3746 Nways Multiprotocol Controller
Models 900 and 950
(For CCM Version F64810)

Controller Configuration and Management User's Guide

SH11-3081-08

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Note

Before using this information and the product it supports, be sure to read the general information under “Notices” on page xiii.

Ninth Edition (September 2000)

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About This Guide

This guide introduces and explains how to use the IBM Controller Configuration and Management (CCM) application to configure the resources used by an IBM 3746 Nways® Multiprotocol Controller Model 900 or 950 for handling network traffic.

It provides instructions on how to navigate through the application panels and provides a series of guidelines that are useful when configuring an IBM 3745 or 3746 communication controller for the first time.

The information in this guide complements the online help.

Who Should Use This Guide

This guide has been written for anyone who uses the CCM to configure or manage an IBM 3745 or 3746 communication controller and its associated resources.

How This Guide Is Organized

This guide is organized into three parts:

Part 1, “Introducing the CCM”

This part introduces the CCM and:

- Explains the operating environments
- Gives some information about the user interface (menus and panels)
- Gives an overview of the configuration process
- Explains some of the configuration tasks that are generic, that is the tasks that are available for the configuration of many or all of the data link control (DLC) types.

Part 2, “Resource Configuration”

This part describes the configuration process and explains how to navigate through the CCM to the panels where you configure your network resources. Each chapter covers some of all the resources for a given DLC type.

Part 3, “Resource Management”

This part explains how to navigate to the panels where you manage Advanced Peer-to-Peer Networking® (APPN®) and IP network resources by viewing operational information, and activating or deactivating resources.

The bibliography, list of abbreviations, glossary, and index are at the back of this guide.

Conventions Used in This Guide

The following typographical conventions and graphics are used in this guide:

Typeface, Graphics	Used for
Italics ***Bold italics***	Word emphasis
Bold	Menu bar and drop-down menu choices Pushbuttons Field names Panel titles
`Monospace`	• Text entered by user
	• Important notes

Menu Conventions

This guide uses a short format to direct you to a particular menu choice. This format does not distinguish between drop-down menus (from the menu bar) and side-opening, cascaded menus; it only gives the chronological order of the menu openings. For example, to go to the **IP Static Routes** panel used to configure IP static routes:

Main panel **Configuration** menu → **IP** → **Static routes** → **IP Static Routes** panel

This means:

1. To select the **Configuration** drop-down menu from the CCM main panel menu bar
2. To select **IP** in the **Configuration** drop-down menu
3. To select **Static routes** in the **IP** cascade-menu to open the **IP Static Routes** panel.

What Is New in This Guide

This guide has been revised to include the following changes and enhancements:

- Addition of the CCM remote "light" configuration for OS/2® software that allows the user, using an editor on a remote workstation, to modify an already-existing CCM configuration file directly.
- Addition of more dynamic capabilities for Multiaccess Enclosure (MAE) users so that, after the IP configuration changes, the MAE re-IMLs only when necessary.
- Addition of the ability to dynamically change the maximum number of PUs per TIC3 port without affecting active users.
- Support of the Branch Extender (BEX) function, reducing the network node (NN) load on large APPN networks. BEX support includes the following two new parameters:
  - APPN Branch Extender, which indicates whether the BEX function is activated on this node
  - Permit Search for Unregistered LUs, which indicates whether this node (when acting as an end node) can be searched for LUs even if the LUs were not registered with the network node server of the BEX.
- Support for dynamic windowing on Token-Ring Processors Type 3, allowing the NNP and NCP to regulate traffic over token-ring ports more efficiently.

The technical changes and additions are indicated by a vertical line (|) to the left of the change.

Additional Information on the Web

You can access the latest news and information about IBM network products, customer service and support on the Web at:

```
http://www.ibm.com/networking
```

You can also directly access the 3746-9x0 technical support Web site at the URL:

```
http://www.lagaude.ibm.com/3746pe
```

Year 2000 Statement

This product is Year 2000 ready. When used in accordance with its associated documentation, it is capable of correctly processing, providing, and/or receiving date data within and between the 20th and 21st centuries, provided all other products (for example, software, hardware, and firmware) used with the product properly exchange accurate date data with it.

For more information, refer to:

```
http://www.ibm.com/year2000
```

The 3745 and 3746 controllers require a certain level of microcode to be Year 2000 ready. For more detailed information, access the URL listed above and click **Product Readiness**.

Part 1. Introducing the CCM

Chapter 1. Welcome to the CCM

The IBM Communication Configuration and Management (CCM) application is designed to help you configure and manage an IBM 3746 Nways® Multiprotocol Controller Model 900 or 950 and its associated network resources.

When you configure your controller and its resources, the CCM creates a configuration file, referred to as the *3746 controller configuration file*. Using the CCM, you can create several configurations.

The CCM runs under the control of the Operating System/2® (OS/2®) and features a Presentation Manager® graphical user interface, where you can perform a wide range of tasks.

The CCM tasks are divided into two main categories:

Configuration for defining configuration parameters such as coupler type, mode, class of service, transmission group, and others. When a group of configuration parameters has been defined, it can be saved to file on disk. This file can then be immediately activated for use by the network, or it can be saved for later use. Configuration parameters are defined by specifying values in CCM panels.

Management that involves viewing operational information about the currently defined network resources, and activating or deactivating network resources to maintain optimal network performance. Tasks requesting network resource information use commands that only specify the resource address.

Note: This is a “how-to-find-it” guide that only shows a few, key panels that help you go to a panel used for specific configuration task; the actual panel used for the task is normally not shown in this guide.

Operating Environments

The CCM can be used on either:

- The service processor, where it is accessed via the MOSS-E. (The service processor may be accessed via a Distributed Console Access Facility (DCAF) remote console). This environment is referred to as the *service processor environment*.
- A stand-alone workstation. This environment is referred to as the *stand-alone environment*.

Service Processor Environment

With the CCM installed and running on the service processor, you access it through the MOSS-E user interface. In this type of installation, both the configuration and the management functions can be used.

Stand-Alone Environment

When the CCM is running in the stand-alone environment, the management part of the application and the coupler with the 2080 address are not available for use (they are greyed-out).

However the configuration part of the application is fully available for configuring the controller and its resources before your machines arrive.

If several controllers are operating on the network, a good strategy is to configure all controllers from a centralized location, using the stand-alone CCM. The configurations can then be sent (exported) to each service processor when complete.

Minimum Hardware and Software Requirements

The minimum requirements for workstations running the stand-alone version of the CCM are:

- 80486 microprocessor or higher.
- 60 MB of hard disk space free.
- VGA display.

  Note: The CCM panels are designed for a VGA resolution (640x480), higher resolutions might cause minor column alignment problems. However, the MAE configuration program will be easier to use because both of its panels are visible at the same time.
- 24 MB of virtual memory. The actual amount of virtual memory needed depends on the size of the configuration (does it have tens of lines or hundreds of lines).
- Mouse.
- 3.5-in. diskette drive.
- IBM Operating System/2 (OS/2), Version 2.1 or later.

Installing CCM

This section explains the CCM driver levels and describes the MOSS-E and stand-alone installation procedures.

CCM Levels

This User's Guide is for the CCM functions in ECA 170, which are listed in Table 1.

Table 1 (Page 1 of 3). Functions Supported by each CCM Level

ECA Number	Microcode EC Level (See note 1)	CCM Version (APPN BLPU EC Level)	Functions Supported
144 **146**	D22560A D22560D	D22561 D22561	APPN configuration and management
155	D46100	D22571	The above functions plus: • IP • Frame relay over APPN • HPR/ANR • IP configuration for ESCON® and token-ring.
157 **159** **159**	D46120 D46120A D46120B	D46121 D46121.005 D46121.010	The above functions plus: • IP management • PPP • Frame relay over IP • HPR/RTP • Second expansion enclosure • A CCM password • NetView® Performance Monitor (NPM).
167	D46130	D46131 000	The above functions plus: • HPR/RTP and ARB on token-ring, Ethernet, SDLC, frame relay, and ESCON • APPN/ISR (5000 PUs + 15 000 sessions) • Display of 3746 EC/ECA microcode level • CDF-E checking
170 (See note 2)	D46130D	D46131.024	The above functions plus: • X.25 support on 3746 (under NNP control) • HPR MLTG on token-ring, SDLC, frame relay, and ESCON • BRS for 3746 PPP lines • FRFH on 3746 lines • CIR on 3746 frame-relay lines.

Table 1 (Page 2 of 3). Functions Supported by each CCM Level

ECA Number	Microcode EC Level (See note 1)	CCM Version (APPN BLPU EC Level)	Functions Supported
175 (See note 2)	F12380	F12381.000	The above functions plus: • APING function added (like IP PING, but for APPN traffic) • ESCON adapter re-IML is now optional when activating a configuration • Increased management of remote IP addresses • Make DLCI copies function added • IP access controls now available at port level.
180	F12430	F12431.000	The above functions plus: • Multiaccess enclosure (MAE) configuration • Management of MAE configurations (import, export, change coupler number, and others)
185	F12720	F12721.000	The above functions plus: • IP route table filtering • RIP V2 support.
190	F64810	F64811.000	The above functions plus: • CCM Remote Configuration Application • Connectivity counters for PUs, SSCP-LUs, LU-LUs. (see note 3 on page 7)

Table 1 (Page 3 of 3). Functions Supported by each CCM Level

ECA Number	Microcode EC Level (See note 1)	CCM Version (APPN BLPU EC Level)	Functions Supported
250 **280**	H10000 H100100	H10000.000 H10010.000	The above functions plus: • CCM batch light • CCM more dynamicity for MAE User • Dynamic change of maximum PU per TIC3 port • Branch Extender (BEX), only for ECA 280 • Enhanced support for LENs • Token-ring dynamic windowing improvement • Maximum number of IP routes increased to 10K on CBSP3

Notes:

1. This is the minimum functional EC level as of the General Availability date of the CCM level.
2. This ECA must not be ordered, the corresponding microcode is automatically shipped with any features requiring this level. In particular, the 3746 Extended Functions 1 (feature number 5800) must be ordered to operate any the functions listed.
3. 5810/5811 FC must be ordered and activated to make the CCM remote configuration application available for use.
4. **Legend**:

   BLPU build logical program unit
   EC engineering change
   ECA engineering change announcement

Additional, level-specific information is available in the README file that comes with the stand-alone CCM.

Level compatibility

Different levels of CCM are upwardly compatible only. For this reason, a configuration that has been generated at CCM one level can only be exported to a CCM at the same or higher level.

When you display the configuration list, check the level compatibility column. It indicates the CCM level with which a configuration is compatible. If this level is different from the running CCM level, then the configuration is to be first migrated before being opened (To know the running CCM level, select **Product Information** from the Help pull-down menu). The migration is automatically proposed when you want to open or activate the configuration. Once migrated, the level compatibility for the migrated configuration changes to the running CCM level. When there are several configurations, you can migrate them at the same time.

IBM recommends that the same level of the CCM should be maintained in the service processor and the stand-alone environment. This is important if configurations generated on the stand-alone CCM are to be exported to a CCM

running in a service processor. Details of the APPN BLPU level are displayed in the **Product Information** panel.

Viewing the CCM Product Information

You can view information about this release of the CCM: its version, EC (APPN BLPU engineering change), and the date of general availability of this EC version. To view the product information:

Main panel **Help** menu → **Product information**

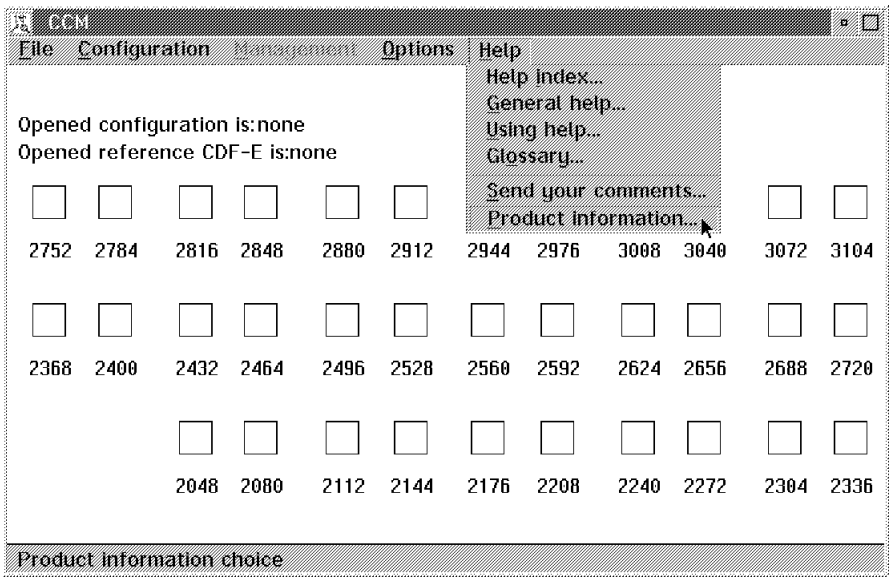


Figure 1. Main Panel Help Menu

Installing CCM in Service Processor Environment

Installation of the CCM in the MOSS-E is a task that is performed by an IBM customer engineer. The CCM is installed when the MOSS-E is installed.

Installing CCM in the Stand-Alone Environment

The IBM customer engineer creates the CCM installation diskettes that you use for installing the CCM.

Note: Before installing CCM, ensure that your workstation has the correct hardware and software requirements (see page 4). The installation procedure is in the README files that comes with the CCM and might be different according to the level of the CCM that is being installed.

CCM Password Protection from MOSS-E

The CCM on a service processor can be protected by a password using the MOSS-E CCM/Telnet User Profile Management function in the Manage Passwords menu.

Starting the Service Processor CCM

To start the CCM in the service processor environment:

Step 1. Open the MOSS-E **3746-9xx** group of menus.

Step 2. In the **3746-9xx Network Node Processor Management** menu select the **CCM-Controller Configuration and Management** function.

Starting the Stand-Alone CCM

Note: When the CCM is running in the stand-alone environment, the management part of the application and the 2048 coupler are not available for use (they are greyed-out).

To start the stand-alone CCM, you can use either the mouse or the keyboard.

Using the Mouse

Step 1. Double-click the CCM folder icon 

Step 2. Double-click the CCM icon to start the application.

Using the Keyboard

Step 1. Open an OS/2 panel.

Step 2. Type `CCM` and press **Enter**.

Stopping and Exiting from CCM

To stop the CCM:

Main panel **File** → **Exit**.

Becoming Familiar with the Main Panel

The CCM provides a graphical user interface with which you will quickly become familiar.

When you start the CCM, the main panel is displayed (see Figure 2).

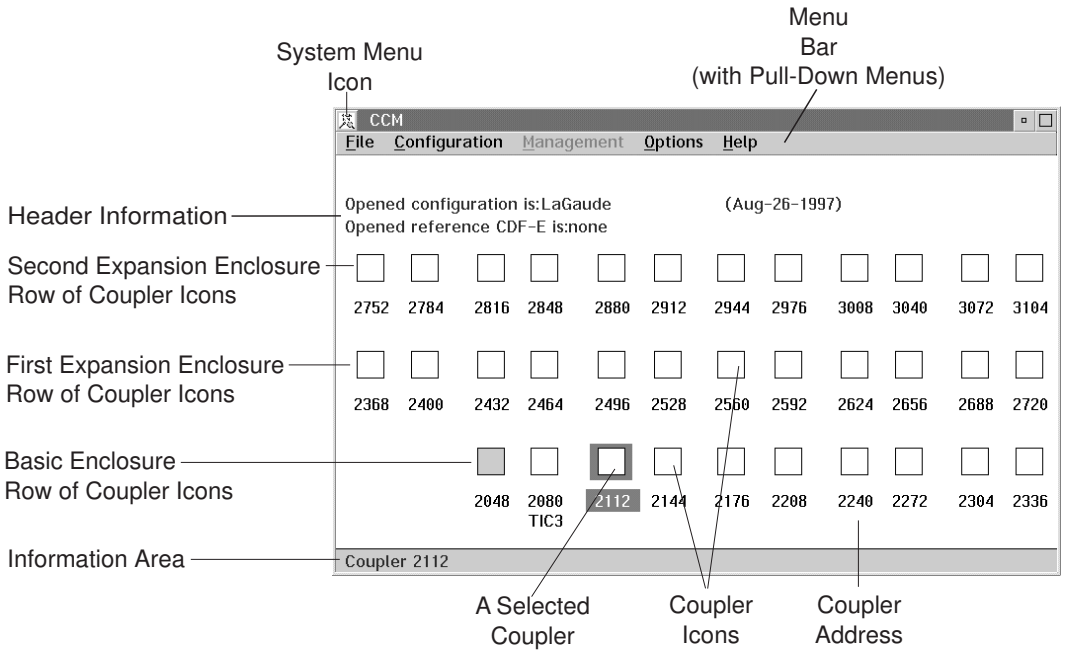


Figure 2. CCM Main Panel

As shown in Figure 2, the main panel includes the following features:

- Menu bar
- Header information
- Coupler icons
- Information area

Menu Bar

Five pull-down menus are available from the menu bar:

- File
- Configuration
- Management
- Options
- Help

Header Information

The header information is dynamically updated, and shows the following information:

- The active configuration (if one exists), not available in stand-alone CCM
- The opened configuration (if one has been opened)
- The opened reference CDF-E file (if one exists in the opened configuration).

Coupler Icons

The coupler icons represent a schematic view of the couplers in the basic enclosure and expansion enclosures within the controller.

The lower row of coupler icons represents the 10 coupler slot addresses in the basic enclosure, which can hold up top five adapters.

The middle row of coupler icons represents the 12 coupler slot addresses in the first expansion enclosure, which can hold up to six adapters.

The upper row of coupler icons represents the 12 coupler slot addresses in the second expansion enclosure, which can hold up top six adapters.

An adapter consists of one processor connected to one or two couplers: each adapter has a pair of coupler icons. Adapters configured for ESCON channels only use one of a coupler pair.

The shape and color of the coupler icons give information about the couplers they represent.

Icon Shape

There are two shapes for the coupler icons:

Means that the coupler has been configured in the CCM.

Means that the coupler has not been configured in the CCM.

For example, if the first coupler configured on a processor is a TIC3, the second slot on the processor is automatically labeled as an unconfigured TIC3, because only a TIC3 can be installed in the second slot.

In the same manner, if a LIC (LIC11 or LIC12) is configured on a processor, the other slot is labeled as a LIC.

Blue and White Icons

These colors indicate the status of a coupler after a comparison has been made between the actual, physical configuration of the coupler slot (as given in the reference CDF-E file) and the CCM configuration of the coupler slot:

Blue Means that, when the CDF-E file was compared to the CCM configuration file, no discrepancies were found between the two for that coupler slot.

Note: While a coupler is blue, its DLC type cannot be changed in the CCM configuration unless it is "cleared," see "Setting or Clearing the Coupler Type" on page 32.

White Means one of the following:

- The reference CDF-E/CCM configuration comparison has not been made.
- During the comparison, the CCM coupler DLC type ***was not*** found in the reference CDF-E file.

- During the comparison, the CCM coupler DLC type ***was*** found in the reference CDF-E file, but there are configuration discrepancies that would prevent the coupler from operating properly.

Grey Icons

Means that the coupler can be neither selected nor configured because it is the:

- Second, unused slot in an ESCON adapter.
- 2048 slot, which is never available because of the amount of traffic for the NNP and service processor handled by the 2080 TIC3 attached to the service LAN. The 2048 and 2080 slots are for CBSP (type 2 or 3).

  Note: In the 3746-900, the 2048 is used to connect the 3745 to the 3746. This connection does not handle (route) a large amount of traffic, most of it just passes through and is handled by other 3746 processors.

Information Area

The information area is located at the bottom of the main panel and displays navigation and processing status information.

Working in the Main Panel

This section briefly explains how to work with the coupler icons and the menus in the main CCM panel.

Working with the Main Panel Menu Choices

In a stand-alone environment with no configuration currently opened, you can:

- Create a new configuration: File menu → **New**
- Open an existing configuration: File menu → **Open**
- Import a configuration: File menu → **Import**

Note: All choices on the Options and Help menus are also available.

Working with the Coupler Icons

Select a coupler icon to begin configuring a coupler. If you are using a mouse, double-click on the icon for the coupler you want to configure. If you prefer to work with the keyboard, use the arrow keys to highlight the desired coupler and press **Enter**.

If the coupler type has already been defined, you go directly to the panel needed to continue the configuration process.

If the coupler type has not been defined, CCM opens the Coupler type panel, where you must specify the coupler type. CCM then opens panel needed to continue the configuration process.

If the configuration is new, the first time you select a the coupler, CCM opens the 3745/3746 Parameters panel, where you must specify the 3746 model used and

give information about the 3745 if a 3746 Model 900 is being used. CCM then opens the Coupler type panel to continue the configuration process.

Working from the Pull-Down Menus

For some pull-down menu choices, you do not have to select a coupler icon, instead just select the option from the menu. For example, any of the File pull-down menu choices can be selected without first selecting a coupler icon.

Chapter 2. About the Configuration Process

The CCM enables you to configure the controller and all the associated resources it uses for handling network traffic.

An Easier Way to Configure

The CCM is designed to provide a much simpler method of configuring the controller and its resources, when compared with the NCP generation process.

About 80% of the parameters have predefined default values. These values can be used, or modified and saved as new default values if required. This saves time and effort when you configure several identical lines, ports, or stations.

Configuration files can also be copied or exported (or printed as listings). The CCM ensures that the configuration is internally consistent by dynamically cross-checking the validity of parameter values while you are entering them.

This dynamic checking allows CCM to help you, when you choose a value for a parameter, by immediately disabling (greying-out) all the other CCM parameters that are:

- No longer relevant to the configuration you are working on.

  For example, if you start to configure an ESCON port for a SNA/subarea network, the APPN and IP name parameters are greyed-out as they do not apply to a SNA/subarea ESCON Channel.

- Automatically selected by the CCM and cannot be changed.

  For example, for a serial line port, if you choose the DLC as SDLC, the network parameter is automatically set to APPN and the set of choices is greyed-out. But, if you choose the PPP DLC, the network is automatically set to IP and, again, the set of choices is greyed-out.

During the configuration process, the CCM creates a set of output files which are then compressed into a single file known as the 3746 configuration file (the .CCM binary file, see Figure 3 on page 16).

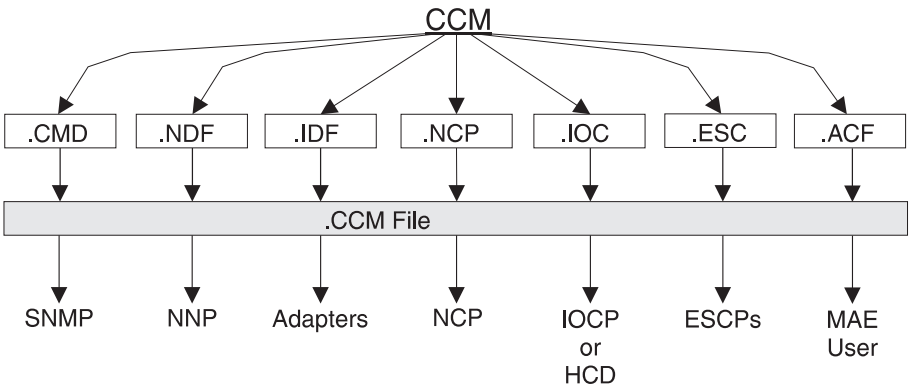


Figure 3. Files Created by the CCM during the Configuration Process

Legend:

.CCM

Name: CCM Configuration File
Contents: Complete CCM configuration (compressed) with all the above files and others
Destination: Hard disk that contains the CCM program

.CMD

Name: SNMP Definition File
Contents: SNMP definitions
Destination: Network Node Processor (NNP)

.NDF

Name: Network Definition File
Contents: APPN and IP resource configurations
Destination: Network Node Processor (NNP)

.IDF

Name: Internet Definition File
Contents: IP resource data
Destination: Processors that handle IP traffic

.IOC

Name: I/O Configuration Program file
Contents: Defines the ESCON channel paths
Destination: Destination: Host (IOCP or the MVS® Hardware Configuration Definition (HCD) tool)

Note: The CCM produces this file as output from a 3746 configuration file to be used as input for the host.

.NCP

Name: Network Control Program (NCP) file
Contents: ESCON definitions for NCP
Destination: Host (NCPGEN)

Note: The CCM produces this file as output from a 3746 configuration file to be used as input for the host.

.ESC

Name: ESCON Definition File
Contents: SNA/subarea, APPN, and IP ESCON definitions
Destination: Used to configure ESCON processors

.ACF

Name: ASCII Configuration File
Contents: MAE resource configurations
Destination: User: this is text version of MAE configuration.

What You Can Do with a CCM Configuration

With the CCM, configuration files can be created, modified, copied, imported, exported, and activated as required.

Creating Configuration Files

Different configuration files can be created for different controller configurations and environments (but only a single configuration file can be active at a given time).

You can create a configuration file in the service processor environment or in stand-alone environment.

Though possible, it is preferable not to create CCM configurations using the CCM remote configuration application.

Before starting the initial configuration, use:

- The hardware configuration worksheets to record the controller hardware topology, including details of coupler position and type.
- The CCM parameter worksheets to record the configuration information for each controller and its associated resources.

These worksheets are located in the *CCM Planning Worksheets*.

Modifying Configuration Files

If resources are changed (for example, if a coupler is added or a coupler is replaced with one of a different type) the configuration file must also be updated.

This can be done in the service processor environment or in stand-alone environment. This procedure is explained in “Opening and Modifying a Configuration” on page 28.

You can also use the CCM remote configuration application to modify CCM configurations from a remote workstation. Read “Using the CCM Remote Configuration Application on AIX Software” on page 40 for more information.

After modifying a configuration, you can activate the changes in the configuration either:

- Immediately, using the CCM Dynamic Configuration Update function on individual ports and stations without disrupting the rest of the network. For more information, see Chapter 15, “Dynamic Activation and How It Affects Your Network” on page 131.
- Later, by activating the whole configuration, see “Activating a Configuration” on page 29.

Before modifying a configuration, ensure that you:

- Know the file name of the configuration to be modified.
- Have the hardware configuration worksheet, if the hardware topology of the machine has changed.
- Have the parameter worksheets with the details of the changes to be made in the configuration.

Copy a Configuration

You can make one or more copies of a given configuration by saving its file under different names.

This is used, for example, if several controllers on the network have similar configurations and a "master" configuration contains most of definitions needed by all these controllers. This master configuration can be changed as needed for an individual controller and saved under a unique name that corresponds to this controller. This can be repeated for each of the other controllers, giving you a group of configurations each customized for a specific controller.

This method can also be used to produce several configurations for the same controller. For example, to handle traffic over a coupler differently at night, the active configuration could change at 8:00 p.m. to the night version and change again at 7:00 a.m. to the day version.

Export/Import a Configuration

If you configure in the stand-alone environment, the configuration file must be exported from the CCM to a diskette and then imported onto the service processor hard disk of the destination controller. See “Importing a CCM Configuration” on page 28.

Note: In order to export CCM configurations from one environment to another one, you can also use the file transfer facility provided by the DCAF program or the Java™ Console application. See “Using the File Transfer Facility” on page 35.

Activate a Configuration

You can do this:

- In the service processor environment CCM, see “Activating a Configuration” on page 29.
- From a remote workstation using the CCM remote configuration application. Read “Using the CCM Remote Configuration Application on AIX Software” on page 40 for more information.

A single configuration can only be active at a given time.

Configuring the Controller

To configure a controller, you define the parameters for the:

Controller itself:

- Controller frame information
- Its network focal point
- As a dependent LU requester (DLUR)

- Its mode of CCU operation (for a 3746-900)
- Class of service (COS) for its traffic
- Communications protocol.

Controller resources:

The couplers.

To configure a coupler, you define parameters for its ports and stations.

The controller and its resources must be configured when they are first installed and when modifications are made to the network.

Creating a Configuration in Different Environments

The procedure for creating a configuration depends on the environment in which you are working (service processor or stand-alone).

Notes:

1. In the following figures, the activation step has been included to show the difference between the two environments.
2. The procedure for creating a configuration using the CCM remote configuration application is not described here. Read “Using the CCM Remote Configuration Application on AIX Software” on page 40 for more information.

In the Service Processor Environment

If you are using the service processor environment, follow the steps shown in Figure 4.

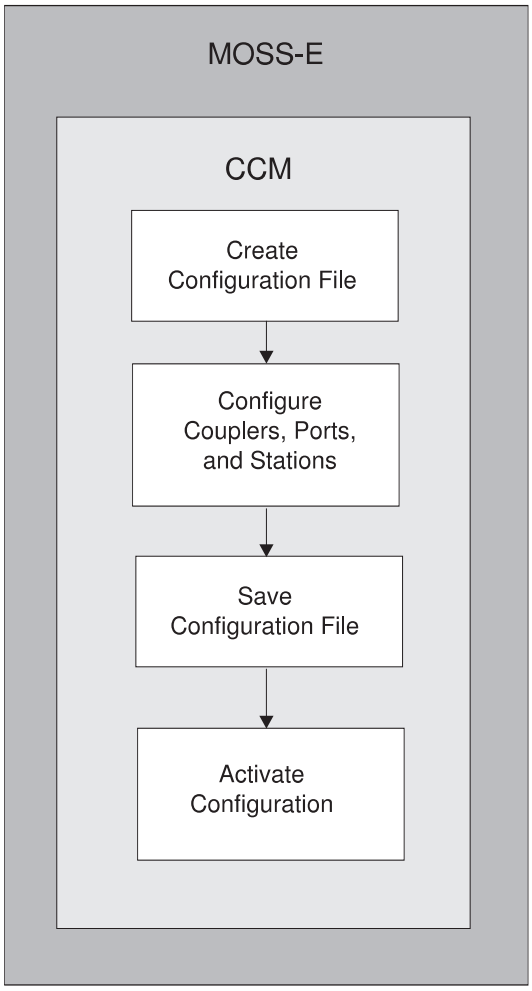


Figure 4. Creating a Configuration in the Service Processor Environment

In the Stand-Alone Environment

If you are using the stand-alone environment, follow the steps shown in Figure 5.

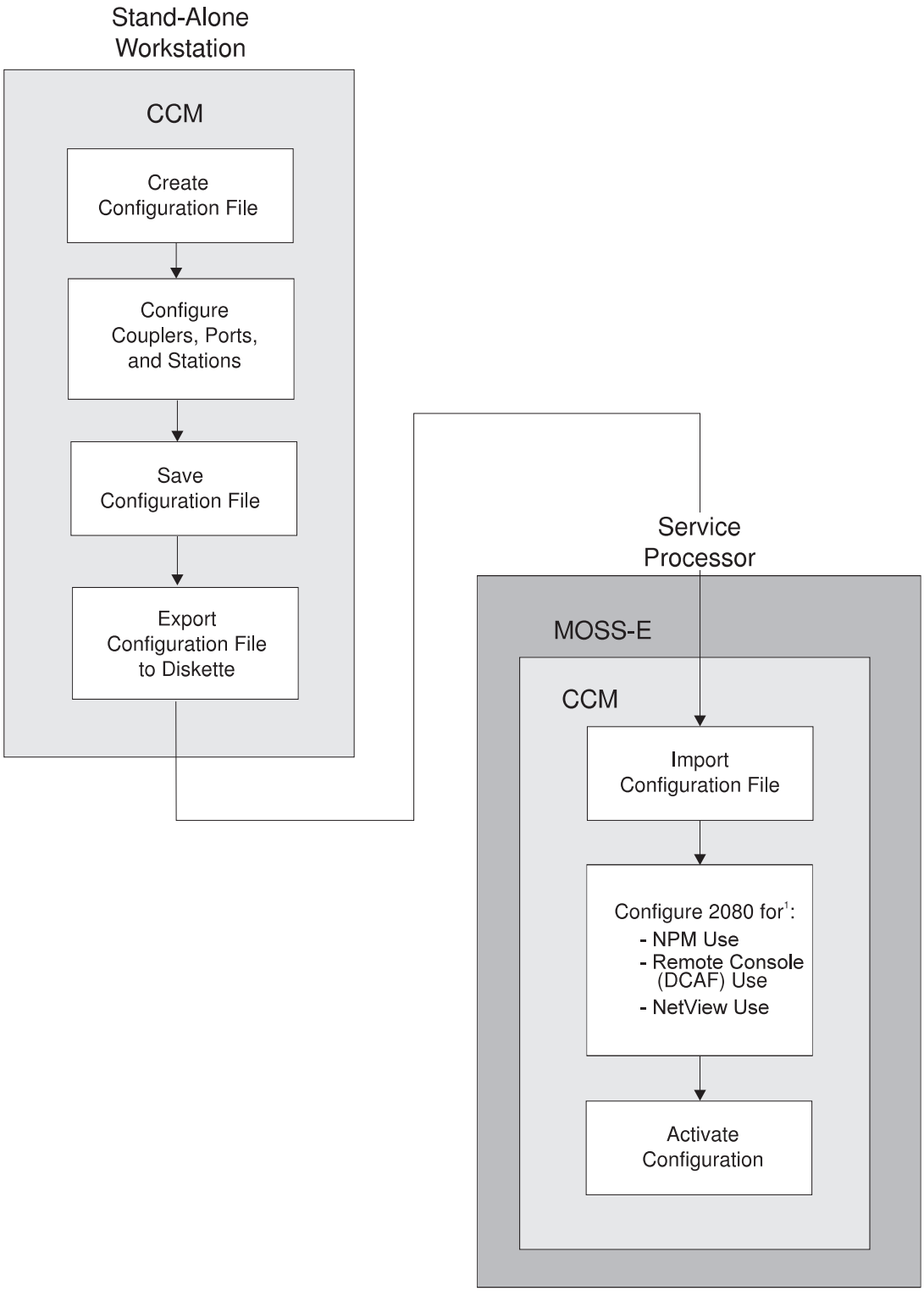


Figure 5. Creating a Configuration in a Stand-Alone Environment.

[1] *See "Configuring Stations on Coupler/Port 2080" on page 59.*

Chapter 3. Performing Generic Configuration Tasks

This chapter explains how to find the panels where you perform generic tasks such as manipulating configurations, and comparing coupler and port configurations to the definitions in the CDF-E file.

A Word about the Buttons, Worksheets, and Online Help

The buttons Search, Copy, Save as Defaults, Modify and Cancel provide useful functions when working with the CCM.

The parameter worksheets can be used during the pre-configuration planning to note the values needed for the configurations. Once the CCM configuration process is finished, these worksheets provide an easy-to-consult, permanent record of the configuration. They should be kept up-to-date.

The CCM online help provides detailed information about the parameters, their valid values, and the rules for their use.

The Generic Buttons

Copy

Use Copy to make copies of a resource that is already configured.

Copying ports and stations that have previously been configured is a useful time-saving feature when working with a configuration that contains many port and station parameters.

For example, after configuring the first of 30 ports on a LIC11, you could automatically make 29 copies and then modify them as needed.

To copy a port or station, you specify the number of ports or stations and up to four common initial characters of the port or station names. The system then generates a list of proposed new ports or stations with names that consist of the common initial characters plus an incremented hexadecimal number.

The copies can be renamed and their currently configured values modified as needed.

Search

Using Search, you can find all the configured resources of a given type that corresponding to search criteria that you define, such as the name, address, comments, dial number, or MAC address.

Sort

Using Sort, you can sort resources (such as OSPF or RIP IP addresses, MLTGs, CDF-E couplers and ports) according to criteria that you define (DLC type, port number, port name, dial circuit number, or IP address).

Copying, Searching, and Sorting Resources

Table 2 shows which resources can be copied, searched for, or sorted.

Table 2. Copy, Search, and Sort Availability

Resource	Function Available		
	Copy	**Search**	**Sort**
Port configurations:			
LIC11 (Serial Line)	X	X	
Station configurations:			
LIC11 (Serial Line)	X	X	
LIC12 (Serial Line)	X	X	
Token-ring	X	X	
MLTGs		X	X
DLCIs	X	X	
IP configurations:			
OSPF addresses		X	X
RIP addresses		X	X
Managing resources:		X	
Ports		X	
Stations		X	
Sessions		X	
The CCP IP display		X	
CDF-E resources			X

The changes made to a list using **Modify** and **Delete** are changed in the CCM configuration after you click **OK**.

Save as Defaults

Use Save as defaults button to save the current panel parameter values as the new default values in that panel.

The new default values apply to all ports and stations of the *current DLC type* that you configure later–***each DLC type has its own default values***.

All ports and stations configured before the defaults were changed use the original default values. Before making major changes, you should carefully check the proposed new defaults to avoid having to make time consuming corrections later.

Modify

Use Modify to change a parameter value. Enter the new value, then press **Modify** to save it.

Cancel

Use Cancel to exit the current panel without saving any changes that have been made to and through this panel.

Attention

When you click **Cancel**, be careful because the system ***does not*** request confirmation. Not only is any modified information lost in the current panel, any changes to ***any other panels that you have accessed via the current panel*** are lost.

Note: If you have used Save as defaults anywhere, the new default values are ***not lost*** when **Cancel** is used.

Getting Online Help

If you need additional information while using the CCM, use the online help by:

- Clicking on **Help** at the bottom of the panel.

  The global help for the current panel is displayed; it provides information about the panel controls (buttons, lists, and so on) and parameters (values, ranges, and rules for use).

- Selecting a parameter in the panel and pressing **F1**.

  The contextual help for the parameter (value, range, and rules for use) is displayed.

Generic Configuration Tasks

The following tasks are not related to any specific DLC type.

Creating a New Configuration

To create a new configuration:

Step 1. Main panel **File** menu → **New**.

Step 2. In the Configuration Description panel, enter the configuration file name and a short description in the Comment field.

Step 3. Press **OK** to return to the CCM main panel.

Importing an ESCON Configuration

You can import an ESCON channel configuration output file (.SBS) from the ESCON Generation Assistant. To import a .SBS file, you must create a new CCM configuration.

To import an ESCON configuration:

Step 1. Main panel **File** menu → **New**.

Step 2. In the Configuration Description panel, enter the configuration file name and a short description in the Comment field.

Step 3. Select the **Import ESCON SBS file created with EGA** checkbox.

Step 4. Provide the full path information of the .SBS file, including the file name.

Step 5. Press **OK** to import the .SBS file and return to the previous panel.

Step 6. Press **OK** to return to the main panel.

Viewing a List of Available Configurations

You can select a configuration and perform various tasks with it, such as activate, delete, modify, or open it.

