3745 Communication Controller Model A
3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:

ESCON Channels

GA27-4237-01

3745 Communication Controller Model A
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Note!

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

Second Edition (September 2000)

This edition applies to the 3745 Communication Controller Models A and 3746 Nways® Multiprotocol Controller Models 900 and 950.

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For more information, refer to:

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

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

What Is New in This Book

This book has been revised to include the increase of the Maximum Transmission Unit (MTU) for IP traffic over ESCON channels from 4 KB to 8 KB.

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

About this Guide

The *3745/3746 Planning Series* is designed to help you plan the installation and configuration of the IBM 3745 Communication Controller Models A and IBM 3746 Nways® Multiprotocol Controller Models 900 and 950. The *Planning Series* also describes the information you must gather to install and integrate 3746 Controllers into Advanced Peer-to-Peer Networking®/High-Performance Routing (APPN®/HPR) and Internet Protocol (IP) environments.

The *3745/3746 Planning Series* consists of a set of Planning Guides that replace, update and obsolete the *Planning Guide*.

Important:

1. If you already use the existing *Planning Guide*, IBM recommends that you read the new *Planning Series* to learn about new features and to become familiar with the new structure in which planning information is presented.
2. When planning the installation and configuration of 3746 controllers you must use the *IBM 3745 Communication Controller Models A, IBM 3746 Nways Multiprotocol Controller, Models 900 and 950: Overview* along with the *3745/3746 Planning Series* to have all required information.
3. The 3745/3746 documentation is updated periodically in response to your needs and to reflect product evolutions. Because of the time delay necessary to update hard media (books that are printed and available on CD-ROM), it is highly recommended that you check periodically the IBM 3745/3746 documentation on the Web for the latest versions of the documents (see “Additional Information on the Web” on page xix).

Refer to the appropriate Planning Guide for the parameters to be customized for the installation and operation of:

- 3745 Communication Controller Models A
- 3746 Nways Multiprotocol Controller Models 900 and 950
- Network Node Processor (NNP)
- Multiaccess Enclosure (MAE)
- Service processor
- Distributed Console Access Facility (DCAF) and TME® 10 remote consoles
- Java™ Console
- Network management

When you define 3746 resources controlled by NCP, record the information in the worksheets provided for the Controller Configuration and Management application.

The *3745/3746 Planning Series* consists of the following planning guides:

Overview, Installation, and Integration

Starts with a general overview of 3746 planning and then explains the various 3745 and 3746 installation and upgrade scenarios.

The guide also explains the options available for the basic integration of the controller and its service processor into your network. There are MOSS-E worksheets for these options, which are to be filled out for the IBM service representative who does the actual controller installation or upgrade. The appendixes:

- Shows the panels of the MOSS-E service processor customization function
- Support offered by each level of the 3746 Licensed Internal Code.

ESCON Channels

After an overview of ESCON® and the adapters, the guide explains the configuration and tuning. This can be done with either the ESCON Generation Assistant (EGA) tool or the Controller Configuration Management (CCM) tool.

The guide also includes examples of various types of ESCON configurations.

Note: For information about using ESCON adapters on the MAE, refer to the *Multiaccess Enclosure Planning* guide.

Token Ring and Ethernet

Helps you with the configuration and definitions of your 3746 Network Node token-ring adapters (TRAs) for APPN/HPR-, IP-, and NCP-controlled traffic.

There are MOSS-E worksheets for the token-ring information needed by the IBM service representative to install or update your machine.

Although no longer available from IBM, the guide explains 3746 Ethernet support and Ethernet adapter configuration.

The token-ring (IEEE 802.5) and Ethernet (IEEE 802.3) standards are discussed in the appendixes.

Note: For Multiaccess Enclosure Ethernet information, refer to the *Multiaccess Enclosure Planning* guide.

Serial Line Adapters

Starts with an overview of the serial line adapters. Next X.25, frame-relay, PPP, and SDLC support are covered.

The two ways that the 3746 supports ISDN (LIC16 adapter[1] and terminal adapters) are explained, including how ISDN lines can be used as backups for other types of lines.

There is an appendix that gives the frame-relay support in each NCP level since frame relay was introduced in NCP Version 6.

Note: For Multiaccess Enclosure ISDN information, refer to the *Multiaccess Enclosure Planning* guide.

Physical Planning

Gives information to help you plan the physical site used by the 3745/3746s frames, service processor, and network node processor: the physical dimensions, electrical characteristics, and so on. It also gives this information for the various components of the 3745/3646, such as the Multiaccess Enclosure, Controller Extension, LICs, LCBs, ARCs, and so on.

The cable descriptions include feature codes (FCs) and part numbers used when ordering them.

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[1] No longer being manufactured

The guide includes and explains the controller installation sheets, which show what IBM has installed on your machines.

Plugging sheets for keeping track of your installed LICs, ARCs, and cables are provided along with examples and explanations of their use.

Note: This type of information for the Multiaccess Enclosure is in the *Multiaccess Enclosure Planning* guide.

Management Planning

Starts with a management overview covering:

- Tivoli® NetView®
- Performance Management
- Service processor
- Network Node Processor
- APPN Topology Integrator

Then there are chapters about:

- APPN/HPR Network Node management
- NetView Performance Monitor
- Remote console support
- IBM Remote Support Facility
- 3746 IP router management
- Multiaccess Enclosure APPN/HPR Network Node management
- X.25 network

There are MOSS-E worksheets for the network management parameters needed by the IBM service representative to install or upgrade your machine.

The guide explains the use of the MOSS-E Service Processor Customization.

There is an example of ESCON management information base (MIB) definitions.

Note: For Multiaccess Enclosure management information, refer to the *Multiaccess Enclosure Planning* guide.

Multiaccess Enclosure Planning

Provides information about the Multiaccess Enclosure and its adapters (ATM, ESCON, and so on) and how to configure them.

For information about:

- Multiaccess Enclosure APPN/HPR Network Node management, refer to the *3745/3746 Planning Series: Management Planning*
- Physical site planning and the cables, refer to the *3745/3746 Planning Series: Physical Planning*

Protocols Description

Is an in depth description of these protocols used by the 3746:

- APPN/HPR
- IP

The detailed discussions of how the 3746 and Multiaccess Enclosure support these protocols help you understand the purpose of the protocol parameter definitions and what types of information are needed for the most efficient operation of your 3745/3746-connected networks.

CCM Planning Worksheets, (Online)

These example worksheets for the 3746 and MAE can be used to plan the actual definitions of the many CCM parameters you need to configure your 3746.

This guides is available (in PDF format) on the Web at

`http://www.ibm.com/networking/did/3746bks.html#Customer`

Who Should Use the 3745/3746 Planning Series

The *3745/3746 Planning Series* is intended for network planners, network specialists, and system programmers responsible for collecting the information required for the installation and network integration of 3745 Communication Controller Models A and 3746 Expansion Unit Model 900 in an SNA environment, as well as the 3746-950 and 3746-900 as APPN/HPR network nodes and IP routers.

Where to Find More Information

While planning a migration, you must use the following documents in addition to the *3745/3746 Planning Series* guides:

- IBM *3745 Communication Controller Models A and 170, 3746 Nways Multiprotocol Controller Models 900 and 950: Overview*, GA33-0180
- IBM *3745 Communication Controller All Models, 3746 Nways Multiprotocol Controller Model 900: Console Setup Guide*, SA33-0158 (This guide contains information about remote console access to 3745/3746-900s via an SNA/subarea, APPN, or TCP/IP path and using a modem.)

Also, you may need to use the following additional documents:

- IBM *3746 Nways Multiprotocol Controller Model 900 and 950: Controller Configuration and Management: User's Guide*, SH11-3081 (IBM recommends that you prepare controller definitions before installing a 3746. To obtain a stand-alone version of the Controller Configuration and Management that runs on an OS/2® workstation, contact your IBM marketing representative.)
- *3746 Nways Multiprotocol Controller Model 950: User's Guide*, SA33-0356. (This guide contains information about routine operations, installing and testing the communication line adapters, service processor, and remote consoles.)
- *Planning for Integrated Networks*.

Be sure to use the latest editions of these documents. This will ensure that you have up-to-date and complete information about the 3746 controllers.

The following *IBM International Technical Support Organization* redbooks provide useful information about 3746 implementation:

- *APPN Architecture and Product Implementations Tutorial*, GG24-3669
- *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: APPN Implementation Guide*, GG24-2536
- *Subarea Network to APPN Network Migration Guide*, SG24-4656
- *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: IP Implementation Guide*, SG24-4845 (an IBM redbook).

Be sure to see the other relevant documents listed in the bibliography at the back of this guide.

Additional Information on the Web

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

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

The latest versions of the *Planning Series* and other 3745/3746 documentation are available in PDF format at:

```
http://www.ibm.com/networking/did/3746bks.html#Customer
```

CD-ROM

Starting with engineering change F12380, the Licensed Internal Code (LIC) is shipped on a CD-ROM. The complete 3745/3746 documentation set is also included on the CD-ROM.

Examples: 3745 Models A and 3746 *Planning Series*, 3746 NNP and Service Processor Installation and Maintenance Guides, CCM *User's Guide*, 3746-950 *User's Guide*, and others. See the bibliography for the complete name and form number of the books.

3745/3746 documentation is in PDF format. Acrobat Reader for OS/2® is included on the CD-ROM to allow you to read the .PDF files and print all or part of a book.

Accessing CD-ROM Information

To access the CD-ROM from a service processor equipped with a CD-ROM drive, do the following:

Step 1. Install the CD-ROM in the service processor CD-ROM drive.

Step 2. In the MOSS-E main panel, open the **View** menu and select **Information**.

Step 3. Double-click **CD-ROM documentation**. Your browser automatically opens and displays the documentation home page.

Step 4. Click any highlighted text (blue and underlined) to go to the material that interests you:

a. Click **Documentation** to access 3745/3746 books.

b. Click the icon marked PDF that corresponds to the item that interests you.

The Acrobat Reader automatically opens and displays the file in the full panel mode. Use the **Page Up** and **Page Down** keys to move through the document.

Press **Esc** to display the Reader menus that allow you to print all or part of the file.

When you close the Acrobat Reader, you return to the browser.

When you close the browser, you return to the MOSS-E Documentation menu.

Each document file has one or more of the following identifiers:

- Date
- Form number
- Engineering change level
- Revision code.

Check these identifiers on future releases of the CD-ROM to see if the documents that you use have been updated.

How to Use the 3745/3746 Planning Series

Your Responsibility as a Customer

You are responsible for performing the tasks listed in Table 1. These tasks are not performed by IBM personnel as part of the machine installation and basic operations. They can, however, be performed by IBM on a fee basis.

Table 1 (Page 1 of 3). Customer Tasks

Task	Where to Find Information
Network design:	Network design is not covered in this book. Refer to the following IBM books for SNA, APPN/HPR, and IP network planning guidance: • *Planning for Integrated Networks* • IBM redbooks: – *Subarea Network to APPN Network Migration Guide* – *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: APPN Implementation Guide* – *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: IP Implementation Guide* – *IBM Nways 2216 Multiaccess Connector Description* – *IBM 2216 Multiaccess Connector ESCON Solutions*
Physical planning: Before the IBM service representative arrives to install your controller, make sure that you have met the necessary requirements for the following: • Electric power • Floor space with service clearances • Space for the cables • The RSF switched line • The Controller Expansion (FC 5023) • Other components (such as the service processor).	"Physical Planning Details" chapter in the *3745/3746 Planning Series: Physical Planning*
Controller hardware configuration definitions: Decide what type of attachments (lines) and how many of each type you need.	This input is necessary for the IBM ordering system (CF3745). For more information, refer to the *3745/3746 Planning Series: Physical Planning*.

