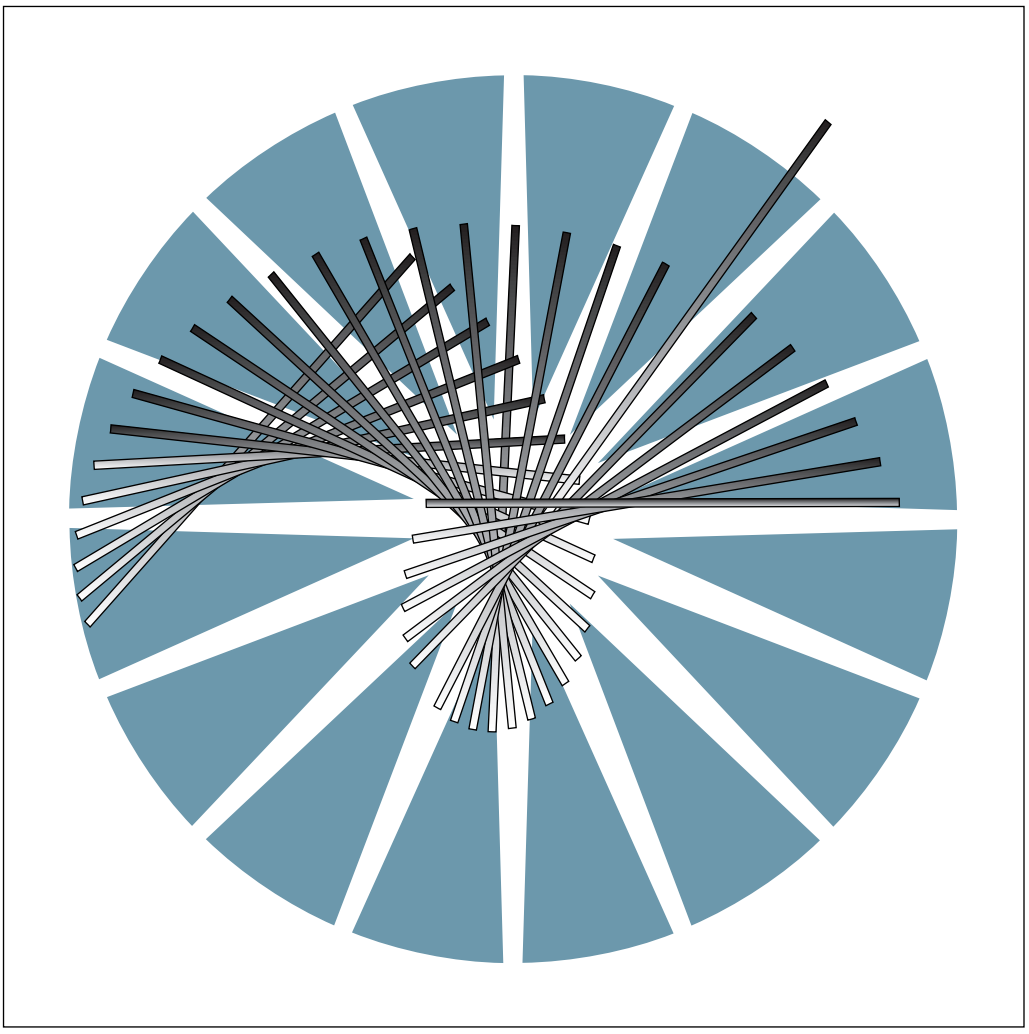
3745 Communication Controller Models A
3746 Nways Multiprotocol Controller Model 900

Basic Operations Guide



SA33-0177-05

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3746 Nways Multiprotocol Controller Model 900

Basic Operations Guide

SA33-0177-05

Note!

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

Sixth Edition (December 1997)

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About This Guide

This guide applies to the IBM 3745 Communication Controller Models A and the IBM 3746 Nways* Multiprotocol Controller Model 900 operating as one of the following:

- A subarea Network Control Program (NCP).
- A Network Node (NN) with Advanced Peer-to-Peer Networking (APPN*) High Performance Routing (HPR*).
- IP router.

The main operation of these products is described, with the following functions and processes included:

- Service processor.
- Network node processor (3746-900NN or 3746-900IP).
- Managing the APPN/HPR network (3746-900NN only).
- Managing the IP network (3746-900IP only).
- Logging on to the Maintenance and Operator Subsystem - Extended (MOSS-E).
- Opening a 3745 MOSS window and using MOSS functions.
- Opening a 3746 Model 900 MOSS-E window and using MOSS-E functions.
- Turning on the power for the 3745 and the 3746 Model 900.
- Enabling and disabling channel adapters.
- Fallback and a switchback for Models 41A and 61A.
- Performing an initial microcode load (IML) of the MOSS, the 3745 scanners, and the 3746 Model 900 processors.

For advanced functions, see the *Advanced Operations Guide*, SA33-0097, or the MOSS-E on-line help.

Conventions Used in this Guide

When used in this guide, the term:

3745 Refers to the IBM 3745 Models 17A, 21A, 31A, 41A, and 61A with 3746 Models A11, A12, L13, L14 , or L15 Expansion Units.

3746-900 Refers to the IBM 3746 Nways Multiprotocol Controller Model 900.

3746-900NN Refers to the function of the 3746-900, operating as an APPN/HPR network node.

3746-900IP Refers to the part of the 3746-900 that operates as an IP router.

Who Should Use this Guide

- Non-specialized personnel carrying out daily routine operations.
- Non-IBM personnel configuring remote consoles connected to the service processor running the MOSS-E.
- Personnel responsible for installing and changing program configurations, for example:
  - Network personnel
  - System programmers

– System service personnel
– IBM trained service representatives.

The user should have an understanding of teleprocessing, modem operations, and APPN/HPR.

Teleprocessing specialists can access online information (help, guides, and other material) for information on the following:

- Maintenance and Operator Sub-System - Extended (MOSS-E).
- Controller Configuration and Management (CCM).
- APPN/HPR and IP Control Point functions.
- Multiaccess Enclosure (MAE) Management.
- DCAF* installation.
- TCP/IP* environment.

Further publications are listed in the Appendix D, “Bibliographies” on page D-1.

How this Guide is Organized

The guide consists of the following chapters and appendixes:

- Chapter 1, “Introduction,” explains how to use the service processor and the network node processor in a multiprotocol environment. Examples of controller configurations with sharing the service processor are included.
- Chapter 2, “Getting Started,” explains how to use the service processor, how to open maintenance and operator subsystem (MOSS) sessions for the 3745 and for the 3746-900 (using the MOSS-E). Examples are included of console attachments.
- Chapter 3, “Working with the Network Node Processor Functions,” explains how to access the APPN/HPR control point and IP router functions via the MOSS-E.
- Chapter 4, “3745 Power ON and IPL from Control Panel,” provides information on automatic and manual power ON/OFF and IPL procedures.
- Chapter 5, “3745 IPL from Service Processor,” provides information on IPL, procedures for checking power supplies, and explanations of IPL messages.
- Chapter 6, “Enabling and Disabling Channel Adapters,” describes the necessary conditions for enabling or disabling the 3745 and 3746-900 channel adapters and how to do it.
- Chapter 7, “3745 Models 41A and 61A Fallback and Switchback,” explains fallback and switchback for twin-standby and twin-backup modes.
- Chapter 8, “Basic Service Procedures,” explains how to activate, deactivate, and perform an IML for the 3745 and 3746-900. It is a quick reference for service procedures that are normally performed by service personnel.
- Chapter 9, “Service Processor and MAE Microcode Management,” explains how to update the active CDF-E, and describes saving and backup operations.
- Chapter 10, “CCM and Telnet IP Resource Management,” contains information on using CCM and the MOSS-E for Telnet commands.
- Appendix A, “3745 Operator Control Panel,” describes the 3745 control panel and the hexadecimal codes that display on it.

- Appendix B, “3746-900 Operator Control Panel,” describes the 3746-900 control panel.
- Appendix C, “MOSS-E Functions,” is a basic guide to MOSS-E functions.
- Appendix D, “Bibliographies,” lists the available customer documentation related to the 3745 and 3746-900.

The following information is included at the back of this guide:

- A list of abbreviations used in this guide, on page X-1.
- A glossary of terms which may be unfamiliar, on page X-3.
- An index is provided on page X-7.

What is New in this Guide

This revised edition provides information on the following:

- Multiaccess enclosure (MAE) management.
- Service processor customization.
- Licensed internal code information.
- CCM/Telnet user profiles management.

Where to Find More Information?

- “Customer Documentation for the 3745 (Models 210, 310, 410, 610, 21A, 31A, 41A, and 61A), and 3746 (Model 900)” on page D-1.
- “Additional Customer Documentation for the 3745 Models 130, 150, 160, 170, and 17A” on page D-5.
- “Help Pull-Down Menu” on page 2-8.
- *Introducing Enterprise Systems Connection*, GA23-0386.
- *IBM 3746 APPN/HPR Implementation Guide*, GG24-2536.
- *IBM 3746 IP Implementation Guide*, GG24-4845.
- *SNA Network to APPN Network Migration Experience*, SG24-4656.
- Networking Softcopy Collection Kit, SK2T-6012.

World Wide Web

You can access the latest news and information about IBM network products, customer service and support, and microcode upgrade via Internet at the Uniform Resource Locator (URL):

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Chapter 1. Introduction

APPN/HPR and IP Routing

Figure 1-1 below shows the Enterprise System Connection (ESCON*), token-ring, and communication line connectivity (ATM, PPP, SDLC, Frame-relay) of the 3745, 3746-900, and 3746-950.

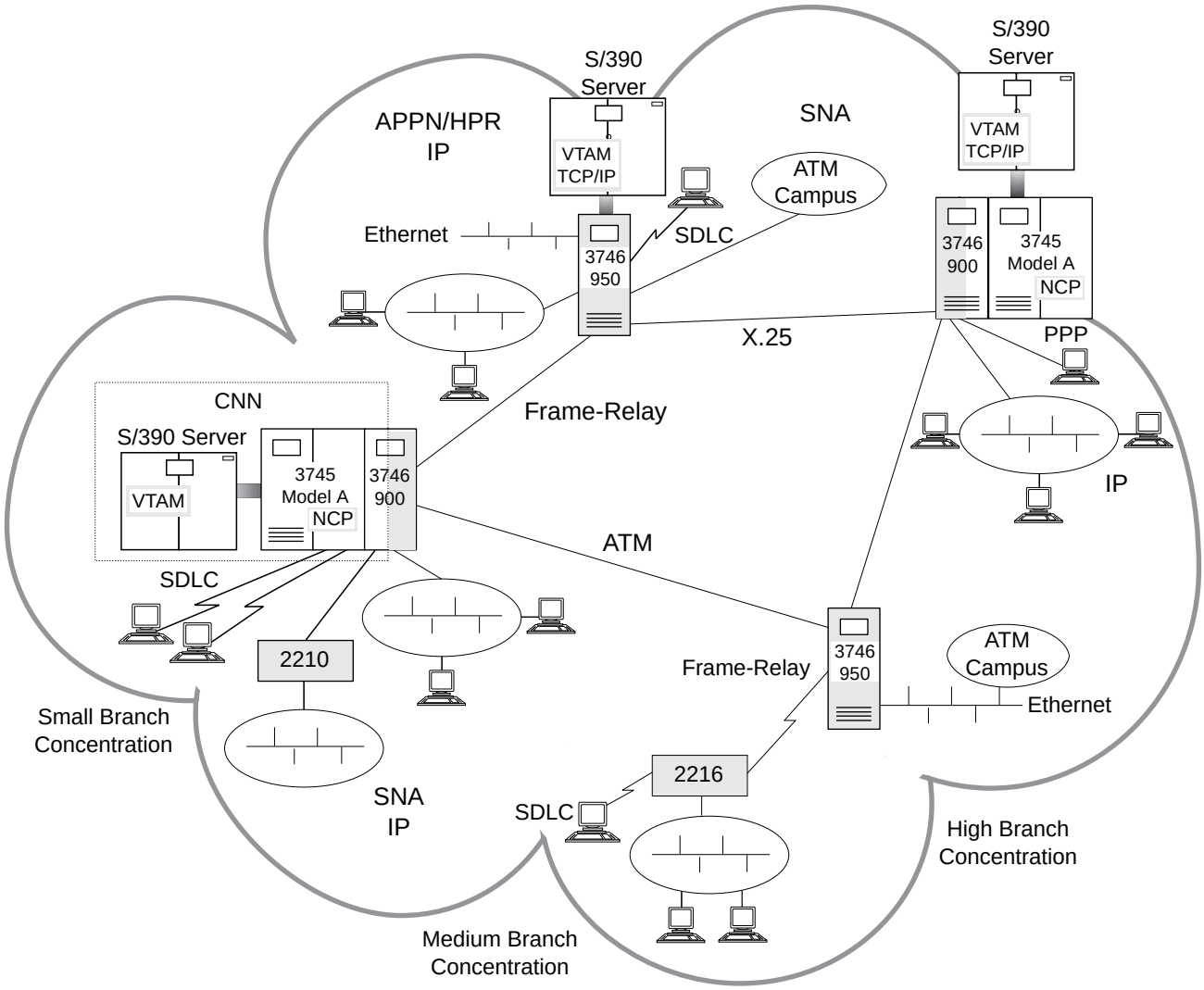


Figure 1-1. SNA and APPN/HPR Networking with 3745 Model A, 3746-900, and 3746-950.

The 3746 Nways* Multiprotocol Controller Model 900 can operate as any of the following:

- SNA node controlled by NCP.
- APPN/HPR composite network node (CNN) controlled by NCP and VTAM*.
- APPN/HPR network node, independent from NCP and VTAM, controlled by the network node processor (NNP).
- IP router, independent from NCP and APPN, controlled by the NNP.

The 3746-900 can operate simultaneously in multiple modes, as in the following examples:

- APPN/HPR network node and SNA node (NCP).
- APPN/HPR network node and APPN composite network node (NCP).
- SNA node (NCP) and IP router.
- APPN/HPR network node and IP router.
- APPN/HPR network node, IP router, and SNA node (NCP).

In these modes, the adapters of the 3746 Model 900 are shared between traffic controlled by the 3746 network node (NN), traffic controlled by NCP, and traffic controlled by the 3746 IP router.

The 3746-900, under control of the NN processor, carries out APPN/HPR network node functions over communication line adapters, token-ring adapters type 2 (and higher), and ESCON adapters type 2 (and higher). All the adapters can run 3746 network node traffic, IP traffic, and NCP traffic simultaneously.

The 3746-900 supports SNA traffic, for example, 3270 flows, via the dependent logical unit requester (DLUR) function.

The 3746-900 allows the 3745 and associated SNA network to evolve and grow in capacity, function, and performance. The controller also provides upgrades to protect current and future investments in 3745-based networks. As an APPN/HPR network node, the 3746-900 offers a flexible and cost-effective evolution path from SNA networking to APPN/HPR networking.

The 3746-900 can operate with the same APPN/HPR and IP routing capabilities as the 3746-950.

Locating Processors

The service processor and network node processors are located in a controller expansion unit next to the 3746-900 or the 3745 Models A (see Figure 1-2 on page 1-3).

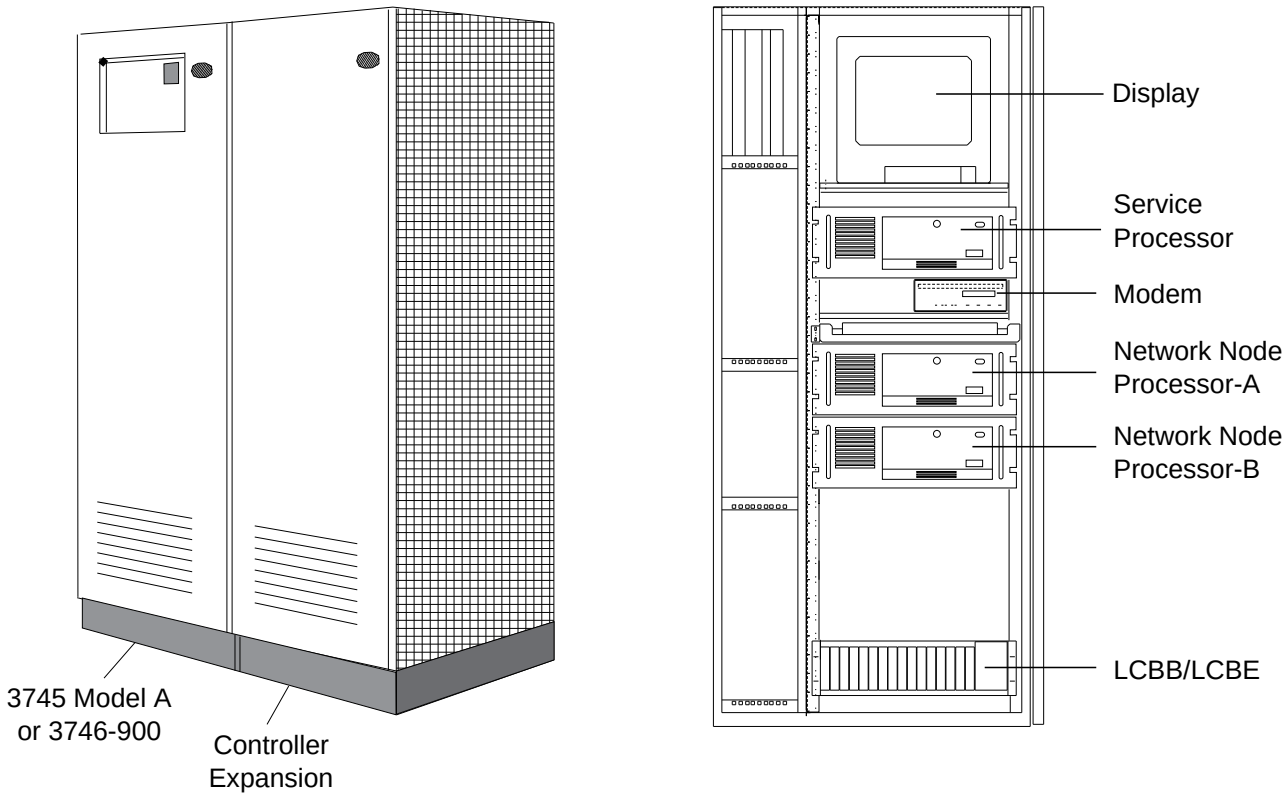


Figure 1-2. 3745 Model A or 3746-900 with Controller Expansion

Using the Service Processor

The service processor connects the 3745 to the 3746-900, and provides a single user interface for 3745 and 3746-900 operator and service functions.

The service processor runs MOSS-E to perform the following:

- Maintenance and operator subsystem (MOSS) functions in the 3745. MOSS screens are the same for the operator consoles of the 3745 Models 130, 150, 160, 170, 210, 310, 410, and 610.
- Graphic status displays of the controllers connected to the service processor.
- Maintenance and operation of the 3745 Models A and the 3746 Nways Multiprotocol Controller Model 900.

The service processor also performs the following:

- Runs Controller Configuration and Management (CCM)[1] for the following:
  - Configuring the 3746-900 APPN/HPR Network Node and IP Router with ESCON Generation Assistant (EGA).
  - Displaying information about 3746-900 resources, for example, the current local network topology.
  - Managing multiple configurations of 3746-900 resources.

[1] CCM is also available in a stand-alone OS/2 version.

- Loads 3746-900 microcode.
- Stores information, for example, configuration data file-extended (CDF-E) files on 3746-900 hardware resources.
- Reports 3746-900 errors as alerts to NetView* and sends error codes to the IBM Remote Support Facility (RSF). Error codes are locally stored by the service processor and can be displayed by the user.

The service processor normally runs unattended and should always be operational. However, normal network operations are not affected if the service processor is temporarily disabled.

Connecting the Service Processor.

The service processor communicates with the 3745 MOSS, the 3746-900, and the network node processor via a Service Processor Access Unit (SPAU). The SPAU can be shared with other 3745s and 3746-900s.

If a SPAU is connected to a 3746 network node or a 3746-950, it cannot be shared by other user stations, as it must be isolated from user traffic. Otherwise, DCAF stations can be connected to the SPAU for remotely controlling the service processor or operating the 3746 network node and 3746 IP router. If remote console access runs via bridges, there must be appropriate LAN filtering to protect the SPAU segment. The SPAU is packaged with a service processor and provides a LAN connection between the service processor and equipment attached to controllers 3745, 3746-900, and 3746-950.

The 3745 includes specific MOSS hardware and microcode to support communications with the service processor.

Sharing the Service Processor

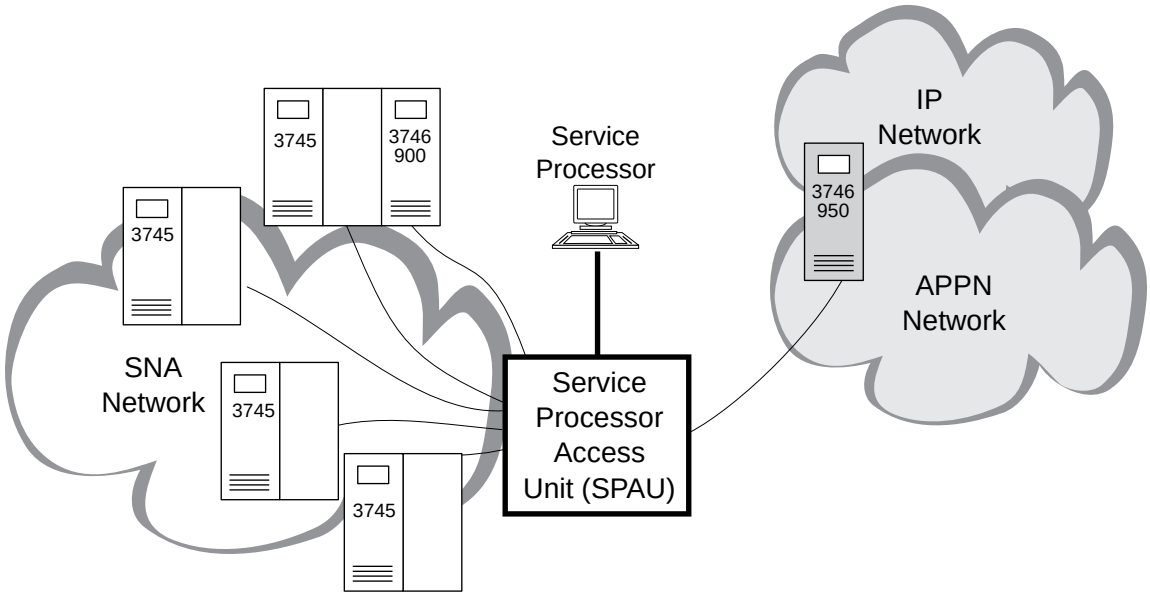


Figure 1-3. Example 1 of a Maximum Configuration. Service Processor running four 3745s, one 3746-900 (SNA), and one 3746-950 (IP, or APPN/HPR).

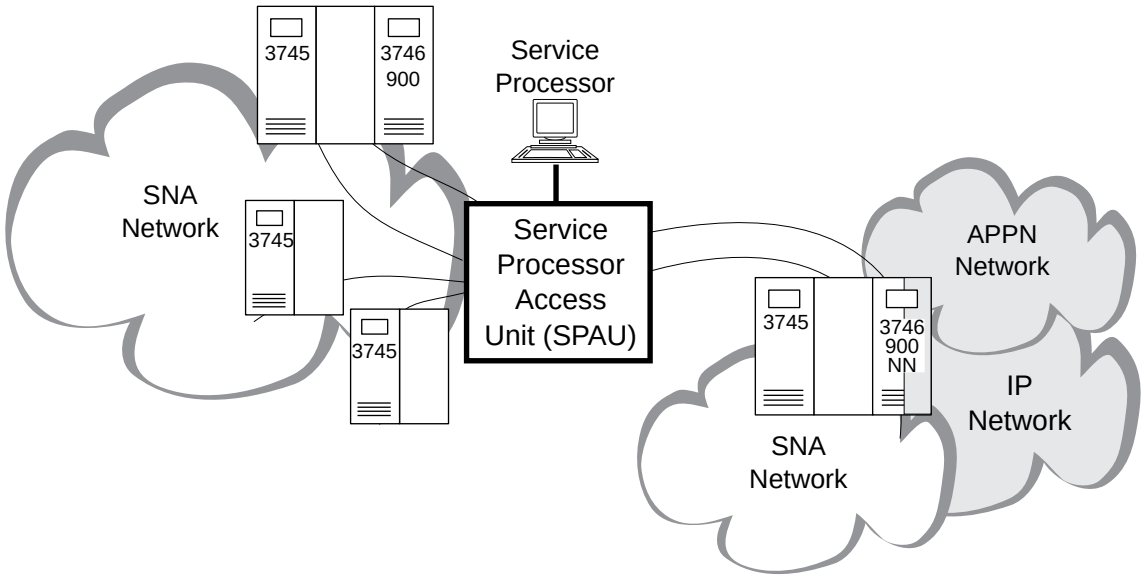


Figure 1-4. Example 2 of a Maximum Configuration. Service processor running four 3745s and two 3746-900s, one operating as an APPN/HPR network node.

A service processor can run the following controller and expansion unit combinations:

- Four 3745s and two 3746-900s operating in an SNA mode (controlled by NCP).
- Four 3745s, one 3746-900 operating in an SNA mode (controlled by NCP), and one 3746-950 (see Figure 1-3 on page 1-4).
- Four 3745s and two 3746-900s, one operating as an IP Router and APPN/HPR network node (see Figure 1-4).

IBM recommends that controllers be installed in the room, within 10 m of the service processor. Connecting an additional controller to the service processor will not interfere with ones already installed.

Large installations that need more than four 3745s and two 3746-900s require several service processors and controllers. If all the groups are attached to the same token-ring LAN (either directly attached or through a token-ring bridge), then one remote DCAF console located at a central control point can access and control all the 3745s/3746s located in the same or different machine rooms.

Backing Up the Service Processor

Network operations are not affected if the service processor is temporarily disabled. However, a backup service processor provides a higher level of availability.

In normal operations, the backup service processor is not connected to the SPAU and remains powered OFF. The hard disk of the backup service processor should duplicate that of the active service processor. This means that if the active service processor fails, it can be easily replaced by the backup.

After setting up a backup service processor, use the following procedures to duplicate it with the active service processor:

1. Save active MOSS-E configuration data to the hard disk of the backup service processor.
2. Save Multiaccess Enclosure (MAE) configuration data to a backup diskette.

3. Save the active MOSS-E microcode to the hard disk of the backup service processor.
4. Repeat steps 1 on page 1-5 and 3 after every configuration or code change.

For more details, see “Backing Up the Service Processor” on page 9-18.

Dual Network Node Processor (NNP)

The 3746 Nways Multiprotocol Controller is equipped with one or two network node (NN) processors which provide the following:

- IP router functions.
- APPN/HPR control point functions including DLUR.
- Controller Configuration and Management (CCM) application.
- Storage utility for the network node files.

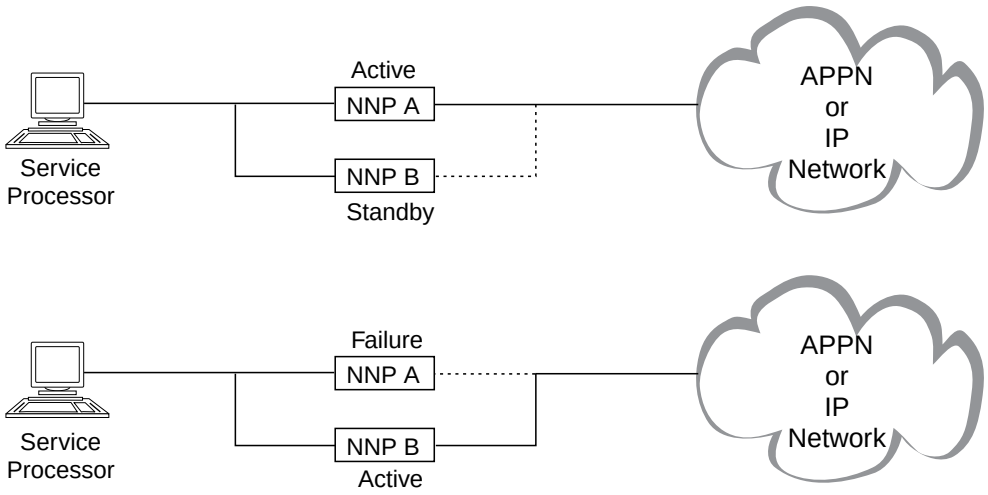


Figure 1-5. Dual Network Node Processors. Dual NNPs in twin-standby mode for 3745 Models 41A and 61A.

To activate dual NNP, select **Enable CP/NNP backup** (see “Manage Control Points on NNPs” on page 3-2).

Each NNP (A or B) can be in **active** or **standby** mode alternatively. The active NNP runs the APPN/HPR Control Point or IP router functions. The standby NNP takes control if the active NNP fails. The service processor monitors both NNPs, and if one fails, activates the standby NNP after a 2 minute timer confirmation. Choosing automatic configuration resets and restarts traffic for the 3746-900NN (see “Manage Control Points on NNP” on page 3-5). Otherwise, you must restart traffic manually.

Network Node Processor States

In twin-standby mode, the NNPs display color status messages similar to the 3746-900 NNP (see “Information Pull-Down Menu” on page 2-7).

Other Consoles

For more information on logging on to remote consoles, see the following:

- “Using DCAF to Remotely Log on to the Service Processor” on page 2-15.
- “Using Telnet to Remotely Access IP functions” on page 2-17.

Operator Tools

To operate the 3745 and 3746-900, you will need the following:

- Service processor, color display, pointing device (usually a mouse), and keyboard.
- 3745 operator control panel. This is operational even when the 3745 is deactivated (see Chapter 8, “Basic Service Procedures” and Appendix A, “3745 Operator Control Panel” for a description of control panel displays, indicators and switches).
- The 3746-900 operator control panel. This is operational even when the 3746-900 is deactivated (see Chapter 8, “Basic Service Procedures” and Appendix B, “3746-900 Operator Control Panel” for a description of control panel displays, indicators and switches).

Stop Switch

Located on the 3745 control panel (see Figure 1-6).

Attention

Even if the stop switch is in the OFF position, the primary power box is still connected to the electric current. To disconnect completely, do the following:

1. Turn off the main circuit breaker.
2. Remove the power plugs from supply outlets.

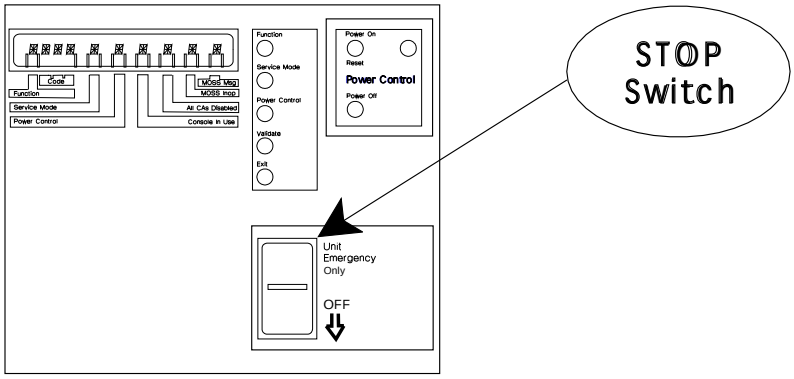


Figure 1-6. IBM 3745 Control Panel

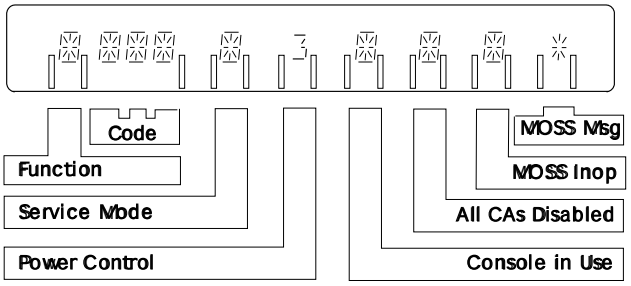
The stop switch is meant only as a backup to the Power OFF button. If you use the stop switch to Power OFF, you will need an IBM service representative to restart the controller.

Control Panels

Note

The same control panel numbers on both the 3745 and 3746-900 do not always indicate the same function.

The 3745 Control Panel

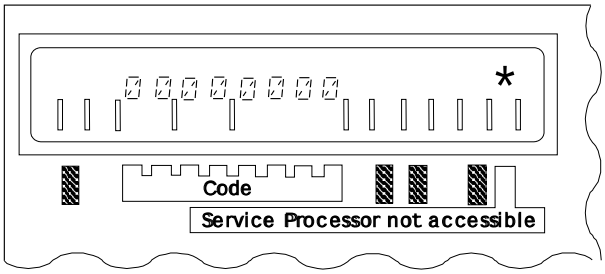


3745 control panel display. For more information on displays, see in Appendix A, “3745 Operator Control Panel” on page A-1.

Option 3 is selected.

Indicator is on.

The 3746-900 Control Panel



3746-900 control panel display. For more information on displays, see B-1.

Solving Problems

There are three levels of problem resolution. If you encounter a problem, start at the first level and work down:

1. First Level

   Use online help to solve the problem. See “Help Pull-Down Menu” on page 2-8.

2. Second Level

   Contact the person in charge of 3745/3746-900 problem analysis.

   HELP CONTACT

   Name: .....

   Telephone: .....

3. Third Level

Forward a report to the IBM support center. Before you do this, try levels 1 and 2 first so that you will have as much information as possible for IBM support personnel.

Alarms

Alarms in the 3745 or 3746-900 are indicated by a red bell icon 🔔. This appears in the **MOSS-E View**, next to the controller that produced the alarm.

If the MOSS-E window is an icon or hidden, it will automatically appear in front of any open windows, and display the red alarm bell. Double-click the 🔔 to open **Display Alarms** (see the online help for more information).

If you use IBM's remote support facility (RSF) when a problem is reported to RETAIN* (either automatically or manually), two alarms are generated, one when the call is made to RSF, and a second when IBM answers the call.

Chapter 2. Getting Started

Beginners should read this...

The following procedures assume that you know how to operate a mouse in a windows environment.

Before you begin, make sure that the service processor is on and that **MOSS-E View** is displayed.

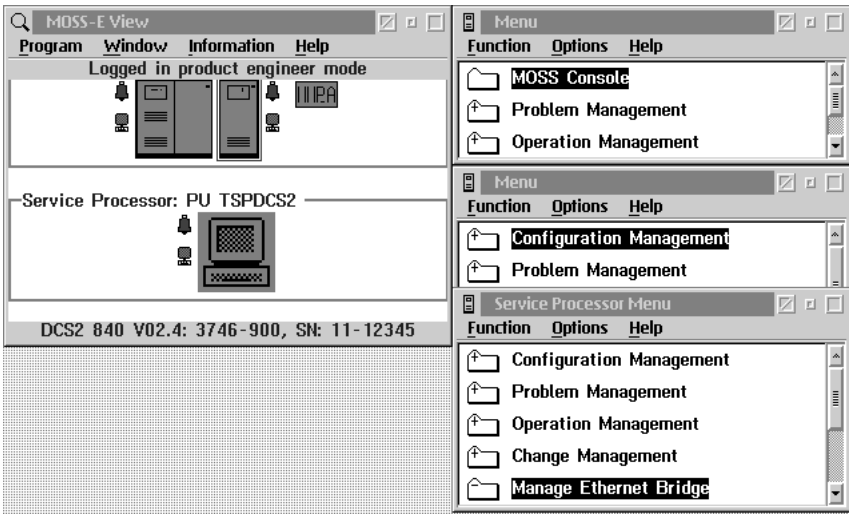


Figure 2-1. MOSS-E View Window with Machine Menus

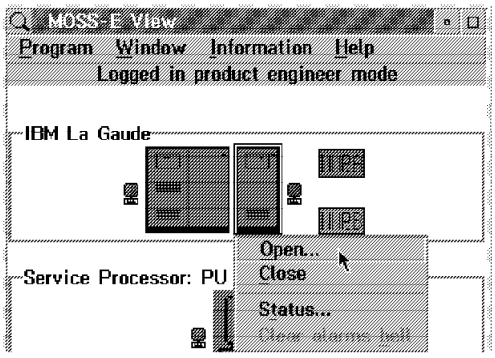
The basic **MOSS-E View** window (left in Figure 2-1) provides access to other windows and functions. The figure above shows a minimum configuration, with two areas:

- For 3745 Model A, 3746-900, and network node processors.
- For service processors.

Double-click the machine icon to open a menu with associated tasks (this does not apply to the network node processor). A ▨ next to each machine icon indicates an open machine menu (see the right side of Figure 2-1).

The contents of the menu depends on the logon mode that you used (see “Logging On the MOSS-E” on page 2-4).

Select an object and click the right mouse button to display a pull-down menu.



From a pull-down menu, you can do the following:

- Open a machine menu.
- Close a machine menu.
- Display the status of a machine (this does not apply to the service processor).
- Clear alarm bells.

MOSS-E Passwords

When logging on to the MOSS-E through the **MOSS-E View** window, choose the password that corresponds to the mode and functions that you want to use.