To view the list, main panel **File** menu → **Open**:

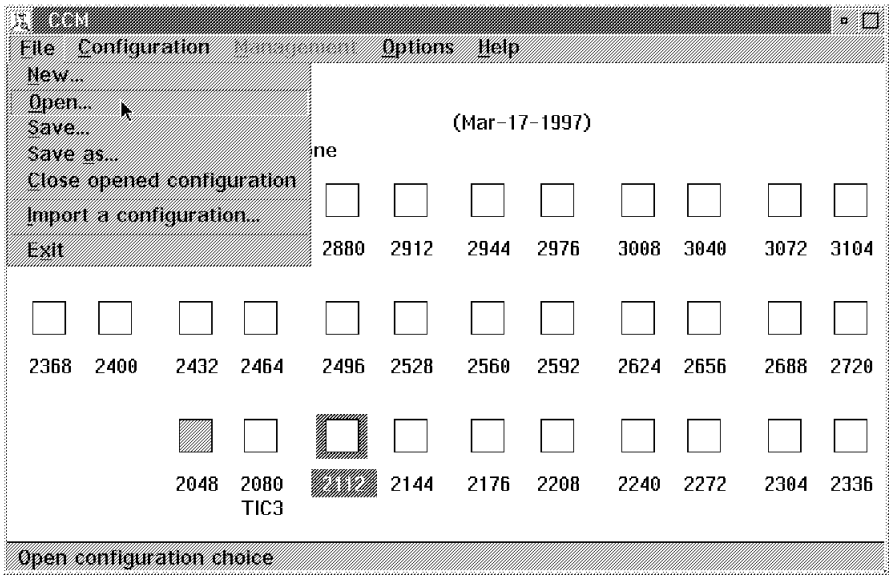


Figure 6. Main Panel File Menu

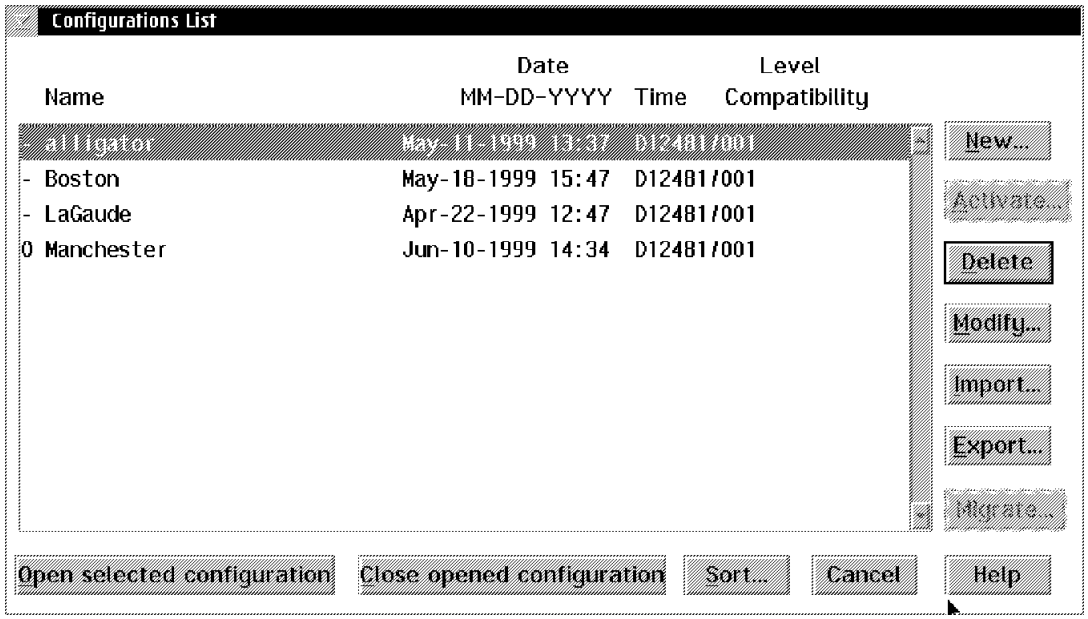


Figure 7. Configurations List

Importing a CCM Configuration

You can import a configuration into the CCM by selecting it from the list of available configurations.

To import a configuration:

Step 1. Main panel **File** menu → **Import a configuration**.

Step 2. In the panel **Path Selection**, specify the location of the file to be imported and press **OK**.

Step 3. In the **Import a Configuration** panel, select the required configuration and press **Import selected configuration** to confirm the importation.

Opening and Modifying a Configuration

To open and modify a configuration:

Step 1. Main panel **File** menu → **Open** (see Figure 6 on page 27)

Step 2. From the configuration list, select the configuration you want to modify (see Figure 7 on page 27).

Attention

When you select a configuration, check the level compatibility column in order to know whether this configuration is compatible with the running CCM level. If the level indicated is different from the running CCM level, ***the configuration is migrated before being opened or activated.*** You are prompted to start the migration when you try to open or activate such a configuration. After the migration completion, the level compatibility for the migrated configuration changes to the running CCM level. If you have several configurations that are not compatible with the running CCM level, you can migrate these configurations at the same time (See "Migrating Configurations" on page 29).

To check the running CCM level, select **Product Information** from the **Help** pull-down menu.

Step 3. When the configuration opens, modify it as required, see Part 2, "Resource Configuration" on page 55.

Step 4. When completed: Main panel **File** menu → **Save**.

Note: If you were only viewing the configuration, you can close it without modification: Main panel **File** menu → **Close opened configuration**.

Saving a Configuration to Diskette or Hard Disk

You can export a configuration in the:

Stand-alone environment
To the A: or B: drive or any accessible hard disk partition.

Service processor environment
Only to the A: drive.

To export a configuration:

Step 1. Main panel **File** menu → **Open**.

Step 2. In the configuration list, select the configuration to export and press **Export** (see Figure 6 on page 27).

Step 3. In the Path Selection panel, specify the destination disk and press **OK**.

Activating a Configuration

To activate a configuration:

Step 1. Main panel **File** menu → **Open**.

Step 2. In the configuration list, select the configuration you want and press **Activate** (see Figure 6 on page 27).

Note: A configuration cannot be activated if it is currently opened.

Migrating Configurations

When you have several configurations that are not compatible with the running CCM level, you can decide to migrate these configurations at the same time. In order to know if a configuration is compatible with the running CCM level, check the level compatibility column. If it indicates a level different from the one running, the configuration must be migrated. To migrate configurations:

Step 1. Main panel **File** menu → **Open**.

Step 2. In the configuration list, select the configurations that require migration and press **Migrate**.

Moving the MAE Coupler Connection

In the main CCM panel, if you select the coupler configured for the MAE connection and then right-click, the pop-up contextual menu allows you to go to the Move MAE configuration function to change the MAE coupler. Because not all unused couplers cannot be connected to the MAE, this function only offers you the choice of the couplers that are available.

Working with the CDF-E

The Reference CDF-E menu (see Figure 8) lets you compare the opened CCM configuration to a MOSS-E reference CDF-E (configuration definition file-extended).

For example, you might want to compare the active CDF-E of a 3746 with a CCM configuration that you are planning to use in the 3746. This function allows you to compare the machine hardware with the future machine configuration ***offline***. This allows you to check for and resolve any discrepancies between the hardware configuration (as given in the reference CDF-E file) and the logical configuration (the CCM configuration file) before activating the CCM configuration.

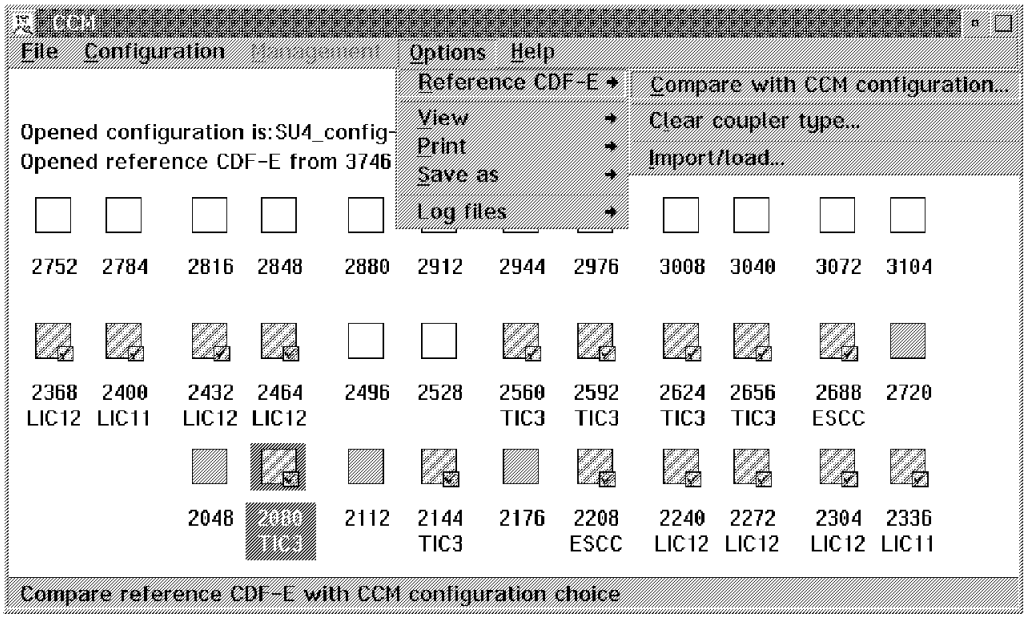


Figure 8. Reference CDF-E Comparison Menu

Comparing Couplers and Ports in a Configuration with a Reference CDF-E

To compare the couplers and ports in a CCM configuration with a MOSS-E reference CDF-E:

Main panel **Options** → **Reference CDF-E** → **Compare with CCM configuration** → **CCM Configuration/Reference CDF-E Comparison** panel (see Figure 9).

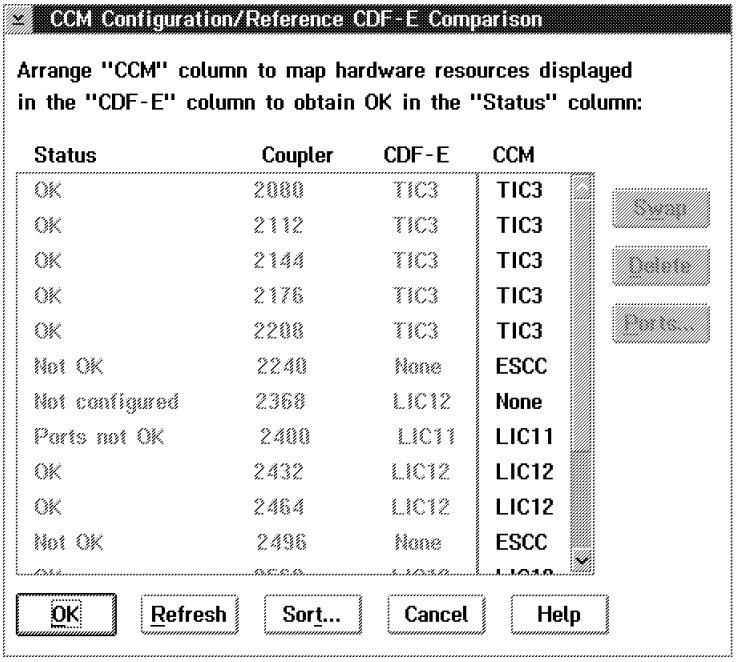


Figure 9. CCM Configuration/Reference CDF-E Comparison Panel

Notes:

1. After the comparison is finished, some of the coupler icon are blue, others remain white. For more information, see “Blue and White Icons” on page 11.
2. If discrepancies are found between the CCM configuration and the reference CDF-E, a message is displayed. Additional information about the discrepancies can be found in the CCM log file.
3. As the MAE is not in the CDF-E file, none of buttons in this panel are enabled when the MAE is selected in the CCM column. However, the coupler location of the MAE can be changed, see “Moving the MAE Coupler Connection” on page 29.

Working with CDF-E Ports

By selecting a LIC11 in the CCM column (see Figure 9) and then clicking **Ports**, you can see the results of the port comparison in the CCM Configuration/Reference CDF-E Ports Comparison panel.

The ports can be sorted, swapped, and deleted to resolve discrepancies in the same way as the couplers can be in Figure 9.

Swapping Couplers or Ports

To swap two couplers (or ports), select the two couplers in the CCM configuration and click **Swap**.

If the attempted swap is not allowed, does not resolve, or creates a problem, a message is displayed that saying that you cannot make the swap.

Deleting Couplers or Ports

To delete a coupler (or port), select it in the CCM column and click **Delete**. More than one coupler (or port) can be selected at the same time for deleting by holding down **Ctrl**.

Sorting the Information in a CDF-E Comparison

You can sort the information in a coupler or port CDF-E comparison by status, CDF-E, coupler, or CCM configuration.

To sort a comparison:

Step 1. When the coupler or port list is displayed (see Figure 9 on page 31), press **Sort**.

Step 2. In the Sort By panel, enter the sort criteria and press **Sort**.

Problem Resolution

You can try to resolve any problems by swapping or deleting couplers or ports in the CCM configuration to obtain either `OK` or `Not configured` in the Status column for all the couplers.

If all the problems cannot be resolved by swapping or deleting, you must return to the main panel and reconfigure one or more of the couplers.

Note: None of the changes you make to the CCM configuration are saved until you click the **OK** button.

Setting or Clearing the Coupler Type

Once a reference CDF-E - CCM configuration has been made, the “blue” coupler types are set. There are two ways to change the coupler type once they are set by the CDF-E:

- To free (clear) *all* the “blue” couplers:

  Main panel **Options** → **Reference CDF-E** → **Set/clear coupler type**.

  You can reset the couplers again by selecting **Set/clear coupler type** again.

- To free (clear) *one* “blue” coupler:

  Right-click the coupler you want to change → Pop-Up menu → **Set/clear coupler type**.

  You can reset the coupler by clicking **Set/clear coupler type** again.

Loading a CDF-E

To load a reference CDF-E into the opened CCM configuration:

Main panel **Options** → **Reference CDF-E** → **Import/load** (see Figure 8 on page 30)

The disk that the reference CDF-E file can be loaded from varies according to the CCM environment:

Service Processor
: The reference CDF-E can come directly from the MOSS-E disk or from the A: drive.

Stand-alone
: The reference CDF-E can come from the hard drive, the A: drive, or another .CCM configuration file.

The reference CDF-E loaded into the CCM configuration becomes part of the CCM configuration when the .CCM configuration file is saved.

Chapter 4. Working with the CCM Configuration Files from a Remote Workstation

This chapter describes how:

- To use the file transfer facility provided by the DCAF program or Java Console application. See "Using the File Transfer Facility."
- To use the CCM remote configuration application. See "Using the CCM Remote Configuration Application on AIX Software" on page 40.

Using the File Transfer Facility

If you want to modify the active CCM configuration file, use the file transfer facility available either through DCAF or the Java Console application[1] in order to:

1. Download the required file from the service processor hard disk onto the remote controlling workstation.
2. Upload the file onto the service processor hard disk, after modifying it.

File Transfer Major Steps

During the CCM configuration file transfer, three major steps take place as shown in Figure 10 on page 36.

The first step takes place when you download the configuration file from the service processor hard disk (Q:\NODE\ MOSSE\ directory) to the remote workstation hard disk (\CCMIN\ directory)

1 in Figure 10

The second step takes place when you modify the configuration using a stand-alone CCM. After modifying and saving the configuration, you export the configuration to the \CCMOUT\ directory.

2 in Figure 10

The third step takes place when you upload the configuration from the remote workstation hard disk (\CCMOUT\ directory) to the service processor hard disk (Q:\NODE\MOSSE\ directory).

3 in Figure 10

[1] If you are using the Java Console via an applet, you ***cannot download*** and then upload files. You can ***only download*** files from the service processor.

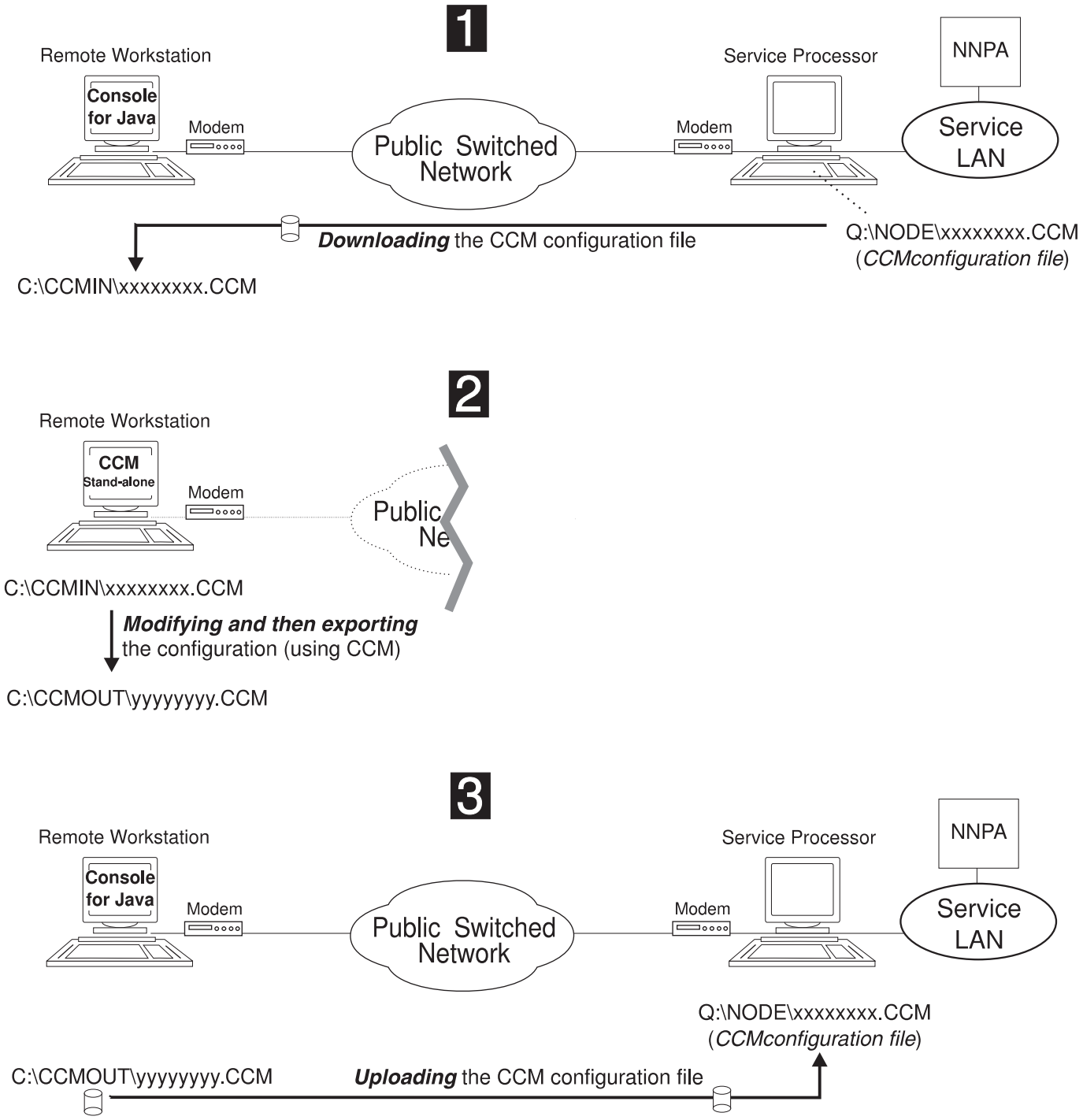


Figure 10. File Transfer Major Steps

Before you go further...

- If you intend to use Java Console program, it must be running on the remote workstation. If you intend to use DCAF, DCAF must be correctly configured and operational.
- You must be remotely connected to and controlling the service processor. Refer to the *Console Setup Guide* for more information.

- You must know the name of the active configuration file. Otherwise, look for it in the SCHEDULE.DAT file, which is located on the service processor hard disk in the Q:\NODE\ MOSSE\ directory.
- Two directories must be created on the remote controlling workstation:
  - The \CCMIN\ directory into which to download the CCM configuration file(s).
  - The \CCMOUT\ directory where you can export the CCM configuration file after you modify it.

  If they were already created, check these directories are empty before downloading any file. Otherwise, delete the files contained in them.

Using the Java Console Program

Step 1. In the Java Console, select **Actions→File Manager**. This displays the File Manager panel (see Figure 11).

Step 2. From the Local column, select the target directory, which should be \CCMIN\. From the Remote column, select the source CCM configuration file from the Q:\NODE\MOSSE\ directory on the service processor hard disk and double-click it to copy it to the target directory.

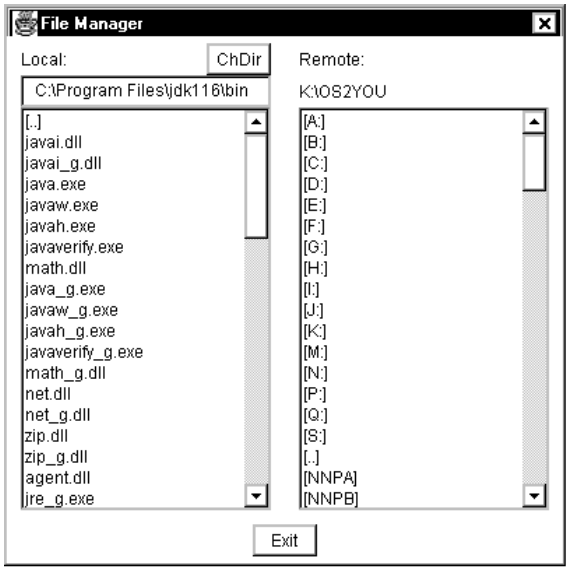


Figure 11. Java Console File Manager Panel

Step 3. Using the CCM stand-alone version, import the file from the \CCMIN\ directory (**File→Import**).

Step 4. Open the file and modify it (**File→Open**).

Step 5. Then save the configuration using a new name (**File→Save as**).

Attention

A CCM configuration is characterized by:

- The name you specify when you first create it or later modify it.
- The name of the file that contains the configuration data. This name is automatically generated by CCM.

  Each time, you modify a configuration, CCM changes the name of the file that contains the configuration data.

Step 6. Close the configuration.

Step 7. Export the configuration to the \CCMOUT\ directory (**File→Open→** *Select the configuration* **→Export**).

Step 8. Check that the modified configuration file has been exported to the \CCMOUT\ directory.

Step 9. In the Java Console, select **Actions→File Manager**.

Step 10. In the File Manager panel, select from the Remote column, the Q:\NODE\MOSSE\ target directory on the service processor hard disk. Then select the configuration file from \CCMOUT\ in the ***local*** file list, and double-click it to copy it to the target directory.

Step 11. Use CCM (through the MOSS-E) to activate the modified configuration.

Step 12. Once you no longer need to work with the CCM configuration files, delete the files contained in the CCMIN and CCMOUT directories.

Using DCAF

Step 1. From the DCAF main panel, select **Services→Start File Transfer**. This displays the DCAF - File Transfer Utility panel (see Figure 12).

Step 2. In the Source file name field, type the source configuration name, including the complete path, as follows:

```
Q:\NODE\MOSSE\04221247.CCM
```

Step 3. In the Destination file name field, type the target directory name, followed by `filename.filetype`. For example:

```
C:\CCMIN\04221247.CCM
```

Step 4. Click **Receive**.

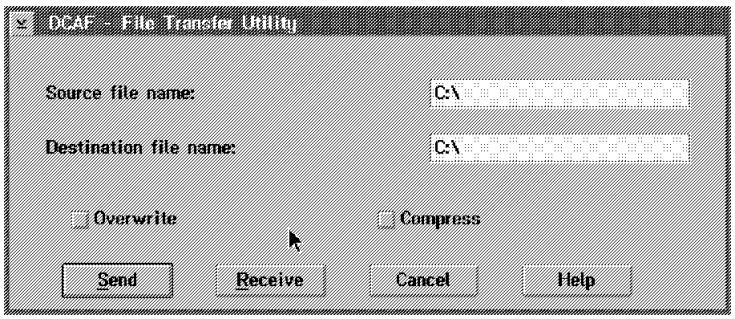


Figure 12. DCAF File Transfer Utility Panel

Step 5. Using the CCM stand-alone version, import the file from the \CCMIN\ directory (**File→Import**).

Step 6. Open the file and modify it (**File→Open**).

Step 7. Save the configuration using a new name (**File→Save as**).

See the ⚠ note on page 38.

Step 8. Close the configuration.

Step 9. Export the configuration to the \CCMOUT\00 directory (**File→Open→** *Select the configuration*→**Export**).

Step 10. Check that the modified configuration file has been exported to the \CCMOUT\ directory.

Step 11. From DCAF main panel, select **Services→Start File Transfer**.

Step 12. In the Source file name field, type the source configuration name, including the complete path, as follows:

```
C:\CCMOUT\04221247.CCM
```

Step 13. In the Destination file name field, type target directory followed by the `filename.filetype`. For example:

```
Q:\NODE\MOSSE\04221247.CCM
```

Step 14. Click **Send**.

Step 15. Use CCM (through the MOSS-E) to activate the modified configuration.

Step 16. Once you no longer need to work with the CCM configuration files, delete the files contained in the CCMIN and CCMOUT directories.

Using the CCM Remote Configuration Application on AIX Software

Based on an client/server application, the CCM remote configuration application allows a user, from an AIX® workstation, to perform the following tasks:

- Access the 3746s to download CCM configurations
- Update the corresponding ASCII files with a text editor
- Upload the resulting CCM configurations
- Activate them after syntax validity checking

What You Need

Required CCM Version

The required CCM version is EC: F64810.

A TCP/IP Connection

There must be a TCP/IP connection between the server and the client. The TCP/IP connection can be set up by either accessing:

- The service ring via a bridge or a router
- The server through the 3746-9X0 controller

On the Service Processor/Server

- Feature code 5810/5811 must be installed.

On the AIX Client Workstation

- AIX Version 4.2 or later
- A dedicated directory in which to put the client application
- The EULYCLII.CMD executable file and EULYCLI*.DAT files, downloaded using FTP from the service processor (Q:\NODE\CLIENT directory)

Installing the Client Workstation

Note: You must know:

1. The service processor IP address
2. The required user identifier and password to access the service processor.

Step 1. Create a directory into which to put the CCM remote configuration executable files. For example the CCMCLI directory.

Step 2. Using FTP, download the CCM remote configuration application files from the service processor Q:\NODE\CLIENT directory to the client workstation CCMCLI directory.

Access to the service processor is password-protected. In addition, a user identifier must be entered before the password. Check that you have the required information.

```
ftp service processor IP address
user: user identifier
password: password
cd Q:/NODE/CLIENT
get eulyclii.cmd
bin
prompt
mget eulycli*.dat
```

```
bye
```

Step 3. Enter the **chmod** command to convert the EULYCLII.CMD file to an executable file:

```
chmod +X EULYCLII.CMD
```

Step 4. Launch the EULYCLII.CMD file, which extracts the CCMCLI client application files.

Checking or Customizing the User Information

The user information consists of the user identifier and the password that must be entered when you connect to the server.

Note: In order to use the CCM remote configuration application and configure the user information, the FC 5810/5811 must be installed on the service processor.

To check or modify the user information, proceed as follows:

Step 1. From the Service Processor menu, select the **Configuration Management → Service Processor (SP) Customization**

Step 2. Select the **CCM Remote Configuration** option and click **Next**.

Step 3. Click **Customize**.

Step 4. Enter the management password.

Step 5. In the CCM Remote Configuration panel, the user identifier and password appear and can be modified. Use the online help for more information.

Before You Start

Remember That:

- You cannot launch more than one CCM remote configuration application on the same client workstation.
- Several client workstations can be connected to the same server, but performing concurrent actions must be avoided.
- You cannot select more than one controller.

It is recommended that you migrate all the configurations that require migration before using the CCM remote configuration application. Configurations saved with a previous CCM level cannot be downloaded on the client workstation.

If You Need Help...

Online help is available and consists of contextual and general help.

- Contextual help provides explanations about the commands. Type `-?` after a command to get information about the command.
- General help provides information about different topics. Type `help` to display the topic list, or type `help` *TOPIC* to display information about the specified topic.

Starting the Server

It is assumed that the server and its environment, including the TCP/IP connection between the server and the client, have been correctly installed using the MOSS-E and checked.

From the main CCM panel, select the **Option** → **Server** → **Start** option.

Note: If the server is running before the service processor reboot occurs, then it is automatically restarted. Otherwise, it remains stopped.

Starting the Client Application

From the AIX workstation, start the client application using the **ccmcli** command:

```
ccmcli
```

Connecting to the Server

Connecting to the server consists of the following procedures:

- Connecting to the service processor
- Selecting a remote controller

Before You Start...

1. In order to connect to a service processor, you must know either:
   - Its IP address
   - Its host name, if the service processor is known by the domain server or declared in your local host file.
2. You must also provide a user identifier and a password that have been defined using the MOSS-E.
3. The logon command is case-sensitive.

Connecting to a Service Processor

Use the **logon** command as follows:

`logon` *target service processor user identifier password*

Selecting a Controller

In order to select a controller you must know its name.

Use the **select** command as follows:

`select` *controller name*

If you cannot remember the name of the controller, use the **listrc** command to display the list of the controllers:

```
listrc
```

Switching Between the Local and Remote Environments

After the connection to the server has been established and you have selected a controller, you can switch between the *local environment* and the *remote environment*.

Which Is Which?

In the **local environment**, you work with the files located on the (client) workstation hard disk.

In the **remote environment**, you can, from the client workstation, directly work with the files located on the service processor disk.

Switching Between These Environments

At any time, you can switch between these two environments using the following commands:

- `local` to switch to the local environment, and
- `remote` to switch to the remote environment.

However, without switching to the other environment, you can run remote commands in the local environment, and conversly, by simply adding an 'l' or an 'r' suffix to the command.

For example, if you are working in the local environment and want to list the files located on the service processor hard disk, then type:

```
listr
```

If you are working in the remote environment, and want to list the files located on the client workstation hard disk, then type:

```
listl
```

Listing the Configuration Files

Use the **list** command to list the configuration files available in the current working directory (depending on the current environment you are working in).

If working in the local environment, use the **listr** to list the files available on the service processor. If working in the remote environment, use the **listl** to list the files available on the client workstation.

If you want to display configuration file name and comments, use the **display** command.

`display` *cfgname*

Downloading a Remote Configuration

In order to download a configuration from the service processor to the client workstation, type:

`get` *cfgname*

Note: You cannot download a configuration created with a CCM level previous to the CCM Level F64810.

It is therefore recommended that you migrate the configurations that require migration ***before*** using the CCM remote configuration application.

Extracting the ASCII Configuration Files

A CCM configuration consists of several ASCII files. Some of these files are mandatory. They are:

- **.NDF**, which is the network definition file that contains the APPN and IP resource configurations.
- **.ESC**, which is the ESCON definition file that contains the SNA/subarea, APPN, and IP ESCON definitions.

Optional files are:

- **.IDF**, which is the Internet definition file that contains the IP resource data.
- **.CMD**, which is the SNMP definition file that contains the SNMP definitions.
- **.MAE**, which is the directory that contains the MAE-related files.

After downloading a configuration, you must extract the ASCII files from the CCM configuration, in order to update the CCM configuration by editing the ASCII files with a text editor. The **extract** command syntax is:

`extract` *cfgname* `-fn:`*f.ndf* `-fi:`*f.idf* `-fs:`*f.cmd* `-fe:`*f.esc* `-fm:`*d.mae*

Note: The complete command must be typed in on a single line.

Creating a New CCM Configuration

Creating a new configuration on the client workstation requires the creation of the mandatory .NDF and .ESC files and, if necessary, the .IDF and .CMD optional files and MAE directory.

The command is:

`create` *cfgname*`-fn:`*f.ndf* `-fi:`*f.idf* `-fs:`*f.cmd* `-fe:`*f.esc* `-fm:`*d.mae*

Note: The complete command must be typed in on a single line.

Checking a Configuration

Before uploading a configuration from the client workstation to the service processor, you must check any new or modified CCM configuration. This step is mandatory.

The command is:

`check` *cfgname*

The configuration checking consists of:

- Cross-checking the different configuration files. Because some parameters are duplicated in the APPN, IP and ESCON files, the configuration of these parameters must be consistent between these files.
- Processing the different ASCII files in order to generate binary files that can be managed by the 3746-9x0 controllers and network node processors.

A configuration that has not been checked cannot be exported. If errors are found during the checking, they must be corrected and the configuration must be checked again.

Uploading a Configuration

After successfully checking a configuration, you can transfer the configuration from the client workstation to the service processor. The command is:

`put` *cfgname*

Activating a Configuration

After uploading a configuration, you can activate the configuration on the service processor from the client workstation. The command is:

`activate` *cfgname*

Activating a configuration from the client workstation is traffic-disruptive:

- APPN and IP control points are restarted.
- ESCON processors are re-IMLed.

When being activated, the configuration file is locked (a **I** flag indicates the locked status).

Compared to a configuration activation run from the service processor, the following restrictions apply:

- No dynamic configuration update
- No CDF-E checking
- No resource management.

Note: If the TCP/IP connection between the server and the client workstation breaks during a configuration activation, the configuration file remains locked, even if the activation would have successfully completed without the connection interruption. Use the **unlock** command to unlock the configuration file:

`unlock` *cfgname*

Choosing the Interactive or Script Mode

You can run the CCM remote configuration application in two modes:

The interactive mode In this mode, commands are processed in a conversational mode. Alternatively, you enter commands and then wait for the responses from the application.

The script mode In this mode, you create batch files that contain a series of commands, which are processed in sequence when you type the name of the file at the command prompt. See Appendix A, “CCM Remote Configuration Application: Options, Script Commands and Variables” on page 171 to know more about the available commands and variables that can be used in the script files.

Summarizing the Commands

In Table 3 the **Remote** column indicates the remote commands that can be run from the local environment. The **local** column indicates the local commands that can be run from the remote environment.

Table 3 (Page 1 of 2). CCM Remote Configuration Commands

Command	Description	Remote	Local
activate *cfgname*	To activate a configuration on the service processor.	-	-
@	To run any shell command. ¬¬ For example: [local]>@ls This gives the list of the files located in the current directory.	-	-
check *cfgname*	To check the modified or new configuration before uploading it to the service processor.	**checkr**	**checkl**
create *name* **-fn***ndf***: -fi:***f.idf* **-fs:***f.cmd* **-fe:***f.esc* **-fm:***d.mae* **(see note)**	To create a new CCM configuration on the client workstation.	-	-
delete *cfgname*	To delete a configuration from the current working directory.	**deleter**	**deletel**
display *cfgname*	To display details about a configuration located in the current working directory.	**displayr**	**displayl**
exit	To quit the application interactive mode and switch to the running script program.	-	-
extract *name* **-fn:***ndf***: -fi:***f.idf* **-fs:***f.cmd* **-fe:***f.esc* **-fm:***d.mae* **(see note)**	To extract the configuration ASCII files from the CCM local configuration file.	-	-
get *cfgname*	To download a configuration from the server to the client workstation.	-	-
getrlf	To download the server.log file.	-	-

Table 3 (Page 2 of 2). CCM Remote Configuration Commands			
Command	**Description**	**Remote**	**Local**
list	To list the configuration files available in the current working directory.	**listr**	**listl**
listrc	To display the controller list.	-	-
local	To switch to the local environment	-	-
logon *server user id password*	To connect to the server.	-	-
logoff	To disconnect from the server.	-	-
modify <cfgname>{-n:<name>} {-c:<comment>}	To modify the name and description of a configuration located in the current working directory.	**modifyr**	**modifyl**
put *cfgname*	To upload a configuration to the server.	-	-
quit	To quit and stop the application.	-	-
select *controller_name*	To select a controller.	-	-
test_connection *server*	To test the TCP/IP connection between the server and the client workstation.	-	-
remote	To switch to the remote environment of the specified server.	-	-
unlock *cfgname*	To unlock a configuration.	-	-
Note: The complete command must be typed in on a single line.			

Using the CCM Remote "light" Configuration Application on OS/2

The CCM remote "light" configuration for OS/2 is available with feature code FC5812, Extended Function 5. This new function allows the user, using an editor on a remote workstation, to modify an already-existing CCM configuration file directly. For example, it allows the user to utilize the editor's Copy/Paste function to define a large number of the same resources quickly.

The CCM remote "light" configuration runs only on the OS/2® operating system, but, by using FTP, for instance, the user can use the editor on any type of workstation (Windows® 95, Windows 98, Windows NT®, DOS, and so on).

The CCM remote "light" for OS/2 enables a user to perform the following tasks:

- Access the 3746s to download CCM configurations
- Update the corresponding ASCII files with a text editor
- Upload the resulting CCM configurations

What You Need

TCP/IP Connection

There must be a TCP/IP connection between the server and the client. The TCP/IP connection can be established by accessing either:

- The service ring by means of a bridge or a router
- The server through the 3746-9X0 controller

On the Service Processor/Server

- Feature code 5810/5811/5812 must be installed.

On the OS/2 Client Workstation

- OS/2 WARP® Version 4 or later
- A dedicated directory into which to put the CCM files

Installing the Client Workstation

The CCM remote "light" configuration for OS/2 is an executable file, CCMUPD.EXE, that runs on OS/2 only. CCMUPD.EXE is included in the auto-extractable file of the CCM stand-alone package and installs automatically when you install the CCM stand-alone application.

For more information on installing the CCM stand-alone application, see Chapter 1, "Welcome to the CCM."

Checking or Customizing the User Information

The user information consists of the user identifier and the password that you must enter when you connect to the server.

Note: In order to use the CCM remote "light" configuration application and configure the user information, FC 5810/5811/5812 must be installed on the service processor.

To check or modify the user information, perform the following steps:

Step 1. From the Service Processor menu, select the **Configuration Management → Service Processor (SP) Customization**.

Step 2. Select the **CCM Remote Configuration** option and click **Next**.

Step 3. Click **Customize**.

Step 4. Enter the management password.

Step 5. In the CCM Remote Configuration panel, the user identifier and password appear and can be modified. Use the online help for more information.

Before Using the CCM Remote "light" Configuration Application

Remember That:

It is recommended that you migrate all the configurations that require migration before using the CCM remote "light" configuration application, as configurations saved with a previous CCM level cannot be downloaded on the client workstation.

If You Need Help...

Online help is available by typing `ccmupd -?`.

User Operations Description

There are three major procedures in user operations:

Procedure 1 Download the CCM configuration file (.CCM) from the service processor directory (Q:\NODE\MOSSE\) to an OS/2 workstation.

Procedure 2 Run CCMUPD.EXE on the OS/2 workstation to convert the .CCM file to ASCII text files (.NDF and .IDF). Use an editor on the OS/2 workstation or on another workstation (for example, a Windows workstation) to modify the .NDF and .IDF files, and then convert the .NDF and .IDF files back into the .CCM file.

Procedure 3 Upload the modified .CCM file to the service processor.

Important

A CCM configuration is characterized by the following names:

- The name that you specify when you first create or later modify the CCM configuration
- The name of the file that contains the configuration data. CCM generates this file name automatically.

For example, on the CCM panel, the current configuration name could be: `Machine 123 at xxx`, but the real CCM file (on the MOSS-E disk) would be: `12345678.CCM`.

Procedure 1: Download the CCM Configuration File from the Service Processor

Important

If you want to download only the active configuration file, you must know the name of the CCM-generated active configuration file (for example, 12345678.CCM). You can find the name in the SCHEDULE.DAT file, which is located on the service processor hard disk in the Q:\NODE\MOSSE\ directory. You can download this file locally using either the following DCAF or the following FTP procedure.