Table 1 (Page 2 of 3). Customer Tasks	
Task	**Where to Find Information**
Software definitions and tuning: • ESCON port, host link, and station definitions; ESCON resource, TCP/IP, and VTAM® tuning	Refer to: • "ESCON Adapters" chapter in the *3745/3746 Planning Series: ESCON Channels* • "ESCON Channel Adapter" chapter in the *3745/3746 Planning Series: Multiaccess Enclosure Planning* • "ESCON Configuration Examples" chapter in the *3745/3746 Planning Series: ESCON Channels*
• Token-ring port and station definitions; PU and LU maximum limits; port sharing with NCP-controlled traffic; duplicate addresses; token-ring APPN, IP, and/or NCP resource tuning and VTAM tuning	• "Token-Ring Adapters" chapter in the *3745/3746 Planning Series: Token Ring and Ethernet*
• Serial line (SDLC, PPP, frame-relay, and X.25) port and station definitions; location of CLPs, LICs, LCBs, and ARCs; maximum CLA line connectivity; CLP backups	• "Serial Line Adapters" chapter in the *3745/3746 Planning Series: Serial Line Adapters* • "3746 SDLC Support" chapter in the *3745/3746 Planning Series: Serial Line Adapters*
• Multiaccess Enclosure: hardware planning and configuration; software configuration and tuning	• *3745/3746 Planning Series: Multiaccess Enclosure Planning* • *3745/3746 Planning Series: Physical Planning*
• Use of the Controller Configuration and Management (CCM) application.	• *IBM Controller Configuration and Management User's Guide*, SH11-3081. Also refer to: • *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: APPN Implementation Guide* (an IBM redbook) • *IBM 3746 Nways Multiprotocol Controller Model 950 and IBM Model 900: IP Implementation Guide* (an IBM redbook).
Filling out: • 3746 plugging sheets To keep a record of the processors and couplers (and their addresses) installed in the 3746 frame.	Refer to: • "Plugging Sheets for 3745 and 3746" chapter in the *3745/3746 Planning Series: Physical Planning*
• *CCM User's Guide*, SH11-3081 worksheets To plan the 3746 and MAE logical resource definitions. They can then be used when configuring the 3746 and MAE via the CCM.	• *3745/3746 Planning Series: CCM Planning Worksheets*

Table 1 (Page 3 of 3). Customer Tasks	
Task	**Where to Find Information**
NetView definitions in VTAM, the MOSS-E, NPM, CCM, NetView/360, and Tivoli NetView® (formerly NetView for AIX) for: • APPN traffic • IP traffic • NetView alert path.	Refer to: • "3746 Management Overview" chapter in the *3745/3746 Planning Series: Management Planning* • "3746 APPN/HPR Network Node Management" chapter in the *3745/3746 Planning Series: Management Planning* • "3746 IP Router Management" chapter in the *3745/3746 Planning Series: Management Planning*.
Controller, service processor, and network node processor definitions. For example: • Link IPL port information • Password management • NetView alert reporting path definitions • DCAF LU definitions • Ethernet port definitions for SNMP • Service processor token-ring and IP LAN addresses.	Refer to "Controller and Service Processor Integration" chapter in the *3745/3746 Planning Series: Overview, Installation, and Integration*. Fill out the worksheets in the various *Planning Series* guides. These worksheets are used by the IBM service representative during installation.
Remote console definitions (using DCAF): • Ensure that the necessary hardware and software is available for the type of console attachment chosen • Service processor definitions for DCAF • DCAF installation and configuration on the remote console.	Refer to: • "Remote Customer Consoles" chapter in the *3745/3746 Planning Series: Management Planning* • For the 3746-900, refer to the *3745 Console Setup Guide* • For the 3746-950, refer to the *IBM 3746 Nways Multiprotocol Controller Model 950 User's Guide*
Connection to the IBM remote support facility (RSF): • Service processor connection (modem) definitions • Customer definitions for RSF records.	Refer to the "Connecting to the IBM Remote Support Facility" chapter in the *3745/3746 Planning Series: Management Planning*
Problem determination through the MOSS-E and NetView	For the 3746-900, refer to: • *Problem Analysis Guide* accessed online from the MOSS-E • *3745 Models A: Alert Reference Guide* • *3745 All Models: Advanced Operators Guide*

Finding Your Way Around in the New Planning Series

If you are familiar with the layout of the old *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457, Table 2 should help you find which of the eight new books of the planning series contains the information that you need.

Note: Some of the chapters in the *Planning Guide* have been split into two or more new chapters in one or more new guides.

Table 2 (Page 1 of 2). Location of Old Planning Guide Chapters in New Planning Guides

Old Planning Guide		New Planning Series Book	
Chapter	**Chapter Name**	**Chapters**	**Guide Name**
1	3745 and 3746 General Information	--	Not included in the new guides
2	APPN/HPR Overview	1	*Protocols Description*
3	Internet Protocol (IP) Overview	2	*Protocols Description*
4	3746 ATM Support	4	*Multiaccess Enclosure Planning*
5	Token-Ring/802.5	B	*Token-Ring and Ethernet*
6	Ethernet Overview	C	*Token-Ring and Ethernet*
7	Frame Relay Overview	4, 5	*Serial Line Adapters*
8	Point-to-Point Protocol (PPP) Overview	4	*Serial Line Adapters*
9	X.25 Overview	2, 3, 5, 7	*Serial Line Adapters* *Management Planning*
10	ISDN Adapters	8	*Serial Line Adapters*
11	ESCON Overview	1	*ESCON Channels*
12	3745 and 3746 Installation and Upgrade Scenarios	2	*Overview, Installation, and Integration*
13	Configuration Scenarios	6	*Multiaccess Enclosure Planning*
14	3746 Planning Overview	1	*Overview, Installation, and Integration*
15	ESCON Adapters	1, 2, 3	*ESCON Channels*
16	Token-Ring Adapters	1, 2, 3	*Token-Ring and Ethernet*
17	Ethernet Adapters	4, 5	*Token-Ring and Ethernet*
18	Serial Line Adapters	1	*Serial Line Adapters*
19	3746 SDLC Support	3, 4	*Serial Line Adapters*
20	Multiaccess Enclosure	1	*Multiaccess Enclosure Planning*
21	Multiaccess Enclosure Adapters Overview	2	*Multiaccess Enclosure Planning*
22	ESCON Channel Adapter	8	*Multiaccess Enclosure Planning*
23	Multiaccess Enclosure ISDN Support	5	*Multiaccess Enclosure Planning*
24	3746 Configuration Overview	--	Not included in the new guides
25	Welcome to the CCM	--	Not included in the new guides
26	Multiaccess Enclosure Configuration	7	*Multiaccess Enclosure Planning*
27	3746 Base Frame ESCON Configuration Examples	1	*ESCON Channels*
28	Configuring the MAE ESCON Channel Adapter	8	*Multiaccess Enclosure Planning*

Table 2 (Page 2 of 2). Location of Old Planning Guide Chapters in New Planning Guides

Old Planning Guide		New Planning Series Book	
Chapter	**Chapter Name**	**Chapters**	**Guide Name**
29	3746 Management Overview	1	*Management Planning*
30	3746 APPN/HPR Network Node Management	2	*Management Planning*
31	3746 IP Router Management	6	*Management Planning*
32	MAE APPN/HPR Network Node Management	2	*Management Planning*
33	MAE IP Router Management	6	*Management Planning*
34	Controller and Service Processor	3	*Overview, Installation, and Integration*
35	Customer Consoles and DCAF	4 1 1	*Management Planning* *Overview, Installation, and Integration* *Token-Ring and Ethernet*
36	Connecting to the IBM Remote Support Facility	5	*Management Planning*
37	Performance Management with NetView Performance Monitor	3	*Management Planning*
37	3746 IP Router Management	6	*Management Planning*
38	MOSS-E Worksheets for Controller Installation (3745)	A A A	*Overview, Installation, and Integration* *Management Planning* *Token-Ring and Ethernet*
39	Parameter Cross-Reference Table	B	*Overview, Installation, and Integration*
40	CCM Worksheets for Controller Configuration Definitions	1	*CCM Planning Worksheets* (online)
41	Multiaccess Enclosure Worksheets	2	*CCM Planning Worksheets* (online)
42	Familiarizing Yourself with the Installation Sheets	2	*Physical Planning*
43	Plugging Sheets for the 3746 Nways Multiprotocol Controller	3	*Physical Planning*
44	Physical Planning Details	1	*Physical Planning*
A	3746-9x0 Microcode Levels (EC)	D	*Overview, Installation, and Integration*
B	ESCOM MIB	A	*Management Planning*
C	MOSS-E Service Processor Customization Function	C	*Overview, Installation, and Integration*

Chapter 1. ESCON Overview

Enterprise Systems Connection (ESCON®) fiber optic channels can be installed in either the 3746-9x0 base or expansion frames, or as an adapter in the 3746 Multiaccess Enclosure (MAE). For more information about ESCON in the MAE, refer to the *3745/3746 Planning Series: Multiaccess Enclosure Planning*, GA27-4240.

The 3746 base-frame and MAE use different non-interchangeable hardware adapters.

This chapter assumes that you understand ESCON architecture and the generation processes for IOCP (and for NCP, if you plan to share base 3746-900 ESCON adapters between the 3746 Network Node control points and NCP running in the 3745).

Note: MAE ESCON adapters are not supported by NCP.

You should also know TCP/IP if you plan to use ESCON adapters for the 3746 IP support or for NCP IP support running in the 3745 CCU.

A 3746-950 or 3746-900 can house up to 16 ESCON Channel Adapters (ESCAs), which allow a 3746 Network Node to communicate with PU type 2.1 nodes, such as VTAM® and TPF (Transaction Processing Facility) PUs, and TCP/IP MVS™ hosts (PU type 1).

The 3746 Network Node supports parallel APPN/HPR Transmission Groups (TGs) over ESCAs in the same way as NCP does for the 3745 parallel channel adapters type 6 (CADS) and type 7 (BCCA), and for the 3746-900 ESCAs.

In a 3746-900, the ESCA also allows NCP to communicate with TPFs (PU type 2.1), VTAM PUs (PU types 5 and 2.1), and TCP/IP MVS hosts (PU type 1).

The MAE ESCA provides access to:

- SNA-based host applications, such as CICS® and DB2® software
- TCP/IP-based host applications, such as Web Server and FTP

Each ESCON Channel Adapter provides access for up to 32 Multiple Image Facility (EMIF)-capable hosts or Logical Partitions (LPs). It also supports the traffic on the ATM, TR and Ethernet adapters found in the MAE.

The 3746 base-frame ESCON adapters are more effective for SNA traffic, while the MAE adapters provide a better solution for IP and APPN traffic.

Additional information on planning for ESCON cable installations can be found in the publication, *Fiber Optic Link Planning*, GA23-0367.

Summary of 3745 and 3746 Channel Options

Table 3 gives an overview of the channel options supported by the 3745, 3746 base-frame, and MAE.

