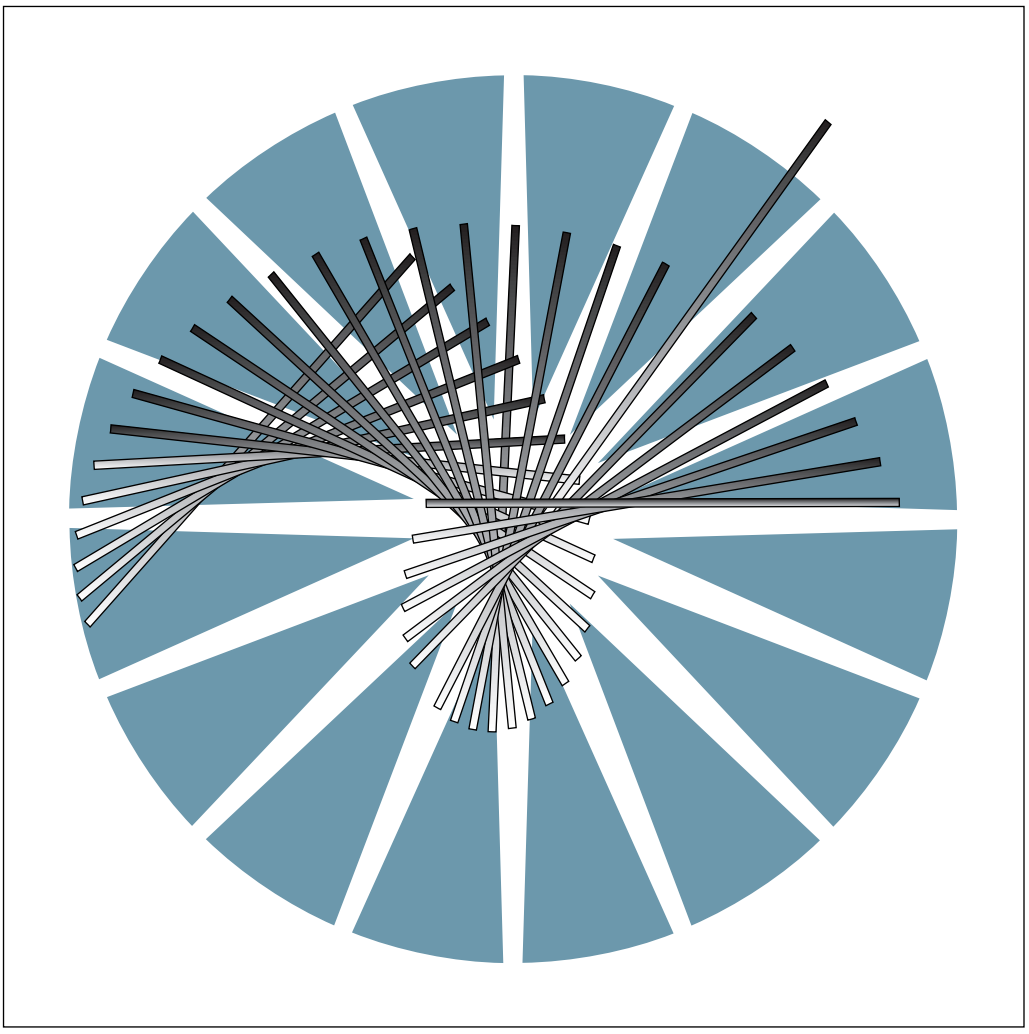
3746 Nways Multiprotocol Controller
Models 900 and 950
(For CCM Version F12381 000 or Later)

Controller Configuration and Management User's Guide



SH11-3081-4A

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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 xi.

Fifth Edition (December 1997)

This edition applies to the Version 2.0 of the Controller Configuration and Management application (CCM), and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this Book

This book 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 windows 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 book complements the online help.

Who Should Use this Book

This book 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 Book is Organized

This guide is organized into 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 windows)
- 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 windows 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 windows where you manage 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 book.

Conventions Used in this Book

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

Typeface Graphics	Used for
Italics ***Bold italics***	Word emphasis
Bold	Menu bar and drop-down menu choices Pushbuttons Field names Window 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** window used to configure IP static routes:

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

This means:

1. To select the **Configuration** drop-down menu from the CCM main window 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** window.

Part 1. Introducing the CCM

Chapter 1. Welcome to the CCM

The IBM Communication Configuration and Management application (CCM) is designed to help you configure and manage an IBM 3746 communication controller 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 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 windows.

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 windows that help you go to a window used for specific configuration task; the actual window used for the task is normally not shown in this guide.

For “how-to-configure” information, use:

- *3746 Communication Controller Models A, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

Operating Environments

The CCM can be used on either:

- The service processor, where it is accessed via the MOSS-E. 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.
- 40 MB of hard disk space free.
- VGA display (for example, an IBM 8515 Color Display or equivalent).
- 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-inch diskette drive.
- IBM Operating System/2 (OS/2), version 2.1 or higher.

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 1-1.

Table 1-1 (Page 1 of 2). 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: • HRP/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 1-1 (Page 2 of 2). 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.

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. **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.

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** window.

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 window **Help** menu → **Product information**

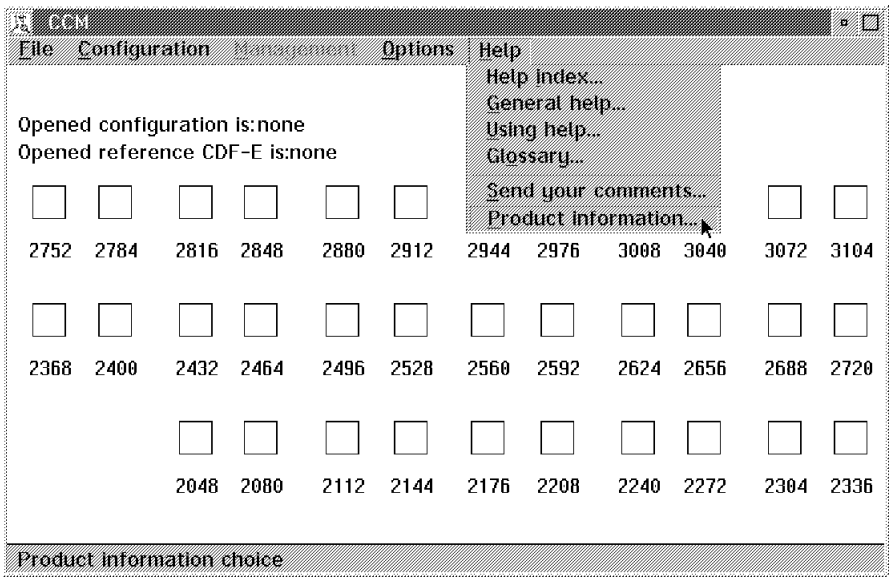


Figure 1-1. Main Window Help Menu

Installing CCM in Service Processor Environment

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

Installing CCM in Stand-Alone Environment

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

Before installing CCM

Ensure that your workstation has the correct hardware and software requirements (see page 1-2).

The installation procedure is in the README files that comes with the CCM and may 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/Tenet 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 on the CCM folder icon  CCM

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

Using the Keyboard

Step 1. Open an OS/2 window.

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

Stopping and Exiting from CCM

To stop the CCM:

Main window **File** → **Exit**

Becoming Familiar with the User Interface: the Main Window

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

When you start the CCM, the main window is displayed (see Figure 1-2).

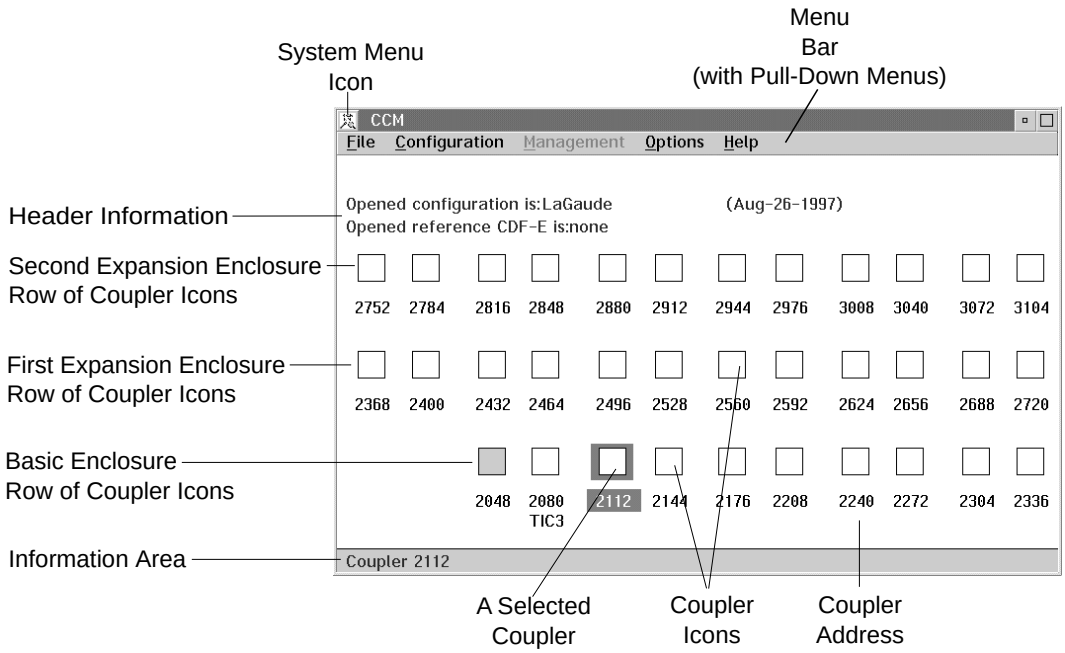


Figure 1-2. CCM Main Window

As shown in Figure 1-2, the main window 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:

- 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, since 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”, refer to “Setting or Clearing the Coupler Type” on page 3-10.

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 window and displays navigation and processing status information.

Working in the Main Window

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

Working with the Main Window 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 window needed to continue the configuration process.

If the coupler type has not been defined, CCM opens the **Coupler type** window, where you must specify the coupler type. CCM then opens window 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** window, 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** window 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 several identical lines, ports, or stations are being configured.

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 2-1 on page 2-2).

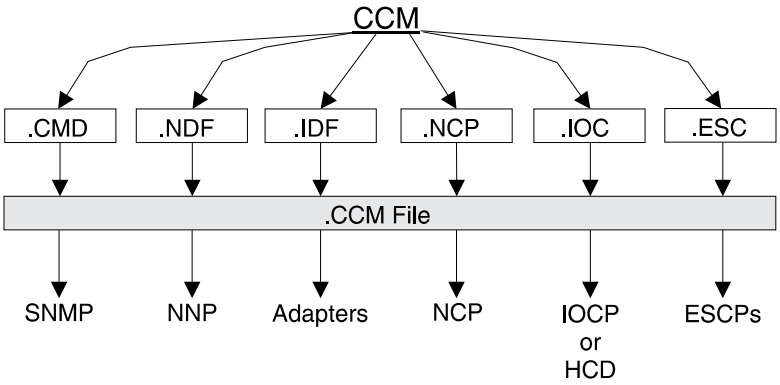


Figure 2-1. Files Created by the CCM during the Configuration Process

Legend:

.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

.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

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. This procedure is explained in “Creating a New Configuration” on page 3-4.

Before starting the initial configuration ensure you have available:

- The hardware configuration worksheets, which are located in the *3746 Communication Controller Models A, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457, and is used for keeping a record the controller hardware topology, including details of coupler position and type.
- The CCM parameter worksheets are also located in the 3746 *Planning Guide* and are used for recording the configuration information for each controller and its associated resources.

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 “To Open and Modify a Configuration” on page 3-6.

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, refer to Chapter 13, “Dynamic Activation and How It Affects Your Network” on page 13-1.
- Later, by activating the whole configuration, refer to “Activating a Configuration” on page 3-7.

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 20:00 to the night version and change again at 07:00 to the day version.

Export/Import a Configuration

If you configure in the stand-alone environment, or in the service processor for a controller not attached to the service processor, 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 using its CCM and MOSS-E.

You can also import a CCM configuration file for other than the default directory. Refer to “Importing a CCM Configuration” on page 3-6.

Activate a Configuration

This must be done in the service processor environment CCM, refer to “Activating a Configuration” on page 3-7.

A single configuration only can 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.

Configuration Creation in Different Environments

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

Note: In the following figures, the activation step has been included to show the difference between the two environments.

In the Service Processor Environment

If you are using the service processor environment, follow the steps shown in Figure 2-2.

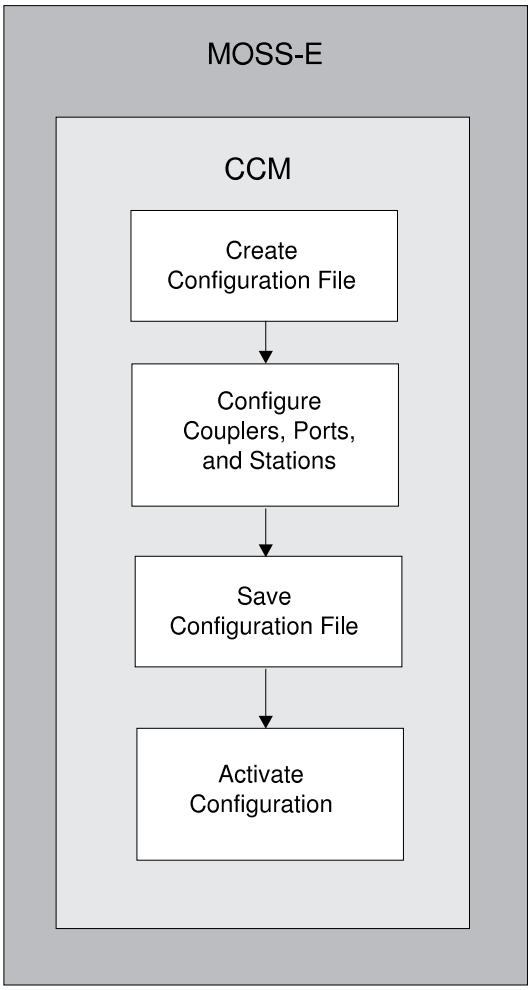


Figure 2-2. Creating a Configuration in the Service Processor Environment

In the Stand-Alone Environment

If you are using the stand-alone environment, follow the steps shown in Figure 2-3.

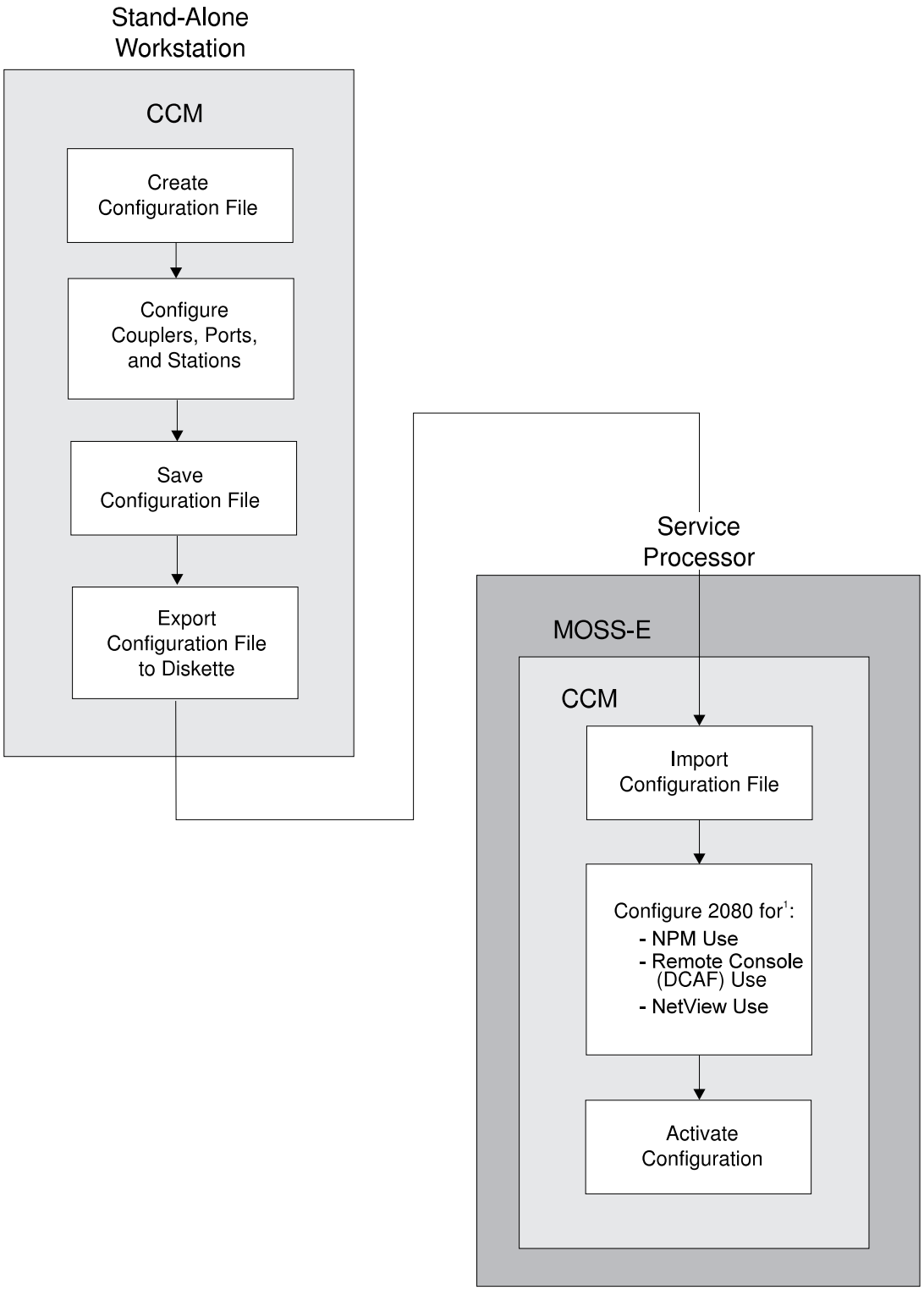


Figure 2-3. Creating a Configuration in a Stand-Alone Environment.
[1]*Refer to "Configuring Station(s) on Coupler/Port 2080" on page 4-3.*

Chapter 3. Performing Generic Configuration Tasks

This chapter explains how to find the windows 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 configuration(s). 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 Push Buttons

Copy Push Button

Use the **Copy** button 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 Push Button

Using the **Search** button, 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 Push Button

Using the **Sort** button, 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 3-1 shows which resources that can be copied, searched for, or sorted.

Table 3-1. 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

Save as Defaults Push Button

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

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 Push Button

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

Cancel Push Button

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

Important...

When using the **Cancel** button, be careful as the system *does not* request confirmation. Not only is any modified information lost in the current window, any changes to **any other windows that you have accessed via the current window** are lost.

Note: If you have used the **Save as defaults** button 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 the **Help** button at the bottom of the window.

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

- Selecting a parameter in the window and pressing the **F1 key**.

  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 window **File** menu → **New**

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

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

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 window **File** menu → **New**

Step 2. In the **Configuration Description** window, 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 window.