Using DCAF:

Step 1. From the DCAF main panel, select **Services→Start File Transfer**. The DCAF - File Transfer Utility panel appears.

Step 2. In the Source file name field, type the source configuration name, including the complete path, as follows:

Q:\NODE\MOSSE\ *xxxxxxxx*.CCM

where *xxxxxxxx* represents digits.

Step 3. In the Destination file name field, type the target directory name, followed by *filename.filetype*, as follows: C:\CCMIN\ *xxxxxxxx*.CCM

Step 4. Click **Receive**.

Using FTP:

Step 1. From the OS/2 window, create a directory into which to download the configuration files, and then make that directory the current directory. For example:

```
mkdir \CCMIN
cd \CCMIN
```

Step 2. Using FTP, download the CCM configuration files from the service processor

```
ftp service processor IP address
user: user identifier defined in service processor customization
password: password defined in service processor customization
cd Q:\NODE\MOSSE
bin
prompt
mget *.CCM
bye
```

Important

Service processor customization rules requires that the password be uppercase.

Procedure 2: Convert the CCM Configuration File into ASCII Files

Important

Before working with the CCM configuration file, you must back up all service processor CCM configuration files to a local directory.

On the service processor, the CCM configuration files are located in `Q:\NODE\MOSSE\*.CCM`.

On a stand-alone workstation, if you performed Procedure 1, the CCM configuration files are located in `\CCMIN`.

Note: If you want to see the syntax of the CCMUPD.EXE tool, type `ccmupd -?`.

Step 1. Determine which CCM file in which configuration you want to update. Copy all .CCM files from \CCMIN into your working directory where you installed the CCM stand-alone application. Use the command **ccmupd** to obtain the list of configurations with the configuration names and the names of the .CCM files.

For example,

```
BEX-FR 2 Uplinks      Jun-07-2000  16:29   H10014/000 | 06071630.CCM
BIGNET+MCLReg+10K     Feb-22-2000  11:53   H10014/000 | 02221153.CCM
NEW2ET+MCLReg+10K     Feb-22-2000  11:53   H10014/000 | 5500.CCM
```

You can also use the method described in Procedure 1 to determine which file is the active configuration file, if you do not know its name.

Step 2. Extract the APPN configuration file from the .CCM file to your current directory by using the following command:

`ccmupd GET opened.ndf` *xxxxxxxx*`.ccm`

where *xxxxxxxx* represents digits.

Step 3. Use an editor to modify the APPN ASCII file (OPENED.NDF), and then save it.

Step 4. Put the updated APPN ASCII file in your .CCM file by using the following command:

`ccmupd PUT opened.ndf` *xxxxxxxx*`.ccm`

where *xxxxxxxx*`.ccm`

is the same file name as that in Step 2.

If a syntax error occurs, the .CCM file will not be updated. Errors are listed in the following files:

- PSNA_CCM.LOG -> APPN errors output found in OPENED.NDF (see note)
- IDF_COM.LOG -> IP errors output found in OPENED.NDF
- CFG_COM.LOG -> Miscellaneous errors output

Explanations of the errors are explicit, and often the line where the error appears is listed.

Note: The following PSNA_CCM.LOGsyntax error message about OPENED.SEC is not actually an error because the last line indicates that the verification of the PSNA configuration was successful:

```
Parsing of the node definitions file started.
Parsing of the node definitions file was successful.
APN0421W  fopen failed for the security information
          file (.SEC)=PUTCFG\OPENED.SEC.
APN0434W  An empty or missing security information
          file (.SEC) is OK if no security
          information is defined in the PSNA
          configuration.
An empty security information file will be created.
Verification of the PSNA configuration started.
Verification of the PSNA configuration was successful.
```

Step 5. Repeat Steps 2 on page 51, 3 on page 51, and 4 on page 51 to extract the IP configuration file by replacing the name of the APPN configuration file (OPENED.NDF) with the name of the IP configuration file (OPENED.IDF). For example:

```
ccmupd GET opened.idf 12345678.ccm
ccmupd PUT opened.idf 12345678.ccm
```

Step 6. Prepare for Procedure 3 by typing the following command:

```
copy xxxxxxxx.ccm \CCMOUT
```

Procedure 3: Uploading the CCM Configuration File to the Service Processor

This procedure describes how to use FTP to upload the modified .CCM file to the service processor.

Using DCAF:

Step 1. From the DCAF main panel, select **Services→Start File Transfer**. The DCAF - File Transfer Utility panel appears.

Step 2. In the Source file name field, type the source configuration name, including the complete path, as follows:

```
C:\CCMOUT\xxxxxxxx.CCM
```

where *xxxxxxxx* represents digits.

Step 3. In the Destination file name field, type the target directory name, followed by the CCM file name. For example:

```
Q:\NODE\MOSSE\xxxxxxxx.CCM
```

Step 4. Click **Send**.

Step 5. Use CCM (through the MOSS-E) to activate the modified configuration.

Step 6. Once you no longer need to work with the .CCM configuration files, delete the files contained in the CCMIN and CCMOUT directories.

Using FTP:

Step 1. From the OS/2 window, change the directory to \CCMOUT.

Step 2. Using FTP, upload the CCM configuration files to the service processor. For example:

```
ftp service processor IP address
user: user identifier defined in service processor customization
password: password defined in service processor customization
```

```
cd Q:\NODE\MOSSE
bin
prompt
mput *.CCM
bye
```

Important

Service processor customization rules require that the password be uppercase.

Step 3. Use CCM (through the MOSS-E) to activate the modified configuration.

Step 4. Once you no longer need to work with the .CCM configuration files, delete the files contained in the CCMIN and CCMOUT directories.

Part 2. Resource Configuration

Chapter 5. Beginning a CCM Configuration

If you are creating a new configuration and if you are configuring the first coupler, go to Step 1 on page 58.

Otherwise, go to Step 4 on page 58.

Note: To save a new configuration, at least the following two parameters must have a value:

Network node: **Network identifier** and **Control point name**

To go to these parameters: Main panel **Configuration** menu → **NN/FP/DLUR** → **Network Node/Focal Point/Dependent LU Requester Parameters** panel.

It is possible to save a configuration with only these two parameters and the name of the configuration file defined.

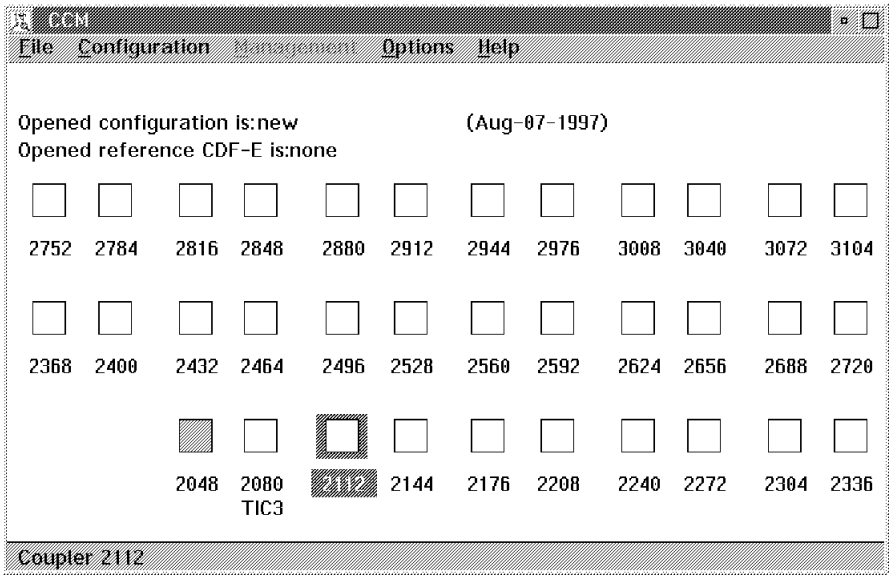


Figure 13. Main CCM Panel

To start a new configuration:

Step 1. Double-click the icon for the coupler you want to configure. This displays the 3745/3746 Parameters panel (see Figure 14).

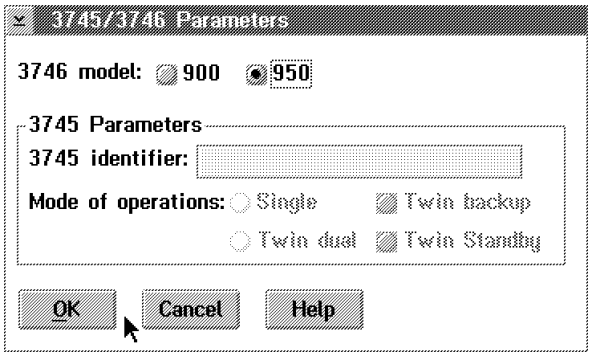


Figure 14. 3745/3746 Parameters Panel

Step 2. Enter the parameters as required for your configuration.

Notes:

a. If you leave the default **950** for the 3746 model, you will not be able to add the 3745 identifier or set the mode of operation.

b. Information you have entered on some of the fields is retained by the CCM. This information can be later modified by: Main panel **Configuration** menu → **3745/3746 Parameters**

Step 3. When completed, click **OK** → **Coupler/Processor Type** panel (see Figure 15).

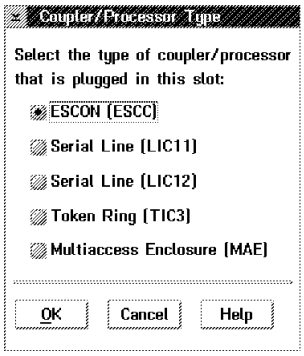


Figure 15. CCM Coupler/Processor Type Panel

Step 4. Select the desired coupler type.

Step 5. Click **OK** → **Port Configuration** panel for the selected port type.

Step 6. For the specific configuration, go to the appropriate chapter:

- Chapter 6, “Configuring an ESCON Coupler” on page 61
- Chapter 7, “Configuring a Token-Ring Coupler” on page 69
- Chapter 8, “Configuring Serial Line SDLC Resources” on page 77
- Chapter 9, “Configuring Serial Line Frame-Relay Resources” on page 83
- Chapter 10, “Configuring Serial Line PPP Resources” on page 95
- Chapter 11, “Configuring Serial Line X.25 Resources” on page 99
- Chapter 12, “Configuring the MAE” on page 107

Configuring Stations on Coupler/Port 2080

You specify the type of stations to be automatically generated on the 2080 port. The station type depends on your use of the port:

- Service Processor
  - For a remote console using DCAF
  - To use the Aping function
  - To send alerts to NetView for AIX[2]
- NPM
  - To use NetView Performance Monitor

To configure these parameters go to the Configuration menu on the Main panel and select **Stations on Coupler/Port 2080** (see Figure 16). Select either **Service Processor** or **NPM** and click OK.

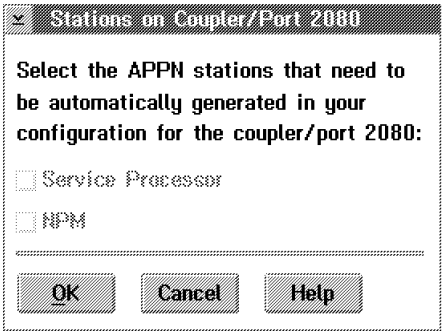


Figure 16. Stations on Coupler/Port 2080 Panel

[2] After Version 4.0, NetView for AIX has been renamed to Tivoli® NetView®.

Chapter 6. Configuring an ESCON Coupler

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring the ESCON Port Parameters.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click the icon of the coupler you want to configure, and go to “Configuring the ESCON Port Parameters.”

If You Need Help...

Use the CCM online help or the *3745/3746 Planning Series: ESCON Channels* for more information about the ESCON configuration parameters.

Configuring the ESCON Port Parameters

From the ESCON Port configuration panel (see Figure 17), you can specify configuration parameters for the ESCON ports and the ESCON Directors (ESCDs).

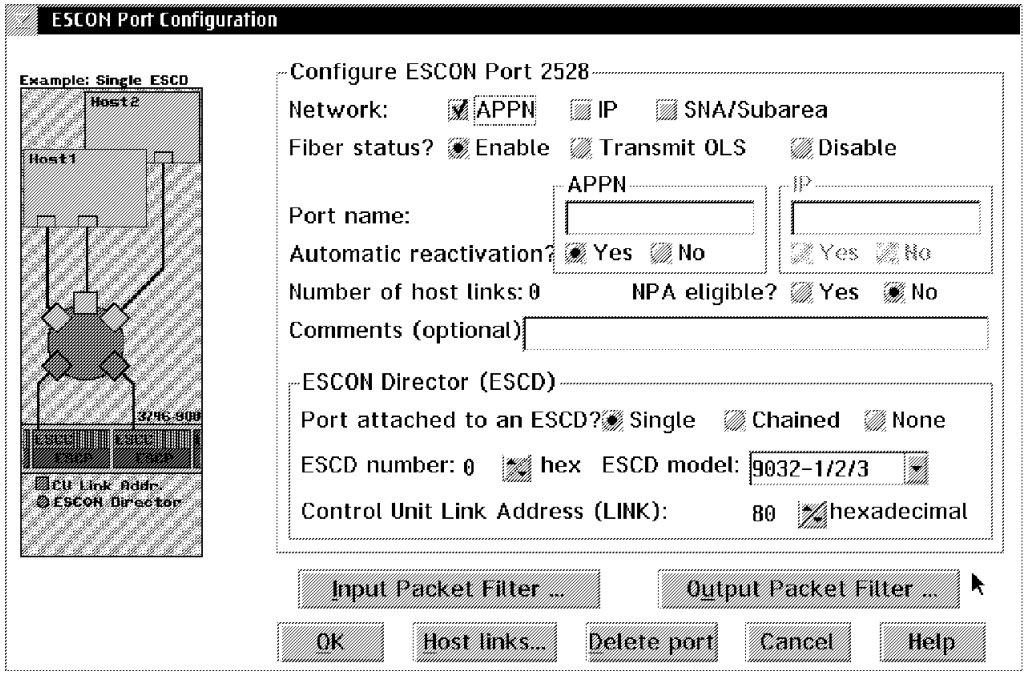


Figure 17. ESCON Port Configuration Panel

Step 1. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

Note: An ESCON port can be shared by an APPN network, an IP network, and an SNA/Subarea network.

To configure IP access control filtering for this port, continue with the next step.

Otherwise, go to Step 16 on page 63.

Step 2. To configure the input packet filter, click **Input Packet Filter...**. The Input Packet Filter panel appears (see Figure 18).

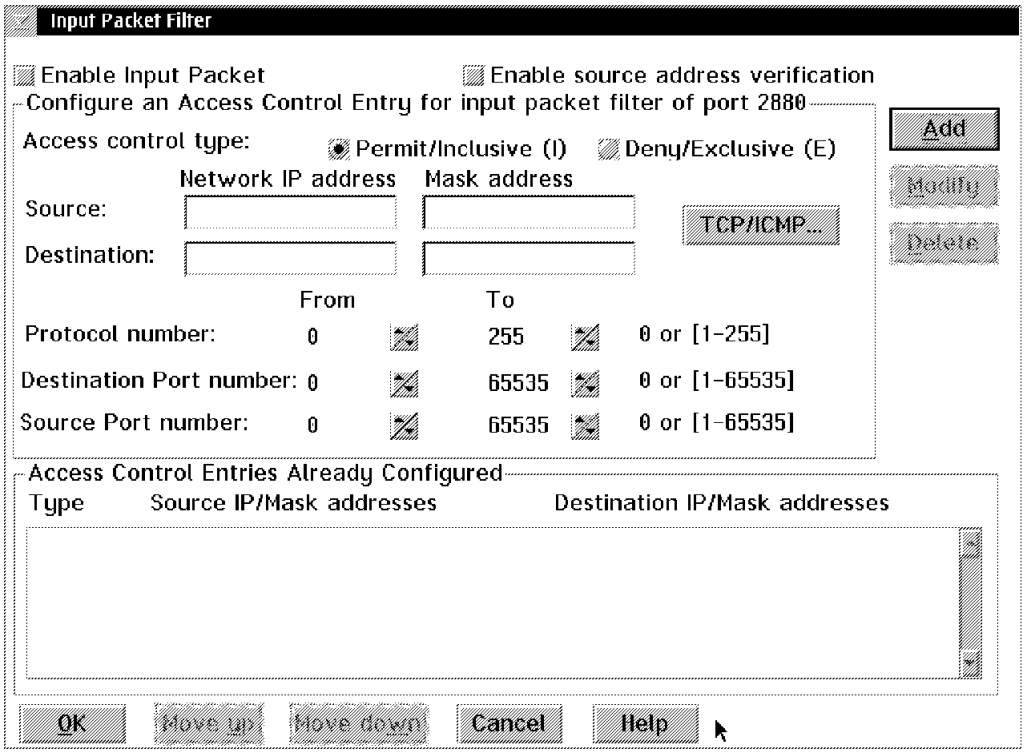


Figure 18. Input Packet Filter Panel

Step 3. Select the **Access control type** that you want, and enter the source and destination network IP addresses, the IP protocol number, and the destination and source port numbers.

Step 4. Click the **TCP/ICMP...** button and define TCP/ICMP for the current access control.

Step 5. Click **Add** to add the new access control entries.

Step 6. Repeat Steps 3 through 5 for any other access control entires that you want to define.

Step 7. Check **Enable Input Packet** to filter incoming traffic.

Step 8. When you have completed configuring the input packet filter, click **OK**. The ESCON Port Configuration panel reappears.

Step 9. To configure the output packet filter, click **Output Packet Filter...** (see Figure 19 on page 63).

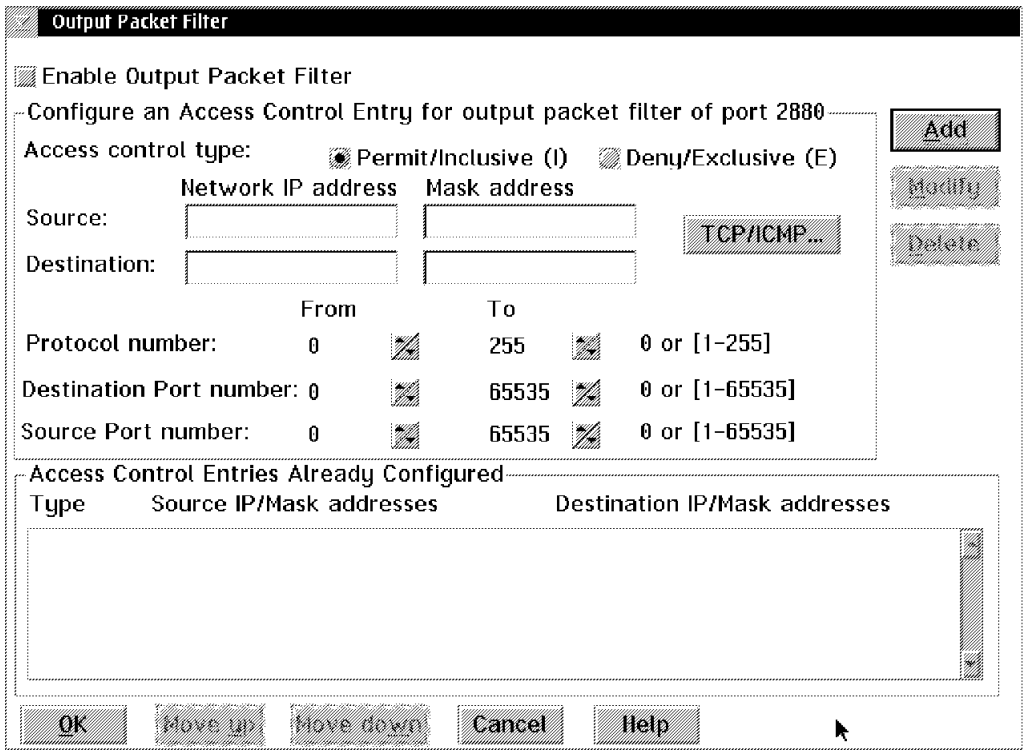


Figure 19. Output Packet Filter Panel

Step 10. Select the **Access control type** that you want, and enter the source and destination network IP addresses, the IP protocol number, and the destination and source port numbers.

Step 11. Click the **TCP/ICMP...** button and define TCP/ICMP for the current access control.

Step 12. Click **Add** to add the new access control entries.

Step 13. Repeat Steps 10 through 12 for any other access control entires that you want to define.

Step 14. Check **Enable Output Packet Filter** to filter outgoing traffic.

Step 15. When you have completed configuring the output packet filter, click **OK**. The ESCON Port Configuration panel reappears.

Step 16. When you have completed configuring the port parameters, click one of the following options:

- **OK** to save and exit
- **Host links...** to display the ESCON Host Links Configuration panel; then continue with “Configuring the ESCON Host Link Parameters” on page 64.

Configuring the ESCON Host Link Parameters

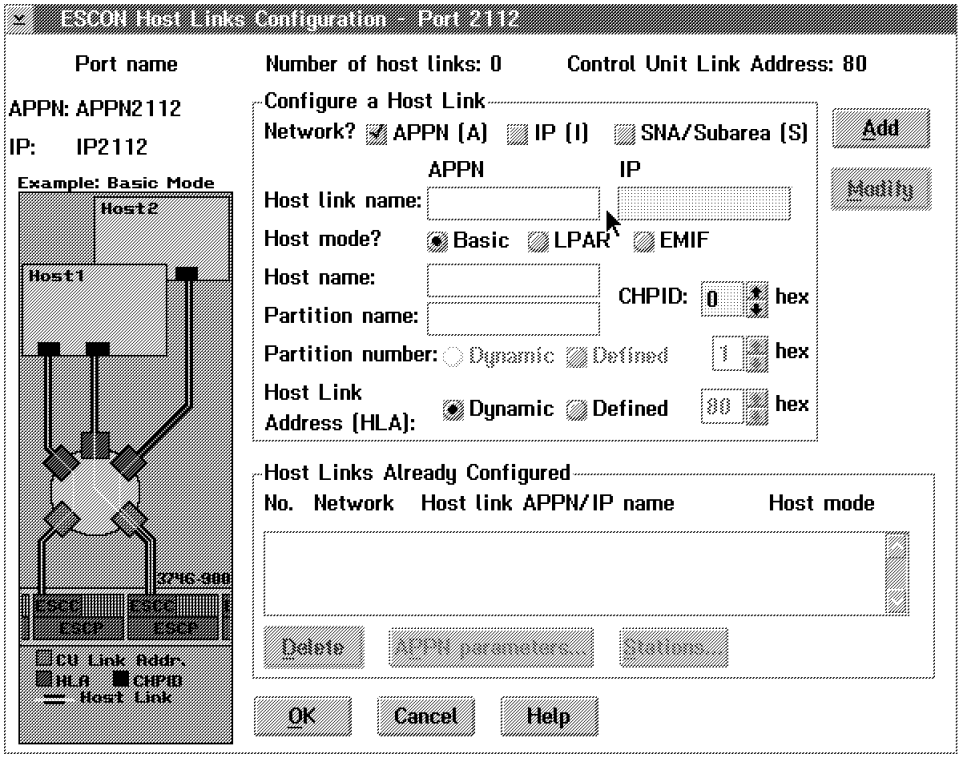


Figure 20. ESCON Host Links Configuration Panel

Step 1. Enter the parameters as required in the ESCON Host Links Configuration panel (see Figure 20).

Note: A host link can be shared by an APPN network, an IP network and an SNA/Subarea network.

Step 2. When completed, click **Add**.

Note: After clicking **Add**, the host link information you have just entered, is added to the Host Link Already Configured list. Depending on the type of host link configured, other pushbuttons are now available.

Step 3. Repeat Step 1 and Step 2 for any other host links to be defined.

Otherwise, continue with the next step.

Step 4. To configure the APPN parameters for one or more host links, go to Step 5.

Otherwise, to configure ESCON stations for host links, go to “Configuring ESCON Station Parameters” on page 65.

Configuring the Port APPN Parameters

Step 5. Select a host link and click **APPN parameters** → **ESCON Port Configuration - APPN Parameters** panel.

Step 6. Keep the default APPN values or change them as needed.

Step 7. When completed, click **OK** to return to the Host Links Configuration panel.

Step 8. Repeat Step 5 through Step 7 for any other host link that is to be used for APPN.

Otherwise, go to "Configuring ESCON Station Parameters," or click **OK** to save and exit.

Configuring ESCON Station Parameters

Step 1. From the Host Links Configuration panel, select a host link and click **Stations...→ ESCON Station Configuration** panel.

Step 2. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, see "An Easier Way to Configure" on page 15.

Note: A station cannot be shared by several networks. It is configured to work in a single network.

If the station is defined for an *IP network*, the IP address must be specified in this panel.

Step 3. Click **Add**. The ESCON Host Links Configuration panel reappears.

Note: After clicking **Add**, the station information you have just entered, is added to the ESCON Stations Already Configured list. Depending on the type of station configured, other pushbuttons are now available.

Step 4. Repeat Step 2 and Step 3 for any other station to be defined.

Otherwise, continue with the next step.

Step 5. If you need to configure:

a. Station APPN parameters for one or several stations, continue with the next step.

b. IP parameters for one or several stations, go to Step 18 on page 67.

Otherwise, go to Step 13 on page 66.

Configuring the Station APPN Parameters

Step 6. Select a station and click **APPN parameters... → ESCON Station Configuration - APPN Parameters** panel (see Figure 21 on page 66).

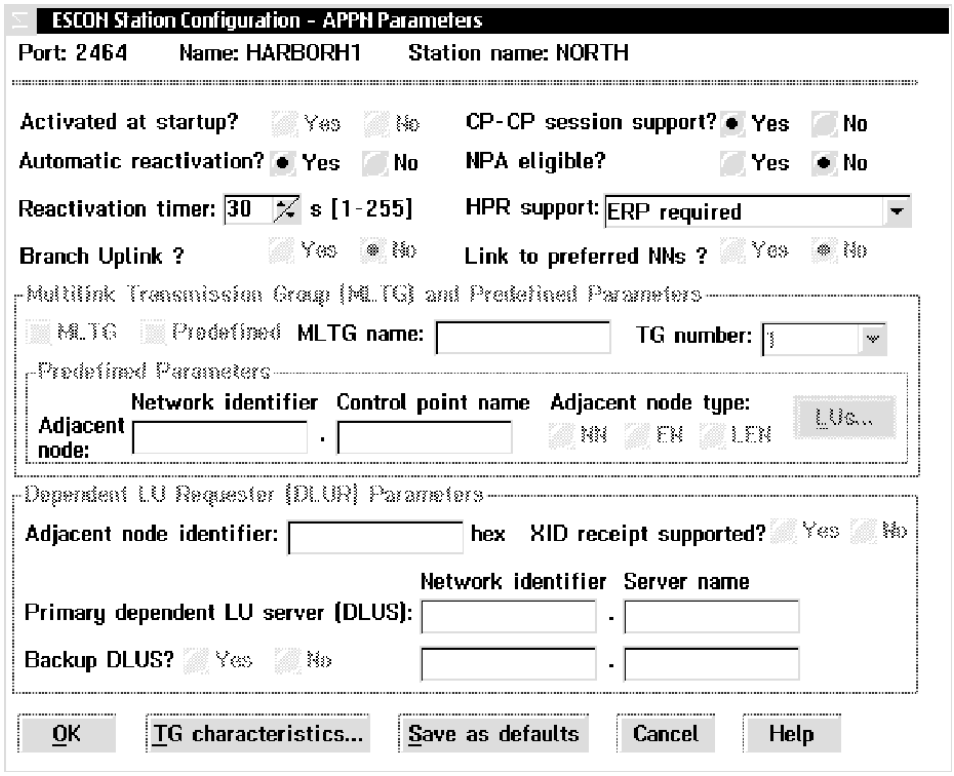


Figure 21. ESCON Station Configuration - APPN Parameters Panel

Step 7. Either keep the default values or change these values according to your needs.

Step 8. To configure the transmission group for this station, continue with the next step.

Otherwise, go to Step 12.

Step 9. Click **TG characteristics... → Station Configuration - TG characteristics** panel.

Step 10. Either keep the default values or change these values according to your needs.

Step 11. When completed, click **OK** to save and return to the previous panel.

Step 12. When completed, click **OK** to save and return to the ESCON Station Configuration panel.

Step 13. To configure the DLC parameters for one or several stations, select a station and click **DLC parameters → ESCON Station - DLC Parameters** panel.

Otherwise, go to Step 16.

Step 14. Keep the default values, or change these values according to your needs.

Step 15. When completed, click **OK** to save, and return to the ESCON Station Configuration panel.

Step 16. Click **OK** to return to the Host Links Configuration panel.

Step 17. To configure ESCON stations for any other host link, repeat Step 1 (starting on page 65) through Step 16.

To configure the IP parameters for a station, continue with the next step. Otherwise, go to step 20 on page 67.

Configuring the Port IP Parameters

Step 18. Select a station and click **IP parameters**. → **ESCON Station Configuration - IP Parameters** panel.

Step 19. Either keep the default values or change these values according to your needs.

Step 20. Click **OK** on each panel until the CCM main panel is displayed.

Chapter 7. Configuring a Token-Ring Coupler

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring Token-Ring Ports.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Configuring Token-Ring Ports.”

If You Need Help...

Use the CCM online help and the *3745/3746 Planning Series: Token Ring and Ethernet* for more information about the token-ring configuration parameters.

Configuring Token-Ring Ports

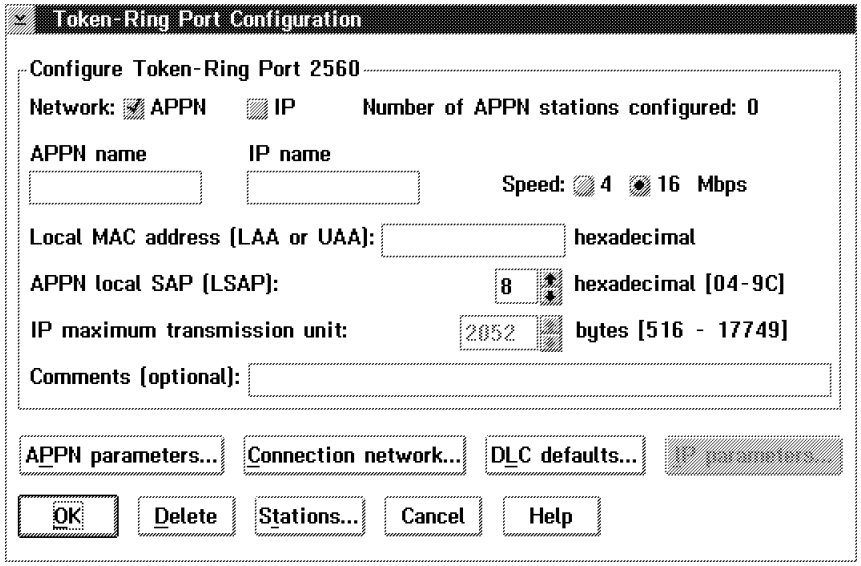


Figure 22. Token-Ring Port Configuration Panel

Step 1. Enter the parameters values as required in the Token-Ring Configuration panel (see Figure 22). As you enter the values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

Note: A token-ring port can be shared between IP and APPN networks.

Step 2. When completed, click **OK** to save and exit. Otherwise:

- To configure the port APPN parameters, go to Step 3 on page 70.
- To configure the IP parameters, go to Step 10 on page 70.

- To configure the port DLC parameters, go to Step 18 on page 71.
- To configure the connection network, go to Step 22 on page 72.
- To configure the stations, see “Configuring Token-Ring Stations” on page 73.

Configuring Port APPN Parameters

Step 3. Click **APPN parameters → Token-Ring Port Configuration - APPN Parameters** panel (see Figure 23).

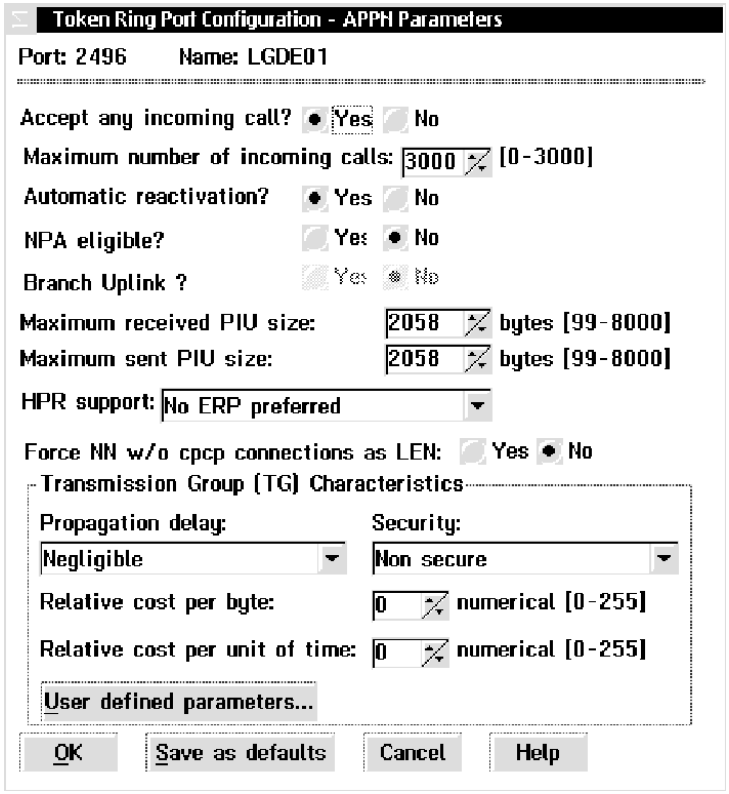


Figure 23. Token-Ring Port Configuration - APPN Parameters Panel

Step 4. Keep the default parameter values, or change these values according to your needs.

Step 5. If you want to configure the user defined parameters, continue with the next step.

Otherwise, to Step 8.

Step 6. Click **User defined parameters**.

Step 7. When completed, click **OK**.

Step 8. Click **OK** to return to the Token-Ring Port Configuration panel.

Step 9. If you want to use IP over a token-ring port, continue with the next step.

Otherwise, go to Step 21 on page 72.

Configuring Port IP Parameters

Step 10. Click **IP parameters...** to display the IP over Token-Ring Parameters panel (see Figure 24 on page 71).

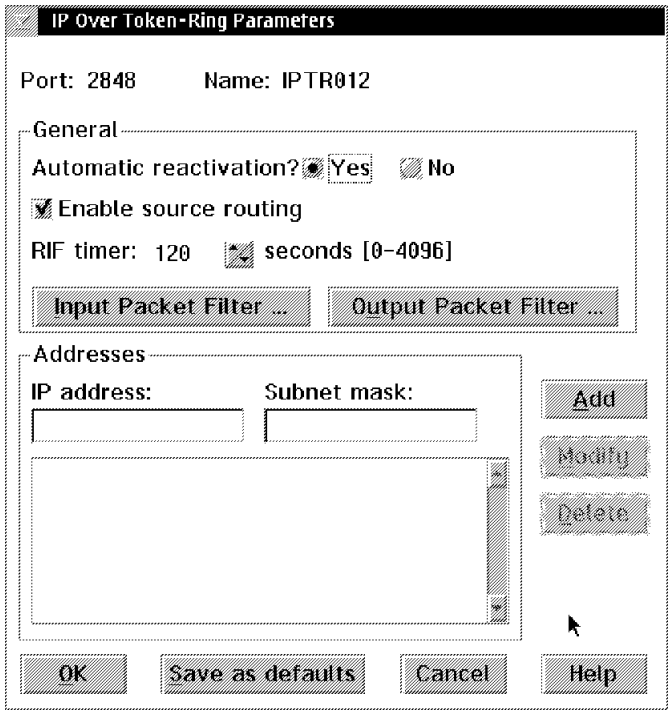


Figure 24. IP Over Token-Ring Parameters Panel

Step 11. Enter the IP address and the subnetwork mask values (note that up to 16 IP address and subnetwork mask pairs can be defined). Keep or change the RIF timer default value according to your needs.

To configure IP access control filtering for this port, continue with the next step.

Otherwise, go to Step 16.

Step 12. To define the input packet filter, click **Input Packet Filter...**. (see Figure 18 on page 62).

Step 13. When completed, click **OK**.

Step 14. To define the output packet filter, click **Output Packet Filter...**. (see Figure 19 on page 63).

Step 15. When completed, click **OK**.

Step 16. When the IP configuration is completed, click **OK** to return to the Token-Ring Port Configuration panel.

Step 17. If you want to configure the DLC port parameters, continue with the next step.

Otherwise, go to step 21 on page 72.

Configuring Port DLC Parameters

Step 18. Click **DLC defaults...**.

Step 19. Keep the default parameter values, or change these values according to your needs.

Step 20. When completed, click **OK** to return to the Token-Ring Port Configuration panel.

Step 21. If you want to configure port connection network parameters, continue with the next step.

Otherwise, go to Step 27.

Configuring Port Connection Network Parameters

Step 22. **Connection network** → **Token-Ring Connection Network** panel (see Figure 25).

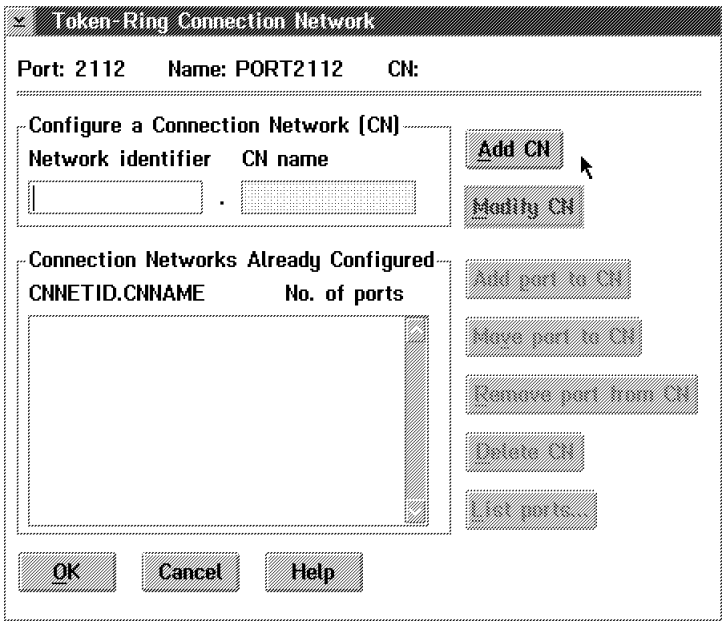


Figure 25. Token-Ring Connection Network Panel

Step 23. Enter the **Network identifier** and the **CN name**.

Step 24. Click **Add CN**.

Notes:

a. After clicking **Add CN**, the connection network that you have just configured is added to the **Connection Networks Already Configured** list. Depending on the type of connection network configured, other push buttons are now available.

b. After clicking **Add CN**, you must click **Add port to CN**, otherwise the connection network information you have just entered will not be saved.

c. If connection networks have been defined, select the one to which you want to add the port currently being defined. A total of five ports can be added to each connection network.

Step 25. Click **Add port to CN**.

Step 26. When completed, click **OK** to save and return to the previous panel.

Step 27. If you want to define token-ring stations, go to “Configuring Token-Ring Stations” on page 73.