Table 3. Summary of 3745 and 3746 Channel Options

	3745/NCP	**3746-900**	**3746-950**	**3746-MAE**
Servers	Multiple S/390® servers	Multiple S/390, RS/6000®	Multiple S/390, RS/6000	Multiple S/390, RS/6000
Host Operating Systems	MVS, VM, VSE	MVS, VM, VSE, AIX®	MVS, VM, VSE, AIX	MVS, VM, VSE, AIX
Channel Adapters	16 Parallel	16 ESCON	16 ESCON	4 ESCON (See note 1)
Protocols	CDLC	CDLC	CDLC	MPC+, LSA, LCS
LPARs	16	256	256	128 (See note 1)
SNA Routing	ISR/HPR	ISR/HPR	ISR/HPR	ISR/HPR
IP Routing	RIP	RIP	RIP	RIP

Notes:

1. These are in addition to the 3745 and 3746 limits.

ESCON Fiber and Host Link Sharing

Figure 1 and Figure 2 on page 4 illustrate fiber and host link sharing.

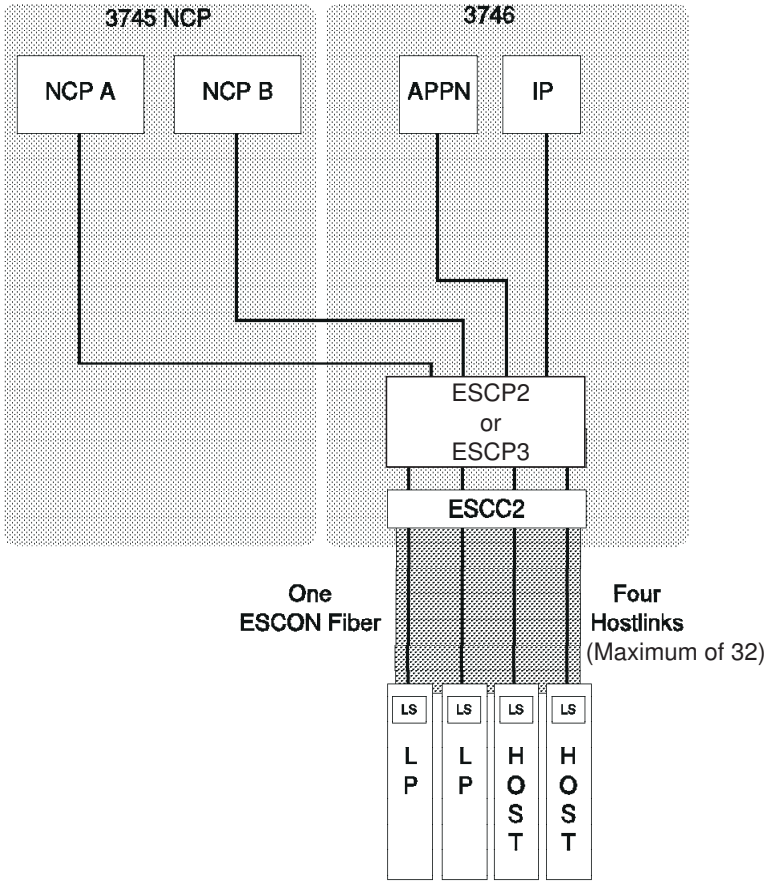

Figure 1. Sharing at the Fiber Level

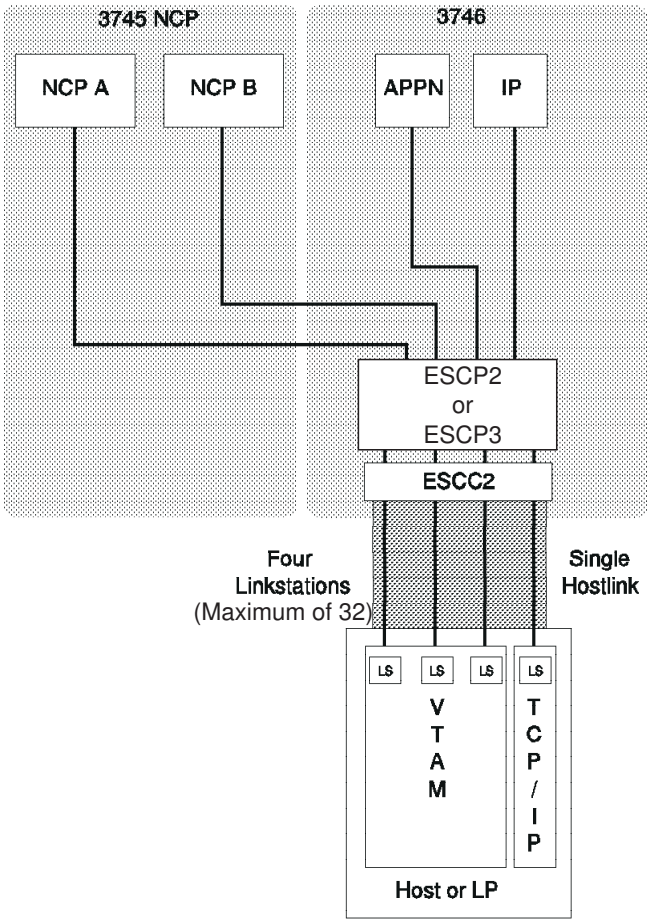

Figure 2. Sharing at the Host Link Level

3746 Base Frame ESCON Hardware

The ESCA consists of two features:

1. **ESCON channel processor type 3** (ESCP3 - FC 5523), which provides the channel data link control. The ESCP3 is an enhancement of ESCP2 and provides higher processing power, more storage. ESCP3 supports 3746 IP router and APPN/HPR network node functions.
2. **ESCON channel coupler type 1** (ESCC - FC 5501), or the **ESCON channel coupler type 2** (ESCC2 - FC 5502), which contains the interface to the ESCON multimode, duplex fiber optic channel cable. The ESCC2 is recommended, as it provides the same functions as the ESCC but with increased performance in throughput and channel utilization. Any ESCC is field upgradable to an ESCC2. The ESCC is not available with the 3746-950.

   There is one ESCON channel coupler per ESCON channel processor.

ESCA: Distances

The ESCON channel couplers support the standard ESCON fiber distance (3 km [1.87 miles]). This is equally true for the ESCON adapter in the MAE. They do not themselves support the ESCON eXtended Distance Feature (XDF). However, longer distances can be reached via an ESCD using the ESCON XDF. An S/390 can be reached up to 23 km (14.3 miles) away or, via two cascaded ESCDs each with the XDF, up to 43 km (26.7 miles) away.

Table 4 gives the maximum 3746-9x0 to S/390 distance for various ESCON configurations. It is valid for ESCON adapters in the MAE. Also see Figure 3.

Table 4. Maximum 3746-9x0 to S/390 Distances

Extended Distance Links	**Direct Host Connection** km (miles)	**One ESCON Director** km (miles)	**Two Cascaded ESCON Directors** km (miles)
0	3 (1.87)	6 (3.7)	9 (5.5)
1	-	23 (14.3)	26 (16.1)
2	-	-	43 (26.7)

Figure 3 illustrates the maximum 3746-9x0-to-S/390 distances.

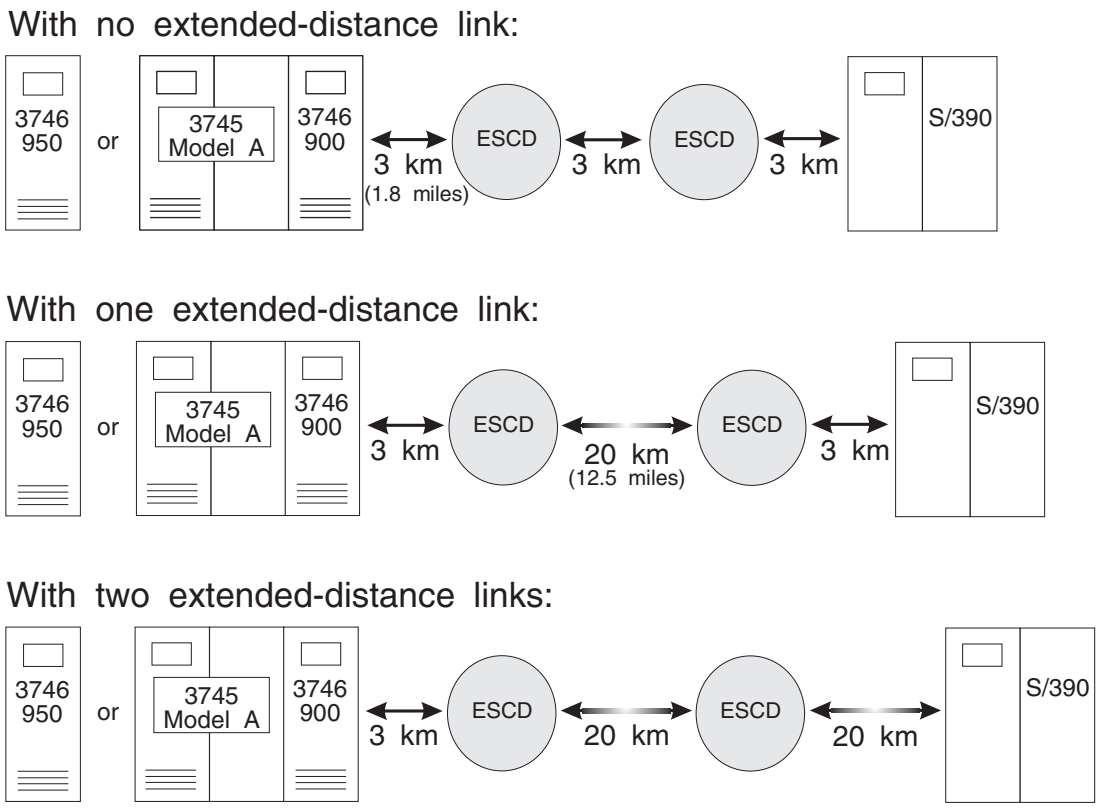

Figure 3. Extended ESCON Support. This figure shows the different possible distances between the 3746-9x0 and the S/390 through the ESCON support.

ESCA Sharing

The following section shows how the 3746, 3745 with NCP, and the MAE can share ESCAs, either in the base 3746 frame or in the MAE.

Note: The diagrams are meant to show how the routing occurs, but do not necessarily show all components involved. Depending upon whether ISR or HPR is used, and whether inter-adapter or intra-adapter is used, the session connectors or NCL layers will be in different locations. The same applies for IP routing.

3746 ESCA Sharing

Figure 4 on page 7 shows which traffic can use the 3746 native ESCON adapters. The APPN and IP components are shown as being connected together. In the 06/30/97 release of the MAE, this connection will involve using an external token-ring connections between the 3746 frame and the MAE. In a later release, this will be replaced by an internal hardware connection.

The numbers in the following list correspond to the numbers in the diagram:

1

Subarea traffic, or APPN traffic (when the 3745/NCP is part of a CNN), can directly access the 3746 ESCON adapters. This traffic can enter the 3745 via its adapters, or the 3746 adapters.

2

APPN, DLUR, or IP traffic, entering the 3746 through its adapters, can be routed to the 3746 ESCON adapters.

3

APPN, DLUR, or IP traffic, entering the 3746 through MAE adapters, is routed by the APPN or IP routing functions to the APPN or IP function of the 3746 base, where it is then passed to the ESCON adapters.