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

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 window **File** menu → **Open**:

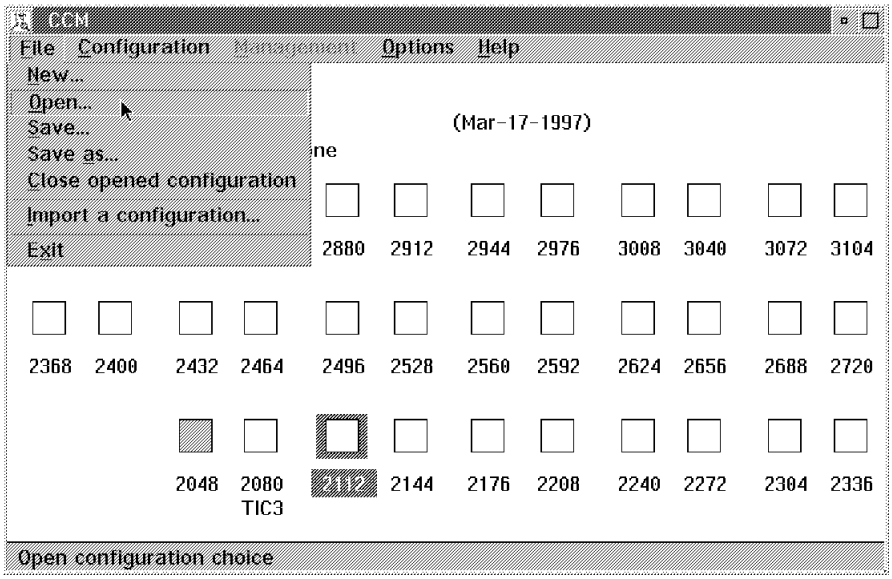


Figure 3-1. Main Window File Menu

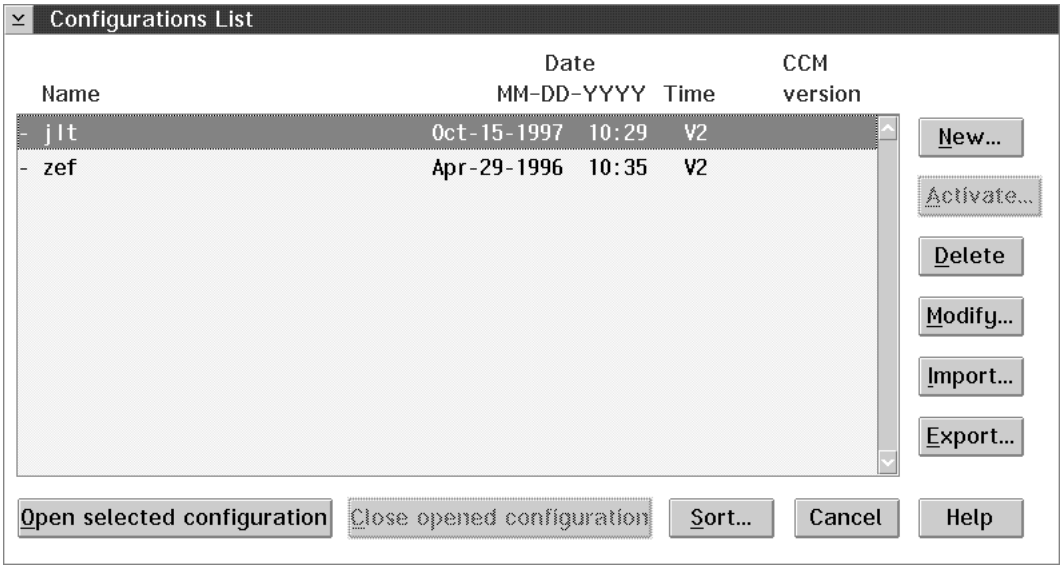


Figure 3-2. Configurations List

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 window **File** menu → **Import a configuration**.

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

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

To Open and Modify a Configuration

To open and modify a configuration:

Step 1. Main window **File** menu → **Open** (see Figure 3-1 on page 3-5)

Step 2. In the configuration list, select the configuration you want to modify (see Figure 3-2 on page 3-5).

Important...

If you select a configuration created with a previous version of CCM, you may have to convert it to the new format before modifying it. If you do not convert the file, you won't be able to use the configuration with the current version of the CCM.

Step 3. When the configuration opened, modify it as required, refer to Part 2, “Resource Configuration.”

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

Note: If you were only viewing the configuration, you can close it without modification: Main window **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 window **File** menu → **Open**

Step 2. In the configuration list, select the configuration to export and press **Export** (see Figure 3-1 on page 3-5).

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

Activating a Configuration

To activate a configuration:

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

Step 2. In the configuration list, select the configuration you want and press **Activate** (see Figure 3-1 on page 3-5).

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

Working with the CDF-E

The **Reference CDF-E** menu (see Figure 3-3) lets you compare the opened CCM configuration to a MOSS-E reference CDF-E (configuration definition file-extended).

For example, you may want to compare the active CDF-E of a 3746 with a CCM configuration that you are planning to use in the 3726. This function allows you to compare the machine hardware with the future machine configuration **off line**. 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.

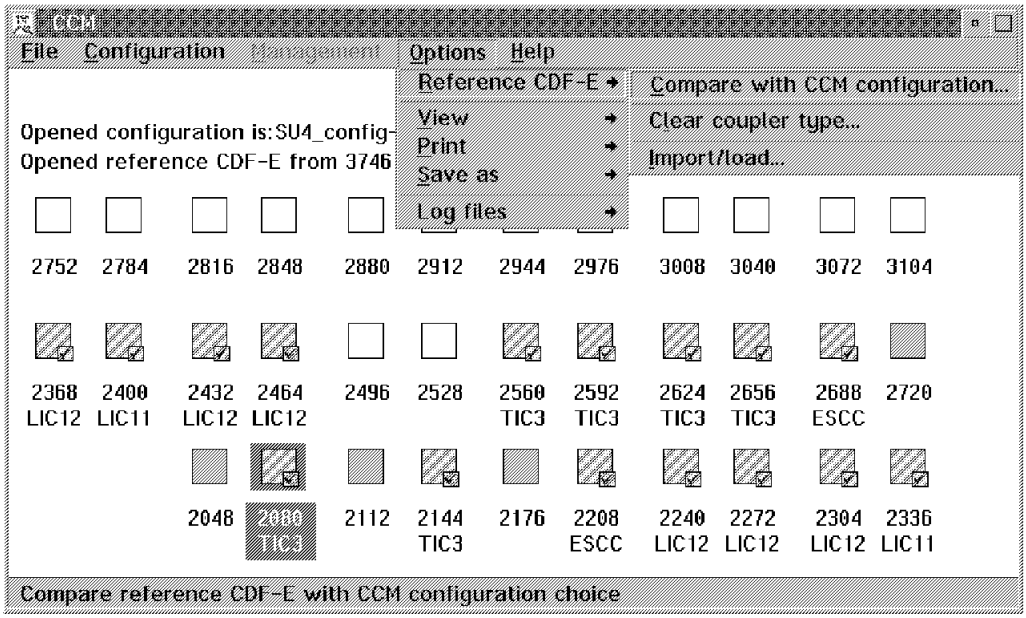


Figure 3-3. Reference CDF-E Comparison Menu

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 window **Options** → **Reference CDF-E** → **Compare with CCM configuration** → **CCM Configuration/Reference CDF-E Comparison** window (see Figure 3-4)

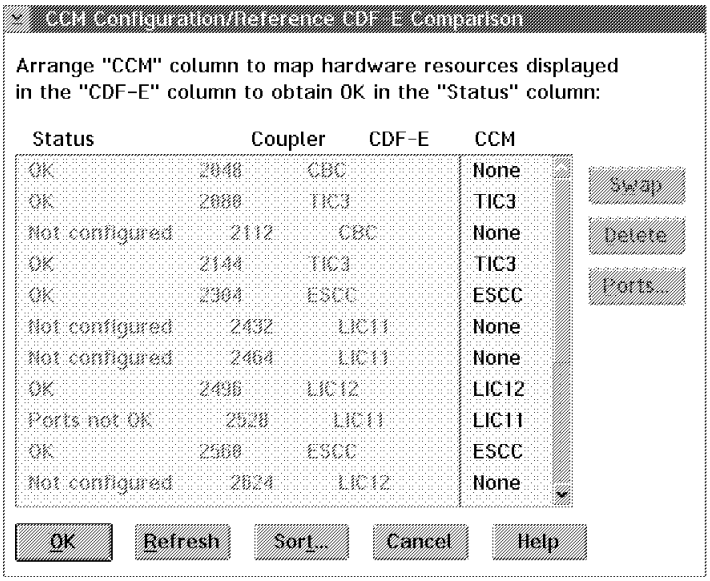


Figure 3-4. CCM Configuration/Reference CDF-E Comparison Window

Notes:

1. After the comparison is finished, some of the coupler icon are blue, others remain white. For more information, refer to “Blue and White Icons” on page 1-8.
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.

Working with CDF-E Ports

By selecting a LIC11 in the CCM column (see Figure 3-4) and then clicking on the **Ports** button, you can see the results of the port comparison in the **CCM Configuration/Reference CDF-E Ports Comparison** window.

The ports can be sorted, swapped, and deleted to resolve discrepancies in the same way as the couplers can be in Figure 3-4.

Swapping Couplers or Ports

To swap two couplers (or ports), select the two couplers in the CCM configuration and click on **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 on **Delete**. More than one coupler (or port) can be selected at the same time for deleting.

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 3-4 on page 3-9), press **Sort**

Step 2. In the **Sort By** window, 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 window and re-configure one or more of the couplers.

Note: None of the changes you make to the CCM configuration are saved until you click on 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 window **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:

  Click on the coupler you want to change with the *right* mouse button → Pop-Up menu → **Set/clear coupler type**

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

Loading a CDF-E

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

Main window **Options** → **Reference CDF-E** → **Import/load** (see Figure 3-3 on page 3-8)

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 drive A.

Stand-alone

The reference CDF-E can come from the hard drive, the drive A, 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.

Part 2. Resource Configuration

Chapter 4. Beginning a CCM Configuration

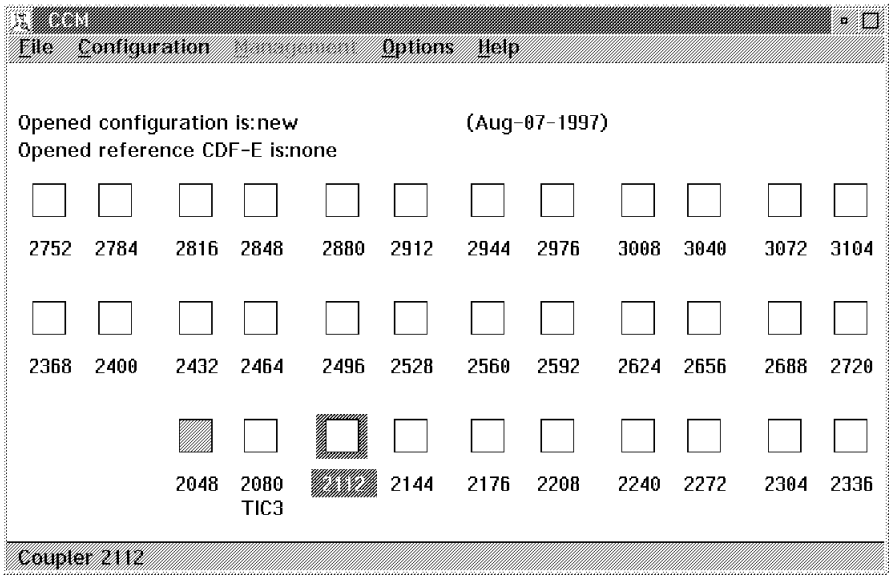


Figure 4-1. Main CCM Window

If you are creating a new configuration...

If you are creating a new configuration and if you are configuring the first coupler, go to step 1 on page 4-2.

Otherwise, go to step 4 on page 4-2.

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 window **Configuration** menu → **NN/FP/DLUR** → **Network Node/Focal Point/Dependent LU Requester Parameters** window

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

To start a new configuration:

Step 1. Double-click on the icon for the coupler you want to configure. This displays the **3745/3746 Parameters** window (see Figure 4-2).

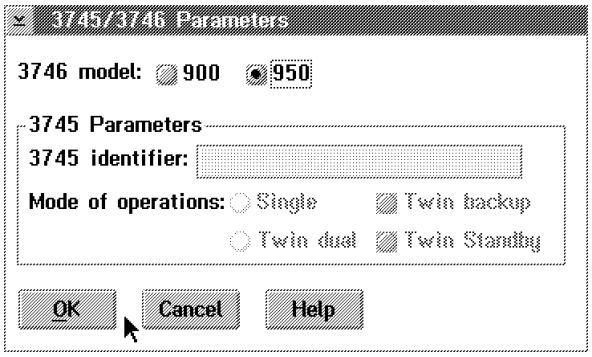


Figure 4-2. 3745/3746 Parameters Window

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

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

Step 3. When completed, click on **OK** → **Coupler Type** window (see Figure 4-3).

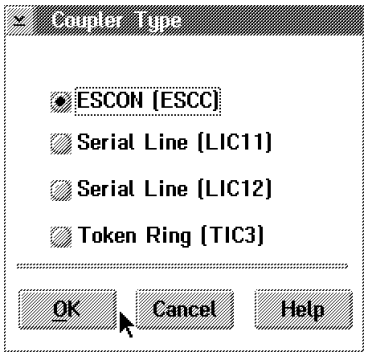


Figure 4-3. CCM Coupler Type Window

Step 4. Select the desired DLC and coupler type.

Step 5. Click on **OK** → port configuration window for the selected port type.

Step 6. Go to the appropriate chapter:

- Chapter 5, “Configuring an ESCON Coupler”
- Chapter 6, “Configuring a Token-Ring Coupler”
- Chapter 7, “Configuring Serial Line SDLC Resources”
- Chapter 8, “Configuring Serial Line Frame-Relay Resources”
- Chapter 9, “Configuring Serial Line PPP Resources”
- Chapter 10, “Configuring Serial Line X.25 Resources.”

Configuring Station(s) on Coupler/Port 2080

You specify the type of station(s) 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 send alerts to NetView.
- NPM
  - Using NetView Performance Monitor

To configure these parameters:

Main window **Configuration** menu → **Stations on coupler/port 2080** → **Stations on Coupler/Port 2080** window (see Figure 4-4)

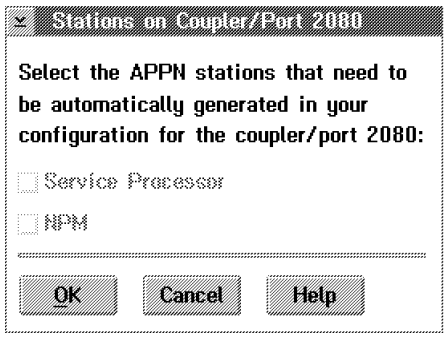


Figure 4-4. Stations on Coupler/Port 2080 window

Chapter 5. Configuring an ESCON Coupler

Before you start...

If this is the first coupler to be configured in a new CCM configuration, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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 on the icon of the coupler you want to configure**, and **go to “Configuring the ESCON Port Parameters”** .

Configuring the ESCON Port Parameters

From the **ESCON Port configuration** window (see Figure 5-1), you can specify configuration parameters for ESCON ports and the ESCON Directors.

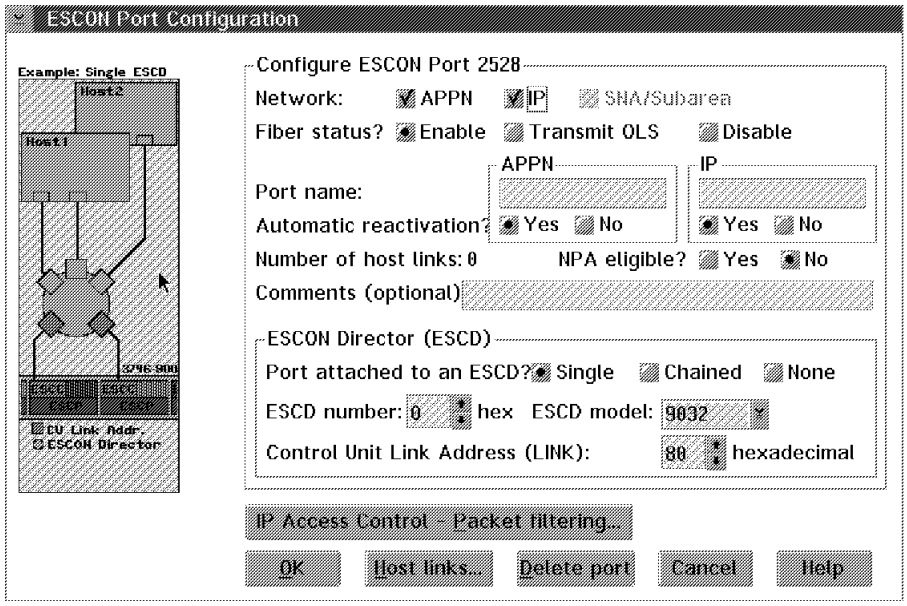


Figure 5-1. ESCON Port Configuration Window

Step 1. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, refer to “An Easier Way to Configure” on page 2-1.

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

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

Otherwise, go to Step 4 on page 5-2.

Step 2. Click on **IP Access Control - Packet filtering → IP Access Controls** window (see Figure 5-2).

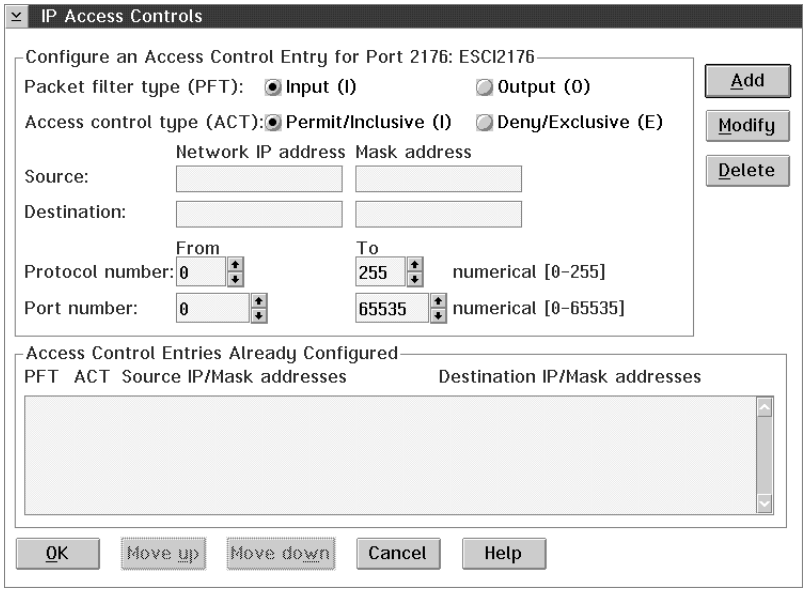


Figure 5-2. IP Access Controls Window

Step 3. When completed, click on **OK**.

Step 4. When the port is completed, either click on **OK** to save and exit or click on **Host links** to display the **ESCON Host Links Configuration** window.

Configuring the ESCON Host Link Parameters

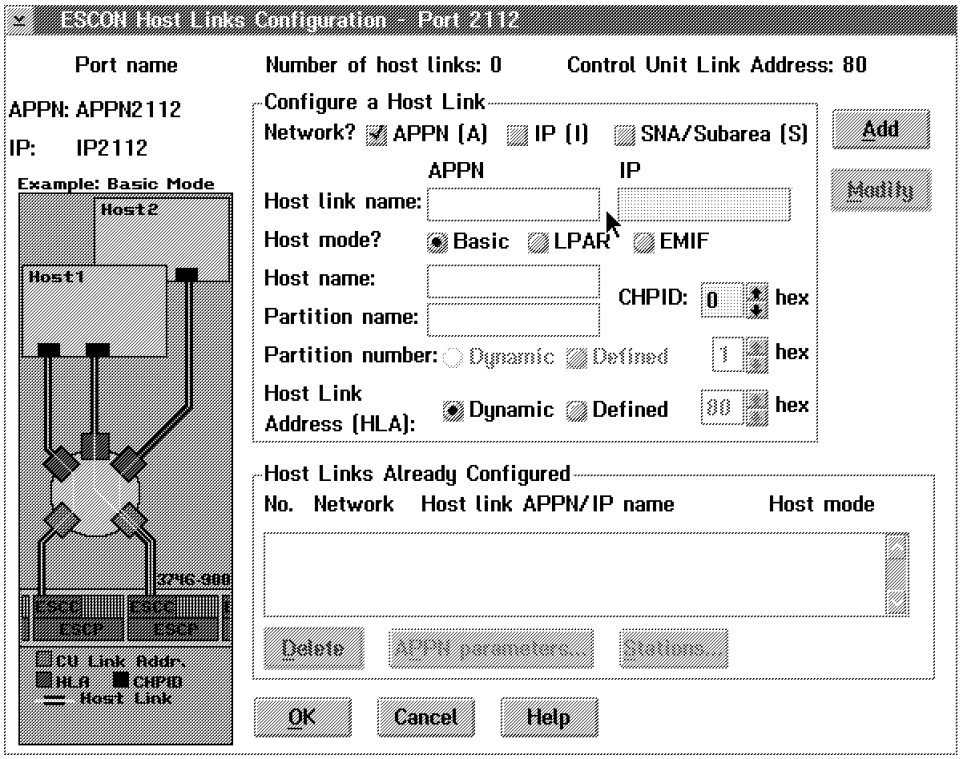


Figure 5-3. ESCON Host Link Configuration Window

Step 1. Enter the parameters as required in the **ESCON Host Link Configuration** window (see Figure 5-3).