Otherwise, click **OK** to exit.

Configuring Token-Ring Stations

Note: Token-ring stations only need to be configured when the connection must be established from the controller to the stations.

Step 1. From the Token-Ring Port Configuration panel, click **Stations** to display the Token-Ring Station Configuration panel (see Figure 26).

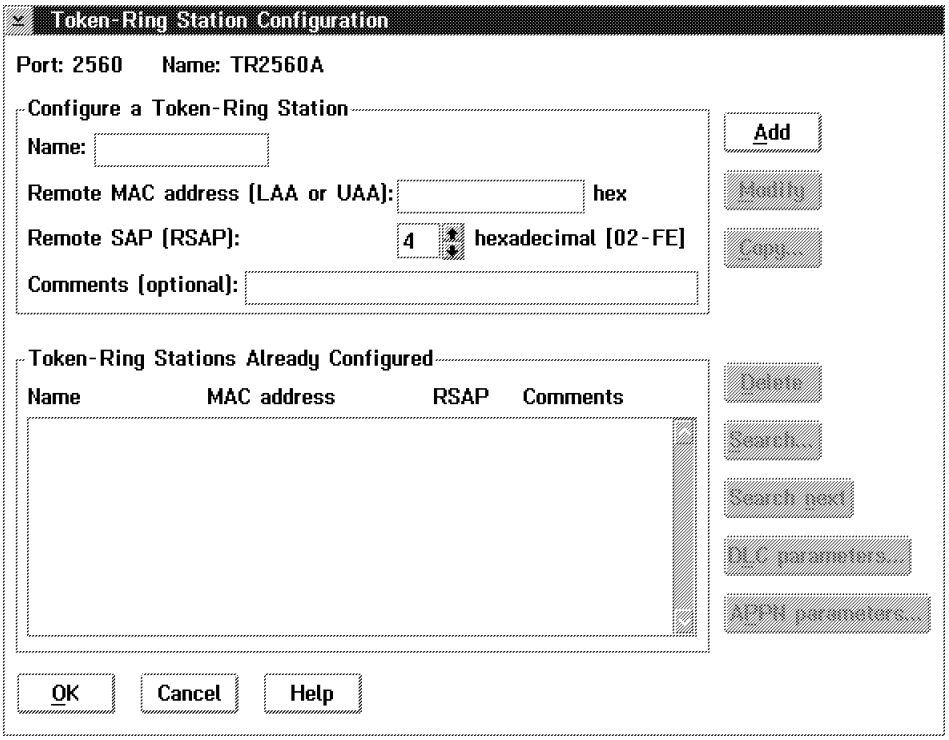


Figure 26. Token-Ring Station Configuration Panel

Step 2. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

Step 3. Click **Add**.

Note: After clicking **Add**, the station that you have just configured is added to the Token-Ring Stations Already Configured list. Depending on the type of station configured, other pushbuttons are now available.

Step 4. If you need to configure APPN parameters for the station, continue with the next step.

Otherwise, go to Step 15 on page 74.

Configuring Station APPN Parameters

Step 5. Select a station and click **APPN parameters... → Token-Ring Station Configuration – APPN Parameters** panel (see Figure 27 on page 74).

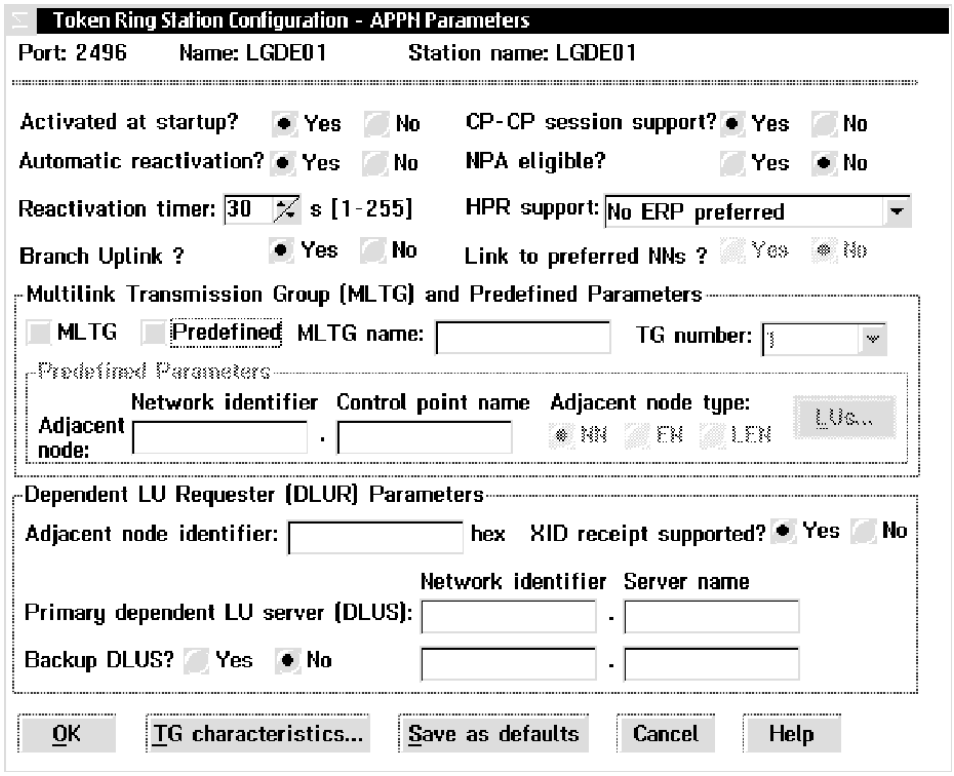


Figure 27. Token-Ring Station Configuration - APPN Parameters Panel

Step 6. Either keep the default values or change these values according to your needs. If you want to configure remote LUs on adjacent nodes, continue with the next step.

Otherwise, go to Step 9.

Step 7. Click **LUs...**.

Step 8. When completed, click **OK**.

Step 9. To configure the transmission group for this station, continue with the next step.

Otherwise, go to Step 13.

Step 10. Click **TG characteristics...** → **Station Configuration - TG characteristics** panel.

Step 11. Either keep the default values or change these values according to your needs.

Step 12. When completed, click **OK** to save and return to the previous panel.

Step 13. Click **OK** to save and return to the Token-Ring Station Configuration panel.

Step 14. Repeat Steps 5 on page 73 through 13 until you have configured the APPN parameters for each station that requires APPN parameter configuration, or continue with the next step.

Configuring Station DLC Parameters

Step 15. If you need to configure DLC parameters for the station, continue with the next step.

Otherwise, go to Step 21 on page 75.

Step 16. To configure the DLC parameters for a station, **DLC parameters** → **Token-Ring Station - DLC Parameters 1/2** panel.

Step 17. Keep the default values, or change these values according to your needs.

Step 18. **Token-Ring Station - DLC Parameters 1/2** → **Parameters 2/2** → **Token-Ring Station - DLC Parameters 2/2** panel.

Step 19. Keep the default values, or change these values according to your needs.

Step 20. When completed, click **OK** to save and return to the Token-Ring Station Configuration panel.

Step 21. Click **OK** on each panel until the CCM main panel is displayed.

Chapter 8. Configuring Serial Line SDLC Resources

This chapter explains the configuration of serial line couplers LIC11 and LIC12 for SDLC lines.

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring the SDLC Port.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Configuring the SDLC Port.”

If You Need Help...

Use the CCM online help or the *3745/3746 Planning Series: Serial Line Adapters*, GA27-4235 for more information about the serial line parameters.

Configuring the SDLC Port

Note: A LIC12 has only one port, a LIC11 can have up to 30 ports.

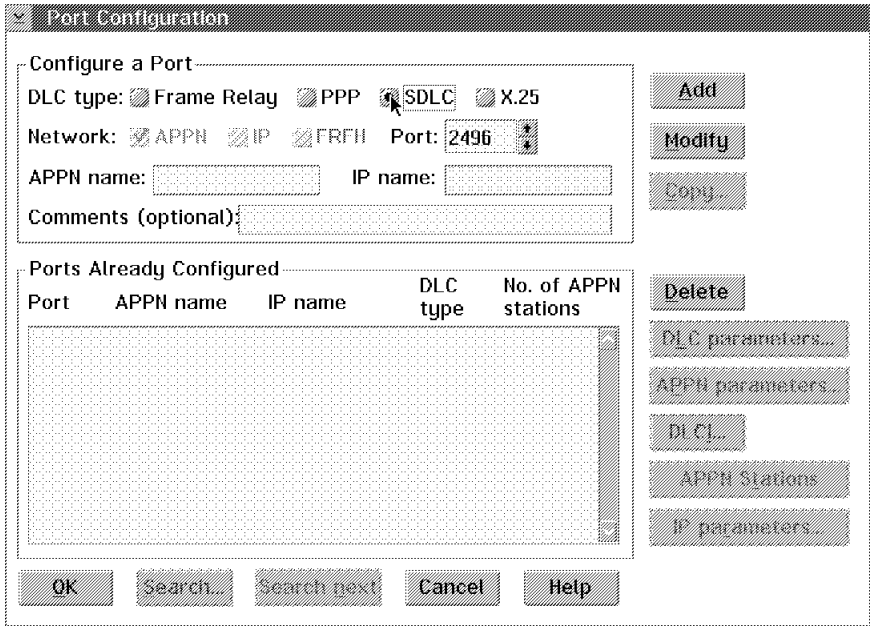


Figure 28. Serial Line Port Configuration Panel

Step 1. In the Port Configuration panel (see Figure 28), select the *DLC type* as **SDLC** and enter the other parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

Step 2. When completed, click **Add**.

Note: After clicking **Add**, the port you have just configured is added to the Ports Already Configured list. Depending on the type of port configured, other push buttons are now available.

Step 3. If you want to configure APPN parameters for a port, continue with the next step.

Otherwise, go to Step 10.

Configuring Port APPN Parameters

Step 4. Select a port and click **APPN parameters → Port Configuration - APPN parameters...** panel (see Figure 23 on page 70).

Step 5. Keep the default values or modify these values according to your needs.

Step 6. If you want to configure the user defined parameters, continue with the next step.

Otherwise, to Step 8 on page 70.

Step 7. Click **User defined parameters**.

Step 8. Click **OK**.

Step 9. When completed, click **OK** to return to the previous panel.

Step 10. If you want to configure the DLC parameters for the port, continue with the next step.

Otherwise go to Step 15 on page 79.

Configuring Port DLC Parameters

Step 11. Click **DLC parameters** → **SDLC Port - DLC Parameters 1/3** panel.

Step 12. Keep the default values or modify these values according to your needs (see Figure 29).

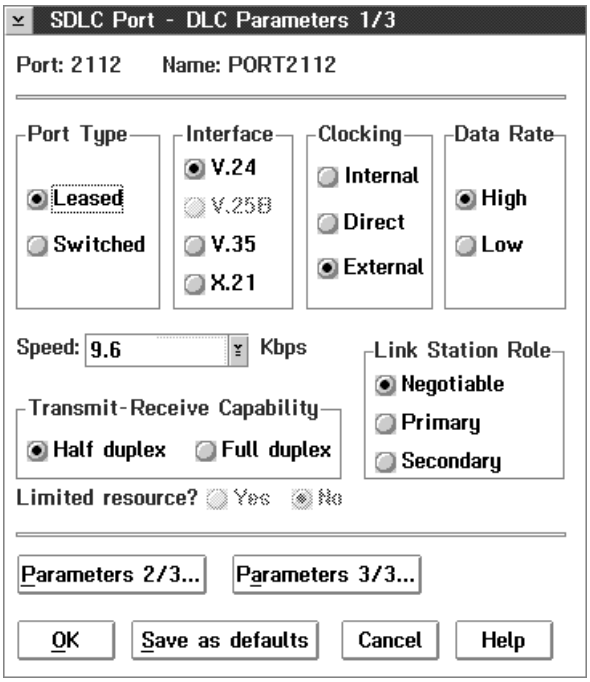


Figure 29. The First DLC Port Parameters Panel for SDLC

Note: There are three panels containing the DLC port parameters, you can display the second and third panels in any order.

Step 13. When completed, click **OK** to return to the previous panel.

Note: If the DLC Parameters 2/3 or DLC Parameters 3/3 panel is displayed, you must first return to the DLC Parameters 1/3 panel, then click **OK** in that panel to exit.

Step 14. Repeat Step 1 on page 77 through Step 13 for any other ports that need to be configured.

Step 15. At this point, you can either:

- Save and exit port configuration by clicking **OK**.
- Configure stations by going to “Configuring SDLC Stations” on page 80.

Configuring SDLC Stations

Step 1. From the Port Configuration panel, select a port and click **APPN Stations → SDLC Station Configuration** panel (see Figure 30).

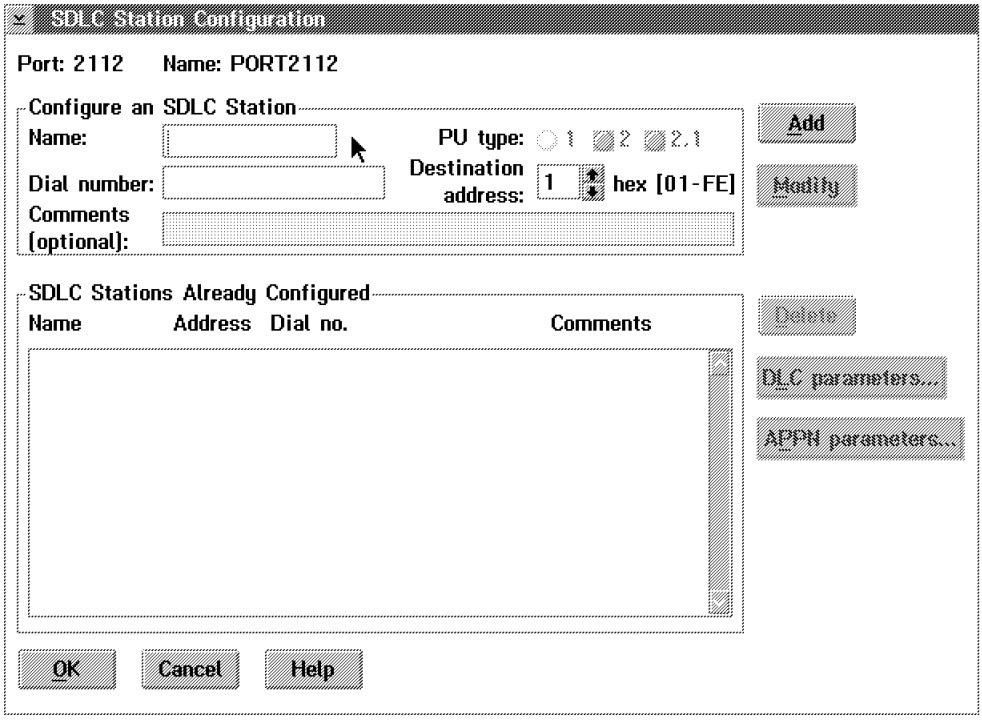


Figure 30. SDLC Station Configuration Panel

Step 2. Enter the parameters as required and click **Add**.

Note: After clicking **Add**, the station you have just configured, is added to the SDLC Stations Already Configured list. Depending on the type of station configured, other push buttons are now available.

Step 3. If you need to configure APPN parameters for the station, continue with the next step.

Otherwise, go to Step 13 on page 81.

Configuring Station APPN Parameters

Step 4. Select a station and click **APPN parameters** to display the SDLC Station Configuration – APPN Parameters panel (see Figure 27 on page 74).

Step 5. Either keep the default values or change these values according to your needs. To configure remote LUs on adjacent nodes, continue with the next step.

Otherwise, go to Step 8.

Step 6. Click **LUs...** → **Adjacent Node - Remote LUs** panel.

Step 7. When completed, click **OK**.

Step 8. To configure the transmission group for the MLTG, continue with the next step.

Otherwise, go to Step 12.

Step 9. Click **TG characteristics** → **Station Configuration - TG characteristics** panel.

Step 10. Either keep the default values or change these values according to your needs.

Step 11. When completed, click **OK** to save and return to the previous panel.

Step 12. When the APPN configuration is completed, click **OK** to save and return to the SDLC Station Configuration panel.

Step 13. To configure the DLC parameters for a station, select a station and click **DLC parameters** → **SDLC Station - DLC Parameters** panel.

Otherwise, go to Step 17 on page 82.

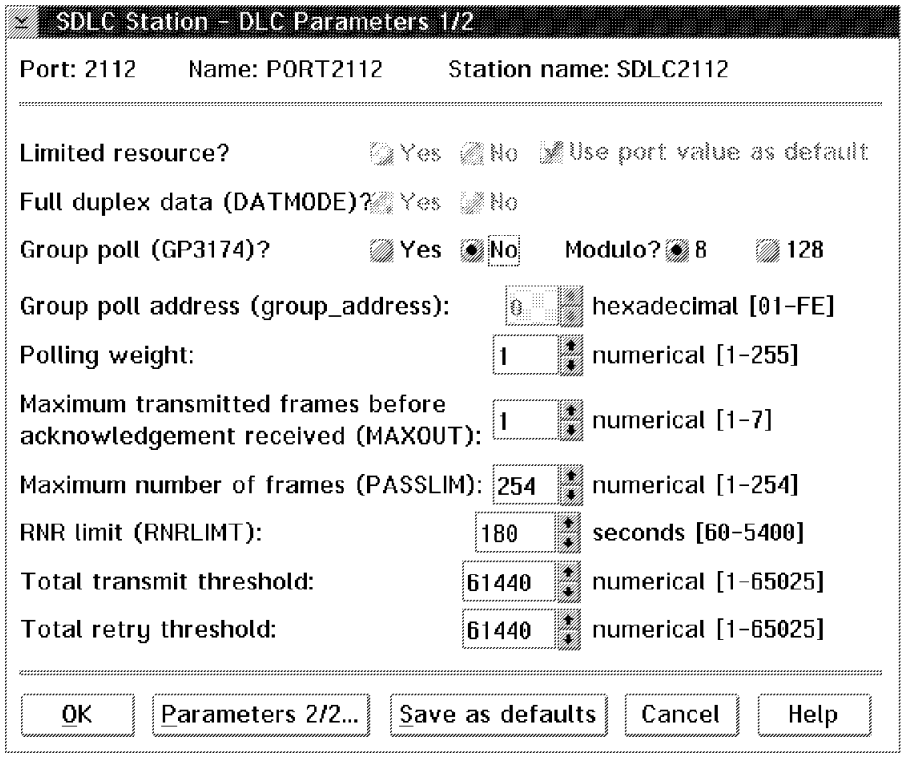


Figure 31. First SDLC Station Configuration - DLC Parameters Panel

Step 14. Keep the default values, or change these values according to your needs.

Step 15. When completed, click **OK** to save, and return to the SDLC Station Configuration panel.

Note: If the DLC Parameters 2/2 panel is displayed, you must first return to the DLC Parameters 1/2 panel by clicking **OK** or **Cancel**.

Step 16. Repeat Step 1 on page 80 through Step 15 any other stations that need to be configured.

Step 17. Click **OK** to return to the Port Configuration panel.

Step 18. To configure stations on another port, select the port and go to “Configuring SDLC Stations” on page 80.

Step 19. If no other stations need to be defined, click **OK** on each panel until the CCM main panel is displayed.

Chapter 9. Configuring Serial Line Frame-Relay Resources

This chapter explains the configuration of the serial line couplers LIC11 and LIC12 for frame-relay lines. The frame-relay configuration procedure for defining the DLCIs is different depending on your choice of bandwidth management (a DLC port parameter) used:

- COMRATE (communications rate)
- CIR (committed information rate).

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring a Frame Relay Port.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Configuring a Frame Relay Port.”

If You Need Help...

Use the CCM online help or the *3745/3746 Planning Series: Serial Line Adapters*, GA27-4235 for more information about the frame-relay configuration parameters.

Configuring a Frame Relay Port

Note: A LIC12 has only one port, a LIC11 can have up to 30 ports.

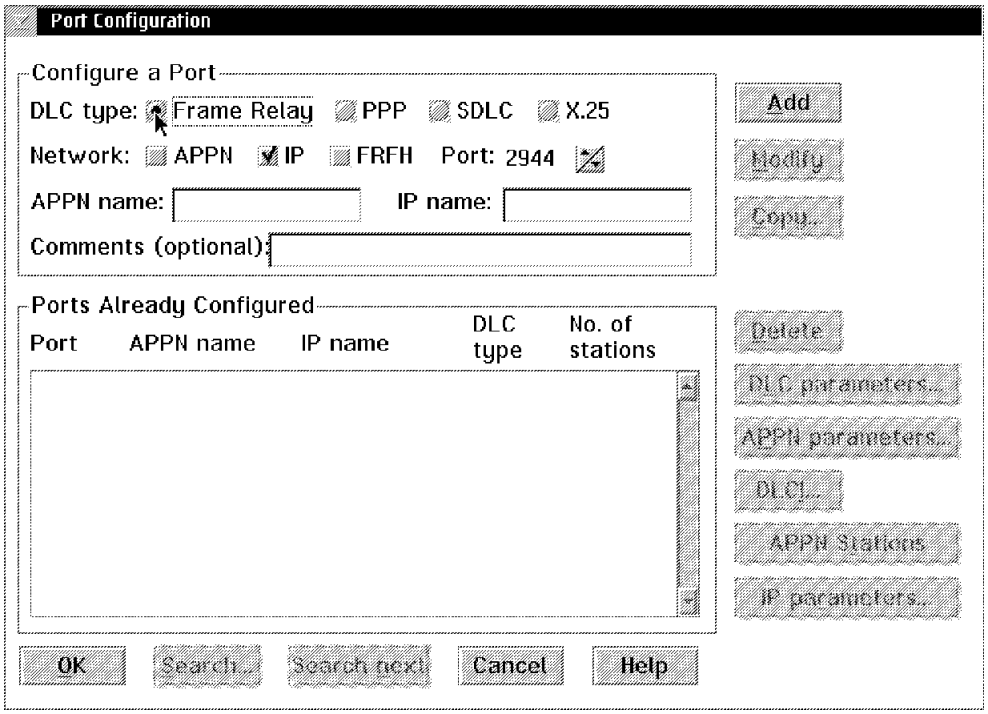


Figure 32. Serial Line Port Configuration Panel

Step 1. In the **Port Configuration** panel (see Figure 32), select the *DLC type* as **Frame Relay** and enter the other parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, see "An Easier Way to Configure" on page 15.

Note: After clicking **Add**, the port you have just configured is added to the Ports Already Configured list. Depending on the type of port configured, other pushbuttons are now available.

For information about creating one or more ports identical to one in the Ports Already Configured list, see "Copy" on page 23.

Step 2. If you want to configure APPN parameters for a port, continue with the next step.

Otherwise, go to Step 7.

Configuring Port APPN Parameters

Step 3. Click **APPN parameters → Frame Relay Port Configuration - APPN Parameters** panel (see Figure 23 on page 70).

Step 4. Keep the default values or modify these values according to your needs.

Step 5. Click **User defined parameters** if you want to define these parameters at the port level. Otherwise, continue with the next step.

Step 6. When completed, click **OK** to return to the previous panel.

Step 7. If you want to configure the DLC parameters for a port, continue with the next step.

Otherwise go to Step 15 on page 86.

Configuring the Port DLC Parameters

Step 8. Click **DLC parameters** → **Frame-Relay Port - DLC Parameters** panel (see Figure 33 on page 85).

Step 9. Keep the default values or modify these values according to your needs.

In this panel, you choose the type of bandwidth management (COMRATE, the default, or CIR) to be used for all the traffic on this port. This choice decides which panel you use for configuring in “Defining Frame-Relay DLCIs and Stations” on page 88.

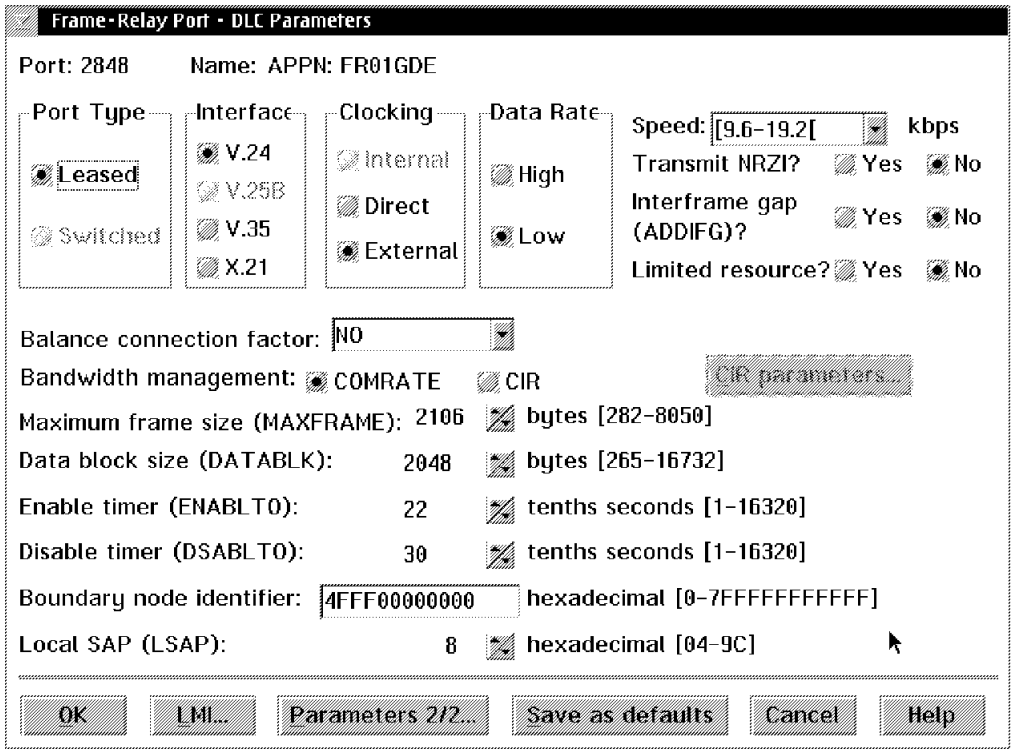


Figure 33. Frame-Relay Port - DLC Parameters Panel

Step 10. Click **Parameters 2/2...** to configure additional DLC parameters (see Figure 34).

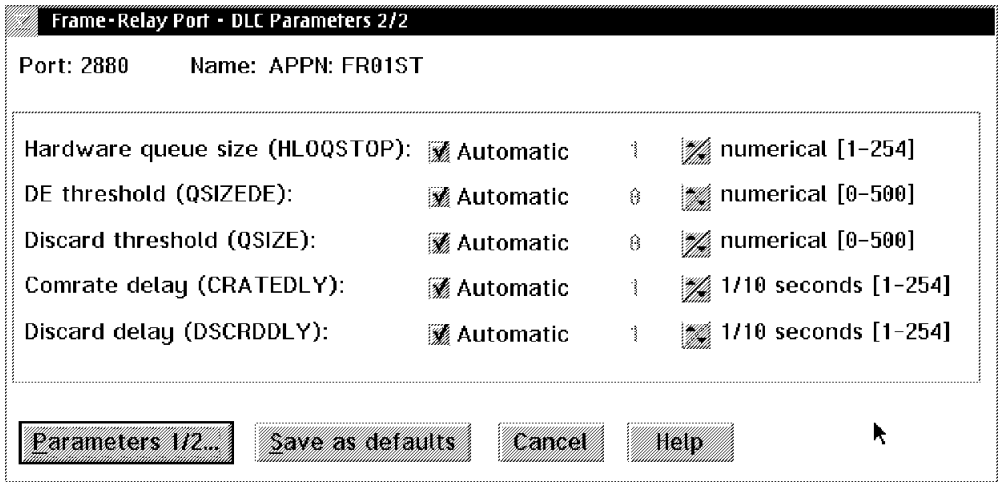


Figure 34. Frame-Relay Port - DLC Parameters 2/2 Panel

When completed, click **Parameters 1/2** to return to the previous panel.

Step 11. Click **LMI** to configure the frame-relay local management interface.

Step 12. When completed, click **OK**.

Step 13. If **CIR** is selected as the **Bandwidth management**, click **CIR Parameters** to configure CIR and CLLM parameters.

Step 14. When completed, click **OK** until you reach the **Port Configuration** panel.

Step 15. If you want to configure IP over Frame Relay for the port, continue with the next step.

Otherwise go to Step 23 on page 87.

Step 16. Click **IP parameters** → **IP over Frame-Relay Parameters** panel (see Figure 35).

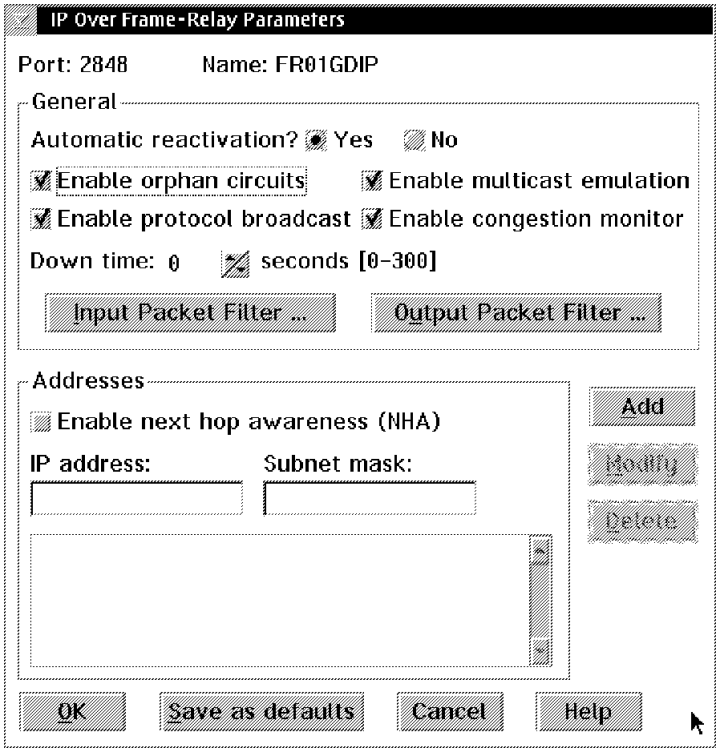


Figure 35. IP over Frame-Relay Parameters Panel

Step 17. Keep the default **General** values or modify them according to your needs.

Enter the IP addresses that you want to use on this port.

If you want to configure IP access control filtering for this port, continue with the next step.

Otherwise, go to Step 22 on page 87.

Step 18. To define the input packet filter, click **Input Packet Filter...**. (see Figure 18 on page 62).

Step 19. When completed, click **OK**.

Step 20. To define the output packet filter, click **Output Packet Filter...**. (see Figure 19 on page 63).

Step 21. When completed, click **OK**.

Step 22. When the IP configuration is completed, click **OK** to return to the previous panel.

Step 23. When completed, you can either:

- Save and exit port configuration by clicking **OK**.
- Configure stations by going to “Defining Frame-Relay DLCIs and Stations” on page 88.

Defining Frame-Relay DLCIs and Stations

In order to configure the stations, you must first define the DLCIs for the frame-relay port. Then you define the stations for each DLCI.

Step 1. Select a frame-relay port and click **DLCI**.

Step 2. If you configured the port for COMRATE bandwidth management, to configure stations, continue with the next step (see Figure 33 on page 85).

Otherwise, go to Step 14 on page 89 to configure stations using CIR bandwidth management.

Step 3. In the Frame-Relay DLCI/COMRATE Parameters panel (see Figure 36), for each DLCI you need keep the default values or modify these values according to your needs and click **Add**.

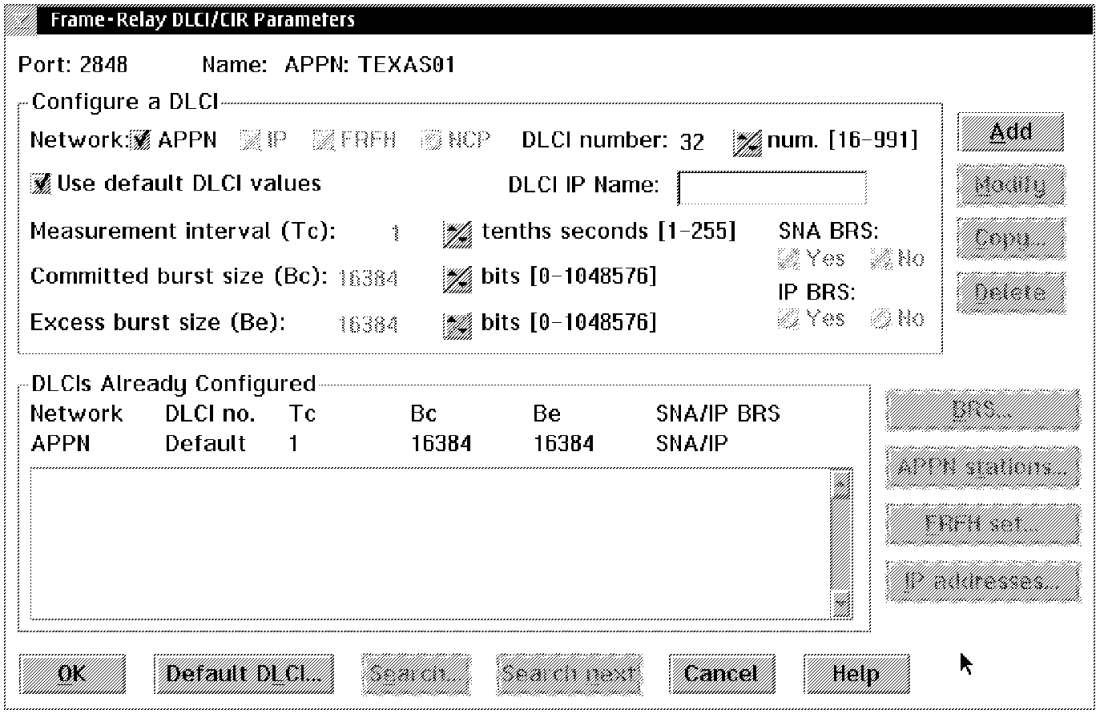


Figure 36. Frame-Relay DLCI/COMRATE Parameter Panel

Step 4. If you want to configure remote IP addresses for a DLCI, click **IP addresses...** → **DLCI Remote IP Addresses** panel and continue with the next step.

Otherwise, go to Step 7.

Step 5. Enter the values according to your needs.

Step 6. When completed, click **OK** to return to the previous panel.

Step 7. If you want to change parameters for the FRFH, click **FRFH set** → **Frame-Relay Handler Set Configuration** panel and go to next panel.

Otherwise, go to step 10 on page 89.

Step 8. Keep the default values or modify these values according to your needs.

Step 9. When completed, click **OK** to return to the previous panel.

Step 10. If you want to change the default DLCI communication rates (COMRATE) for the APPN and IP stations, click **Default DLCI** → **Frame-Relay COMRATE - Default DLCI** panel

Step 11. Keep the default values or modify these values according to your needs.

Step 12. When completed, click **OK** to return to the previous panel.

Step 13. Go to Step 27 on page 90

Step 14. In the Frame-Relay DLCI/CIR Parameters panel (see Figure 37), for each DLCI you need keep the default values or modify these values according to your needs and click **Add**.

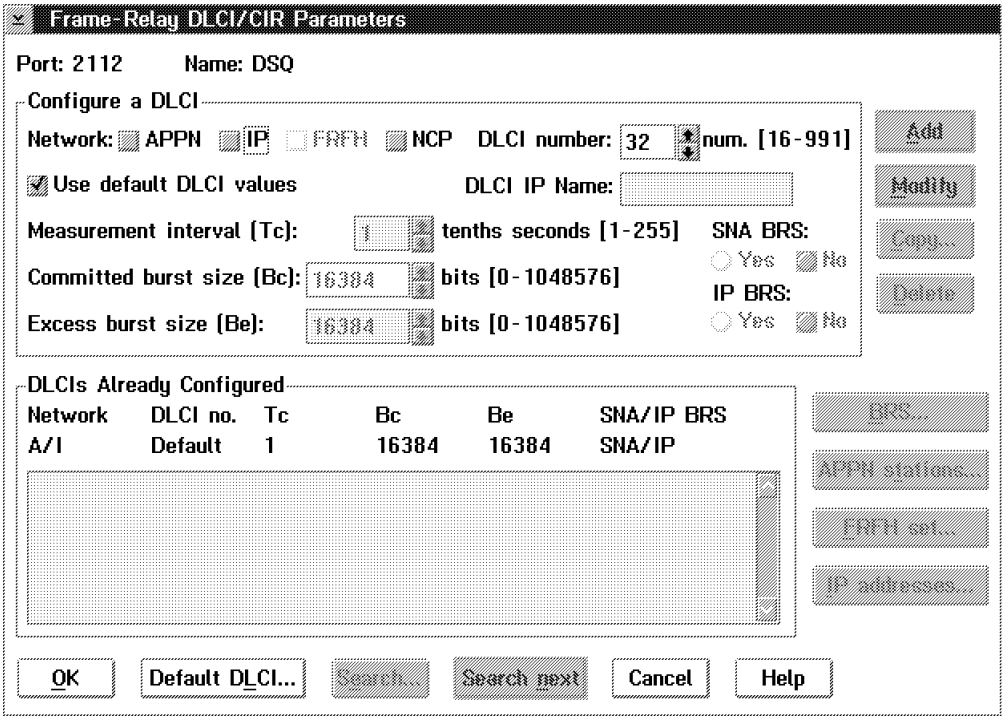


Figure 37. Frame-Relay DLCI/CIR Parameters Panel

Step 15. If you want to configure remote IP addresses for a DLCI, click **IP addresses...** → **DLCI Remote IP Addresses** panel and continue with the next step.

Otherwise, go to Step 18.

Step 16. Enter the values according to your needs.

Step 17. When completed, click **OK** to return to the previous panel.

Step 18. If you want to configure BRS parameters for a selected DLCI, click **BRS** → **Frame-Relay CIR - Bandwidth Reservation System (BRS)** panel, and continue with the next step.

Otherwise, go to Step 21 on page 90.

Step 19. Keep the default values or modify these values according to your needs.

Step 20. When completed, click **OK** to return to the previous panel.

Step 21. If you want to change parameters for the FRFH, click **FRFH set** → **Frame-Relay Handler Set Configuration** panel and continue with the next step.

Otherwise, go to Step 24.

Step 22. Keep the default values or modify these values according to your needs.

For more information about configuring a FRFH, see “Configuring Frame-Relay Frame Handler Sets” on page 94.

Step 23. When completed, click **OK** to return to the previous panel.

Step 24. If you want to change the default DLCI committed information rate (CIR) for the APPN and IP stations, click **Default DLCI** → **Frame-Relay CIR - Default DLCI** panel and go to next panel.

Otherwise, go to Step 27.

Step 25. Keep the default values or modify these values according to your needs.

Step 26. When completed, click **OK** to return to the previous panel.

Step 27. Click **Add**.

Note: After clicking **Add**, the DLCI information you have just entered, is added to the DLCIs Already Configured list. Depending on the type of DLCI configured, other push buttons are now available.