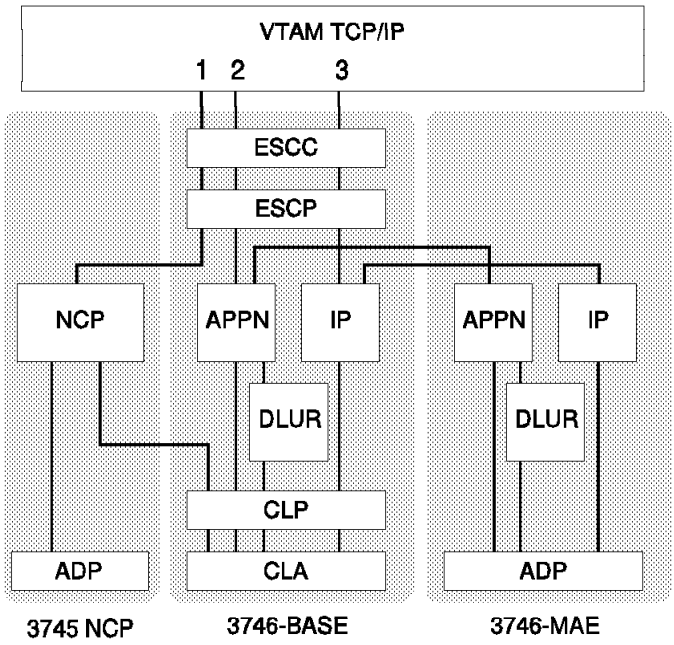

Figure 4. 3746 Base ESCON Connectivity

Subarea traffic entering the MAE through LAN or ATM adapters, can be routed to the 3746 base ESCON adapters. The following methods are available:

1. Figure 5 shows traffic entering the MAE (3), which is then bridged to the 3745 or 3746. This traffic could either be bridged over the dedicated token-ring connections between the MAE and 3746 frame, or over a different token-ring, either to a 3746 (4), or to a 3745 (5) token-ring adapter. The traffic is then routed by the APPN (3746 NNP or NCP/CNN) or IP functions as in Figure 4 on page 7
2. DLSw traffic entering the MAE (3) can be used to transport subarea BNN traffic, this traffic can then be directed to token-ring connections on the MAE. As with the previous example, this can be the dedicated ring, or a different ring connecting a 3745 or the 3746 to its MAE.

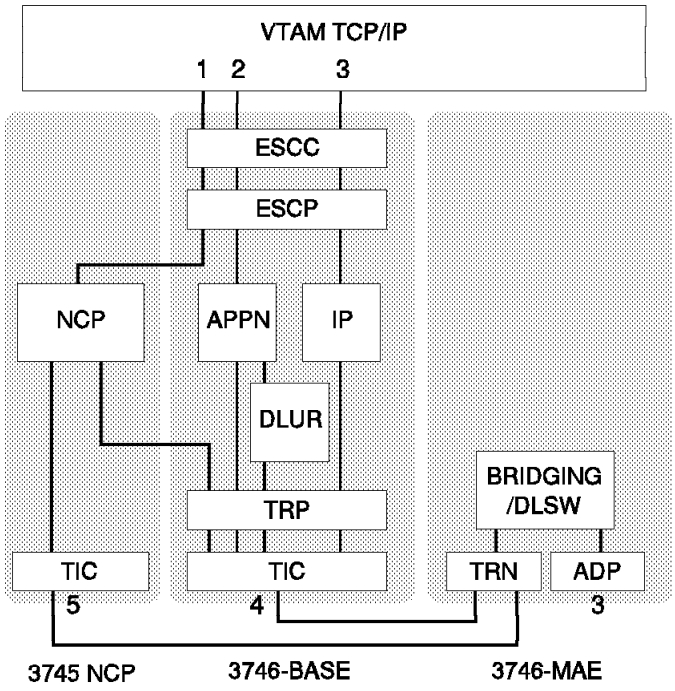

Figure 5. MAE to 3746 Bridging and DLSw for Subarea Traffic

MAE ESCA Sharing

Figure 6 shows which traffic can use the 3746 MAE ESCON adapters. The numbers in the following list correspond to the numbers in the diagram:

1

3745 APPN traffic (when the 3745/NCP is part of a CNN), entering either through 3745 or 3746 adapters, 3746 APPN and DLUR traffic, and MAE APPN traffic can be routed by the APPN functions to the MAE ESCON adapters.

APPN traffic is routed through either an internal or an external APPN link between the 3745 and the 3746 frame.

2

3746 IP traffic, and MAE IP traffic is routed by the IP routing functions to the MAE ESCON adapters.

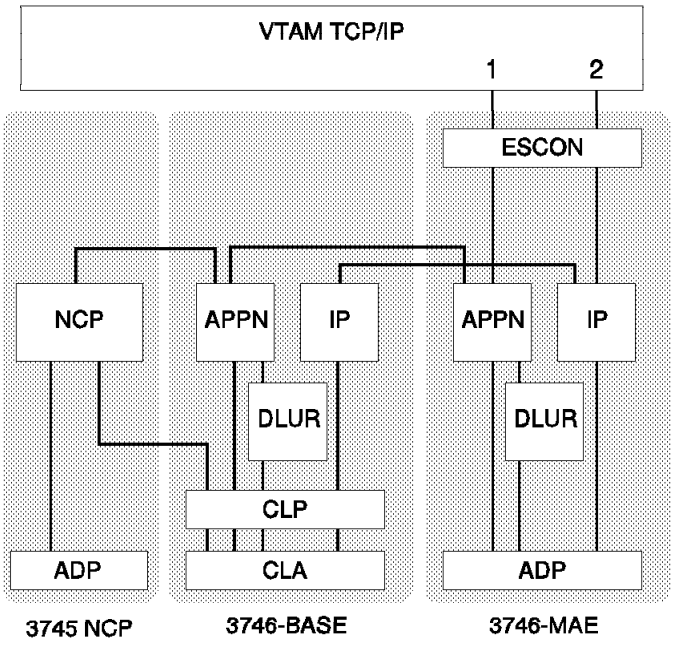

Figure 6. 3746 MAE ESCON Connectivity

3745 Parallel Channel Adapter Sharing

To complete the section on sharing of ESCAs, Figure 7 shows which traffic can use the 3745 parallel channel adapters. The numbers in the following list correspond to the numbers in the diagram:.

1

3745 APPN traffic (when the 3745/NCP is part of a CNN), entering either through 3745 or 3746 adapters, and 3746 and MAE APPN and DLUR traffic can be routed to the 3745 parallel channel adapters.

APPN traffic is routed through either an internal or an external APPN link between the 3745 and the 3746 frame.

2

3746 IP traffic, and MAE IP traffic is routed by the IP routing functions via an external connection to a 3745 adapter where the NCP IP function routes it to the 3745 parallel channel adapters.

As in Figure 5 on page 8, traffic can also be bridged or send from DLSw to the 3745 via token-ring, this traffic can also then be transported over the 3745 parallel channels.

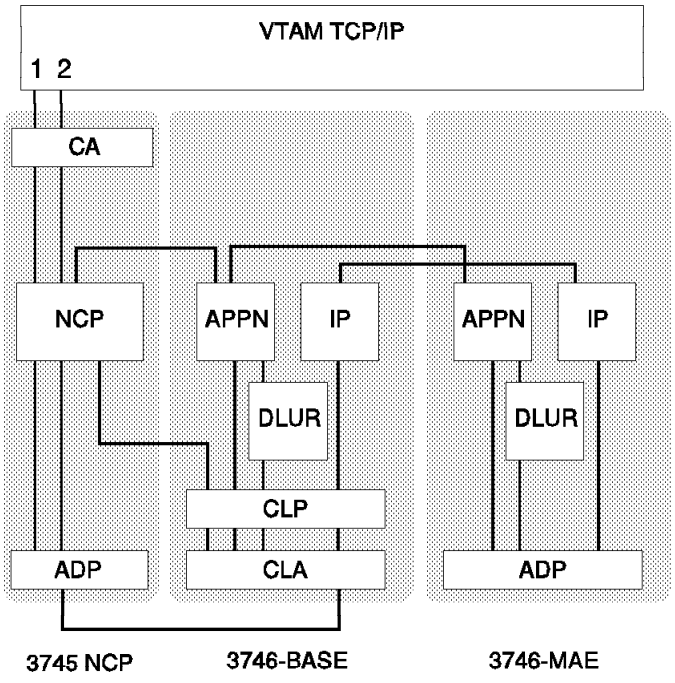

Figure 7. 3746 Parallel Channel Connectivity

Chapter 2. ESCON Adapters

Note: For information about ESCON in the MAE, refer to *3745/3746 Planning Series: Multiaccess Enclosure Planning*, GA27-4240.

This chapter is designed to help you configure and define ESCON adapters. Basic facts on installing ESCON processors and couplers in the base 9x0 frame are described in Chapter 1, “ESCON Overview” on page 1.

On the 3746, ESCON adapter (ESCA) consist of an ESCON channel processor (ESCP), and ESCON channel couplers (ESCCs).

ESCP Types

ESCP Types include ESCP, ESCP2, and ESCP3. The ESCP2 has a 16-MB storage and the ESCP3 has a 32-MB storage and a more powerful processor. In this chapter ESCP stands for all ESCP processor types unless otherwise indicated. The improved performance and connectivity of the ESCP3 is described specifically in “ESCON Adapters” on page 12.

Planning for 3746 Base Frame ESCAs

Configuring your ESCON channels involves definitions in the service processor (MOSS-E[2]), host (IOCP/HCD), and possible 3745 NCPs and ESCON Directors.

To help you with this task, IBM has developed:

- ESCON Generation Assistant (EGA).
- Controller Configuration and Management (CCM)[3] , which is part of the Licensed Internal Code and is also available as a stand-alone program for OS/2 workstations from your IBM marketing representative. Use this program to configure your ESCAs in the 3746 Network Node. See “Using CCM” on page 17 and “Introducing EGA” on page 23 for more information.

  Plan your ESCA configuration by drawing a diagram, so that your ESCON connectivity requirements are clear. The diagram should include the following:

  – Amount of ESCAs required.

  – How they will be attached to the hosts, that is, with or without an ESCON Director.

  – If the ESCON Multiple Image Facility (EMIF) will be used to share one ESCA between several logical partitions (LPs).

  – If the ESCON will be shared between several control points (NCPs, APPN/IP).

  A host link corresponds to a physical path between an ESCC or ESCC2 and a host or LP. Because only one host link can be established between an ESCC

2 Licensed Internal Code.

3 CCM includes functions that are equivalent to the EGA for ESCONs under NCP control, previously available for the 3745/3746-900, and new functions to configure ESCON adapters for APPN, APPN/DLUR, APPN/HPR and/or IP.

or ESCC2 and a host or LP, it is important to identify how many physical connections are required in your system to fulfill your throughput and backup requirements.

It is also important to consider the use of LPs and EMIF; each LP appears as a separate physical host. EMIF allows you to share ESCON channels across LPs.

Installing the 3746 Network Node Hardware

You should work with IBM to determine the positions of the ESCON adapters. The installation sheets produced by the hardware configurator (CF3745) provide guidelines for their physical installation. This, in turn, provides the 3746 ESCON coupler addresses needed for definitions in EGA for 3746-900 without NNP installed or CCM for 3746-9X0 with NNP installed (for ESCON under NCP control), Network Node Processor control (APPN/HPR, IP). You should review these sheets and verify that their ESCON channel needs have been met.