There are four password modes for secure access to customer and maintenance functions of MOSS-E menus.

Controller customer password
: Access to operator functions in the 3746-900 and 3745 menus. For first level operators.

Controller maintenance password
: Access to operator and maintenance functions in the 3746-900 and 3745 menus. For IBM Service personnel.

Service processor customer password
: Access to operator functions in the service processor and controllers. For supervisors and system programmers.

Service processor maintenance password
: Access to functions in the service processor and controllers. Take care in distributing this password because IBM requires it for service procedures.

Note: Use 5 to 8 alphanumeric characters for passwords. Each mode must have a password unique from passwords in the other modes.

Changing Passwords

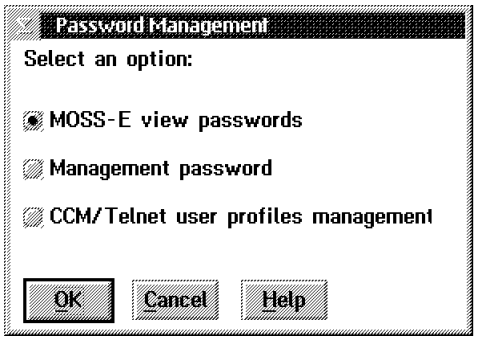
To change a password:

Step 1. Open the **Service Processor** menu.

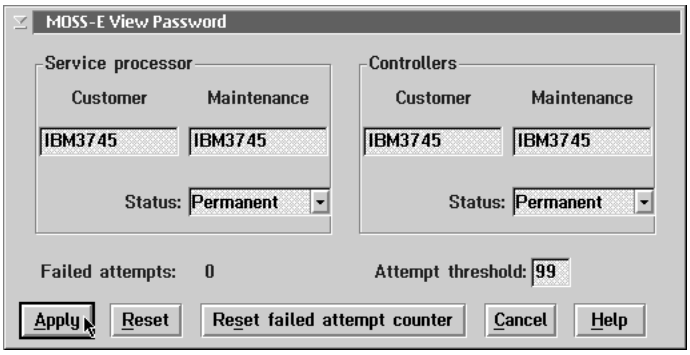
Step 2. Select **Operation Management**.

Step 3. Select **Manage Passwords**. Enter the management password (the default is **IBM3745**) and click **OK**.

Step 4. Click **MOSS-E view passwords** and click **OK**.

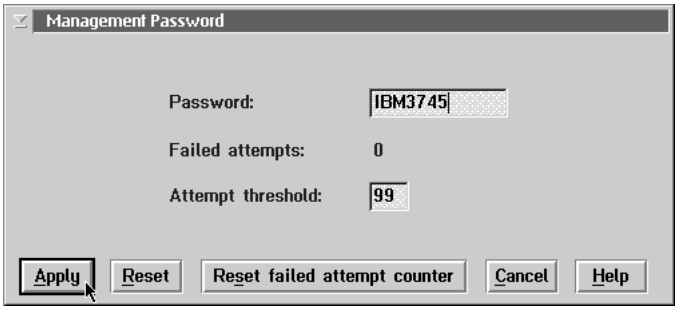


Step 5. Re-enter new passwords and click **Apply**.



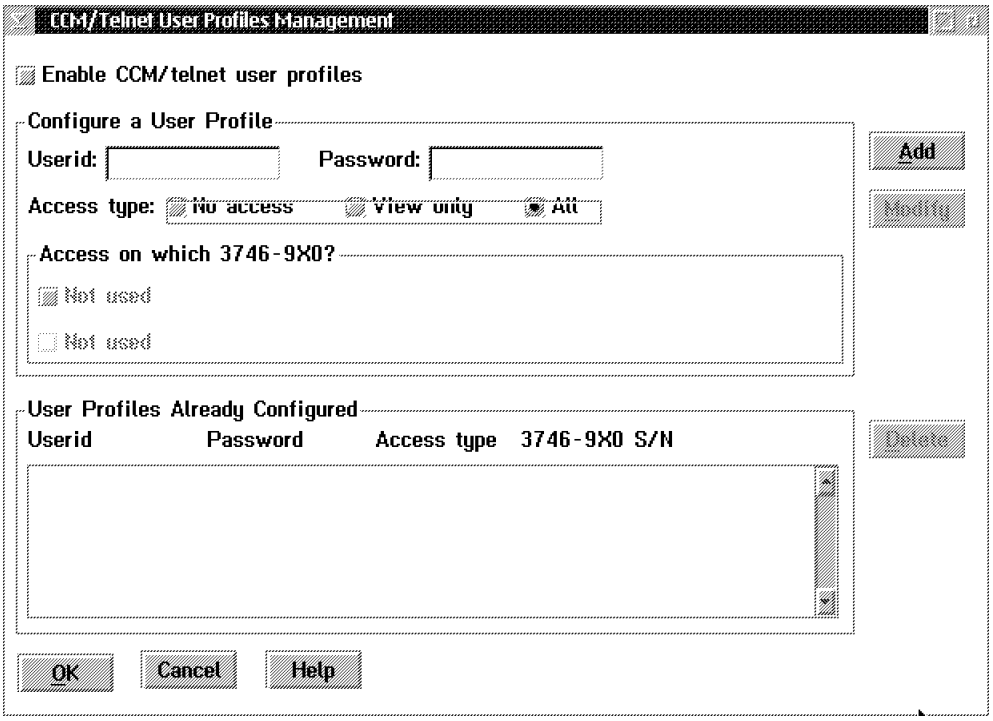
Step 6. Click **Management password** and click **OK**.

Step 7. Enter the new management password and click **Apply**.



Step 8. Click **CCM/Telnet user profiles management** if you want to use CCM functions for Telnet access and IP resource management. For more information, see Chapter 10, “CCM and Telnet IP Resource Management” on page 10-1.

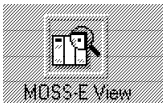
Step 9. Enter a **Userid** and **Password** and click **OK**.



Step 10. Click **Cancel** to exit.

Logging On the MOSS-E

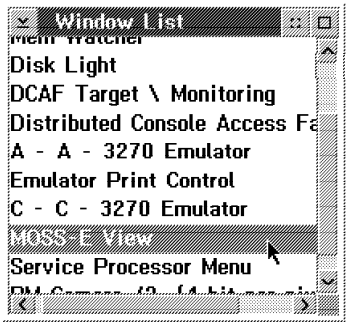
Step 1. If the **MOSS-E View** window displays, go to Step 3 on page 2-5. Otherwise continue with next step.

Step 2. Double-click the 

icon.

If **MOSS-E View** does not display, either:

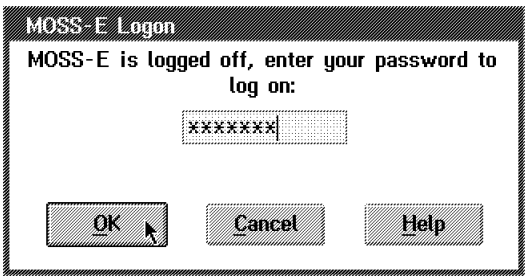
- Press Ctrl Esc for the **Window List** and double-click **MOSS-E View**.



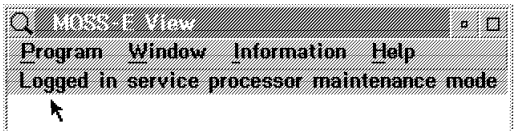
- See “Problems with MOSS-E or the Service Processor” on page 2-18.

Step 3. Click **Program**, then **Log on MOSS-E**.

Step 4. Type in a password that corresponds to a logon mode and click **OK**.



Step 5. If the logon is successful, a message at the top of the MOSS-E View window shows the mode that you have logged into.



If there are problems with logging on, see one of the following:

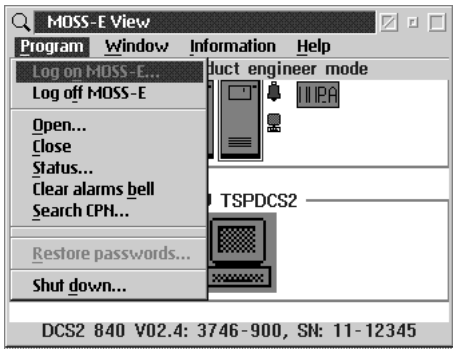
- “Help Pull-Down Menu” on page 2-8.
- “Problems with MOSS-E or the Service Processor” on page 2-18.

Otherwise, contact the person in charge of 3745 and 3746-900 problem analysis (see “Solving Problems” on page 1-8).

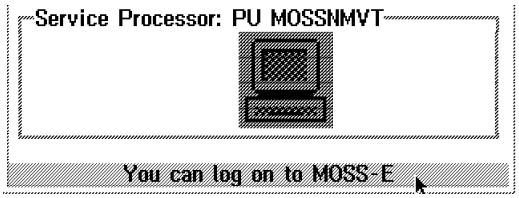
Step 6. MOSS-E menus and functions are now available (see page 2-8).

Logging Off the MOSS-E

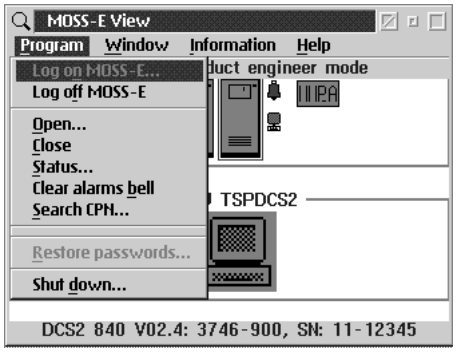
Step 1. Click **Program** in the **MOSS-E View** window and click **Log off MOSS-E**. Then click **OK**. A logoff is successful message displays.



Step 2. A message at the bottom of the **MOSS-E View** window indicates that you can logon if you want.



Program Pull-Down Menu



As well as logging on or off, this menu provides the following selections:

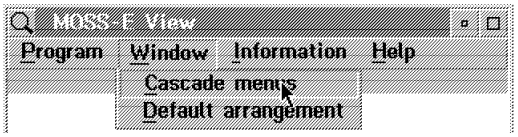
Open	Opens menus for 3745, 3746-900, and service processor.
Close	Closes a menu.
Status	Diplays information on 3745 or 3746-900.
Clear alarms bell	Clears alarms with a pending status.

Search CPN For controller maintenance by a customer engineer.

Restore Passwords For restoring default passwords (**IBM3745** in capital letters).

Shutdown Exits all programs and shuts down, with a message prompt to turn off or restart the system.

Window Pull-Down Menu

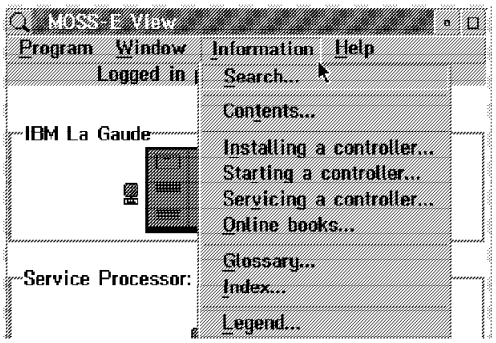


Cascade Arranges the menus that you have open in a stacked formation, like index cards.

Default arrangement Restores your own arrangement.

Information Pull-Down Menu

Note: You can work with the **Information menu** without being logged on.



For detailed information on the 3745, 3746-900, and service processor.

Search Searches for information on an entry that you make in a text box.

Contents Lists the main tasks related to the communication controller.

Installing a controller Information on installing a controller.

Starting a controller Information on starting a controller.

Servicing a controller Information on servicing a controller.

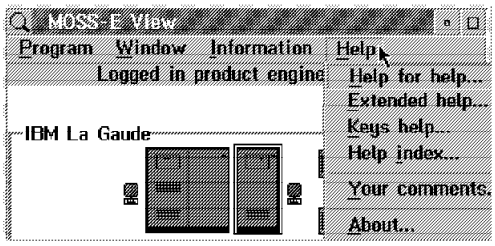
Online books Information that can be accessed directly from the service processor, for example, *Problem Analysis Guide*.

Glossary Abbreviations and definitions about the 3745, 3746-900, and 3746-950 with any diagrams of main components.

Index	An alphabetical list of subjects related to the 3745, 3746-900, and any main components.
Legend	A list of colors for machine objects in the **MOSS-E View** window. Each color indicates the status or condition of the machine.

Help Pull-Down Menu

Note: You can access the **Help** menu without being logged on.



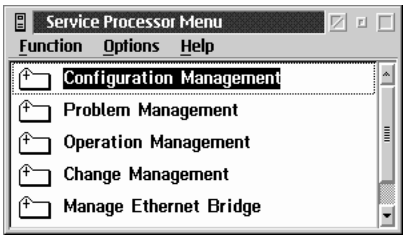
Help for help	Explains how to use Help.
Extended help	Information about the functions of the **MOSS-E View** window.
Keys help	Lists the function keys of the MOSS-E.
Help index	Lists Help items in alphabetical order.
Your comments	Information on where to send your reader's comments on MOSS-E information and usability.
About	Information on MOSS-E copyright and Licensed Internal Code.

MOSS-E Menus, Tasks, and Functions

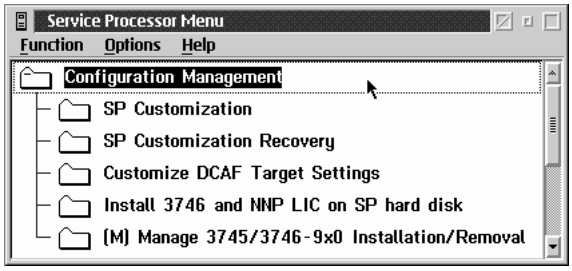
MOSS-E menus are the link between you and MOSS-E functions. There is a MOSS-E menu for the 3745, 3746-900, or 3746-950, and also for the service processor as well. For more information, see Appendix C, “MOSS-E Functions.”

How to Use a Machine Menu

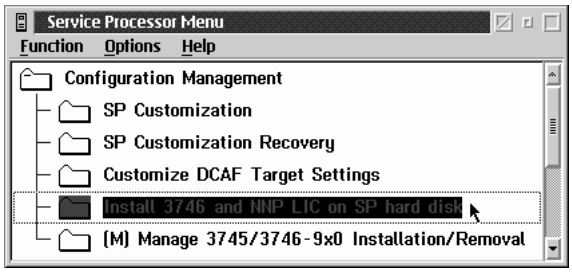
To display the menu for a machine, you must be logged on to the MOSS-E (see “Logging On the MOSS-E” on page 2-4). After logging on, double-click a machine object to open a menu with a task list (see the **Service Processor** menu below).



Clicking a task will displays a list of functions. Clicking an open menu closes it.



Double-clicking a function runs it. This is indicated by the color change of the function when it runs.



The MOSS Window

A MOSS window is a link between you and the MOSS running in the 3745. There is one window for each 3745 attached to the service processor.

This section provides information on the following:

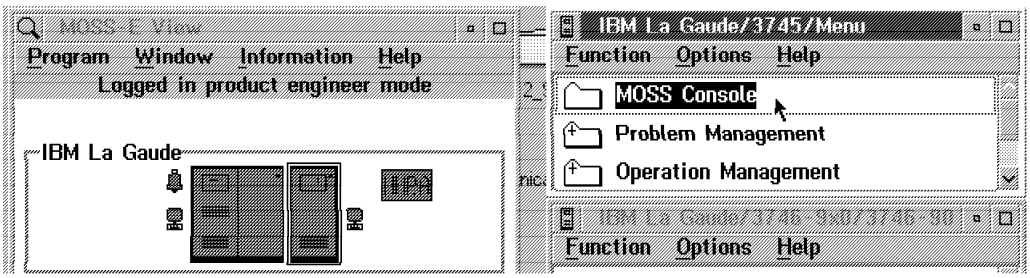
- MOSS screens
- Using certain keys
- Opening a MOSS window
- Accessing MOSS functions.

How to Open the MOSS Window

After you log on to the MOSS-E (see page 2-4), follow the steps below:

Step 1. Double-click the 3745 in the **MOSS-E View** to display the menu.

Step 2. Double-click **MOSS Console**.



Opening a MOSS-E window for the first time displays the **FUNCTION SELECTION RULES** screen (see Figure 2-3 on page 2-12).

You can review the status of a machine in the **MOSS-E View** window by clicking **Information**, then **Legend**.

If you have problems logging on the MOSS-E, see the following:

- "Help Pull-Down Menu" on page 2-8.
- "Problems with MOSS-E or the Service Processor" on page 2-18.

If you still have a problem, contact the person in charge of 3745 and 3746-900 problem analysis. See "Solving Problems" on page 1-8.

Service Processor MOSS Screen Layout

Below is an example of a service processor MOSS screen.

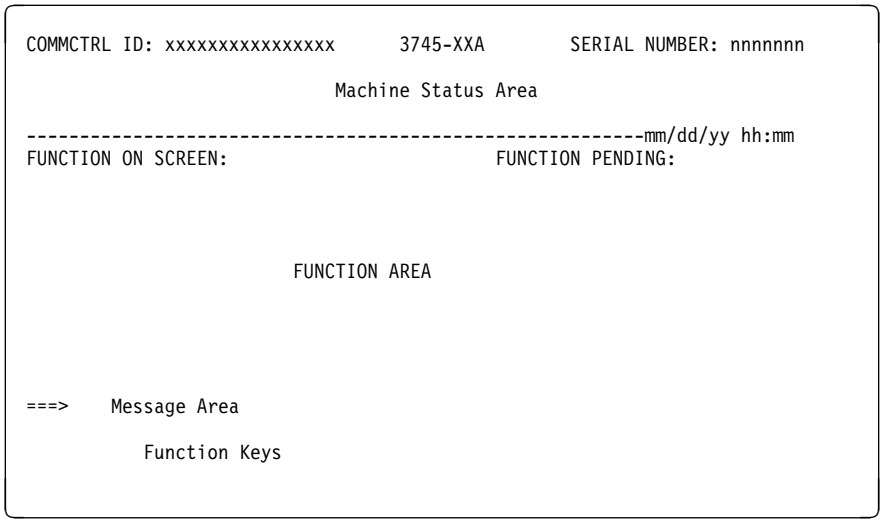


Figure 2-2. General Format of a MOSS Screen

The following is a list of definitions for text on a MOSS screen.

COMMCTRL ID — Communication controller id. Always displayed as 16 characters.

Note: To modify the controller id, use the MOSS-E **Manage 3745/3746-9x0 Installation / Removal** function of the **Service Processor** menu.

3745-XXA — The machine type and model.

SERIAL NUMBER — Serial number of the 3745 (seven characters).

MACHINE STATUS AREA — Information on the Central Control Unit (CCU), scanners, and IPL. For more information, see the *Advanced Operations Guide*, SA33-0097.

FUNCTION ON SCREEN — The name of the function being displayed.

FUNCTION PENDING — The name of the function waiting to be displayed.

FUNCTION AREA — Function display and operator input.

MESSAGE AREA	Area to display messages. For more information, see the *Advanced Operations Guide*.
FUNCTION KEYS	Available function keys appear on this line.

Keyboard Terminology

As consoles may be of different types, the console keyboard may vary. For consistency, the following terminology applies to certain keys:

Sends data to the 3745. Verify that the data is correct before you use this key. This key is often called SEND.

If you want to regain control of the service processor, pressing these keys together temporarily suspends any function that is running.

This key moves the cursor from one input area to another.

Explanations of Common Commands and Function Keys on Screen

OFF Enter **OFF** to logoff and close the MOSS window. If a function is active or pending, press 

first.

Closes any active functions. Menu 1 or Menu 2 displays, depending on the function that you close.

Displays menu 1, menu 2, or a pending function.

Displays the **Function Selection Rules** screen.

Selecting MOSS Functions

When you open a MOSS window, the **Function Selection Rules** screen displays.

More information on the **Function Selection Rules** screen is shown in the *Advanced Operations Guide*.

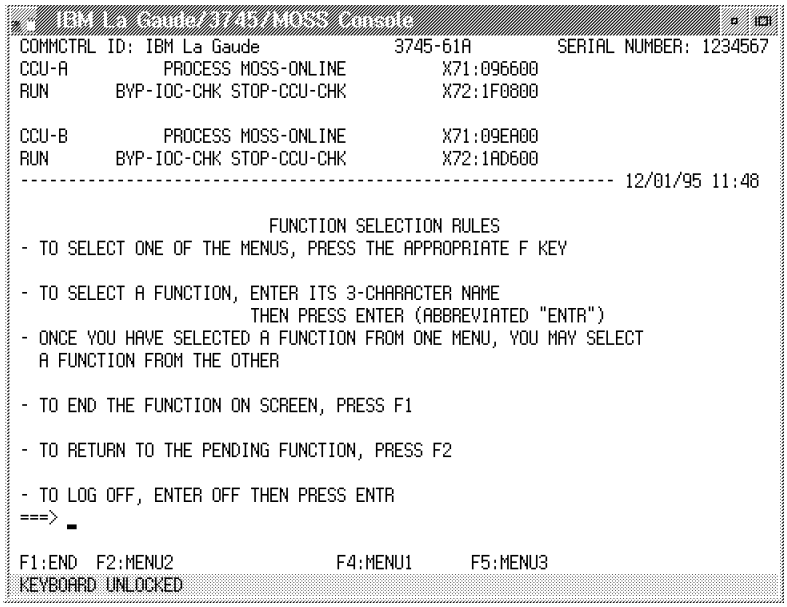


Figure 2-3. Function Selection Rules Screen

The following keys are available:

F1 Ends a function.

F2 Displays Menu 2 functions (see “Menu 1 and 2 Functions” on page 2-13).

F4 Displays Menu 1 functions (see “Menu 1 and 2 Functions” on page 2-13).

You can also enter the three-letter codes of MOSS function on the command line. For more information, see the next section “Menu 1 and 2 Functions” on page 2-13).

Menu 1 and 2 Functions

Note: Depending on the model of your 3745, some of the functions shown below may not be available.

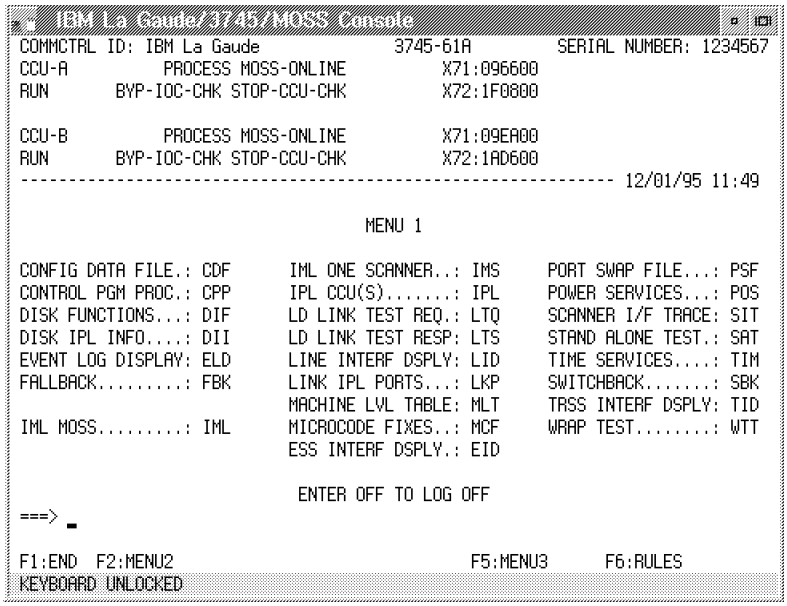


Figure 2-4. Menu 1 Functions

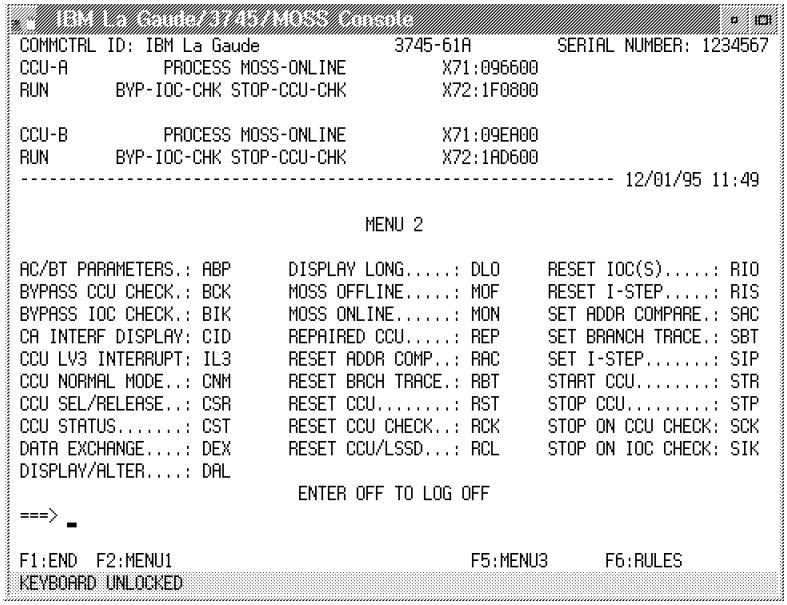


Figure 2-5. Menu 2 Functions

Enter the three letter code of a function on the command line and press Enter.

Note: For Models 41A and 61A, enter CSR (CCU Selection and Release) on the command line to select a CCU. The selected CCU appears in the machine status area.

If a function is unavailable, the following message displays on the command line:

```
PRESS ENTER TO DISPLAY FUNCTION MENU
```

Switching between Menu 1 and Menu 2 Functions

Use the F2 key to switch between menu 1 and menu 2. If you see F2 on the bottom part of the screen, this indicates that you can switch from one menu to the other.

You can enter the three letter code of a function from either menu on the command line at any time.

Switching from a Menu 1 Function to a Menu 2 Function

Step 1. Press F2 to switch from menu 1 to Menu 2.

Step 2. Enter the code letters of a function and press Enter .

Notes:

If you press F2, any menu 2 functions that are running will be suspended, and any menu 1 functions that are suspended will be re-activated.

Once any active functions of menu 1 have ended, any pending menu 2 functions will be re-activated.

Switching from a Menu 2 Function to a Menu 1 Function

Step 1. Press F2 to switch from menu 2 to Menu 1.

Step 2. Enter the code letters of a function and press Enter .

Notes:

If you press F2, any menu 2 functions that are running will be suspended, and any menu 1 functions that are suspended will be re-activated.

Once any active functions of menu 1 have ended, any pending menu 2 functions will be re-activated.

How to Start and Stop Refresh

Press **F5** to refresh the information in a function area.

If you start a refresh and want to stop it, press Ctrl Pause together.

How to Close MOSS

You can close MOSS by doing one of the following:

- Double click the system menu icon in the upper left corner of the MOSS window.
- Enter OFF on the command line.

If you have problems closing MOSS, refer to the online help.

If you have technical problems, contact the person in charge of 3745 problem analysis (see page 1-8).

Using DCAF to Remotely Log on to the Service Processor

PS/2* (or equivalent) workstations can remotely access the service processor MOSS-E and CCM functions through Distributed Console Access Facility (DCAF), an IBM licensed program. A DCAF session allows a user to either:

- Control a target service processor from a remote workstation keyboard and mouse.
- Monitor a target service processor in the DCAF window of a remote workstation.

DCAF enables the remote workstation to operate as a controlling workstation and the service processor to operate as a target workstation. When a DCAF session is established between a remote workstation and a service processor, the user of the remote workstation can perform MOSS-E, CCM, and APPN functions as though seated before the service processor.

Customer Consoles

There are five types of customer remote console. These types define how the console is connected to the service processor (see Figure 2-6 on page 2-16).

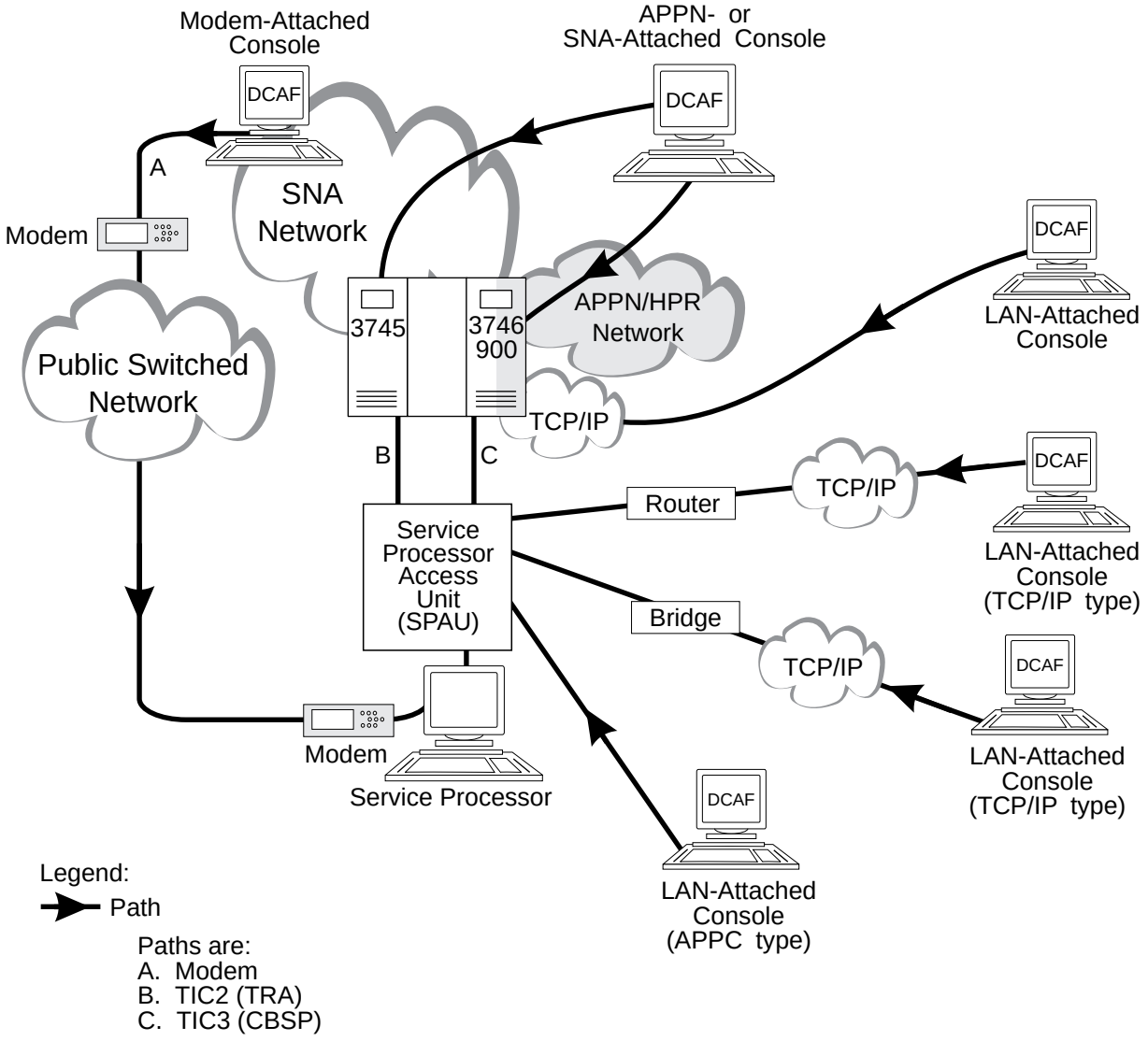


Figure 2-6. DCAF Console Attachments

LAN-attached

APPC type consoles that attach either:

- Directly to the same token-ring LAN as the service processor.
- Indirectly through token-ring LAN bridges.

LAN-attached

TCP/IP type consoles that attach to the Service Processor Access Unit (SPAU) via a bridge with filtering.

Note: This type of console is supported only when the service processor has a 3746 network node or a 3746-950 connected to the service LAN.

SNA-attached

Consoles that communicate with a service processor via an LU6.2 session on a backbone.

Note: The connection between SPAU and an installed 3745 MOSS cannot be used for a link to a backbone.

APPN-attached

Consoles that communicate with the service processor via an LU6.2 session on a backbone.

Note: The connection between SPAU and an installed 3745 MOSS cannot be used for a link to a backbone.

Modem-attached

Consoles using a public switched telephone network to access a service processor via its SDLC port and modem.

Note: The same port and modem is used for Remote Support Facility (RSF) and Remote Technical Assistance Information Network (RETAIN) calls.

A remote console can be configured for many different types of network access. For example, a single console at a central control site LAN-attached to a local service processor, can also provide APPN and modem access to remote service processors.

Detailed information about DCAF can be found in the *Console Setup Guide*, SA33-0158 or the *DCAF: Installation and Configuration Guide*, SH19-4068.

Using Telnet to Remotely Access IP functions

A workstation supporting IP for Telnet can use DCAF to remotely access the IP functions of a network node processor (see “Using DCAF to Remotely Log on to the Service Processor” on page 2-15).

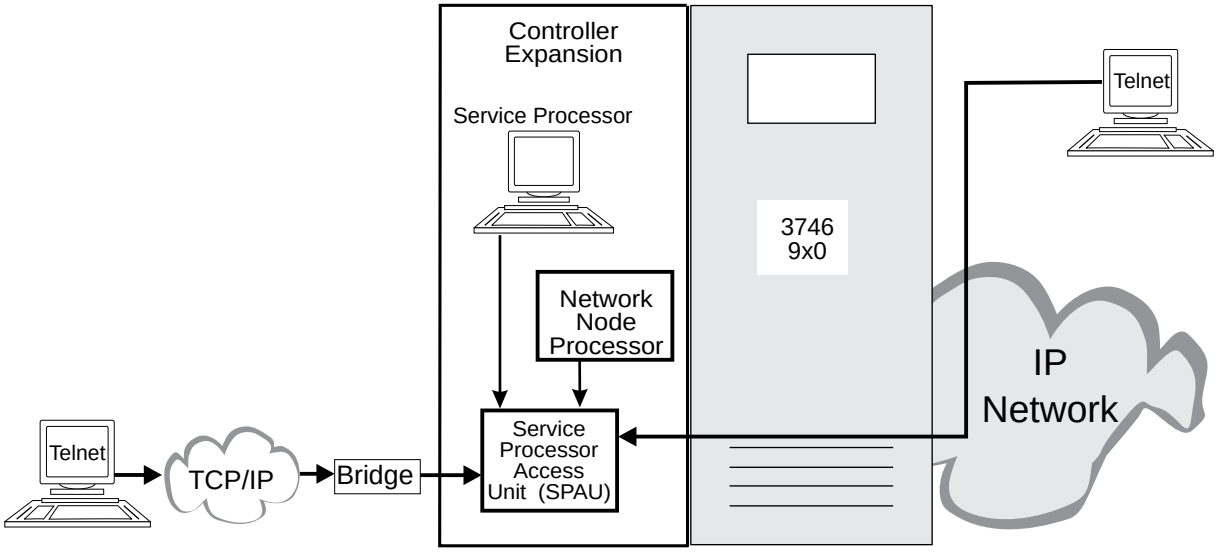


Figure 2-7. Telnet Workstation Attachments

Telnet attachments can be any of the following:

- LAN (token-ring, Ethernet).
- WAN links (Frame-relay, Point-to-Point Protocol).

Detailed information about Telnet can be found in the *Console Setup Guide*.

Problems with MOSS-E or the Service Processor

If the keyboard and mouse are not responding to input, the service processor may be under the control of a DCAF remote console. To regain control of the service processor, press the DCAF hotkeys Alt T together.

The following problems may occur:

- Service processor screen is dark.
- Service processor screen does not contain a **MOSS-E View** window or icon (see Figure 2-1).
- OS/2 or Communication Manager error message displays.

If any of the above occurs, IPL the service processor as follows:

Attention

Performing an IPL disrupts traffic. Before performing an IPL, ask the network administrator to stop traffic, or wait until the next maintenance window is available.

If your service processor is powered OFF, go to Step 1. Otherwise, go to Step 2.

Step 1. Turn on your service processor. Wait until the first **MOSS-E View** displays.

Step 2. IPL your service processor by doing the following:

- Press Ctrl Alt Del. Wait until the **MOSS-E View** displays.
- Turn off the service processor, wait a few seconds and turn it on again. Wait until the **MOSS-E View** displays.

If this does not work, contact the person in charge of 3745 or 3746-900 problem analysis (see “Solving Problems” on page 1-8 and “Help Pull-Down Menu” on page 2-8).

Chapter 3. Working with the Network Node Processor Functions

Unless otherwise noted, this chapter applies to APPN/HPR and IP configurations.

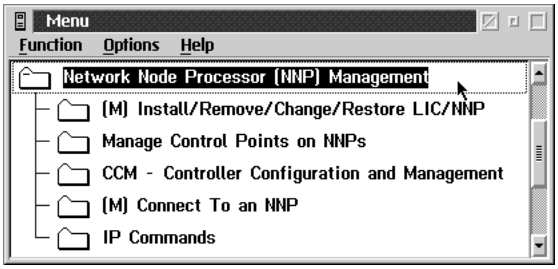
Accessing the Network Node Processor Functions

The APPN/HPR control point and IP router functions are located in the NNP and accessible via MOSS-E.

To access the functions of a Network Node Processor, follow the steps below:

Step 1. Open the 3746-900 menu (see “How to Use a Machine Menu” on page 2-8).