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

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

> **Note...**
>
> After clicking on **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 push buttons are now available.

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

Otherwise, go to 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 5-4.

Configuring the Port APPN Parameters

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

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

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

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” on page 5-4, or click on **OK** to save and exit.

Configuring ESCON Station Parameters

Step 1. Select a host link and click on **Stations** from the **Host Links Configuration** window → **ESCON Station Configuration** window (see Figure 5-4).

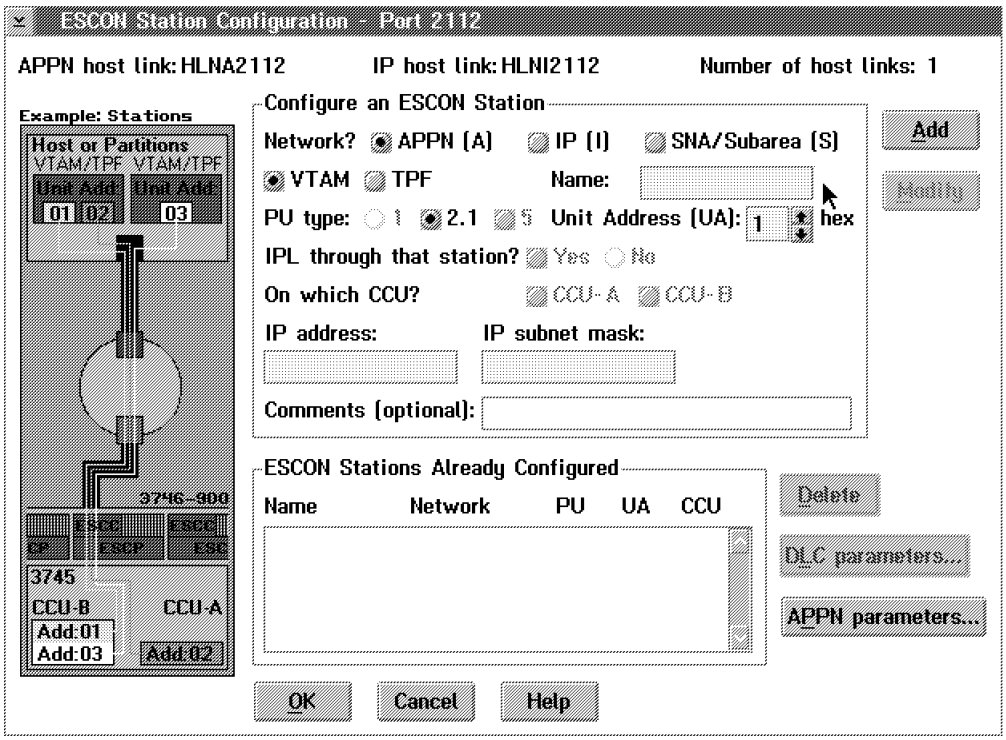


Figure 5-4. ESCON Station Configuration Window

Step 2. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, refer to “An Easier Way to Configure” on page 2-1.

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 window (Figure 5-4).

Step 3. Click on **Add**.

> **Note...**
>
> After clicking on **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 push buttons are now available.

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

Otherwise, go to next step.

Step 5. If you need to configure APPN parameters for one or several stations, go to next step.

Otherwise, go to Step 13 on page 5-5.

Configuring the Station APPN Parameters

Step 6. Select a station and click on **APPN parameters** → **ESCON Station Configuration - APPN Parameters** window (see Figure 5-5).

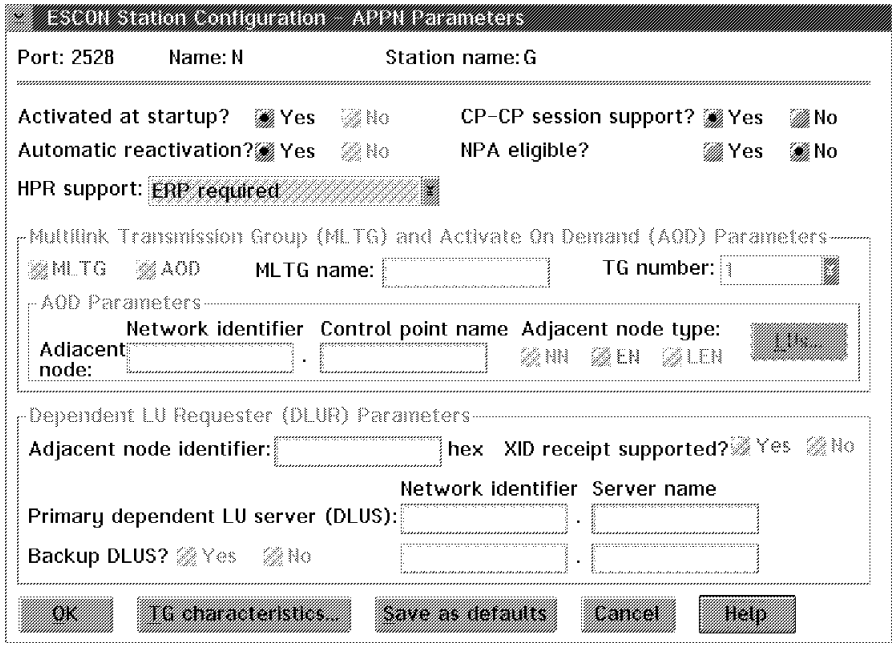


Figure 5-5. ESCON Station Configuration - APPN Parameters Window

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

Note: For information about the MLTG, AOD, and DLUR parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

Step 8. To configure the transmission group for this station, go to next step.

Otherwise, go to Step 12.

Step 9. Click on **TG characteristics** → **Station Configuration - TG characteristics** window.

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

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

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

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

Otherwise, go to step 16 on page 5-6.

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

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

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

Step 17. To configure ESCON stations for any other host link, repeat Step 1 (starting on page 5-4) through Step 16.

Otherwise, go to next step.

Step 18. Click on **OK** on each window until the CCM main window is displayed.

Chapter 6. Configuring a Token-Ring Coupler

Before you start...

If this is the first coupler to be configured in a new CCM configuration, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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”**.

Configuring Token-Ring Ports

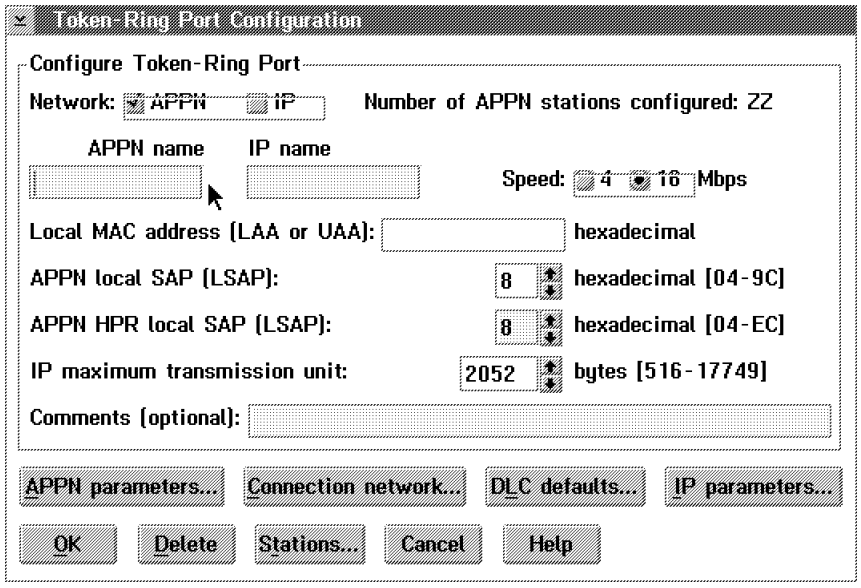


Figure 6-1. Token-Ring Port Configuration Window

Step 1. Enter the parameters values as required in the **Token-Ring Configuration** window (see Figure 6-1). As you enter the values, CCM dynamically checks them for configuration-wide consistency, refer to “An Easier Way to Configure” on page 2-1.

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

Note: For information about using duplicate MAC addresses on two ports for load balancing and TRP backup, refer to the *3746 Communication Controller Models A, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457.

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

- To configure the port APPN parameters, go to Step 3.
- To configure the IP parameters, go to Step 10 on page 6-3.
- To configure the port DLC parameters, go to Step 16 on page 6-3.
- To configure the connection network, go to Step 20 on page 6-4.
- To configure the stations, see "Configuring Token-Ring Stations" on page 6-5.

Configuring Port APPN Parameters

Step 3. Click on **APPN parameters → Token Ring Port Configuration - APPN Parameters** window (see Figure 6-2).

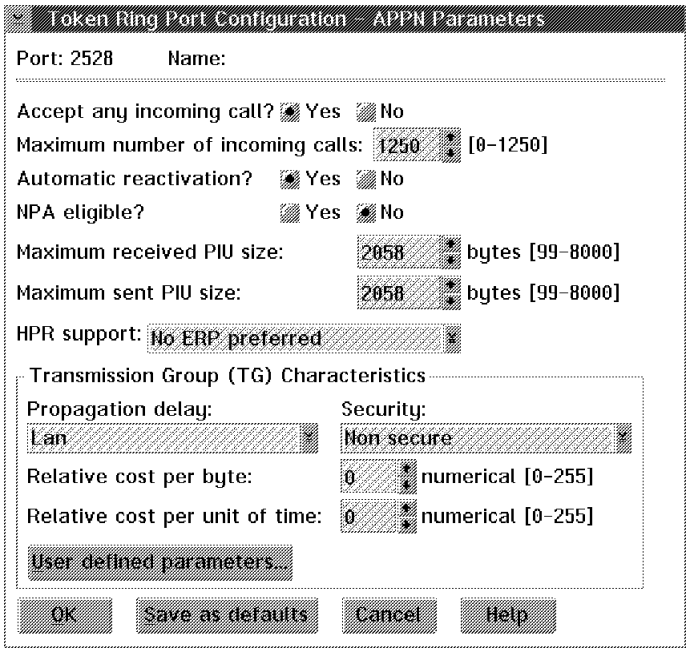


Figure 6-2. Token-Ring Port Configuration - APPN Parameters Window

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, go to next step.

Otherwise, to Step 8.

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

Note: For information about the user defined parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

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

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

Otherwise, go to Step 19 on page 6-3.

Configuring Port IP Parameters

Step 10. **IP parameters → IP over Token-Ring Parameters** window (see Figure 6-3).

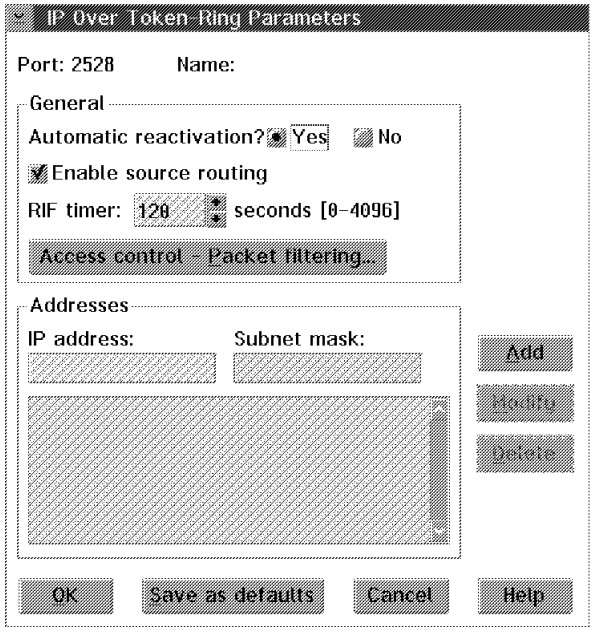


Figure 6-3. IP Over Token-Ring Parameters Window

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.

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

Otherwise, go to Step 14.

Step 12. Click on **IP Access Control - Packet filtering → IP Access Controls** window (see Figure 5-2 on page 5-2).

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

Step 14. When the IP configuration is completed, click on **OK** to return to the **Token-Ring Port Configuration**.

Step 15. If you want to configure the DLC port parameters, go to next step.

Otherwise, go to Step 19.

Configuring Port DLC Parameters

Step 16. Click on **DLC defaults**

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

Step 18. When completed, click on **OK** to return to the **Token-Ring Port Configuration**.

Step 19. If you want to configure port connection network parameters, go to next step.

Otherwise, go to Step 25 on page 6-4.

Configuring Port Connection Network Parameters

Step 20. Connection network → Token-Ring Connection Network window (see Figure 6-4).

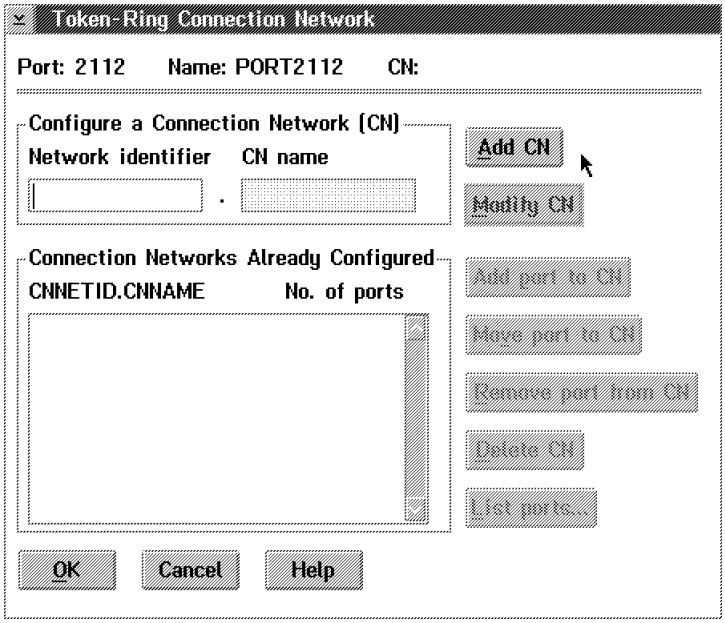


Figure 6-4. Token-Ring Connection Network Window

Step 21. Enter the **Network identifier** and the **CN name**.

Step 22. Click on **Add CN**.

> **Note...**
>
> After clicking on **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.
>
> After clicking on **Add CN**, you must click on **Add port to CN**, otherwise the connection network information you have just entered will not be saved.
>
> - 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 23. Click on **Add port to CN**.

Step 24. When completed, click on **OK** to save and return to the previous panel.

Step 25. If you want to define token-ring stations, go to “Configuring Token-Ring Stations” on page 6-5.

Otherwise, click on **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** window, click on **Stations** to display the **Token-Ring Station Configuration** window (see Figure 6-5).

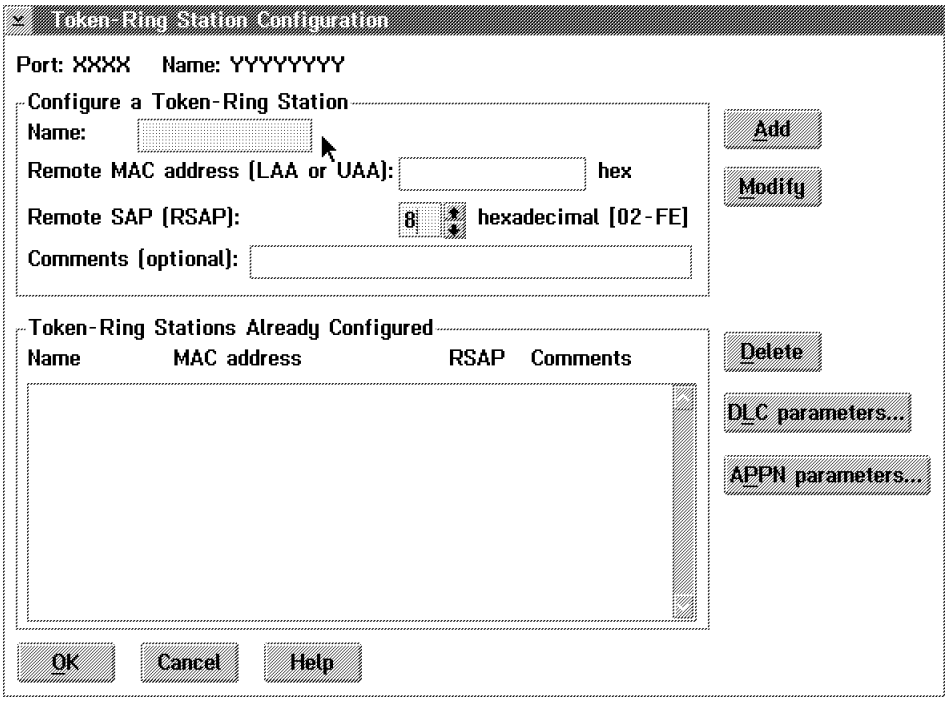


Figure 6-5. Token-Ring Station Configuration Window

Step 2. Enter the parameters values as required. As you enter the values, CCM dynamically checks them for configuration-wide consistency, refer to “An Easier Way to Configure” on page 2-1.

Step 3. Click on **Add**.

Note...

After clicking on **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 push buttons are now available.

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

Otherwise, go to Step 15 on page 6-7.

Step 5. Select a station and click on **APPN parameters → Token-Ring Station Configuration – APPN Parameters** window (see Figure 6-6).

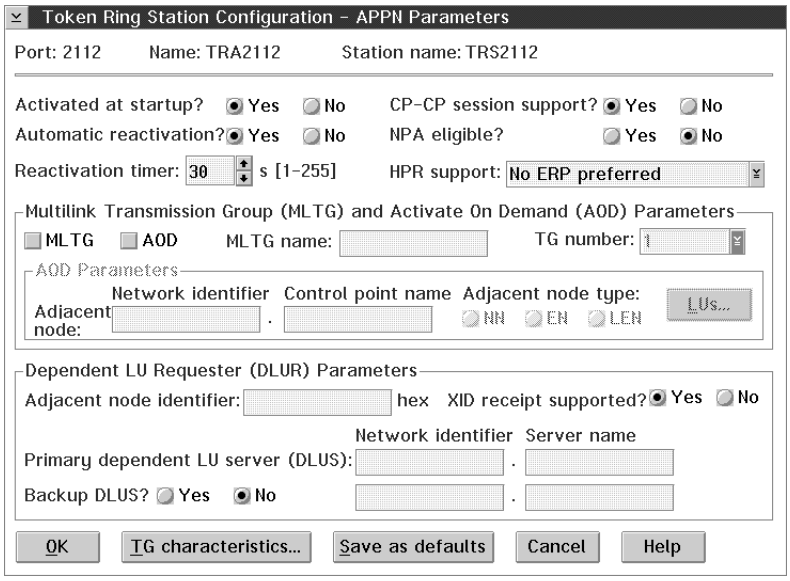


Figure 6-6. Token-Ring Station Configuration - APPN Parameters Window

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

Note: For information about the MLTG, AOD, and DLUR parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

Otherwise, go to Step 9.

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

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

Step 9. To configure the transmission group for this station, go to next step.

Otherwise, go to Step 13 on page 6-7.

Step 10. Click on **TG characteristics → Station Configuration - TG characteristics** window.

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

Note: For information about the user defined parameters in the **Station Configuration - TG characteristics** window, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

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

Step 14. Repeat Step 5 on page 6-6 through 13 until you have configured the APPN parameters for each station that requires APPN parameter configuration, or go to next step.

Configuring Station DLC Parameters

Step 15. To configure the DLC parameters for a station, **DLC parameters →** **Token-Ring Station - DLC Parameters** window.

Otherwise, go to Step 18.