Chained ESCON Directors Are Supported

The use of chained ESCON Director is supported, but the use of ESCON Director ports already defined in dedicated connections is not checked by CCM (or EGA). Most of this information is defined by the ESCON Director administrator and can concern devices other than the 3746 ESCON adapters. Additional information about ESCON channels is available in the CCM/EGA online help.

ESCON Adapters

Native support of ESCON architecture provides flexibility in the design of host connections. ESCAs allow communication with the following:

- ES/3090™ Models 180J, 200J, 280J, and above (ES/3090 J models must have EC 227574 or above installed)
- ES/3090-9000T (all models)
- ES/9000® processors (all models)
- S/390 Parallel Transaction Servers (all models)
- S/390 Parallel Enterprise Server™ (all models)
- S/390 Parallel Multiprise® 2000 Servers (all models)

ESCAs also support the following attachments:

- 9032 and 9033 ESCON Directors

ESCON channels have the following advantages:

- Connectivity over greater distances between the 3745/3746 and the S/390. For example, the standard connection between a 3746 and a S/390 is up to 3 km (1.8 miles). By using ESCON Directors, the S/390 can be up to 43 km (26.7 miles) away.
- More configuration flexibility
- Increased performance
- Decreased sensitivity to noise.

An ESCA consists of the following:

- One processor (ESCP2 or ESCP3)
- One coupler (ESCC2)

The ESCON channel processor type 3 (ESCP3) supports traffic routing for the 3746 network node, 3746 IP Router, and 3746 NCP traffic[4].

The ESCON coupler type 2 (ESCC2) provides:

- Higher data throughput for applications (for example, file transfer between S/390 servers and distributed servers).
- Enhanced performance in heavy interactive traffic environments using small messages.

When used in the 3746-900 NN, the ESCP2 or ESCP3 can concurrently support:

- NCP traffic for the Central Control Units (CCU) of the associated 3745.
- 3746 network node traffic.
- 3746 IP router traffic.

ESCON Multiple Image Facility (EMIF)

The 3746 9x0 supports ESCON Multiple Image Facility (EMIF) (see Figure 8). EMIF allows several logical partitions (LPs) to share the same ESCON channel. A single ESCA can communicate with several LPs in a S/390 server without the need of an ESCON Director.

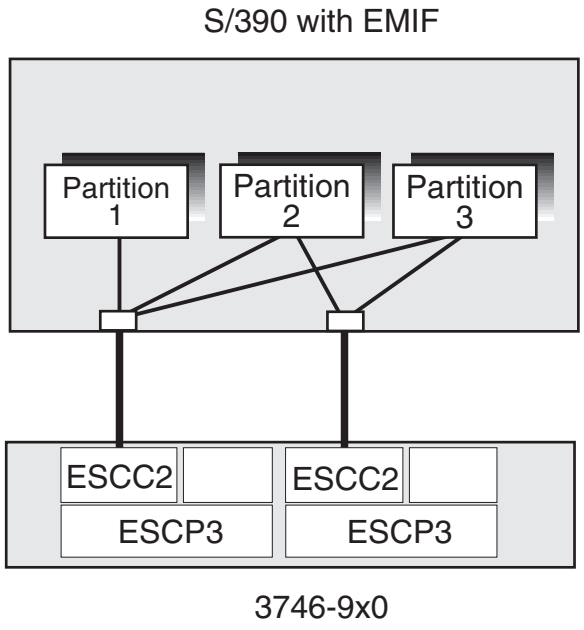

Figure 8. Example of EMIF Support with a 3746 9x0

[4] ESCP3 enhanced performance for APPN/HPR, IP, and NCP traffic.

ESCON Adapter Connectivity

ESCON adapters have the following connectivity options:

- An ESCA in the 3746-950 can communicate with 32 host logical stations (VTAM PUs, TCP/IPs, and TPFs) in up to 32 LPs.
- An ESCON adapter in the 3746-900 NN can be shared by the 3746 NN, one or two active NCPs in the 3745, and the 3746 IP Router. Each ESCA supports up to 32 logical connections to host LPs and stations. Any mix of 3746- or NCP-controlled logical connections to VTAM PUs, TPFs, and TCP/IPs can occur.
- An ESCON adapter type 3 supports up to 15 000[5] APPN data sessions controlled by the 3746 network node.
- An ESCON adapter (ESCP2 or ESCP3) supports any number of HPR sessions (ANR) between HPR edge nodes and HPR VTAM nodes.

If your planning indicates that you may use your ESCON adapters near their maximum limits, you should consider having your system verified by the IBM 3745/3746 Configurator (CS3745).

ESCON Link Components

An ESCA link consists of physical and logical parts shown in Figure 9 on page 16 and is described in this section:

- The physical line represents the ESCON adapter (ESCA) and the fiber optic cable between the ESCA and the host channel or ESCON Director.
- A host link (logical line) represents the logical connection between an ESCON coupler (ESCC or ESCC2) and a host (BASIC host mode) or a logical partition (LP or EMIF host mode).

  Several host links can be multiplexed over the same physical line using:

  – An ESCON Director, which can route the host links to different hosts or LPs.

  – A host with the ESCON Multiple Image Facility (EMIF), which can route multiplexed host links to the correct LPs.

  The ESCON adapter requires that ***one*** host link is defined for ***each*** host/partition that needs a logical connection.
- A logical link station (also called a host link station or link station) represents the logical connection between an active CCU or network node processor and a VTAM, TPF, or TCP/IP. Logical link stations can be multiplexed over a host link for 3745/3746-900 configurations, one logical link station must be defined for the 3746 Network Node and one for each CCU to access the same VTAM, TPF, or TCP/IP.

There should be ***one*** IODEVICE ADDRESS defined in VM/MVS/VSE IOGEN for ***each*** logical link station, that is to support a logical connection with a host/partition. If ADDRESS=(*nnn*,2) then this will make two IODEVICE addresses *nnn* and *nnn*+1.

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5 For detailed information on adapter connectivity, refer to “APPN / HPR Overview” chapter in the *3745/3746 Planning Series: Protocols Description*.

Note: In Figure 9 on page 16, user traffic does not flow between the ESCP3 and the network node processor. This control part of the Logical Link Station path is only used for ESCON control messages (activation, deactivation, link status, and others).

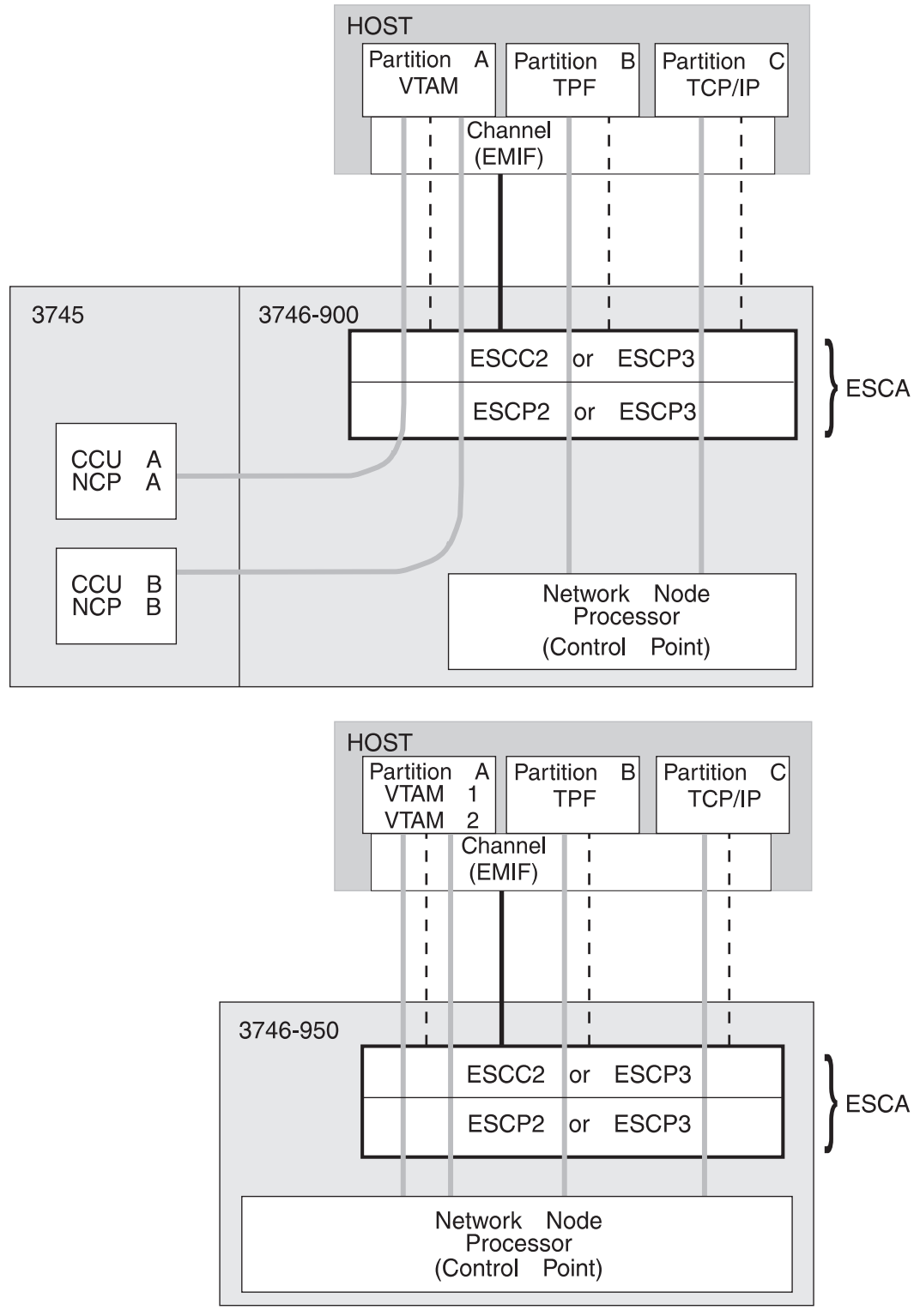


Figure 9. Physical Link and Host Link Sharing through the Same ESCON Adapter

User Traffic Bypasses Network Node Processor

The user traffic flows directly between the ESCP3 or ESCP2 and the host application without going through the network node processor.

Using CCM

CCM parameter definitions necessary for ESCON channels can be grouped as follows:

- Couplers, including the ESCON directors
- Hosts, including the host links
- Stations (host link stations)
- IP address per station if IP is used.

Use the *3745/3746 Planning Series: CCM Planning Worksheets* located on the Web at:

`http://www.ibm.com/networking/did/3746bks.html#Customer`

for your planning.

Coupler Parameters

Coupler parameters include:

- Port name.
- Networking environment, that is, 3746 APPN/HPR, SNA/subarea (NCP), 3746 IP. Any combination can be used and may require ESCA sharing between NCP and the 3746 control point.
- Use of ESCON directors (ESCDs).

  If ESCDs are to be used, you must specify:

  – ESCD model and number

  – Control unit link address, which identifies the ESCD port connected to the optical fiber coming from the ESCON coupler.

Host Link Parameters

They include:

- Host link name.
- Host name.
- Host mode.
- The host channel path identifier (CHPID) that uniquely identifies a path.