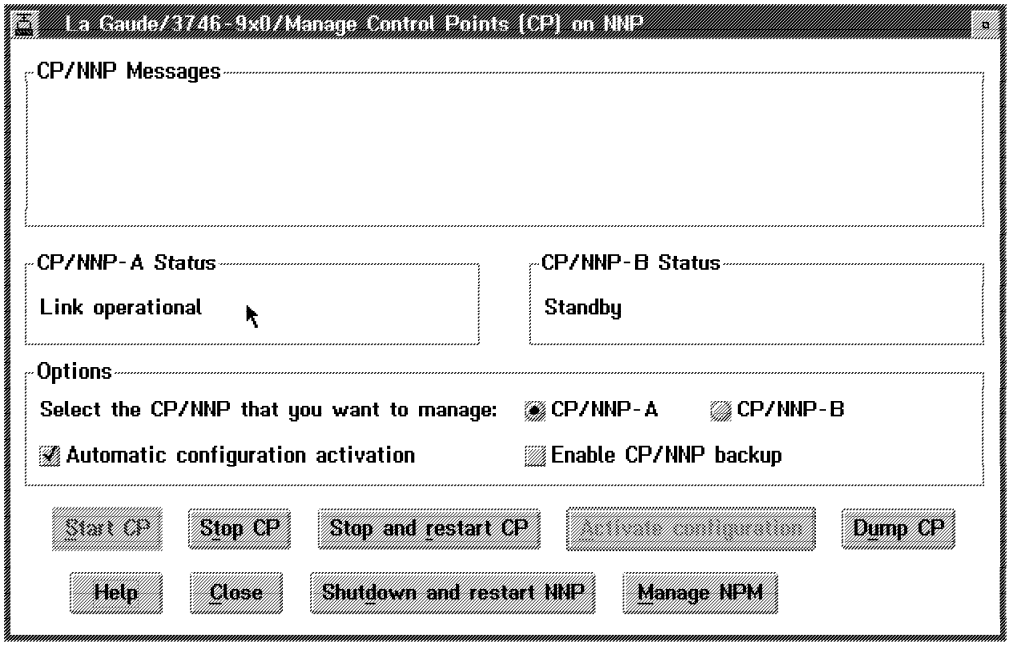
Step 2. Click the **Network Node Processor Management** task to display NNP functions.



Install/Remove/Change/Restore LIC/NNP

To be used only by an IBM representative.

Manage Control Points on NNPs



The following describes the buttons in the **Manage Control Points for NNPs** window.

CP/NNP Messages Area
The message shows you the progress of a chosen function.

CP/NNP-A (or -B) Status Areas
Information on the links between the service processor, network node processor, and controller. The status can be any of the following:

- Down
- Standby
- Waiting for user input
- Link not ready
- Link ready
- Link operational.

More status information is given in “Manage Control Points on NNP” on page 3-5.

CP/NNP-A Radio Button
For working with NNP A control point functions.

CP/NNP-B Radio Button
For working with the NNP B control point functions.

Automatic Configuration Activation Option

Enables automatic resource activation after a network failure (see Table 3-1).

Enable CP/NNP Backup Option

Activates dual NN functions (see Table 3-1).

Table 3-1. Control Point Management

Options	Status	Comments
Automatic Configuration Activation	Off	Click **Stop and restart**, **Shutdown and restart**, or an active **NNP failure** to stop all active sessions, and then restart the control point up to **Waiting for operator activation** status. Click **Activate configuration** to re-activate resources.
Enable CP/NNP Backup	Off	
Automatic Configuration Activation	On	• Click **Stop and restart** or **Shutdown and restart** to restart the control point, automatically reactivating the active configuration. • An active **NNP failure** will drop the active sessions.
Enable CP/NNP Backup	Off	
Automatic Configuration Activation	Off	• No operator action available. • An active **NNP failure** will activate the backup network node processor up to the **Waiting for operator activation** status. Then do the following: 1. Set the **Enable CP/NNP backup** option to Off. 2. Click **Activate configuration** to reactivate resources.
Enable CP/NNP Backup	On	
Automatic Configuration Activation	On	• No operator action available. • An active **NNP failure** results in the following: 1. Activates and starts the backup network node processor. 2. Activates the configuration (dropping resources temporarily). 3. Reactivates active sessions.
Enable CP/NNP Backup	On	

Start CP Button

Initiates the control point program after using **Stop CP**.

Stop CP Button

Ends the control point program without deactivating the network node resource configuration. Connecting to additional resources is no longer possible.

Stop and Restart CP Button

Select this button to:

1. Stop control points.
2. Automatically restart the control point.
3. Automatically reactivates a configuration. This will only work if **Automatic configuration activation** is selected (see “Automatic Configuration Activation Option”).

Activate configuration Button

Manually activates configuration of NN resources when **Automatic configuration activation** is not selected. Use this after the **Start CP** button.

Dump CP Button
To be used only by an IBM representative.

Help Button
Online information for managing the control point program.

Close Button
Saves changes and returns to the previous panel.

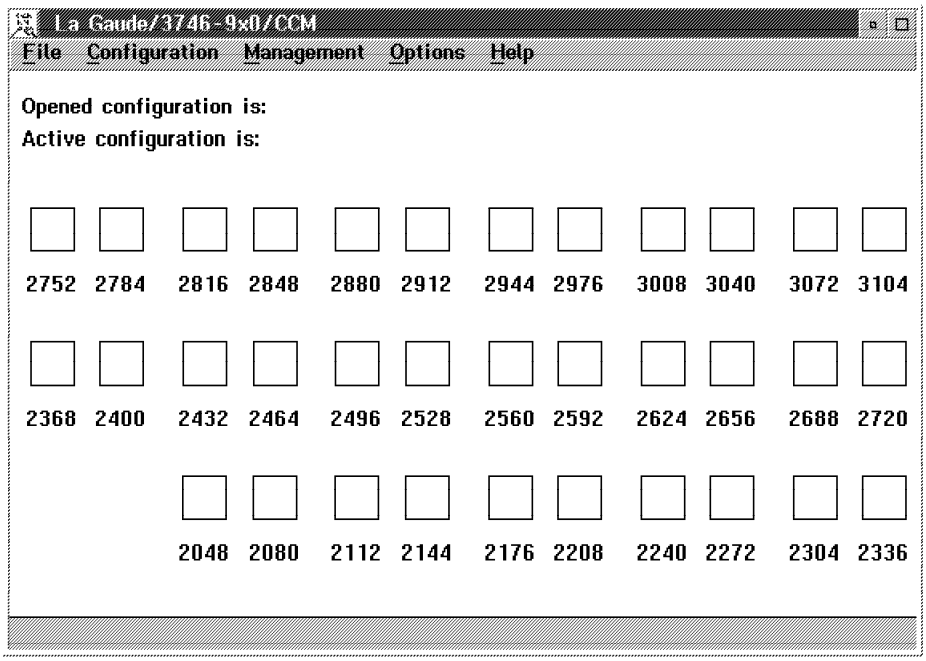
Shutdown and Restart NNP Button
Use this button to:

1. Stop the control point program and deactivate the configuration.
2. Shut down the NNP.
3. Restart the NNP.

   Then, if **Automatic configuration activation** is selected:
4. Restart the CP program.
5. Re-activate the configuration.

Manage the NPM Push-Button
Allows you to add, update, or remove a NetView Performance Monitor (NPM) configuration.

Controller Configuration and Management (CCM)
For configuring and managing APPN/HPR or IP resources in an OS/2 environment.



The above screen shows CCM without an open configuration.

Refer to Chapter 10, “CCM and Telnet IP Resource Management” or to the *CCM: Users Guide*, SH11-3081.

Connecting to an NNP

To be used only by an IBM representative.

IP Commands

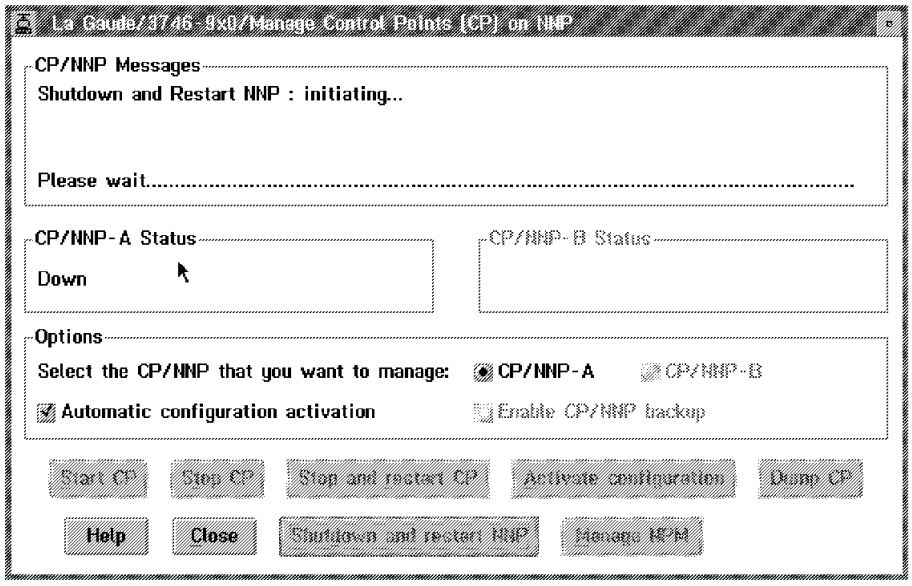
A method of configuring and managing IP resources using Telnet commands and without using CCM. Details about these commands are in “Accessing IP Commands from the MOSS-E” on page 10-4.

Manage Control Points on NNP

Attention

If you select **Enable CP/NNP backup**, the configuration buttons will be unavailable. This is because priority is given to dual network node functions.

Down Status



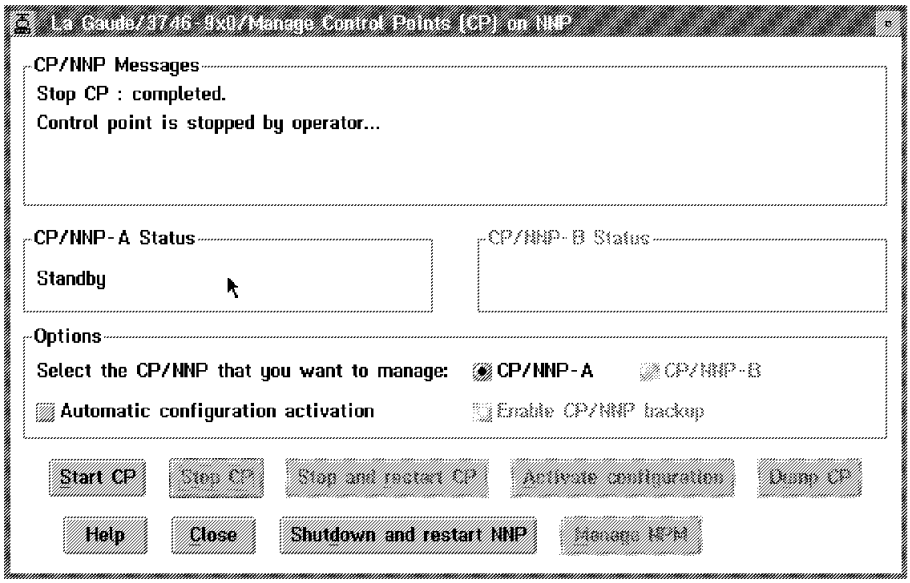
The NNP icon appears grey in color in the **MOSS-E View** window. This means that the link between the service processor and NNP has failed because of one of the following problems:

- Inactive service processor.
- Power OFF in the NNP.
- Defective cabling between the service processor and NNP.

For any of the above, see the online *Problem Analysis Guide*.

Click **Close** to exit.

Standby Status



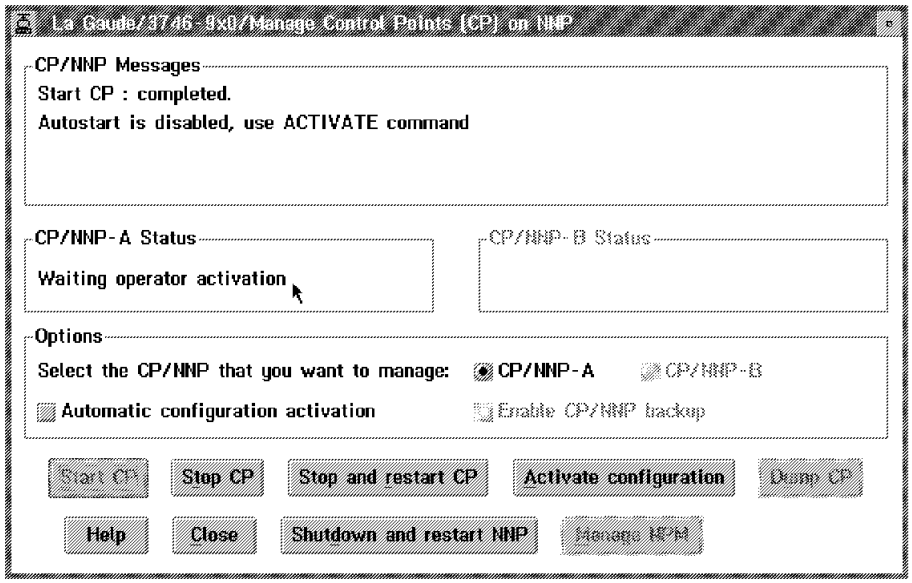
The NNP icon appears blue in color in the **MOSS-E View** window. This means that the NNP is active and ready for input. To select automatic configuration, click one of the following buttons:

- **Start CP** to initiate the control point program, ready for a configuration to be activated.
- **Shutdown and restart NNP** to:
  - Stop the control point program
  - Deactivate a configuration
  - Shut down and restart NNP
  - Restart the control point program
  - Re-activate a configuration.
- **Close** to save changes and exit.

To de-select automatic configuration, select one of the following buttons:

- **Start CP**, to initiate the control point program, ready for a configuration to be activated.
- **Shutdown and restart NNP** to:
  - Stop the control point program
  - Deactivate a configuration
  - Shut down and restart NNP
  - Restart the control point program
  - Re-activate a configuration.
- **Close** to save changes and exit.

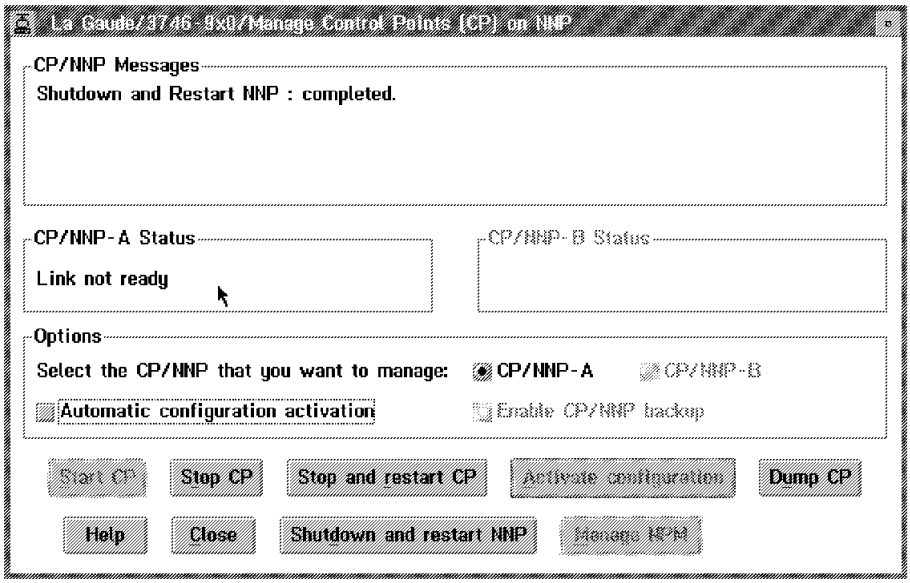
Waiting Operator Activation Status



The NNP icon appears pink in color in the **MOSS-E** View window. This means that the NNP and control point program are ready but the configuration has not been activated. To activate a configuration, click one of the following buttons:

- **Activate configuration** completes the **Start CP** command by activating the NN.
- **Stop CP** ends the control point program and returns to **Standby** status.
- **Stop and restart CP** activates automatic configuration by:
  - Stopping the control point program
  - Deactivating the configuration
  - Restarting the control point program
  - re-activating the configuration.
- **Stop and restart CP**. This will de-select automatic configuration by:
  - Stopping the control point program
  - Deactivating the configuration
  - Restarting the control point program
  - Waiting for you to restart the configuration.
- **Close** saves changes and exits.

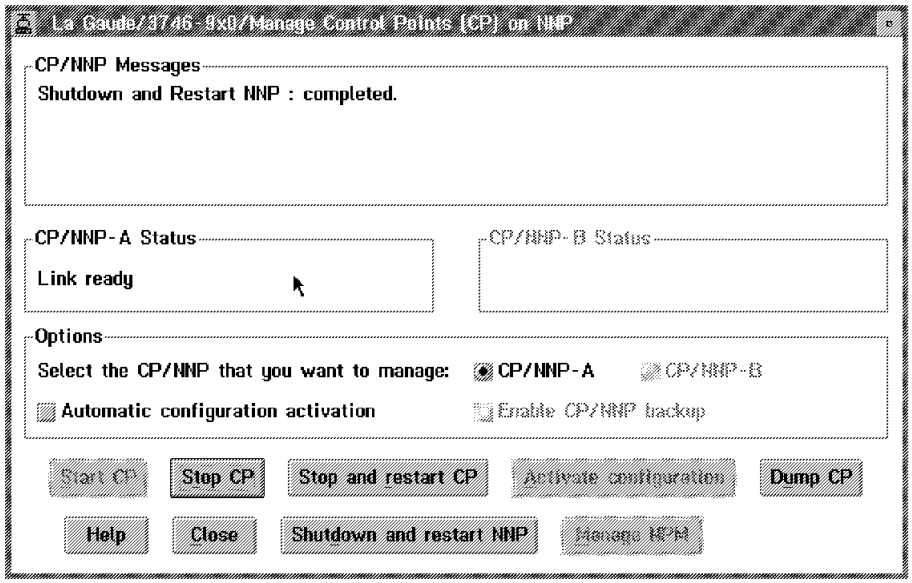
Link Not Ready Status



The NNP icon appears grey in color in the **MOSS-E View** window. This status means that the control point program is active and ready to be connected to the 3746-900.

There are no operator requirements.

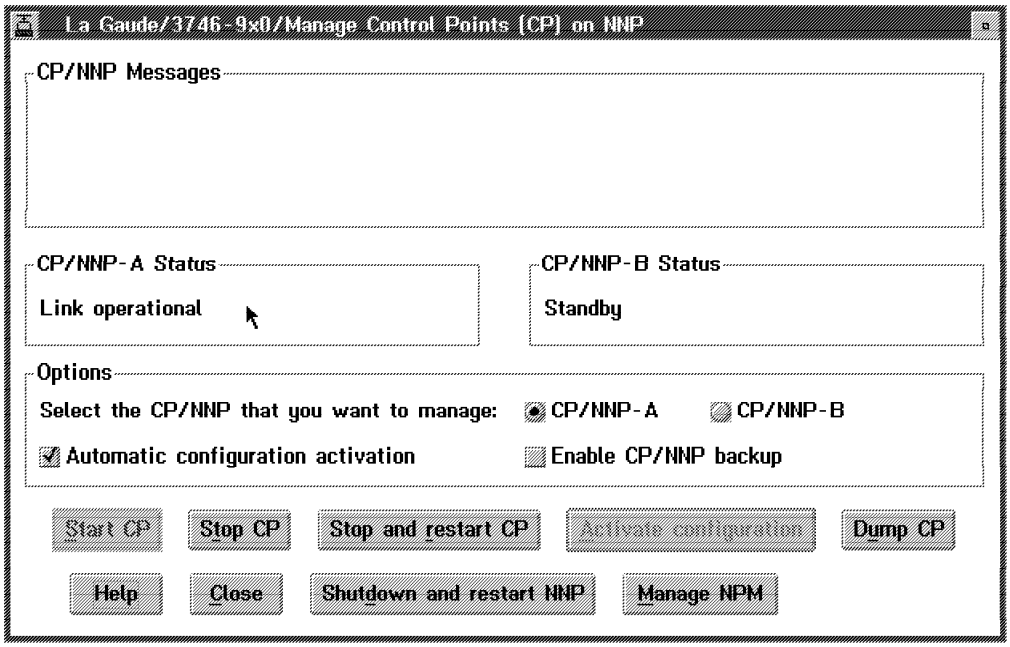
Link Ready Status



The NNP icon appears as white in color in the **MOSS-E View** window. This means that the NNP and control point are ready and the configuration is active. For further options, click the following buttons:

- **Stop CP** to end the control point program without deactivating the NN resource configuration.
- **Dump CP** is for IBM representatives only.
- Select Automatic configuration by clicking:
  - **Stop and restart CP**. This will do the following:
    - Stop and restart the 3746-900 control points
    - Automatically re-activate the configuration.
  - **Shutdown and restart NNP**. This will do the following:
    - Stop the control point program
    - Deactivate the configuration
    - Shut down the NNP
    - Restart the NNP
    - Restart the control point program
    - Re-activate the configuration.
- De-select automatic configuration by clicking:
  - **Stop and restart CP**. This will do the following:
    - Stop and restart the 3746-900 control points
    - Wait for your action.
  - **Shutdown and restart NNP** results in the following:
    - Stops the control point program
    - Deactivates the configuration
    - Shuts down the NNP
    - Restarts the NNP
    - Waits for your action.
- **Close** saves any changes and returns you to the previous panel.

Link Operational Status



The NNP icon appears as green in color in the **MOSS-E View** window. This continues the **Link ready** status, and means that the control point is ready and the configuration is active.

Chapter 4. 3745 Power ON and IPL from Control Panel

Note: Throughout this and the following chapters, you may find it useful to refer to Appendix A, "3745 Operator Control Panel."

3745 Manual Power ON and IPL

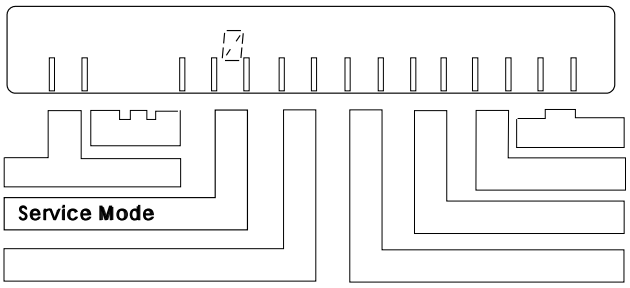
The control program can be loaded into the CCU by one of the following methods:

- Parallel or ESCON channel from the host.
- A link IPL port from the host.
- Fixed disk with the control program, activated by a host operator.

Note: If you are operating in twin-standby mode, a control program loaded into the active CCU will be automatically loaded into the standby CCU.

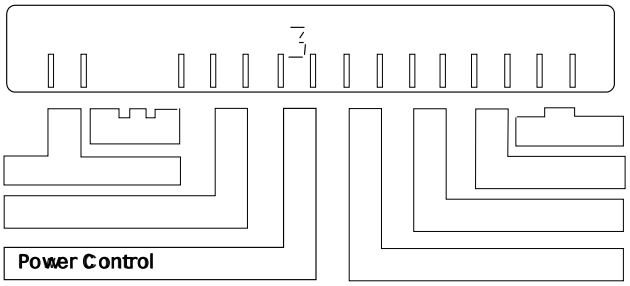
Step 1

Is the **Service Mode** set to **0**?		
Yes	Go to Step 2.	
No	1. Press **Service Mode** repeatedly until **0** is displayed. 2. Press **Validate**. 3. Is the 3745 already powered **ON**?	
	Yes	Go to Step 4.
	No	Go to Step 2.



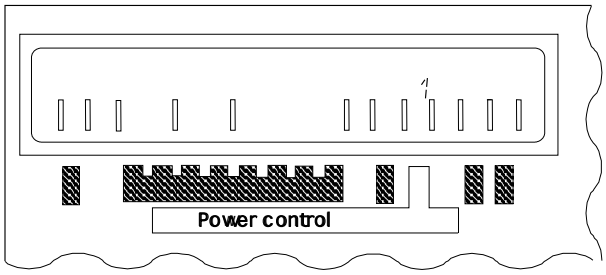
Step 2

Is the **Power Control** set to **3**? **Note: Power Control 3** (local mode) is not recommended for normal operations. It is intended for service operations, and if the controller is left in local mode, you will have to manually power ON after any external power failure.	
Yes	Go to Step 3.
No	1. Note the **Power Control** setting so that you can reset it at the end of this procedure. 2. Press **Power Control** repeatedly until **3** displays. 3. Press **Validate** and go to Step 3.



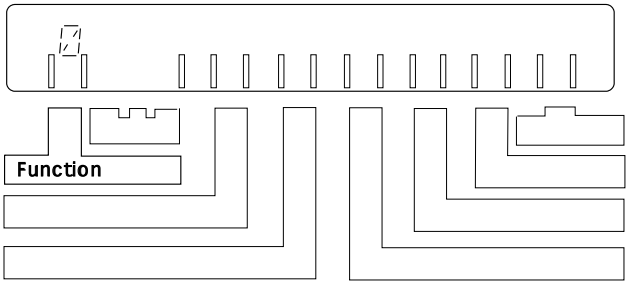
Step 3

Do you want to power ON the 3746-9x0 at the same time as the 3745?		
Yes	Is the 3746-9x0 **Power Control** set to **1**?	
	Yes	Go to Step 4.
	No	1. Press the 3746-9x0 **Power Control** repeatedly until **1** displays. 2. Press **Validate** and go to Step 4.
No	Is the 3746-9x0 **Power Control** set to **3**?	
	Yes	Go to Step 4.
	No	1. Press the 3746-9x0 **Power Control** repeatedly until **3** displays. 2. Press **Validate** and go to Step 4.



Step 4

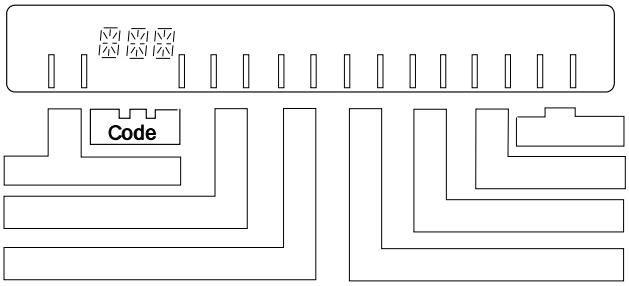
Is the 3745 **Function** set to **0**?	
Yes	Go to Step 5.
No	1. Press **Function** repeatedly until **0** is displayed. 2. Press **Validate**. 3. Go to Step 5.



Step 5

Press **Power ON Reset**.

A general IPL starts (IML of MOSS and IPL of CCUs). This takes about five minutes. Hex codes on the display show the progress of the IPL. Page A-9 has an explanation of these codes.



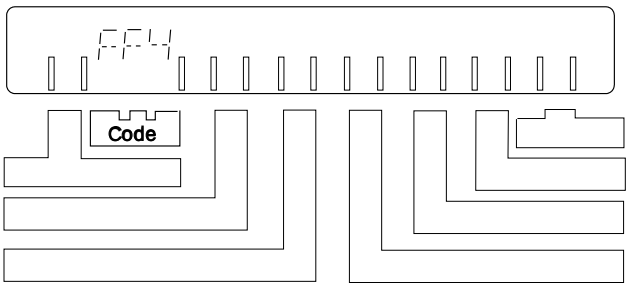
Step 6

Is the host loading the control program?			
Yes	Have any hex codes remained displayed for more than five minutes (other than **FF4**)?		
	Yes	1. Go back to Step 5 and reset the 3745. 2. If the problem persists, contact the person in charge of 3745 problem analysis (see page 1-8).	
	No	1. Open a MOSS window at the service processor (see page 2-9). 2. Wait until the screen at the right displays. → 3. Do you need to enable or disable a channel adapter?	
		Yes	1. To enable or disable: • 3745 channel adapters, see 2 on page 6-1. • 3746-9x0 ESCON channel adapters, see page 6-2. 2. Go to Step 7.
		No	Go to Step 7.
No	Go to Step 8.		

```
------------------------------------------------------------ mm/dd/yy hh:mm

                              FUNCTION SELECTION RULES
- TO SELECT ONE OF THE MENUS, PRESS THE APPROPRIATE F KEY

- TO SELECT A FUNCTION, ENTER ITS 3-CHARACTER NAME THEN PRESS SEND
                                THEN PRESS ENTER (ABBREVIATED "ENTR")
- ONCE YOU HAVE SELECTED A FUNCTION FROM ONE MENU, YOU MAY SELECT
  A FUNCTION FROM THE OTHER

- TO END THE FUNCTION ON SCREEN, PRESS F1

- TO RETURN TO THE PENDING FUNCTION, PRESS F2

- TO LOG OFF, ENTER OFF THEN PRESS SEND
===>

F1:END  F2:MENU2  F3:ALARM   F4:MENU1
```

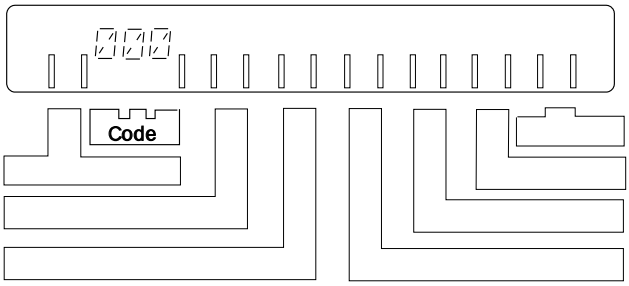
Step 7

Is **FF4** displayed?	
Yes	1. Ask the host operator to load the control program. The progress of the IPL is shown on the code display. 2. Go to Step 8.
No	Go to Step 8.



Step 8

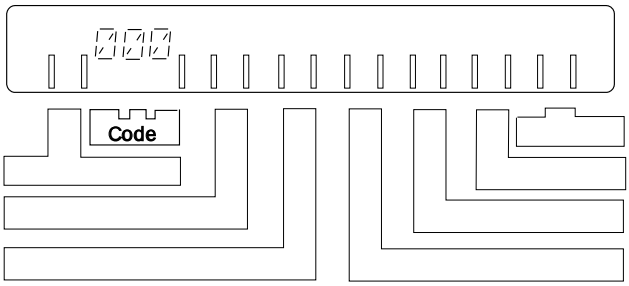
Is **000** displayed?			
Yes	1. The IPL of one CCU is successful. 2. Is the 3745 in twin-standby mode?		
	Yes	Go to Step 9.	
	No	Go to Step 12.	
No	Has **FF4** remained displayed for more than two minutes.		
	Yes	Go to Step 10.	
	No	Is there another code displayed?	
		Yes	Go to page A-9.
		No	Contact the person in charge of 3745 problem analysis (see page 1-8).



Step 9

The IPL of the standby CCU starts. Hex codes on the display show the progress of the IPL. Wait for two minutes.

Is **000** displayed **again**?			
Yes	1. The IPL of the standby CCU is successful. 2. Go to Step 12.		
No	Has **FF4** remained displayed more than two minutes?		
	Yes	Go to Step 10.	
	No	Are there other codes displayed?	
		Yes	Go to page A-9.
		No	Contact the person in charge of 3745 problem analysis (see page 1-8).

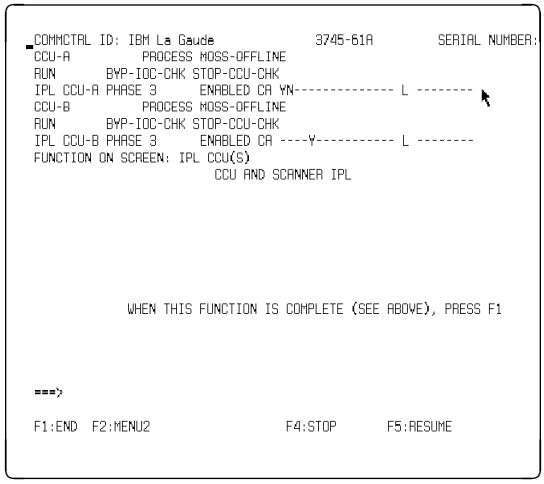


Step 10

Is there a 3746-9x0 ESCON link for the IPL port?			
Yes	Does the 3746-9x0 object display an alarm in the **MOSS-E View** window?		
	Yes	1. See the MOSS-E 3746-9x0 **Display Alarms** or follow the recommended action of the online *Problem Analysis Guide*. 2. When you solve the problem, go back to Step 5.	
	No	1. Use the procedure on page 5-3 to check the power supply. 2. Is **FF4** still displayed?	
		Yes	Contact the person in charge of 3745 problem analysis (see page 1-8).
		No	When **000** displays, go to Step 12.
No	Go to Step 11.		

Step 11

Make sure a MOSS window is open at the service processor (see page 2-9). Wait until the following screen displays:



Is the active CA or link IPL port marked **Y**?			
Yes	Contact the person in charge of 3745 problem analysis (see page 1-8).		
No	Is the active CA or link IPL port marked **N**?		
	Yes	1. See Chapter 6, “Enabling and Disabling Channel Adapters.” 2. Go back to Step 7.	
	No	1. See the procedure on page 5-3 to check the power supply. 2. Is **FF4** still displayed?	
		Yes	Contact the person in charge of 3745 problem analysis (see page 1-8).
		No	When **000** displays, go to Step 12.

Step 12

Is the **Power Control** set to the number noted from Step 2?	
Yes	Go to Step 13.
No	1. Press **Power Control** repeatedly until the number that you noted displays. 2. Press **Validate** and go to Step 13.

Step 13

To see if resources are available, do the following in MOSS-E:

1. Click the **3745** icon.
2. In **Program** menu, select **Status**. This will display the color legend.

3745 Automatic Power ON and IPL

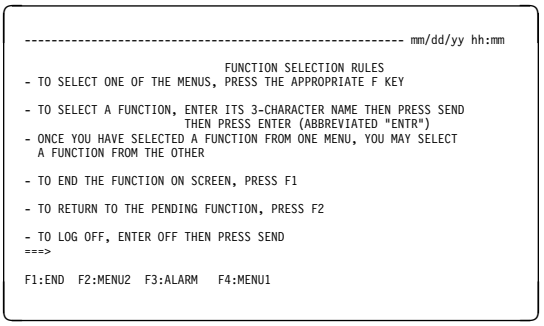
An automatic power ON and IPL can be performed in two ways, either by the host, or by the 3745 at a scheduled time.

The following procedure applies to both of the above, with a slight difference in the last step. When the **Power Control** mode is set to **1**, this applies to the host, and when it is set to **2**, this applies to the scheduled time (for more information, see “Power Control Display” on page A-5).

Step 1

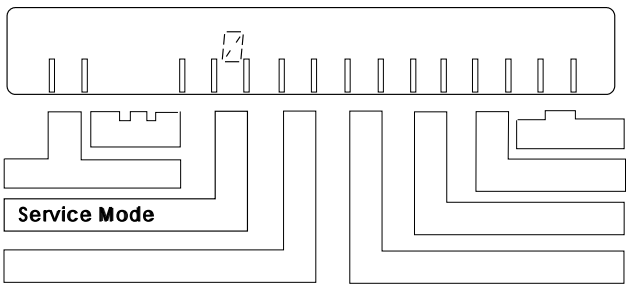
Open a MOSS window at the service processor (see page 2-9).

Is the screen on the right displayed? →	
Yes	Go to Step 8.
No	Go to Step 2.



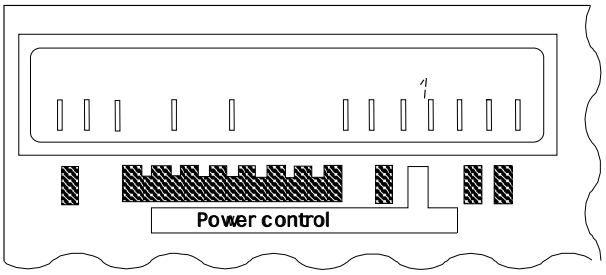
Step 2

Is **Service Mode** set to **0**?	
Yes	Go to Step 3.
No	1. Press **Service Mode** repeatedly until **0** is displayed. 2. Press **Validate**. 3. Go to Step 3.



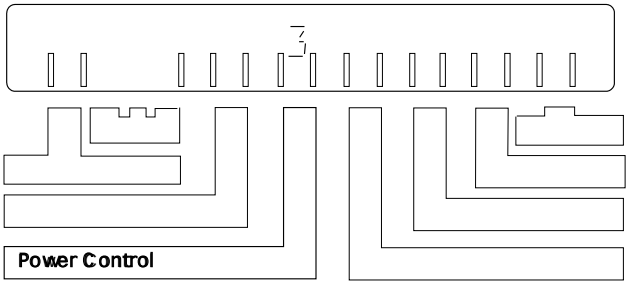
Step 3

Do you want to power ON the 3746-9x0 at the same time as the 3745?		
Yes	Is 3746-9x0 **Power Control** set to **1**?	
	Yes	Go to Step 4.
	No	1. Press 3746-9x0 **Power Control** repeatedly until **1** displays. 2. Press **Validate** and go to Step 4.
No	Is 3746-9x0 **Power Control** set to **3**?	
	Yes	Go to Step 4.
	No	1. Press the 3746-9x0 **Power Control** repeatedly until **3** displays. 2. Press **Validate** and go to Step 4.



