_equ		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Alarm	set-attr-alm	rtrv-attr-alm	almdel		x	x	x
			clrdel		x	x	x
			tribrep		x	x	x
Alarm	set-attr-env	rtrv-attr-env	ntfcncde		x	x	x
			almmsg		x	x	x
Alarm	set-attr-cont	rtrv-attr-cont	conttype		x	x	x
Alarm		rtrv-attr-all	aidtype	speccond-640	x	x	x
			locn	always=nend	x	x	x
			dirn	always=rcv	x	x	x
			ntfcncde		x	x	x
Alarm	set-attr-t3		ntfcncde		x	x	x
Alarm	set-attr-oc3		ntfcncde		x	x	x
Alarm	set-attr-ec1		ntfcncde		x	x	x
Alarm	set-attr-oc12		ntfcncde		x	x	x
X-conn	ent-crs-sts1	rtrv-crs-sts1	cct		x	x	x
			loca		x	x	x
			locz		x	x	x
			extra		x	x	x
			oc3st		x	x	x
			pst		x	x	x
			sst		x	x	x
			audit		x	x	x
			redline		x	x	x
X-conn	ent-crs-sts3	rtrv-crs-sts3	cct		x	x	x
			loca		x	x	x
			loca-nid				
			locz		x	x	x
			locz-nid				
			extra		x	x	x
			oc3st		x	x	x
			pst		x	x	x
			sst		x	x	x
			audit		x	x	x
			redline		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Prov	ent-oc3	rtrv-oc3	au4map		x	x	x
			ntfcncde		x	x	x
			syncmsg		x	x	x
			oc3frmlgx		x	x	x
			oc3tolgx		x	x	x
			sdthr		x	x	x
			sst		x	x	x
Prov	ent-oc12	rtrv-oc12	au4map		x	x	x
			ntfcncde		x	x	x
			syncmsg		x	x	x
			oc12frmlgx		x	x	x
			oc12tolgx		x	x	x
			oc12tdir		x	x	x
			sdthr		x	x	x
			sst		x	x	x
Prov	ent-oc48	rtrv-oc48	sdthr		x	x	x
			syncmsg		x	x	x
			fbyteproc				**x**
Prov	ent-prot-sts1	rtrv-prot-sts1	protacc	no STS3 NE in ring	x	x	x
Prov	ent-prot-sts3	rtrv-prot-sts1	protacc	at least one STS3 NE in ring	x	x	x
Prov	ent-prot-line	rtrv-prot-line	wtr		x	x	x
Prov	ent-prot-ls	rtrv-prot-ls	wtr		x	x	x
Prov		rtrv-state	sw_state actswprty	use rtrv-state only to restore nppa (removed by cpro970966)			
Prov		rtrv-pthtrc-sts1	status		x	x	x
			label		x	x	x
			inctrc		x	x	x
Prov	ent-sts1	rtrv-pthtrc-sts1					
			exptrc				
			trc				

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Prov		rtrv-all	level	speccond-640	x	x	x
			optlinecde		x	x	x
			wavlnth		x	x	x
			pyldfrmlgx		x	x	x
			pyldtolgx		x	x	x
			opoc3frmlgx		x	x	x
			opoc3tolgx		x	x	x
			proc3frmlgx		x	x	x
			proc3tolgx	for oc3frmlgx	x	x	x
			opoc12frmlgx	for oc3tolgx	x	x	x
			opoc12tolgx		x	x	x
			proc12frmlgx		x	x	x
			proc12tolgx	for oc12frmlgx	x	x	x
			swprty	for oc12tolgx	x	x	x
			actswprty		x	x	x
			gueswprty		x	x	x
Prov	ent-ec1	rtrv-ec1	ntfcncde		x	x	x
			sdthr		x	x	x
			pst		x	x	x
			sst		x	x	x
Prov	ent-t3	rtrv-t3	fmt=async		x	x	x
			linecde		x	x	x
			ntfcncde		x	x	x
			omode		x	x	x
			pbit		x	x	x
			sdthr		x	x	x
			pmmode	p/fm	x	x	x
			pst	is=provision as auto	x	x	x
			sst		x	x	x
Prov	ent-ls	rtrv-ls	prty		x	x	x
Perf		rtrv-th-all		speccond-640	x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Perf	set-th-ec1	rtrv-th-ec1	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x
Perf	set-th-oc3	rtrv-th-oc3	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x
Perf	set-th-oc12	rtrv-th-oc12	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x
Perf	set-th-oc48	rtrv-th-oc48	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x
Perf	set-th-sts1	rtrv-th-sts1	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x