If the host mode is:

BASIC
: Only one CHPID is specified because the ESCA communicates with the host through a single channel.

LPAR (Logically PARtitioned mode)
: A CHPID must be specified for each host link.

LPAR and ESCD

If either of these are used, the following parameters must be defined:

- Partition name.
- Host link address (HLA), which identifies the port on the ESCD connected to the optical fiber coming from a host. HLAs can be dynamically defined during path establishment. ESCC or ESCC2 and the host channel automatically assign a unique HLA to each path request in the order they are received.

  If you choose to manually define the HLAs, remember that each HLA must be unique among all the HLAs but also among all the CU link addresses.

EMIF

You must specify:

- Partition name.
- Partition number, which can be dynamically defined. (See "Dynamic Definition of Partitions" on page 19 for a definition of dynamic partitions.)
- Only one CHPID, since the ESCA communicates with the partitions through a single channel.

Station Parameters

They include:

- Station name
- Access method (VTAM, TPF, or TCP/IP)
- Unit address
- IP address in case of IP.

Dynamic Definition of Host Link Addresses

For type 2.1 host nodes, this option allows the user to define a logical path from the host to the ESCC or ESCC2 without using predefined HLAs.

Each HLA must be unique among all the HLAs and ***also among all the CU links***. Verification of the uniqueness of the HLAs and CU links is not done by CCM. This is the responsibility of the ESCD administrator.

When the dynamic link option is selected, during path establishment the ESCC or ESCC2 and host channel automatically assign a unique HLA to each path request in the order they are received.

Note: The path for a given connection may not always use the same links as the automatic assigning of HLAs to paths is done on a first-come-first-served basis.

For example, if the service processor is re-IMLed, the path could be different after the IML if the order of the path requests to reestablish the connections is different.

Dynamic Definition of Partitions

if you are using the ESCON Multiple Image Facility (EMIF), dynamic configuration of partitions is available. In the ESCON Host links configuration panel of CCM, use the ***Partition Number Dynamic*** option. This allows you to move an application from one partition to another without changing the MOSS-E definitions.

Dynamic Configuration Changes

If you modify an active configuration, changes can be either dynamically applied or saved into a new configuration file. When changes are dynamically activated, the network traffic is not affected except in some cases:

- If SNA resources of an ESCON port that has been modified, are active, you must first manually deactivate these resources by using the VTAM program, and then activate the changes.
- If you add or delete an ESCON port, the ESCON processor is automatically re-IMLed.
- If you modify or delete an ESCON host link, the ESCON processor automatically is re-IMLed.

Preventing automatic IML

As a time saving option, CCM prompts you to choose if you want the ESCON processors to be automatically re-IMLed when you activate your configuration.

If you modify a non-active configuration, this does not affect the network traffic. In this situation, the changes you make to the configuration are only applied when that configuration is activated.

Complete Dynamic Activation Information

For details on the possible effects on your system if you dynamically change a parameter, refer to the *3746 Nways Multiprotocol Controller Model 900 and 950: Controller Configuration and Management: User's Guide*, SH11-3081, chapter on dynamic activation or the CCM Online Help.

Chapter 3. ESCON Configuration

This chapter is designed to help you with the configuration and definition of ESCON adapters using the EGA.

Configuration Reuse

Reusing Existing ESCON Configurations Created with the EGA

Configurations originally generated in EGA can be used in CCM by creating a new configuration and selecting **Import ESCON SBS file created with EGA**.

However, before the installation of the Licensed Internal Code supporting the 3746 Network Node function, you should make sure that the existing EGA file (.SBS) reflects the ESCON configuration parameters currently used in your 3746. To check your definitions are correct or make necessary changes, use the following procedure:

Step 1. Record your current ESCON configuration parameters from the service processor display (Manage ESCON Processor).

Step 2. Install CCM stand-alone version on the OS/2® workstation where the .SBS files created by EGA stand-alone version are stored.

If CCM is installed on another workstation, copy the most recent .SBS files for your 3746 onto a diskette.

Step 3. Using CCM, create a new configuration and select **Import ESCON SBS file created with EGA**.

Step 4. Verify that the ESCON definitions match the current configuration parameters and, if needed, make updates.

Step 5. Add any new definitions and make any necessary changes needed for the new 3746 Network Node.

Step 6. Export the resulting CCM configurations onto a diskette (it contains all the ESCON files required).

Step 7. When the new microcode is installed in the 3746, use the CCM on the service processor to import CCM configuration (including the latest ESCON definitions you made) from the diskette.

Reuse of Existing ESCON Definitions

If you do not use EGA, or if you no longer have access to the .SBS files generated by the EGA for your machine, you must reenter the ESCON definitions using CCM (either the stand-alone or the MOSS-E version). Until this is done, the current ESCON configuration parameters can be used with the Licensed Internal Code supporting the 3746 Network Node, but they cannot be changed by using CCM on the service processor. To reenter the ESCON definitions and be ready for the installation of the 3746 Network Node support, use the following procedure:

Step 1. Record your ESCON configuration parameters from the service processor display.

Using the IOCP definition files, record also the CHPID and CU LINK values that are needed by CCM (they were not needed in version 3.6 or older of EGA).

Step 2. Use CCM (either the stand-alone or the MOSS-E version) to reenter definitions for your ESCON resources. Make any changes and new definitions needed for the 3746 Network Node.

Step 3. If you used an OS/2 workstation for step 2:

a. Use CCM to export the resulting ESCON configuration onto a diskette.

b. Use CCM on the service processor of the 3746 Network Node to import the ESCON configuration.

IOCP Generation for ESCON Channels

Following is the list of the IOCP macro-instructions supplied by the CCM in the generation output (.IOC) file.

```
RESOURCE
    PARTITION

CHPID
    PARTITION
    PATH
    SWITCH
    TYPE

CNTLUNIT
    CUNUMBR
    LINK
    PATH
    STADET
    UNIT
    UNITADD

IODEVICE
    ADDRESS
    CUNUMBR
    UNIT
    UNITADD
    PARTITION
```

Note: If you are migrating to the Hardware Configuration Definition (HCD), use the IOCP generation provided by CCM as input for the HCD migration support.

NCP Generation for ESCON Channels (3746-900)

Following is the list of NCP definition statements and keywords supplied by CCM in the generation output (.NCF) file. They are only for NCP-controlled resources in a 3745/3746-900.

```
GROUP
    LNCTL
    PHYSRSC

LINE
    ADDRESS
    HOSTLINK
    MAXPU
    MONLINK

PU
    ADDR
    ANS
    MONLINK
    PUTYPE
    XMONLNK
```

Introducing EGA

Defining ESCAs for SNA/subarea traffic (for APPN/IP traffic, use CCM) for the 3746-900 can be done manually, but this may result in omissions or errors in specifying parameters, which can compromise, for example, an entire NCP generation. Therefore, the parameter definition tasks in the NCP, IOCP, and MOSS-E should be done using the latest version of EGA, which is part of the Licensed Internal Code (in the service processor) and is also available as a stand-alone program for OS/2 workstations from your IBM marketing representative. Use this program to configure your ESCAs. It has been developed to:

- Examine a range of input parameters
- Check and compare the input parameters
- Automatically create outputs to be used in NCP and IOCP generations and in the MOSS-E configuration.

  Note: If you are migrating to the Hardware Configuration Definition (HCD), use the IOCP generation provided by the EGA as input for the HCD migration support.

The EGA will not remove all the complexity of defining a network that is heavily dependent on ESCAs, but it will help you to:

- Learn about the various parameters required to define an ESCA for NCP, IOCP, and MOSS-E.
- Understand the terms, ideas, and rules surrounding the configuration of 3746-900 ESCAs. For example, you will find out about:
  - Physical lines, host links, and stations
  - Basic mode
  - Logically partitioned mode (LP)
  - ESCON multiple image facility (EMIF)
  - Rules for specifying host links
  - Rules for specifying logical link stations
  - NCP definition statements and keywords
  - IOCP macro-instructions
  - MOSS-E parameters
- Create each source deck (parameter listing) to be used in NCP, IOCP, and MOSS-E.

  In creating the generations, the EGA requires you to answer a series of simple questions and make a small number of text entries. When you have finished entering the necessary information about all the ESCAs in one controller, you can save this input data in a subset (.SBS) file.

  When the subset is complete, the EGA creates formatted output for you to use in generating ESCA configurations for NCP, IOCP, and MOSS-E. This automatically verified parameter output (which is the ESCA portion of a complete NCP generation, IOCP generation, and MOSS-E configuration) is called a generation output.
- Prepare example subsets that may be studied and optimized. It is not necessary to reenter all the data by hand when you want to change just a few parameters.

- EGA provides almost all definitions and helps you make consistent definitions for the IOCP, MOSS-E, and NCP. However, you must provide the labels for each NCP resource represented by an ESCON definition. You also must provide PCCU statements if they are used.

Functions Supported in EGA 3.8 (for EC D22564.026 or Later)

The EGA Version 3.8 introduced new functions:

- The host link address (HLA) range has been extended from C0 - CF to 80 - FB, when using the IBM ESCON Director 9032 Model 3.
- A new type of physical unit (PU) is supported for TCP/IP over ESCON: PU type 1 is selectable on the EGA station definition panel.
- The initial ESCC fiber status can now be selected:
  - Enable (Enables the coupler and allows frame exchange to start.)
  - Transmit OLS (Off-line sequences are transmitted over the OUT fiber.)
  - Disable (Disables the coupler and turns off the light in the OUT fiber.).
- The .SBS files can be exported using the Subset menu. This allows one or more configurations to be copied from the stand-alone EGA to a configuration diskette.
- The IOCP output can now be used as input for HCD. The ADAPTER IOCP keyword value has been changed to TYPE7 to be compatible with HCD.
- Using the service processor version of the EGA 3.8, the MOSS-E Configure ESCON Processors function now allows you to save several different ESCON configurations on the MOSS-E disk without interrupting the ESCA until you want to make a particular configuration active.

  To activate a configuration, select and open it. Select **Save** in the Subset menu and then transmit it. Next do a permanent reset and IML of the modified ESCPs to actually activate the configuration.

Note: EGA version 3.8 is no longer available from IBM, it has been replaced by version 3.9 or later versions. The EGA Version 3.9 supports OEM ESCON Directors.

Installing Stand-Alone EGA

To run the stand-alone version of the ESCON Generation Assistant, you must have OS/2 Version 1.3 or later, running on a PS/2® or equivalent workstation. It is recommended that you put this tool on your hard disk (it takes about 3 MB of storage, depending on the size of the output files) and that a printer be available. To transfer NCP and IOCP generation subsets to your host, you need Communications Manager.

To install EGA, follow the instructions in the READ.ME file that accompanies the program using a simple text editor.

All information and help for the EGA are online.

Note: The subsets created with versions previous to Version 2.0 cannot be used with Version 2.0 or later. Erase all the Version 1.x .SBS files from the directory where the tool is stored before using the Version 2.0 or later. All later versions of EGA are compatible with any .SBS files produced by earlier versions starting with Version 2.0.

Using EGA

EGA parameter definitions necessary for ESCON channels can be grouped as follows:

- Couplers, including the ESCON directors
- Hosts, including the host links
- Stations (host link stations)

Coupler Parameters

The coupler parameters include:

- Port name
- Use of ESCON directors

  If ESCDs are to be used, you must specify:

  – ESCD model and number

  – Control unit link address, which identifies the ESCD port connected to the optical fiber coming from the ESCON coupler.