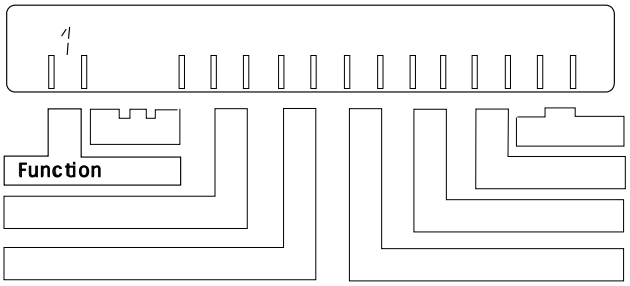
Step 4

Is the 3745 **Power Control** set to **3**?	
Yes	Go to Step 5.
No	1. Press **Power Control** repeatedly until **3** displays. 2. Press **Validate**. 3. Go to Step 5.



Step 5

Is the 3745 **Function** set to **1**?		
Yes	Go to Step 6.	
No	1. Press **Function** repeatedly until **1** is displayed. 2. Press **Validate**. 3. Is the 3745 already powered **ON**?	
	Yes	Go to Step 7.
	No	Go to Step 6.

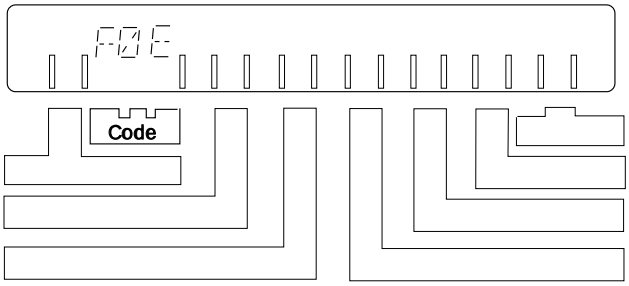


Step 6

Press **Power On Reset**.

Step 7

The MOSS IML starts and takes a few minutes. Hex codes on the display show the progress of the IML.



Is **F0E** or **F0F** displayed?	
Yes	Go to Step 8.
No	Contact the person in charge of 3745 problem analysis (see page 1-8).

Step 8

Type **CID** and press Enter.

Is a screen similar to the one on the right displayed? →	
Yes	Go to Step 9.
No	Contact the person in charge of 3745 problem analysis (see page 1-8).

```
COMMCTRLID :xxxxxxxx          3745-XXX         SERIAL NUMBER:nnnnnnn

                3745 MICROCODE (C) COPYRIGHT IBM CORP. 1987

_____________________________________________________ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CA INTERF  DISPLAY
INTERFACE  CHANGE      E/D    INTERFACE     HOST OR    CHANNEL    NSC
 NUMBER    E/D REQ   REQUEST   STATUS     SWITCH UNIT  ADDRESS  ADDRESS


   1A      ==>        D        DISABLED                           FA
   2A      ==>            E    ENABLED                            FB
   3A      ==>            E    ENABLED                            0C
   4A      ==>        D        DISABLED                           11
   5A      ==>        D        DISABLED                           FC
   6A      ==>            E    ENABLED                            FD
   7A                   -      -
   8A                   -      -

- TYPE E OR D TO CHANGE THE ENABLE/DISABLE REQUEST, THEN PRESS SEND
===>

F1:END      F3:ALARM             F5:UPDATE
_____________________________________________________________________
```

Step 9

Use the **CA INTERF DISPLAY** screen below to enable or disable channel adapters as necessary:


```
COMMCTRLID :xxxxxxxx          3745-XXX         SERIAL NUMBER:nnnnnnn

                3745 MICROCODE (C) COPYRIGHT IBM CORP. 1987

_____________________________________________________ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CA INTERF  DISPLAY
INTERFACE  CHANGE      E/D    INTERFACE     HOST OR    CHANNEL    NSC
 NUMBER    E/D REQ   REQUEST   STATUS     SWITCH UNIT  ADDRESS  ADDRESS


   1A      ==>        D        DISABLED                           FA
   2A      ==>            E    ENABLED                            FB
   3A      ==>            E    ENABLED                            0C
   4A      ==>        D        DISABLED                           11
   5A      ==>        D        DISABLED                           FC
   6A      ==>            E    ENABLED                            FD
   7A                   -      -
   8A                   -      -

- TYPE E OR D TO CHANGE THE ENABLE/DISABLE REQUEST, THEN PRESS SEND
===>

F1:END      F3:ALARM             F5:UPDATE
_____________________________________________________________________
```


1. Press: → until the cursor is at the appropriate **CHANGE E/D REQ** field.
2. Do you want to enable the channel adapter?
   - For yes, type **E**.
   - For no, type **D**.
3. Repeat the same steps if there are several channel adapters to update.
4. Press Enter. The **E/D REQUEST** field displays new information immediately.

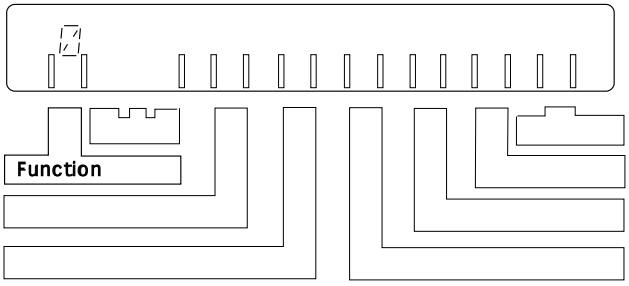
Note: If there are three asterisks in the **E/D REQUEST** column, the MOSS could not save or retrieve information because of a disk error. Issue the request again by entering either **E** or **D**.

If you still have the three asterisks, contact the person in charge of 3745 problem analysis (see page 1-8).

If a channel adapter is initialized, the **INTERFACE STATUS** field displays new information immediately. Otherwise, it is updated at the next IPL.

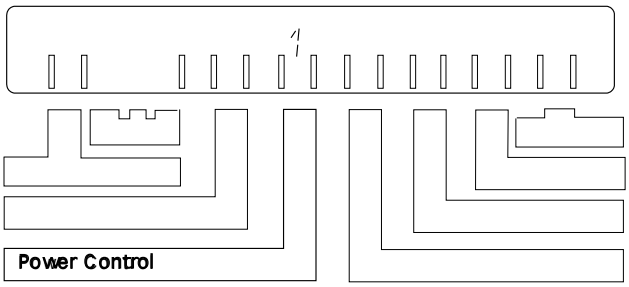
Step 10

1. Press **Function** repeatedly until **0** is displayed.
2. Press **Validate**.
3. Go to Step 11.



Step 11

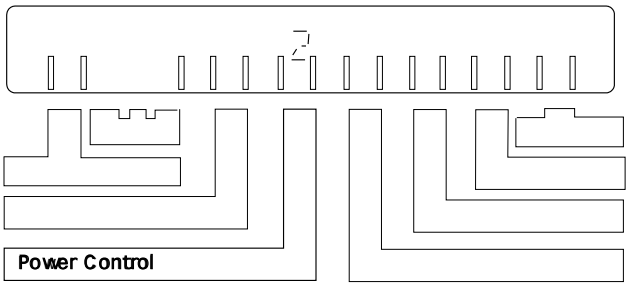
Do you want to set the 3745 to automatic host power **ON**?	
Yes	1. Press **Power Control** repeatedly until **1** displays. 2. Press **Validate**. 3. The procedure is finished.
No	Go to Step 12.



Step 12

To power on at a scheduled time, follow these steps:

1. Press **Power Control** repeatedly until **2** displays.
2. Press **Validate**.
3. Use the MOSS 'Time Services' (TIM) function to enter appropriate scheduled power on data.



Chapter 5. 3745 IPL from Service Processor

If you want to set an automatic IPL that follows a manual or automatic power ON, see Chapter 4, “3745 Power ON and IPL from Control Panel.”

Step 1

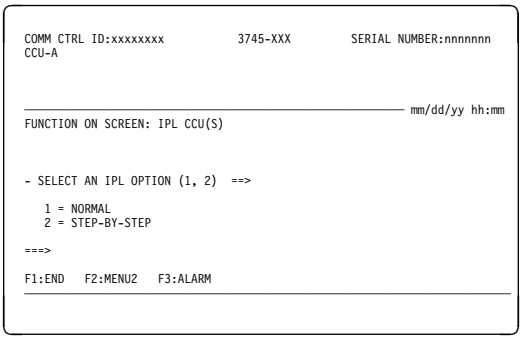
Open a MOSS window on the service processor (see page 2-9).

Step 2

Type **IPL**.

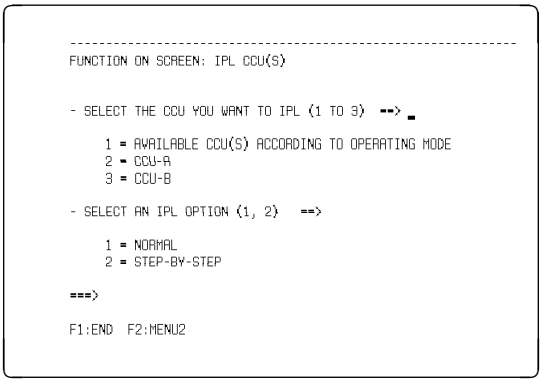
Step 3

Are you using a twin-CCU 3745 (Model 41A or 61A)?	
Yes	Go to Step 4.
No	1. When the screen shown on the right displays, type **1** and press Enter. 2. When the IPL starts, go to Step 6.



Step 4

Do you want an IPL for all available CCUs?		
Yes	1. Type **1** to IPL the active CCU. 2. Go to Step 5.	
No	Do you want to IPL only CCU A?	
	Yes	1. Type **2**. 2. Go to Step 5.
	No	1. Type **3** to IPL CCU B. 2. Go to Step 5.

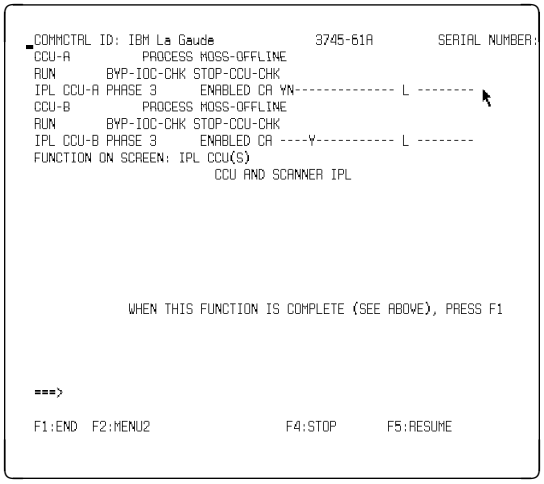


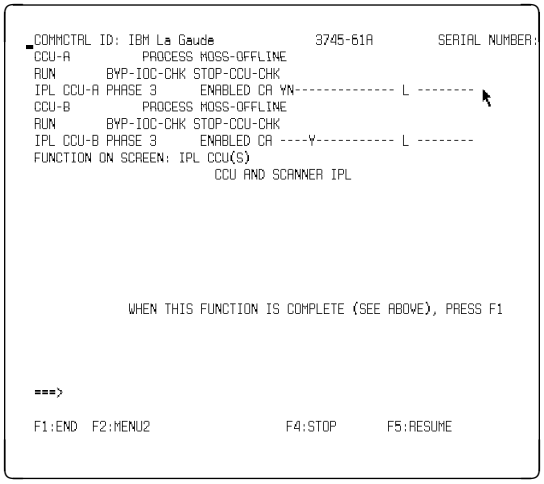
Step 5

Type **1** and press Enter to select a normal IPL option.

Step 6

When the IPL starts, the screen at the right displays. →

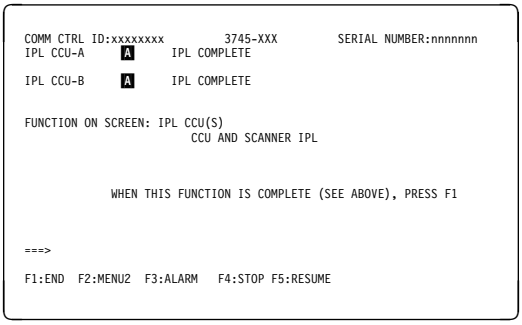




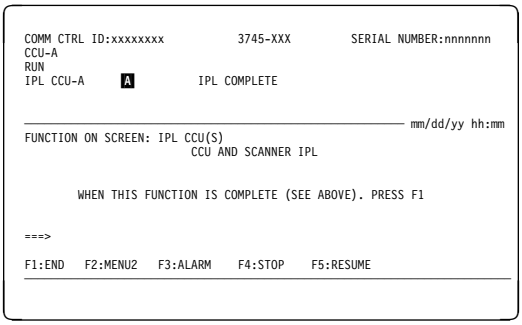
Will the control program be loaded from a fixed disk?	
Yes	Go to Step 7.
No	1. Wait for the message `ENABLED CA` (see the example on the right →). Ask the network operator to load the control program (this message is explained on 5-3). 2. Go to Step 7.

Step 7

Are you using a dual-CCU 3745?	
Yes	Wait for the message `IPL COMPLETE` to display on both CCUs. In twin standby mode, the standby CCU is automatically pre-loaded with the active load module. Press F1 to end the procedure. See page 5-6 for an explanation of messages in **A** field.
No	When you see the message `IPL COMPLETE`, press F1 to end the procedure. See page 5-6 for an explanation of messages in **A** field.



For dual-CCU models.



For single-CCU models.

Check Power Supply of CA or IPL Port

The message `ENABLED CA ---------- L --------` indicates the status of channel adapters (CA) and link IPL ports (L). The single letter codes indicate the following:

Y for enabled.
N for disabled.
U for unusable (see procedure below).
- for not installed (for channel adaptors) or not defined (for link IPL ports).

The position of the letters shows the channel adapter and link IPL port number. For example, the following means that channels 1 and 2 are enabled:

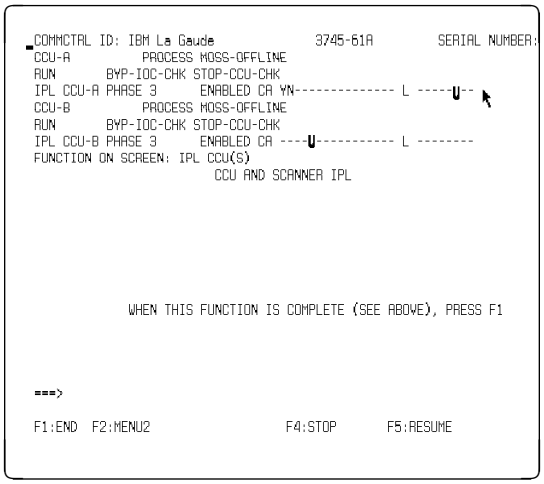
```
ENABLED CA YYNNNNNNNNNNNNNN L NNNNNNNN
```

Troubleshooting Channel Adapters and IPL Ports

If a **U** is displayed (meaning unusable), check the power supply to the CA or IPL port. If the problem persists, see the following procedure:

Step 1

Note the position number of any CAs or IPL ports marked **U**.



Step 2

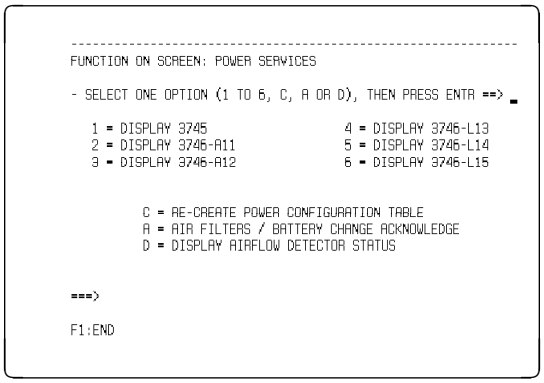
Exit the IPL by pressing F1.

Step 3

Type **POS** and press Enter to access the **Power Services** function.

Step 4

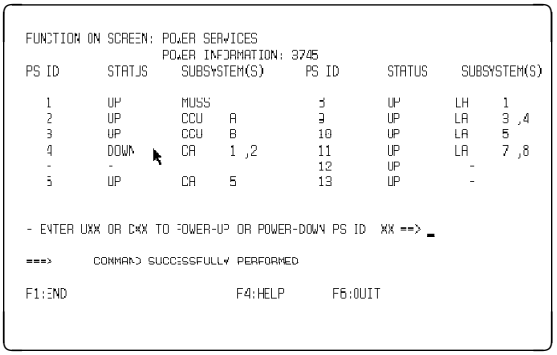
Is the CA or IPL port located in the 3745 base frame?	
Yes	1. Type **1** and press Enter. 2. Go to Step 5.
No	The CA or IPL port is in the 3746-A11 unit. 1. Type **2** and press Enter. 2. Go to Step 5.



Step 5

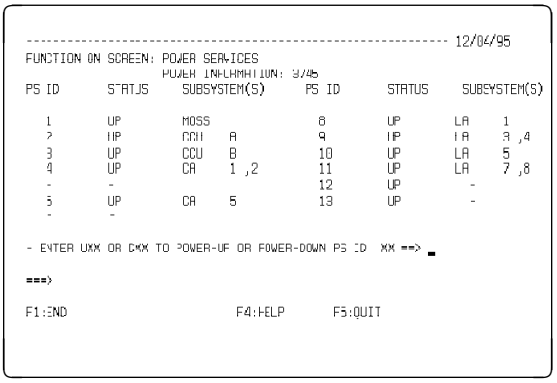
The MOSS screen on the right shows the CA or IPL link port adapter (LA) in the third and sixth **SUB-SYSTEM(S)** column.

Check the entry in the **STATUS** column on the same line. In the example shown on the right, CAs 1 and 2 are **DOWN**.



Step 6

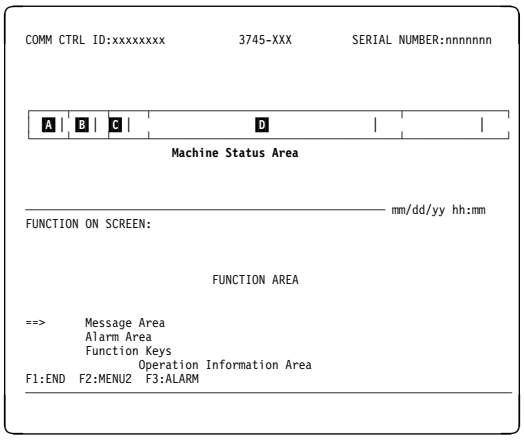
Is the CA or IPL port status **UP**?		
Yes	Contact the person in charge of 3745 problem analysis (see page 1-8).	
No	1. Type **uxx** for the **PS ID**. 2. Press Enter. 3. The status changes from **DOWN** to **UP** as shown in the example on the right. →	
	Yes	1. Press F1 to exit the **POS** function. 2. Restart the IPL (see page 5-1).
	No	If the power status remains **DOWN**, see “Solving Problems” on page 1-8.



Information Displayed on the MOSS Screen during IPL

Information on the IPL displays in the machine status area (MSA) of the MOSS screen as shown on the right. →

For a complete explanation on these messages, see *Advanced Operations Guide*, SA33-0097.



The following is a list of messages that you may see in the MSA during an IPL.

Messages appearing in A :

IPL 3745 IPL has started.

Messages appearing in B :

PHASE 1 CCU initialization.

PHASE 2 Control program loader in the CCU loaded and started.

PHASE 3 Scanner (line adapter) IML in progress.

PHASE 4 Scanners (line adapters) are IMLed.

Messages appearing in C :

STOP 3745 IPL suspended because of a fallback or operator request.

SUSPEND IPL of current CCU suspended while the IPL of the second CCU is initiated. The suspended IPL resumes when the second IPL has reached the same phase. Both IPLs then continue until complete.

Messages appearing in D :

CA IPL DETECTED ON CA x A control program load/dump is running on a channel-attached 3745. **x** is the channel adapter number. If this message displays for more than 5 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).

CONTROL PROGRAM LOADED The control program successfully loaded.

CP SAVE ON DISK IN PROGRESS The control program is being saved onto disk. If this message remains for a long time, contact the person in charge of 3745 problem analysis (see page 1-8).

DUMP IN PROGRESS ON CA x

The control program for a channel-attached 3745 is being dumped (**x** is the channel adapter number). Contact the person in charge of 3745 problem analysis (see page 1-8).

DUMP IN PROGRESS ON L xxxx

The control program for a link-attached 3745 is being dumped (**xxxx** is the decimal communication line address). Contact the person in charge of 3745 problem analysis (see page 1-8).

DUMP ON MOSS DISK IN PROGRESS

The control program is being dumped on to disk. Contact the person in charge of 3745 problem analysis (see page 1-8).

ENABLED CA ---------- L ------

Shows which channel adapters (CA) or link IPL ports (L) are enabled or disabled.

Y means enabled.
N means disabled.
U means unusable.
- means not installed (for channel adaptors) or not defined (for link IPL ports).

The position of the letters gives the channel adapter and link IPL port number. For example, the message below means that only channel adapters 1 and 2 are enabled.

```
ENABLED CA YYNNNNNNNNNNNNNN L NNNNNNNN
```

If a U is displayed, go to page 5-3 and check the power supply of the CA or IPL port in question.

For more information see page 5-3.

FALLBACK CANCELED

3745 fallback canceled. If you did not request this, contact the person in charge of 3745 problem analysis (see page 1-8).

FALLBACK CHECK Fxx

Contact the person in charge of 3745 problem analysis (see page 1-8).

FALLBACK COMPLETE

3745 fallback successfully completed.

FALLBACK COMPLETE + ERRORS

3745 fallback completed but with errors. Contact the person in charge of 3745 problem analysis (see page 1-8).

FALLBACK IN PROGRESS

3745 fallback in progress.

IPL CANCELED

3745 IPL canceled. If you did not request this, contact the person in charge of 3745 problem analysis (see page 1-8).

IPL CHECK Fxx

3745 IPL ends abnormally. Contact the person in charge of 3745 problem analysis (see page 1-8).

IPL CHECK F1B CLDP ABEND xxxx

3745 IPL ended abnormally. Contact the person in charge of 3745 problem analysis (see page 1-8).

IPL COMPLETE

3745 IPL successfully completed.

IPL COMPLETE + ERRORS

IPL completed, but with non-disruptive errors. Contact the person in charge of 3745 problem analysis (see page 1-8).

IPL FROM MOSS DISK IN PROGRESS

NCP loading from disk in progress.

IPL IN PROGRESS

3745 IPL in progress.

LINK IPL DETECTED ON L xxxx	A control program load/dump has started via a link-attached 3745. **xxxx** is the decimal communication line address. If this message remains, contact the person in charge of 3745 problem determination (see page 1-8).
LINK TEST PROGRAM ABEND	Contact the person in charge of 3745 problem analysis (see page 1-8).
LINK TEST PROGRAM LOADED	Link test program successfully loaded.
LOAD FROM MOSS DISK IN PROGRESS	Control program load onto the CCU from the MOSS disk.
LOAD IN PROGRESS ON CA x	Control program load onto a channel-attached 3745. **x** is the channel adapter number. If this message remains, contact the person in charge of 3745 problem determination (see page 1-8).
LOAD IN PROGRESS ON L xxxx	Control program load on a link-attached 3745. **xxxx** is the decimal communication line address. If this message remains, contact the person in charge of 3745 problem determination (see page 1-8).
RPO DETECTED ON L xxxx	A remote power OFF (RPO) command detected on a communication line **xxxx** (**xxxx** is the decimal communication line address).
SCANNER(S) NOT IMLED: xxxxxxxx	Contact the person in charge of 3745 problem analysis (see page 1-8).
SWITCHBACK CANCELED	3745 switchback canceled. If you did not request this, contact the person in charge of 3745 problem analysis (see page 1-8).
SWITCHBACK CHECK Fxx	Contact the person in charge of 3745 problem analysis (see page 1-8).
SWITCHBACK COMPLETE	3745 switchback successfully completed.
SWITCHBACK COMPLETE + ERRORS	3745 switchback completed, but with errors. Contact the person in charge of 3745 problem analysis (see page 1-8).
SWITCHBACK IN PROGRESS	3745 switchback in progress.
TEST CHECK Fxx	Standby CCU test ended abnormally. Contact the person in charge of 3745 problem analysis (see page 1-8).
TEST IN PROGRESS	Standby CCU test in progress.
TEST COMPLETE	Standby CCU test successfully completed.
TEST CANCELED	Standby CCU test canceled on operator request.

Chapter 6. Enabling and Disabling Channel Adapters

To enable or disable 3745 channel adapters, the following must apply:

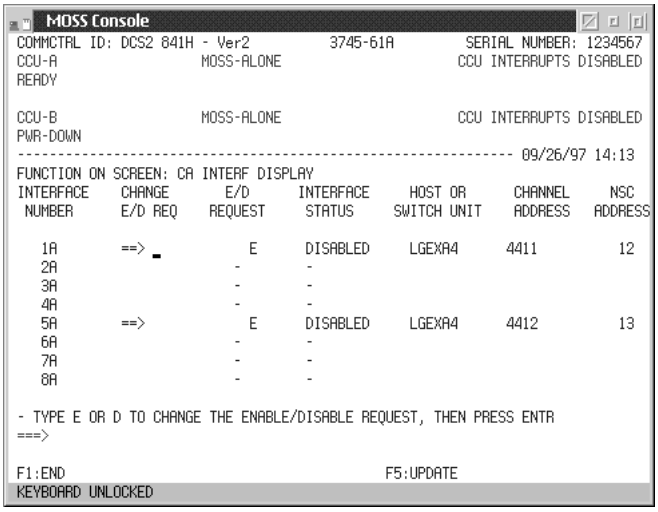
- The channel adapter must be physically connected to the host.
- Switching units between the host and the 3745 must be correctly configured.
- A control program must be running in the CCU.

Enable or disable requests are saved on disk, and automatically retransmitted during an IML after power off.

Enabling and Disabling 3745 Channel Adapters

Before you begin, make sure that you have a MOSS window open on the service processor (see page 2-9).

Step 1. If the **CA INTERF DISPLAY** screen below is not displayed, type **CID** on the command line and press Enter .



Step 2. Press → | until the cursor is in the appropriate **CHANGE E/D REQ** field.

Step 3. Enable or disable the channel adapter(s) by typing:

E to enable.

D to disable.

Step 4. Repeat the procedure if there are several channel adapters to update.

Step 5. Press Enter to update the **E/D REQUEST** column.

Note: Three asterisks in the **E/D REQUEST** column indicate that the MOSS could not save or retrieve information because of a disk error. Issue the request again, by entering either **E** or **D**.

If this does not work, contact the person in charge of 3745 problem analysis (see page 1-8).

The **INTERFACE STATUS** field shows new information when the channel adapter is initialized, or during the next IPL.

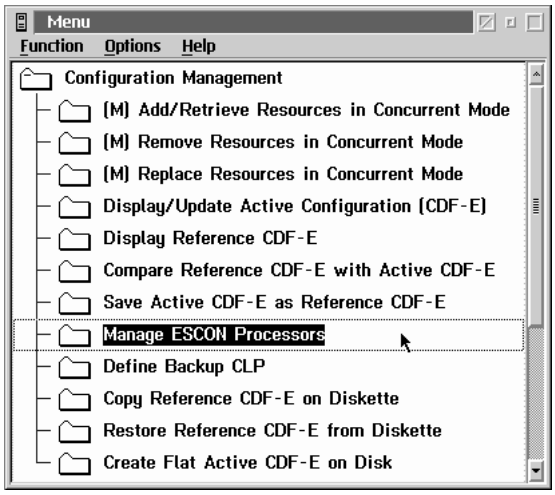
Step 6. Press F1 to end the procedure.

Enabling and Disabling 3746-900 ESCON Channel Adapters

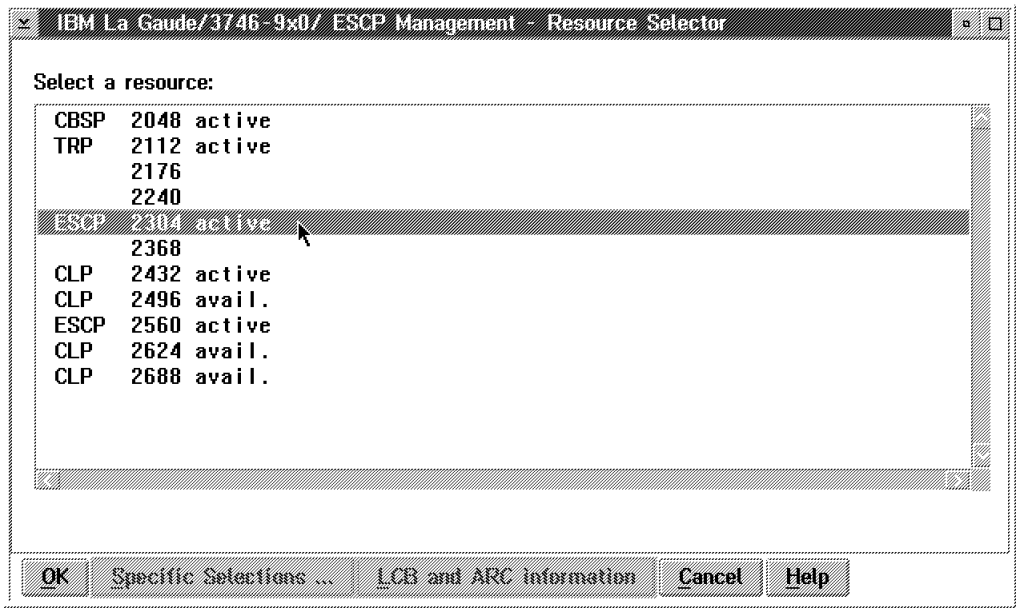
Verifying an ESCON Coupler Status

Step 1. Open a MOSS-E menu for the 3746-900 (see page 2-8).

Step 2. Click **Configuration Management**, then double-click **Manage ESCON Processors**.



Step 3. Double-click the ESCON processor line (**ESCP**) to verify its status.

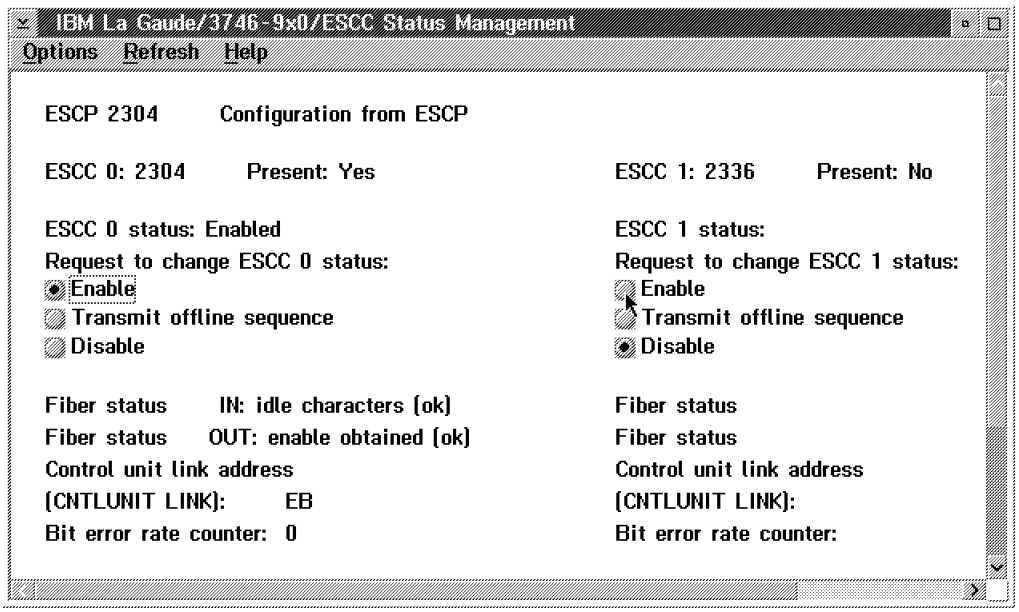


Step 4. Click **Options**, then **Manage ESCC status**.

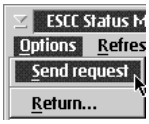
Step 5. A panel displays with status information about the coupler. To modify the status of the coupler, go to the next step. Otherwise, go to Step 10 on page 6-4.

Step 6. Select one of the following options:

Enable
Transmit off-line sequence
Disable.



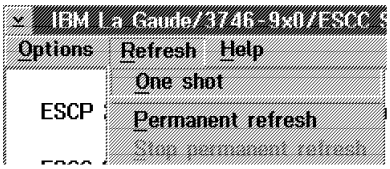
Step 7. Click **Options**, then **Send request**.



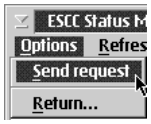
Note: If you want to save these options on the service processor hard disk, use CCM.

Step 8. Click **OK** on the next two screens.

Step 9. Click **Refresh**, then **One shot** to see the results.



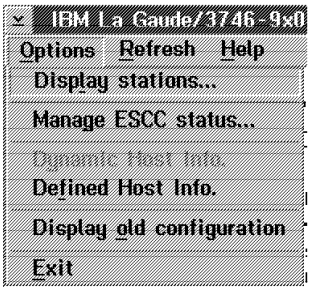
Step 10. Click **Options**, then **Return** to open the previous panel.



Verifying a Link IPL Port

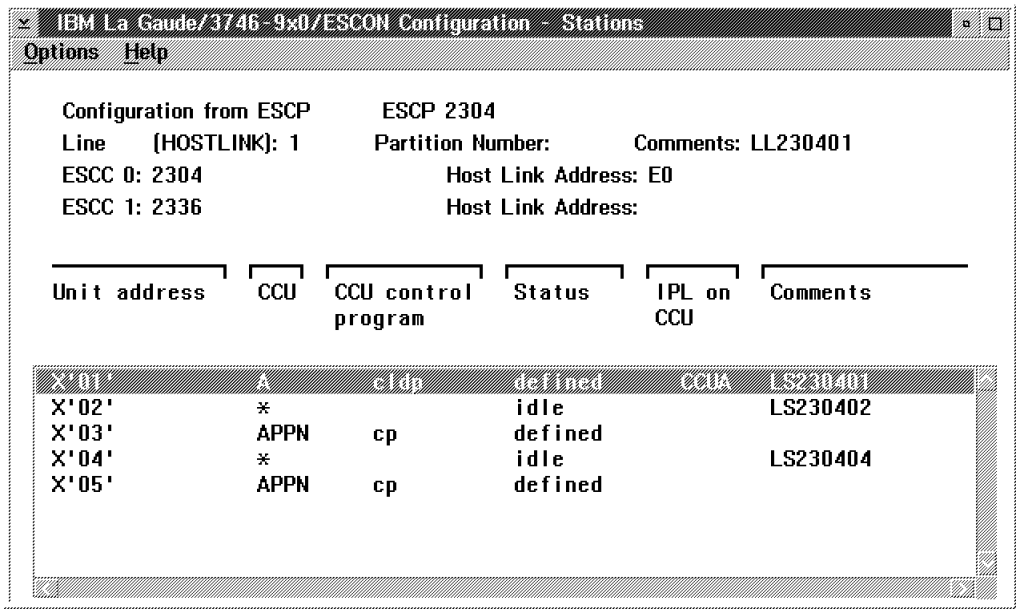
Step 1. Select an ESCP (see Step 3 on page 6-2).

Step 2. Click **Options**, then **Display stations**.



Step 3. Verify IPL port information for the station that you want.

Note: If you want to modify the IPL port information, use CCM.



Chapter 7. 3745 Models 41A and 61A Fallback and Switchback

Fallback

Open a MOSS window at the service processor (see page 2-9).

Step 1

Type **FBK** and press Enter.

Step 2

Are you using twin-standby mode?	
Yes	Go to Step 3.
No	1. Type **1** or **2** at **A** to select the CCU. Type **1** or **2** at **B**. If you enter **2**, wait until the message ALARM B0 displays, indicating that the request has been sent. 2. Press Enter. 3. Go to Step 4.

```
COMM CTRL ID:xxxxxxxx          3745-XXX          SERIAL NUMBER:nnnnnnn


_____________________________________________________________ mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

 - SELECT THE CCU THAT WILL SUPPORT THE WHOLE CONFIGURARTION (1,2) ==> A

    1 = CCU-A
    2 = CCU-B

 - SELECT THE FALLBACK PHASE (1, 2) ==> B

    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK


 - PLEASE CONFIRM YOUR SELECTION: Y OR N. THEN PRESS SEND ==>
===>

F1:END   F2:MENU2   F3:ALARM
```

Twin-backup

Step 3

Type **1** or **2** at **B** then press Enter to start fallback.

If you enter **2**, wait until the message ALARM B0 displays, indicating that the request has been sent.

```
COMM CTRL ID:xxxxxxxx          3745-XXX          SERIAL NUMBER:nnnnnnn


_____________________________________________________________ mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK



- SELECT THE FALLBACK PHASE (1, 2) ==>  B

    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK


===>
 ALARM B0: HOST OPERATOR NOTIFIED: FALLBACK TO BE PERFORMED
F1:END   F2:MENU2   F3:ALARM
```

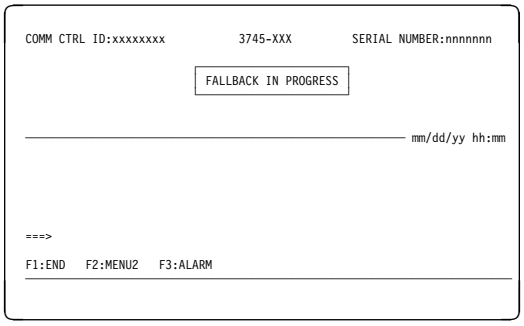
Twin-standby

Step 4

Wait until the message PLEASE CONFIRM YOUR SELECTION displays.