Step 28. Repeat step 2 on page 88 through 27 for any other DLCIs to be defined on the same frame-relay port.

Step 29. If you want to configure APPN stations for a DLCI, go to “Configuring APPN over Frame-Relay Stations” on page 91.

Otherwise, go to Step 23 on page 93.

Configuring APPN over Frame-Relay Stations

Step 1. Select a DLCI and click **APPN stations** → **APPN over Frame Relay – Station Configuration** Panel (see Figure 38).

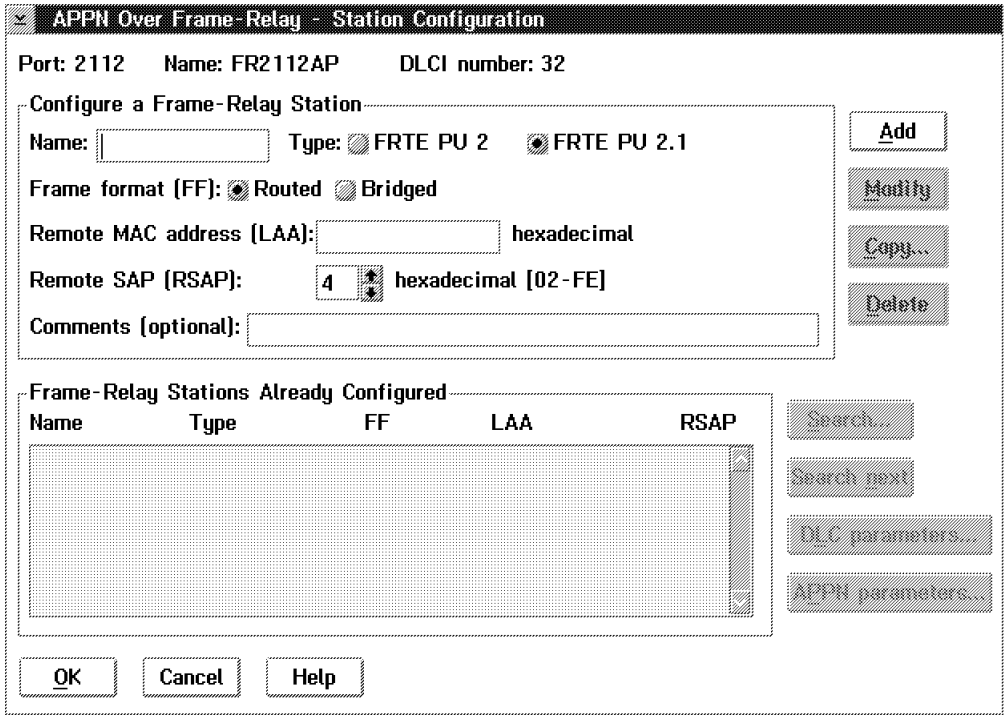


Figure 38. APPN over Frame Relay – Station Configuration Panel

Step 2. Enter the parameters as required.

Step 3. Click **Add**.

Note: After clicking **Add**, the station you have just configured, is added to the Frame Relay Stations Already Configured list. Depending on the type of station configured, other push buttons are now available.

For information about creating one or more stations identical to one in the Frame-Relay Stations Already Configured list, see “Copy” on page 23.

Step 4. If you need to configure APPN parameters for the station, continue with the next step.

Otherwise, go to Step 15 on page 92.

Configuring Station APPN Parameters

Step 5. Select a station and click **APPN parameters** → **Frame-Relay Station Configuration – APPN Parameters** panel (see Figure 27 on page 74).

Step 6. Either keep the default values or change these values according to your needs.

If you want to configure remote LUs on adjacent nodes (if **AOD** has been selected), continue with the next step.

Otherwise, go to Step 9 on page 92.

Step 7. Click **LUs...**.

Step 8. When completed, click **OK**.

Step 9. To configure the transmission group for the MLTG (including the user defined parameters used to change route priority), continue with the next step.

Otherwise, go to Step 13.

Step 10. Click **TG characteristics** → **Station Configuration - TG characteristics** panel.

Step 11. Either keep the default values or change these values according to your needs.

Step 12. When completed, click **OK** to save and return to the previous panel.

Step 13. When completed, click **OK** to save and return to the APPN Over Frame-Relay – Station Configuration panel.

For information about creating one or more stations identical to one in the Stations Already Configured list, see “Copy” on page 23.

Step 14. If you need to configure DLC parameters for the station, continue with the next step.

Otherwise, go to Step 15

Configuring Station DLC Parameters

Step 15. To configure the DLC parameters for the station, click **DLC parameters** → **Frame-Relay/FRTE Station - DLC Parameters** panel.

In this panel, you can define, among others, the following parameters:

- Panel increment (DYNWIND - nw)
- Panel decrement (DYNWIND dwc)
- Discard eligibility (the conditions under which data are discarded).

Step 16. Keep the default values or change these values according to your needs.

Step 17. To configure more DLC parameters, click **DLC Parameters 2/2** and continue with the next step.

Otherwise, go to Step 19.

Step 18. In the **DLC Parameters 2/2** panel, you can define, among others, the following parameters:

- Reply timer
- Acknowledgement timer
- Inactivity timer
- Number of retries.

Step 19. When completed, click **OK** to save, and return to the APPN Over Frame-Relay – Station Configuration panel.

Note: If the DLC Parameters 2/2 panel is displayed, you must first return to the DLC Parameters 2/2 panel, then click **OK** in that panel to exit.

Step 20. Repeat steps 2 on page 91 through 19 for each station that needs to be configured on the DLCI.

Step 21. Click **OK** to return to the Frame-Relay DLCI/COMRATE Parameters or Frame-Relay DLCI/CIR Parameters panel.

Step 22. To configure other stations on another DLCI, click **OK**, and repeat Steps 1 on page 91 through 21.

Step 23. Click **OK** on each panel until the CCM main panel is displayed.

Configuring Frame-Relay Frame Handler Sets

You define the set name, NPA (NetView Performance Analyzer) eligibility, and the primary-substitute partner DLCI pairing. You can also modify or delete sets in the list of FRFH sets already configured.

To configure these parameters: Main panel **Configuration** menu → **Frame-relay frame handler set** → **Frame-Relay Frame Handler Set Configuration** panel (see Figure 39)

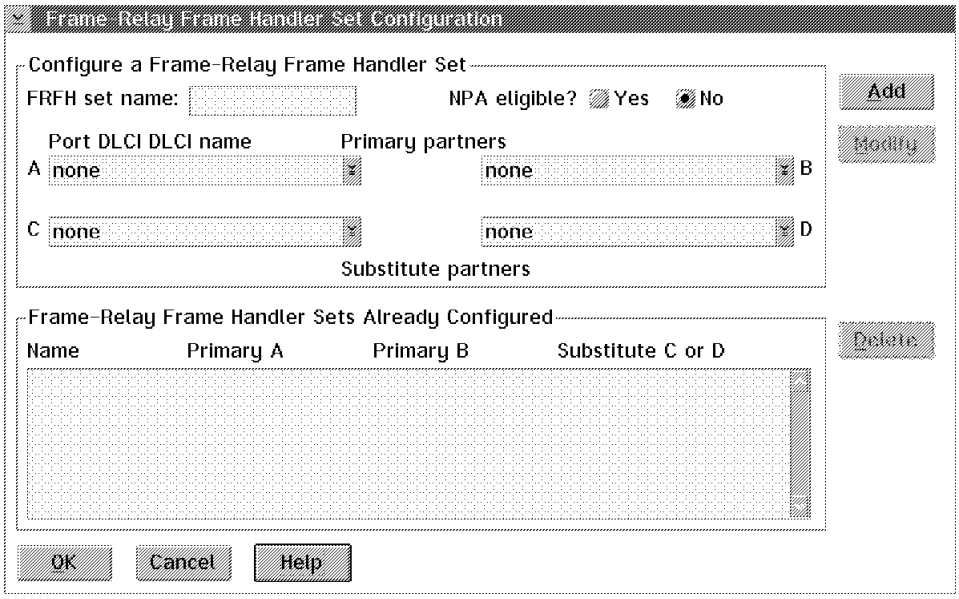


Figure 39. Frame-Relay Frame Handler Set Configuration Panel

Only certain DLCI pairing possible in a given set. In general, the primary partner DLCI can pair with each other or with one of the substitute DLCIs. The substitute partner DLCI can never pair with each other. There are only four possible set types. The combinations of pairing are:

1. A with B
2. A with B
   A with D
3. A with B
   A with D
   B with C
4. A with B
   B with C

Note: B is never paired with D.

Chapter 10. Configuring Serial Line PPP Resources

This chapter concerns the configuration of serial line couplers LIC11s and LIC12s for PPP leased lines.

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring a PPP Port.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Configuring a PPP Port.”

If You Need Help...

Use the CCM online help or the *3745/3746 Planning Series: Serial Line Adapters*, GA27-4235 for more information about the PPP configuration parameters.

Configuring a PPP Port

Note: A LIC12 has only one port, a LIC11 can have up to 30 ports.

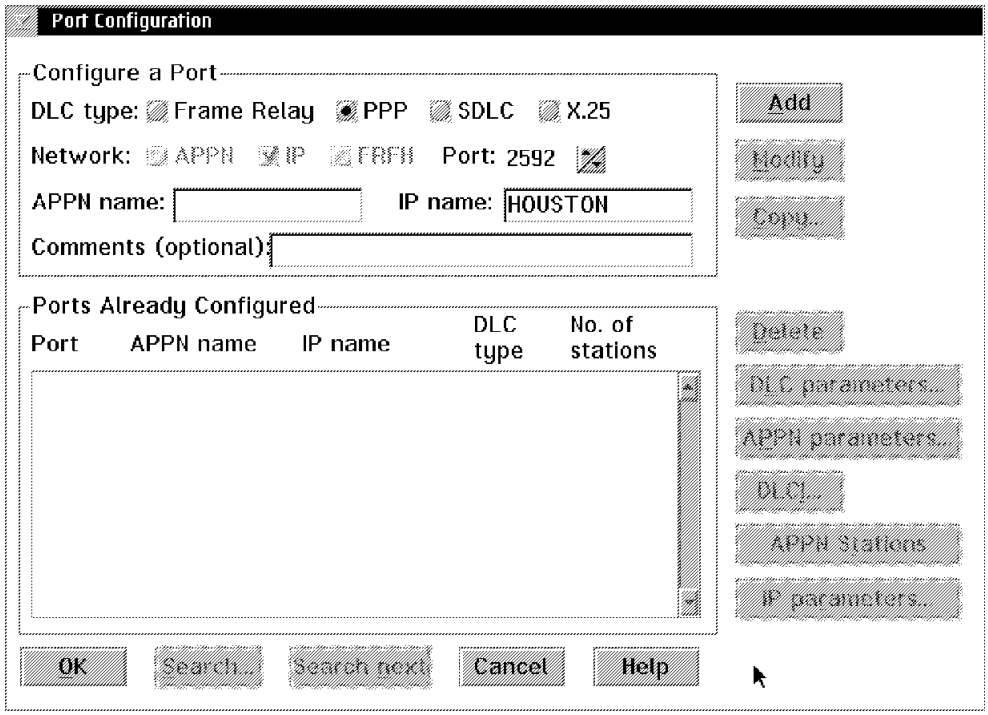


Figure 40. Serial Line Port Configuration Panel

Step 1. In the Port Configuration panel (see Figure 40), select the *DLC type* as **PPP** and enter the other parameters values as required.

As you enter the values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

For information about creating one or more ports identical to one in the Ports Already Configured list, see “Copy” on page 23.

Step 2. Click **Add**.

Step 3. If you want to configure remote IP addresses for a DLCI, click **IP addresses... → DLCI Remote IP Addresses** panel and continue with the next step.

Otherwise, go to Step 6.

Step 4. Enter the values according to your needs.

Step 5. When completed, click **OK** to return to the previous panel.

Step 6. If you want to configure the DLC parameters for a port, continue with the next step.

Otherwise go to Step 14 on page 97.

Configuring the Port DLC Parameters

Step 7. Select a port and click **DLC parameters**.

Step 8. Keep the default values or modify these values according to your needs (see Figure 41).

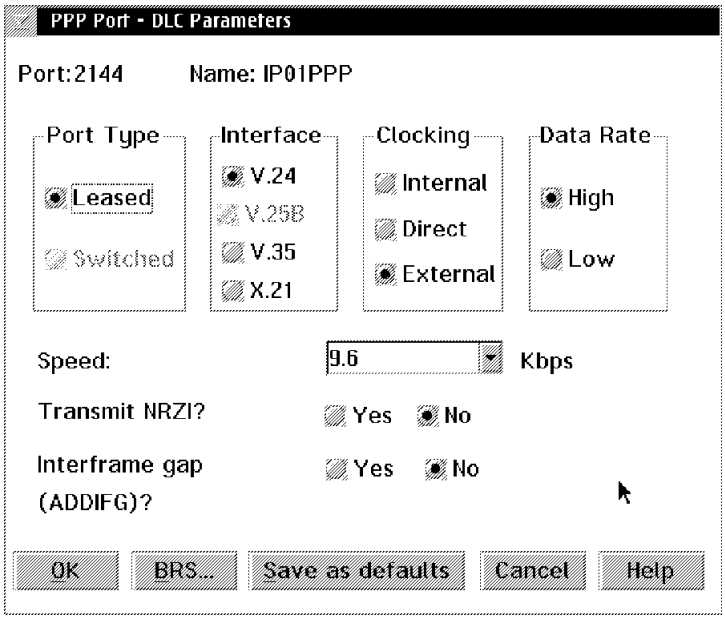


Figure 41. PPP Port DLC Parameters Panel

Step 9. When completed, click **OK** to return to the Port Configuration panel and go to step 14 on page 97.

Otherwise, go to 10 to configure BRS parameters.

Step 10. To configure the bandwidth reservation class of the PPP port, click **BRS... → Bandwidth Reservation** panel.

Step 11. When completed, click **OK** to return to the PPP Port - DLC Parameters panel.

Step 12. Click **OK** to return to the Port Configuration panel.

Step 13. Repeat Step 7 on page 96 through Step 11 on page 96 for any other ports that need DLC parameters configured.

Step 14. Save and exit port configuration by clicking **OK**.

Chapter 11. Configuring Serial Line X.25 Resources

This chapter describes the configuration of one X.25 port for a LIC11 or LIC12 serial line coupler.

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57.
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Configuring a X.25 Port.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Configuring a X.25 Port.”

If You Need Help...

Use the CCM online help or the *3745/3746 Planning Series: Serial Line Adapters*, GA27-4235 for more information about the X.25 configuration parameters.

Configuring a X.25 Port

Note: A LIC12 has only one port, a LIC11 can have up to 30 ports.

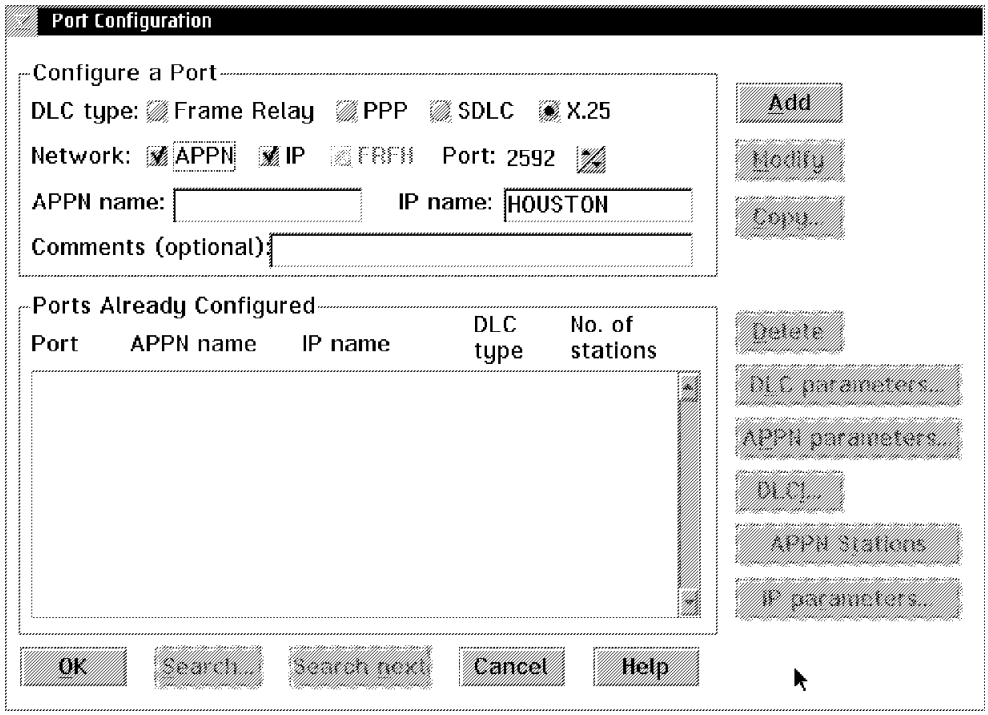


Figure 42. Serial Line Port Configuration Panel

Step 1. In the Port Configuration panel (see Figure 42), select **X.25** as the *DLC type* and enter the other parameters values as required. As you enter the

values, CCM dynamically checks them for configuration-wide consistency, see “An Easier Way to Configure” on page 15.

Step 2. Click **Add**.

Note: After clicking **Add**, the port you have just configured is added to the Ports Already Configured list. Depending on the type of port configured, other push buttons are now available.

For information about creating one or more ports identical to one in the Ports Already Configured list, see “Copy” on page 23.

Step 3. If you want to configure APPN parameters for the port, continue with the next step.

Otherwise, go to Step 8

Configuring Port APPN Parameters

Step 4. Select a port and click **APPN parameters** to go to the Port Configuration - APPN Parameters panel (see Figure 23 on page 70).

Step 5. Keep the default values or modify these values according to your needs.

Step 6. Click **User defined parameters** if you want to define these parameters at the port level.

Step 7. When completed, click **OK** to return to the previous panel.

Step 8. If you want to configure DLC parameters for the port, continue with the next step.

Note: To configure stations on the X.25 port, you must define at least two DLC parameters: the **X.25 local DTE address** and one or more on logical channel numbers (see Figure 44 on page 101).

Otherwise go to Step 18 on page 101.

Configuring the Port DLC Parameters

Step 9. DLC parameters → X.25 Port - DLC Parameters panel (see Figure 43)

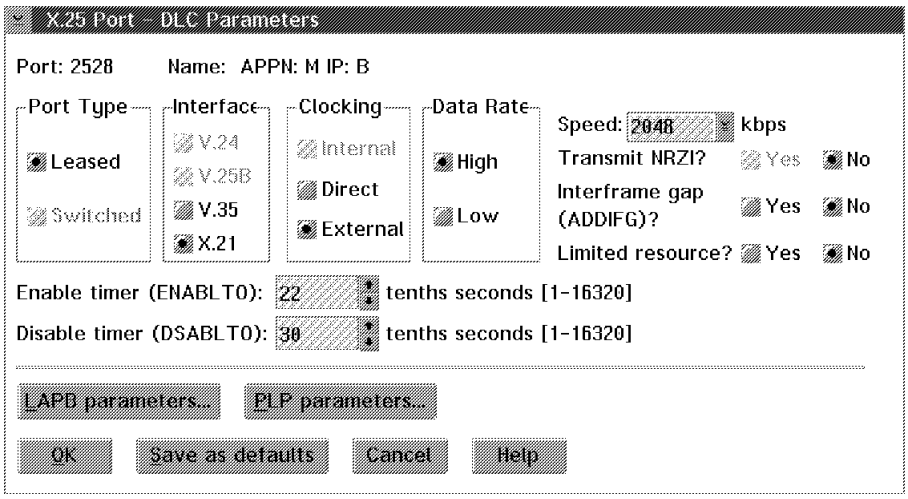


Figure 43. X.25 Port - DLC Parameters Panel

Step 10. Keep the default values or modify the other values according to your needs.

Step 11. If you want to configure the LAPB parameters for the port, continue with the next step.

Otherwise go to Step 15.

Step 12. Click **LAPB parameters** → **X.25 - LAPB Parameters** panel

Step 13. Keep the default values or modify the values according to your needs.

Step 14. When completed, click **OK** to return to the previous panel.

Step 15. PLP parameters → **PLP parameters 1/2** panel (see Figure 44)

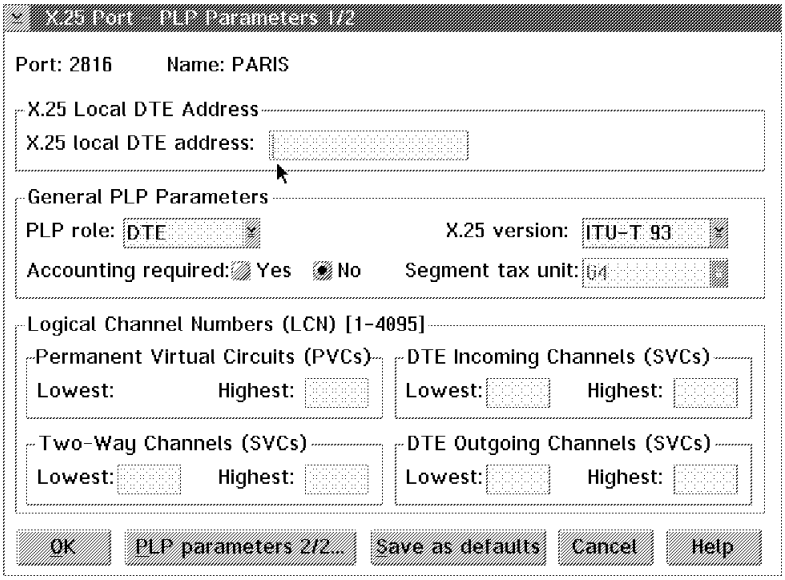


Figure 44. First X.25 PLP Parameters Panel

Step 16. You must enter values for the **X.25 Local DTE Address** and for at least one of the logical channel types: the **PVCs** values < **Incoming SVCs** values < **Two-Way SVCs** values < **Outgoing SVCs** values.

Notes:

a. The SVC **Highest** values must be always ≥ the **Lowest** values.

Keep the other default values or modify them according to your needs.

b. There is a second PLP parameter panel available.

Step 17. When completed, click **OK** to return to the previous panel.

Note: If the PLP Parameters 2/2 panel is displayed, you must first return to the PLP Parameters 1/2 panel, then click **OK** in that panel to exit.

Step 18. If you want to configure IP over X.25 for the port, continue with the next step.

Otherwise go to step 27 on page 102.

Step 19. Click **IP parameters** → **IP over X.25 - Port Parameters** panel (see Figure 45 on page 102)

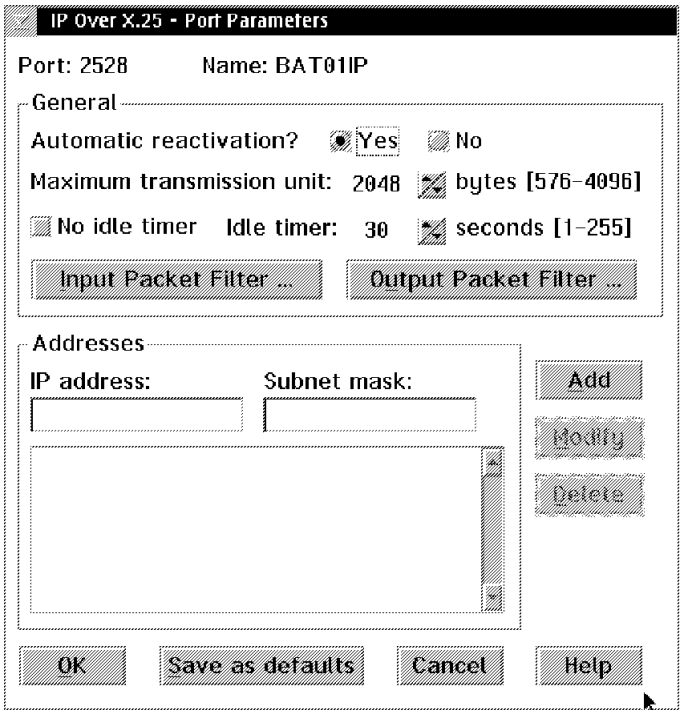


Figure 45. IP over X.25 - Port Parameters Panel

Step 20. Keep the default **General** values or modify them according to your needs.

Enter the IP addresses that you want to use on this port.

If you want to configure IP access control filtering for this port, continue with the next step.

Step 21. To define the input packet filter, click **Input Packet Filter...**. (see Figure 18 on page 62).

Step 22. When completed, click **OK**.

Step 23. To define the output packet filter, click **Output Packet Filter...**. (see Figure 19 on page 63).

Step 24. When completed, click **OK**.

Step 25. When the IP configuration is completed, click **OK** to return to the previous panel.

Otherwise, go to step 26.

Step 26. When the IP configuration is completed, click **OK** to return to the previous panel.

Step 27. At this point, you can either:

- Save and exit the port configuration by clicking **OK**.
- Configure stations by going to “Configuring X.25 Stations” on page 103.

Configuring X.25 Stations

Before configuring stations on the X.25 port, you must define at least two DLC parameters: the **X.25 local DTE address** and one or more logical channel numbers (see Figure 44 on page 101).

Step 1. Click **APPN Stations → X.25 Station Configuration** panel (see Figure 46).

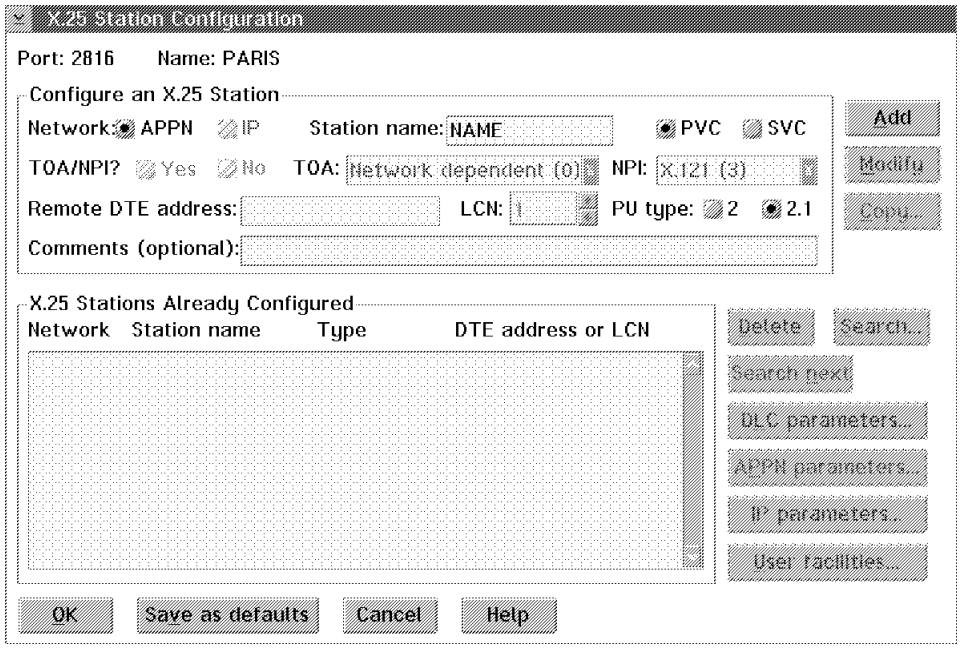


Figure 46. X.25 Station Configuration Panel

Step 2. Enter the parameters as required and click **Add**.

Notes:

a. You must choose the type of virtual circuit (permanent or switched) for the station. (It must have a logical circuit number [**LCN**] available, the number of PVCs and SVCs are defined in Figure 44 on page 101.)

b. After clicking **Add**, the station you have just configured, is added to the X.25 Stations Already Configured list. Depending on the type of station configured, other pushbuttons are now available.

For information about creating one or more stations identical to one in the Stations Already Configured list, see “Copy” on page 23.

Step 3. If you need to configure the station DLC parameters, continue with the next step.

Otherwise, go to Step 7 on page 104.

Step 4. Click **DLC parameters → X.25 Station - DLC Parameters** panel (see Figure 47). Otherwise, go to Step 21 on page 105.

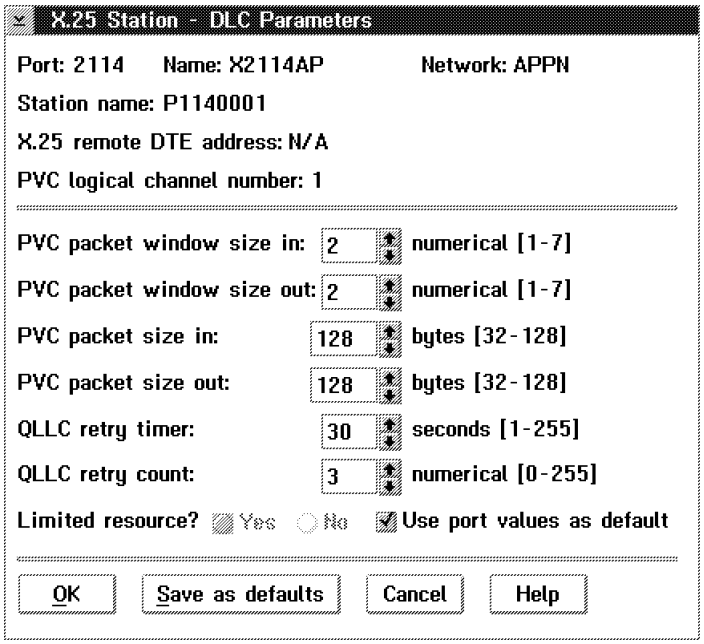


Figure 47. X.25 Station Configuration - DLC Parameters Panel

Step 5. Keep the default values or change them according to your needs.

Step 6. When completed, click **OK** to save, and return to the X.25 Station Configuration panel.

Step 7. If you need to configure the APPN parameters, continue with the next step.

Otherwise, go to Step 17 on page 105.

Step 8. **APPN parameters → X.25 Station Configuration – APPN Parameters** panel (see Figure 27 on page 74)

Step 9. Either keep the default values or change these values according to your needs. To configure remote LUs on adjacent nodes, continue with the next step.

Otherwise, go to step 12.

Step 10. Click **LUs...**.

Step 11. When completed, click **OK**.

Step 12. To configure the transmission group for the MLTG (including the user defined parameters used to change route priority), continue with the next step.

Otherwise, go to Step 16 on page 105.

Step 13. Click **TG characteristics → Station Configuration - TG characteristics** panel.

Step 14. Either keep the default values or change these values according to your needs.

Step 15. When completed, click **OK** to save and return to the previous panel.

Step 16. When the APPN configuration is completed, click **OK** to save and return to the X.25 Station Configuration panel.

Step 17. If you want to configure IP over X.25 for the station, continue with the next step.

Otherwise go to Step 27 on page 102.

Configuring IP Over X.25

Step 18. Click **IP parameters** → **IP over X.25 - Station Parameters** panel (see Figure 48)

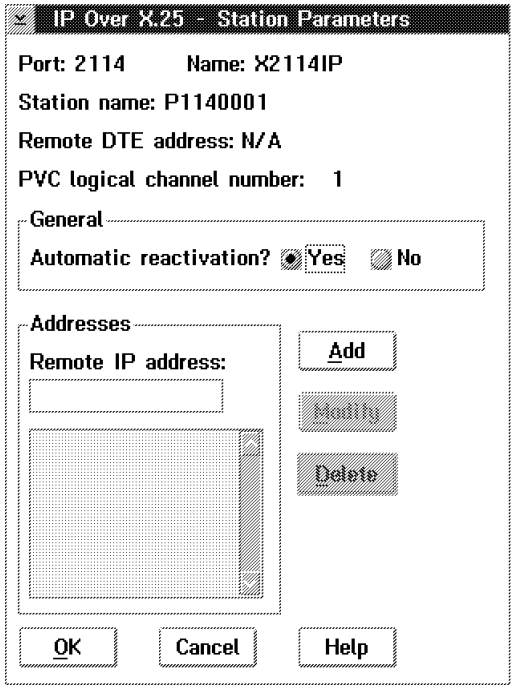


Figure 48. IP over X.25 - Station Parameters Panel. (This panel is for a PVC, the SVC panel is slightly different.)

Step 19. Keep the default **General** values or modify them according to your needs.

Enter the IP addresses that you want to use on this station.

Step 20. When completed, click **OK** to return to the previous panel.

Step 21. Click **OK** to return to the Station Configuration panel.

Step 22. To configure IP over X.25 for another station, select the station and return to 18.

Step 23. If other X.25 ports need to be defined for this coupler, return to “Configuring a X.25 Port” on page 99.

Otherwise, click **OK** until the CCM main panel is displayed.

Chapter 12. Configuring the MAE

This chapter describes how to use the MAE configuration program[3] by including some of the navigation features of the program.

Before You Start...

- If this is the first coupler to be configured in a new CCM configuration, see Chapter 5, “Beginning a CCM Configuration” on page 57
- If this is the first time the coupler is to be configured, but it is not the very first one to be configured, double-click the icon of the coupler you want to configure, select its DLC type (see Figure 15 on page 58), and go to “Understanding the Navigation and Configuration Panels.”
- If the coupler type has already been defined, and if you want to just check or modify the coupler configuration, double-click on the icon of the coupler you want to configure, and go to “Understanding the Navigation and Configuration Panels.”

Note: Only ***one*** MAE can be connected to a coupler ***per*** CCM configuration. The MAE can be connected to left-hand slot of any pair of ***unused*** coupler slots. The remaining, unused right-hand coupler slot is not available for configuration.

Understanding the Navigation and Configuration Panels

After CCM starts the MAE configuration program and clears the copyright notice, it opens two panels:

- The full screen Configuration panel labeled “Nothing Selected!”. This is the panel where you actually configure each MAE resource. You use it most of the time while configuring, so it is made as large as possible.
- The smaller Navigation panel (see Figure 49 on page 108). Use this panel to move through the MAE configuration program to find resources that you want to view or configure. When the MAE Configurator starts, this panel is hidden by the Configuration panel. There are two ways to bring the Navigator Panel to the front when you need it:
  - Click and hold down the left mouse key on the Configuration Panel. title bar then slide down the Configuration Panel until you can see the title bar of the Navigator Panel.
  - Press **Ctrl + Esc** to open the OS/2 task list and click **Navigator Panel**.
  - If you are using the stand-alone CCM, you can see both panels at the same time if you increase your screen resolution above VGA-level.

You configure the MAE by selecting items in the Navigation panel and then providing details for each selected item in the Configuration panel. When you have completed entering the configuration details, select a new item in the Navigation Panel.

---

[3] This program is also known as the *IBM Nways Multiprotocol Access Services Configuration Program* or the *IBM 2210-400 Configuration Program*.

Using the MAE through the MOSS-E

MAE configuration panels are often larger than the service processor display panel and the scroll bars are sometimes hidden. It is therefore ***highly recommended*** to change the screen resolution.

In order to enable a high-VGA screen resolution, select from the MOSS-E:

Service Processor Menu → Configuration Management → Service Processor (SP) Customization → Screen Resolution. Then select the **600x800** option from the list.

The Navigation Panel

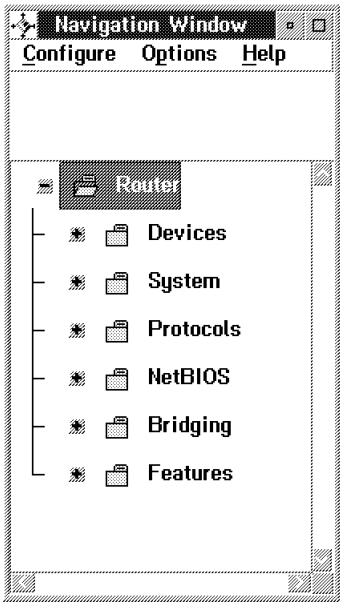


Figure 49. Navigation Panel

The Navigation panel (see Figure 49) contains the following items:

- Menu bar

  The Navigation panel menu bar contains the following menus:

  – **Configure**

    Use the **Configure** menu option to exit the MAE configurator and return to the 3746 resources.

  – **Options**

    You can change the following configuration program options:

    - Colors
    - Message prompting
    - ATM address format.

  – **Help**

    Note: The following topics in the online help and tutorial do not apply to the version of the MAE Configurator Program that is used with the CCM:

    - Using the MAE Configurator from the command line

- AIX support
- **Configuration** menu functions
- **Options** menu change fonts.

- Configuration description area

  The area below the menu bar is the configuration description area. It displays the following information:

  – Scrollable list of features and protocols that you can configure.

    This list is called the navigation list. As you select items in the navigation list, the program displays related configuration panels in the Configuration panel.

  – If there are no configuration errors for a type of resource, a check mark (√) appears next to that item in the navigation list.

  – If there is an error or if you have not supplied required information in the current configuration, a question mark (?) appears next to that item in the navigation list.

Contextual Pop-Up Menu

Another feature of the Navigation Panel is a contextual pop-up menu that you invoke by clicking the right mouse button on any selected folder in the navigation list.

While holding down the right mouse button, drag the mouse to the submenu item that you want to select. You can invoke the history pop-up from any item in the navigation list in the same way you invoke the contextual pop-up menu.

The pop-up menu allows you to:

- Fully expand the navigation list.
- Expand a portion of a navigation folder.
- Contract a portion of the navigation list into a folder.
- Display the history of the configuration items that you have selected. From the history pop-up you can access any of the previously selected configuration items.
- Validate a selection item in error. The Navigation panel marks erroneous items with a yellow question mark.

  The validate function displays messages for any configuration errors. Using the validate function on a folder displays the validation messages for all of the items within that folder.

  After you correct an error and leave the configuration panel that contained the error, the question mark is removed.

Return to the CCM

Use the **Configure** menu option to exit the MAE configurator and return to the 3746 resources. If you have made changes in the MAE configuration, you are asked if you want to save the changes before exiting. If so, click **Yes**.

The Configuration Panel

The title bar of the Configuration panel (see Figure 50) identifies the item that is selected in the navigation list.

As you select items in the Navigation panel, the format of the Configuration panel changes to the appropriate display for the item selected.