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

Step 17. When completed, click on **OK** to save and return to the **Token-Ring Station Configuration** window.

Step 18. Click on **OK** on each window until the CCM main window is displayed.

Chapter 7. Configuring Serial Line SDLC Resources

This chapter concerns 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, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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”**.

Configuring the SDLC Port

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

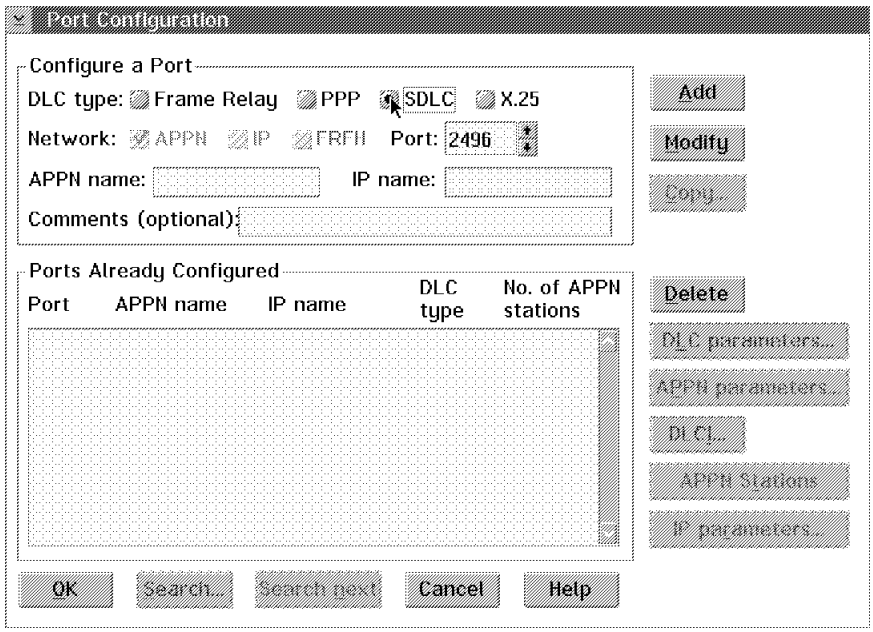


Figure 7-1. Serial Line Port Configuration Window

Step 1. In the **Port Configuration** window (see Figure 7-1), 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, refer to “An Easier Way to Configure” on page 2-1.

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

> **Note...**
>
> After clicking on **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, go to next step.

Otherwise, go to Step 10

Configuring Port APPN Parameters

Step 4. Select a port and click on **APPN parameters → Port Configuration - APPN Parameters** window (see Figure 6-2 on page 6-2).

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, go to next step.

Otherwise, to Step 8 on page 6-2.

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

Note: For information about the user defined parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

Step 8. Click on **OK**.

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

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

Otherwise go to Step 15 on page 7-3.

Configuring Port DLC Parameters

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

Step 12. Keep the default values or modify these values according to your needs (see Figure 7-2).

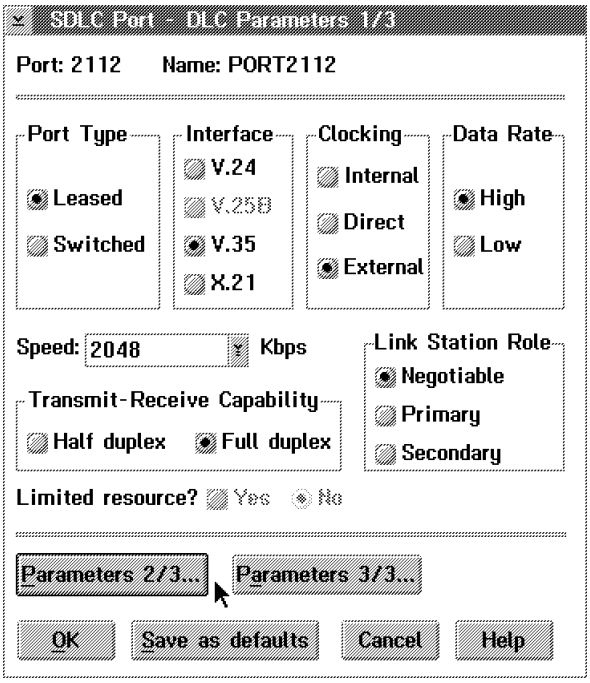


Figure 7-2. The First DLC Port Parameters Window for SDLC

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

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

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

Step 14. Repeat Step 1 on page 7-1 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 on **OK**.
- Configure stations by going to “Configuring SDLC Stations” on page 7-4.

Configuring SDLC Stations

Step 1. From the **Port Configuration** window, select a port and click on **APPN Stations → SDLC Station Configuration** window (see Figure 7-3).

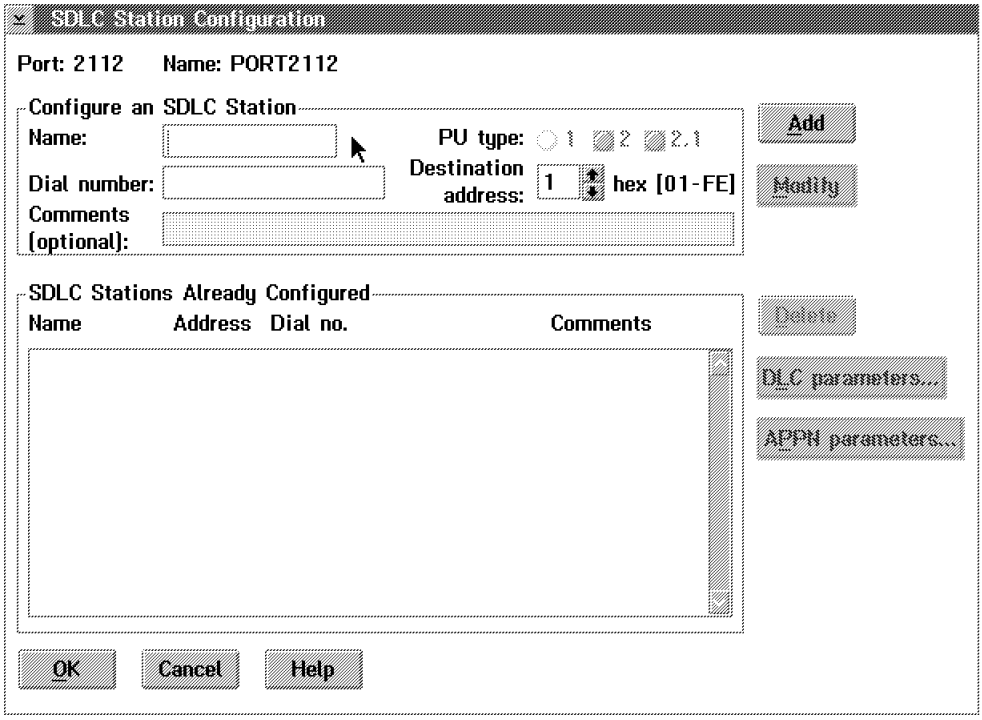


Figure 7-3. SDLC Station Configuration Window

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

> **Note...**
>
> After clicking on **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, go to next step.

Otherwise, go to Step 13 on page 7-6

Configuring Station APPN Parameters

Step 4. Select a station and click on **APPN parameters** to display the **SDLC Station Configuration – APPN Parameters** window (see Figure 6-6 on page 6-6).

Step 5. Either keep the default values or change these values according to your needs.

Note: For information about the MLTG, AOD, and DLUR parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

Otherwise, go to Step 8.

Step 6. Click on **LUs...** → **Adjacent Node - Remote LUs** window.

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

Step 8. To configure the transmission group for the MLTG, go to next step.

Otherwise, go to Step 12.

Step 9. Click on **TG characteristics** → **Station Configuration - TG characteristics** window.

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

Note: For information about the user defined parameters in the **Station Configuration - TG characteristics** window, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

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

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

Otherwise, go to Step 17.

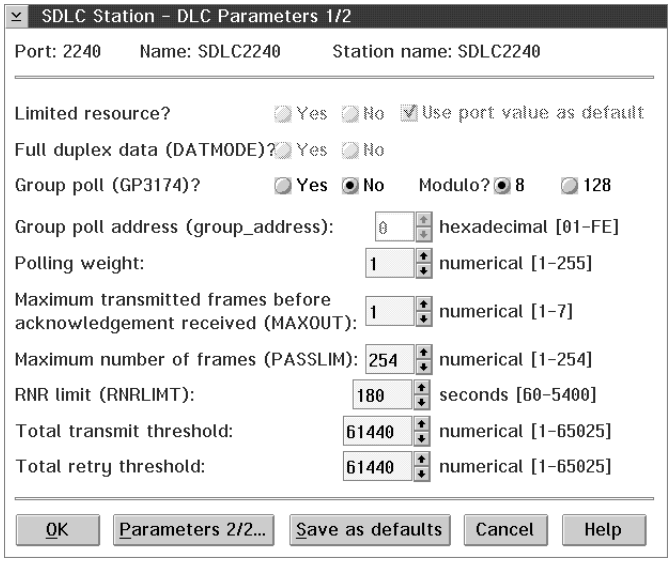


Figure 7-4. First SDLC Station Configuration - DLC Parameters Window

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

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

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

Step 16. Repeat Step 1 on page 7-4 through Step 15 any other stations that need to be configured.

Step 17. Click on **OK** to return to the **Port Configuration** window.

Step 18. To configure stations on another port, select the port and go to “Configuring SDLC Stations” on page 7-4.

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

Chapter 8. Configuring Serial Line Frame-Relay Resources

This chapter concerns 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, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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”**.

Configuring a Frame Relay Port

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

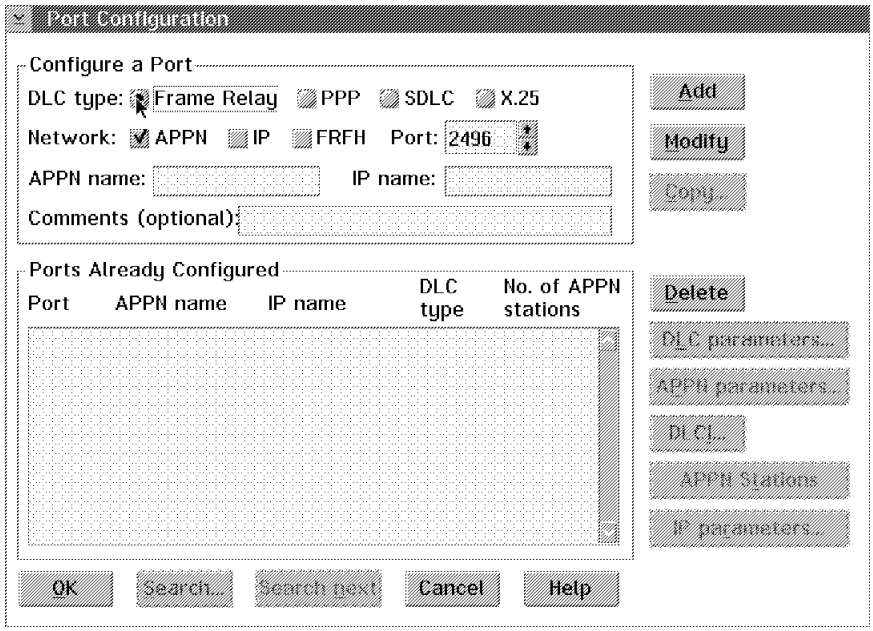


Figure 8-1. Serial Line Port Configuration Window

Step 1. In the **Port Configuration** window (see Figure 8-1 on page 8-1), 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, refer to “An Easier Way to Configure” on page 2-1.

> **Note...**
>
> After clicking on **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, refer to “Copy Push Button” on page 3-1.

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

Otherwise, go to Step 7.

Configuring Port APPN Parameters

Step 3. Click on **APPN parameters → Frame Relay Port Configuration - APPN Parameters** window (see Figure 6-2 on page 6-2).

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

Step 5. Click on **User defined parameters** if you want to define these parameters at the port level.

Note: For information about the user defined parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

Otherwise, go to next step.

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

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

Otherwise go to Step 14 on page 8-3.

Configuring the Port DLC Parameters

Step 8. Click on **DLC parameters** → **Frame-Relay Port - DLC Parameters** window (see Figure 8-2).

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

In this window, 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 window you use for configuring in “Defining Frame-Relay DLCIs and Stations” on page 8-5.

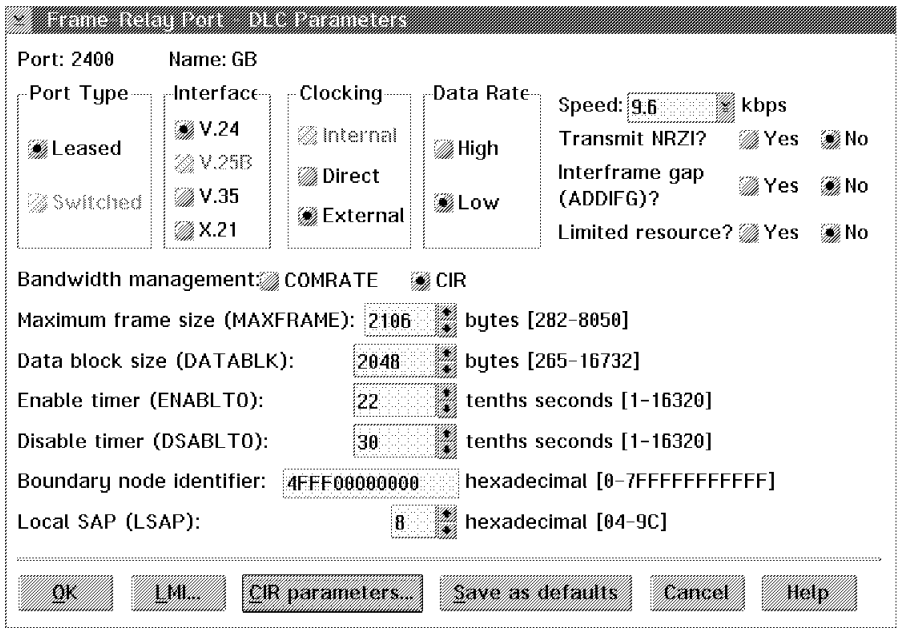


Figure 8-2. Frame-Relay Port - DLC Parameters Window

Step 10. Click on **LMI** to configure the frame-relay local management interface.

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

Step 12. If **CIR** is selected as the **Bandwidth management**, click on **CIR Parameters** to configure CIR and CLLM parameters.

Step 13. When completed, click on **OK** until you reach the **Port Configuration** window.

Step 14. If you want to configure IP over Frame Relay for the port, go to next step.

Otherwise go to step 19 on page 8-4.

Step 15. Click on **IP parameters** → **IP over Frame-Relay Parameters** window (see Figure 8-3).

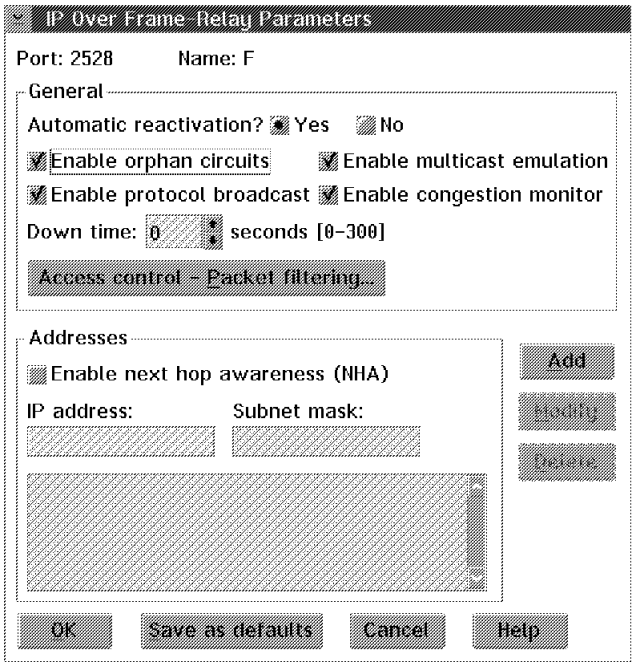


Figure 8-3. IP over Frame-Relay Parameters Window

Step 16. 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, go to next step.

Otherwise, go to Step 18.

Step 17. Click on **Access Control - Packet filtering** → **IP Access Controls** window (see Figure 5-2 on page 5-2).

Step 18. When the IP configuration is completed, click on **OK** to return to the previous window.

Step 19. When completed, you can either:

- Save and exit port configuration by clicking on **OK**.
- Configure stations by going to “Defining Frame-Relay DLCIs and Stations” on page 8-5.

Defining Frame-Relay DLCIs and Stations

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

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

Step 2. If you configured the port for COMRATE bandwidth management, to configure stations, go to next step (see Figure 8-2 on page 8-3).

Otherwise, go to Step 14 on page 8-6 to configure stations using CIR bandwidth management.

Step 3. In the **Frame-Relay DLCI/COMRATE Parameters** window (see Figure 8-4), for each DLCI you need keep the default values or modify these values according to your needs and click on **Add**.

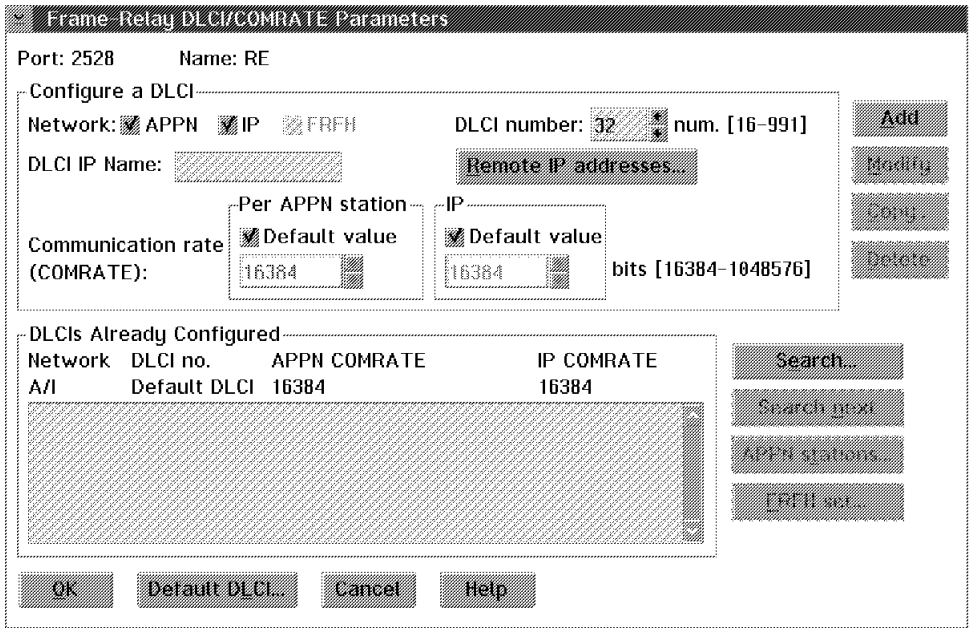


Figure 8-4. Frame-Relay DLCI/COMRATE Parameter Window

Step 4. If you want to configure remote IP addresses for a DLCI, click on **Remote IP addresses... → DLCI Remote IP Addresses** window and go to next step.

Otherwise, go to Step 7.

Step 5. Enter the values according to your needs.

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

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

Otherwise, go to Step 10.

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

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

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

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

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

Step 13. Go to Step 27 on page 8-7

Step 14. In the **Frame-Relay DLCI/CIR Parameters** window (see Figure 8-5), for each DLCI you need keep the default values or modify these values according to your needs and click on **Add**.