Type **Y** and press Enter to begin fallback. The screen at the right displays. →

Note: You cannot cancel fallback once it starts.



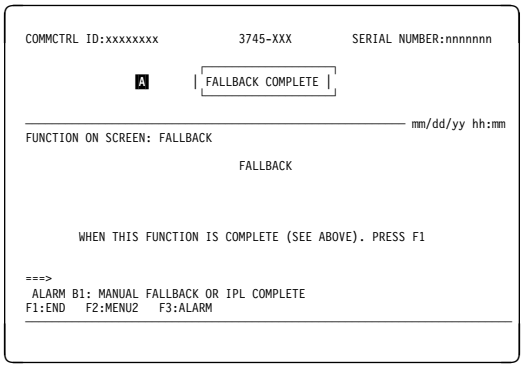
Step 5

Wait until the message FALLBACK COMPLETE displays.

Press F1 to end the procedure.

For the meaning of messages displayed in **A** field, see page 5-6.

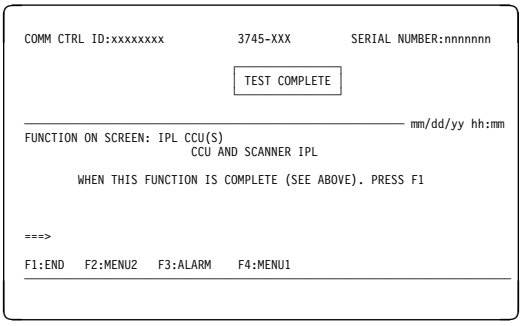
The message ALARM B1 indicates that fallback has completed.



Are you using twin-standby mode?	
Yes	Go to Step 6.
No	1. When fallback is complete, an automatic IPL is initiated on the first CCU. **Note:** To re-start the CCU, use the **Switchback** function described on page 7-3.

Step 6

Is the control program pre-loaded on the standby CCU?	
Yes	An IPL automatically starts on the standby CCU. Go to Step 7.
No	When fallback is complete, an automatic IPL is initiated on the second CCU. The IPL ends with displaying the message `TEST COMPLETE`. For the meaning of other messages that appear, see page 5-6.



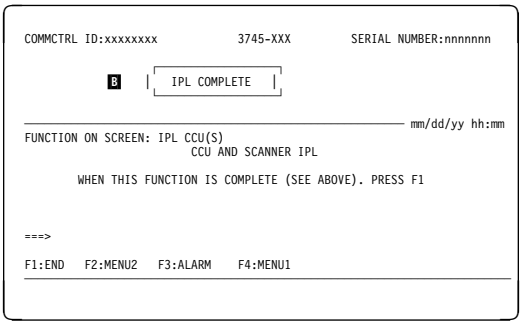
Note: Fallback needs to be performed again for the control program to be loaded on the CCU A channel or IPL link port.

Step 7

Wait until you see the message `IPL COMPLETE`.

Pressing F1 ends the procedure.

For the meaning of other messages displayed in **B** field, see page 5-6.



Switchback

Note: Switchback can only be performed in twin-backup mode.

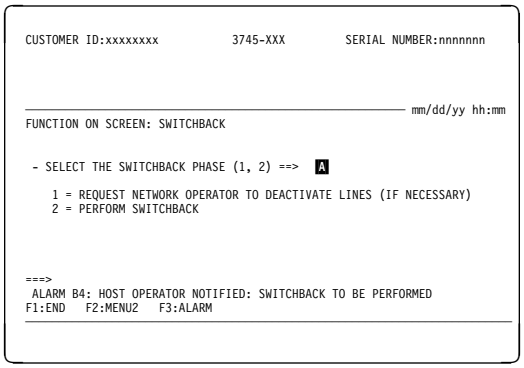
Step 1

Make sure a MOSS window is open on the service processor (see page 2-9).

Step 2

Type **SBK** and press Enter .

The screen at the right displays. →



Step 3

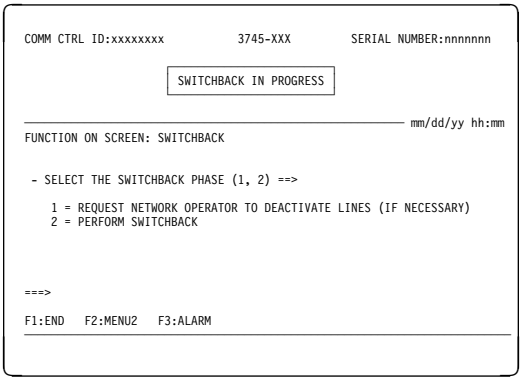
Are the effected lines already deactivated?	
Yes	Go to Step 4.
No	1. Type **1** at **A** and press Enter . This is a request for the network operator to deactivate the lines. A message ALARM B4 indicates that the request has been sent. 2. When the lines are deactivated, go to Step 4.

Step 4

Type **2** at **A** and press Enter (see the previous screen).

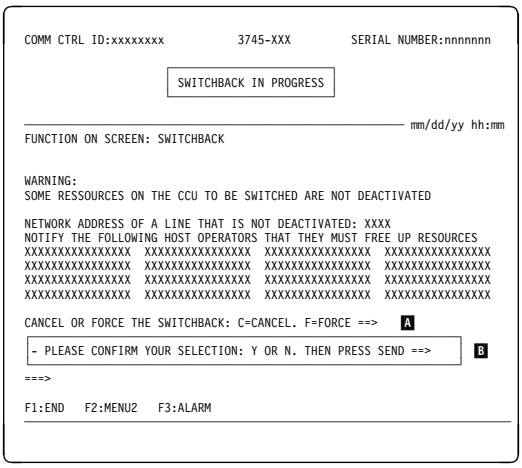
Step 5

Does the message SWITCHBACK IN PROGRESS display?	
Yes	Go to Step 7.
No	Go to Step 6.



Step 6

The screen at the right shows that some resources are inactive. → Do you want to cancel switchback?	
Yes	1. Type **C** and press Enter. 2. Type **Y** and press Enter. This returns you to Step 2.
No	1. Send a request for the network operator to deactivate the resources on the screen. 2. Type **C** and press Enter. 3. Type **Y** and press Enter. 4. Go to Step 7.



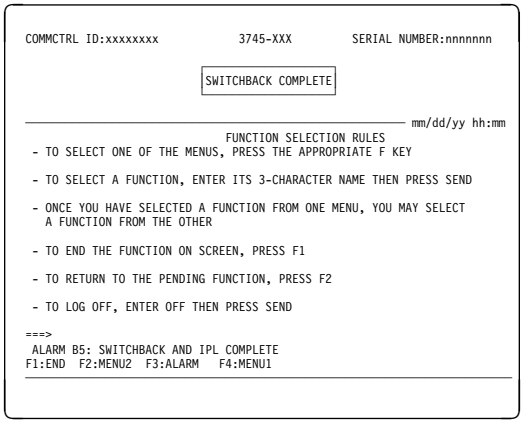
Note: If you have a Model **41A or 61A**, the warning message will be the following:

```
WARNING:
SOME RESOURCES ON THE CCU TO BE SWITCHED EITHER ARE NOT DEACTIVATED

OR CONTAIN AN ACTIVE TRANSMISSION GROUP

NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
```

The procedure ends with the message `ALARM B5: SWITCHBACK AND IPL COMPLETE`.

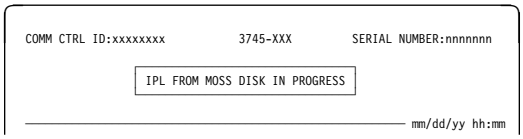
For the meaning of other messages that display in this field, see 5-6.

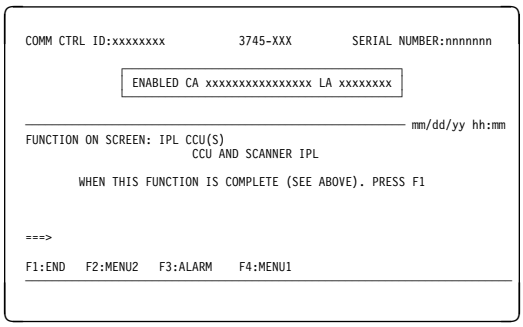
The **Function Selection Rules** screen displays, and an automatic re-IPL of the original CCU begins.



Step 8

Does this message display?: `IPL FROM MOSS DISK IN PROGRESS`.		
Yes	Go to Step 9.	
No	If this message displays: `ENABLED CA ...`?	
	Yes	1. Ask the host operator to load the control program. 2. Repeat this step again. **Note:** For an explanation of this message, see page 5-3.
	No	Contact the person in charge of 3745 problem analysis (see page 1-8).

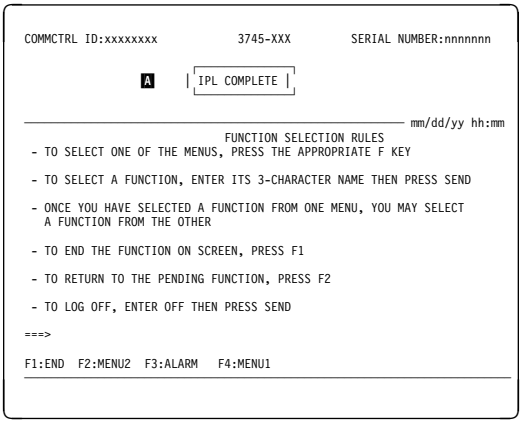




Step 9

Wait for the message `IPL COMPLETE` to display.

For the meaning of other messages that display in **A** field, see page 5-6.



Chapter 8. Basic Service Procedures

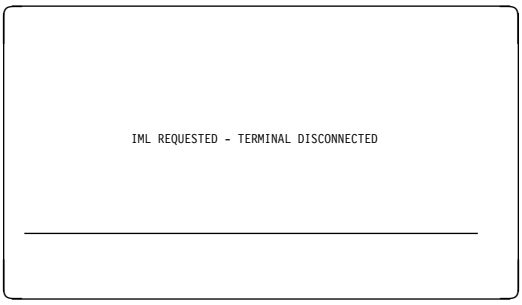
3745 MOSS IML from the Service Processor

Before you begin, make sure that you have a MOSS window open on the service processor (see page 2-9).

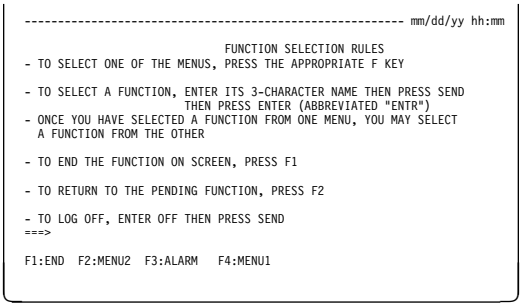
Step 1

Type **IML** then press Enter.

The screen on the right displays. →



1. Wait until **MOSS-E View** displays. IML is complete when the 3745 icon turns pink in color.
2. Double-click **MOSS Console** in the MOSS-E 3745 menu.
3. Enter the three letter code of the MOSS function you want to use.



3745 Scanner (Line Adapter) IML

Step 1

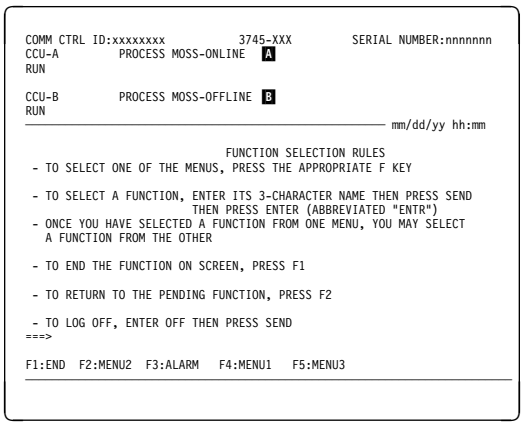
Make sure a MOSS window is open on the service processor (see page 2-9).

The screen on the lower right displays.

Step 2

A or **B** on the screen shows the MOSS status of the CCU, attached to a scanner.

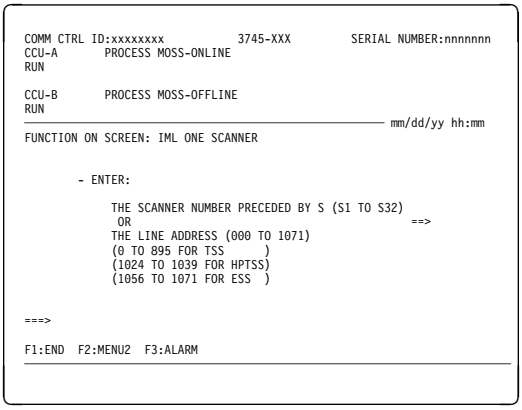
Is the MOSS online?		
Yes	Go to Step 3.	
No	Is the MOSS off-line?	
	Yes	1. Type **CSR**, then **1**, or **2** to select a CCU, then press Enter. 2. Type **MON** and press Enter to bring the MOSS online. 3. Go to Step 3.
	No	1. Load the control program on to the CCU by performing an IPL (see Chapter 5, “3745 IPL from Service Processor” on page 5-1). Then go to the next step.



Step 3

To IML a scanner, type **IMS** and press Enter.

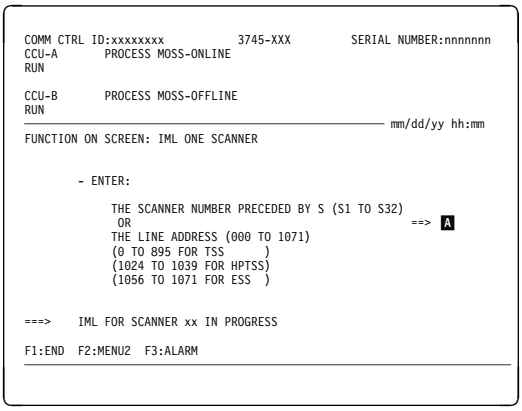
The screen on the right displays. →



Step 4

1. Enter either the scanner (line adapter) number or the address of a line attached to the scanner at **A**.
2. Type **SX** or **SY** and press Enter (where **X** equals the scanner number, and **Y** equals the line address).

   The IML begins when the following message displays:
   `IML FOR SCANNER xx IN PROGRESS`.



If the message `INVALID INPUT` displays, restart this step.

If the following message displays: `SCANNER CANNOT BE IMLED: MOSS IS NOT ONLINE`, set the MOSS online by performing Step 2.

If any other messages display, contact the person in charge of 3745 problem analysis (see page 1-8).

Step 5

Wait approximately one minute. If the IML is successful, the following message displays:

```
IML FOR SCANNER xx COMPLETED:
SCANNER IS CONNECTED. →
```

```
COMM CTRL ID:xxxxxxxx           3745-XXX         SERIAL NUMBER:nnnnnnn
CCU-A       PROCESS MOSS-ONLINE
RUN

CCU-B       PROCESS MOSS-OFFLINE
RUN
_____________________________________________________________ mm/dd/yy hh:mm
FUNCTION ON SCREEN: IML ONE SCANNER


       - ENTER:

            THE SCANNER NUMBER PRECEDED BY S (S1 TO S32)
             OR                                              ==>
            THE LINE ADDRESS (000 TO 1071)
            (0 TO 895 FOR TSS     )
            (1024 TO 1039 FOR HPTSS)
            (1056 TO 1071 FOR ESS  )


===>    IML FOR SCANNER xx COMPLETED: SCANNER IS CONNECTED

F1:END  F2:MENU2  F3:ALARM
_____________________________________________________________________________
```

Step 6

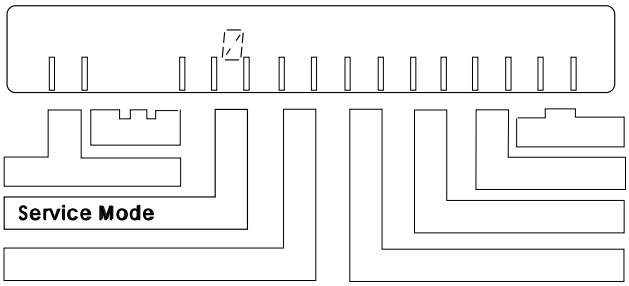
Press F1 to end the procedure.

MOSS IML from the 3745 Control Panel

If you have a problem with this step, see the online *Problem Analysis Guide*.

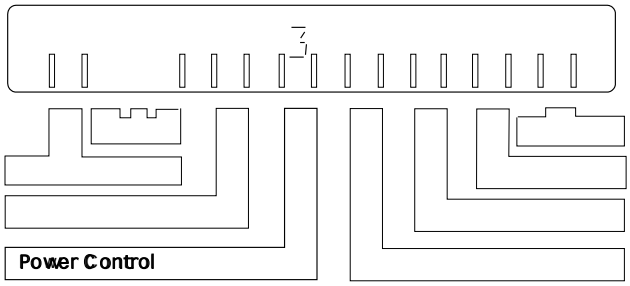
Step 1

Is **Service Mode** set to **0**?	
Yes	Go to Step 2.
No	1. Press **Service Mode** repeatedly until **0** displays. 2. Press **Validate**. 3. Go to step 2.



Step 2

Is the **Power Control** set to **3**?	
Yes	Go to Step 3.
No	1. Note the **Power Control** setting; you will need to reset it at the end of this procedure. 2. Press **Power Control** repeatedly until **3** displays. 3. Press **Validate** and go to Step 3.



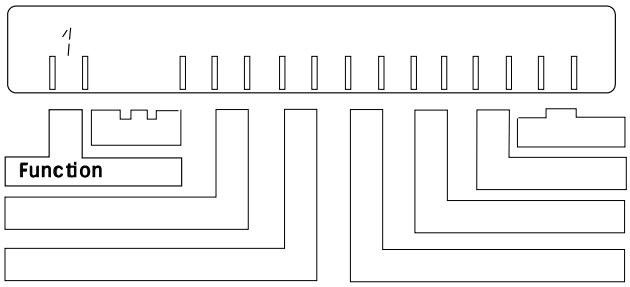
Note

Power Control 3 (local mode) is intended for service procedures and is not recommended for normal operations. If the controller is left in local mode and there is a power failure, you will have to manually power ON.

Also, if there is a power failure, the power control must be set to **1** (remote mode) for the 3746-900 to automatically re-start.

Step 3

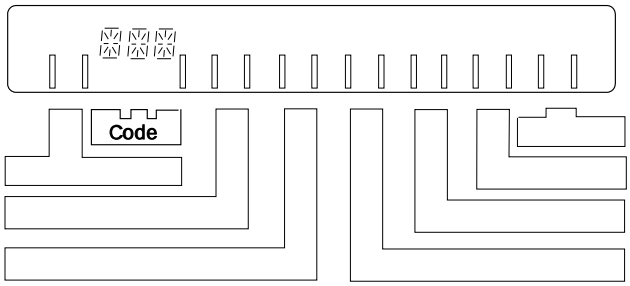
Is **Function** set to **1**?	
Yes	Go to Step 4.
No	1. Press **Function** repeatedly until **1** displays. 2. Go to Step 4.



Step 4

Press **Validate**.

The MOSS IML begins. You can see the progress of the IML on the hex display.



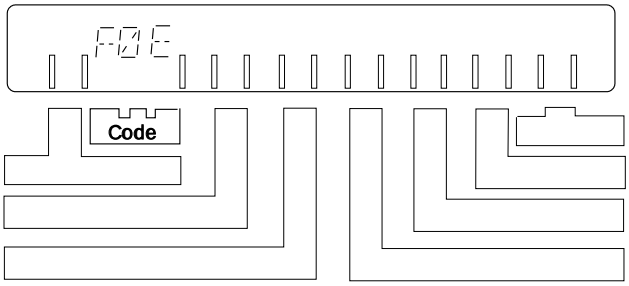
Step 5

Wait for about 3 minutes until you see one of the following on the display:

- F0E indicating the MOSS, without NCP loaded.
- F0F indicating that the MOSS is offline, or that the IPL has completed in diskette mode.

To change the status of the MOSS, refer to the *Advanced Operations Guide*, SA33-0097.

For information on other codes that display, see page A-9.



3746-900 Power State

When the main switch is on and connected to the main power supply, the 3745-900 has two power states (this applies to the entire 3745/3746 family). The power state can be either:

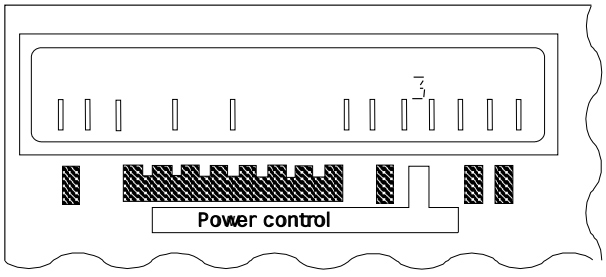
- Activated (IML complete, ready to work).
- Deactivated (only the main power box and the operator control panel are active).

Power Control Mode Switching

This section describes changing from one power mode to the other (whether the 3746-900 is activated or de-activated).

To switch between local and remote mode from the control panel, perform the following:

Step 1. Press **Power Control** repeatedly until a **1** or a **3** displays, blinking. (**1** means remote and **3** means local.)



Step 2. Press **Validate**.

Notes:

You can activate or deactivate the 3746-900 from the control panel when it is in **local** mode (see “Activation and IML from the 3746-900 Operator Control Panel” on page 8-10).

The power state of the 3746-900 in **remote** mode depends on external power commands received from the following:

- 3745 base frame.
- Service Processor (see “Activation/Deactivation from the Service Processor”).
- Host via the External Power On (EPO) cable (see “Activation/Deactivation from a Host” on page 8-9).

Any one of the above sending a power ON command will activate the 3746-900.

Any one of the above sending a power OFF command will de-activate the 3746-900.

Switching from Remote to Local (1 to 3)

The power state does not change.

Switching from Local to Remote (3 to 1)

The power state depends on the initial settings of the 3746-900, and any pending power commands.

The 3746-900 is activated if the following applies:

- The 3745 is powered ON.
- A power ON command is pending from a connected host.

Otherwise, the 3746-900 remains deactivated.

The 3746-900 is deactivated if the following applies:

- The 3745 is powered OFF.
- No power ON command pending from a connected host.
- No power ON command pending from the service processor.

Otherwise, the 3746-900 remains active.

Activation/Deactivation from the Service Processor

Before activating or de-activating the 3746-900 from the service processor, make sure the Power Control is set to **1 (Remote)** mode. If necessary, change the power control setting as follows:

Step 1. Press **Power Control** repeatedly until **1** blinks.

Step 2. Press **Validate**.

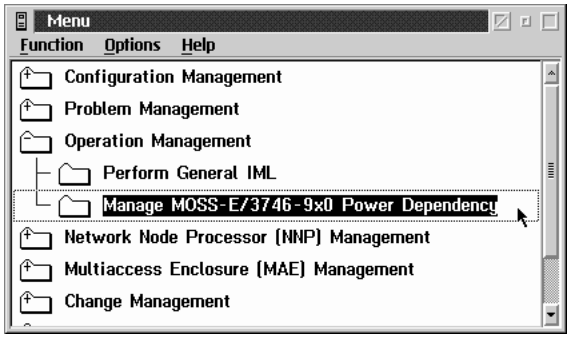
Activation

To activate Before activating the 3746-900, make sure the **Standby** light on the control panel is ON.

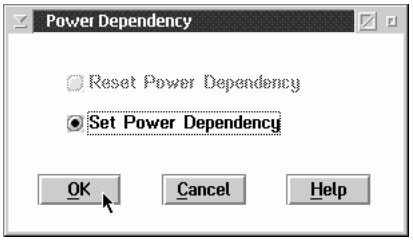
Step 1. Open a MOSS-E menu to activate the 3746-900 (see to “MOSS-E Menus, Tasks, and Functions” on page 2-8).

Step 2. Click **Operation Management**.

Step 3. Double-click **Manage MOSS-E/3746-900 Power Dependency**.



Step 4. Click **Set Power Dependency** and click **OK**.



The 3746-900 is activated. If there are errors, see the **Display Alarms** function, or the online help for more information.

Deactivation

Before de-activating the &900sh., make sure the Ready light is ON, but not blinking.

Step 1. Open a MOSS-E menu to de-activate the 3746-900 (see “MOSS-E Menus, Tasks, and Functions” on page 2-8).

Step 2. Click **Operation Management**.

Step 3. Double-click **Manage MOSS-E/3746-900 Power Dependency**.

Step 4. Click **Reset power dependency**.

Step 5. Click **OK**.

The 3746-900 remains active if any of the following applies:

- Activation locally or from a network mode.
- Power ON request from a connected host.
- 3745 is powered ON.

The 3746-900 is deactivated if any of the following applies:

- 3745, 3746-900, and connected hosts powered OFF.

  Attempt to activate the 3746-900 in remote mode when there is no power ON request from a connected host.

If there are errors, see the **Display Alarms** function, or online help for more information.

Activation/Deactivation from a Host

This section describes the results of power ON/OFF commands from a host connected to the 3746-900 via the external power off (EPO) cable. Results may differ, depending on whether the power mode is local or remote.

Power ON Command

Make sure the Standby light is ON, but not blinking.

When the host generates a Power ON command, the 3746-900 is inactivated in local mode, and activated in remote mode.

The Ready light blinks and stays ON.

If an error occurs, call the IBM representative (see “Solving Problems” on page 1-8).

Power OFF Command

The Ready light must be ON, but not blinking.

When the host generates a Power OFF command, the following occurs:

- The 3746-900 stays active in local mode.
- In remote mode:
  - 3746-900 stays active if the following applies:
    - 3745 is powered ON.
    - Service processor requests activation (see “Activation” on page 8-7).
    - Power ON command is generated by another host connected to the 3746-900 via an EPO cable.
  - The 3746-900 is deactivated if the following applies:
    - 3745 is powered OFF.
    - Service processor requests deactivation (see “Deactivation” on page 8-8).
    - No power ON commands from other hosts connected to the 3746-900 via EPO cable.

The **Standby** light begins to blink and then goes ON.

If an error occurs, call the IBM representative (see “Solving Problems” on page 1-8).

VTAM Remote Power OFF Command

A remote power OFF (RPO) command can be sent to a remote 3745 and attached 3746-900 from VTAM. The remote 3746-900 powers OFF only if the following applies:

- 3745 Power Control is in a network mode.
- 3746-900 Power Control is in remote mode.

Activation and IML from the 3746-900 Operator Control Panel

Note: For more information about the 3746-900 control panel, see Appendix B, "3746-900 Operator Control Panel."

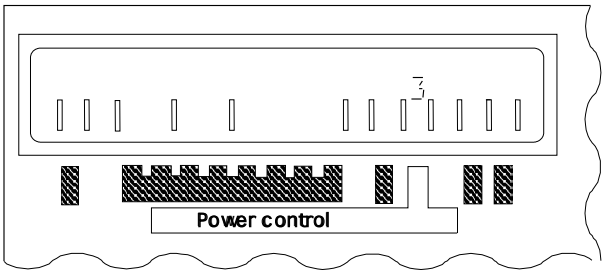
To activate the 3746-900, use the following procedure:

Step 1

Is the **Ready** light ON or blinking?	
Yes	Go to Step 4.
No	Go to Step 2.

Step 2

Is the **Power Control** set to **3**?	
Yes	Go to Step 3.
No	1. Press **Power Control** repeatedly until **3** is blinking. 2. Press **Validate** and go to Step 3.



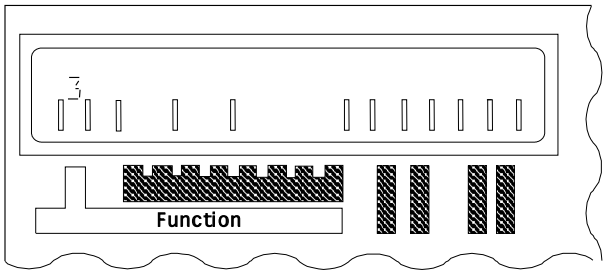
Note

Power Control 3 (local mode) is intended for service procedures and is not recommended for normal operations. If the controller is left in local mode and there is a power failure, you will have to manually power ON.

Also, if there is a power failure, the Power Control must be set to **1** (remote mode) for the 3746-900 to automatically re-start.

Step 3

Do you want to do an IML with diagnostics?		
Yes	Does **Function** display **3**?	
	Yes	Press **Validate** and go to Step 5.
	No	1. Press **Function** repeatedly until **3** is blinking. 2. Press **Validate**. 3. Go to Step 5.
No	Does **Function** display **8**?	
	Yes	1. Press **Validate**. 2. Press **General IML**. 3. Go to Step 5.
	No	1. Press **Function** repeatedly until **8** is blinking. 2. Press **Validate**. 3. Press **General IML**. 4. Go to Step 5.

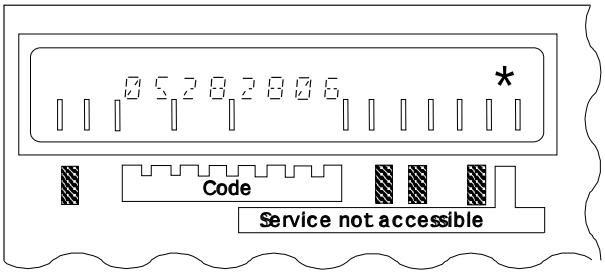


Step 4

Do you want to do an IML with diagnostics?		
Yes	Does **Function** display **3**?	
	Yes	1. Press **Validate**. 2. Go to Step 6.
	No	1. Press **Function** repeatedly until **3** is blinking. 2. Press **Validate**. 3. Go to Step 6.
No	Does **Function** display **8**?	
	Yes	1. Press **Validate**. 2. Press **General IML**. 3. Go to Step 6.
	No	1. Press **Function** repeatedly until **8** is blinking. 2. Press **Validate**. 3. Press **General IML**. 4. Go to Step 6.

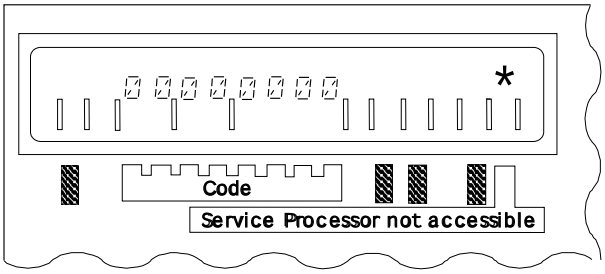
Step 5

Wait until the hex code **05 28 2806** displays and the **Standby** light remains ON.	
Yes	1. Press **Start** on the control panel. The 3746-900 activates and begins an IML. The **Ready** light starts blinking and the **Standby** light goes OFF. 2. Go to Step 6.
No	1. Check the 3746-900 link with the MOSS-E. If ***** is not displayed in the **Service not accessible** field, see “Service Processor Inaccessible” on page B-5. 2. Start again from Step 3. 3. If the problem persists, refer to the progress codes in the online *Problem Analysis Guide*.



Step 6

After a few minutes, check the following: • Is the hex code **00 00 0000** displaying? • Is the **Ready** light remaining ON, without blinking?		
Yes	IML is finished and the 3746-900 is ready for operation.	
No	Is there another code displaying and the **Ready** light blinking?	
	Yes	1. Restart from Step 4. 2. If the problem persists, see the progress codes in the online *Problem Analysis Guide*.
	No	Contact the person in charge of 3746-900 problem analysis, (see page 1-8).

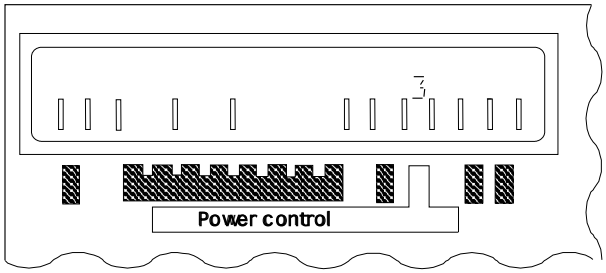


Deactivation from the 3746-900 Operator Control Panel

To deactivate the 3746-900 from the control panel, use the following procedure:

Step 1

Is **Power Control** set to **3**?	
Yes	Go to Step 2.
No	1. Press **Power Control** repeatedly until **3** is blinking. 2. Press **Validate**. 3. Go to Step 2.



Note

Power Control 3 (local mode) is intended for service procedures and is not recommended for normal operations. If the controller is left in local mode and there is a power failure, you will have to manually power ON.

Also, if there is a power failure, the power control must be set to **1** (remote mode) for the 3746-900 to automatically re-start.

Step 2

Press **Standby**. After a few seconds, the **Ready** light changes from ON to OFF, and the **Standby** light blinks and then goes ON.

Auto-Restart after a Power Failure

The 3746-900 automatically powers ON and performs an IML (the same as the 3745).

If there is a total power failure, the 3746-900 goes into standby mode. When power is restored, the 3746-900 automatically performs an IML. However, IML is only automatic if the following applies:

If a power failure occurs while the 3746-900 is activated:

- 3746-900 goes into power OFF state.
- When power is restored, the 3746-900 goes on standby and continues to perform an IML up to the ready state, and the following applies:
  - 3745 is powered ON.
  - Power ON commands are pending from a host attached to the 3746-900 via EPO cable.
  - The 3746-900 is activated by the power dependency function (see “Activation” on page 8-7).

If the power failure occurs while the machine is on standby:

- The machine goes into power OFF state.
- When power is restored, the 3746-900 returns to standby status until:
  - Power ON command is received from a host attached to the 3746-900 via EPO cable.
  - Power ON command is received from the service processor.
  - 3745 is powered ON.

Chapter 9. Service Processor and MAE Microcode Management

This chapter consists of the following procedures:

- Installing and upgrading the microcode for the MAE configurator.
- Backing up microcode and configurations to the service processor and the MAE.
- Updating the active CDF-E.
- Installing microcode and backing up configurations to a backup service processor.
- Installing a backup service processor.

Installing and Running MAE Configurator Microcode

Although the microcode for running the MAE is installed on the hard drive of the MAE, the microcode for MAE configurator is installed and maintained on the service processor hard disk. The procedures below describe the following:

- Installing MAE configurator code
- Maintaining MAE configurator code.

Installing MAE Configurator Microcode

Use the following procedure to install the necessary microcode for running the MAE configurator.

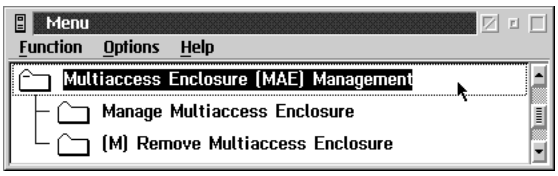
Warning

The following procedure downloads MAE configurator microcode onto the active partition (version 1) of the service processor. If you switch partitions (version 1 to version 2, for example), you must re-install the MAE configurator microcode again.

Step 1. Insert the CD with the MAE configurator code into the CD-ROM drive.

Step 2. Open the **3746-9x0 Menu**.

Step 3. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.



Step 4. Click **Configurator**. If there is no configurator microcode on the service processor hard drive, the necessary microcode automatically downloads onto your service processor hard disk.

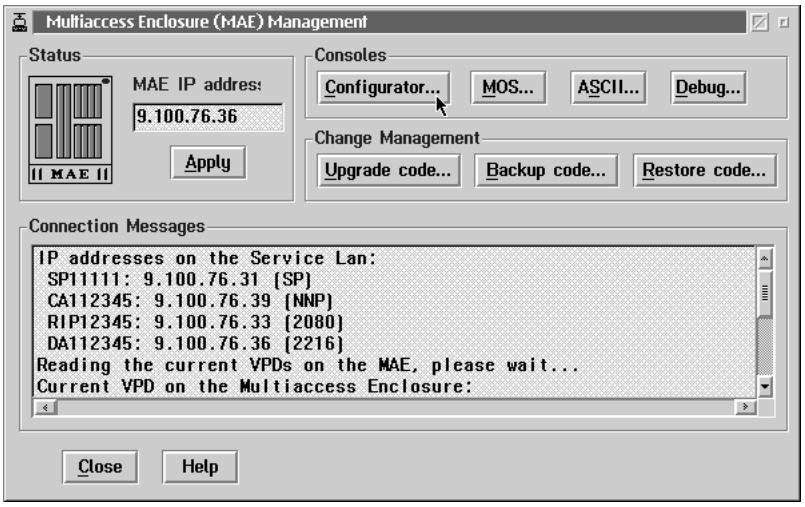


Figure 9-1. Multiaccess Enclosure (MAE) Management Window

The configurator tool opens on your screen. You can now create and save MAE configuration files (see "Creating MAE Configurations" on page 9-6).

Upgrading MAE Configurator Microcode

Use the following procedure to install microcode upgrades and fixes for the MAE.