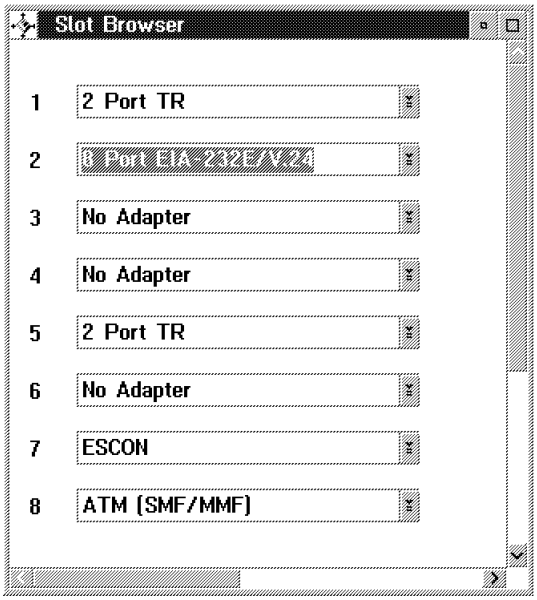


Figure 50. Example Configuration Panel

MAE IP Access Control Packet Filtering

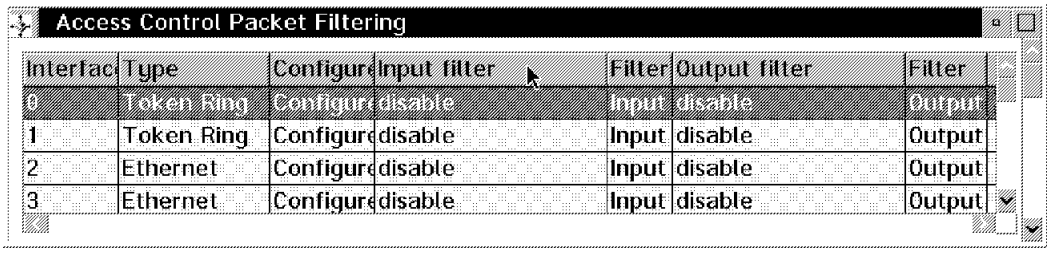


Figure 51. Access Control Packet Filtering Panel

In Figure 51, five of the columns are used in special ways to configure the interface selected in the list:

Configure (3rd column)
Click the column heading to access the fields that let you to choose input, output, or both types of packet filtering.

Input filter (4th column)
Click the word *enable* or *disable* to toggle ON or OFF input filtering for this interface.

Filter (5th column)
Click the column heading to access several pages of fields used to configure the input packet filters for this interface.

Output filter (6th column)
Click the word *enable* or *disable* to toggle ON or OFF output filtering for this interface.

Filter (7th column)
Click the column heading to access several pages of fields used to configure the output packet filters for this interface.

APPN Interfaces

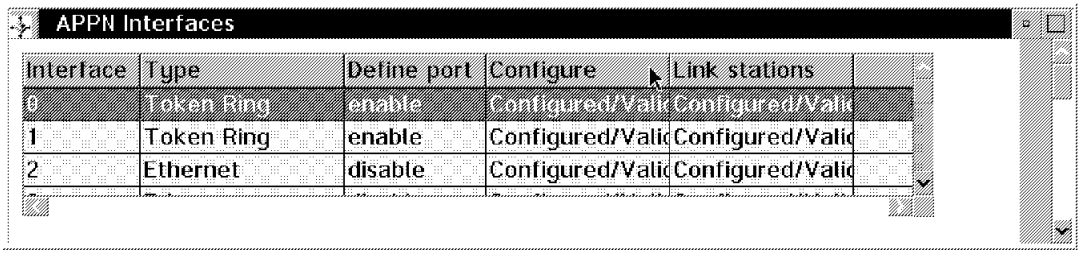


Figure 52. APPN Interfaces Panel

In Figure 52, two of the columns are used in special In this configuration panel, four of the columns are used in special ways to configure the interface selected in the list:

Configure (4rd column)
Click the column heading to access several pages of fields used to configure this interface.

Link stations (5th column)

Click the column heading to access several pages of fields used to configure link stations for this interface.

Navigating Through the MAE Configuration Program

The MAE configuration program is designed with a point-and-click interface. In addition to using a mouse pointer in the Configuration and Navigation panels, various keys also have specific meanings.

Using the Mouse

The mouse pointer is the main tool you use to move through the various lists and panels in the MAE configuration program.

The MAE configuration program uses the:

- Left button to select an item in a panel
- Right button to perform the following actions:
  - In the Navigation panel:
    - Displays a pop-up menu for a selected item in the list
    - Moves through and selects items in a pop-up menu
    - Validates a selected item that was in error and has been corrected.
  - In the Configuration panel: drag-and-drop list items.

    The configurator indicates that a drag-and-drop item is active by changing the mouse cursor into a file icon. You can use drag-and-drop to reorder many configuration lists.

Using the Keyboard in the Configuration Program

Various keys have specific functions in the MAE configuration program, see Table 4.

Table 4 (Page 1 of 2). Configuration Program Keyboard Functions

Key	Function	How to Use Key
F1 (Help)	Request help **Note:** After you press **F1**, the MAE configuration program displays a frame that you use to position the panel. Position the frame wherever you want on your desktop and press the left mouse button to display the help text.	• To obtain help for configuring a feature or protocol: When the MAE configuration program displays a feature or protocol configuration in the Configuration panel, press **F1**. • To obtain help on a panel: **Step 1.** Select an item in the Navigation panel. **Step 2.** Press **F1**. • To obtain help on a parameter, a button, or a drop-down list: **Step 1.** Select the parameter field or button by tabbing to the parameter field, button, or list. When you tab to the field or button, a yellow box will highlight the item. **Note:** You must use the tab key for help: clicking on a button causes the MAE configuration program to perform the configuration task indicated by that button or drop-down list. **Step 2.** Press **F1**. In the help text, additional information about certain words are hypertext-linked to the help panel by clicking on the blue text. If you press **F1** on a different panel or parameter without closing a previously opened help panel, the new help text overlays the currently displayed text. In a help panel, use: • **UP** to view the previous topic • **DOWN** to view the next topic • **CLOSE** to close the help panel.
Up and Down Arrow Keys	Move vertically	Use these keys to move through lists on any panel, including the Navigation panel and the drop-down menus. To select an item, press the Enter key.
Left and Right Arrow Keys	Move horizontally	Use these keys to move through the menu items on the Navigation panel, after you have selected one of the menu items. They can also be used to move through a parameter field without affecting the existing values.
Tab and Shift(Back)-tab	Next or previous entry field	These keys work only in the Configuration panels to move through the various entry items in a panel.

Table 4 (Page 2 of 2). Configuration Program Keyboard Functions		
Key	**Function**	**How to Use Key**
Character Keys	Speed-scroll	Use character keys in the Navigation panel to jump through the list. When you type a character, the selection marker moves to the next item in the list that starts with the characters that you have typed. This feature can help you change specific protocols in a configuration without using the scroll bar to locate the protocol. The following limitations exist: • Speed-scroll works only in the Navigation panel. • Once you speed-scroll to an item, you must select that item before speed-scrolling again.
Alt + C	Configure pull-down	Opens the **Configure** menu.
Alt + P	Options pull-down menu	Opens the **Options** menu.
Alt + H	Help pull-down menu	Opens the **Help** menu.
Esc	Escape	Clears the pull-down menus.

Selecting Multiple Items in a List

Whenever the configuration program presents you with a selection list, you can pick multiple items from those lists. The method for selecting items depends on whether you want to start at one point and end at another point or just select items at random from the list:

To select items randomly:

Press and hold **Ctrl**, point to each item and then press the left mouse button.

To select a range of items:

Select the first item in the range. Press and hold **Shift**. Select the last item in the range and then press the left mouse button.

To deselect items

Press and hold **Ctrl**, point to the item you want to deselect and press the left mouse button. If you do not hold **Ctrl**, you will deselect all previously selected items except the item just selected.

Chapter 13. Configuring IP Parameters

This chapter explains how to go to the panels where you configure the general and default parameters of the IP parameters for Bootp, OSPF, RIP, BGP, ARP, and SNMP.

Configuring General IP Parameters

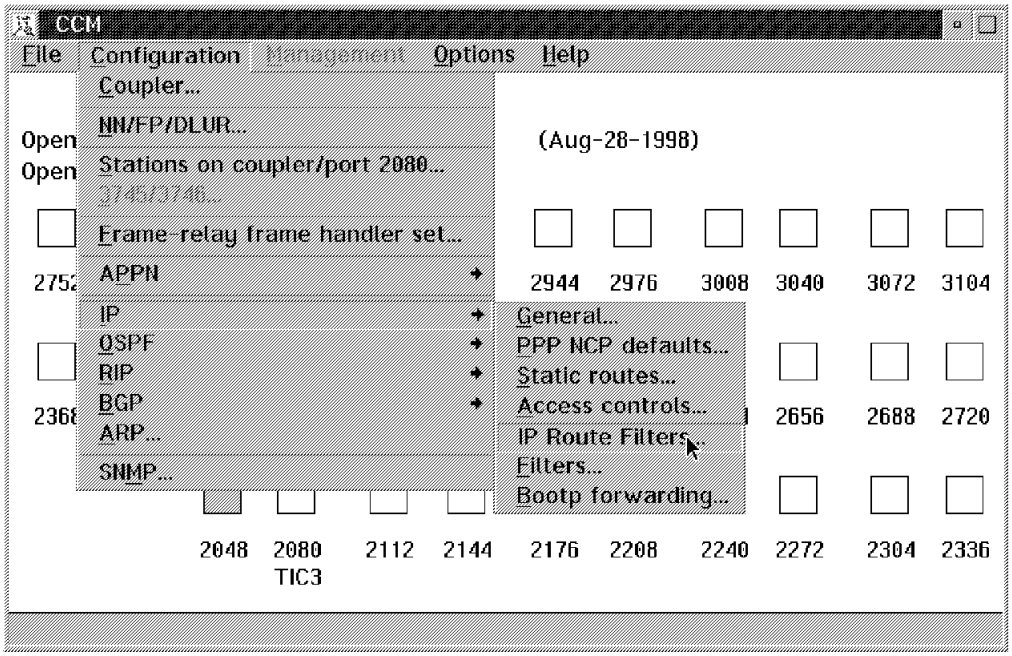


Figure 53. IP Configuration Menu

General IP Parameters

You define parameters for direct broadcasting, packet multipathing, source routing, and the routing table, cache and buffer sizes.

To configure these parameters: Main panel **Configuration** menu → **IP** → **General** → **IP General Parameters** panel.

PPP NCP Default Parameters

You define retry and timeout parameters for configuration, NAK (negative acknowledge character), and terminate.

To configure these parameters: Main panel **Configuration** menu → **IP** → **PPP NCP defaults** → **PPP NCP Default Parameters** panel.

IP Static Routes

You define parameters for destination network, destination mask, and next hop address and cost. You can also modify or delete the records in the list of static routes already configured.

To configure these parameters: Main panel **Configuration** menu → **IP** → **General** → **IP Static Routes** panel.

IP Access Controls

You define access control filter parameters at the *node-level* for access control type, source and destination address, protocol number and port. You can also modify or delete the records in the list of access control entries already configured.

This filtering can also be done for several DLCs at the *port-level* by clicking **IP access control - Packet filtering** in the **Port Configuration** panel.

To configure these parameters: Main panel **Configuration** menu → **IP** → **Access controls** → **IP Access Controls** panel.

There is an example of the use of IP access controls on “Make Sure SNMP Access Is Enabled When Filtering Packets” on page 122.

IP Filters

You define routing filter parameters for IP address and subnetwork mask. You can also modify or delete the records in the list of IP filters already configured.

Note: IP filters allow the control of host access to each other across a firewall.

To configure these parameters: Main panel **Configuration** menu → **IP** → **Filters** → **IP Filters** panel.

IP Route Filters

When the route table filtering option is enabled and route filters defined, the system checks the routes to be added to the IP routing table. Route table filtering can be used in order to prevent the system from adding routes to the IP route table when the network operator does not want all the routes advertised by routing protocols to be available for use.

To enable route table filtering and/or define route table filters, Main panel **Configuration** menu → **IP** → **Filters** → **IP Route Filters** → **IP Route Table Filters** panel.

Bootp Forwarding Parameters

You enable Bootp and define parameters for maximum hops, waiting time before forwarding and forwarding address. You can also modify or delete the records in the list of Bootp forwarding server addresses already configured.

To configure these parameters: Main panel **Configuration** menu → **IP** → **Bootp forwarding** → **Bootp Forwarding** panel.

Configuring OSPF Parameters

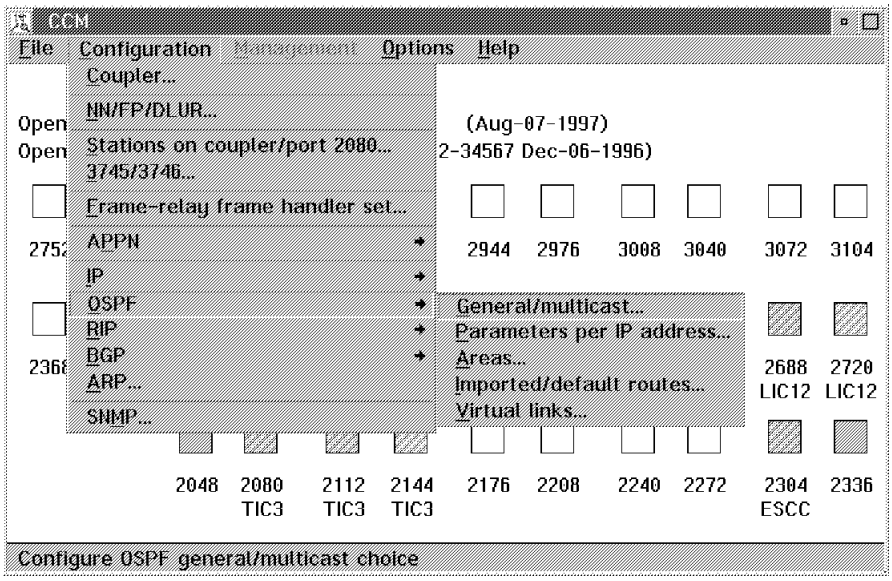


Figure 54. OSPF Configuration Menu

OSPF General and Multicast Parameters

You can enable or disable the Open Shortest Path First (OSPF) and multicast functions and define parameters such as number of routes/routers, and the group addresses. You can also modify or delete the records in the list of group addresses already configured.

To configure these parameters: Main panel **Configuration** menu → **OSPF** → **General/Multicast** → **OSPF - General/Multicast Parameters** panel.

OSPF Parameters for Each IP Address

You can select an IP address in the list and specify whether you want to configure OSPF or RIP.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **OSPF** → **Parameters per IP address**.

Step 2. In the OSPF/RIP - Parameters Per IP Address panel, specify the required values.

Step 3. If available, you can press **OSPF parameters**.

Step 4. In the OSPF - Parameters for IP panel, specify the required values and press **OK**.

Step 5. If available, you can press **RIP parameters**.

Step 6. In the RIP - Parameters for IP panel, specify the required values and press **OK**.

Step 7. If available, you can press **OSPF neighbors (N)**.

Step 8. In the OSPF - Neighbors panel, specify the required values and press **OK**.

OSPF Areas

You can enable/disable the stub area and authentication functions and define stub area default cost. You can also modify or delete records in the list of OSPF areas already configured.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **OSPF** → **Areas** → **OSPF - Area Configuration** panel.

Step 2. Specify the required values.

Step 3. To configure the area ranges, press **Ranges**.

Step 4. In the Area Ranges panel, specify the required values.

OSPF Imported and Default Routes

You can enable/disable various "import" functions including static routes, RIP routes, BGP routes, direct routes and subnetwork routes. You can also define parameters such as network IP address and default route cost.

To configure these parameters: Main panel **Configuration** menu → **OSPF** → **Imported/default routes** → **OSPF - Imported/Default Routes** panel.

OSPF Virtual Links

You define the neighbor IP addresses and interval timers including retransmit/transmit, and dead router interval. You can also modify or delete records in the list of OSPF virtual links already configured.

To configure these parameters: Main panel **Configuration** menu → **OSPF** → **Virtual links** → **OSPF - Virtual Links** panel.

Configuring RIP Parameters

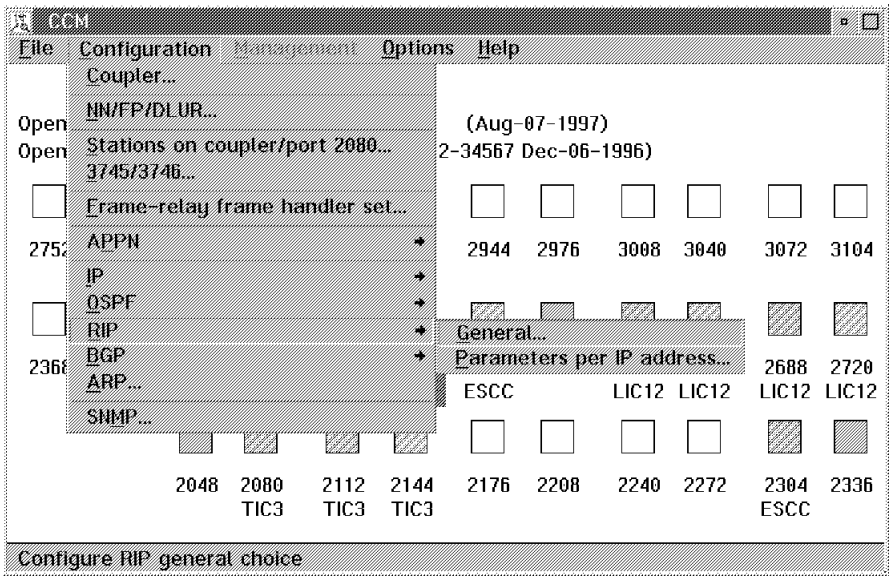


Figure 55. RIP Configuration Menu

RIP General Parameters

You can enable/disable RIP and define the "originate default route" parameters. You can also modify or delete records in the list of route acceptance network addresses.

To configure these parameters: Main panel **Configuration** menu → **RIP** → **General** → **RIP - General Parameters** panel.

RIP Parameters for Each IP Address

You can select an IP address in the list and specify whether you want to configure OSPF or RIP.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **RIP** → **Parameters per IP address**.

Step 2. In the OSPF/RIP - Parameters Per IP Address panel, specify the required parameters.

Step 3. To configure addition RIP parameters, press **RIP parameters**.

Configuring BGP Parameters

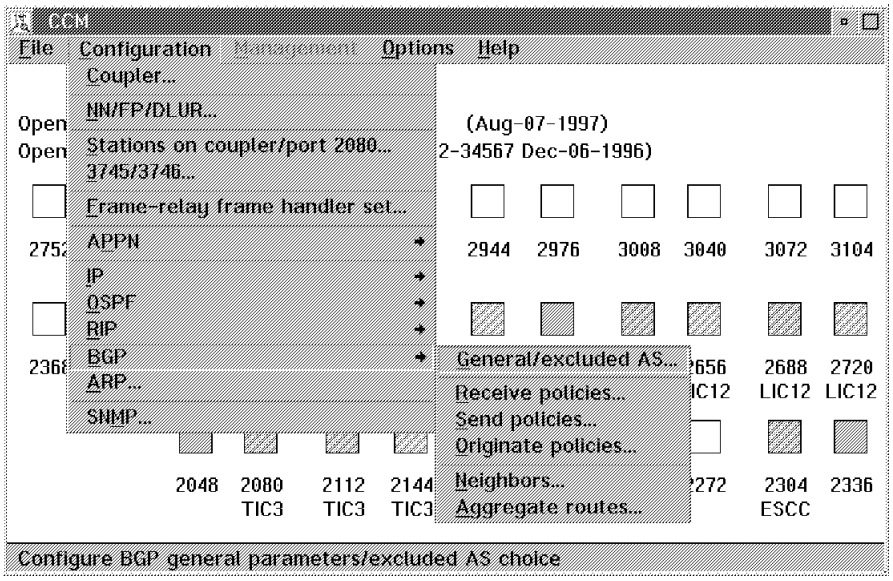


Figure 56. BGP Configuration Menu

BGP General and Excluded AS Parameters

You can enable/disable the BGP (border gateway protocol) function and define parameters for AS (autonomous system) number, and TCP segment size. You can also select the AS to be excluded, and modify or delete records in the list of excluded AS.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **General/excluded AS** → **BGP - General Parameters/Excluded AS** panel.

BGP Receive Policies

You define policy type, matching addresses, IP address/mask, and AS numbers (origin and adjacent). You can also modify or delete records in the list of BGP receive policies already configured.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **Receive policies** → **BGP - Receive Policies** panel.

BGP Send Polices

You define policy type, matching addresses, IP address/mask, and AS numbers (origin and adjacent). You can also modify or delete records in the list of BGP send policies already configured.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **Send policies** → **BGP - Send Policies** panel.

BGP Originate Policies

You define policy type, matching addresses, IP address/mask, and AS numbers (origin and adjacent). You can also modify or delete records in the list of BGP originate policies already configured.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **Originate policies** → **BGP - Originate Policies** panels

BGP Neighbors

You define parameters for IP address, AS number, TCP segment, and hold and connect timers. You can also modify or delete records in the list of BGP neighbors already configured.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **Neighbors** → **BGP - Neighbors** panel.

BGP Aggregate Routes

You define the IP address and subnetwork mask for an aggregate route. You can also modify or delete records in the list of aggregate route already defined.

To configure these parameters: Main panel **Configuration** menu → **BGP** → **Aggregate routes** → **BGP - Aggregate Routes** panel.

Configuring ARP Parameters

ARP Parameters

You enable/disable ARP net routing, ARP subnetwork routing, and ARP auto refresh, and you configure ARP entry parameters (port, remote IP address, and remote MAC address). You can also modify or delete records in the list of ARP entries already configured.

To configure these parameters: Main panel **Configuration** menu → **ARP** → **ARP** panel.

Configuring SNMP Parameters

SNMP Parameters

You define the access type, community name and user datagram protocol (UDP) parameters for Simple Network Management Protocol (SNMP). You can also modify or delete records in the list of SNMP transport information sets already configured.

To configure these parameters: Main panel **Configuration** menu → **SNMP** → **SNMP Configuration** panel.

Make Sure SNMP Access Is Enabled When Filtering Packets

To deny outside access to your service LAN when using SNMP, make sure the IP Access Controls are configured correctly (see Figure 57). The following example shows how to do this:

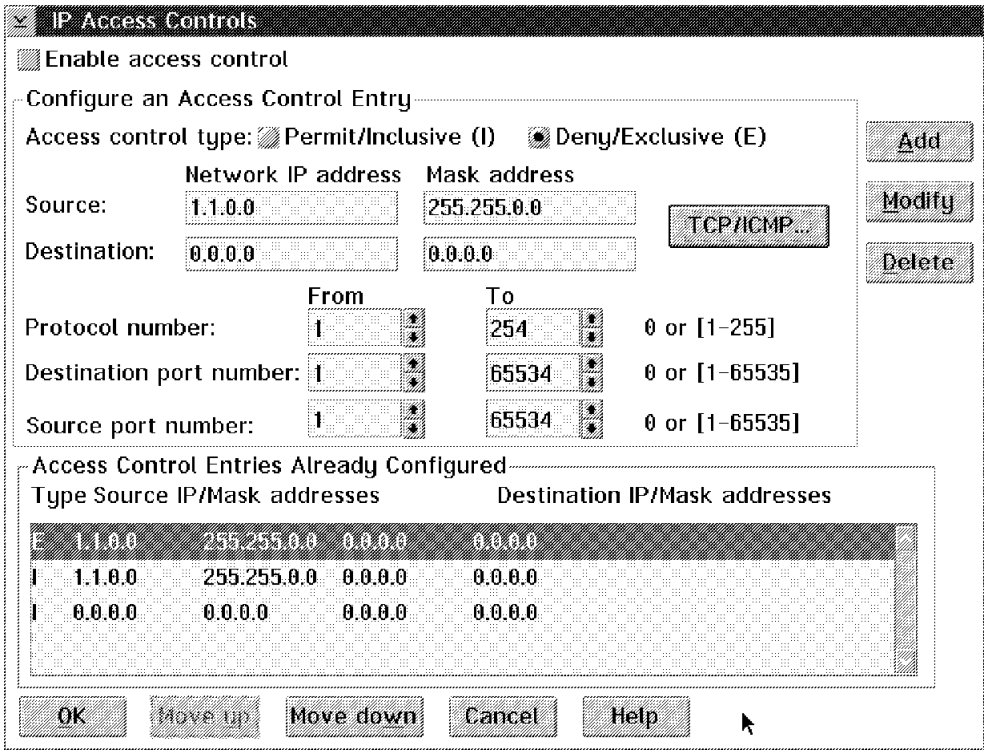


Figure 57. IP Access Controls Panel

Step 1. Leave the default **I** (permit/inclusive) access control in the list of access controlled already configured:

```
I  0.0.0.0    0.0.0.0   0.0.0.0   0.0.0.0
```

Step 2. Deny access to all outside hosts by adding an **E** (deny/exclusive) access control with the source addresses as 0.0.0.0 0.0.0.0 and the destination address of your 3746 IP router (for example: 5.5.5.0 255.255.255.0):

```
E  0.0.0.0    0.0.0.0   5.5.5.0   255.255.255.0
```

Step 3. Enable access for the SNMP connection between the 3746 and the NNP with an **I** with the source and destinations addresses both equal to the address of your 3746 IP router, in this example:

```
I  5.5.5.0   255.255.255.0   5.5.5.0   255.255.255.0
```

Step 4. Enable access for any other IP hosts you to want to have access to your service LAN.

Chapter 14. Configuring APPN Parameters

This chapter describes how to configure general and specific APPN parameters from the main panel **Configuration** menu (see Figure 58) for ports and stations, and other values such as:

- Network node characteristics
- Management focal points
- Dependent LU servers (DLUSs)
- Coupler 2080
- Type of 3745/3746
- Adjacent node remote LUs
- Different kings of class of service (COSs) and modes
- Transmission groups (TGs) and MLTGs

For additional information about the parameter values and controls in these panels, press **Help** in the panel.

Configuring General APPN Parameters

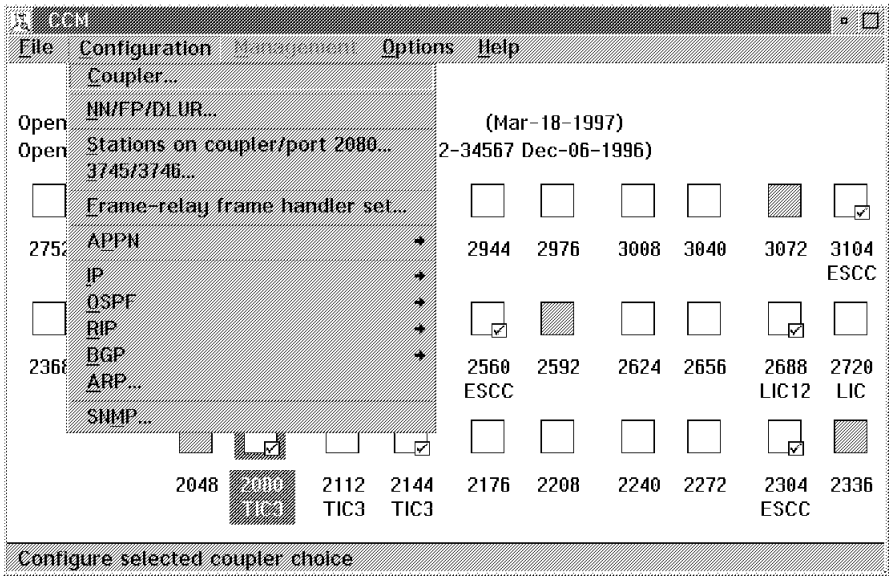


Figure 58. Configuration Menu

Coupler

You go to the port configuration panel for the selected coupler.

An easier way to go to this panel is to simply double-click the coupler icon.

Network Nodes, Focal Points, and DLURs

You define values for network identifier and control point name for:

- This Network Node
- Primary network management focal point
- Backup network management focal points
- Primary DLUS
- Backup DLUSs

Also defined is the type of High-Performance Routing (HPR) for this Network Node, retry timers, and other values.

To configure these parameters: Main panel **Configuration** menu → **NN/FP/DLUR** → **Network Node/Focal Point/Dependent LU Requester Parameters** panel.

Network Node Characteristics

You define values for cache entries, route addition resistance (RAR), and frequency of topology routing services (TRS) tree use.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **NN/FP/DLUR**.

Step 2. In the Network Node/Focal Point/Dependent LU Requester Parameters panel, specify the required values.

Step 3. Press **NN characteristics** → **Network Node Characteristics** panel.

Backup Focal Points

You define the network identifier and control point name for a backup focal point.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **NN/FP/DLUR**.

Step 2. In the Network Node/Focal Point/Dependent LU Requester Parameters panel, specify the required values.

Step 3. Press **Backup focal point** → **Backup Focal Point Parameters** panel.

Rapid Transport Protocol/Path Switch Parameters

You define values for sessions and RTP retries and timers.

To configure these parameters:

Step 1. Main panel **Configuration** menu → **NN/FP/DLUR**.

Step 2. In the Network Node/Focal Point/Dependent LU Requester Parameters panel, specify the required values.

Step 3. Press **RTP parameters** → **Rapid Transport Protocol (RTP)/Path Switch Parameters** panel.

Coupler/Port 2080 Stations

You specify the type (service processor or NetView Performance Monitor) of stations to be automatically generated.

To configure these parameters: Main panel **Configuration** menu → **Stations on coupler/port 2080** → **Stations on Coupler/Port 2080...** panel.

3745/3746

You define the type of 3746 for this CCM configuration.

If necessary, you give the identifier of the 3745 attached to the 3746-900 and the 3745 mode of operation.

To configure these parameters: Main panel **Configuration** menu → **3745/3746** → **3745/3746 Parameters** panel.

Frame-Relay Frame Handler Set

For information about configuring frame-relay frame handler sets, refer to "Configuring Frame-Relay Frame Handler Sets" on page 94.

Configuring Specific APPN Parameters

The procedures in this section start with: Main panel **Configuration** menu → **APPN** as shown in Figure 59.

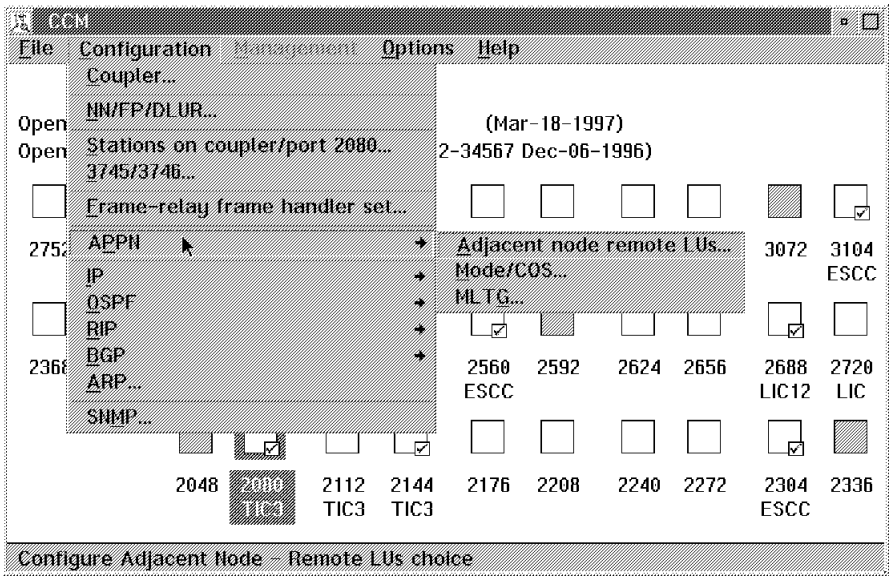


Figure 59. APPN Configuration Menu

Adjacent Node Remote LUs

You specify the remote LU and adjacent LEN node. You can also modify or delete LUs in the list of remote LUs already configured.

To configure these LU/LENs:

Main panel **Configuration** menu → **APPN** → **Adjacent Node Remote LUs** → **Adjacent Node - Remote LUs** panel

Session Mode Classes of Service

You specify the mode name and its class of service (COS). You can also modify or delete mode COSs in the list of modes already configured.

To configure the modes:

Main panel **Configuration** menu → **APPN** → **Mode/COS...** → **Mode Configuration** panel.

Classes of Service

You specify mode and COS names and transmission priorities. You can also modify or delete items in the lists of modes and different kinds of COS already configured.

To configure the modes and COS:

Step 1. Main panel **Configuration** menu → **APPN** → **Mode/COS**

Step 2. In the Mode Configuration panel, specify the required values.

Step 3. Press **Configure COS** → **Class of Service Configuration** panel.

Node Rows

You specify values for weight, RAR (route addition resistance), and congestion. You can also modify or delete from the list of node rows already configured.

To configure the node rows:

Step 1. Main panel **Configuration** menu → **APPN** → **Mode/COS**

Step 2. In the Mode Configuration panel, specify the required values and press **Configure COS**.

Step 3. In the Class of Service Configuration panel, specify the required values and press **Node rows** → **Node Row Configuration** panel.

Transmission Group Rows

You specify values for weight, propagation, security, effective capacity (EC), relative cost per byte (RCPB), and relative cost per unit of time (RCPUT). You can also modify or delete TG rows in the list of TG rows already configured.

To configure the TG rows:

Step 1. Main panel **Configuration** menu → **APPN** → **Mode/COS...**.

Step 2. In the Mode Configuration panel, specify the required values and press **Configure COS**.

Step 3. In the Class of Service Configuration panel, specify the required values and press **TG Node rows** → **Transmission Group Row Configuration** panel.

Multilink Transmission Group

You define the MLTG name and transmission group number. You can also modify or delete the MLTGs in the list of MLTGs already configured.

To configure the MLTGs:

Main panel **Configuration** menu → **APPN** → **MLTG** → **Multilink Transmission Group Configuration** panel.

Specifying Multilink Transmission Group Stations

You specify which stations are to be added to or removed from a MLTG.

To add or remove stations:

Step 1. Main panel **Configuration** menu → **APPN** → **MLTG**.

Step 2. In the Multilink Transmission Group Configuration panel, specify the required values and press **Stations** → **Stations Selection** panel.

Part 3. Resource Management

Chapter 15. Dynamic Activation and How It Affects Your Network

This chapter describes:

- How to dynamically activate resources in a modified active configuration
- Possible unexpected results when using dynamic activation

Notes:

1. Information about actual configuration parameter values is not covered (refer to the CCM online help for parameter descriptions, valid values, and rules for use).
2. When running the stand-alone CCM, because there is no 3746 connected, there is nothing to manage and ***the procedures explained in this chapter are not available***.

Dynamically Activating Modifications to a Configuration While Saving

When you start to save the *active* configuration, after modifying it, you are asked if you want to immediately update the active resources affected by the modifications. Then, you are asked whether you want to immediately activate these resources.

Attention

- When changes are dynamically activated, most network traffic is not affected by APPN, IP, and SNA/subarea modifications.

  However, dynamic activation of certain resources ***can have*** a major effect on network operation, because a re-IML or VTAM deactivation of resources might have to be performed. You should be aware of the information in "Network Traffic Disruption and Dynamic Activation" on page 133 before using dynamic activation.

- Modifications made to the network node (NN/FP/DLUR parameters) cannot be dynamically activated. The CP must be stopped and restarted to take these changes into account, which is disruptive for all APPN and IP traffic.

  Exception! Modifications made to the LU parameters are dynamically activated.

- Choosing dynamic activation after making modifications only to the MAE configuration results in restarting only the MAE, when no MAE IP resource is affected by the modifications. Otherwise, when shared IP parameters are modified, all IP traffic (3746 and MAE) is disrupted. Modifying only IP resources of the 3746 results in only the IP router restarting.

- Modification of a non-active configuration does not affect the network traffic. The changes you make to the non-active configuration are only applied when it is activated.

- When you modify the maximum number of incoming calls parameter of the token-ring port, the port and the stations concerned will not have traffic disrupted.

Network Traffic Disruption and Dynamic Activation

The tables in this section show the effect on network traffic of viewing, adding, modifying, or deleting network resources.

Attention

When you save the active configuration–if you dynamically activate the modifications you have just made in your configuration–you can disrupt network traffic.

Restarting the IP CP (router) restarts the whole MAE (IP and APPN traffic).

Viewing a Resource

Attention

When you finish viewing a 3746 resource of the active configuration, click **Cancel**. Do not use **OK**.

If you use **OK** in certain panels, the resources related the parameters in the panel are marked as needing to be re-IMLed, even though you did not change a single thing in the panel. Then when you dynamically activate changes that you *do want* to make, There may be *unexpected* traffic disruptions because resources that you *did not change* are re-IMLed.

All 3746 APPN and IP resources related to the following parameters can be disrupted by using **OK** even if they are only viewed:

- APPN parameters in port and station configuration panels
- DLC parameters
- Parameters in the following panels:
  - Frame-Relay - Default DLCI
  - Frame-Relay CIR - BRS

To summarize:

- In the 3746 (non-MAE) configuration, use only the **Cancel** button to close panels when you navigate inside CCM to view your configuration.
- In the MAE configuration, this problem does not exist.

Adding a Resource When a new resource is created, normally it is not disruptive for any of preexisting resources. In Table 5 are the two groups of parameters that are exceptions to this rule.

Table 5. Network Traffic Disruption - Adding a Resource

Networks	DLC	Added Resources	Result
APPN, SNA/subarea	All DLCs	Frame Relay DLCI/CIR parameters	• Disruptive for the associated IP port, if it exists If there is no associated IP port, this is disruptive for APPN ports and their resources
		MAE IP parameters	• Disruptive for all IP resources, the IP router is restarted. Disruptive for all MAE resources.
		MAE other parameters	• Disruptive for all MAE resources, the MAE is restarted.
IP	All DLCs	All resources	• Disruptive for all IP resources, the IP router is restarted

Modifying a Resource

Table 6 (Page 1 of 3). Network Traffic Disruption - Modifying a Resource

Networks	DLC	Modified Resources/Parameters	Result
All networks	All DLCs	Network parameter (sharing) on a port/host link/DLCI	• Disruptive for all APPN concerned resources and their resources if modified from an APPN network to a non-APPN network • Non-disruptive if modified from an IP network to a shared network • If modified from a non-IP network to an IP network, it is disruptive for all IP resources, the IP router is restarted
		MAE IP parameters	• Disruptive for all IP resources, the IP router is restarted. Disruptive for all MAE resources.
		MAE other parameters	• Disruptive for all MAE resources, the MAE is restarted.