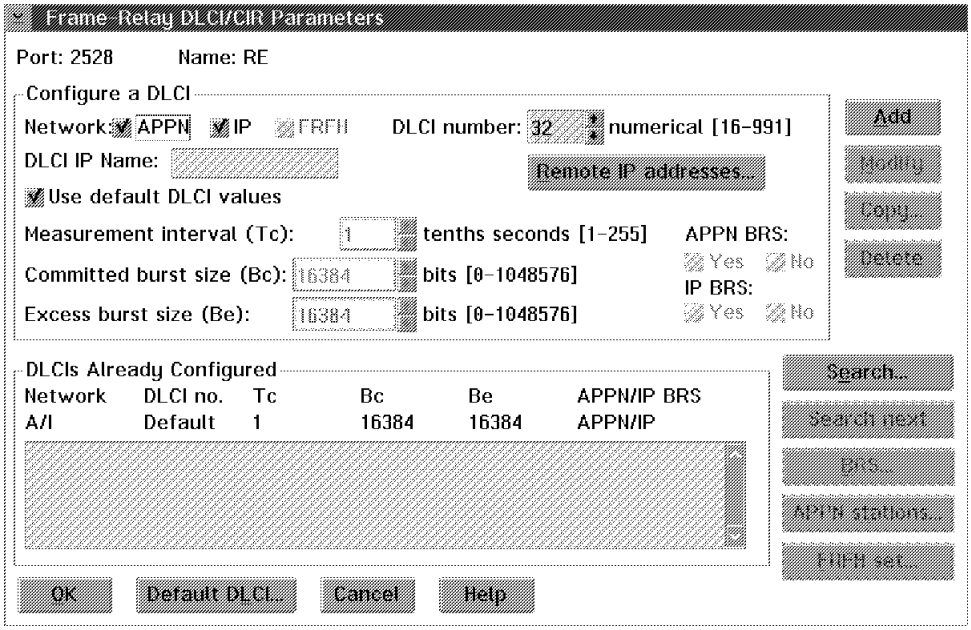


Figure 8-5. Frame-Relay DLCI/CIR Parameters Window

Step 15. If you want to configure remote IP addresses for a DLCI, click on **Remote IP addresses... → DLCI Remote IP Addresses** window and go to next step.

Otherwise, go to Step 18.

Step 16. Enter the values according to your needs.

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

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

Otherwise, go to Step 21.

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

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

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

Otherwise, go to Step 24 on page 8-7.

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

For more information about configuring a FRFH, refer to “Configuring Frame-Relay Frame Handler Sets” on page 8-10.

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

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

Otherwise, go to Step 27.

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

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

Step 27. Click on **Add**.

> **Note...**
>
> After clicking on **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 8-5 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."

Otherwise, go to Step 23 on page 8-9.

Configuring APPN over Frame-Relay Stations

Step 1. Select a DLCI and click on **APPN stations** → **APPN over Frame Relay – Station Configuration** Window (see Figure 8-6).

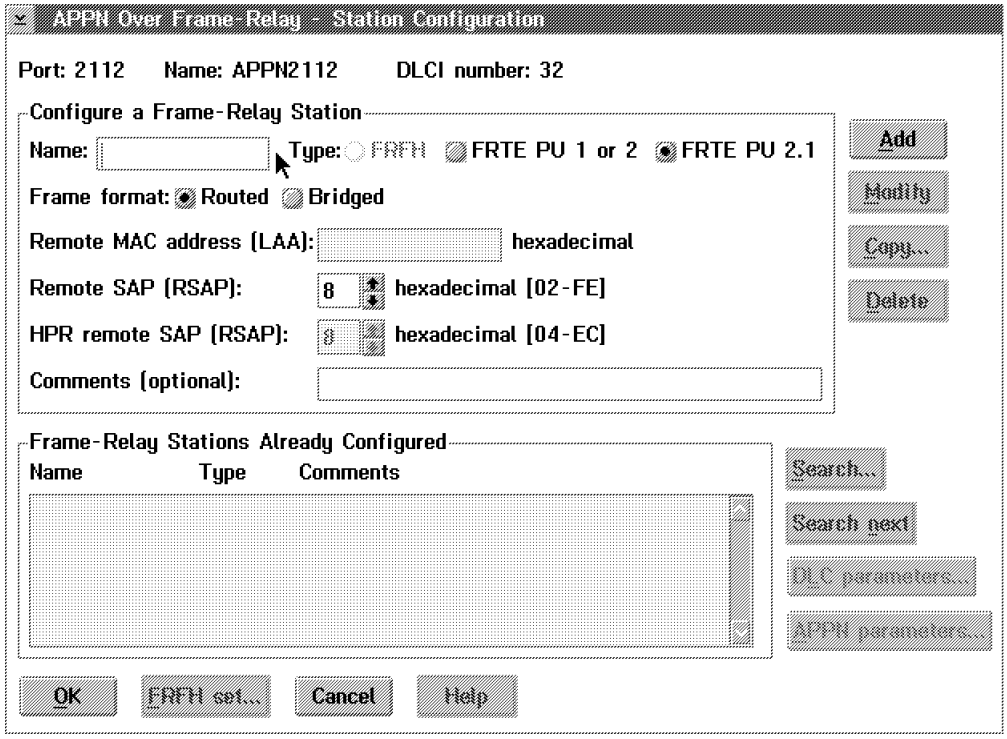


Figure 8-6. APPN over Frame Relay – Station Configuration Window

Step 2. Enter the parameters as required.

Step 3. Click on **Add**.

Note...

After clicking on **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, refer to “Copy Push Button” on page 3-1.

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

Otherwise, go to Step 15 on page 8-9

Configuring Station APPN Parameters

Step 5. Select a station and click on **APPN parameters** → **Frame-Relay Station Configuration – APPN Parameters** window (see Figure 6-6 on page 6-6).

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), go to next step.

Otherwise, go to Step 9.

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

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

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

Note: For information about the MLTG, AOD, and DLUR parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

Otherwise, go to Step 13 on page 8-9.

Step 10. Click on **TG characteristics** → **Station Configuration - TG characteristics** window.

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

Note: For information about the user defined parameters in the **Station Configuration - TG characteristics** window, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

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

For information about creating one or more stations identical to one in the **Stations Already Configured** list, refer to “Copy Push Button” on page 3-1.

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

Otherwise, go to Step 15

Configuring Station DLC Parameters

Step 15. To configure the DLC parameters for the station, click on **DLC parameters → Frame-Relay/FRTE Station - DLC Parameters 1/2** window.

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

- Window increment (DYNWIND - nw)
- Window 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 on **DLC Parameters 1/2** and go to next step.

Otherwise, go to Step 19.

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

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

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

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

Step 20. Repeat Steps 2 on page 8-7 through 19 for each station that needs to be configured on the DLCI.

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

Step 22. To configure other station(s) on another DLCI, click on **OK**, and repeat Steps 1 on page 8-7 through 21.

Step 23. Click on **OK** on each window until the CCM main window 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 window **Configuration** menu → **Frame-relay frame handler set** → **Frame-Relay Frame Handler Set Configuration** window (see Figure 8-7)

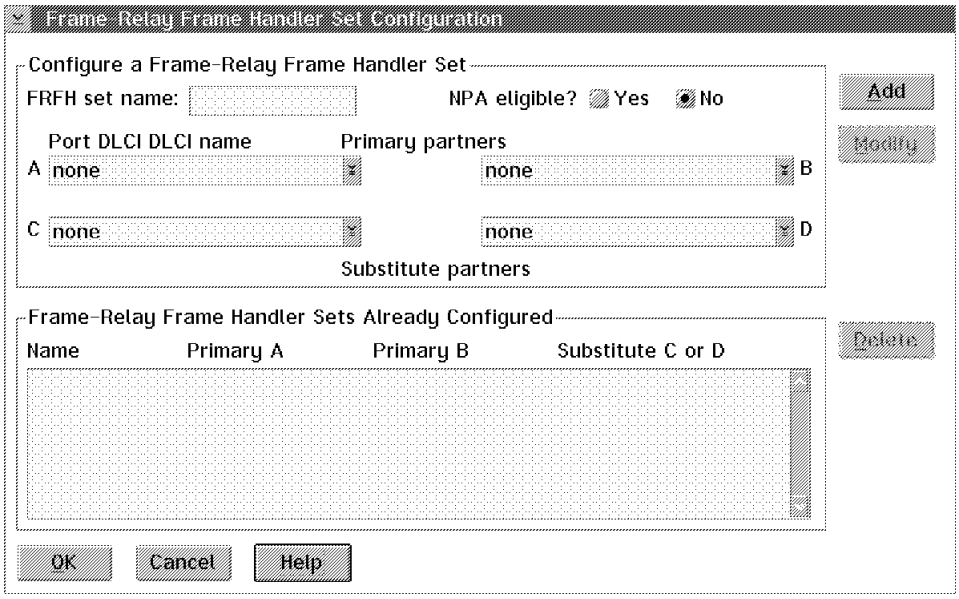


Figure 8-7. Frame-Relay Frame Handler Set Configuration Window

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

Notes:

1. B is never paired with D.
2. For more information about a FRFH set configuration, refer to:
   - *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
   - CCM online help.

Chapter 9. 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, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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”**.

Configuring a PPP Port

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

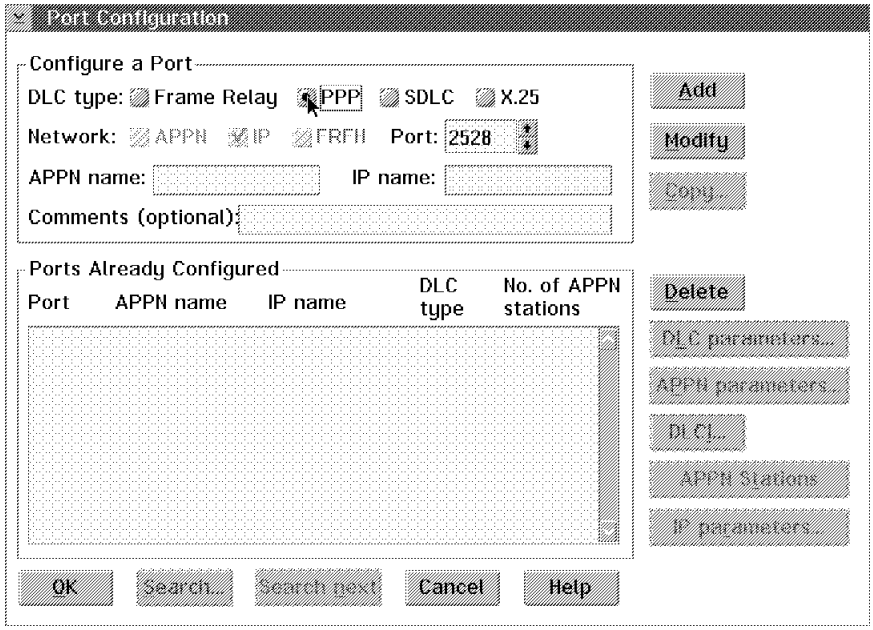


Figure 9-1. Serial Line Port Configuration Window

Step 1. In the **Port Configuration** window (see Figure 9-1), 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, refer to “An Easier Way to Configure” on page 2-1.

For information about creating one or more ports identical to one in the **Ports Already Configured** list, refer to “Copy Push Button” on page 3-1.

Step 2. Click on **Add**.

Step 3. If you want to configure remote IP addresses for a DLCI, click on **IP addresses...** → **DLCI Remote IP Addresses** window and go to next step.

Otherwise, go to Step 6.

Step 4. Enter the values according to your needs.

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

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

Otherwise go to step 15 on page 9-3.

Configuring the Port DLC Parameters

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

Step 8. Keep the default values or modify these values according to your needs (see Figure 9-2).

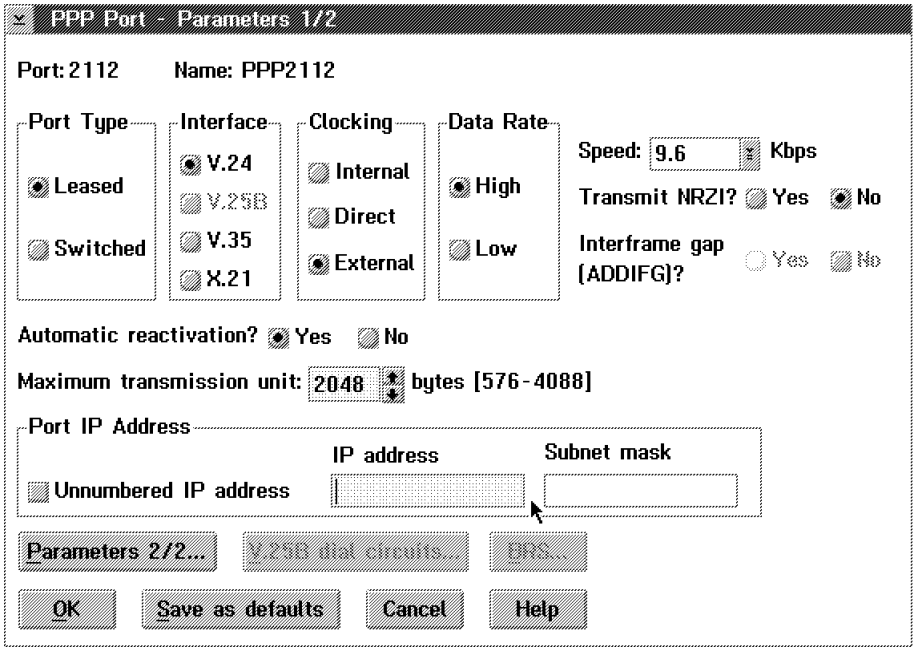


Figure 9-2. The First PPP Port Parameters Window

Step 9. When completed, press **OK** to return to the **Port Configuration** window and go to Step 15 on page 9-3.

Otherwise, press **Parameters 2/2** to define additional DLC parameters.

Step 10. When completed, press **OK** to return to the **PPP Port - Parameters 1/2** window.

Step 11. To configure the bandwidth reservation class of the PPP port, press **BRS** → **Bandwidth Reservation** window.

Step 12. When completed, press **OK** to return to the **PPP Port - Parameters 1/2** window.

Step 13. Press **OK** to return to the **Port Configuration** window.

Step 14. Repeat Step 7 through Step 12 for any other ports that need DLC parameters configured.

Step 15. Save and exit port configuration by pressing **OK**.

Chapter 10. 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, refer to Chapter 4, “Beginning a CCM Configuration” on page 4-1

If this is the first time the coupler is to be configured, but it isn't the very first one to be configured, **double click on the icon of the coupler you want to configure, choose its DLC type (see Figure 4-3 on page 4-2)**, 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”**.

Configuring a X.25 Port

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

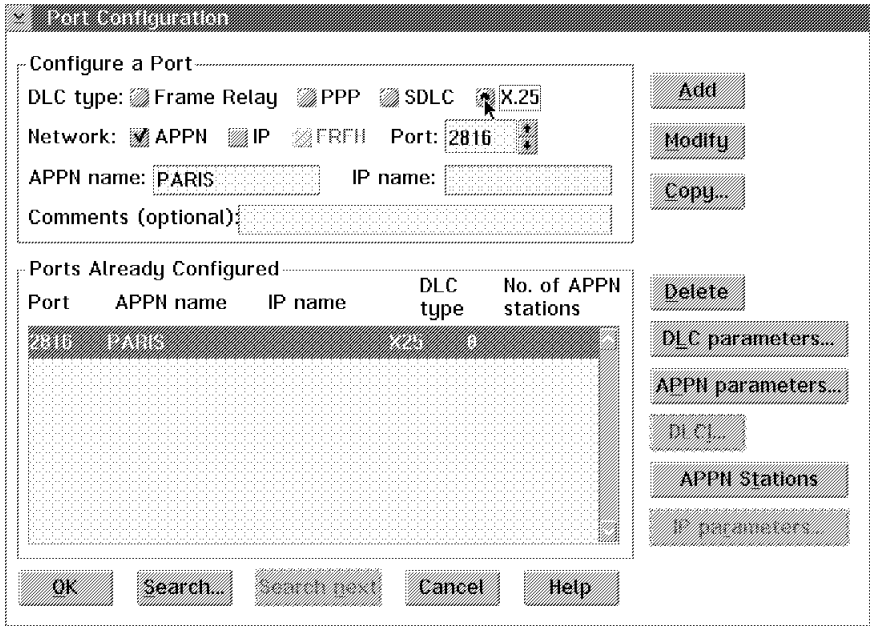


Figure 10-1. Serial Line Port Configuration Window

Step 1. In the **Port Configuration** window (see Figure 10-1), 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, refer to “An Easier Way to Configure” on page 2-1.

Step 2. Click on **Add**.

> **Note...**
>
> After clicking on **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, refer to “Copy Push Button” on page 3-1.

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

Otherwise, go to Step 8

Configuring Port APPN Parameters

Step 4. Select a port and click on **APPN parameters** to go to the **Port Configuration - APPN Parameters** window (see Figure 6-2 on page 6-2).

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

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

Note: For information about the user defined parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

Step 8. If you want to configure DLC parameters for the port, go to 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 10-3 on page 10-3).

Otherwise go to Step 18 on page 10-3.

Configuring the Port DLC Parameters

Step 9. DLC parameters → X.25 Port - DLC Parameters window (see Figure 10-2)

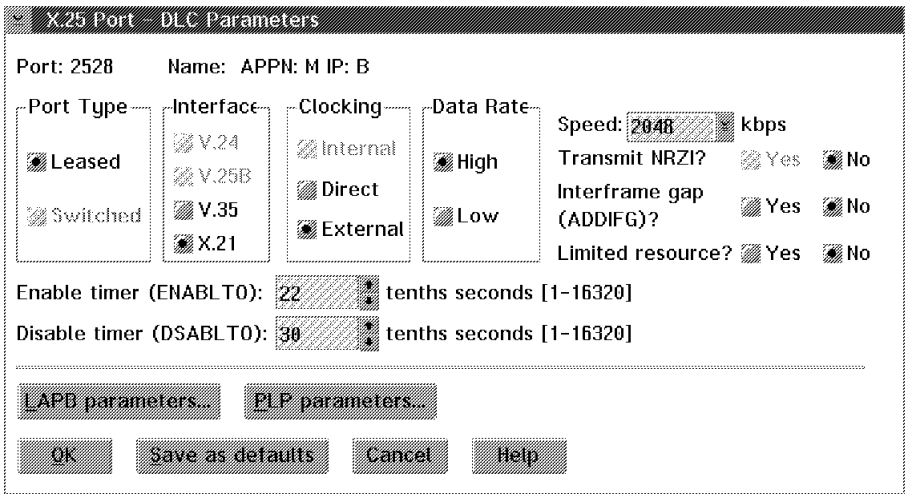


Figure 10-2. X.25 Port - DLC Parameters Window

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, go to next step.

Otherwise go to Step 15.

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

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

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

Step 15. PLP parameters → **PLP parameters 1/2** window (see Figure 10-3)

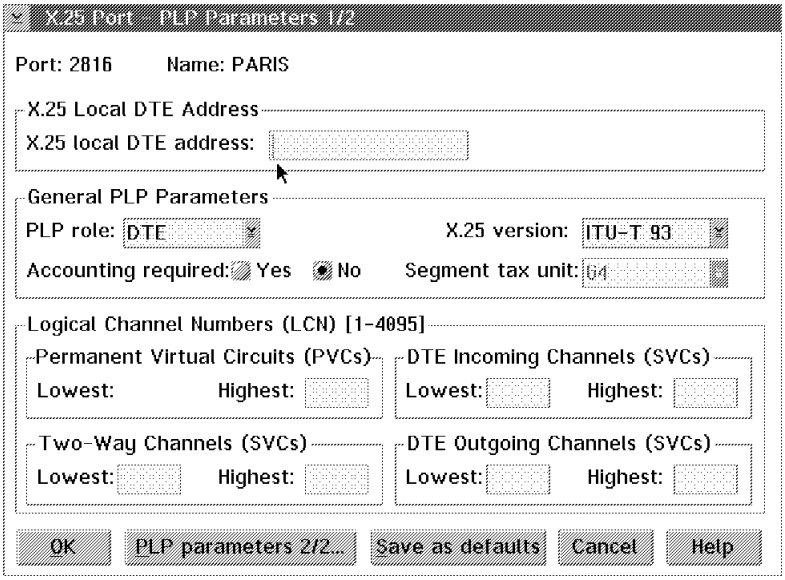


Figure 10-3. First X.25 PLP Parameters Window

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 window available.

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

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

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

Otherwise go to Step 24 on page 10-4.