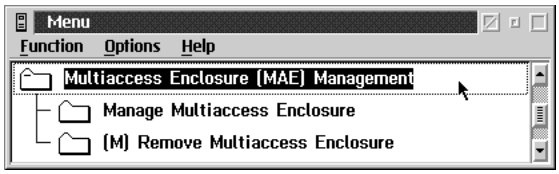
Warning

The following procedure downloads MAE configurator microcode onto the active partition (version 1) of the service processor. If you switch partitions (version 1 to version 2, for example), you must re-install the MAE configurator microcode again.

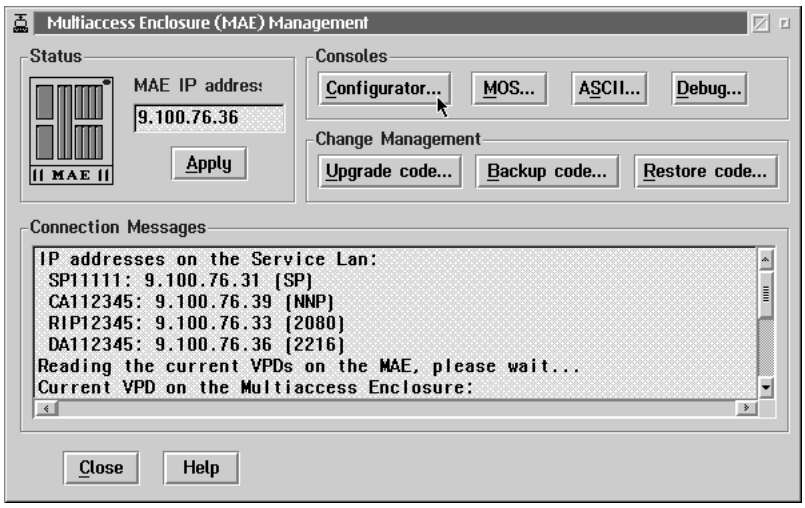
Step 1. Insert the upgrade or fix CD into the CD-ROM drive.

Step 2. Open the **3746-9x0 Menu**.

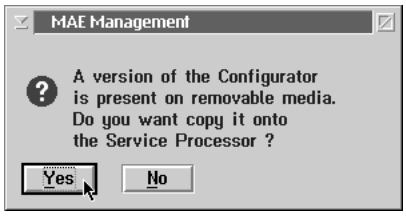
Step 3. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.



Step 4. Click **Configurator**.



Step 5. A message indicates that the required microcode is available for copying onto the service processor hard disk. Click **Yes**.



You now have the current microcode required for running the MAE and creating MAE configuration files.

Configuration Management

It is recommended that you backup the configurations for the service processor, network node processor, and MAE. Backup configurations include the necessary information required for resuming normal operation if the hard disk fails on the service processor, network node processor, or MAE.

Multiaccess Enclosure (MAE) Configuration Management

The MAE configurator is run and maintained from the service processor hard disk. The **Multiaccess Enclosure (MAE) Management** window in the **3746-9x0 Menu** opens the MAE configurator tool on the service processor.

Using the MAE configurator, you can perform the following:

- Create and save MAE configuration files.
- Restore MAE configuration files.
- Import MAE configuration files.

Important

The **Configurator** button is used to install and upgrade the microcode needed for running the MAE configurator (see “Installing and Running MAE Configurator Microcode” on page 9-1). However, installing and maintaining the microcode necessary for running the MAE is performed by the **Upgrade code**, **Backup code**, and **Restore code** buttons of the **Multiaccess (MAE) Management** window (see Figure 9-1 on page 9-2).

After the MAE is installed and ready to run, follow the procedures below to run the MAE configurator and create MAE configuration files. These procedures include the following:

- Retrieving the default MAE configuration from the MAE hard disk.
- Backing up the default MAE configuration to diskette.
- Modifying the default MAE configuration.
- Saving the new configuration to the service processor hard disk.
- Sending the new configuration to the MAE.

Retrieving the Default MAE Configuration

Important

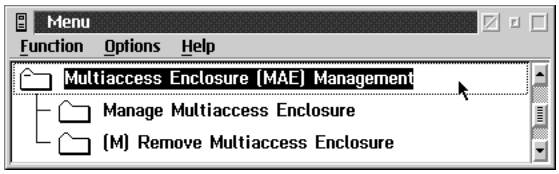
The MAE is installed with a default configuration. You must use this default configuration to create any new configuration files.

Use the procedure below to do the following:

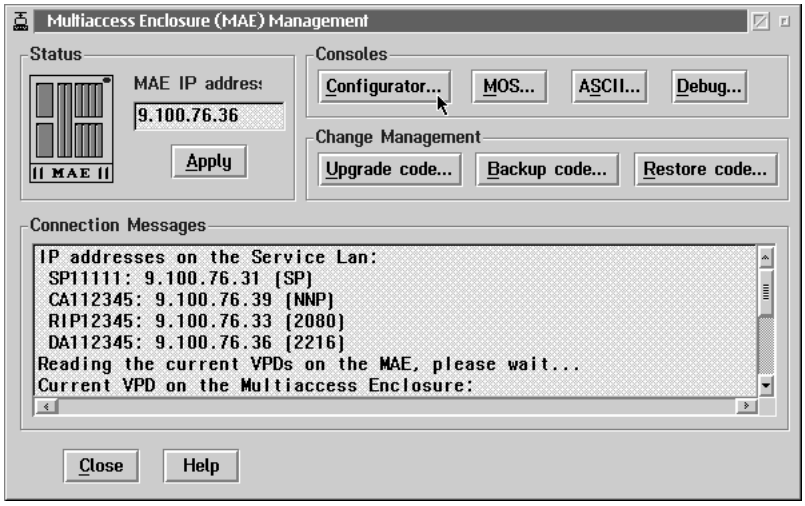
- Retrieve the default configuration from the MAE.
- Backup the default configuration to diskette.

Step 1. Open the **3746-9x0 Menu**.

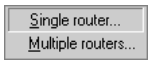
Step 2. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.



Step 3. Click **Configurator**.



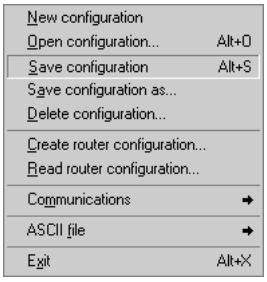
Step 4. Click **Communications**, then **Single Router**.



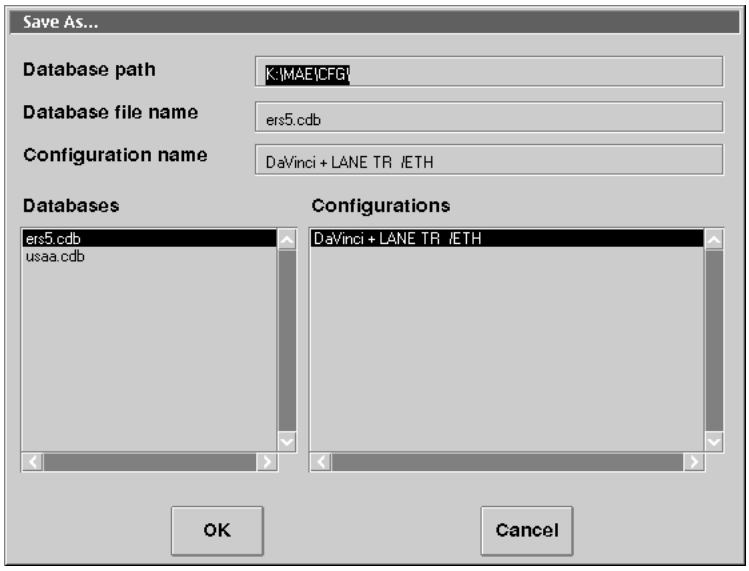
Step 5. Enter the PCMCIA IP address in the **IP Address or Name** field, and **public** in the **Community** field, select **Retrieve configuration** and click **OK**.

The MAE default configuration displays in the **Navigation** window.

Step 6. Click **Configure**, then **Save configuration as**.



Step 7. Fill in the path and name fields and click **OK**.



Creating MAE Configurations

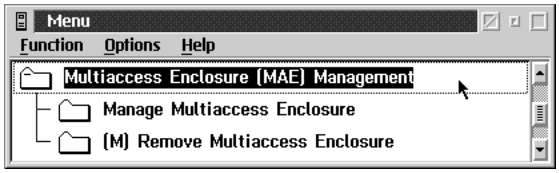
Use the following procedure to create a new configuration from the default MAE configuration and save it to the hard disk of the service processor:

Important

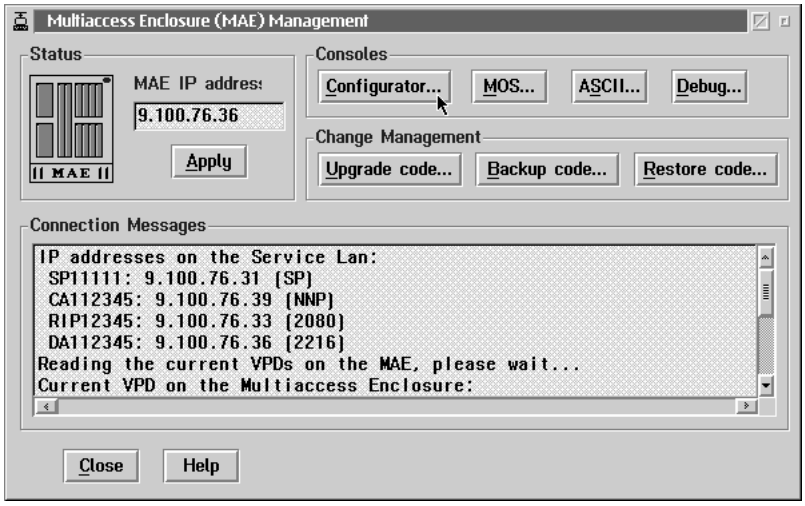
You must always use the default MAE configuration to create any new configuration files.

Step 1. Open the **3746-9x0 Menu**.

Step 2. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.

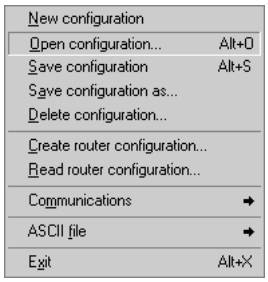


Step 3. Click **Configurator**.

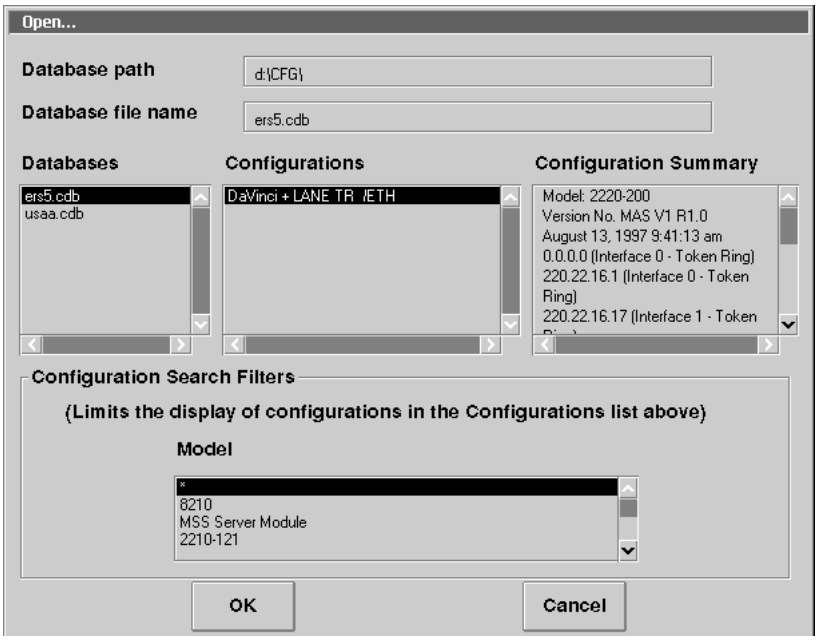


Step 4. In the **Navigation** window, click **Configure** and **Open Configuration**.

Note: Do not use **New configuration** as you must always use the default MAE configuration to create any new configuration files.



Step 5. Enter the drive and path name of the default configuration file that you want to open and click **OK**.



The configuration displays in the **Navigation** window. Double-click any items that you want to modify and then save the new configuration.

Sending MAE Configurations to the MAE

Use the following procedure to activate a new or updated configuration and send it to the MAE.

Step 1. Open the **3746-9x0 Menu**.

Step 2. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.

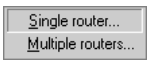
Step 3. Click **Configurator**.

Step 4. In the **Navigation** window, click **Configure** and **Open configuration**.

Note: Your configuration can either be on diskette or on the service processor hard disk.

The configuration displays in the **Navigation** window.

Step 5. In the **Navigation** window, click **Configure**, **Communications**, then **Single Router**.



Step 6. Enter the PCMCIA IP address in the **IP Address or Name** field, and **public** in the **Community** field, select **Send configuration to router** and click **OK**.

Backing up MAE Configurations

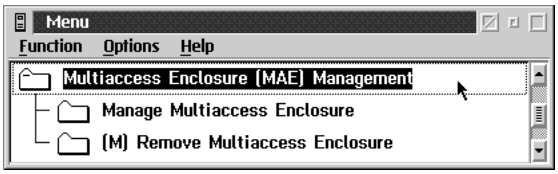
Use the following procedure to backup a new MAE configuration from the service processor hard disk to diskette.

Important

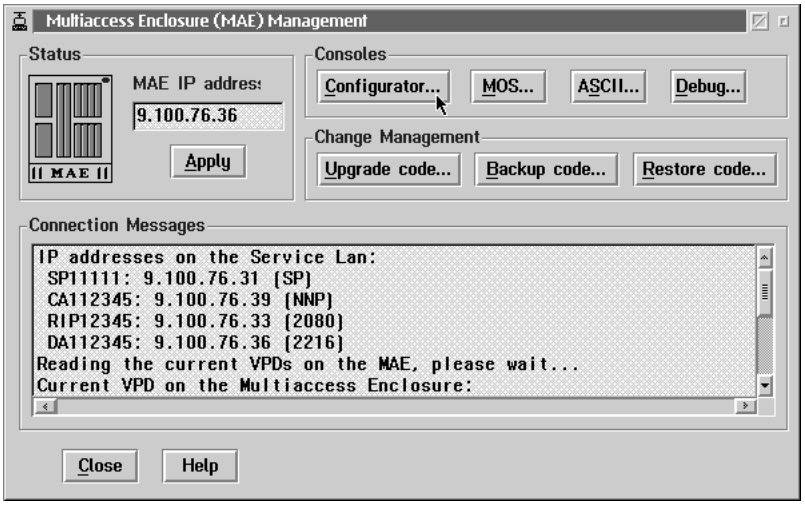
New MAE configurations are created from the default MAE configuration. For more information, see “Creating MAE Configurations” on page 9-6.

Step 1. Open the **3746-9x0 Menu**.

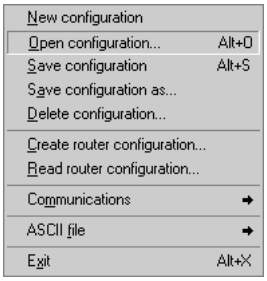
Step 2. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.



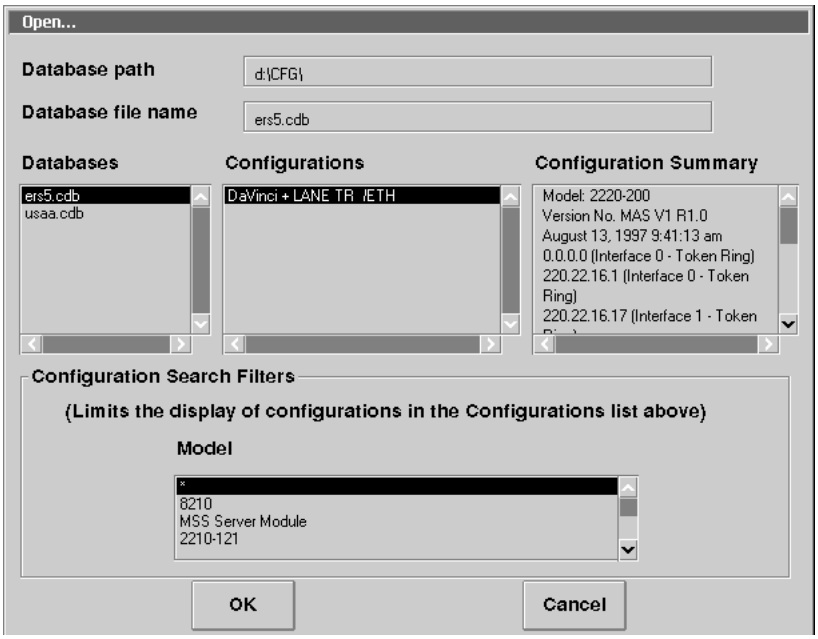
Step 3. Click **Configurator**.



Step 4. In the **Navigation** window, click **Configure** and **Open configuration**.



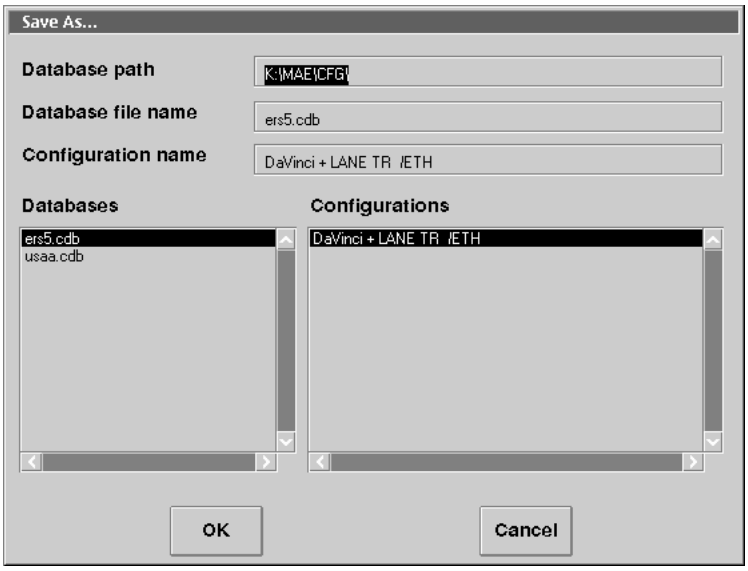
Step 5. Enter the drive and path name of the configuration file and click **OK**.



The configuration displays in the **Navigation** window.

Step 6. Click **Save configuration as**.

Step 7. Fill in the path and name fields and click **OK**.

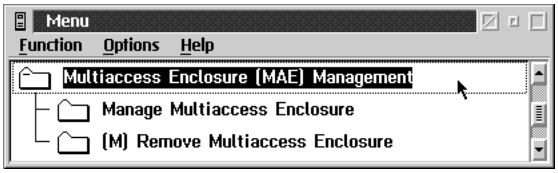


Restoring Backup MAE Configurations

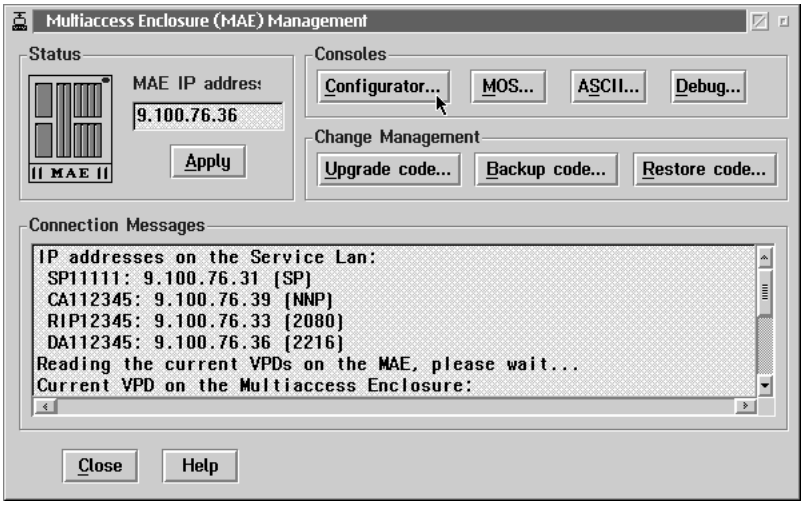
Use the following procedure to restore an MAE configuration to the service processor hard disk from diskette.

Step 1. Open the **3746-9x0 Menu**.

Step 2. Click **Multiaccess Enclosure (MAE) Management**, and then **Manage Multiaccess Enclosure**.

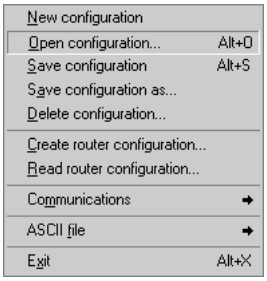


Step 3. Click **Configurator**.

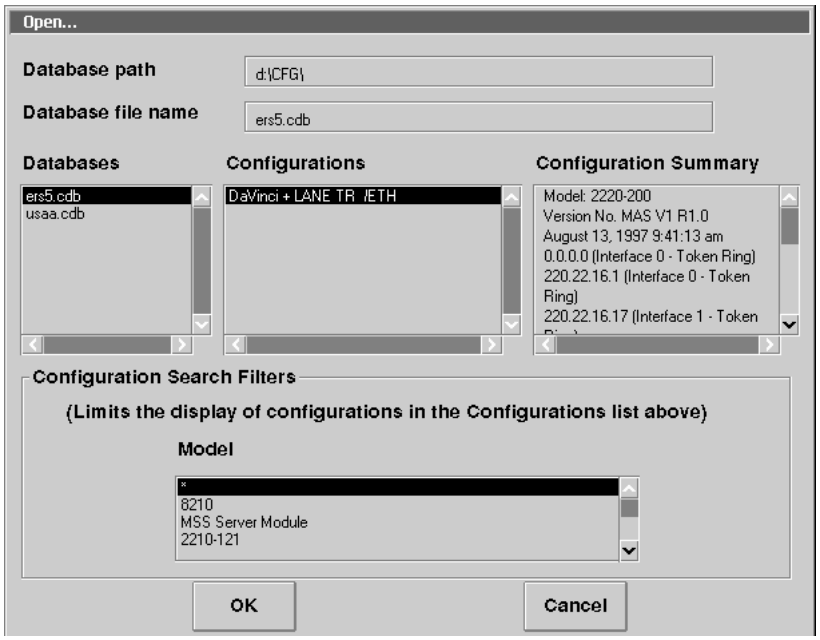


Step 4. Insert the diskette with the backup configuration into the diskette drive.

Step 5. In the **Navigation** window, click **Configure** and **Open configuration**.



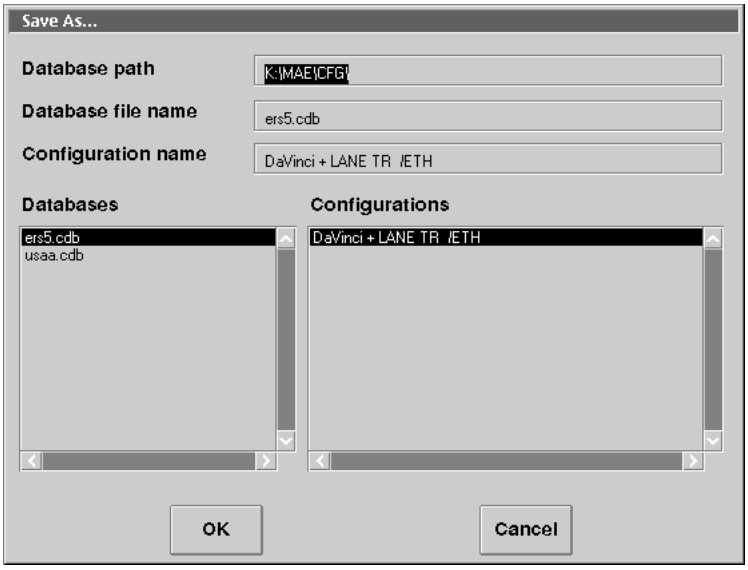
Step 6. Enter the drive and path name of the configuration file on diskette and click **OK**.



The configuration displays in the **Navigation** window.

Step 7. Click **Save configuration as**.

Step 8. Fill in the path and name fields and click **OK**.



Updating the Active CDF-E

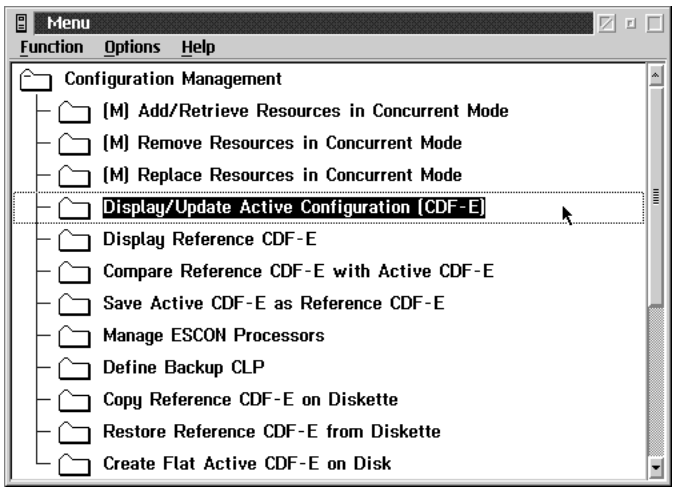
Use the procedure below to record any new hardware as part of the controller hardware configuration, for example, lines connected to a LIC11.

This procedure ensures that the following information is recorded:

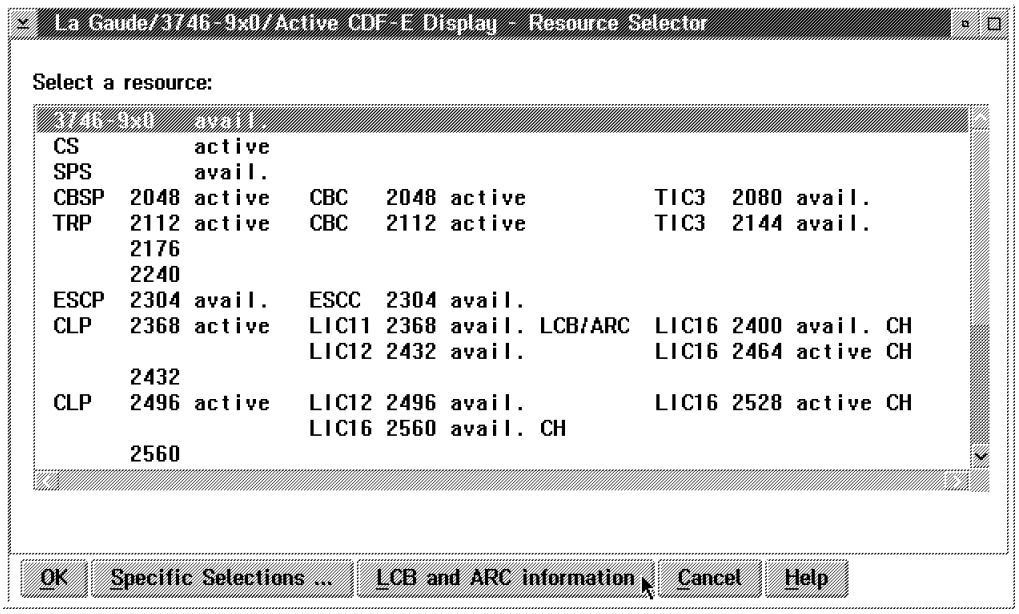
- Hardware character strings
- New CDF-E configuration saved as the working CDF-E
- Backup CDF-E copied on to diskette.

Step 1 Double-click a 3746-900 object icon, or select a 3746-9x0 menu in the window list (see Step 2 on page 2-4).

Step 2 Click **Configuration Management**, then double-click **Display/Update Active Configuration (CDF-E)**.



Step 3 New or changed LCBs and ARCs for each CLP are shown in the **Resource Locator** screen (see the figure and notes below).

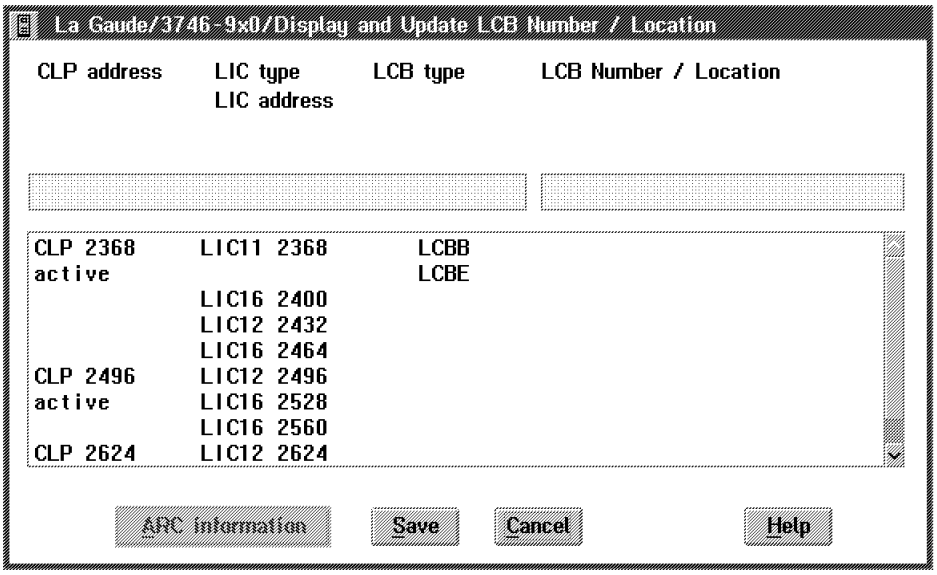


Notes:

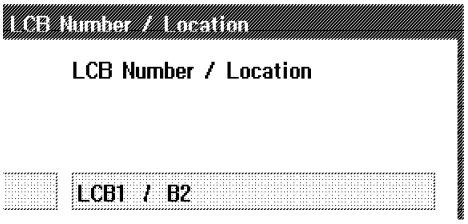
- A new LCB with an ARC is indicated by **LCB/ARC** to the right of the associated LIC11.
- A new LCB is indicated by **LCBB** to the right of the associated LIC11.
- A new LCBE will not display without an ARC installed in it, or until an IML procedure has been performed for the LCBE adapter.

Step 4 Click LCB and ARC information .

Step 5 Select the LCBB line, or for an LCBE, select the line just below the associated LCB.



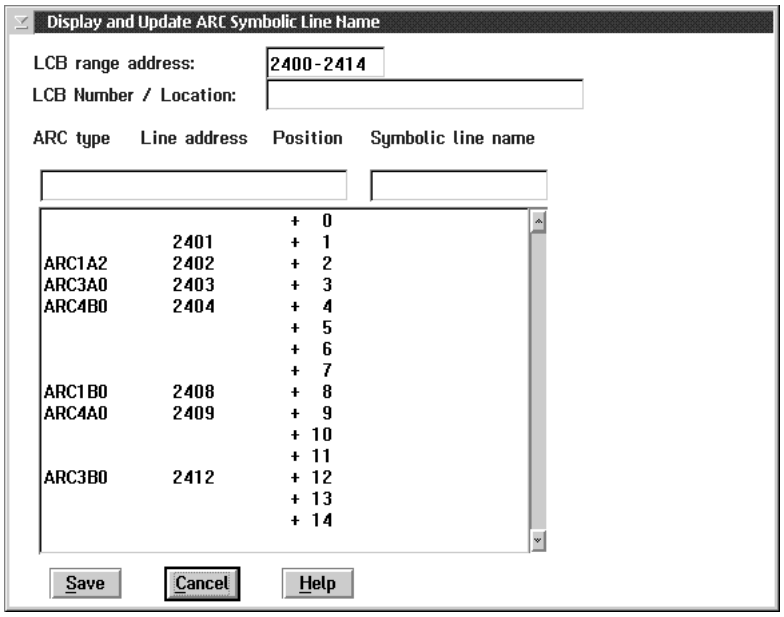
Step 6 Enter or update the **LCB Number / Location** field. You can use up to 25 alphanumeric characters to identify an LCB attached to a processor. Existing codes should already be recorded in the *Planning Guide*, GA33-0457.



Step 7 Press **Enter** and repeat steps 5 and 6 to identify more LCBs if you need to. Then click Save and **OK**.

Step 8 If you have ARCs attached to a selected LCB, click ARC information . Otherwise, go to step 12.

Step 9 Select an ARC, and enter or update the **Symbolic line name** field. You can use up to 8 alphanumeric characters to identify the ARC. Existing codes should already be recorded in the *Planning Guide*.



Step 10 Press **Enter** and repeat steps 5 to 11 if you want to identify more ARCs. Then click Save and **OK**.

Step 11 To identify ARCs on other LCBs, repeat step 9 and step 11 for each LCB.

Step 12 When you have finished with all the LCBs and ARCs, click **Cancel**.

Step 13 Double-click **Save Active CDF-E as Reference CDF-E**. Then click **OK**.

Note: It is recommended that you save the CDF-E onto diskette. For more information, see “Backing up Controller Configurations” on page 9-17.

Backing up Controller Configurations

It is recommended that you backup the MOSS-E current controller configurations to diskette if you have done any of the following:

- Updated the CDF-E
- Customized DCAF target settings
- Managed passwords
- Configured remote operations
- Set automatic microcode download
- Updated CCM configurations.

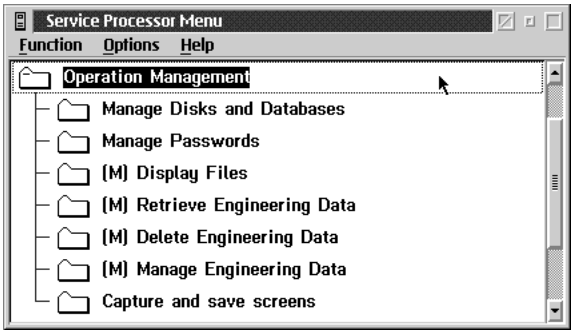
Note: For saving current configurations of the Ethernet Bridge or MAE, see "Creating MAE Configurations" on page 9-6.

Follow the steps below for backing up the controller configuration:

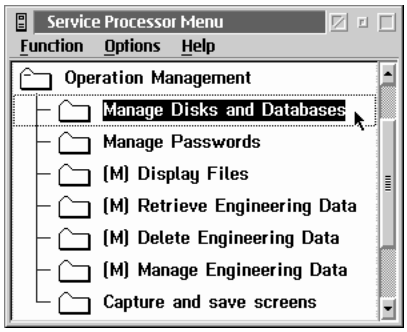
Step 1. Insert the backup diskette into the drive.

Step 2. Double-click the **Service Processor** object icon, or open the **Service Processor** menu in the window list (see step 2 on page 2-4).

Step 3. Click **Operation Management**.



Step 4. Double-click **Manage Disks and Databases**.



Step 5. Click **Save Databases on diskette(s)**.

Step 6. Click **OK**.

Step 7. Follow the prompts to save the active CDF-E onto the hard disk, and then onto diskettes.

Step 8. Click **Cancel** to exit.

Note: This procedure takes about 5 minutes and does not interfere with the operation of the service processor.

Backing Up the Service Processor

Backing up the service processor requires the following:

- Setting up a backup service processor.
- Saving the following configuration data:
  - Active MOSS-E to the backup hard disk
  - Active MOSS-E microcode to the backup hard disk.

Setting Up a Backup Service Processor

Before you set up a backup service processor, check that the microcode levels are the same for both the backup and the primary service processor.

If the microcode levels are not the same, use one of the following methods to set the same level in both:

- Install the microcode of the active service processor onto the hard drive of the backup service processor (see “Installing Microcode to a Backup Service Processor” on page 9-20).
- Copy the active configuration onto the hard disk of the backup service processor (see “Backing Up Configurations to a Backup Service Processor” on page 9-19).

Follow the procedure below to check the microcode levels of the primary and backup service processor:

Procedure for EC level D46130 ECA 167 and Above

Step 1. Log on to the MOSS-E (see “Logging On the MOSS-E” on page 2-4).

Step 2. Click **Help**.

Step 3. Click **About**.

Step 4. Click **Licensed Internal Code**.

Step 5. Compare the two microcode levels.

Backing Up Configurations to a Backup Service Processor

When configuration data is updated on the active service processor, you must save it on to backup diskettes (see “Backing up Controller Configurations” on page 9-17). This process takes about five minutes.

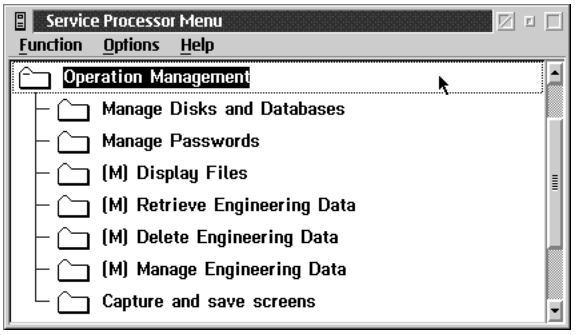
Save new configuration data by copying it onto the hard disk of the backup service processor as follows:

Step 1. Power ON the backup service processor. This produces an error message because the backup service processor is not connected to the LAN. Cancel this message by clicking **OK**.