Host Link Parameters

The host link parameters include:

- Host link name
- Host name
- Host mode
- The host channel path identifier (CHPID) that uniquely identifies a path

If the host mode is:

BASIC Only one CHPID must be specified because the ESCA communicates with the host through a single channel.

LP Logically partitioned: CHPID must be specified for each host link.

EMIF You must specify:

- Partition name
- Partition number, which can be dynamically defined
- Only one CHPID, since the ESCA communicates with the partitions through a single channel

LP and ESCD The following parameters must be defined:

- Partition name.
- Host link address (HLA), which identifies the port on the ESCD connected to the optical fiber coming from a host. HLAs can be dynamically defined during path establishment. ESCC or ESCC2 and the host channel automatically assign a unique HLA to each path request in the order they are received.

  If you choose to manually define the HLAs, remember that each HLA must be unique among all the HLAs but *also among all the CU link addresses*.

Station Parameters

The station parameters include:

- Station name
- Access method (VTAM or TPF)
- Unit address.

Service Processor Version of EGA

Service Processor EGA

The microcode engineering change level D22560 provides the MOSS-E function equivalent to the stand-alone EGA Version 3.8.

The microcode engineering change levels D46124 and D46134.008 provide MOSS-E functions equivalent to stand-alone EGA Version 3.9.

For a 3746-900 running this microcode level, you must use the new Configure ESCON Processors menu to configure the ESCON adapters via the MOSS-E. This menu is part of the Configuration Management function. It allows you to import and save an ESCON configuration from a diskette created by a stand-alone EGA 3.9.

It also allows you to prepare undated ESCON configurations and save them without disrupting the ESCON adapters. These adapters are now reset or re-IMLed only when the changes are activated.

The Manage ESCON Processors menu is used only to display the current status of the ESCON lines, stations, and couplers.

Notes:

1. If you have a second 3746-900 controlled by the same service processor, and it has not been upgraded to run the 3746-900 microcode provided in the engineering change level D22560, the MOSS-E Manage ESCON Processors menu continues to be used as before the upgrade to configure the second 3746-900.
2. If you are already using a stand-alone EGA, you should verify that the existing configuration on the OS/2 workstation accurately reflects the configuration that is actually running in the 3746-900 before the installation of an engineering change.
3. The latest EGA stand-alone version (3.9) for OS/2 workstations is available from your IBM representative through MKTTOOLS.

IOCP and NCP Generations for ESCON Channels

The IOCP macro-instructions and NCP definition statements and keywords supplied by the EGA are the same as CCM, see:

- "IOCP Generation for ESCON Channels" on page 22
- "NCP Generation for ESCON Channels (3746-900)" on page 22.

MOSS-E Definitions for ESCON Channels

EGA produces a flat file containing all the ESCON channel parameters required by the MOSS-E.

They must be exported to a diskette for the IBM Service Representative installing your 3746-900. This configuration diskette is used to import the ESCON configuration into the MOSS-E[6] where it is saved on the hard disk.

EGA and a Microcode Upgrade

Using Your Current ESCON Configuration After the Upgrade

If you are not planning to change your current ESCON traffic in any way after the microcode change is installed, you have nothing to do; once this new level of MOSS-E and ESCA microcode is installed, your ESCON traffic will restart using the same ESCON configuration as before the upgrade.

Changing an ESCON Configuration After the Upgrade

There are two methods to change your ESCON configuration for the *first* time after IBM upgrades your MOSS-E:

1. The easiest method, if you have been already using the stand-alone EGA, is to continue using the stand-alone EGA workstation. (This method assumes that you still have the configuration files on your OS/2 workstation).
2. Manually using the MOSS-E on the service processor.

Using the Stand-Alone EGA

To install and use the stand-alone EGA:

Step 1. Install the EGA in the sub-directory that contains the previous EGA version.

Step 2. Open the configuration

Step 3. Make the necessary changes for the new configuration

Step 4. Save the configuration

Step 5. Export it to a diskette.

After the microcode upgrade, use the MOSS-E Configuration Management function as follows:

Step 6. Open the Configure ESCON Processors menu.

---

[6] This is done with the service processor version of the EGA that has a minimum microcode level of D22560

Step 7. In the Subset menu, import, save, and, if you want to, activate the new configuration.

Repeat this procedure for every 3746-900 that will have the engineering change installed.

Note: If this procedure is used before the microcode change is installed, give the ESCON configuration diskette to the IBM service representative who installs the microcode change so that he can restart the ESCON adapters using the new configuration.

Using the Service Processor EGA

Before the microcode upgrade, use the MOSS-E Configuration Management function as follows:

Step 1. Open the Manage ESCON Processors menu.

Step 2. Use the Display functions as necessary to record manually your complete current ESCON configuration on a worksheet.

After the microcode upgrade, use the MOSS-E Configuration Management function as follows:

Step 3. Open the Configure ESCON Processors. menu.

Step 4. In the Subset menu, select **New** to enter the parameters you recorded on your worksheet in step 1 and make any necessary changes for the new configuration.

Step 5. While still in the Subset menu, save, and, if you want to, activate the new configuration.

Repeat this procedure for every 3746-900 having an engineering change installed.

Chapter 4. ESCON Tuning

This chapter is designed to help you with tuning the configuration and definitions of ESCON adapters.

Attention

Proper operation of the 3746-900 or 3746-950 requires adequate setting of VTAM, TCP/IP, and CCM parameters, and NCP for resources under NCP control.

There are parameter values that need to be changed when migrating from a parallel channel (CADS or A) to an ESCON channel or from an NCP-controlled ESCON channel to a 3746-controlled ESCON channel. When planning your ESCON implementation, this section must be used.

TCP/IP Considerations

The 3746 Nways Controller (Model 900 and 950) implements both an APPN network node and an IP router function. The 3746-9x0 IP router function is completely independent of the 3745 NCP IP router function. The 3746-9x0 IP router function connects to TCP/IP for MVS over an ESCON channel using the CDLC channel protocol.

The 3746-9X0 supports native IP over:

- ESCON adapters (with ESCP2 and ESCP3)
- Token-ring adapters (with TRP2 and TRP3)
- Communication line adapters (with CLP2 and CLP3) for frame relay, PPP, and X.25

The throughput is increased because the data goes directly from the adapter to MVS TCP/IP in the host. This enhancement allows IP datagrams to be sent and received across the channel without having been encapsulated into SNA, frames as otherwise done with SNALINK. The result is reduced mainframe CPU consumption and improved throughput, because interaction with SNALINK address space is no longer required.

Performance tuning is simplified because:

- Controller Configuration Management (CCM) Tool is configured such that default parameters are optimized for performance, it is very important to keep ESCON Station DELAY at 0 in order to insure a good throughput during a one way file transfer.
- For ESCON, MTU or IP, the packet size needs to be set in the MVS TCP/IP profile (GATEWAY or BSDROUTING parameters). Recommended MTU size or packet size is 8192 in the MVS TCP/IP configuration, but due to 3746 internal limitation, the real MTU size after 3746 and MVS negotiation will be limited automatically to 7148 if the MTU size is configured to 8192 in MVS. Make sure that you explicitly state the packet size instead of the default size, and for that code 8192 in the DEVICE statement while 8188 is coded in GATEWAY or BSDROUTING. Please see “TCP/IP PROFILE Example” on page 30.

- For FTP, make sure that the IP packet size MTU is large enough from end to end (workstation to host). For an ESCON adapter, use the value in the TCP/IP profile running on the host. For the other adapters, the default value needs to be increased to the recommended ESCON value of 7148 bytes.