Backup/Restore Commands, Parameters and Release Relation Table for FT-2000 with TL1 (continued)

Area	Restore Cmd	Backup Cmd	Parameter	Special Conditions	8.1	9.0	9.1
Perf	set-th-t3	rtrv-th-t3	montype		x	x	x
			thlev		x	x	x
			locn		x	x	x
			dirn		x	x	x
			tmper		x	x	x
			tcarpt		x	x	x
Perf	set-pm-stime	rtrv-pm-stime	start_hour		x	x	x

Special Conditions

SpecCond-110

1. For DDM OC-3 NEs, the backup procedure shall ignore the “missing circuit pack - BBF5"message under the following conditions: Shelf #3 is used, AND
2. 27 type OLIU is NOT installed.

Note: Since BBF5 is detected through a 27 type OLIU, any installed BBF5 will not be detected without the 27 type OLIU even if it is installed. Under this condition, the error message should be suppressed to avoid confusion.

SpecCond-120

For DDM OC-3 that may be equipped for the MegaStar configuration, MegaStar is denoted by the following conditions:

1. RTRV-SYS returns product = MegaStar 2000; and
2. BBG8 SYSCTL circut pack has S1-1 OFF, S1-2 OFF, S1-3 OFF; and
3. RTRV-OC3 returns RADIO = yes.

SpecCond-338

Restore commands (ENT-xxx) shall not be issued to unequiped resources for DDM-2000 OC-3, OC-12 and FiberReach.
Restore commands can be issued to unequiped resources in FT because it supports pre-provisioning.

SpecCond-510

When the value to be restored exceded the valid range, the default value shall be used instead. Both the default value and the range are provided in the Parameter Values Tables.

SpecCond-520

Security restoration shall be conducted only in the MML mode for both FT and DDM network elements. Passwords are always encripted, and cannot be restored.
.

SpecCond-530

Cross connection restoration shall be checked for the followings:

1. connection type
2. all the end-points of the connection type
3. low speed end-points
4. protection mode
5. if the conflicting cross-connection in existance is part of a path.

Note that when a cross-connection to be restored consists of low-speed end-point(s), and not all the end-points match with existing cross-connections, it is in conflict with two cross-connections.

SpecCond-540

For DDM network elements, Channel States shall be set only cross-connected and conform to the following cases:

1. VT1.5 channels to DS-1, OC-3 or EC-1 interfaces,
2. STS1 channels to DS3 (D&C, 0x1, ADR) or DS1,
3. STS3C channels from main to OC-3C interface units.

SpecCond-550

OC-1 line states are applicable only to OC-1 lines terminating on 27-type or 26G2-U OLIUs in OC-3 systems.

SpecCond-560

EC-1 port states are only applicable to OC-3 or OC-12 equiped with STS1E circuit packs set to LOW SPEED with hardware switch. The STS1Es must be cross-connected to main with no VT cross-connections.

SpecCond-570

If the user specified that the target NE is to be treated as RT, and the backup is from a CO NE, then, default values shall be used for the SET-ATTR-ENV and SET-ATTR-CONT commands.

If the user specified that the target NE is to be treated as CO, and the backup is from a RT NE, then, the SET-ATTR-ENV and SET-ATTR-CONT commands are not needed.

SpecCond-580

Optical Transmitter Power applies to 21G OLIU only, and not other types of OLIU.

SpecCond-590

If the current value of the ENT-T1 Line Coding parameter in the target NE is different from the value in the backup file, the backup value shall be used, and a warning message shall be displayed.

SpecCond-600

For DDM Nes, the switch settable parameters of STS1E pack shall be compared with that on the backup file. If they don't agree, the restoration shall not proceed.