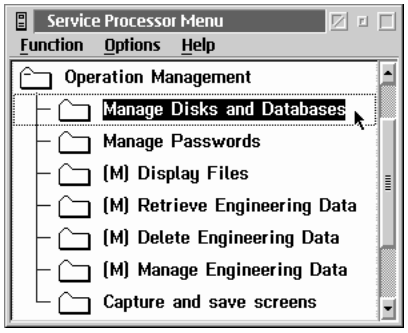
Step 2. Log on to the backup service processor (see “Logging On the MOSS-E” on page 2-4).

Step 3. Open the **Service Processor** menu.

Step 4. Click **Operation Management**.



Step 5. Click **Manage Disks and Databases**.



Step 6. Select **Restore databases from diskettes(s)**.

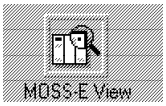
Step 7. When you have finished, power OFF the backup service processor.

At power ON, the backup service processor automatically registers the new configuration data.

Installing Microcode to a Backup Service Processor

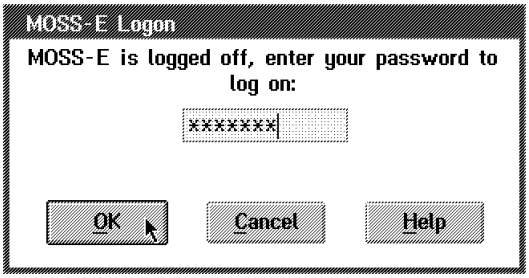
Use the following procedure to install microcode onto a backup service processor.

Step 1. Power ON the backup service processor. This produces an error message because the backup service processor is not connected to the LAN. Cancel this message by clicking **OK**.

Step 2. Double-click the 

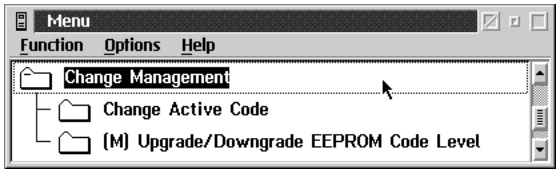
icon.

Step 3. Type in a password and click **OK**.



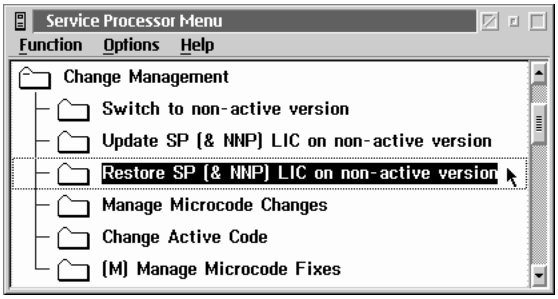
Step 4. In **MOSS-E View**, open the service processor machine menu.

Step 5. Click on **Change Management**.



Step 6. Insert the CD with the service processor installation code into the CD-ROM.

Step 7. Double-click **Restore SP (&NNP) LIC on non-active version**.



Step 8. Follow the prompts.

Installing a Backup Service Processor

If the active service processor fails, replace it with the backup service processor as follows:

Attention

Make sure the microcode and configuration levels are the same in both the primary and the backup service processor.

Step 1. Power OFF the active service processor.

Step 2. Verify that the backup service processor is powered OFF.

Step 3. Disconnect the active (failed) service processor from the token-ring LAN.

Step 4. If necessary, disconnect any RSF modem or telephone lines.

Step 5. Connect the backup service processor to the token-ring LAN.

Step 6. If necessary, connect the backup service processor to any RSF modem or telephone lines.

Step 7. Check that the service processor installation diskette is not in the backup service processor disk drive.

Step 8. Power ON the backup service processor.

Chapter 10. CCM and Telnet IP Resource Management

This section describes how to access and manage IP resources through using CCM or through using Telnet Client.

CCM provide menu options that access IP resources by running commands similar to Telnet. Otherwise, you can access Telnet and run Telnet commands for IP resources directly. The advantage to directly accessing Telnet is that you do not need to use the resources of the service processor, which can then be reserved for other tasks.

For more information on CCM, see *CCM: Users Guide*, SH11-3081.

For more information on Telnet, see the *Protocol Configuration and Monitoring Reference*, SC30-3680 and the *Software User's Guide*, SC30-3681.

Controller Configuration and Management (CCM)

CCM is an IBM application program that runs in the network node processor (NNP). You can access CCM from the service processor and use the application for the following:

- Defining configuration parameters for APPN and IP resources.
- Viewing configuration parameters.
- Performing management tasks.

The following describes how to configure CCM to access Telnet and run Telnet commands.

CCM and Telnet User Profiles

First make sure that the MOSS-E option for configuring CCM and Telnet user profiles is enabled.

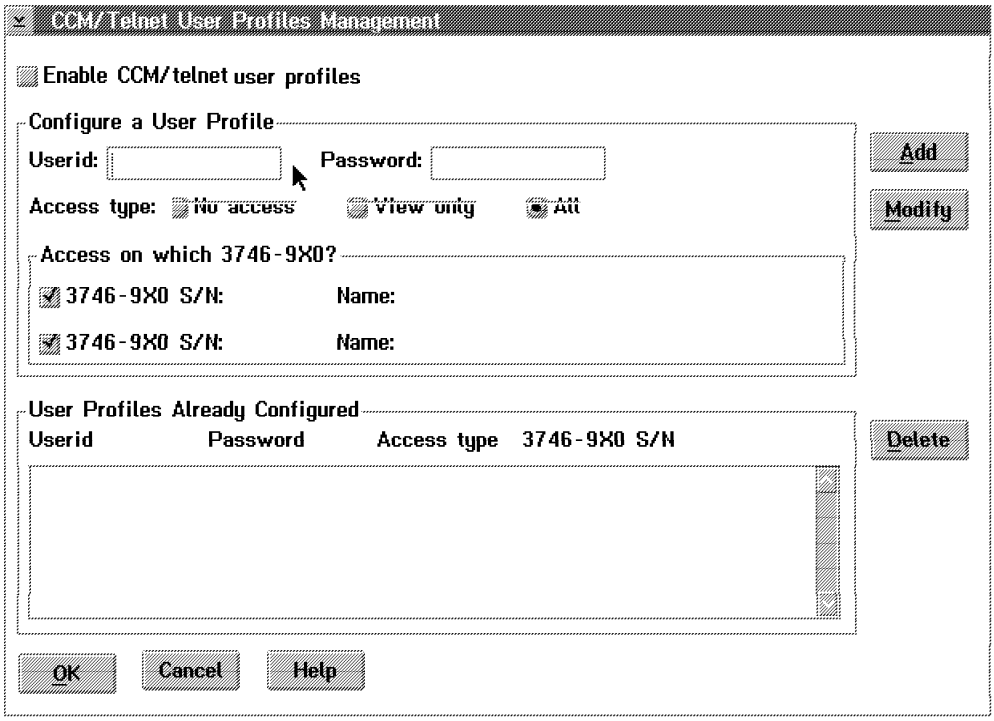
Step 1 Double-click the service processor object icon or open an **MOSS-E View** menu from the window list (see Step 2 on page 2-4).

Step 2 Click **Operation Management**.

Step 3 Click **Manage Passwords**. Enter the management password (the default is **IBM3745**) and click **OK**.

Step 4 Click **CCM/Telnet user profiles management**.

Step 5 Enter a **Userid** and **Password** and click **OK**.



Step 6 Click **Cancel** to cancel.

CCM IP Resource Management

You can configure IP resource management parameters by using the **Management** menu in CCM.

Step 1 Double-click the 3746-900 machine object icon, or open the 3746-900 menu in the window list (see Step 2 on page 2-4).

Step 2 Click **Network Node Processor (NNP) Management** then double-click **Controller Configuration and Management (CCM)**. The CCM main window displays (see figure below).

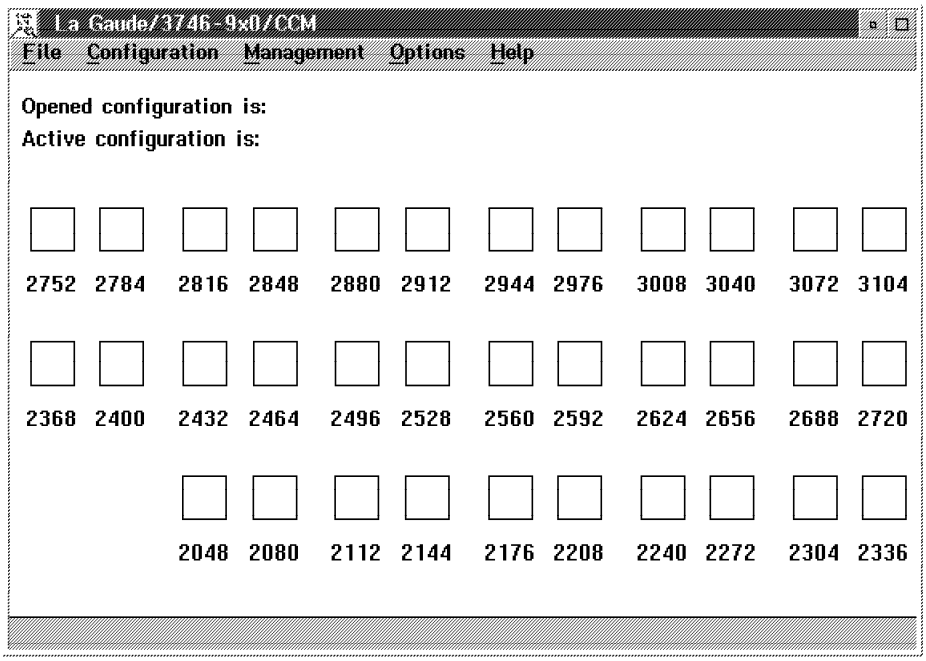
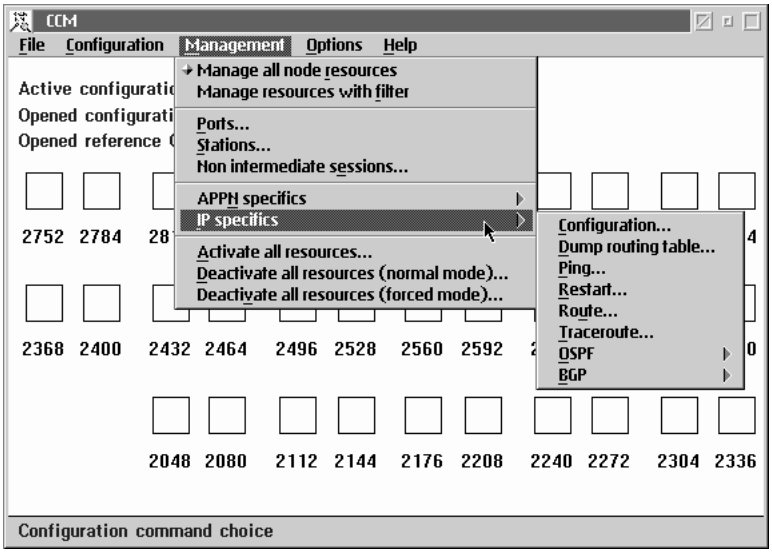


Figure 10-1. Controller Configuration and Management (CCM) Main Window

Step 3 Open the **Management** menu, and click **IP specifics**.



Step 4 CCM commands for Telnet functions are listed in the **IP specifics** sub-menus. For more detailed information on using CCM commands for IP management, see the *Planning Guide*, GA33-0457.

Working with Telnet

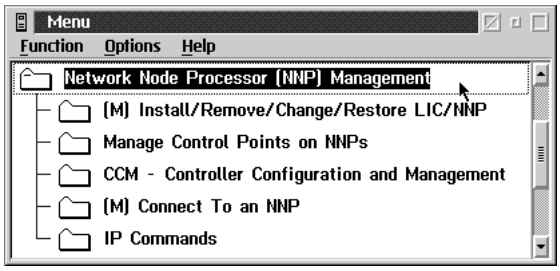
First make sure that the MOSS-E option for configuring CCM and Telnet user profiles is enabled (see “CCM and Telnet User Profiles” on page 10-1).

Accessing IP Commands from the MOSS-E

This section describes how to configure and manage IP resources by directly accessing Telnet commands through the MOSS-E.

Step 1 Double-click a 3746-900 machine object icon, or open a 3746-900 menu in the window list (see Step 2 on page 2-4).

Step 2 Click **Network Node Processor (NNP) Management**, then double-click **IP Commands**.



Step 3 Enter your **Userid** and **Telnet Password** to access the OPCON environment (see “Navigating in the IP Environment” on page 10-5 for more information on OPCON).

Note: You can enter your own userid and password or the default Telnet values of **NNPIP** and **37469X0A**.

Step 4 At the Telnet *RANGE XXXX-YYYY ** command line, you can configure and manage available IP resources (see “Configuring Resources” on page 10-6 and “Managing Resources” on page 10-6).

Accessing IP Commands from a DCAF Remote Console

Step 1 Establish a DCAF session as described in the *Console Setup Guide*, SA33-0158

Step 2 To operate, follow the instructions as described in “Accessing IP Commands from the MOSS-E.”

Accessing IP Commands from a TCP/IP Remote Console

You can run TCP/IP with Telnet on a remote console for managing IP resources without using the service processor.

Step 1 Establish a Telnet session as described in the *Console Setup Guide*.

Step 2 To access IP commands, see “Configuring Resources” on page 10-6 and “Managing Resources” on page 10-6.

Navigating in the IP Environment

IP is divided in three main environment levels (see Figure 10-2).

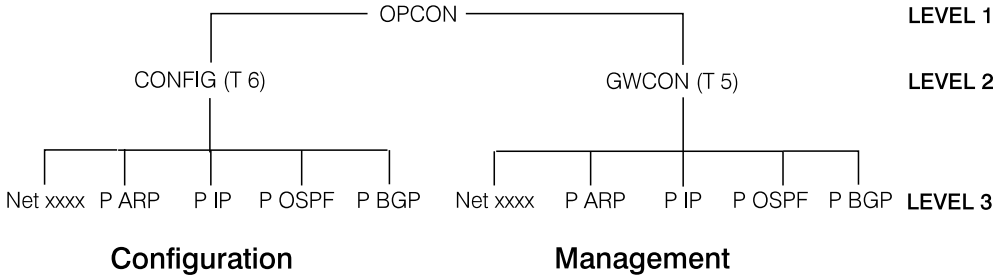
Level 1 OPCON environment.

Level 2 CONFIG (or T 6) environment for configuration GWCON (or T 5) environment for management.

Level 3 Protocol environments (Netxxxx, P ARP, P IP, P OSPF, P BGP).

You can configure and manage IP resources within these levels. Navigating these levels requires the following simple commands:

- Level 3 commands allow you into a specified environment.
- Typing **EXIT** returns you to the previous level.
- Pressing Ctrl and *O* together returns you from the environment that you are in back to OPCON (the *RANGE XXXX-YYYY ** command prompt).



Legend

xxxx Port number

Figure 10-2. Internet Protocol (IP) Environment

OPCON Commands

At the OPCON command prompt **RANGE XXXX-YYYY ***, enter **?** for available OPCON commands.

Logout Exits the Telnet session without saving changes (the keyboard shortcut is pressing Ctrl and C together).

Memory Displays information on adapter memory.

Range Selects an adapter by specific port number.

Restart Restarts the IP router with the current or new configuration.

Status Displays the status of adapter processes.

Talk For configuration (Talk 6 or T 6) or management (Talk 5 or T 5) IP.

For working on a specific processor, you can use the port number, interface number, or port name in OPCON and GWCON environments. The command prompt automatically updates to the processor that you are working on.

Commands that include a port number, interface number, or port name, take you automatically to the appropriate processor.

Some commands include a parameter for entering a port number (for example, BUFFER). If a parameter is entered, the command applies to the specified address. Otherwise, the command applies to the entire processor.

Configuring Resources

For a more detailed description on using these commands, see *Protocol Configuration and Monitoring Reference*, and the *Software User's Guide*.

Step 1 On the **Range XXXX-YYYY *** command line, enter **T 6** for the **Config>** command prompt.

Step 2 Enter **?** to display the list of the available configuration commands.

Exit	Returns to the previous environment level.
List	Displays the configuration and devices list.
Logout	Exits the Telnet session without saving changes (the keyboard shortcut is pressing Ctrl and C together).
Network	Enters the configuration network (port) environment.
Patch	Used only by an IBM representative.
Protocol	For entering a protocol environment (IP, ARP, etc).
Set	For setting parameters.
Unpatch	Used only by an IBM representative.

Step 3 Entering **?** after a command name displays any associated sub-commands.

Pressing Ctrl and *O* together returns you from the environment that you are in back to OPCON (the *RANGE XXXX-YYYY ** command prompt).

Managing Resources

For detailed use of these commands, refer to the *Protocol Configuration and Monitoring Reference* and to the *Software User's Guide*.

Step 1 On the **Range XXXX-YYYY *** command line, enter **T 5** to display the GWCON command prompt (shown as **RANGE XXXX-YYYY** +).

Step 2 Enter **?** to display the list of the available management commands.

Range	For other adapter range addresses.
Buffer	Displays the interface buffer size and utilization.
Clear	For clearing interface statistics.
Configuration	Displays adapter protocol and interface configuration.
Disable	Disables adapter interfaces.
Error	Displays interface error statistics.
Interface	Displays interface statistics.

Logout	Exits the Telnet session without saving changes (the keyboard shortcut is pressing Ctrl and C together).
Memory	Displays memory information.
Network	For entering a network (or port) environment.
Protocol	For entering a protocol environment.
Queue	Displays interface queue length.
Statistics	Displays interface traffic.
Test	For enabling or verifying an adapter interface.
Uptime	Display the time statistics of an adapter.
Debug	Used by an IBM representative only.
Phdump	Used by an IBM representative only.
Trcon	Used by an IBM representative only.
Trcoff	Used by an IBM representative only.

Step 3 Enter **?** after a command name to display any available associated sub-commands.

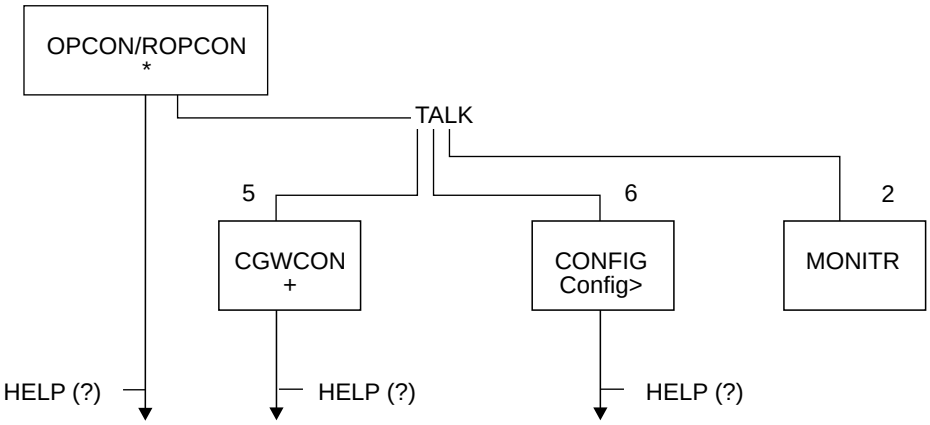
Pressing Ctrl and *O* together returns you from the environment that you are in back to OPCON (the *RANGE XXXX-YYYY **</u> command prompt).

Working with MAE Management

The Multiaccess Enclosure (MAE) is an extension of a communication controller, and effectively acts as a super processor. The MAE houses eight adapter slots that extend the routing capacities of existing networks.

This section is taken from the *Nways Multiprotocol Access Services Software User's Guide*, SC30-3886. For more details refer to this manual.

Navigating in the MAE Environment



Legend:

OPCON (operator console) - Operates as the main control program.
ROPCON (remote operator console) - OPCON service for remotely connected consoles.
CGWCON (gateway console) - Status and statistics on router hardware and software.
CONFIG - Online control of various configuration parameters.
MONITR - Receives messages from Event Logging System (ELS) and the operating system.

Figure 10-3. Multiaccess Enclosure Environment

At the OPCON command prompt (shown as *****), enter **?** to display the available OPCON commands.

Diags Displays the diagnostic main menu.

Divert Sends output from a specified process to a selected terminal.

Flush Clears the output buffers of the MONITR process.

Halt Suspends the output of a specified process, until **divert** , **flush** or **talk** OPCON commands are issued.

Intercept Changes default OPCON intercept key combination Ctrl and P.

Logout Terminates the current remote console session.

Memory Displays information on global memory usage by the router.

Reload Reboots the router by loading a new copy of the router software.

Status Displays information about router processes.

Talk Connects to another process, for example, GWCON, MONITR, or CONFIG.

Telnet Remote attachment to another router.

Configuring Resources

Step 1 At the ***** OPCON command line, enter **T 6** to access the **Config**> command prompt.

Step 2 Enter **?** to display a list of available configuration commands.

Add Adds an interface to the configuration or user-access.

Boot Enters the boot CONFIG command environment.

Change Modifies a configuration interface, user password, or user information.

Clear Deletes router configuration information from non-volatile configuration memory.

Delete Removes an interface from the list of devices stored in the configuration, or removes a user.

Disable Prevents login prompts from a remote console.

Enable Allows login from a remote console, and enables specified interface.

Event Enters the Event Logging System (ELS) environment.

Feature Accesses configuration commands for specific router features other than the protocol and network interface configuration processes.

List Displays configuration information for all network interfaces, or configuration information for the router.

Network Enters the network interface configuration environment for supported networks.

Patch Modifies the router global configuration.

Protocol Enters the configuration environment for the protocol software installed in the router.

Qconfig Initiates the Quick Configuration process.

Set Configures various system-wide parameters.

Time Set the MAE system clock and date, and displays the values on the user console.

Unpatch Restores default values from variables entered with the **Patch** command.

Update Updates the configuration memory at new software installation.

Step 3 Entering **?** after a command name allows you to display the associated sub-commands (when available).

Pressing 

and *O* together returns you from the environment that you are in back to OPCON (the *RANGE XXXX-YYYY ** command prompt).

Managing Resources

Step 1 On the OPCON ***** command line. enter **T 5** to display the GWCON command prompt +.

Step 2 Enter **?** to display a list of management commands.

Buffer Displays information on the packet buffers of each interface.

Clear Discards statistical information on router network interfaces.

Configuration	Displays information on protocols and network interfaces.
Disable	Makes the network interface unavailable by taking it off-line.
Error	Displays network error statistics.
Event	Accesses the console environment Event Logging System (ELS).
Feature	Console commands for specific MAE features, eternal to protocol and network interface console processes.
Interface	Statistic displays on network interfaces.
Memory	Display of the current CPU memory usage in bytes, the number of buffers, and the packet sizes.
Network	Records the console environment of supported networks.
Protocol	Instructs the router software to implement the network protocols of your router.
Queue	Statistics on queue information of specified interfaces.
Statistics	Statistics on network software.
Test	Verifies an interface, or enables an interface previously disabled (see the **Disable** command).

Step 3 Enter **?** after a command name to display any available associated sub-commands.

Pressing 

and *O* together returns you from the environment that you are in back to OPCON (the *RANGE XXXX-YYYY ** command prompt).

MONITR Process

The MONITR process displays the activity inside the router and the network. To access MONITR from OPCON, type **T 2**.

Appendix A. 3745 Operator Control Panel

Notes:

The control panel display should not appear as totally blank. If it is, or if you suspect a problem on the control panel, contact the person in charge of 3745 problem analysis (see page 1-8).

Take a moment to review the reference card in the diskette storage compartment to the left of the control panel.

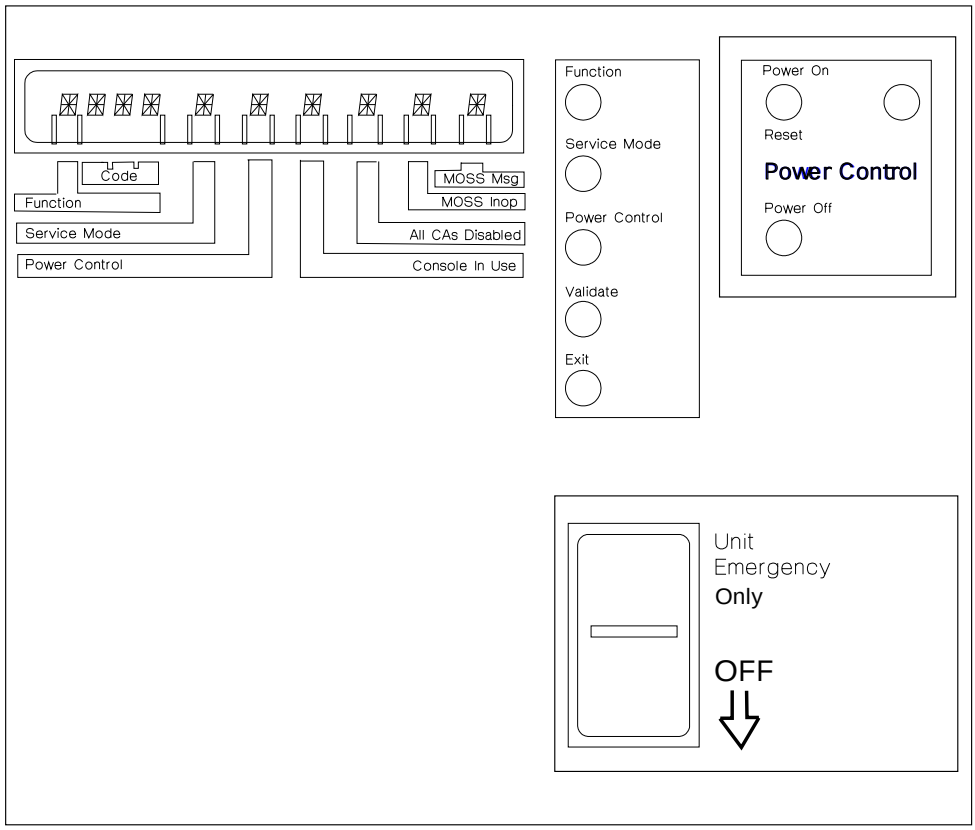


Figure A-1. 3745 Control Panel

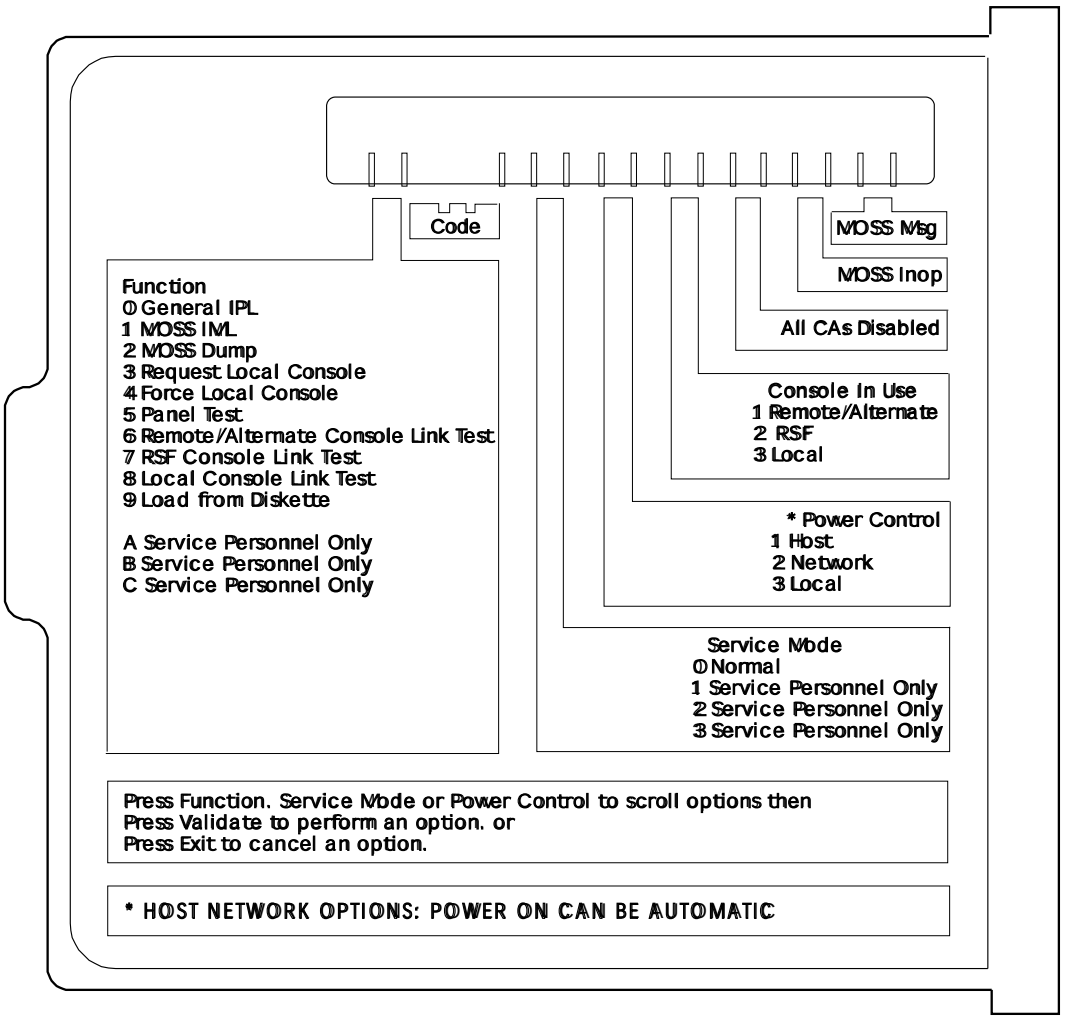


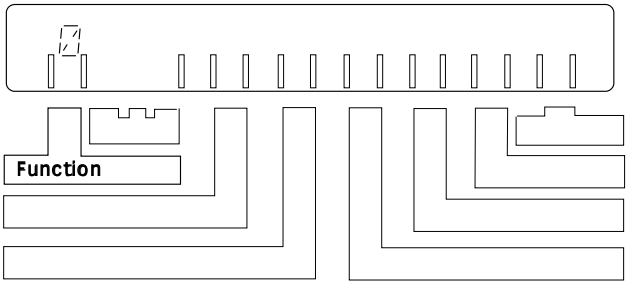
Figure A-2. 3745 Control Panel Reference Card

Function Display

Attention

The same control panel numbers on the 3745 and 3746-900 do not always share the same function.

The display at the top shows the number of the function that you have selected.



To select the number for a function:

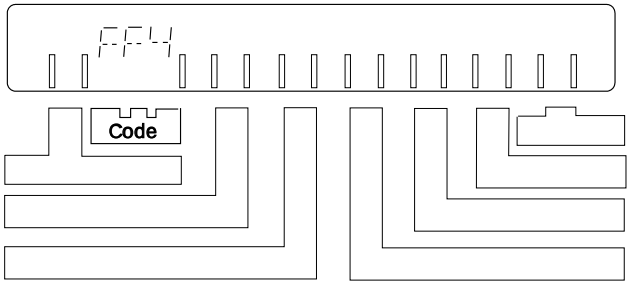
1. Press **Function** repeatedly until the number that you want displays.
2. Press **Validate**.

Function Numbers

The following is a list of numbers and their corresponding functions:

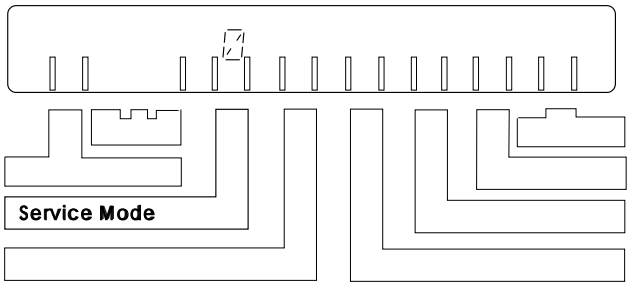
	To IPL the 3745.
	To IML the MOSS.
	To dump the MOSS to disk.
	Reserved.
	Reserved.
	To test the panel (see the *Problem Determination Guide*, SA33-0096).
	Reserved. Code 09E is displayed.
	Reserved. Code 09E is displayed.
	Reserved. Code 09E is displayed.
	To IPL the 3745 from the diskette.
, , or	For Service representatives only.

Code Display



Three character hexadecimal codes display in the main control panel display above the **Code** button. For an explanation of these codes, see page A-9.

Service Mode Display



The number in the display above the **Service Mode** button indicates the service mode of the controller.

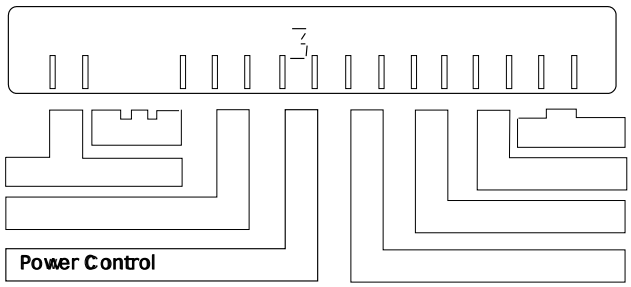
The numbers and their corresponding functions are as follows:

	Customer mode.
, , or	Service representative only.

Note: If is not displayed, follow these instructions:

- Press **Service Mode** repeatedly until displays.
- Press **Validate**.
- IML the MOSS from the control panel as described on page 8-4.

Power Control Display



The number in the display above the **Power Control** button indicates the power control mode of the controller. To select a number:

- Press **Power Control** until the number that you want displays.
- Press **Validate**.

The numbers and their corresponding functions are as follows:

1 (HOST) The 3745 is activated or deactivated from the host. This means that if ac power is lost and then restored, the host will initiate an automatic restart.

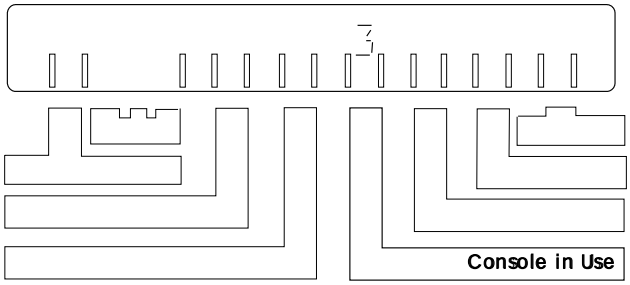
2 (NETWORK) The 3745 is activated by one of the following:

- From the control panel (**Power On Reset** pushbutton).
- By a scheduled power ON.

The 3745 is deactivated by a remote power OFF (RPO) command. If power is lost then restored, an automatic restart is performed.

3 (LOCAL) The 3745 is activated or deactivated from the control panel. If power is lost then restored, an automatic restart is not initiated.

Console in Use Display

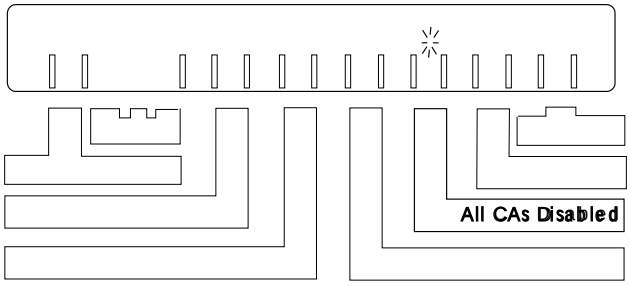


The number in the display above the **Console in Use** button indicates the logged on operator console. The numbers and their corresponding meanings are as follows:

2	The MOSS console is logged on using the service processor or DCAF.
1, 2	No longer available for 3745 Models A.

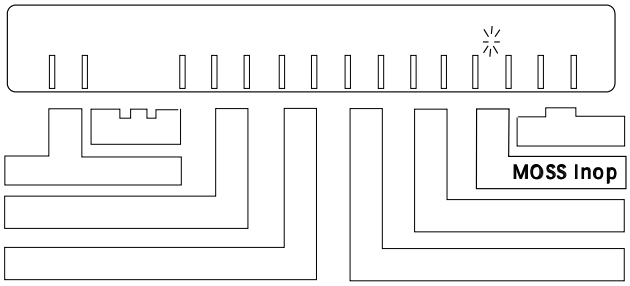
Note: If the display is blank, this indicates that the MOSS console has not been logged on by the service processor or by DCAF.

All 3745 CAs Disabled Indicator



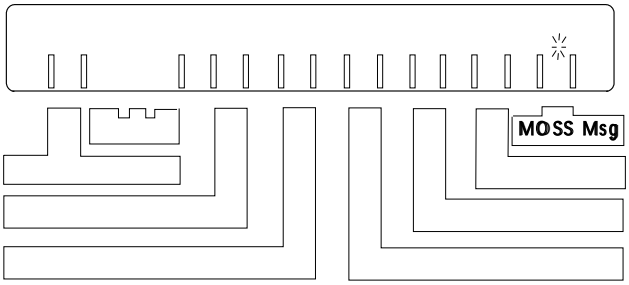
An indicator light in the main control panel display above the **All CAs Disabled** button indicates that all the channel adapters are disabled. If there is no indicator light, this means that at least one channel adapter is enabled.