Table 6 (Page 2 of 3). Network Traffic Disruption - Modifying a Resource

Networks	DLC	Modified Resources/Parameters	Result
APPN/IP	All DLCs except ESCON	APPN parameters in port and station configuration panels	• Disruptive for all APPN concerned resources and their resources
		IP-specific parameters for parameters of dialog boxes: • IP General Parameters • IP Access Control • Bootp Forwarding	• Disruptive for all IP resources, the IP router is restarted. Disruptive for all MAE resources.
		IP parameters different from previous ones	• Disruptive for IP router
		except for: Frame Relay DLCI/CIR parameters	• Disruptive for the associated IP port, if it exists. If there is no associated IP port, disruptive for APPN ports and their resources
APPN	ESCON	ESCON port, except for: Fiber status parameter	• Disruptive for concerned APPN ESCON port and its resources • Disruptive for all resources of the concerned ESCON processor if modified from 'Enable' to another status
		ESCD parameters	• Non-disruptive
IP	ESCON	ESCON port, except for: Fiber status parameter	• Disruptive for all IP resources, the IP router is restarted • Disruptive for all resources of the concerned ESCON processor, if modified from 'Enable' to another status
		Automatic reactivation parameter	• Disruptive for concerned IP ESCON port and its resources
		ESCD parameters	• Non-disruptive
APPN and IP	ESCON	Host link name parameter	• Disruptive for concerned APPN/IP ESCON host link and its resources
		HLA and Partition number parameters	• Disruptive for all resources of the concerned ESCON processor (re-IML)
		Other ESCON host link parameters	• Non-disruptive
APPN	ESCON	ESCON station	• Disruptive for concerned APPN ESCON stations
IP	ESCON	ESCON station parameters, except for: IP address/subnet mask parameters	• Disruptive for concerned IP ESCON station • Disruptive for all IP resources, the IP router is restarted

Table 6 (Page 3 of 3). Network Traffic Disruption - Modifying a Resource

Networks	DLC	Modified Resources/Parameters	Result
SNA/subarea	ESCON	ESCON port, except for: Fiber status parameter	• Non-disruptive • Disruptive for all resources of the concerned ESCON processor if modified from 'Enable' to another status
SNA/subarea	ESCON	ESCON host link, except for: HLA and/or Partition number parameters	• Non-disruptive • Disruptive for all resources of the concerned ESCON processor (re-IML)
SNA/subarea	ESCON	ESCON station, except for: PU type, Unit address and IPL through that station parameters	• Non-disruptive • Disruptive for the concerned SNA/subarea station (manual VTAM deactivation needed)
APPN	Token-ring	Token-ring port Maximum number of incoming calls parameter	• ***Not*** disruptive for port and associated stations

Deleting a Resource

Table 7. Network Traffic Disruption - Deleting a Resource

Networks	DLC	Deleted Resources	Result
APPN	All DLCs except ESCON	All resources, except for: Frame-relay DLCI/CIR parameters MAE IP parameters MAE other parameters	• Disruptive for all concerned resources and their resources. • Disruptive for the associated IP port, if it exists. If there is no associated IP port, this is disruptive for APPN ports and their resources • Disruptive for all IP resources, the IP router is restarted. Disruptive for all MAE resources. • Disruptive for all MAE resources, the MAE is restarted.
APPN and SNA/subarea	ESCON	ESCON port or host link	• Disruptive for all resources of the concerned ESCON processor (re-IML)
APPN and SNA/subarea	ESCON	ESCON station	• Disruptive for concerned ESCON stations
IP	All DLCs, except ESCON	All resources	• Disruptive for all IP resources, the IP router is restarted
IP	ESCON	ESCON port or host link	• Disruptive for all IP resources, the IP router is restarted and is disruptive for all resources of the concerned ESCON processor (re-IML)
IP	ESCON	ESCON station	• Disruptive for all IP resources, the IP router is restarted and is disruptive for all resources of the concerned ESCON processor (re-IML)

Chapter 16. Resource Management

This chapter describes how to view and manage (see the menu in Figure 60) non-MAE:

- Filters for resource management
- Ports (manage and view information about)
- Stations (manage and view information about)
- Sessions (view information about)
- Processor- or port-level IP resources

No MAE resources can be managed with the functions described in this chapter.

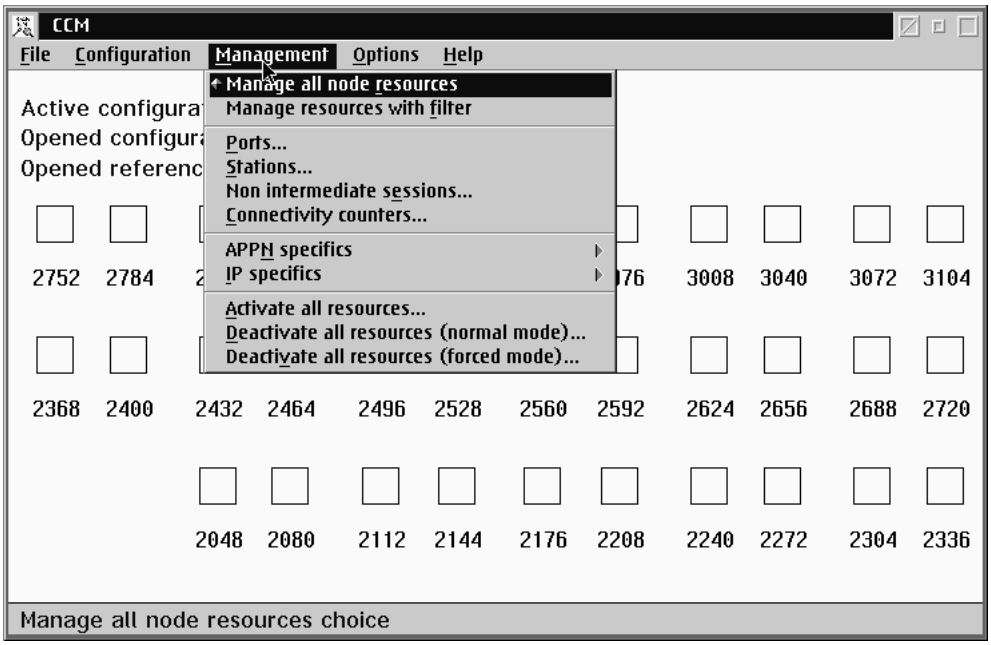


Figure 60. Operations Menu in Ports Management Panel

Notes:

1. Information about actual configuration parameter values is not covered (refer to the CCM online help for parameter descriptions, valid values, and rules for use).
2. When running the stand-alone CCM, since there is no 3746 connected, there is nothing to manage and ***the procedures explained in this chapter are not available***.

Management Using Resource Filters

This section explains the first two item in the Management menu of the main CCM panel (see Figure 60 on page 139):

Manage all node resources

Selecting this choice displays, in the appropriate resource management panel (for ports, stations, or sessions), ***all*** the resources of the chosen type defined on all the couplers installed in the network node.

Manage resources with filter

Selecting this choice lets you limit the number of resources displayed by filtering the resources according to port number (address), port name, station name, and partner LU name.

For example, if you want to look at session information, the Session Management Filters panel is opened (see Figure 61).

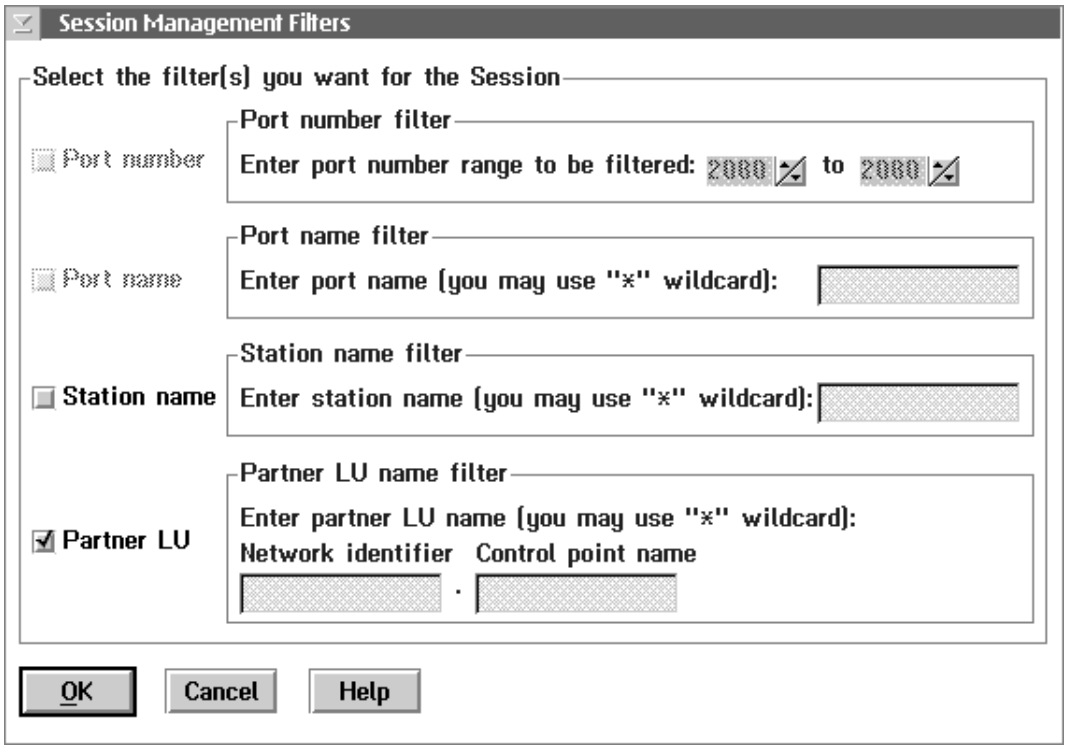


Figure 61. Session Management Filters Panel

In this panel, you can limit the sessions to those contained in one or a limited range of:

- Stations, using the station name
- Session partner LU names.

Managing Ports

The management tasks that can be performed include:

- Displaying a list of configured ports
- Displaying the resources on a selected port
- Viewing details of a port
- Activating or deactivating ports

Displaying a List of Configured Ports

You can display the list of the ports configured for the controller. From this list the ports management tasks can be performed.

To display the port list (see Figure 62): Main panel **Management** menu → **Ports**.

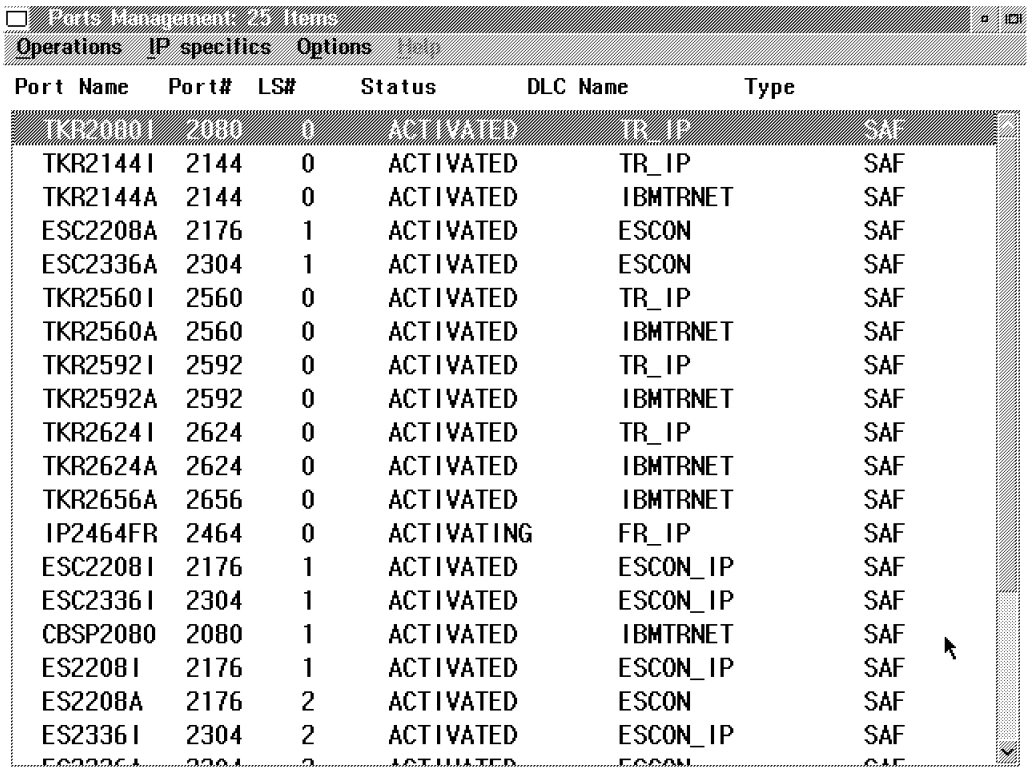


Figure 62. Ports Management Panel

Displaying the Resources on a Selected Port

From the list of ports, you can display the list of the stations available for a specific port.

To display the stations on a port:

Step 1. Main panel **Management** menu → **Ports**.

Step 2. Double-click the desired port.

Note: All the station management functions are available from the panel showing the stations list associated to a specific port.

Viewing Details of a Port

You can display the configuration details for a selected port. The details include the parameter values specified during configuration and the values automatically generated by the CCM during network operation.

To view the details of a port:

Step 1. Main panel **Management** menu → **Ports**.
Step 2. Select the port you want.
Step 3. Operations menu → **Details** (see Figure 64 on page 143).

Displaying the Connectivity Counters

To display the connectivity counters, select from the main panel, the **Management** → **Connectivity counters** option (see Figure 63).

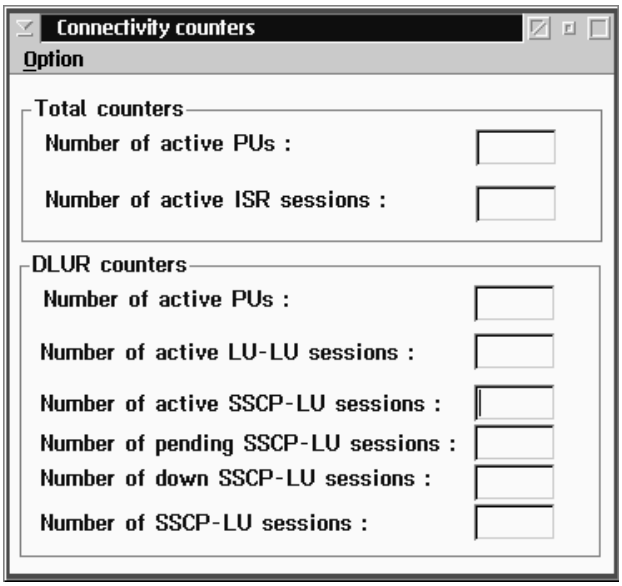


Figure 63. Connectivity Counters Panel

The following list describes the counters:

Number of active PUs — Total number of PUs that the NNP has activated

Number of active ISR sessions — All the LU-LU independent and dependent sessions that the NNP has activated. The sessions that other NNs have activated also are included.

Number of active LU-LU sessions — Total number of active LU-LU sessions

Number of active SSCP-LU sessions — Total number of active SSCP-LU sessions

Number of pending SSCP-LU sessions — Total number of pending SSCP-LU sessions

Number of down SSCP-LU sessuibs — Total number of down SSCP-LU sessuibs

Number of SSCP-LU sessions — Total number of SSCP-LU sessions

Activating and Deactivating Ports

You can activate or deactivate ports as required (see Figure 64).

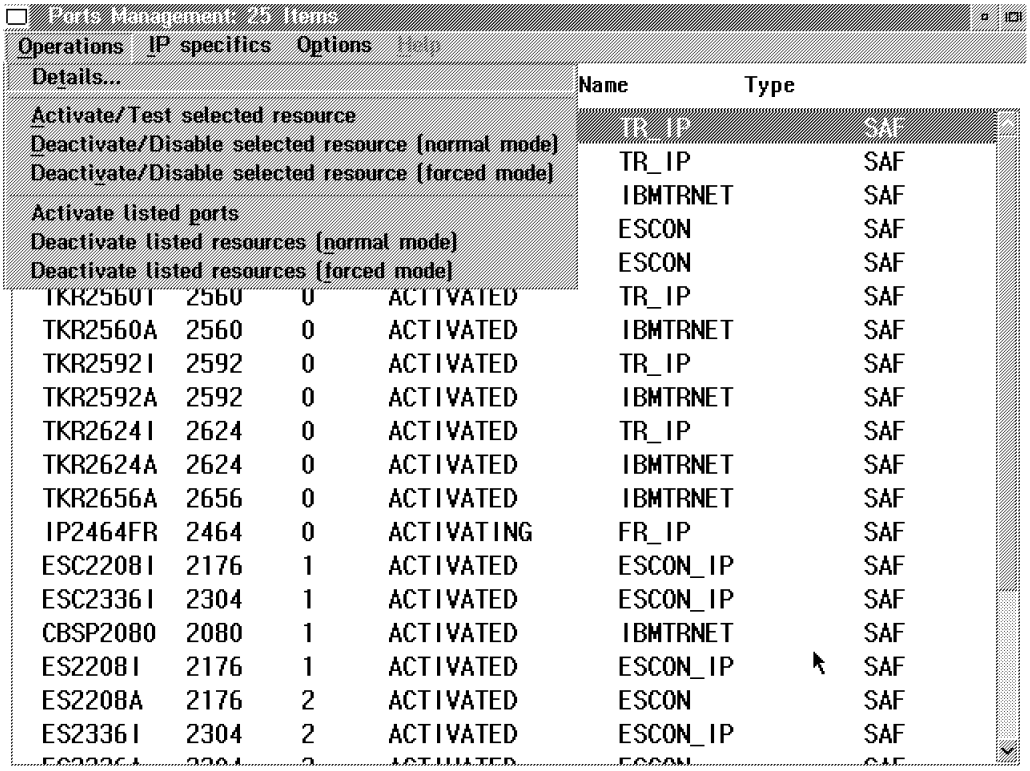


Figure 64. Operations Menu for APPN Ports Management

Port activation is a process that loads code and runs tests in order to make the port available for use. When the port is deactivated, it is no longer available for providing network services.

Ports can be deactivated normally, or by forcing the deactivation.

A normally deactivated port is deactivated if traffic has stopped flowing through it and its associated resources. Sessions are first deactivated, then the stations and finally the ports.

A force-deactivated port is deactivated while traffic is flowing through it and its associated resources, regardless of the status of its associated resources. This is done if, for example, a port has not been deactivated within a reasonable time after attempting a normal deactivation, or if a port must be immediately deactivated for a specific reason.

When you activate or deactivate a resource, you receive a message after the command completion. This message indicates whether or not the command has been successfully performed and completed. In case of an error, you get a return code. Use SMPR for problem determination.

Attention

To activate/deactivate an IP resource, see “IP Resource Status” on page 145.

Activating a Port

To activate a port:

Step 1. Main panel **Management** menu → **Ports**.
Step 2. Select the port you want to activate.
Step 3. Operations menu → **Activate selected resource**.

Deactivating a Port Normally

To deactivate a port normally:

Step 1. Main panel **Management** menu → **Ports**.
Step 2. Select the port you want to activate.
Step 3. Operations menu → **Deactivate selected resource (normal mode)**.

Forcing the Deactivation of a Port

Attention

When you deactivate a port in forced mode, you might lose data in transit, because the port and its associated resources are deactivated without waiting for all of their activity to cease.

To force the deactivation of a port:

Step 1. Main panel **Management** menu → **Ports**.
Step 2. Select the port you want to activate.
Step 3. Operations menu → **Deactivate selected resource (forced mode)**.

Activating All Listed Ports

Attention

Before you run the command, activating a large number of ports may take some time, however the command can be cancelled from the system menu icon, by selecting **Close**.

To activate all listed ports:

Main panel **Management** menu → **Ports** → **Operations** menu → **Activate listed ports**

Deactivating All Ports in Normal Mode

Attention

Before you run the command, deactivating a large number of ports may take some time, however, the command can be cancelled from the system menu icon, by selecting **Close**.

Before doing this, scroll vertically through the list of ports, to display the ports not originally displayed and to check whether you really want to deactivate them all.

To deactivate all listed ports:

Main panel **Management** menu → **Ports** → **Operations** menu → **Deactivate listed resources (normal mode)**.

Deactivating All Ports in Forced Mode

Attention

When you deactivate a port in the forced mode, you may lose data in transit, since the port and its associated resources are deactivated without waiting for all of their activity to cease.

Before you start deactivating all ports, use the vertical scrolling bars to display the items that can be displayed in the panel, and check if you really want to deactivate ***all*** the ports.

Deactivating a large number of ports is time-consuming. However, this command can be cancelled from the system menu icon, by selecting the **Close** option.

To force the deactivation of all ports:

1. Main panel **Management** menu → **Ports**
2. **Operations** menu → **Deactivate listed resources (forced mode)**

IP Resource Status

IP resource activation is a two-stage process that runs the **Activate** command (a generic management command), and the **Test** command (an IP command). The DLC configuration of the IP resource is activated, and then the IP resource in the processor is activated.

The **Activate** and **Test** commands are combined into a single CCM command.

IP resource deactivation also has two stages, the **Disable** command and the **Deactivate** command. The IP resource is disabled in the processor, and then the DLC configuration of the IP resource is deactivated.

The **Deactivate** and **Disable** commands are also combined into CCM commands.

MOSS-E IP Commands

You can use the **IP commands** function from the MOSS-E **Network Node processor (NNP) menu** to issue the **Test** or **Disable** command.

If you issue the **Test** or **Disable** command, the resource status changes.

Possible IP Resource Statuses

An IP resource can have one of the following statuses:

Active/up	The **Activate** command has been issued from the CCM and the resource is ready for operation.
Active/disabled	The resource was active and the **Disable** command has been issued via Telnet. The resource is not ready for operation.
Inactive/testing	The resource was inactive and the **Test** command has been issued via Telnet. The resource is not ready for operation.
Inactive/Disabled	The **Deactivate** command has been issued from the CCM.

Note: Active/testing and inactive/up are not valid statuses.

Table 8 shows the changes in status that result from the issuing of these commands.

Table 8. Post-Command Status

Command issued	Pre-Command Status			
	Active/up	**Active/Disabled**	**Inactive/Testing**	**Inactive/Disabled**
Test	–	Active/Up	–	Inactive/Testing
Disable	Active/disabled	–	–	–
Activate	–	Active/up	Active/up	Active/up
Deactivate	Inactive/Disabled	Inactive/Disabled	–	–

Notes:

1. A dash (-) indicates that the status remains unchanged.
2. Using CCM, you can only activate and deactivate an IP resource, even though the commands **Activate** and **Deactivate** are linked to **Test** and **Disable**.
3. Use Telnet to issue the commands **Test** and **Disable**.

Here are some examples:

If you issue the command **Disable** via Telnet for a resource that is active/up, the resource status becomes active/disabled. In this situation, the DLC configuration is still active, but the IP data is no longer active, and the resource is no longer ready for operation.

If you issue the command **Test** via Telnet for a resource that is active/disabled, the resource status becomes active/up. In this situation, the DLC configuration which was already active, remains active, and the IP data has been activated through the **Test** command. The resource, therefore, becomes ready for operation.

Managing Stations

The station management tasks that can be performed with the CCM include:

- Displaying a list of configured stations
- Displaying a list of sessions for a selected station
- Viewing the details of a station
- Activating and deactivating stations.

Note: The station management tasks can be accessed from a panel containing a list of stations associated with a specific port.

Displaying a List of Configured Stations

You can display all of the stations handled by the controller to perform the station management tasks.

To display the stations:

Main panel **Management** menu → **Stations** → **Station Management** panel (see Figure 65).

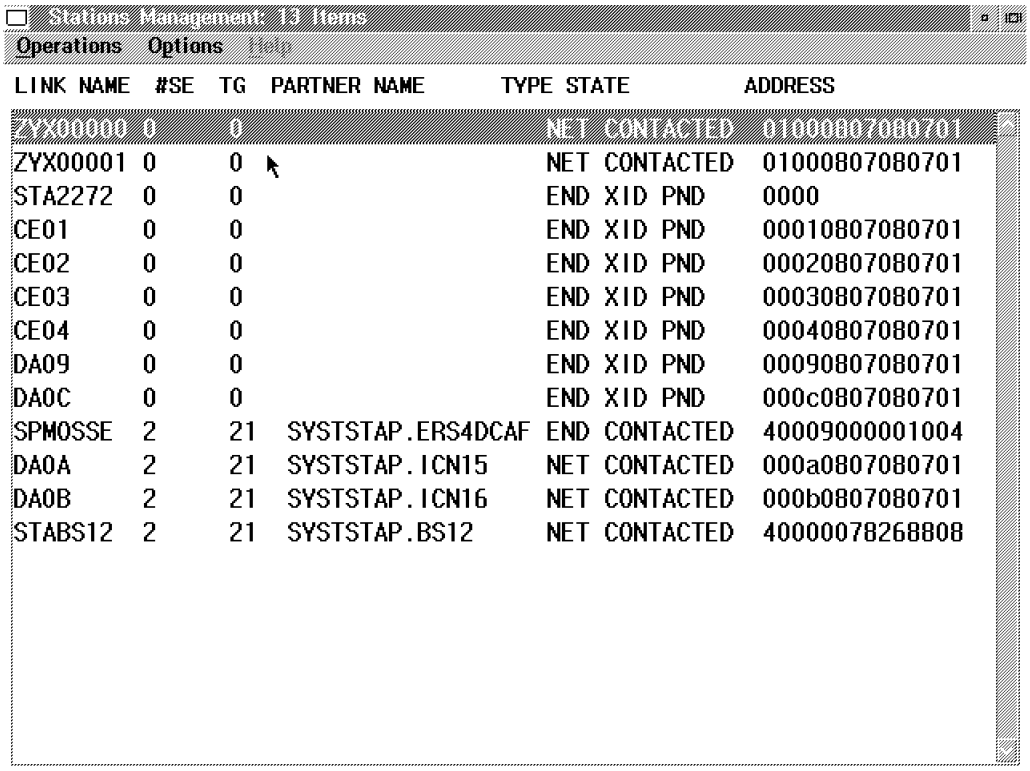


Figure 65. APPN Stations Information Display Panel

Displaying a List of Sessions for a Selected Station

Use this function to display the sessions available for a station.

To display the sessions for a station:

Step 1. Main panel **Management** menu → **Stations** → **Station Management** panel.

Step 2. Double-click the desired station to display the sessions activated for it.

Note: You can display details about a specific session from the panel showing the sessions activated for a specific station.

Viewing the Details of a Station

You can display the configuration details for a selected station. The details include the currently configured parameter values and the values automatically generated by the CCM during network operation.

To display details about a station:

Step 1. Main panel **Management** menu → **Stations** → **Station Management** panel.

Step 2. Double-click the desired station.

Step 3. Operations menu → **Details**.

Activating and Deactivating Stations

You can activate or deactivate stations as required (see Figure 64 on page 143).

Station activation is a process that loads code and runs tests in order to make the station available for use. When the station is deactivated, it is no longer available for providing network services.

Stations can be deactivated normally, or by forcing the deactivation.

A normally deactivated station is deactivated if traffic has stopped flowing through it and its associated resources. Sessions are first deactivated, then the stations.

A force-deactivated station is deactivated while traffic is flowing through it and its associated resources, regardless of the status of its associated resources. This is done if, for example, a station has not been deactivated within a reasonable time after attempting a normal deactivation, or if a station must be immediately deactivated for a specific reason.

When you activate or deactivate a resource, you receive a message after the command completion. This message indicates whether or not the command has been successfully performed and completed. In case of an error, you get a return code. Use SMPR for problem determination.

Activating a Station

To activate a station:

Step 1. Main panel **Management** menu → **Stations**.

Step 2. Select the station you want to deactivate.

Step 3. Operations menu → **Activate selected resource**.

Deactivating a Station Normally

To deactivate a station normally:

Step 1. Main panel **Management** menu → **Stations**.

Step 2. Select the station you want to deactivate.

Step 3. Operations menu → **Deactivate selected resource (normal mode)**.

Forcing the Deactivation of a Station

Attention

When you deactivate a station in forced mode, you may lose data in transit, since the station and its associated resources are deactivated without waiting for all of their activity to cease.

To force the deactivation of a station:

Step 1. Main panel **Management** menu → **Stations**.

Step 2. Select the station you want to deactivate.

Step 3. Operations menu → **Deactivate selected resource (forced mode)**.

Activating All Listed Stations

Attention

Before you run the command, activating a large number of stations may take some time, however, the command can be cancelled from the system menu icon, by selecting **Close**.

To activate all listed stations:

Main panel **Management** menu → **Stations** → **Operations** menu → **Activate listed stations**.

Deactivating All Stations Normally

Attention

Before you run the command, deactivating a large number of stations may take some time, however the command can be cancelled from the system menu icon, by selecting **Close**.

Before doing this, scroll though the list to view all stations and to check whether or not you really want to deactivate all stations.

To deactivate all stations normally:

Main panel **Management** menu → **Stations** → **Operations** menu → **Deactivate listed resources (normal mode)**

Forcing the Deactivation of All Stations

Attention

When you deactivate a station in the forced mode, you may lose data in transit, since the station and its associated resources are deactivated without waiting for all of their activity to cease.

Before you start deactivating all stations, use the vertical scrolling bars to display the items that can be displayed in the panel, and check if you really want to deactivate ***all*** stations.

Deactivating a large number of stations is time-consuming. However, this command can be cancelled from the system menu icon, by selecting the **Close** option.

To force the deactivation of all stations:

1. Main panel **Management** menu → **Stations**.
2. **Operations** menu → **Deactivate listed resources (forced mode)**.

Displaying Information about Sessions

You can display information about the CP-CP and LU-LU sessions currently routed through the network node.

To display sessions information:

Step 1. Main panel **Management** menu → **Non-intermediate sessions** → **Ports Management** panel (see Figure 66).

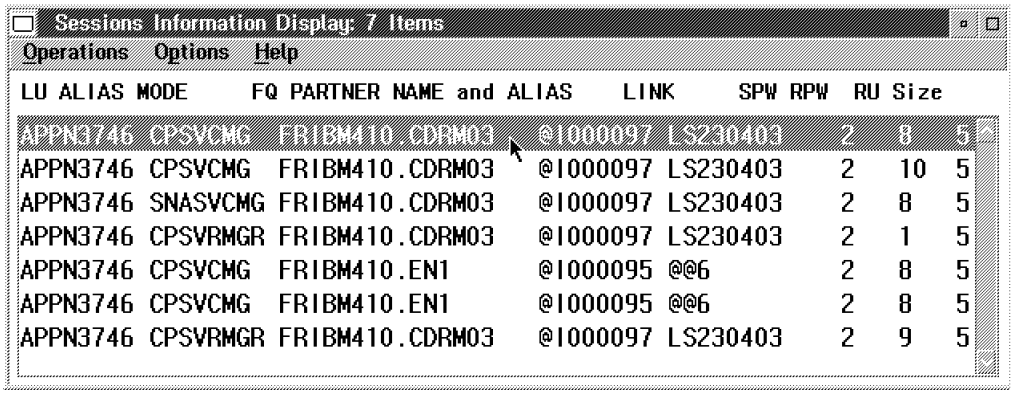


Figure 66. Sessions Information Display

Step 2. Double-click the appropriate session.

Step 3. Operations menu → **Details**.

Step 4. Details about the selected session are displayed in the **CCM IP Results Display** (see Figure 68 on page 154).

IP-Specific Port/Processor Commands

This section explains how to issue IP port-level or processor-level management commands to view information about ports or processors and to clear certain memory areas.

Notes:

1. For the overall, node-level commands, see Chapter 18, “Managing IP Router Data” on page 165.
2. The CCM and Telnet commands given in this section cannot be used for the MAE. MAE IP management is only done through Telnet, refer to either:
   - *3746 Nways Multiprotocol Controller Model 950: User's Guide*.
   - *3745 Communication Controller Models A, 3746 Nways Multiprotocol Controller Model 900: Basic Operations Guide*.

The port-level or processor-level management commands can be issued in two ways:

1. By sending a command using the MOSS-E Telnet console, refer to the 3746-950 *User's Guide*.

   The equivalent Telnet command is given for each CCM command. Most of the time, the command is issued by selecting a cascaded menu item: the CCM automatically adds any necessary parameters to the command.

   Note: Certain commands ask you for additional information. For example, if the command must be issued for a specific resource by its address, name, or number.

2. By using the CCM:
   a. Main panel **Management** menu → **Ports**
   b. Double-click a port in the **Ports Management** panel → **CCM Management** panel
   c. Select the level (port or processor) of the commands that you want to use by selecting either one of the first two **IP specifics** menu options (see Figure 67 on page 154):

      On selected port
      When this option is selected, only commands that can be issued on the port-level are available in the **IP specifics** menu.

      On processor of selected port
      When this option is selected, the commands act globally on the port's processor, that is, for all the ports on all the couplers attached to the processor.

   d. Use the **IP specifics** menu to issue a command.

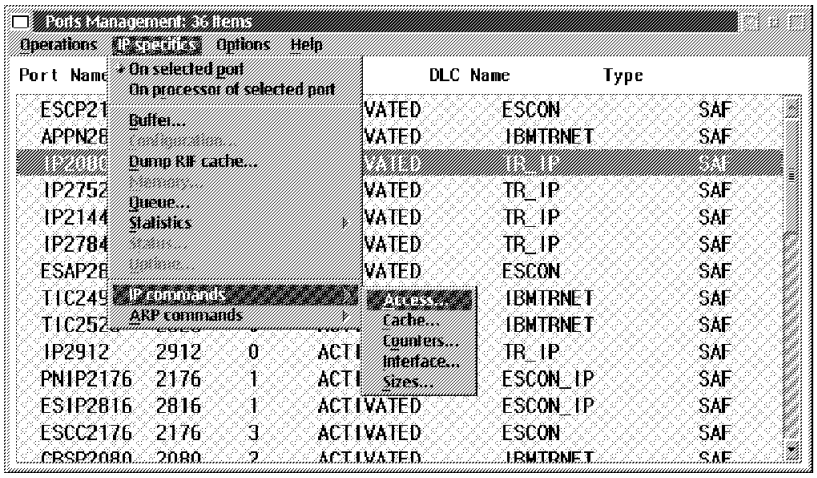


Figure 67. Example IP Port Management Menus

Available Commands Depend on IP Resource DLC

The choices available in the **IP specifics** menu and its cascaded sub-menus vary depending on the DLC (token-ring, frame relay, X.25, or ESCON) of the resource selected as a target for the IP commands.

CCM IP Results Display

If information is generated as the result of a command being issued, it is displayed by CCM in the **CCM IP Results Display** panel, see Figure 68.

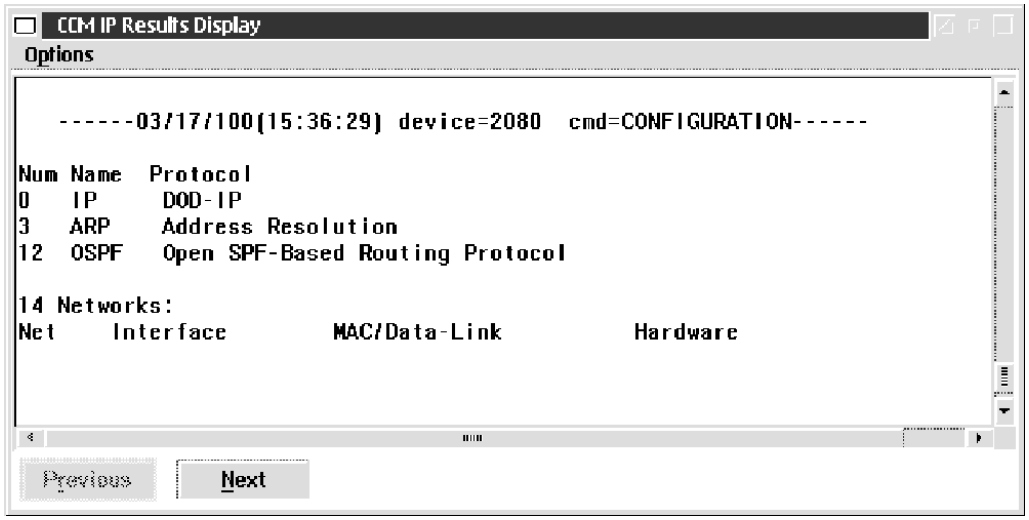


Figure 68. Example CCM IP Results Display

The **Options** menu lets you:

Search You can search for a character string currently in the display (the string need not be visible at the time of the search).

Clear You can delete all the information currently in the display.

Buffer Use and Size

To view information about the packet buffer usage and size at the port or processor level, you can issue either:

- Telnet command: **GWCON BUFFER**
- CCM command: **CCM Management** menu → **IP specifics** → **Buffer**

Protocol and Port Configurations

To view information (DLC type and status) about the ports configured on the processor, you can issue either:

- Telnet command: **GWCON CONFIGURATION**
- CCM command: **CCM Management** menu → **IP specifics** → **Configuration**

Issuing this command for the 2080 coupler lets you view the whole 3746 configuration.

ESCON and Token-Ring Port Dump

To view an ESCON (line status, traffic statistics) and token-ring (MAC address and, if source routing is used, RIF information) port dump, you can issue either:

- Telnet command: **NET DUMP**
- CCM command: **CCM Management** menu → **IP specifics** → **Dump**

Current Processor Memory Use

To view information about current processor memory usage, and buffers, you can issue either:

- Telnet command: **GWCON MEMORY**
- CCM command: **CCM Management** menu → **IP specifics** → **Memory**

Port Queue Length

To view information about the input and output queues (number of buffers and queue length) at the port or processor level, you can issue either:

- Telnet command: **GWCON QUEUE**
- CCM command: **CCM Management** menu → **IP specifics** → **Queue**

All Parameters of a X.25 Port

To view information about the X.25 port parameters at the packet, frame, and physical levels, you can issue either:

- Telnet command: **NET PARAMETERS ALL**
- CCM command: **CCM Management** menu → **IP specifics** → **Parameters** → **All**

This command is only available for X.25 IP ports.

For more information, see "X.25 Physical Level Port Parameters," "X.25 Frame Level Port Parameters," and "X.25 Packet Level Port Parameters."

X.25 Physical Level Port Parameters

To view information about the X.25 port parameters at the physical level (interface type, maximum frame size, type of clocking, and others), you can issue either:

- Telnet command: **NET PARAMETERS PHYSICAL**
- CCM command: **CCM Management** menu → **IP specifics** → **Parameters** → **Physical**

This command is only available for X.25 IP ports.

X.25 Frame Level Port Parameters

To view information about the X.25 port parameters at the frame level (maximum frame and panel size, the T1, T2, N1, and disconnect timers, and others), you can issue either:

- Telnet command: **NET PARAMETERS FRAME**
- CCM command: **CCM Management** menu → **IP specifics** → **Parameters** → **Frame**

This command is only available for X.25 IP ports.

X.25 Packet Level Port Parameters

To view information about the X.25 port parameters at the packet level (default and maximum packet size, various timers, number of logical circuits, and others), you can issue either:

- Telnet command: **NET PARAMETERS PACKET**
- CCM command: **CCM Management** menu → **IP specifics** → **Parameters** → **Packet**

This command is only available for X.25 IP ports.

Error Information

To view statistics about the errors (number of packets discarded or that were defective) at the port or processor level, you can issue either:

- Telnet command: **GWCON ERROR**
- CCM command: **CCM Management** menu → **IP specifics** → **Error**

Interface Information

To view statistics about the number of passed and failed self-tests and the number of maintenance failures at the port or processor level, you can issue either:

- Telnet command: **GWCON INTERFACE**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Interface**

All X.25 Port Statistics

To view all the X.25 counters (packet, frame, and physical levels), you can issue either:

- Telnet command: **NET STATISTICS ALL**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **All**

For more information, see "X.25 Physical Level Port Statistics," "X.25 Frame Level Port Statistics," and "X.25 Packet Level Port Statistics."

X.25 Physical Level Port Statistics

To view the X.25 physical layer counters and information (received and transmitted bytes, cable information, frame error counters, and others), you can issue either:

- Telnet command: **NET STATISTICS PHYSICAL**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Physical**

X.25 Frame Level Port Statistics

To view the X.25 frame level counters (number of received and transmitted frames of each type, number of timeouts for the T1, T2, N1, and disconnect timers, and others), you can issue either:

- Telnet command: **NET STATISTICS FRAME**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Frame**

X.25 Packet Level Port Statistics

To view the X.25 packet level counters (number of received and transmitted packets of each type and others), you can issue either:

- Telnet command: **NET STATISTICS PACKET**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Packet**

All Statistics for a Serial Line Interface

To view statistics about serial lines (frame-relay circuits, PPP, and X.25) at the port level, you can issue either:

- Telnet command: **NET LIST ALL**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **All**

This command is only available for frame-relay, X.25, and PPP ports.