SpecCond-610

The following values of the port state parameter are equivalent:

OOS-MA-AS (in TL1) = AUTO (in MML)
OOS (in TL1) = NMON (in MML)

SpecCond-620

Far end communication must be enabled for TL1 messages. If the current value and the backup value are different, Cpro shall display a warning message and set it "enabled."

SpecCond-630

The DDM convention of representing numbers with scientific notation is that the "1E" part of the notation in the retrieved value field has to be dropped for the entry value field. That is, for the retrieve command, the value returned will has the full scientific notation, including "1E." However, when entering the value with the "set" or "ent" commands, the "1E" MUST be dropped.

Currently, CPro is required to observe this convention for the pmthrormance management threshold values.

SpecCond-640

For FT-2000 network elements, the command "RTRV-xx-ALL" can be used to retrieve a variety of parameters. These parameters can then be restored with the appropriate modifier that follows. There will not be a corresponding restore command for "RTRV-xx-ALL." That is why the restore command column is blank. For CPro, the use of the "RTRV-xx-ALL" command is optional. If "RTRV-xx-ALL" is not used, the parameters can be retrieved using the "RTRV-xx-modifier" commands.

Appendix F.
Table of NE releases per CPro releases

Table of NE releases per CPro releases

	CPro Release									
	R4.0	**R5.0**	**R6.0**	**R6.1**	**R6.1.2 & R6.2**	**R7.0**	**R8.0**	**R9.0**	**R10.0**	**R11.0**
FiberReach										
1.0	x									
2.0	x	x								
2.1		x	x	x	x					
2.2				x	x					
3.0						x	x	x	x	x
3.1							x	x	x	x
4.0									x	x
DDM OC-3										
6.2			x	x	x					
7.1			x	x	x					
7.2	x	x	x	x	x					
8.0	x	x	x	x	x					
8.1		x	x	x	x					
9.0	x	x	x	x	x					
9.1		x	x	x	x					
11.0			x	x	x					
11.1				x	x					
13.0						x	x	x	x	x
13.5							x	x	x	x
15.0									x	x
15.x										x
DDM OC-12										
5.0	x		x	x	x					
5.1			x	x	x					
5.2				x	x					
7.0						x	x	x	x	x
7.x										x

Table of NE releases per CPro releases (continued)

	CPro Release									
	R4.0	**R5.0**	**R6.0**	**R6.1**	**R6.1.2 & R6.2**	**R7.0**	**R8.0**	**R9.0**	**R10.0**	**R11.0**
FT OC-48										
6.0	x	x	x	x	x					
7.0	x	x	x	x	x					
7.1		x	x	x	x					
7.2			x	x	x					
8.1						x	x	x	x	x
9.0								x	x	x
9.1									x	x

Glossary of Terms

AID

Access Identifier (FT-2000). Also applies to Equipment Address (DDM-2000).

American Standard Code for Information Interchange

A standard established by American National Standards Institute (ANSI) that represents characters, numbers, punctuation marks, or signals and uses seven on-off bits plus a parity bit to achieve compatibility among data services.

ASCII

See American Standard Code for Information Interchange.

ASCII User Interface

The CPro-2000 ASCII user interface provides access to the CIT port of an NE in the same way that an ASCII terminal provides access. The user can type commands into the ASCII user interface (AUI) and receive an immediate response from the NE.

AUI

See ASCII User Interface.

Baud Rate

The number of times per second that the state in a channel is switched (or reversed) during data transmission. Each state change may represent two or three bits; therefore, a baud rate of 300 may equal 900 bits per second.

Channel

A transmission path or link.

CIT

See Craft Interface Terminal.

Craft Interface Terminal

The user interface terminal that is part of an NE and is used by craft personnel to operate the NE.

DACS III-2000

The Lucent Technologies' digital access and cross-connect system that provides clear-channel switching at either the DS3 or the STS-1 rates.

DACS IV-2000

The Lucent Technologies' digital access carrier and cross-connect system that provides electronic DS3/STS-1 or DS1/VT1.5 cross-connect capability.

Data Communications Equipment

Data communications equipment (DCE) is the functional equipment that establishes, maintains, and ends a connection, the signal conversion, and the coding required for communications with a data circuit.