Step 19. Click on **IP parameters** → **IP over X.25 - Port Parameters** window (see Figure 10-4)

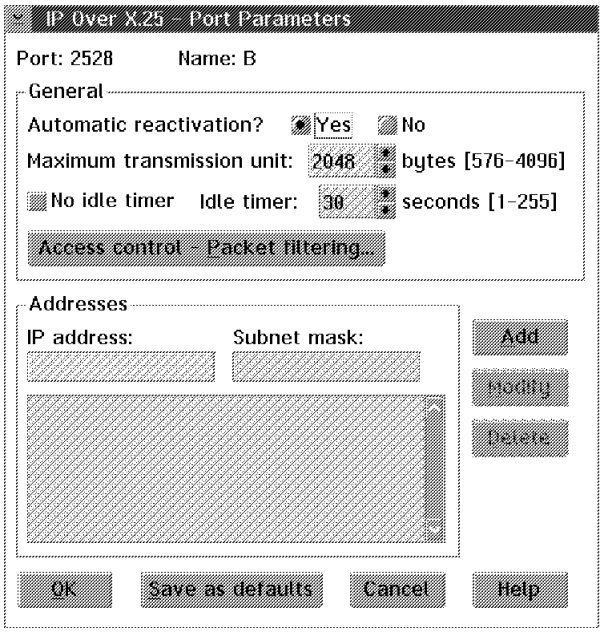


Figure 10-4. IP over X.25 - Port Parameters Window

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, go to next step.

Otherwise, go to Step 23.

Step 21. Click on **Access Control - Packet filtering** → **IP Access Controls** window (see Figure 5-2 on page 5-2).

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

Step 23. When the IP configuration is completed, click on **OK** to return to the previous window.

Step 24. At this point, you can either:

- Save and exit the port configuration by clicking on **OK**.
- Configure stations by going to “Configuring X.25 Stations” on page 10-5.

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 10-3 on page 10-3).

Step 1. Click on **APPN Stations** → **X.25 Station Configuration** window (see Figure 10-5).

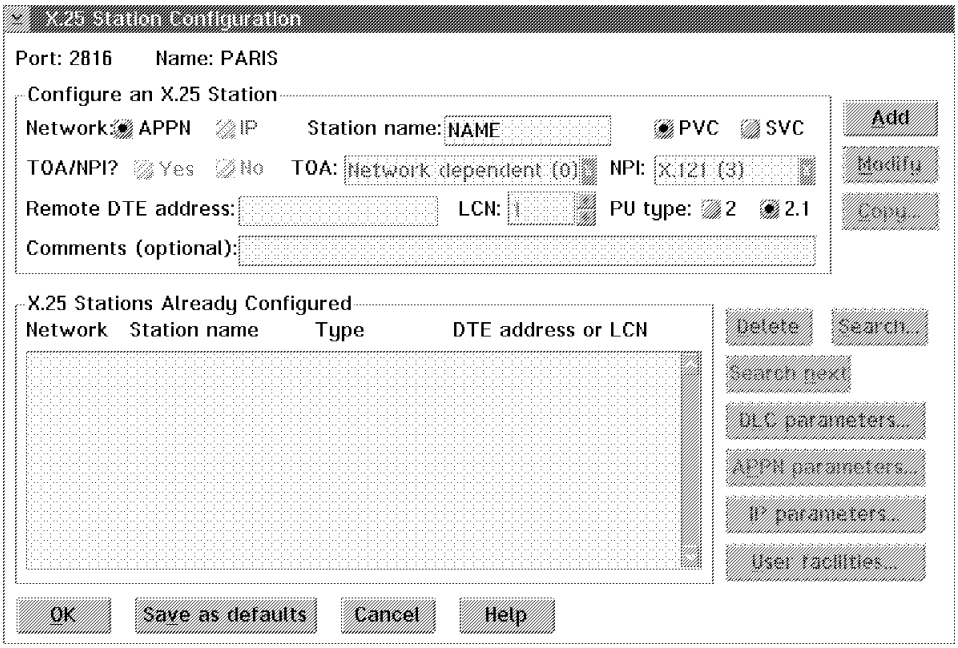


Figure 10-5. X.25 Station Configuration Window

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

> **Note...**
>
> 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 10-3 on page 10-3.)
>
> After clicking on **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, refer to “Copy Push Button” on page 3-1.

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

Otherwise, go to Step 7 on page 10-6.

Step 4. Click on **DLC parameters** → **X.25 Station - DLC Parameters** window (see Figure 10-6) Otherwise, go to Step 21 on page 10-7.

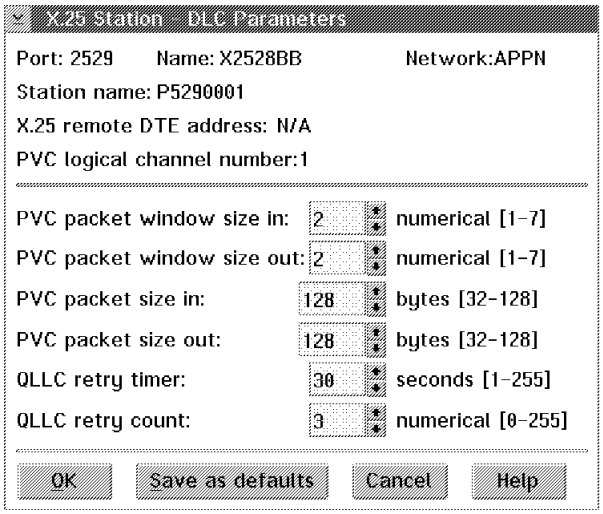


Figure 10-6. X.25 Station Configuration - DLC Parameters Window

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

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

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

Otherwise, go to Step 17 on page 10-7

Step 8. **APPN parameters** → **X.25 Station Configuration – APPN Parameters** window (see Figure 6-6 on page 6-6)

Step 9. Either keep the default values or change these values according to your needs.

Note: For information about the MLTG, AOD, and DLUR parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

Otherwise, go to Step 12.

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

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

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

Otherwise, go to Step 16 on page 10-7.

Step 13. Click on **TG characteristics** → **Station Configuration - TG characteristics** window.

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

Note: For information about the user defined parameters in the **Station Configuration - TG characteristics** window, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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

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

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

Otherwise go to Step 24 on page 10-4.

Configuring IP Over X.25

Step 18. Click on **IP parameters** → **IP over X.25 - Station Parameters** window (see Figure 10-7)

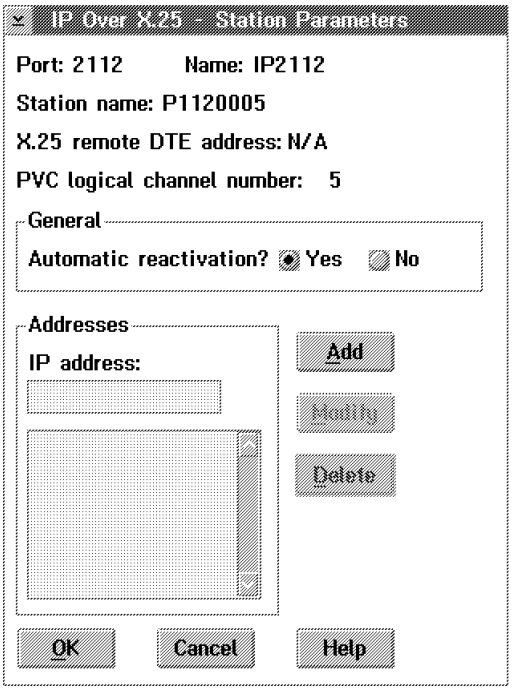


Figure 10-7. IP over X.25 - Station Parameters Window. (This window is for a PVC, the SVC window is slightly different.)

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 on **OK** to return to the previous window.

Step 21. Click on **OK** to return to the **Station Configuration** window.

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 10-1.

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

Chapter 11. Configuring IP Parameters

This chapter explains how to go to the windows where you configure the general and default parameters of the IP parameters for Bootp, OSPF, RIP, BGP, ARP, and SNMP.

Configuring General IP Parameters

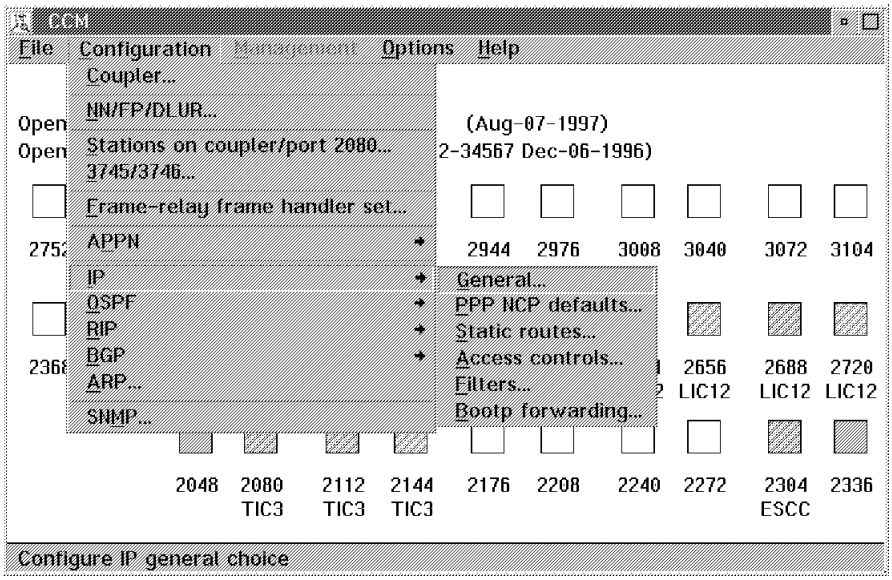


Figure 11-1. IP Configuration Menu

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 window **Configuration** menu → **IP** → **General** → **IP General Parameters** window

PPP NCP Default Parameters

You define retry and timeout parameters for configuration, NAK (negative acknowledge character), and terminate.

To configure these parameters: Main window **Configuration** menu → **IP** → **PPP NCP defaults** → **PPP NCP Default Parameters** window

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 window **Configuration** menu → **IP** → **General** → **IP Static Routes** window

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 on **IP access control - Packet filtering** in the **Port Configuration** window.

To configure these parameters: Main window **Configuration** menu → **IP** → **Access controls** → **IP Access Controls** window

There is an example of the use of IP access controls on “Make Sure SNMP Access is Enabled When Filtering Packets” on page 11-8.

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 window **Configuration** menu → **IP** → **Filters** → **IP Filters** window

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 window **Configuration** menu → **IP** → **Bootp forwarding** → **Bootp Forwarding** window

Configuring OSPF Parameters

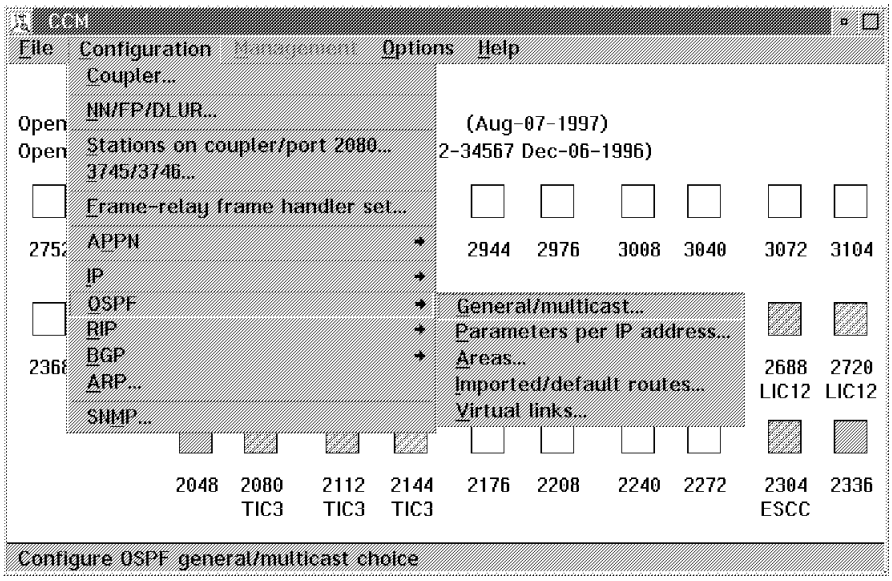


Figure 11-2. OSPF Configuration Menu

OSPF General and Multicast Parameters

You can enable/disable the OSPF (Open Shortest Path First) 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 window **Configuration** menu → **OSPF** → **General/Multicast** → **OSPF - General/Multicast Parameters** window

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 window **Configuration** menu → **OSPF** → **Parameters per IP address**

Step 2. In the **OSPF/RIP - Parameters Per IP Address** window, specify the required values.

Step 3. If available, you can press **OSPF parameters**.

Step 4. In the **OSPF - Parameters for IP** window, specify the required values and press **OK**.

Step 5. If available, you can press **RIP parameters**.

Step 6. In the **RIP - Parameters for IP** window, specify the required values and press **OK**.

Step 7. If available, you can press **OSPF neighbors (N)**.

Step 8. In the **OSPF - Neighbors** window, 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 window **Configuration** menu → **OSPF** → **Areas** → **OSPF - Area Configuration** window.

Step 2. Specify the required values.

Step 3. To configure the area ranges, press **Ranges**.

Step 4. In the **Area Ranges** window, 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 window **Configuration** menu → **OSPF** → **Imported/default routes** → **OSPF - Imported/Default Routes** window

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 window **Configuration** menu → **OSPF** → **Virtual links** → **OSPF - Virtual Links** window

Configuring RIP Parameters

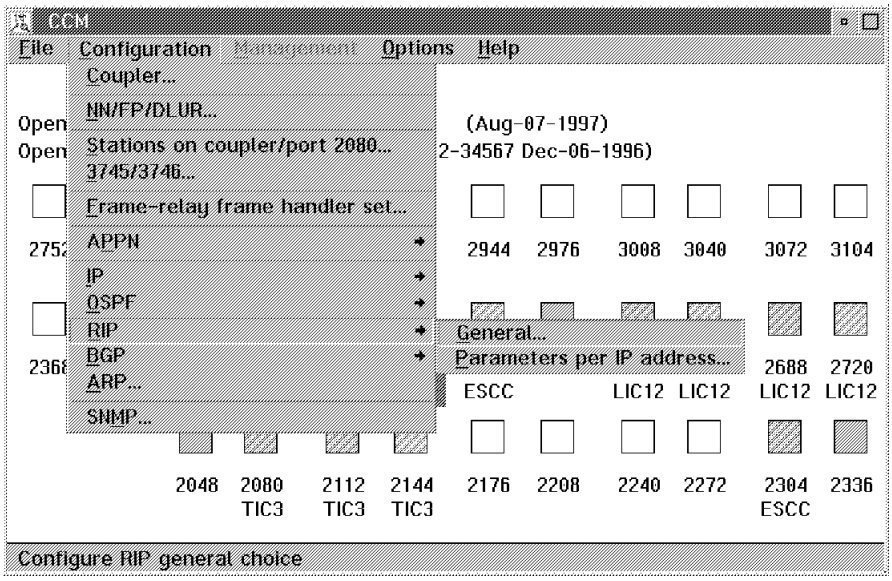


Figure 11-3. RIP Configuration Menu

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 window **Configuration** menu → **RIP** → **General** → **RIP - General Parameters** window

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 window **Configuration** menu → **RIP** → **Parameters per IP address**

Step 2. In the **OSPF/RIP - Parameters Per IP Address** window, specify the required parameters.

Step 3. To configure addition RIP parameters, press **RIP parameters**.

Configuring BGP Parameters

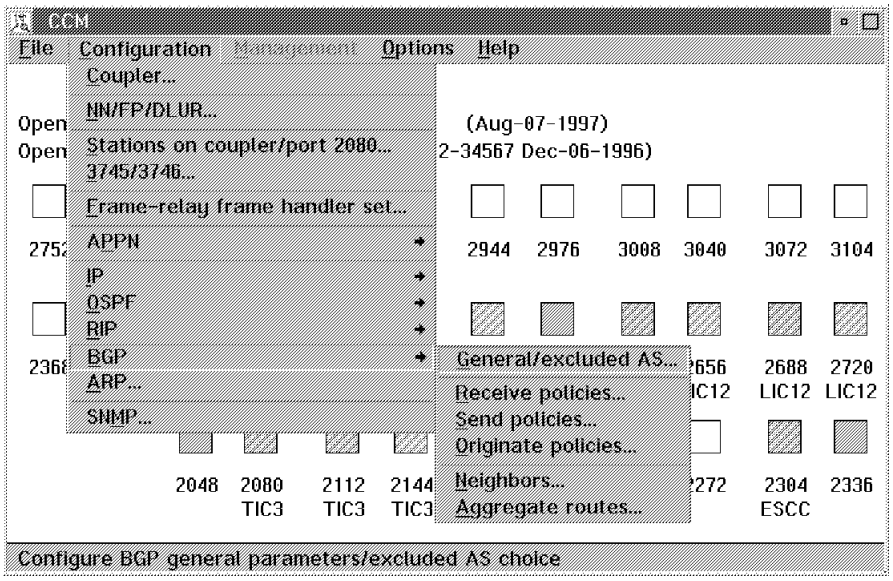


Figure 11-4. BGP Configuration Menu

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 window **Configuration** menu → **BGP** → **General/excluded AS** → **BGP - General Parameters/Excluded AS** window

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 window **Configuration** menu → **BGP** → **Receive policies** → **BGP - Receive Policies** window

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 window **Configuration** menu → **BGP** → **Send policies** → **BGP - Send Policies** window

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 window **Configuration** menu → **BGP** → **Originate policies** → **BGP - Originate Policies** windows

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 window **Configuration** menu → **BGP** → **Neighbors** → **BGP - Neighbors** window

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 window **Configuration** menu → **BGP** → **Aggregate routes** → **BGP - Aggregate Routes** window

---

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 window **Configuration** menu → **ARP** → **ARP** window

Configuring SNMP Parameters

SNMP Parameters

You define the access type, community name and UDP (user datagram protocol) parameters for SNMP (simple network management protocol). You can also modify or delete records in the list of SNMP transport information sets already configured.

To configure these parameters: Main window **Configuration** menu → **SNMP** → **SNMP Configuration** window

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 11-5). The following example shows how to do this:

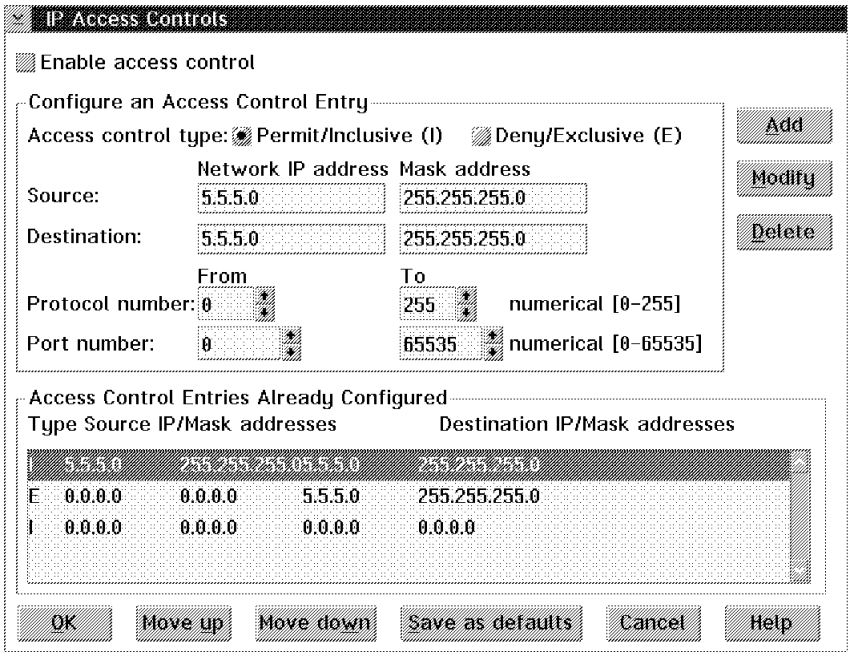


Figure 11-5. IP Access Controls Window

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 you 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 12. Configuring APPN Parameters

APPN parameters from the main window **Configuration** menu (see Figure 12-1) for ports and stations, and other values such as LEN (low entry networking), mode, COS (cost of service), TG (transmission group) the network node, focal point, DLURs, HPR (high performance routing), and the 3745/3746.