Statistics for a DLCI

To view the statistics for a DLCI, you can issue either:

- Telnet command: **NET LIST CIRCUIT**
- CCM command:
  1. **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **Circuit number**
  2. Enter a DLCI number and press **OK**.

This command is only available for frame-relay ports.

LMI Information

To view information about the LMI (local management interface) for the frame-relay port, you can issue either:

- Telnet command: **NET LIST LMI**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **LMI**

This command is only available for frame-relay ports.

Frame-Relay Physical Line Parameters

To view information about the frame-relay physical line parameters for a port, you can issue either:

- Telnet command: **NET LIST LINE PARAMETERS**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **Physical line**

This command is only available for frame-relay IP ports.

Frame-Relay COMRATE Parameters

To view information about the frame-relay port parameters, you can issue either:

- Telnet command: **NET LIST COMMUNICATION RATE TUNING**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **COMRATE**

This command is only available for frame-relay IP ports.

Frame-Relay DLCI IP Address

To find the IP address of the other end of a frame-relay DLCI, you can issue either:

- Telnet command: **NET LIST IARP TABLE**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **IARP table**

This command is only available for frame-relay IP ports and is also called the *inverse ARP* command.

X.25 PVC Information

To view information about the PVCs (permanent virtual circuits) for the frame-relay port, you can issue either:

- Telnet command: **NET LIST PERMANENT-VIRTUAL-CIRCUITS**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **PVCs**

This command is only available for frame-relay ports.

SVC Information

To view information about the SVCs (switched virtual circuits) for the X.25 or frame-relay port, you can issue either:

- Telnet command: **NET LIST SVCS**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **SVCs**

X.25 IP Address Table

To view information about the X.25 IP address table for the port, you can issue either:

- Telnet command: **NET LIST**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **IP-ADDRESS-TABLE**

This command is only available for X.25 IP ports.

PPP IP Control Protocol Information

To view control information (state and configuration) about the IP control protocol for the PPP port, you can issue either:

- Telnet command: **NET LIST CONTROL IPCP**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **Control** → **IPCP**

PPP Link Control Protocol Information

To view control information (state and configuration) about the PPP link control protocol for the PPP port, you can issue either:

- Telnet command: **NET LIST CONTROL LCP**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **Control** → **LCP**

PPP Error Statistics

To view error statistics for a PPP port at the port level, you can issue either:

- Telnet command: **NET LIST ERRORS**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **Error**

PPP Link IP Information

To view information about IP packets over a PPP link at the port level, you can issue either:

- Telnet command: **NET LIST IP**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **IP**

PPP IP Control Protocol Statistics

To view IP control protocol statistics (packets received and transmitted) for a PPP port, you can issue either:

- Telnet command: **NET LIST IPCP**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **List** → **IPCP**

General Port Statistics

To view statistics (type of port(s), number of packets and bytes received and transmitted) about the port or processor, you can issue either:

- Telnet command: **GWCON STATISTICS**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics**

Clearing Statistics

To clear all statistics counters on the port or processor, you can issue either:

- Telnet command: **GWCON CLEAR**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Clear**

Router Status Information

To view the status of the all router processes on the processor, you can issue either:

- Telnet command: **OPCON STATUS**
- CCM command: **CCM Management** menu → **IP specifics** → **Status**

Router Up-Time Statistics

To view router processor statistics (number of restarts and crashes, time since last reload or restart), you can issue either:

- Telnet command: **OPCON UPTIME**
- CCM command: **CCM Management** menu → **IP specifics** → **Uptime**

IP Access Controls

To view information about the IP access controls on the processor (enabled or disabled and exclusive or inclusive for the source and destination networks, protocols, and ports), you can issue either:

- Telnet command: **P_IP ACCESS**
- CCM command: **CCM Management** menu → **IP specifics** → **IP commands** → **Access**

IP Routing Table Cache

To view the IP routing table cache on the processor, you can issue either:

- Telnet command: **P_IP CACHE**
- CCM command: **CCM Management** menu → **IP specifics** → **IP commands** → **Cache**

IP Counters

To view statistics in the IP counters for the processor (routing errors, dropped packets due to congestion, multicast packets, and overflows), you can issue either:

- Telnet command: **P_IP COUNTERS**
- CCM command: **CCM Management** menu → **IP specifics** → **IP commands** → **Counters**

Router IP Addresses

To view the IP addresses and masks for the local processor, you can issue either:

- Telnet command: **P_IP INTERFACE**
- CCM command: **CCM Management** menu → **IP specifics** → **Statistics** → **Interface**

Routing Table Size

routing table size To view the size of the routing table, reassembly buffer, and routing cache for the processor, you can issue either:

- Telnet command: **P_IP SIZES**
- CCM command: **CCM Management** menu → **IP specifics** → **IP commands** → **Sizes**

Clearing ARP Statistics

To flush the ARP cache for a port, you can issue either:

- Telnet command: **P_ARP CLEAR**
- CCM command: **CCM Management** menu → **IP specifics** → **ARP commands** → **Clear**

ARP Cache

To view the ARP cache (MAC address, IP address, and refresh timer) for a port, you can issue either:

- Telnet command: **P_ARP DUMP interface#**
- CCM command: **CCM Management** menu → **IP specifics** → **ARP commands** → **Dump ARP routing table**

ARP Registered Networks

To view the port type and MAC address of the ports currently registered with ARP, you can issue either:

- Telnet command: **P_ARP HARDWARE**
- CCM command: **CCM Management** menu → **IP specifics** → **ARP commands** → **Hardware**

ARP Registered Address Protocols

To view ARP information (the port, its protocol, and protocol local address), you can issue either:

- Telnet command: **P_ARP PROTOCOL**
- CCM command: **CCM Management** menu → **IP specifics** → **ARP commands** → **Protocol**

Statistics about ARP

To view ARP statistics, you can issue either:

- Telnet command: **P_ARP STATISTICS**
- CCM command: **CCM Management** menu → **IP specifics** → **ARP commands** → **Statistics**

Chapter 17. Viewing Node-Level APPN Information

This chapter explains how to see global information about APPN resources running on the network node. Figure 69 shows the APPN-specific cascaded-menu.

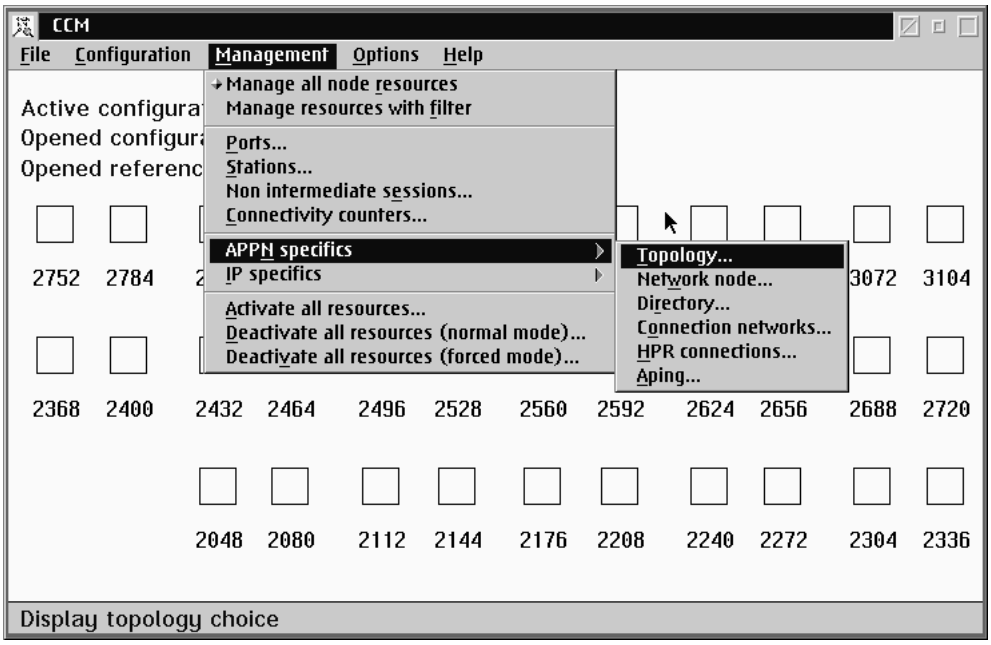


Figure 69. Example Management Panel for APPN

View Details of the APPN Network Topology

You can see the APPN network topology including details about the nodes and the links that are active and active-on-demand.

To view the topology information: Main panel **Management** menu → **APPN specifics** → **Topology...** → **Topology Information Display** panel

View Details of the Network Nodes

You can see network node information, including details about the service processor and network node processor.

To view the network node information: Main panel **Management** menu → **APPN specifics** → **Network node** → **Network Node Information Display** panel

View Details of the Network Directories

You can see information about the network directory, including details of all the LUs for which the local node "recognizes" the owning control point, details of the network node CP name, the number of associated LUs, the name of the owning CP and the LU entry type.

To view the directory information: Main panel **Management** menu → **APPN specifics** → **Directory** → **Directory Information Display** panel.

View Details of the Connection Networks

You can see information about the connection networks.

To view the connection information: Main panel **Management** menu → **APPN specifics** → **Connection networks** → **Connection Networks Information Display** panel

View Details of the HPR Connections

You can see information about the HPR connections.

To view the HPR connection information: Main panel **Management** menu → **APPN specifics** → **HPR Connections** → **HPR Connections Information Display** panel

Aping

You can check the reachability of an APPN resource using this MOSS-E command. This is similar to the IP **PING** command.

To use Aping: Main panel **Management** menu → **APPN specifics** → **Aping** → **APING** MOSS-E panel.

Chapter 18. Managing IP Router Data

This chapter explains how to manage IP network resources that are part of the 3746 router (including the MAE), by issuing commands.

These commands can be issued in two ways:

1. By sending a command using the MOSS-E Telnet console, refer to the *3746 Nways Multiprotocol Controller Model 950: User's Guide*.

   The equivalent Telnet command is given for each CCM command. Most of the time, the command is issued by selecting a cascaded menu item: the CCM automatically adds any necessary parameters to the command.

   Note: Certain command ask you for additional information. For example, if the command must be issued for a specific resource by its address, name, or number.

2. Through the **IP specifics** cascaded menu from the main panel **Management** menu (see Figure 70).

   If information is generated as the result of a command being issued, it is displayed by CCM in the **CCM IP Results Display** panel (see Figure 67 on page 154).

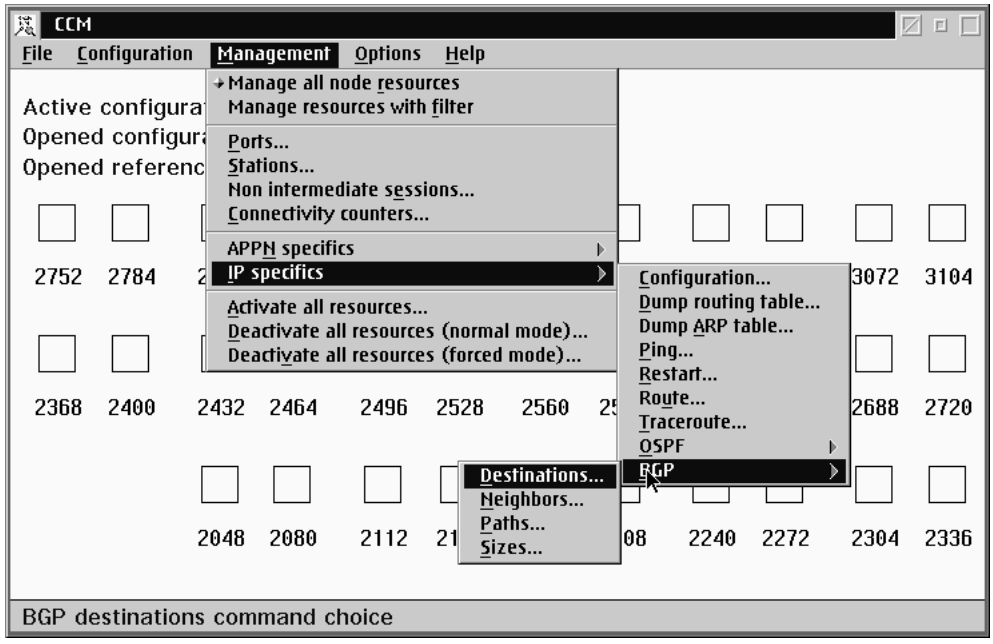


Figure 70. Example of an IP Command Panel

These commands are only available if IP resources are in the active configuration.

General IP-Specific Commands

Viewing the Protocol and Interface Configuration

To view details of the protocol and interface configuration for the whole router, you can issue either:

- Telnet command: **GWCON CONFIGURATION**
- CCM command: Main panel **Management** menu → **IP specifics** → **Configuration**

View (Dump) the Router Routing Table

To perform a dump of the router routing table, you can issue either:

- Telnet command: **P_IP DUMP**
- CCM command: Main panel **Management** menu → **IP specifics** → **Dump routing table**

Verifying the Reachability of a Resource: Ping

This commands checks whether or not a resource is currently reachable. It sends data packets of a specific size to the remote resource and requests the resource to send back the same packets as confirmation that it is reachable.

This command can be issued to a resource at a specific destination address, with no other parameters being defined. Alternatively the command can be issued to a specific destination address, with additional control values such as the size of the data packet being used for pinging, or the time to live (TTL) value for the ping packets.

You can issue either:

- Telnet command: **P_IP PING**
- CCM command: Main panel **Management** menu → **IP specifics** → **Ping** → **Ping** panel.

  To **start** pinging, specify the values in the panel and press **Ping**.

  To **stop** pinging, return to the Ping panel and press **Stop ping**.

Restarting the IP Router

To restart the IP router, you can issue either:

- Telnet command: **OPCON RESTART**
- CCM command: Main panel **Management** menu → **IP specifics** → **Restart**

Note: When the IP router is restarted, the MAE is completely (both IP and APPN traffic) restarted.

Viewing the Route to a Resource

To view information (next hops, routing characteristics) about the route to a specified destination address, you can issue either:

- Telnet command: **P_IP ROUTE**
- CCM command: Main panel **Management** menu → **IP specifics** → **Route** → **Route** panel

Tracing the Route to a Resource

This command traces the transfer of packets to the specified destination and shows the entire route, information about the next hops, and the time to get to each intermediate hop.

To trace the entire route to a specific network resource, you can issue either:

- Telnet command: **P_IP TRACEROUTE**
- CCM command: Main panel **Management** menu → **IP specifics** → **Traceroute** → **Traceroute** panel

  To **start** tracing, specify the values in the panel and press **Trace**.

  To **stop** tracing, return to the Traceroute panel and press **Stop trace**.

IP OSPF Commands

OSPF Link State Advertisement

To view details of a link state advertisement in the OSPF database, you can issue either:

- Telnet command: **P_OSPF ADVERTISEMENT** [advertising-router] [area-id] command
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Advertisement** → **OSPF - Advertisement** panel

OSPF Area

To view the statistics and parameters of all the OSPF areas attached to the router, you can issue either:

- Telnet command: **P_OSPF AREA**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Area**

OSPF AS-External Information

To view all the AS external advertisements belonging to the OSPF routing domain, you can issue either:

- Telnet command: **P_OSPF AS-EXTERNAL**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **AS-External**

OSPF Area Link State Database

To view link state (advertisements) database of a specific OSPF area, you can issue either:

- Telnet command: **P_OSPF DATABASE**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Database** → **OSPF - Database** panel

OSPF Interface Statistics

To view details of the statistics and parameters for all OSPF interfaces, or a specific one, you can issue either:

- Telnet command: **P_OSPF INTERFACE**
- CCM command: Main panel Main panel **Management** panel → **IP specifics** → **OSPF** → **Interface** → **OSPF - Interface** panel

Adding an OSPF Router to a Multicast Group

To add an OSPF router to a multicast group, you can issue either:

- Telnet command: **P_OSPF JOIN**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Join** → **OSPF - Join Multicast Group Address** panel

Removing an OSPF Router from a Multicast Group

To remove an OSPF router from a multicast group, you can issue either:

- Telnet command: **P_OSPF LEAVE**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Leave** → **OSPF - Leave Multicast Group Address** panel

OSPF Multicast Cache

To view all or a specific multicast cache entry, you can issue either:

- Telnet command: **P_OSPF MCACHE**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Mcache** → **OSPF - Multicast Cache** panel

Router OSPF Membership Groups

To view the group membership of the attached router interfaces, you can issue either:

- Telnet command: **P_OSPF MGROUPS**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Mgroups**

OSPF Multicast Routing Statistics

To view statistics (types of forwarding enabled, datagram counters) about the multicast routing, you can issue either:

- Telnet command: **P_OSPF MSTAT**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Mstat**

Details of Active OSPF Neighbors

To view statistics and parameters for all or a specified OSPF neighbor, you can issue either:

- Telnet command: **P_OSPF NEIGHBOR**
- CCM command for all neighbors: Main panel **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Neighbors** → **OSPF - Neighbors** panel

OSPF Router Routes

To view all the router routes that have been calculated by OSPF, you can issue either:

- Telnet command: **P_OSPF ROUTERS**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Routers**

Link State Advertisement Database Statistics

To view the number of link state advertisements (LSAs) in the link state database (categorized by type), you can issue either:

- Telnet command: **P_OSPF SIZE**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **SIZE**

OSPF Routing Statistics

To view the statistics generated by the OSPF routing protocol, you can issue either:

- Telnet command: **P_OSPF STATISTICS**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Statistics**

Changing the Cost of an OSPF Interface

You can view and temporarily change the cost of a router OSPF interface. If the router is restarted or reloaded, the cost of the interface reverts back to its original configured value.

You can issue either:

- Telnet command: **P_OSPF WEIGHT**
- CCM command: Main panel **Management** menu → **IP specifics** → **OSPF** → **Weight** → **OSPF - Weight** panel

IP BGP View Commands

BGP Routing Table

You can view (dump) the BGP routing table (network addresses, subnet masks, advertised to- and advertised from-entries).

This command can be issued to all destinations, a specific destination, or to destinations advertised or obtained.

You can issue either:

- Telnet command: **P_BGP DESTINATIONS**
- CCM command: Main panel **Management** menu → **IP specifics** → **BGP** → **Destinations** → **BGP - Destinations** panel

Details of Active BGP Neighbors

To view details of all active neighbors, or of a specific neighbor, you can issue either:

- Telnet command: **P_BGP NEIGHBORS**
- CCM command: Main panel **Management** menu → **IP specifics** → **BGP** → **Neighbors** → **BGP - Neighbors** panel

Path Description Database

To view the paths in the path description database, you can issue either:

- Telnet command: **P_BGP PATHS**
- CCM command: Main panel **Management** menu → **IP specifics** → **BGP** → **Paths**

Size of the BGP Databases

To view the size of all the BGP databases, you can issue either:

- Telnet command: **P_BGP SIZES**
- CCM command: Main panel **Management** menu → **IP specifics** → **BGP** → **Sizes**

Appendix A. CCM Remote Configuration Application: Options, Script Commands and Variables

This appendix provides information about:

- CCMCLI options and variables
- The script commands
- The variables

CCMCLI Options and Variables

The following section provides information about the **ccmcli** options and variables.

Options

The following list shows the **ccmcli** command options:

-f:*script_name*	Starts the application in script mode with the *script_name* file.
-i:*n*	Ignores all the errors (**-i**, which is the default value) or any first *n* specified error number.
-v	Shows the application release number
-q	Means quiet mode – No information is displayed while the application is running.
-s	Only syntactic analyze is processed – No request is performed.

Variables

The following list shows the **ccmcli** variables.

config_nb	indicates the number of configurations available in the current directory.
config_name[integer_value]	indicates the name of the configuration according to its position in the list (indicated by *integer_value*).
config_nb[config_name]	indicates for the specified configuration, its position in the list.

Example

```
[local]>ccnb=config_nb
[local]>ccfisrt=config_name[1]
[local]>cclast=config_name[ccnb]
[local]>@echo "number of configuration $ccnb"
[local]>number of configuration 15
[local]>@echo "first configuration $ccfirst"
[local]>first configuration BS8 05/02/99
[local]>@echo "last configuration $cclast"
[local]>last configuration BS9 12/12/99
```

Script Commands

This section provides information about the commands used in the script files.

label and goto

The label identifies a specific part of the script program. The **goto** command is used for intentional rerouting and works with the label.

Syntax

label:
`goto` *label*:

Example

```
start:
deletel config_name [1]
goto start:
```

include

The include commands calls, from a script file, another script file.

Syntax

`include` *script name*

Example

The script 1 file contains the following instructions:

```
logon mosse user password
select "BSA-810L"
```

The script 2 file contains the following instructions:

```
include script1
get config_name[1]
```

interactive_mode

This command interrupts the current script program and switches to the interactive mode. In order to return to the script mode and continue the script program execution, type `exit` on the command line.

Syntax

```
interactive_mode
```

Example

```
logon mosse user password
select "BSA-810L"
name=config_name[1]
local
interactive_mode
@echo $name
```

onerror

Error rerouting allows you to manage actions when errors occur.

Syntax

`onerror` *goto label:*

`onerror` *command*

Example

```
start:
onerror goto error:
deleter config_name[1]
goto start:

error:
onerror exit
displayr config_name[1]
unlock config_name[1]
goto start:
```

Substitution

Substitution is used to assign a specific value to a variable depending on whether or not the variable has been previously initialized.

Syntax

${*var?var1:var2*}

Example

```
var=shell
a=${var?ls:dir}
@ $a                                    /* In this case a=ls */
unset var
a=${var?ls:dir}
@ $a                                    /* In this case a=dir */
```

Variables

Variables are mainly used in the script files.

Assigning a Value

Consists to set a value to a variable.

Syntax

variable_name=value
variable_name="value"

Note: Quotes ("xxx") are used when the value contains blanks.

Example

The following instruction assigns to the **program_name** variable the **CCMCLI** value.

```
program_name=CCMCLI
```

The following instruction assigns to the **program_name** variable the **CCMCLI is new** value.

```
program_name="CCMCLI is new"
```

Expanding Variables

Expansion is used to assign to a variable the value of another variable.

Syntax

$*variable_name*

Example

```
[local]> configuration_name=config_test
[local]> first_name=$configuration_name
[local]> @echo $first_name
[local]> config_test
```

Deleting a Variable

Use the **unset** command to delete the value of a variable.

Syntax

`unset` *variable_name*

Example

```
unset program_name
```

Example

```
[local]> configuration=config_test
[local]> first_name=$configuration
[local]> second_name="$configuration name"
[local]> third_name=$configuration_name
[local]> VARIABLE configuration_name DOES NOT EXIST
[local]> fourth_name="${configuration}_name"
[local]> @echo $configuration
[local]> config_test
[local]> @echo $first_name
[local]> config_test
[local]> @echo $second_name
[local]> config_test name
[local]> @echo $third_name
[local]>
[local]> @echo $fourth_name
[local]> config_test_name
```

Parameters

Parameters are used to provide additional information for script file execution. They are identified using $*n*, where *n* corresponds to the number of the parameter position (first, second, third...) after the **ccmcli** character string. Note that $0 corresponds to the script name and $* to the list of parameters.

Example

```
ccmcli -f:sample1 address userid password
```

Sample1

```
@echo $*
@echo $0
@echo $1
@echo $2
logon $2 $3 $4
```

Sample1 results in:

```
-f:sample1 address userid password
sample1
-f:sample1
address
```

Appendix B. Bibliography

Customer Documentation for the 3746 Model 950

Table 9 (Page 1 of 5). Customer Documentation for the 3746 Model 950

This customer documentation has the following formats:

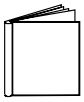
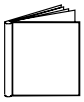
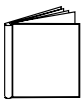
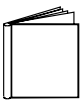
Finding Information		
		3745 Models A and 3746 Books All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[1] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Safety Information***[2] Provides general safety guidelines.
Evaluating and Configuring		
	GA33-0180	***IBM 3745 Communication Controller Models A and 170***[3] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Overview*** Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.
	GA27-4234	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Overview, Installation, and Integration*** Provides information for: • Overall 3746 planning • Installation and upgrade scenarios • Controller and service processor network integration • Related MOSS-E and CCM worksheets for these tasks.

Table 9 (Page 2 of 5). Customer Documentation for the 3746 Model 950



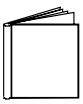
GA27-4235

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame-relay, PPP, X.25, and NCP lines.
- ISDN adapter description and configuration.



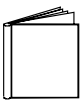
GA27-4236

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter description and configuration.



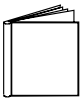
GA27-4237

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

Table 9 (Page 3 of 5). Customer Documentation for the 3746 Model 950

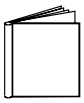
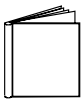
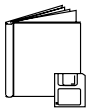
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote consoles, and RSF • MAE APPN/HPR management.
	GA27-4240	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Multiaccess Enclosure Planning*** Provides information for: • MAE adapters details • MAE ESCON planning and configuration • ATM and ISDN support.
	GA27-4241	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Protocols Description*** Provides information for: • Overview and details about APPN/HPR and IP.
	On-line information	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Controller Configuration and Management Worksheets*** Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.

Table 9 (Page 4 of 5). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller Model 950

User's Guide[2]

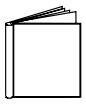
Explains how to:

- Carry out daily routine operations on Nways controller
- Install, test, and customize the Nways controller after installation
- Configure user's workstations to remotely control the service processor using:
  - DCAF program
  - Telnet client program
  - Java Console support.

On-line information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR network node and IP Router, and its resources.
It is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.

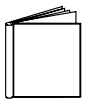


SH11-3081

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Controller Configuration and Management: User's Guide[2]

Explains how to use CCM and gives examples of the configuration process.



GA33-0479

IBM 3745 Communication Controller Models A
IBM 3746 Nways Multiprotocol Controller Models 900 and 950

NetView Console
APPN Command Reference Guide

Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.

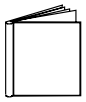
Managing Problems

On-line information

Problem Analysis Guide

An on-line guide to analyze alarms, events, and control panel codes on:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.



SA33-0175

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Alert Reference Guide

Provides information about events or errors reported by alerts for:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

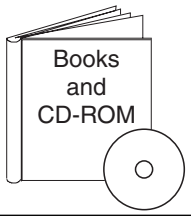
Table 9 (Page 5 of 5). Customer Documentation for the 3746 Model 950

[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

Customer Documentation for the 3745 (All Models), and 3746 (Model 900)

Table 10 (Page 1 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

This customer documentation has the following formats:

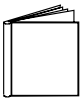


Finding Information

3745 Models A and 3746 Books

All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.

Evaluating and Configuring



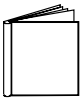
GA33-0092

IBM 3745 Communication Controller
Models 210, 310, 410, and 610

Introduction

Gives an introduction of the IBM Models 210 to 610 capabilities.

For Models A, refer to the *Overview*, GA33-0180.

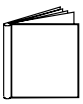


GA33-0180

IBM 3745 Communication Controller Models A and 170[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.



GA27-4234

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Overview, Installation, and Integration

Provides information for:

- Overall 3746 planning
- Installation and upgrade scenarios
- Controller and service processor network integration
- Related MOSS-E and CCM worksheets for these tasks.

Table 10 (Page 2 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

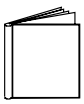
GA27-4235

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame-relay, PPP, X.25, and NCP lines.
- ISDN adapter description and configuration.



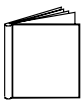
GA27-4236

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter desription and configuration.



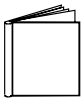
GA27-4237

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

Table 10 (Page 3 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

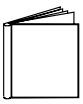
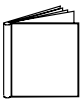
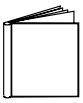
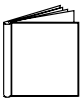
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote consoles, and RSF • MAE APPN/HPR management.
	GA27-4240	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Multiaccess Enclosure Planning*** Provides information for: • MAE adapters details • MAE ESCON planning and configuration • ATM and ISDN support.
	GA27-4241	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Protocols Description*** Provides information for: • Overview and details about APPN/HPR and IP.
	On-line information	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Controller Configuration and Management Worksheets*** Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.
Preparing Your Site		
	GC22-7064	***IBM System/360™, System/370™, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.

Table 10 (Page 4 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

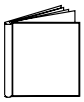
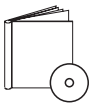
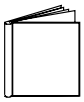
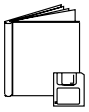
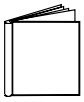
	GA33-0127	***IBM 3745 Communication Controller Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
	SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
	SA33-0416	***Line Interface Coupler Type 5 and Type 6 Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.
	SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using: – DCAF program – Telnet Client program – Java Console support.
Customizing Your Control Program		
	SA33-0178	***Guide to Timed IPL and Rename Load Module*** Provides VTAM procedures for: • Scheduling an automatic reload of the 3745 • Getting 3745 load module changes transparent to the operations staff.
Operating and Testing		

Table 10 (Page 5 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

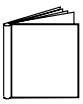
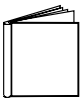
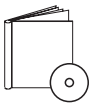
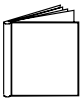
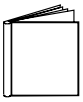
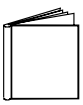
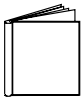
	SA33-0098	***IBM 3745 Communication Controller All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.
	SA33-0177	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 17A to 61A, and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node, and IP Router.
	SA33-0097	***IBM 3745 Communication Controller All Models***[3] ***Advanced Operations Guide***[1] Provides instructions for advanced operations and testing, using the 3745 MOSS console.
	On-line Information	***Controller Configuration and Management Application*** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources. It is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its online help.
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
	GA33-0479	***IBM 3745 Communication Controller Models A*** ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***NetView Console APPN Command Reference Guide*** Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.

Table 10 (Page 6 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Alert Reference Guide*** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

Additional Customer Documentation for the 3745 Models 130, 150, 160, 170, and 17A

Table 11. Additional Customer Documentation for the 3745 Models 130 to 17A

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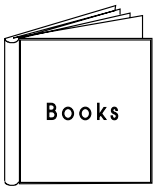
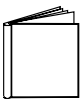


Finding Information

3745 Models A and 3746 Books

All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.

Evaluating and Configuring



GA33-0138

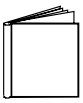
IBM 3745 Communication Controller Models 130, 150, 160, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.

Preparing Your Site



GA33-0140

IBM 3745 Communication Controller Models 130, 150, 160, and 170

Preparing for Connection

Helps for preparing the 3745 Models 130 to 170 cable installation.

For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

[1] Documentation shipped with the 3745.

List of Abbreviations

APPN	Advanced Peer-to-Peer Networking
ARP	address resolution protocol
AS	autonomous system
BGP	border gateway protocol
BLPU	build logical program unit
BRS	bandwidth reservation
CCM	Controller Configuration and Management
CCU	central control unit
CDF-E	configuration data file - extended
CHPID	channel path id
CIR	committed information rate
COS	class of service
CP	control point
CUD	call user data
DCE	data circuit-terminating equipment
DCAF	Distributed Console Access Facility
DLC	data link control
DLCI	data link connection identifier
DLUR	dependent logical unit requester
DLUS	dependent logical user server
DTE	data terminal equipment
EC	engineering change
ECA	engineering change announcement
EGA	ESCON Generation Assistant
EMIF	ESCON Multiple Image Facility
ESCC	ESCON channel coupler
ESCD	ESCON Director
ESCON	Enterprise Systems Connection
ESCP	ESCON channel processor
FRFH	frame-relay frame handler
HCD	Hardware Configuration Definition
HPR	high performance routing
I/O	input or output, input and output
IDF	Internet definition file
IML	initial microcode load
IOC	input/output control
IOCP	Input/Output Configuration Program
IP	Internet Protocol, internetwork protocol
IPCP	
IPL	initial program load
ISDN	integrated services digital network
LAN	local area network
LAPB	link access protocol - balanced
LC	logical channel
LCP	link control protocol
LCN	logical channel number
LEN	low entry networking
LIC	line interface coupler
LLC	logical link control
LMI	local management interface
LU	logical unit
MAC	medium access control
MAE	multiaccess enclosure
MB	megabyte (processor storage) 1MB = 2^{20} (1 048 576 bytes)
MLTG	multilink transmission group
MOSS-E	maintenance and operator subsystem - extended
MVS	Multiple Virtual Storage
NAK	negative acknowledgement
NAU	network accessible unit
NCP	Network Control Program
NDF	network definition file
NNP	network node processor
NPA	NetView Performance Analyzer
NPI	numbering plan identification
NPM	Network Performance Monitor
OSPF	open shortest path first
PLP	packet level protocol
PPP	point-to-point protocol
PR/SM	processor resource/systems manager
PVC	permanent virtual circuit
QLLC	qualified logical link control
RAM	random access memory
RAR	route addition resistance
RCPB	relative cost per byte
RCPUT	relative cost per unit of time

RIF	routing information field
RIP	routing information protocol
RTP	rapid transport protocol
SATF	shared access transport facility
SBS	subset
SDLC	synchronous data link control
SNA	Systems Network Architecture
SNMP	simple network management protocol
SOC	sphere of control
SVC	switched virtual circuit
TCP	transmission control protocol
TG	transmission group
TOA	type of address
TRP	token-ring processor
TRS	transmission control protocol
TTL	time to live
UDP	user datagram protocol
VC	virtual circuit
VGA	video graphics adapter
VTAM	Virtual telecommunications Access Method

Glossary

This glossary explains some of the terms used in this guide.

A

action bar. Also known as the menu bar. The area at the top of the primary window containing selectable keywords that gives the user access to actions in that window. When the user selects a keyword on the action bar, a pull-down menu is displayed.

action bar pull-down menu. An extension of the action bar that displays a list of choices related to the keyword that was selected on the action bar. Also known as a menu.

assigned focal point. A focal point where a SOC (sphere of control) is included, by explicit definition at the focal point or the SOC node. If a node's inclusion in the SOC is defined at the focal point, the focal point is known as an explicit focal point for that SOC node. If a node's inclusion in the SOC is defined at the SOC node, the focal point is known as an implicit focal point for that node.

B

backup focal point. A focal point that provides specific management services for a node if communications with the primary focal point fail. Both of the assigned focal points (explicit and implicit) and the default focal points can also have backup counterparts.

C

Channel Path Identifier. The address assigned to each installed channel path of a system which uniquely identifies that path. The CHPID is "connected" either to a Host Link Address on an ESCD or directly to an ESCC (if there is no ESCON Director).

connection network. A representation within an APPN network of a shared access transport facility (SATF), such as a token-ring, that allows nodes identifying their connectivity to the SATF by a common virtual routing node, to communicate without having individually defined connections to one another.

D

default focal point. A focal point that provides management services for nodes that have not been assigned a focal point. The set of nodes in the SOC (sphere of control) of a default focal point is not defined at the focal point itself, or at the SOC nodes. A default focal point exchanges management services with all the network nodes known to it. Only those nodes that have not established a relationship with another focal point can accept the request.

E

ESCON Multiple Image Facility. A host mode that allows ESCON channels to be shared across PR/SM logical partitions.

ESCON Channel Coupler. This is a communication controller that provides the interface between the ESCON channel processor (ESCP) and the ESCON fiber optic cable.

Only one ESCC can be defined for each ESCP. It must be installed in the leftmost slot of the ESCP.

All ESCCs of the communication controller must be defined in the same subset.

ESCON Director. This is a switching device that can be attached to processors with ESCON channels and to ESCON control units. It permits dynamic channel link switching.

Enterprise System Connection.. A set of IBM networking communications products that use fiber-optic technology.

ESCON Channel Processor. This is a communications controller that provides the channel data link control for the ESCON channel adapter.

I

IOCP. Input/Output Control Program, defines and controls all the available I/O devices and channel paths.

IPL port. Initial Program Load port

L

LEN node. Low entry networking node. A node that supports independent LU protocols but which does not support CP-CP sessions. LEN nodes can be one of the following:

- A peripheral node attached to a boundary node in a subarea network
- An end node attached to an APPN network node in an APPN network
- A peer connected node directly attached to another LEN node or APPN end node

link station. 1) The hardware and software components in a node that represent the connection to an adjacent node over a specific link. For example, if node A is the primary end of a multipoint line that connects to three adjacent nodes, node A will have three link stations representing the connections to the adjacent nodes.

2) In VTAM, a named resource within an APPN or subarea node that represents the connection to another APPN or subarea node which is attached by an APPN or subarea link. In the resource hierarchy in a subarea network, the link station is subordinate to the subarea link.

LU. Logical unit. A network accessible unit (NAU) that enables users to access network resources and to communicate with other users.

LU-LU session. Logical unit-logical unit session. A logical connection between two logical units in a network that provides communication capabilities for two users.

LU name. Logical unit name.

M

Medium access control. The sub-layer of the data link control layer that supports medium dependent functions and which uses the services of the physical layer to provide services to the logical link control (LLC) sub-layer. The MAC sub-layer includes the process for determining when a device has access to the transmission medium.

Maintenance and Operator Subsystem - Extended. A licensed, internal program which resides on the service processor's hard disk. It is designed to provide system maintenance and operation functions for end-users or IBM service representatives.

N

network identifier. Part of a network address that defines the network. The network ID is a 1 to 8 byte name selected by the user or an 8 byte IBM registered name that uniquely identifies a specific subnetwork.

network node. A node that offers a broad range of end user services. An APPN network node can provide distributed directory services, optimal routing, session services and intermediate routing services.

P

port. An access point for data entry or exit which is also the representation of a physical connection to the link hardware.

primary focal point. The central control point for any management services element which is responsible for handling the network management data.

primary window. The top level window in an application program that can be minimized or represented by an icon.

S

Synchronous Data Link Control. A process that manages synchronous, code-transparent, serial-by-bit data transfer over a link connection. Data transmission can be duplex or half duplex over switched or nonswitched links. The link connection can be configured as point-to-point, multipoint or loop.

secondary window. A window that can be moved and sized. Secondary windows are always associated with a primary window.

SNA network. The part of a user application network that conforms to the SNA formats and protocols. It enables reliable transfer of data among end users and provides protocols for controlling the resources of the network.

station. The input or output point of a system that uses telecommunications facilities; for example, one or more systems, computers, terminals, devices, and associated programs at a particular location that can send or receive data over a telecommunication line.

subarea. A portion of the SNA network consisting of a subarea node, attached peripheral nodes, and associated resources. Within a subarea node, all network accessible units (NAUs), links, and adjacent link stations (in attached peripheral or subarea nodes) that are addressable within the subarea, share a

common subarea address and have distinct element addresses.

subset. The part of an EGA (ESCON Generation Assistant) output file which is specific to all ESCON channel adapters on a communications controller. this information is placed in the EGA .SDS output file.

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Tell Us What You Think!

3746 Nways Multiprotocol Controller
Models 900 and 950
(For CCM Version F64810)
Controller Configuration
and Management
User's Guide

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