Data Terminal Equipment

Data terminal equipment (DTE) includes control logic, buffer store, and one or more input/output devices (for example, terminals, printers, or computers).

Datakit II VCS

Lucent Technologies' data switch with low delay that provides high-speed data communication between different networks and various computer equipment.

DCE

See Data Communications Equipment.

DDM-2000

A Lucent Technologies network multiplexer that multiplexes DS1, DS3, or STS-1 inputs into STS-1, OC-3, or OC-12 outputs.

DRI

See Dual-Ring Interworking.

DS1

Digital Signal Level 1 is an ANSI-defined signal or service level at 1.544 Mbps (equivalent to T1).

DS3

Digital Signal Level 3 is an ANSI-defined signal or service level at 44.736 Mbps (equivalent to 28 T1 channels or T3).

DTE

See Data Terminal Equipment.

Dual-Ring Interworking

Dual-ring interworking (DRI) is when two ring networks interconnect at two common nodes.

EC-1

Electrical Carrier 1 is an STS-1 carried electrically.

FT-2000

Lucent Technologies' SONET OC-48 Lightwave system.

Gateway Network Element

A gateway network element (GNE) is an NE that provides a means of communication between an OS and remote NEs, over the SONET data communications channel (DCC).

GNE

See Gateway Network Element.

Graphical User Interface

The CPro-2000 graphical user interface (GUI) consists of a multiple document interface (MDI), which can accommodate a SubNetwork Map and several NE Views.

GUI

See Graphical User Interface.

MML

Human-machine language defined by Consultative Committee for International Telegraph and Telephone (CCITT).

NE

See Network Element.

Network Element

A network element (NE) is a piece of equipment or service that is part of a data communications network.

Non-Preemptible Protection Access

A feature which allows the protection tributaries to serve as unprotected service tributaries while the corresponding service tributaries become unprotected.

NPPA

See Non-Preemptible Protection Access

Object Linking and Embedding (OLE)

This Windows feature is used to transfer and share information between Windows-based applications and accessories. For CPro-2000, the OLE Object Packager tool registers the application in a database and subsequently creates a CPro-2000 program group and associated icons.

OC-12

Optical Carrier 12 is a SONET signal capable of carrying 12 STS-1 signals (or the equivalent).

OC-3

Optical Carrier 3 is a SONET signal capable of carrying three STS-1 signals (or the equivalent).

OC-48

Optical Carrier 48 is a SONET signal capable of carrying 48 STS-1 signals (or the equivalent).

OLE

See Object Linking and Embedding.

Operations System

An operations system (OS) is a system providing support for telephone company operations (for example, network surveillance and provisioning).

OS

See Operations System.

Packet Assembler/Disassembler

An interface between a device and an X.25 packet-switched network. The packet assembler/disassembler (PAD) converts the protocol used by the device and the X.25 protocol used by the network, allowing terminals to exchange data with other packet-mode terminals and hosts.

PAD

See Packet Assembler/Disassembler.

Partition

A partition is a logical grouping of network elements of similar types, all running compatible releases of software. A ring, hub, and chain are considered to be partitions.

Performance-Monitoring (PM) Data

Data that measures the quality of service and identifies degrading or marginally operating systems (before an alarm is generated).

SLC-2000

The Lucent Technologies' digital loop carrier system with a built-in OC-3 SONET multiplexer.

SONET

See Synchronous Optical Network.

STS-1

The basic, building-block logical signal in the SONET standard with a rate of 51.840 Mbps.

STS-3

The basic, building-block logical signal with a rate of 155.52 Mbps.

Subnetwork

A group of interconnecting and inter-related NEs. The most common connotation is a SONET subnetwork, in which the NEs have DCC connectivity.

Synchronous Optical Network

The North American standard for the rates and formats defining optical signals and their constituents.

Target Identifier

A target identifier (TID) allows an NE to be addressed.

TCP/IP

A networking protocol used to provide communications between networks.

TID

See Target Identifier.

TL1

See Transaction Language One.

Transaction Language One

A syntax used in OS/NE communications.

VT1.5

A SONET virtual tributary logical signal with a bit rate of 1.728 Mbps, capable of DS1 payload.

X.25 port

The DTE-to-DCE interface between a synchronous host and a packet-switched data network.

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