MOSS Inop Indicator



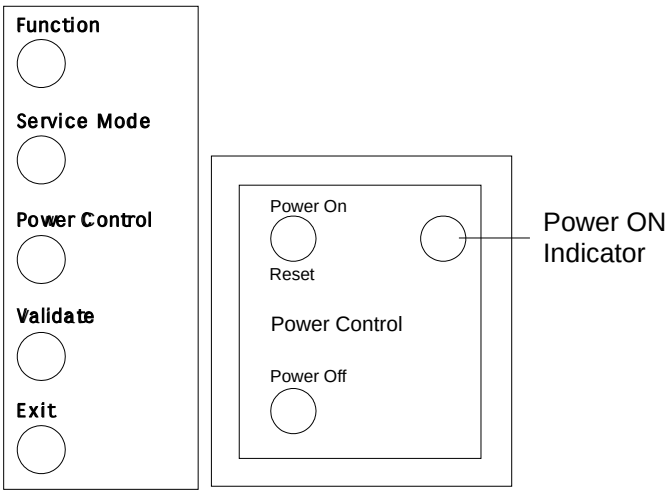
An indicator light in the main control panel above the **MOSS Inop** button indicates that the MOSS is not working. If the indicator light appears, see the *Problem Determination Guide*. Also, if 1 displays, contact the person in charge of 3745 problem analysis (see page 1-8).

MOSS Message Indicator



An indicator light in the main control panel above the **MOSS Msg** button generates an alarm. If this indicator light appears, see the online *Problem Analysis Guide*.

Pushbuttons and Power ON Indicator



Function
Selects a control panel function (see page A-3).

Service Mode
Selects a service mode (see page A-4).

Power Control
Selects a power control mode (see page A-5).

Validate
Performs or validates the selected function, service mode, or power control mode.

Exit
Cancels an invalidated function, service mode, or power control option.

Power On Reset
Reactivates the 3745.

Power Off
Deactivates the 3745. If you have to power ON again, wait 10 seconds before pressing **Power On Reset.**

Power ON Indicator
Indicates that the 3745 is powered ON.

Stop Switch

The stop switch is located on the main 3745 control panel.

Attention

Even if the stop switch is in the OFF position, the primary power box is still connected to the electric current.

To disconnect completely, do the following:

1. Turn off the main circuit breaker.
2. Remove the power plugs from supply outlets.

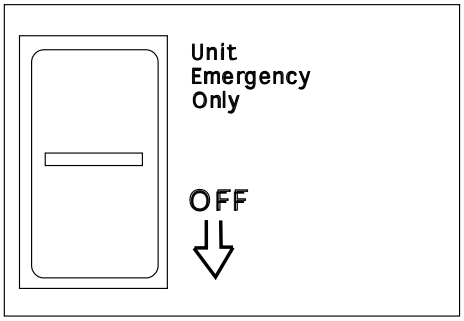


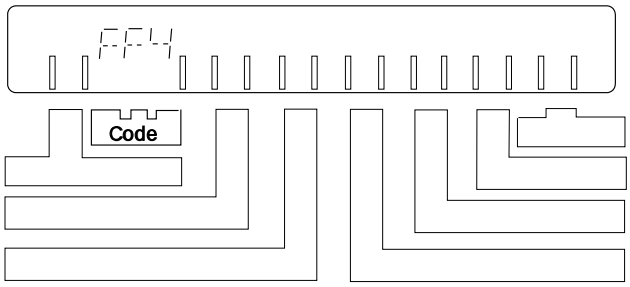
Figure A-3. IBM 3745 Control Panel

Use the OFF switch only in an emergency. The OFF switch immediately forces the 3745 and 3746-900 to power OFF. If you use this switch, only an IBM service representative is authorized to restart the controller.

Hexadecimal Codes

The hexadecimal codes on the control panel indicate the following:

- The progress of a function (for example, IPL).
- The status of 3745 components.
- An error, indicated by a blinking code.



The following list show the codes for normal operating conditions. Other codes, indicating the progress of a function, may display for a short while. However, if a code remains displayed for more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).

Note: The online *Problem Analysis Guide* gives a complete explanation of the hexadecimal codes for Models A.

The following hexadecimal codes display during a normal IPL for a 3745.

Code	Explanation and Action
000	A successful IPL for the 3745. The control program is loaded and MOSS is online.
09E	You selected a reserved function with the control panel function button. The controller does not respond to this selection.
DFC	Wrong diskette in drive. Insert the correct primary diskette. Restart IPL in diskette mode.
F0E	MOSS IML successfully completed. MOSS is alone.
F0F	MOSS IML successfully completed. CCU is running and MOSS is offline or IPL complete in diskette mode.
F28	Failed diskette. Retry with another diskette. If you do not have other diskettes for saving data, contact the person in charge of 3745 problem analysis (see page 1-8).
FD6	Control program loading from disk in progress. If this code displays for more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FD7	Control program dump to disk in progress. If this code remains more than 4 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FD8	Control program save on disk in progress. If this code remains more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FF0	Start of 3745 IPL. If this code remains more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FF1	3745 IPL phase one. If this code remains more than 5 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FF2	3745 IPL phase two. If this code remains more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).
FF3	3745 IPL phase three. If this code remains more than 5 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).

FF4 3745 IPL phase four. The control program will be loaded from the host.

FF5 For a channel-attached 3745, control program(s) being loaded. If this code remains more than 2 minutes, contact the person in charge of 3745 problem analysis (see page 1-8).

FF6 For a link-attached 3745, control programs being loaded. For a link-attached 3745, the time of the code display depends on the size of the load module and the speed of the link.

FF7 The control program is loaded.

FFB 3745 IPL canceled on operator request.

FFE 3745 IPL complete with non-disruptive errors. If this recurs, contact the person in charge of 3745 problem analysis (see page 1-8).

Appendix B. 3746-900 Operator Control Panel

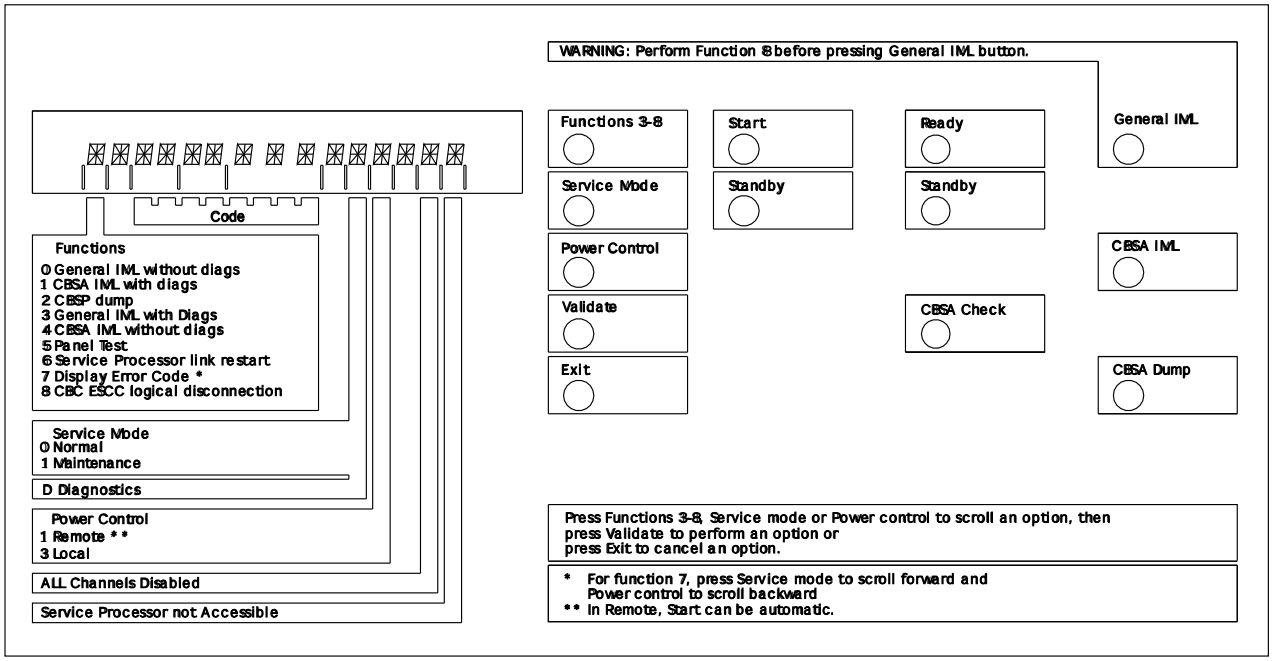
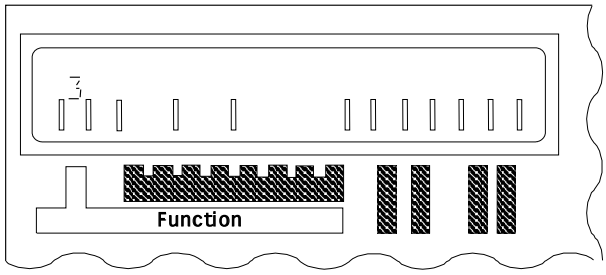


Figure B-1. 3746-900 Control Panel

Function Display



Note

The same control panel numbers on the 3746-900 and the 3745 do not always share the same function.

Specific Button Selections

Functions 0, 1, and 2 are enabled by the **Function** button on the display panel, and also display automatically when you press the corresponding control panel buttons (**General IML**, **CBSA IML**, and **CBSP Dump**). Functions 3 to 8 are also enabled by the **Function** button on the display panel.

0 - General IML

Resets and performs an IML for all 3746-900 processors.

Attention

You must perform function "8 - CBC/ESCC logical disconnection" on page B-3 before running function 0.

Use this function after one of the following:

- Power ON.
- In an emergency, when the MOSS-E function **Perform a general IML** does not run. For more information, see "Activation and IML from the 3746-900 Operator Control Panel" on page 8-10.

1 - CBSA IML with Diags

Runs a diagnostics and IML for the CBSA (Controller Bus and Service Adapter).

Note: Mainly used by an IBM service representative.

2 - CBSP Dump

Transfers a CBSP dump to the MOSS-E on the service processor disk.

Note: Mainly used by the an IBM service representative.

Selections Using the Function Button

To select functions 3-8, perform the following:

1. Press **Function** repeatedly until the number of the function that you want displays on the control panel.
2. Press **Validate** to start the function.

3 - General IML with Diags

Performs an IML and diagnostics for all 3746-900 processors.

Note: Mainly used by an IBM service representative.

4 - CBSA IML

Performs an IML for the CBSA (Controller Bus and Service Adapter).

Note: Mainly used by an IBM service representative.

5 - Panel Test

Runs a diagnostics of the control panel. Before you can use this function, make sure that **Service Mode 1** is selected (see "Service Mode" on page B-3).

Note: Mainly used by an IBM service representative.

6 - Console Link Restart

Re-establishes the link between the 3746-900 and the service processor.

Note: Only used by an IBM service representative.

7 - Display Error Code

Displays error codes.

Note: Only used by an IBM service representative.

8 - CBC/ESCC logical disconnection

Press this before using function 0, **General IML without diags**.

Hexadecimal Codes

Hexadecimal codes display on the control panel during the following processes:

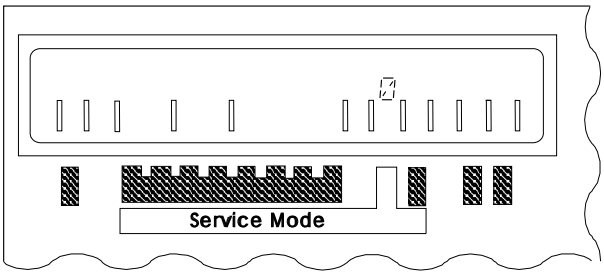
IML and IPL progression codes
: Track the different phases of a process and indicate when a process is complete.

Error codes
: Blink on the display and indicate a problem with normal operations.

Standby codes
: Indicate the status of the machine when it is not totally activated.

More information on hexadecimal codes is contained online, in the *Problem Analysis Guide*.

Service Mode

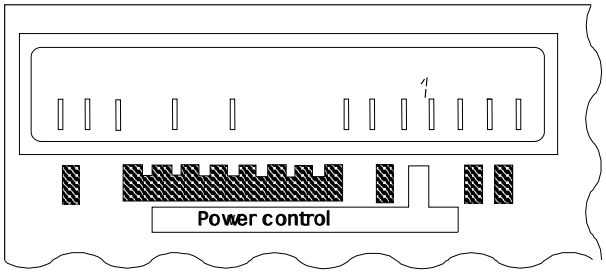


0 - Normal
: The mode for normal operations.

1 - Maintenance
: Used only by an IBM service representative.

D - Diagnostics
: You cannot select this from the control panel. Displays only when certain diagnostics are run by the service representative.

Power Control



1 - Remote

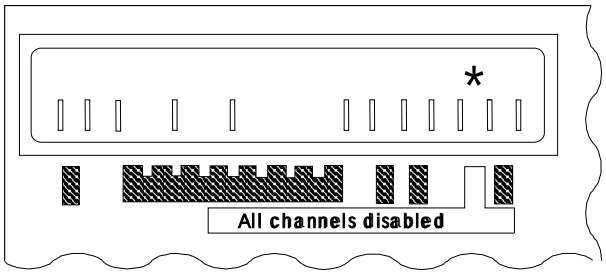
Mode for normal operations. In normal mode, you can perform the following:

- Activate and deactivate the 3746-900 from:
  - Attached host
  - 3745
  - Service processor.
- Automatic power ON restart, and IML if ac power is lost and restored.
- For a remote 3746-900, deactivation from a VTAM remote power OFF command (RPO).

3 - Local

Used only by an IBM service representative.

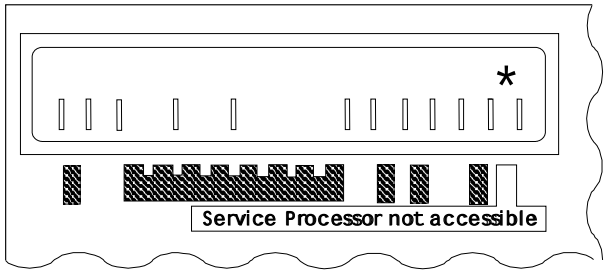
All ESCON Channel Adapters Disabled



The display is blank if at least one channel adapter (CA) is enabled.

***** All CAs are disabled.

Service Processor Inaccessible



The display is blank if the MOSS-E console is accessible.

***** MOSS-E console is inaccessible. This means that the link between the MOSS-E in the service processor and the 3746-900 has failed or was not established. The MOSS-E can run, but it cannot exchange data with the 3746-900.

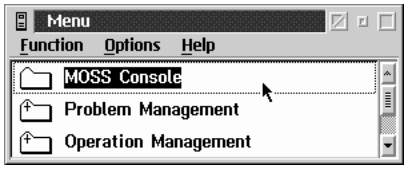
Other codes briefly display during power ON, IML or when there is a problem. If you want more details on these characters, see the *Problem Analysis Guide*.

Appendix C. MOSS-E Functions

This appendix describes the menus, tasks, and functions of **Customer Mode** in the service processor for operating the following:

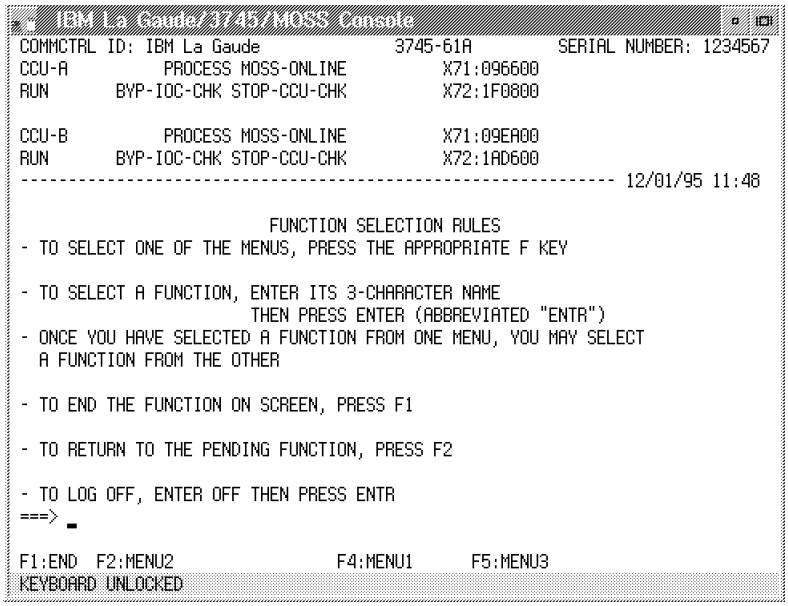
- 3745 Model A
- 3746-900
- Service Processor.

3745 Models A Tasks

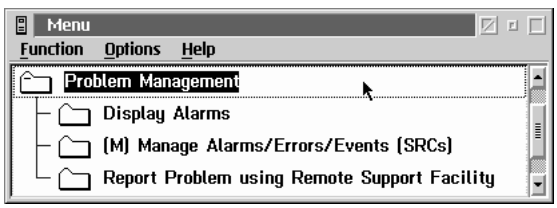


MOSS Console Functions

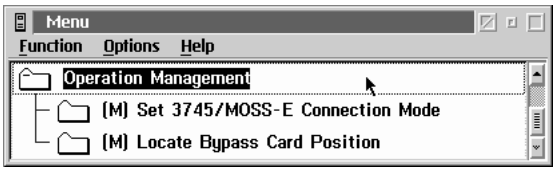
Double-click to display the 3745 MOSS console window.



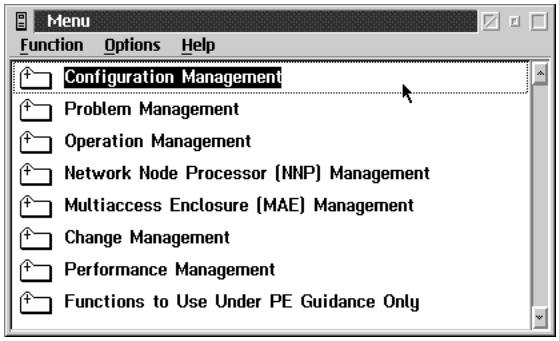
Problem Management Functions



Operation Management Functions

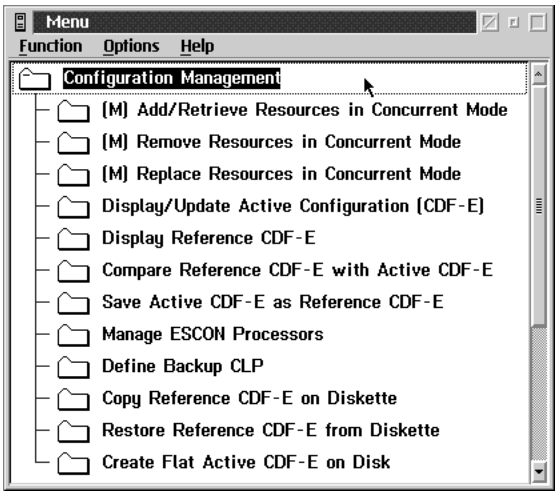


3746-900 Tasks

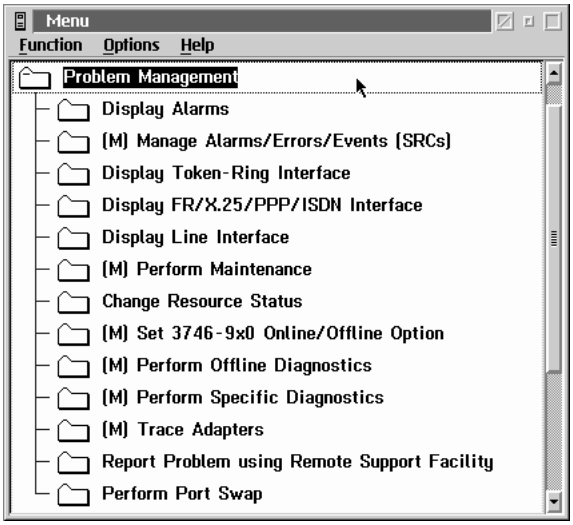


Configuration Management Functions

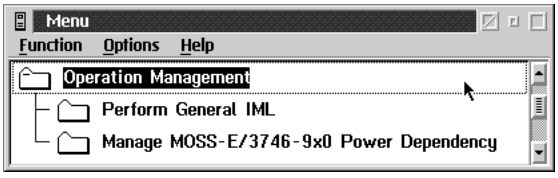
Note: Manage ESCON Processors is unavailable in the 3746-900NN or the 3746-900IP. Use **Network Node Processor (NNP) Management** instead.



Problem Management Functions

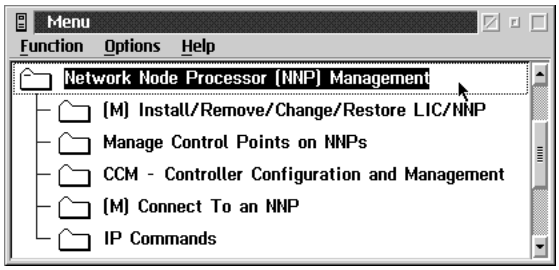


Operation Management Functions

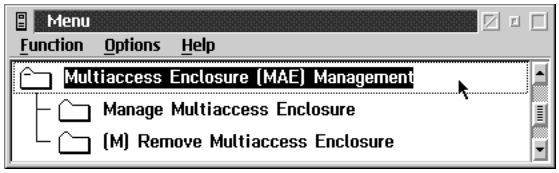


Network Node Processor (NNP) Management Functions

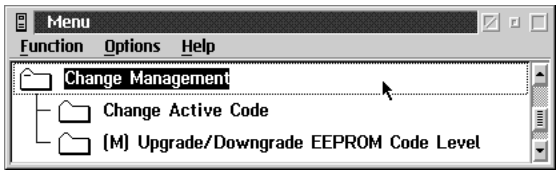
Note: The first function is available for the 3746-900. The other functions are available in the 3746-900NN and 3746-900IP.



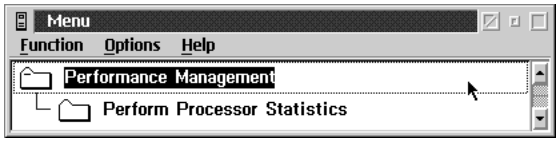
Multiaccess Enclosure (MAE) Management Functions



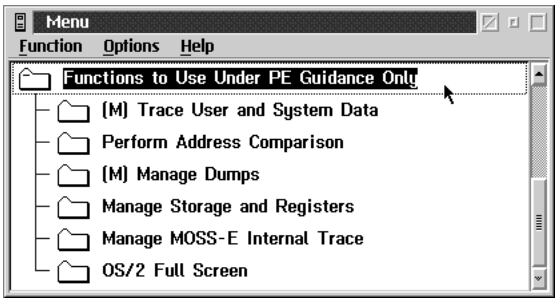
Change Management Functions



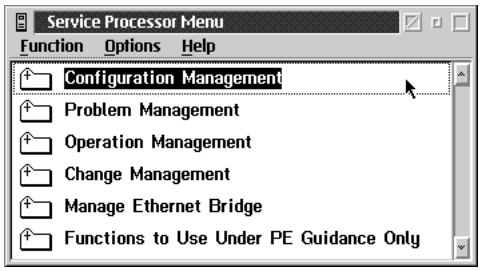
Performance Management Functions



Functions to Use Under PE Guidance Only

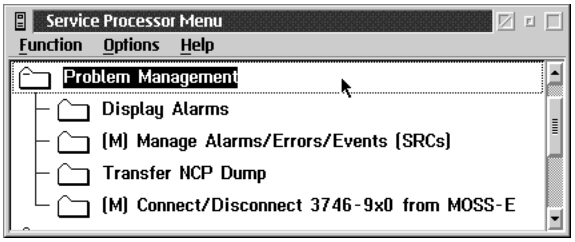


Service Processor Tasks

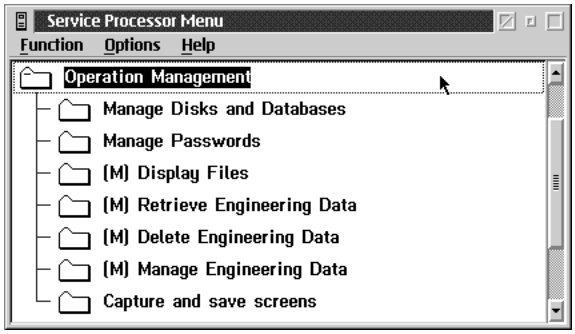


Configuration Management Functions

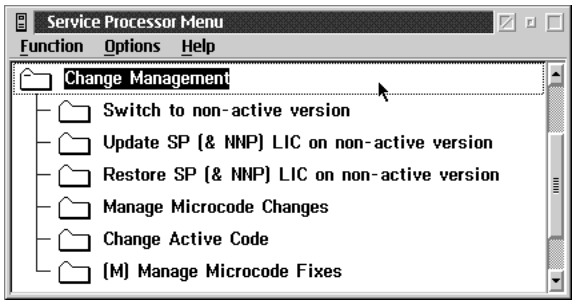
Problem Management Functions



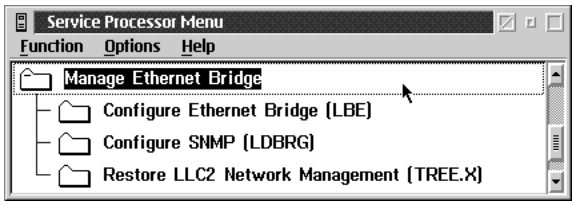
Operation Management Functions



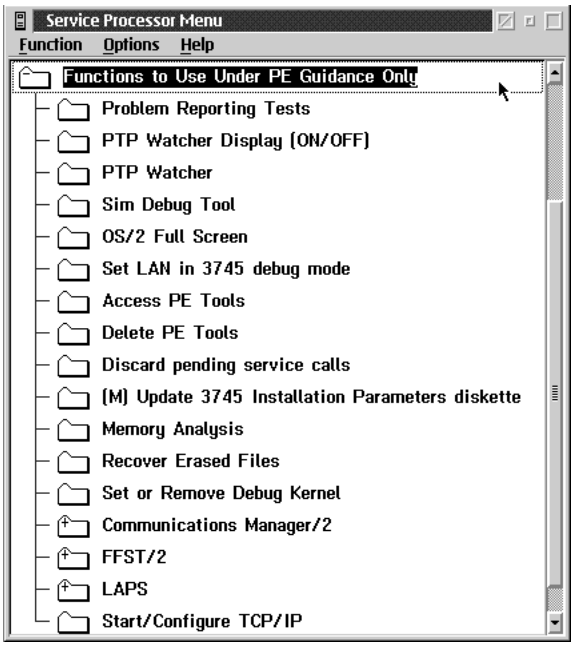
Change Management Functions



Manage Ethernet Bridge Functions



Functions to use Under PE Guidance Only

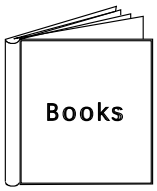


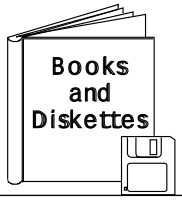
Appendix D. Bibliographies

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

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

This customer documentation has the following formats:

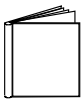




Finding Information

3745 Models A and 3746 Books

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

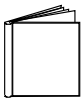
GA33-0092

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

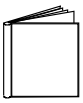
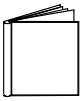
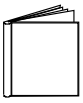
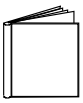
 GA33-0457	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***Models 900 and 950*** ***Planning Guide*** Planning for: • Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
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 D-1 (Page 3 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

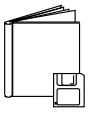
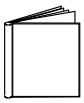
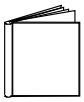
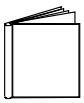
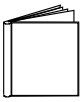
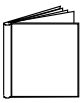
	SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control 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 D-1 (Page 4 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

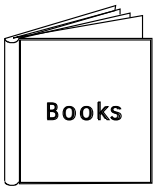
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem 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 D-2. Additional Customer Documentation for the 3745 Models 130 to 17A

This customer documentation has the following format:



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

ac	alternating current
APPN	Advanced Peer-to-Peer Networking
ARC	Active Remote Connector
ARP	Address Resolution Protocol
ASCII	American Standard Code for Information Interchange
ATM	Asynchronous Transfer Mode
BGP	Border Gateway Protocol
CA	Channel Adapter
CB	Circuit Breaker
CBC	Controller Bus Coupler
CBSA	Controller Bus and Service Adapter
CBSP	Controller Bus and Service Processor
CCU	Central Control Unit
CCM	Controller Configuration and Management
CDF-E	Configuration Data File-Extended
CLA	Communication Line Adapter
CLDP	Controller Load/Dump Program
CLP	Communication Line Processor
CP	Control Program (SNA environment)
	Control Point (APPN environment)
CPU	Central Processing Unit
CSR	CCU Selection and Release
DCAF	Distributed Console Access Facility
DLUR	Dependent LU Requester
EGA	ESCON Generation Assistant
ELS	Event Logging System
EPO	External Power ON
ESCC	ESCON Coupler
ESCON	Enterprise System Connection
ESCP	ESCON Processor
FP	Focal Point
GWCON	Gateway Console
HPR	High Performance Routing
IML	Initial Microcode Load
IP	Internet Protocol
IPL	Initial Program Load
ISDN	Integrated Services Digital Network
kbps	kilobits per second
LA	Line Adapter
LAN	Local Area Network
LAPS	LAN Adapter Protocol Support
LCB	Line Connection Box
LCBB	Line Connection Box Base
LCBE	Line Connection Box Expansion
LIC	Line Interface Coupler
	Licensed Internal Code
LIC11	Line Internal Coupler type 11
LU	Logical Unit
MAE	Multiaccess Enclosure
MOSS	Maintenance and Operator Subsystem
MOSS-E	Maintenance and Operator Subsystem - Extended
MSA	Machine Status Area
NCP	Network Control Program
NDF	Network Definition File
NN	Network Node
NNP	Network Node Processor
NPM	NetView Performance Monitor
OPCON	Operator Console
OS	Operating System
OSPF	Open Shortest Path First
PCMCIA	Personal Computer Memory Card International Association
PE	Product Engineer
PPP	Point-to-Point Protocol
PU	Physical Unit
RETAIN	Remote Technical Assistance Information Network
RIP	Routing Information Protocol
ROPCON	Remote Operator Console
RPO	Remote Power OFF
RSF	Remote Support Facility
SDLC	Synchronous Data Link Control
SNA	Systems Network Architecture
SNMP	Simple Network Management Protocol
SPAU	Service Processor Access Unit

TCP/IP Transmission Control Protocol/Internet Protocol

TIC Token-ring Interface Coupler

TRA Token-ring Adapter

TRP Token-ring Processor

URL Uniform Resource Locator

VTAM Virtual Telecommunications Access Method

Glossary

This glossary defines all new terms used in this manual. It also includes terms and definitions from the *IBM Dictionary of Computing,* SC20-1699.

Address Resolution Protocol (ARP). One of the protocols of TCP/IP for dynamically mapping routes between Internet addresses, baseband adapter addresses, X.25 addresses, and token-ring adapter addresses on a local area network (LAN).

Advanced Peer-to-Peer Networking (APPN). Data communication support that routes data in a network between two or more advanced program-to-program communications (APPC) systems that do not need to be adjacent.

alarm. A message sent to the MOSS operator console. In case of an error, a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error, a reference code identifies the nature of the error.

central control unit (CCU). In the 3745, the controller hardware unit that contains the circuits and data flow paths needed to execute instructions and to control its storage and the attached adapters.

channel adapter (CA). A communication controller hardware unit used to attach the controller to a host processor.

channel interface. The interface between the controller and the host processors.

circuit breaker (CB). A switch that automatically interrupts an electric circuit because of an abnormal condition.

communication controller. A communication control unit that is controlled by a program stored and executed in the unit. Examples are the IBM 3705, IBM 3725/3726, IBM 3720, and IBM 3745 models 130, 150, 170, 21A, 31A, 41A, and 61A. More recent in this family are the IBM 3746 models 900 and 950.

configuration data file (CDF). A MOSS file that contains a description of all the hardware features (presence, type, address, and characteristics) of the 3745 controller.

configuration data file-extended (CDF-E). A MOSS-E file that contains a description of all the hardware features (presence, type, address, and characteristics) of the 3746 Model 900 controller.

control panel. A panel that contains switches and indicators for the customer's operator and service personnel.

control point (CP). A collection of tasks, which provide directory and route selection functions for APPN. An end node control point provides its own configuration, session, and management services with assistance from the control point in its serving network node. A network node control point provides session and routing service.

control program. A computer program designed to schedule and to supervise the execution of programs of the controller.

diskette. For IBM 3745 operator control panel, a thin, flexible magnetic disk, and its protective jacket, that records diagnostics, microcode, and files. Diskette size is 5"25. For service processor the diskette size is 3"5.

diskette drive. A mechanism that reads and writes diskettes.

Distributed Console Access Facility (DCAF). An IBM licensed program that enables a user at one workstation to remotely control, monitor, and operate another workstation.

emulation program. A program that enables a system or a device to operate as if it were a different system or device.

Enterprise System Connection (ESCON). A set of IBM products and services that combines fiber optic technology with I/O architecture. ESCON provides a highly flexible channel interconnection environment with an extended distance range.

fallback. In twin backup mode, the traffic of a failing CCU is redirected to the second CCU.

In standby mode, the traffic of a failing CCU is redirected to the standby CCU after it is IPLed.

focal point (FP). An APPN network node that receives alerts. A focal point allows a customer to centrally manage a network.

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host*.

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to start operation.

integrated services digital network (ISDN). A digital end-to-end telecommunication network that supports multiple services including, but not limited to, voice and data.

Internet Protocol (IP). In TCP/IP, a protocol that routes data from its source to its destination in an Internet environment.

LIC unit. For IBM 3745, a line interface coupler unit (LIU) consisting of:

- One power supply (PS) associated with
- Two line interface boards (LIBs), housing
- Multiplex cards (DMUX, SMUXA, or SMUXB), and
- Line interface coupler cards (LICs).

line. See *transmission line*.

line adapter (LA). The part of the TSS, HPTSS, ESS, or TRSS that scans and controls the transmission lines. Also called *scanner* or *communication scanner*.

- For TSS, the line adapters are low-speed scanners (LSSs).
- For HPTSS, the line adapters are high-speed scanners (HSSs).
- For ESS, the line adapters are Ethernet LAN adapters (ELA).
- For TRSS, the line adapters are token-ring adapters (TRAs).

line interface coupler (LIC). A circuit that attaches up to four transmission cables to the controller (from DTEs, DCEs, or telecommunication lines).

local area network (LAN). A computer network located on a user's premises within a limited geographical area. Communication within a LAN is not subject to external regulation; however, communication across the LAN boundary may be subject to some form of regulation.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network in order to communicate with another end user and through which the end user accesses the functions provided by system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other logical units.

Maintenance and Operator Sub-System (MOSS). The part of the controller that provides operating and servicing facilities to the user's operator and the IBM service representative.

Maintenance and Operator Sub-System-Extended (MOSS-E). The licensed internal code loaded on the service processor fixed disk to provide maintenance and operator facilities to the user and IBM service representative.

microcode. A program that is loaded in a processor (for example, the MOSS processor) to replace a hardware function. The microcode is not accessible to the customer.

Multiaccess Enclosure (MAE). A super processor for the 3746-9x0 with a direct hardware attachment to the controller connectivity switch. The MAE houses eight adapter slots with up to eight ports per adapter, and handles multiple traffic routing for TCP/IP, SNA/DLUR, APPN, and HPR protocols.

NetView Performance Monitor (NPM). An IBM licensed program that collects, monitors, analyses, and displays data relevant to the performance of a VTAM telecommunication network. It runs as an on-line VTAM application program.

network. See *user application network*.

Network Control Program (NCP). An IBM licensed program that provides communication controllers supports for single-domain, multiple domain, and interconnected network capability.

offline. Status of MOSS when the later is not connected to the CCU control program.

remote service facility (RSF). RSF provides IBM maintenance assistance when requested via the public switched network. It is connected to the IBM RETAIN database system.

single. Configuration with one CCU.

switchback. Operation to reset a twin backup configuration from fallback to initial state.

Synchronous Data Link Control (SDLC). A discipline conforming to subsets of the Advanced Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-level Data Link Control (HDLC) of the International Organization for Standardization (IOS), for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop.

time out. The interval allotted for certain operations to occur.

token-ring adapter (TRA). Line adapter for IBM Token-Ring Network, composed of one token-ring multiplexor card (TRM), and two token-ring interface couplers (TICs).

twin. 3745 controller configuration with two CCUs.

twin-dual. Mode of operation with two CCUs operating simultaneously in two distinct subareas.

twin-backup. Mode of operation identical to twin-dual with fallback capability.

twin-standby. Mode of operation with one CCU active and the other in standby, ready to take over.

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Readers' Comments — We'd Like to Hear from You

3745 Communication Controller Models A
3746 Nways Multiprotocol Controller Model 900
Basic Operations Guide

Publication No. SA33-0177-05

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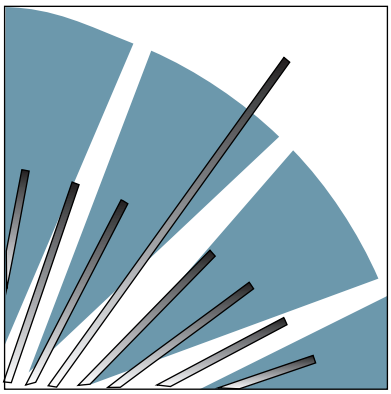

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