For additional information about the parameter values and controls in these windows, press the **Help** button in the window.

Configuring General APPN Parameters

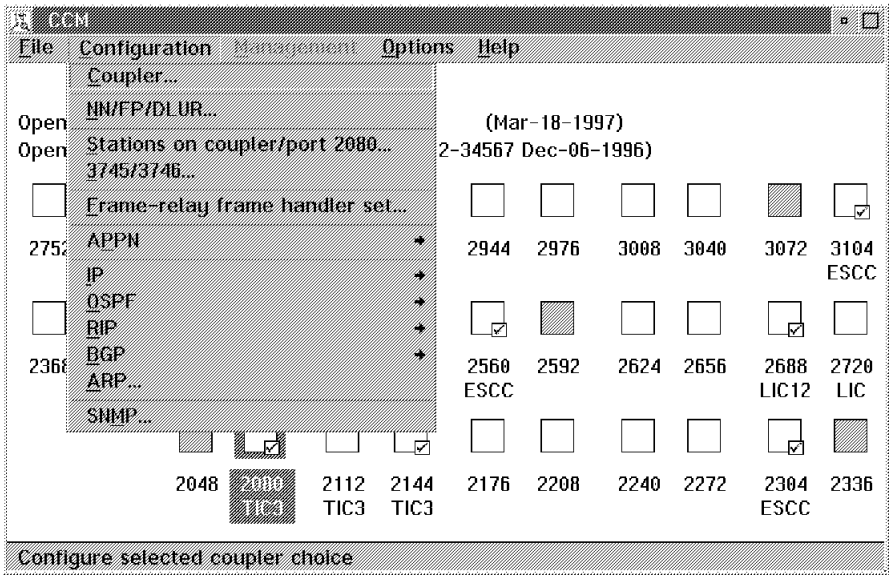


Figure 12-1. Configuration Menu

Coupler

You go to the port configuration window for the selected coupler.

An easier way to go to this window is to simply double-click on 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 HPR (high performance routing) for this Network Node, retry timers, and other values.

To configure these parameters: Main window **Configuration** menu → **NN/FP/DLUR** → **Network Node/Focal Point/Dependent LU Requester Parameters** window

Network Node Characteristics

You define values for cache entries, RAR (route addition resistance), and frequency of TRS (topology routing services) tree use.

To configure these parameters:

Step 1. Main window **Configuration** menu → **NN/FP/DLUR**

Step 2. In the **Network Node/Focal Point/Dependent LU Requester Parameters** window, specify the required values

Step 3. Press **NN characteristics** → **Network Node Characteristics** window

Backup Focal Points

You define the network identifier and control point name for a backup focal point.

To configure these parameters:

Step 1. Main window **Configuration** menu → **NN/FP/DLUR**

Step 2. In the **Network Node/Focal Point/Dependent LU Requester Parameters** window, specify the required values

Step 3. Press **Backup focal point** → **Backup Focal Point Parameters** window

Rapid Transport Protocol/Path Switch Parameters

You define values for sessions and RTP retries and timers.

To configure these parameters:

Step 1. Main window **Configuration** menu → **NN/FP/DLUR**

Step 2. In the **Network Node/Focal Point/Dependent LU Requester Parameters** window, specify the required values

Step 3. Press **RTP parameters** → **Rapid Transport Protocol (RTP)/Path Switch Parameters** window

Coupler/Port 2080 Stations

You specify the type (service processor or NetView Performance Monitor) of station(s) to be automatically generated.

To configure these parameters: Main window **Configuration** menu → **Stations on coupler/port 2080** → **Stations on Coupler/Port 2080** window

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 window **Configuration** menu → **3745/3746** → **3745/3746 Parameters** window

Frame-relay frame handler set

For information about configuring frame-relay frame handler sets, refer to “Configuring Frame-Relay Frame Handler Sets” on page 8-10.

Configuring Specific APPN Parameters

The procedures in this section start with: Main window **Configuration** menu → **APPN** as shown in Figure 12-2.

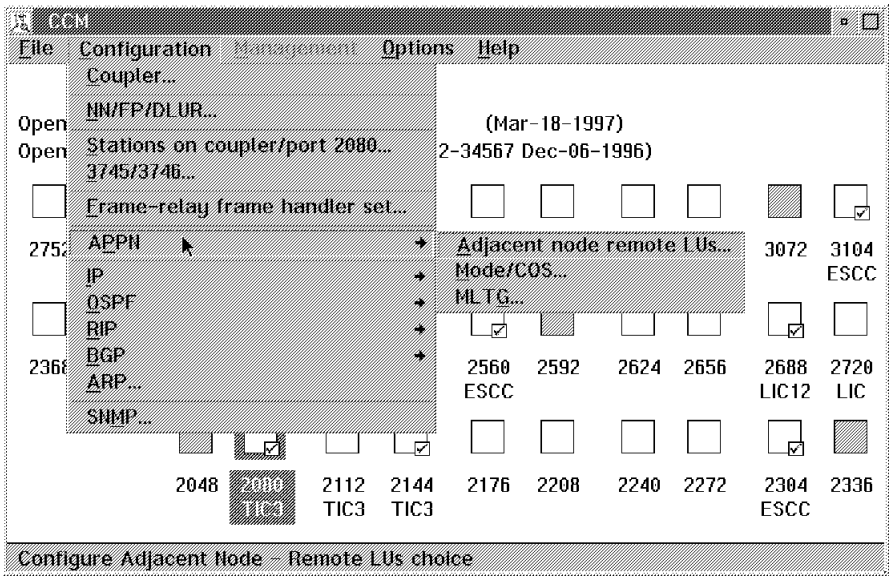


Figure 12-2. APPN Configuration Menu

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 window **Configuration** menu → **APPN** → **Adjacent Node Remote LUs** → **Adjacent Node - Remote LUs** window

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 window **Configuration** menu → **APPN** → **Mode/COS** → **Mode Configuration** window

Note: For information about the class of service parameters, refer to:

- *3745 Communication Controller Models, 3746 Nways Multiprotocol Controller Models 900 and 950: Planning Guide*, GA33-0457
- CCM online help.

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 COSs already configured.

To configure the modes and COSs:

Step 1. Main window **Configuration** menu → **APPN** → **Mode/COS**

Step 2. In the **Mode Configuration** window, specify the required values

Step 3. Press **Configure COS** → **Class of Service Configuration** window

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 window **Configuration** menu → **APPN** → **Mode/COS**

Step 2. In the **Mode Configuration** window, specify the required values and press **Configure COS**

Step 3. In the **Class of Service Configuration** window, specify the required values and press **Node rows** → **Node Row Configuration** window

Transmission Group Rows

You specify values for weight, propagation, security, EC (effective capacity), RCPB (relative cost per byte), and RCPUT (relative cost per unit of time). You can also modify or delete TG rows in the list of TG rows already configured.

To configure the TG Rows:

Step 1. Main window **Configuration** menu → **APPN** → **Mode/COS**

Step 2. In the **Mode Configuration** window, specify the required values and press **Configure COS**

Step 3. In the **Class of Service Configuration** window, specify the required values and press **TG Node rows** → **Transmission Group Row Configuration** window

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 window **Configuration** menu → **APPN** → **MLTG** → **Multilink Transmission Group Configuration** window

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 window **Configuration** menu → **APPN** → **MLTG**

Step 2. In the **Multilink Transmission Group Configuration** window, specify the required values and press **Stations** → **Stations Selection** window

Part 3. Resource Management

Chapter 13. 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, since 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.

Important...

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 may have to be performed. You should be aware of the information in “Network Traffic Disruption and Dynamic Activation” on page 13-2 before using dynamic activation.

- Modifications made to the network node (NN/FP/DLUR screen parameters), a LEN, a Mode or a COS 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.
- 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.

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.

Important

When you save the active configuration, if you dynamically activate the modifications you have just made in your configuration, you can disrupt network traffic.

Viewing a Resource

Important...

When you finish viewing a resource of the active configuration, click on **Cancel**. Don't use **OK**.

If you use **OK** in certain windows, the resources related the parameters in the window are marked as needing to be re-IMLed, even though you did not change a single thing in the window. 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 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 windows
- DLC parameters
- Parameters in the following windows:
  - **Frame-Relay - Default DLCI**
  - **Frame-Relay CIR - BRS**

To summarize: Use only the **Cancel** button to close windows when you navigate inside CCM to view your configuration.

Adding a Resource When a new resource is created, normally it is not disruptive for any of preexisting resources. In Table 13-1 are the two groups of parameters that are exceptions to this rule.

Table 13-1. Network Traffic Disruption - Adding a Resource

Network(s)	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
IP	All DLCs	All resources	Disruptive for all IP resources, the IP router is restarted

Modifying a Resource

Table 13-2 (Page 1 of 2). Network Traffic Disruption - Modifying a Resource

Network(s)	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
APPN/IP	All DLCs except ESCON	1. APPN parameters in port and station configuration windows 2. IP specific parameters of all resources 3. Common parameters of all resources, except for: 'Frame Relay DLCI/CIR' parameters	1. Disruptive for all APPN concerned resources and their resources 2. Disruptive for all IP resources, the IP router is restarted 3. Disruptive for all APPN concerned resources and their resources, disruptive for all IP resources, the IP router is restarted 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
APPN	ESCON	ESCON port, except for: 1. 'Fiber status' parameter 2. 'ESCD' parameters	Disruptive for concerned APPN ESCON port and its resources 1. Disruptive for all resources of the concerned ESCON processor if modified from 'Enable' to another status 2. Non-disruptive
IP	ESCON	ESCON port, except for: 1. 'Fiber status' parameter 2. 'Automatic reactivation' parameter 3. 'ESCD' parameters	Disruptive for all IP resources, the IP router is restarted 1. Disruptive for all resources of the concerned ESCON processor, if modified from 'Enable' to another status 2. Disruptive for concerned IP ESCON port and its resources 3. Non-disruptive

Table 13-2 (Page 2 of 2). Network Traffic Disruption - Modifying a Resource

Network(s)	DLC	Modified Resources/Parameters	Result
APPN and IP	ESCON	1. 'Host link name' parameter 2. 'HLA' and/or 'Partition number' parameters 3. Other ESCON host link parameters	1. Disruptive for concerned APPN/IP ESCON host link and its resources 2. Disruptive for all resources of the concerned ESCON processor (re-IML) 3. 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
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/or 'IPL through that station' parameters	Non-disruptive Disruptive for the concerned SNA/subarea station (manual VTAM deactivation needed)

Deleting a Resource

Table 13-3. Network Traffic Disruption - Deleting a Resource

Network	DLC	Deleted Resources	Result
APPN	All DLCs except ESCON	All resources, except for: 'Frame-relay DLCI/CIR 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
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 14. Resource Management

This chapter describes how to view and manage the following network resources:

- Filters for resource management
- Ports (manage and view information about)
- Stations (manage and view information about)
- Sessions (view information about).

This chapter covers the first five items of the **Operations** menu in Figure 14-1.

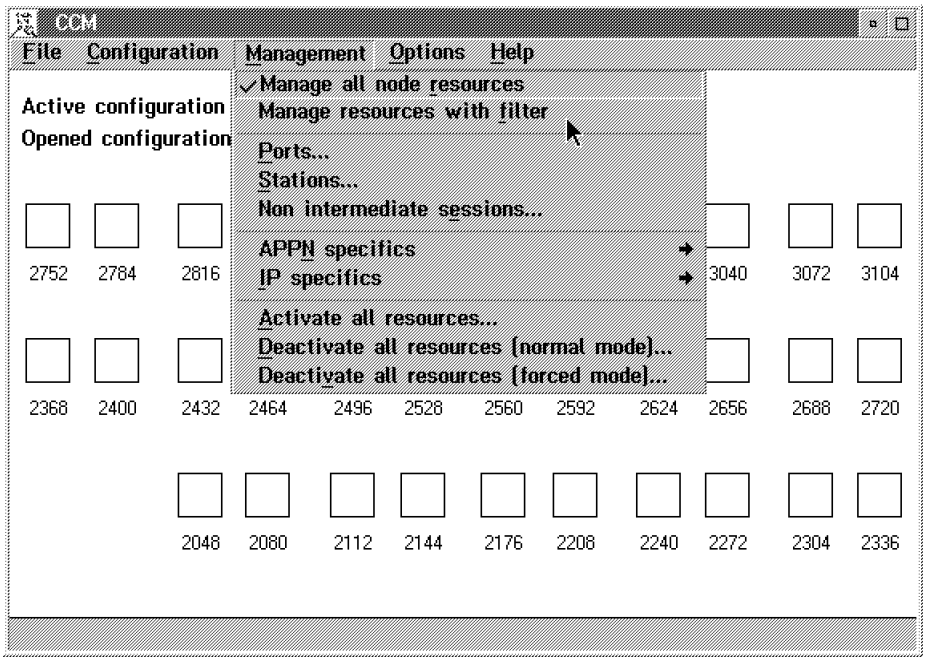


Figure 14-1. Operations Menu in Ports Management Window

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 window (see Figure 14-1 on page 14-1):

Manage all node resources

Selecting this choice displays, in the appropriate resource management window (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.

For example, if you want to look at session information, the **Session Management Filters** window is opened (see Figure 14-2).

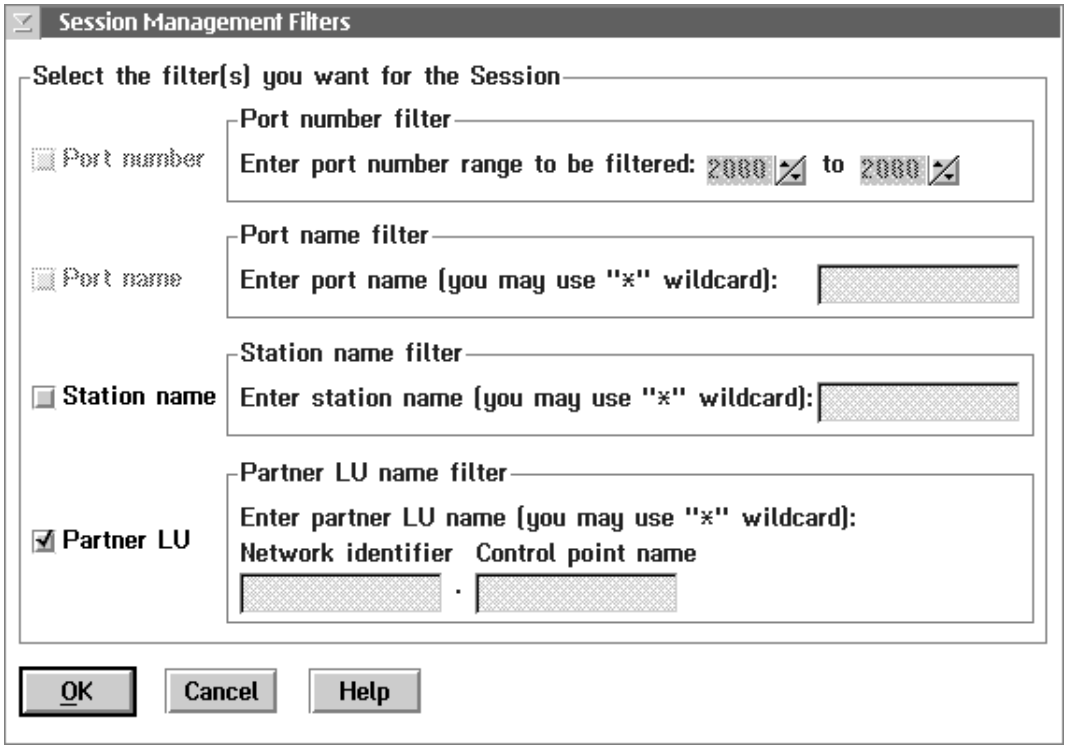


Figure 14-2. Session Management Filters Window

In this window, 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 14-3): Main window **Management** menu → **Ports**

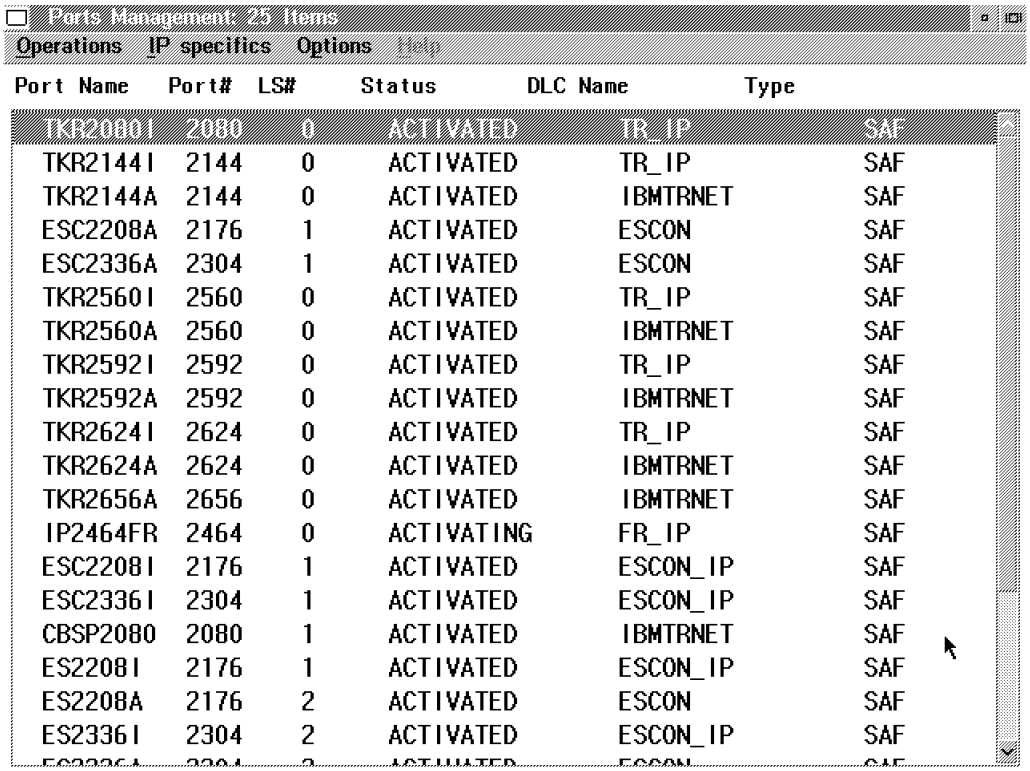


Figure 14-3. Ports Management Window

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 window **Management** menu → **Ports**

Step 2. Double click on the desired port.

Note...

All the station management functions are available from the window 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 window **Management** menu → **Ports**

Step 2. Select the port you want.

Step 3. Operations menu → **Details** (see Figure 14-4).

Activating and Deactivating Ports

You can activate or deactivate ports as required (see Figure 14-4).

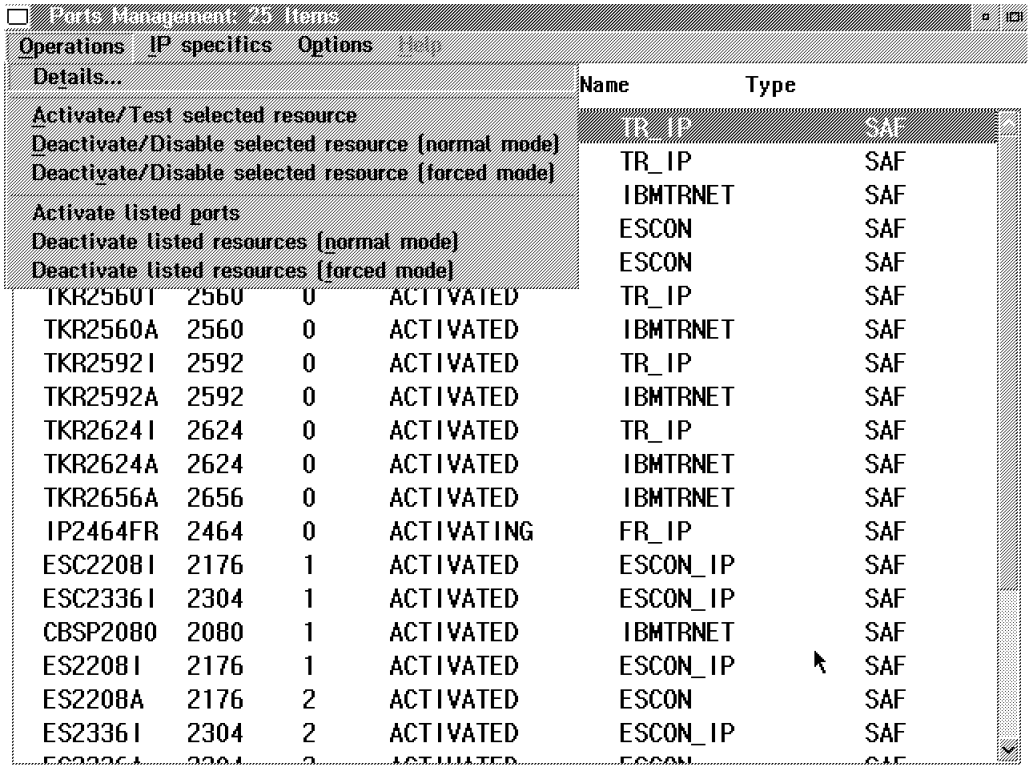


Figure 14-4. Operations Menu for APPN Port Management

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.

Activating/Deactivating an IP Resource...

See “IP Resource Status” on page 14-7.

Activating a Port

To activate a port:

Step 1. Main window **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 window **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

Be careful...

When you deactivate a port in 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.

To force the deactivation of a port:

Step 1. Main window **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

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 window **Management** menu → **Ports** → **Operations** menu → **Activate listed ports**

Deactivating all Ports in Normal Mode

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 window **Management** menu → **Ports** → **Operations** menu → **Deactivate listed resources (normal mode)**

Deactivating all Ports in Forced Mode

Be careful...

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 window, 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 window **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** 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 14-1 shows the changes in status that result from the issuing of these commands.

Table 14-1. 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 which 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 which 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 window 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 window **Management** menu → **Stations** → **Station Management** window (see Figure 14-5)

Stations Management: 13 Items

Operations Options Help

LINK NAME	#SE	TG	PARTNER NAME	TYPE	STATE	ADDRESS
ZYX00000	0	0		NET	CONTACTED	01000007080701
ZYX00001	0	0		NET	CONTACTED	01000807080701
STA2272	0	0		END	XID PND	0000
CE01	0	0		END	XID PND	00010807080701
CE02	0	0		END	XID PND	00020807080701
CE03	0	0		END	XID PND	00030807080701
CE04	0	0		END	XID PND	00040807080701
DA09	0	0		END	XID PND	00090807080701
DA0C	0	0		END	XID PND	000c0807080701
SPMOSSE	2	21	SYSTSTAP.ERS4DCAF	END	CONTACTED	40009000001004
DA0A	2	21	SYSTSTAP.ICN15	NET	CONTACTED	000a0807080701
DA0B	2	21	SYSTSTAP.ICN16	NET	CONTACTED	000b0807080701
STABS12	2	21	SYSTSTAP.BS12	NET	CONTACTED	40000078268808

Figure 14-5. APPN Stations Information Display Window

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 window **Management** menu → **Stations** → **Station Management** window

Step 2. Double click on the desired station to display the sessions activated for it.

Note...

You can display details about a specific session from the window 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 window **Management** menu → **Stations** → **Station Management** window

Step 2. Double click on the desired station

Step 3. Operations menu → **Details**

Activating and Deactivating Stations

You can activate or deactivate stations as required (see Figure 14-4 on page 14-4).

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 window **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 window **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

Be careful...

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 window **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

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 window **Management** menu → **Stations** → **Operations** menu → **Activate listed stations**

Deactivating all Stations Normally

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 window **Management** menu → **Stations** → **Operations** menu → **Deactivate listed resources (normal mode)**

Forcing the Deactivation of all Stations

Be careful...

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 window, 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 window **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 window **Management** menu → **Non-intermediate sessions** → **Ports Management** window (see Figure 14-6).

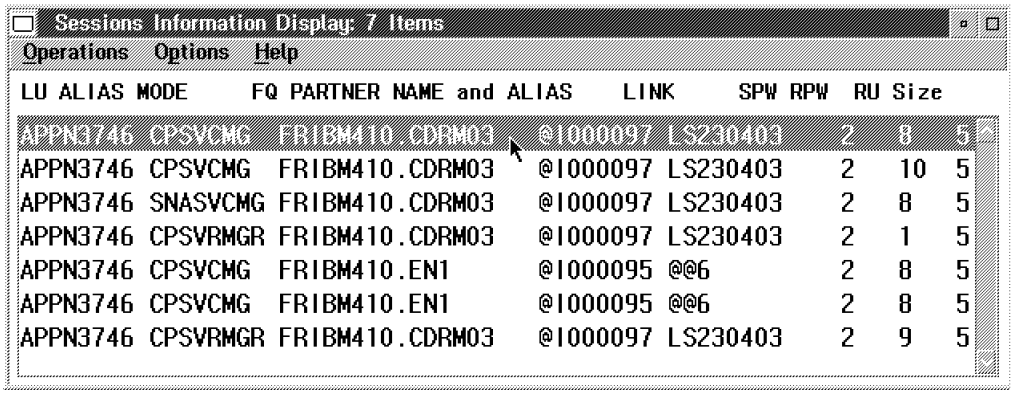


Figure 14-6. Sessions Information Display

Step 2. Double click on the desired session.

Step 3. Operations menu → **Details**

Step 4. Details about the selected session are displayed in the **CCM IP Results Display** (see Figure 14-8 on page 14-15).

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.

Note: For the overall, node-level commands, refer to Chapter 16, “Managing IP Router Resources” on page 16-1.

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 Nways Multiprotocol Controller Model 950: User's Guide*, SA33-0356.

   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. By using the CCM:

   a. Main window **Management** menu → **Ports**

   b. Double-click a port in the **Ports Management** window → **CCM Management** window

   c. Select the level (port or processor) of the command(s) that you want to use by selecting either one of the first two **IP specifics** menu options (see Figure 14-7 on page 14-15):

      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.

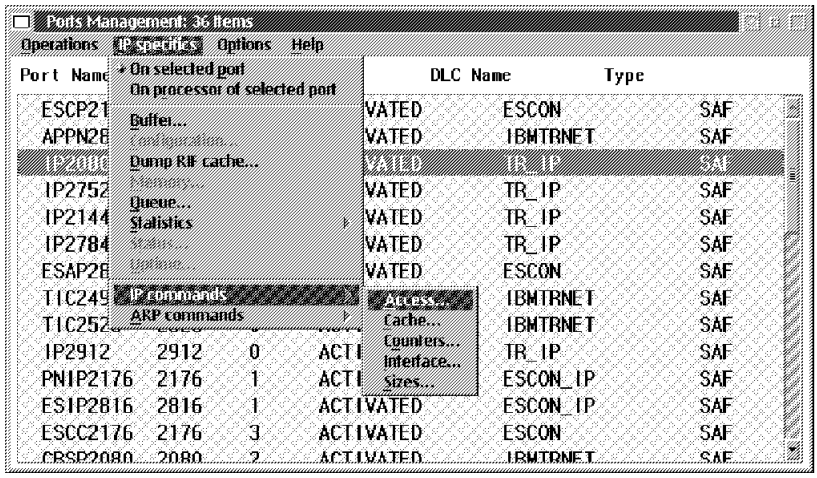


Figure 14-7. Example IP Port Management Menus

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** window, see Figure 14-8.

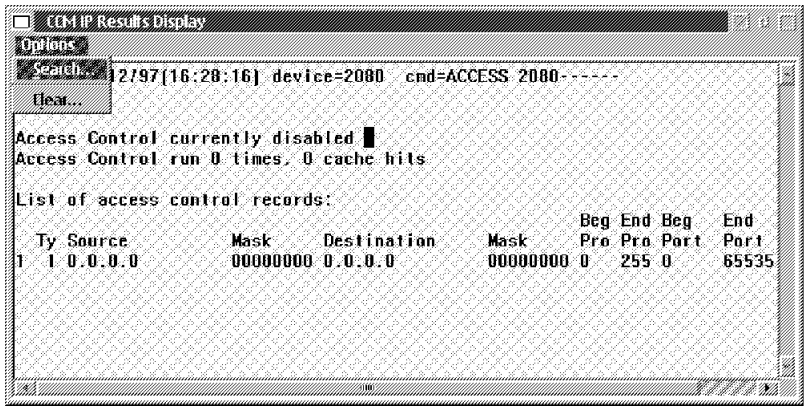


Figure 14-8. Example CCM IP Results Display

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, refer to "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 window 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, refer to “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 15. Viewing Node-Level APPN Resources

This chapter explains how to see global information about APPN resources running on the network node. Figure 15-1 shows the APPN specific cascaded-menu.

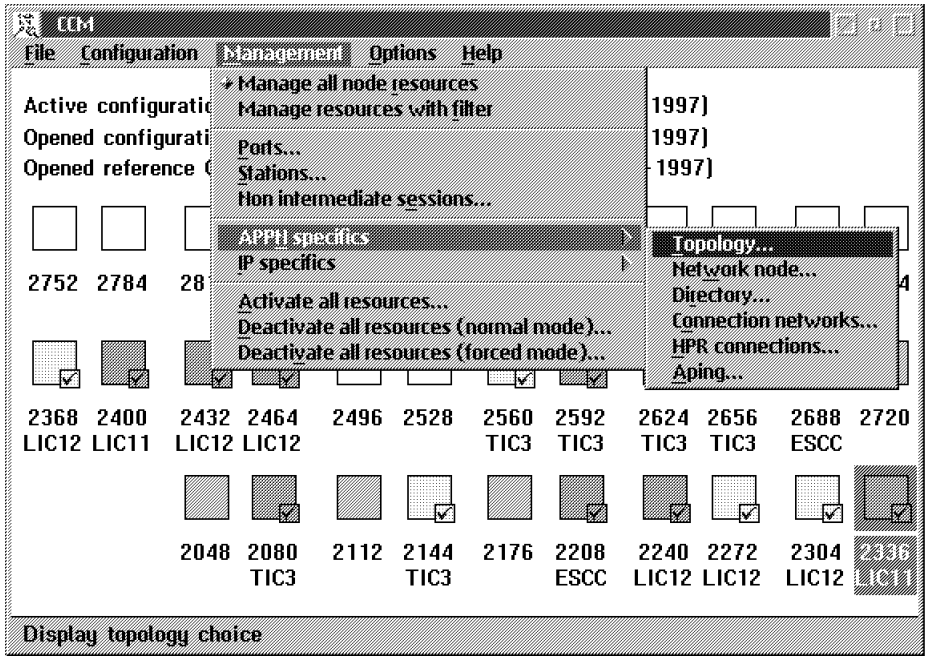


Figure 15-1. Example Management Window for APPN

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 window **Management** menu → **APPN specifics** → **Topology** → **Topology Information Display** window

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 window **Management** menu → **APPN specifics** → **Network node** → **Network Node Information Display** window

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 window **Management** menu → **APPN specifics** → **Directory** → **Directory Information Display** window.

View Details of the Connection Networks

You can see information about the connection networks.

To view the connection information: Main window **Management** menu → **APPN specifics** → **Connection networks** → **Connection Networks Information Display** window

View Details of the HRP Connections

You can see information about the high performance routing connections.

To view the HRP connection information: Main window **Management** menu → **APPN specifics** → **HRP Connections** → **HRP Connections Information Display** window

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 window **Management** menu → **APPN specifics** → **Aping** → **APING** MOSS-E window

Chapter 16. Managing IP Router Resources

This chapter explains how to manage IP network resources by issuing commands. They 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*, SA33-0356.

   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 window **Management** menu (see Figure 16-1).

   If information is generated as the result of a command being issued, it is displayed by CCM in the **CCM IP Results Display** window (see Figure 14-7 on page 14-15).

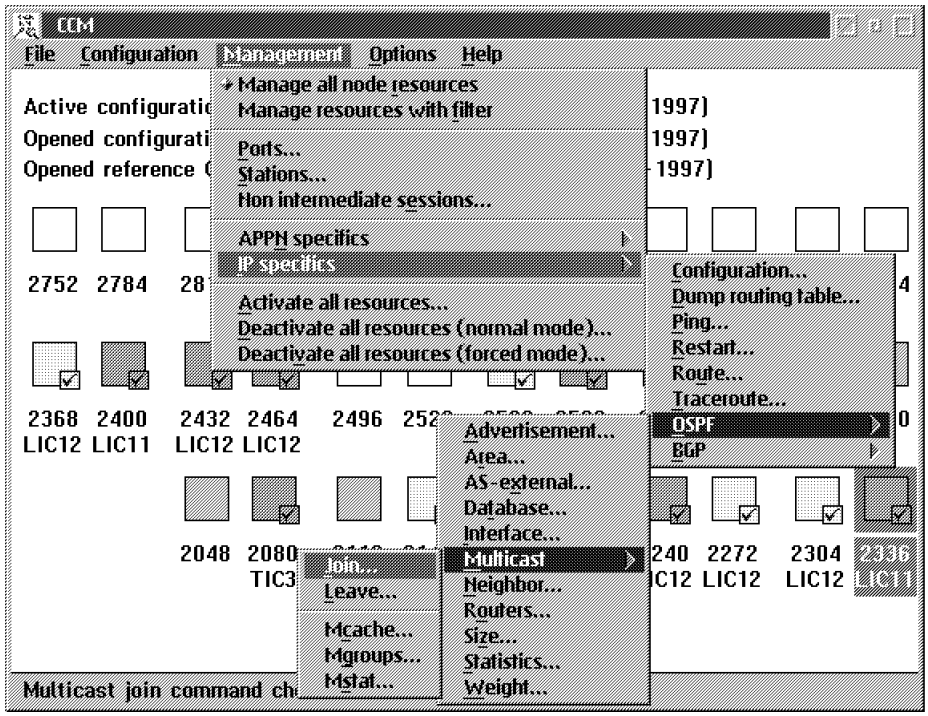


Figure 16-1. Example of an IP Command Window

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 window **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 window **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 window **Management** menu → **IP specifics** → **Ping** → **Ping** window

  To **start** pinging, specify the values in the window and press **Ping**.

  To **Stop** pinging, return to the **Ping** window and press **Stop ping**.

Restarting the IP Router

To restart the IP router, you can issue either:

- TELNET command: OPCON RESTART
- CCM command: Main window **Management** menu → **IP specifics** → **Restart**

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 window **Management** menu → **IP specifics** → **Route** → **Route** window

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 window **Management** menu → **IP specifics** → **Traceroute** → **Traceroute** window

  To **start** tracing, specify the values in the window and press **Trace**.

  To **Stop** tracing, return to the **Traceroute** window 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 window **Management** menu → **IP specifics** → **OSPF** → **Advertisement** → **OSPF - Advertisement** window

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 window **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 window **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 window **Management** menu → **IP specifics** → **OSPF** → **Database** → **OSPF - Database** window

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 window Main window **Management** window → **IP specifics** → **OSPF** → **Interface** → **OSPF - Interface** window

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 window **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Join** → **OSPF - Join Multicast Group Address** window

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 window **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Leave** → **OSPF - Leave Multicast Group Address** window

OSPF Multicast Cache

To view all or a specific multicast cache entry, you can issue either:

- TELNET command: P_OSPF MCACHE
- CCM command: Main window **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Mcache** → **OSPF - Multicast Cache** window

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 window **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 window **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 window **Management** menu → **IP specifics** → **OSPF** → **Multicast** → **Neighbors** → **OSPF - Neighbors** window

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 window **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 window **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 window **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 window **Management** menu → **IP specifics** → **OSPF** → **Weight** → **OSPF - Weight** window

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 window **Management** menu → **IP specifics** → **BGP** → **Destinations** → **BGP - Destinations** window

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 window **Management** menu → **IP specifics** → **BGP** → **Neighbors** → **BGP - Neighbors** window

Path Description Database

To view the paths in the path description database, you can issue either:

- TELNET command: P_BGP PATHS
- CCM command: Main window **Management** menu → **IP specifics** → **BGP** → **Paths**

Size of the BGP Databases

To view the size of all the BGP databases, you can issue either:

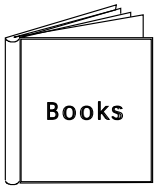
- TELNET command: P_BGP SIZES
- CCM command: Main window **Management** menu → **IP specifics** → **BGP** → **Sizes**

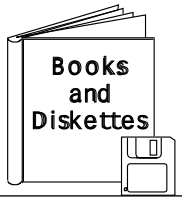
Appendix A. Bibliography

Customer Documentation for the 3746 Model 950

Table A-1 (Page 1 of 2). Customer Documentation for the 3746 Model 950

This customer documentation has the following formats:





Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, 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 this EC.

Preparing for Operation

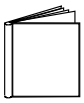
GA33-0400

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[3]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

GA33-0457

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

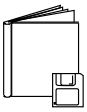
Planning Guide

Planning for:

- Field upgrades
- Service processor and alert management configuration
- Network integration (NCP, APPN, and IP control)
- Physical installation.

Table A-1 (Page 2 of 2). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller Model 950

***User's Guide*[2]**

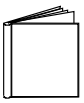
Explains how to:

- 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.

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.
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.

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.

[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

Customer Documentation for the 3745 (Models 210, 310, 410, 610, 21A, 31A, 41A, and 61A), and 3746 (Model 900)

Table A-2 (Page 1 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

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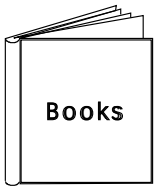
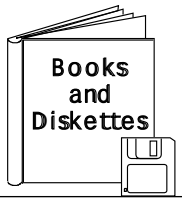
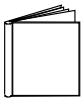




Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, 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 this EC.



SA33-0172

IBM 3745 Communication Controller
Models 210 to 61A
IBM 3746 Expansion Unit Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

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[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

Table A-2 (Page 2 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

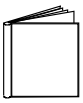
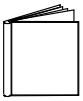
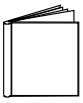
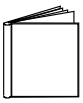
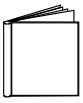
	GA33-0457	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***Models 900 and 950*** ***Planning Guide*** Planning for: • Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
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.
	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.

Table A-2 (Page 3 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

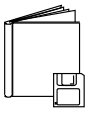
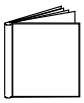
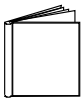
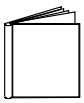
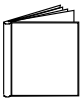
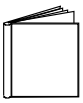
	SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using: – DCAF program – Telnet Client program.
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		
	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. 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.

Table A-2 (Page 4 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

	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.
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.
	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 A-3. Additional Customer Documentation for the 3745 Models 130 to 17A

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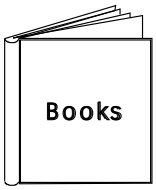


Finding Information

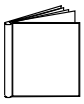
SA33-0142

IBM 3745 Communication Controller
Models 130, 150, 160, 170, and 17A
IBM 3746 Nways Multiprotocol Controller Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring



GA33-0138

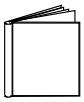
IBM 3745 Communication Controller
Models 130, 150, and 170

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
MB	megabype (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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Readers' Comments — We'd Like to Hear from You

3746 Nways Multiprotocol Controller
Models 900 and 950
(For CCM Version F12381 000 or Later)
Controller Configuration
and Management
User's Guide

Publication No. SH11-3081-4A

Please send us your comments concerning this book. We will greatly appreciate them and will consider them for later releases of the present book.

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In advance, thank you.

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Readers' Comments — We'd Like to Hear from You
SH11-3081-4A

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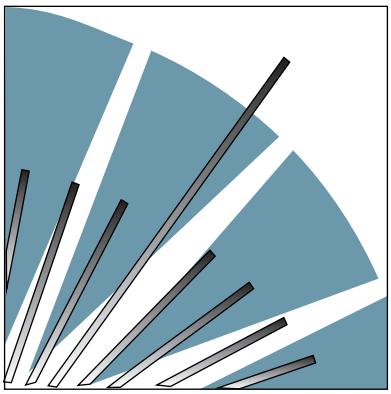

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