TCP/IP PROFILE Example

```
;
; USRTCP.PROFILE.TCPIP
; ====================
; ---------------------------------------------------------------------
;
; The various pool sizes can be customized for your environment.
; Please see the Planning and Customization manual for details on
; improving your system's overall performance by changing these
; values.

ACBPOOLSIZE                 1000
ADDRESSTRANSLATIONPOOLSIZE  1500
CCBPOOLSIZE                 150
; DATABUFFERPOOLSIZE          160  8192
DATABUFFERPOOLSIZE          160  32768
ENVELOPEPOOLSIZE            750
IPROUTEPOOLSIZE             300
; LARGEENVELOPEPOOLSIZE       50   8192
LARGEENVELOPEPOOLSIZE      100   32768
RCBPOOLSIZE                 50
SCBPOOLSIZE                 256
SKCBPOOLSIZE                256
SMALLDATABUFFERPOOLSIZE     25
TCBPOOLSIZE                 256
UCBPOOLSIZE                 100

;
; ---------------------------------------------------------------------
;
; Turn off all tracing.  If tracing is to be used, comment out the
; NOTRACE command and insert the TRACE statements here.

NOTRACE SCREEN
; TRACE <trace_parameter>
; TRACE ALL
; MORETRACE ALL

;
; ---------------------------------------------------------------------
;
; Inform the following users of serious errors
;

INFORM
    CCPIBE TCPMAINT
    BEN    TCPMAINT
    CCPIB5 TCPMAINT
    COUSTO TCPMAINT
ENDINFORM
```

```
;
; Obey the following users for restricted commands
;

OBEY
    CCPIBE  TCP197E4 TCPMAINT
    TREMEUR TCP197E4 TCPMAINT
    CCPIB5  TCP197E4 TCPMAINT
ENDOBEY

;
; ---------------------------------------------------------------------
;
; Flush the arp tables every 5 minutes
;

ARPAGE 5

;
; ---------------------------------------------------------------------
;
; The SYSCONTACT and SYSLOCATION statements are used for SNMP.
;
; SYSCONTACT is the contact person for this managed node and how to
; contact this person.  Used for MVS agent MIB variable "sysContact".
;
;
;SYSCONTACT
;   MAIN SUPPORT
;ENDSYSCONTACT
;
;
DATASETPREFIX USRTCP
;
; SYSLOCATION is the physical location of this node.  Used for MVS
; agent MIB variable "sysLocation".
;
;
SYSLOCATION
   BOX TEST IP B2 LEVEL 1
ENDSYSLOCATION
;
; Set Telnet timeout to 10 minutes
; ================================
INTERNALCLIENTPARMS TIMEMARK 600 ENDINTERNALCLIENTPARMS

; DEFINITION OF IP NATIVE TCPIP MVS TO ESCON ADAPTER 3746-9XX
; ===========================================================
;DEVICE NCPCAR1 NCPC C25  "read-buff"
;                         "write buff" read_size" "write_size"
;
 DEVICE NCPCAR1 NCPC C25 100 100 4096 4096
 LINK  CAR1 NCPC 0 NCPCAR1
;
; ---------------------------------------------------------------------
;
; AUTOLOG the following servers.
;
```

```
AUTOLOG
;   T22SNL01    ; SNALINK
;   T22LU62     ; SNALINK LU 6.2
  T22FTPA     ; FTP Server
  T22FTPB     ; FTP Server
; CEFTP   CE  ; FTP Server
;   T22LPSV     ; LPD Server
;   T22NMS      ; Domain Name Server
;   T22PORTM    ; Portmap server
;   T22ROUTD    ; RouteD Server
;   T22SMTP     ; SMTP Server
;   T22SNMPD    ; SNMP Agent Server
;   T22SNMPQ    ; SNMP Client Address space
;   T22X25      ; X25
;   MVSNFS      ; Network File System Server
ENDAUTOLOG

;
; ------------------------------------------------------------------------
;
; Reserve PORTs for the following servers.
;
; NOTE:  A port that is not reserved in this list can be used by
;        any user.  If you are have TCP/IP hosts in your network that
;        reserve ports in the range 1-1023 for privileged
;        applications, you should reserve them here to prevent users
;        from using them.
;
;        The port values below are from RFC 1060, "Assigned Numbers"

PORT
    20 TCP T22FTPA   NOAUTOLOG ; FTP Server
    20 TCP T22FTPB   NOAUTOLOG ; FTP Server
    21 TCP T22FTPA             ; FTP Server
    21 TCP T22FTPB             ; FTP Server
    23 TCP INTCLIEN            ; TELNET Server
    25 TCP T22SMTP             ; SMTP Server
    53 TCP T22NMS              ; Domain Name Server
    53 UDP T22NMS              ; Domain Name Server
   111 TCP T22PORTM            ; Portmap Server
   111 UDP T22PORTM            ; Portmap Server
   135 UDP T22LLBD             ; NCS Location Broker
   161 UDP T22SNMPD            ; SNMP Agent
   162 UDP T22SNMPQ            ; SNMPQE Agent
   515 TCP T22LPSV             ; LPD Server
   520 UDP T22ROUTD            ; RouteD Server
   750 TCP T22KERB             ; Kerberos
   750 UDP T22KERB             ; Kerberos
   751 TCP T22@ADM             ; Kerberos Admin Server
   751 UDP T22@ADM             ; Kerberos Admin Server
  2049 UDP MVSNFS              ; NFS Server
  3000 TCP T22CICS             ; CICS Socket

; HOME Internet addresses of each link in the host.
; ================================================

HOME
```

```
 9.100.75.1    CAR1

;
; IP Routing information for the host.  All static IP routes should
; be added here.
;

GATEWAY
;
; Direct and Indirect routes
;
; Network  First hop  Driver   Packet size  Subnet mask  Subnet value
 9.100.75.2     =      CAR1      4092     HOST
 210        9.100.75.2 CAR1      4092      0
 204        9.100.75.2 CAR1      4092      0
 9          9.100.75.2 CAR1      4092      0
 10         9.100.75.2 CAR1      4092      0
 11         9.100.75.2 CAR1      4092      0
 12         9.100.75.2 CAR1      4092      0
 13         9.100.75.2 CAR1      4092      0
 14         9.100.75.2 CAR1      4092      0
;
; Default Route - All packets to an unknown destination are routed
;                 through this route.
;
; Network  First hop   Driver   Packet size  Subnet mask  Subnet value
;
;DEFAULTNET 9.100.75.2  CAR1   DEFAULTSIZE         0
 DEFAULTNET 9.100.75.2  CAR1   4096                0
;
;
; ---------------------------------------------------------------------
;
; ; RouteD Routing information (if you are using the ROUTED server)
; ; If you are using RouteD, uncomment all the lines below for
; ; 'BSDROUTINGPARMS', and comment out all the lines for the 'GATEWAY'
; ; statement.
;
; ;  link     maxmtu   metric   subnet mask     dest addr
; BSDROUTINGPARMS false
;    TR1       2000       0     255.255.255.0   0
;    ETH1      1500       0     255.255.255.0   0
;    FDDI1  DEFAULTSIZE   0     255.255.255.0   0
;    L0102SNA  2000       0     255.255.255.0   1.2.1.1
; ENDBSDROUTINGPARMS
;
;
; Use TRANSLATE to specify the hardware address of a specific Internet
; address.  See the Planning and Customization manual for more
; information
;
;TRANSLATE
```

VTAM Considerations

```
; ---------------------------------------------------------------------
; Define the VTAM parameters required for the TELNET server
;

BEGINVTAM
    ; Define logon mode tables to be the defaults shipped with the latest
    ; level of VTAM
  3278-3-E NSX32703 ; 32 line screen - default of NSX32702 is 24 line screen
  3279-3-E NSX32703 ; 32 line screen - default of NSX32702 is 24 line screen
  3278-4-E NSX32704 ; 48 line screen - default of NSX32702 is 24 line screen
  3279-4-E NSX32704 ; 48 line screen - default of NSX32702 is 24 line screen
  3278-5-E NSX32705 ; 132 column screen - default of NSX32702 is 80 columns
  3279-5-E NSX32705 ; 132 column screen - default of NSX32702 is 80 columns
    ; Define the LUs to be used for general users
  DEFAULTLUS
      TCP01001 TCP01002 TCP01003 TCP01004 TCP01005
      TCP01006 TCP01007 TCP01008 TCP01009 TCP01010
      TCP01011 TCP01012 TCP01013 TCP01014 TCP01015
  ENDDEFAULTLUS
  DEFAULTAPPL CNM01 ; Set the default application for all TELNET session
  LINEMODEAPPL ITPECHO ; send all line mode terminals directly to TSO
  ALLOWAPPL TSO* DISCONNECTABLE ; Allow all users access to TSO applications
              ; TSO is multiple applications all beginning with TSO so use
              ; the * to get them all. If a session is closed, disconnect
              ; the user rather than log off the user.
; RESTRICTAPPL IMS ; Only three users may use IMS
;   USER USER1 ; Allow user1 access
;     LU TCPIMS01 ; Assign USER1 LU TCPIMS01
;   USER USER2 ; Allow user2 access from the default LU pool
;   USER USER3 ; Allow user3 access from three TELNET sessions, each with
               ; different reserved LU.
;     LU TCPIMS31 LU TCPIMS32 LU TCPIMS33
  ALLOWAPPL * ; Allow all applications that have not been previously
              ; specified to be accessed
ENDVTAM

;
; ---------------------------------------------------------------------
;
; Start all the defined devices.
; Done with OBEYFILE COMMAND DSN='user.tcpip'
;
START NCPCAR1
```

VTAM PTFs

Refer to *IBM 3745 Communication Controller Models A, IBM 3746 Nways Multiprotocol Controller, Models 900 and 950: Overview* for information about the PTFs that need to be installed to insure proper support of the 3746 Network Node DLUR function.

TCP/IP PTFs

Refer to *IBM 3745 Communication Controller Models A, IBM 3746 Nways Multiprotocol Controller, Models 900 and 950: Overview* for information about the PTFs that need to be installed to insure proper support of the 3746 Network Node IP function (TCP/IP V3R1 + APAR II09903).

Attention Delay Timer

Attention delay is defined in CCM by the DELAY timer parameter in the ESCON Station - DLC Parameters panel. Defining ESCON stations with a Delay timer value greater than zero may increase the response time by up to two times the value compared to Delay timer=0. This represents an increase of up to 0.2 seconds when using the default value of 0.1 seconds.

Potential Effects of DELAY=0 on Adapter Throughput

A Delay timer=0 increases the occurrences of the attention status on the channel, which requires some host process before actual data transfer over the channel adapter. This may reduce the throughput, specifically when there is only one logical link station on the adapter. However, with multiple logical link stations per adapter (up to 32), the adapter is free for data transfer by the other logical link stations.

Therefore, it is recommended to set the attention delay to 0 for:

- Response time-oriented applications (transaction processing, interactive traffic)
- Data throughput-oriented applications (client-server, batch).

VTAM/TPF Buffer

For optimal throughput over an ESCON channel, the VTAM/TPF buffers (IOBUFs) should be as large as the largest message (including the SNA or APPN/HPR overhead) to be sent over the channel. The largest possible VTAM/TPF buffer size is about 4 KB (the size of one page of memory).

However, ESCON adapter performance is not significantly improved for buffer sizes greater than 2 KB and host memory management is optimized with this size buffer if the average message size is 2 KB or larger.

Note: Verify that the host has enough storage for these buffers so that the overall host performance is not impaired.

For more information on the definition of:

VTAM IOBUF buffer pool start option
Refer to the *VTAM Resource Definition Reference*.

UNITSZ definition in the VTAM HOST macro
Refer to the *VTAM Network Implementation Guide*.

Maximum BTU Size

The maximum basic transmission unit (BTU) size supported by the 3746 Network Node is 8000 bytes. For ESCON host links, the CCM parameters **Maximum received PIU size** and **Maximum sent PIU size** in the **Port Configuration - APPN Configuration** panel of CCM should be set to 8000 bytes, if possible as it has the least amount of overhead due to frame headers. This means that it may be necessary to use a less than optimal value of 8000 bytes because some of the equipment used as network node may have a maximum possible BTU size less than 8000 bytes. Using CCM, specify a maximum BTU of at least 4096, or higher if TCP/IP MVS levels allow.

File Transfer Performance (APPN/HPR)

Using CCM, set the Maximum Received PIU size and Maximum Sent PIU size to higher values than the default set by CCM. Pay special attention to the Buffer Utilization of the adapter (see the MOSS-E Performance Management menus). If the processor utilization exceeds 70%, then either:

- Decrease the transmission window size (MAXOUT)
- Increase the acknowledgment frequency at the receiver side [MAXIN (N3)]

You may need to do this more than once until you get the optimum values for this adapter.

File Transfer Performance (IP)

Using MVS configuration, specify a maximum transmission unit (MTU) value of at least 8192 bytes to get 7148 after automatic negotiation between the 3746 and the MVS.

High Number of End Nodes on an ESCON Adapter

The information in “File Transfer Performance (APPN/HPR)” also applies here.

Forcing the Use of a Specific APPN/HPR Route

You can configure a session to use a specific path rather than the default used by the 3746 Network Node. The method to force a route, explained in the VTAM V4 R2 (or higher) *Network Implementation Guide*, does not entirely apply to the 3746 Network Node because the UPARM1 parameter has a fixed value (128) in the 3746. Instead, use the COSTBYTE or COSTTIME parameter:

1. In VTAM, set `UPARM1=(0,255)`. Set either COSTBYTE or COSTTIME to a range that will include the value used in CCM but exclude zero (0).
2. In CCM, change the default value (zero) of either COSTBYTE or COSTTIME. to the value corresponding to the route you want to use. Be sure to keep the value within the range set in VTAM.

Station Definitions in VTAM

In VTAM, you must attribute an address to each station defined in CCM.

For an APPN/HPR connection (controlled by the 3746 Network Node), you must define and activate the local major node related to the MVS IOGEN address to activate the connection.

In the following example, the virtual address of the APPN/HPR station (controlled by the 3746 Network Node) is 700.

```
S12L0700 VBUILD TYPE=LOCAL

P12L0700 PU    CUADDR=700,XID=YES,CPCP=YES,
               PUTYPE=2,MAXBFRU=15,
               CONNTYPE=APPN
```

For channel attachment to the data host (for channels controlled by NCP) you must define and activate the local major node related to the address to activate the attachment.

In the following example, the virtual address of the subarea station is 700.

```
C39MAJ   VBUILD TYPE=CA

GRC39    GROUP  LNCTL=NCP

LINEC39  LINE   ADDRESS=700,MAXBFRU=254

PHYC39   PU     TGN=1
```

Chapter 5. ESCON Configuration Examples

This section provides diagrams of eight typical 3746 ESCON configurations controlled by the 3745 NCPs and/or 3746 NNP (APPN/HPR and IP) that can be created with the *CCM User's Guide*, SH11-3081. Also included are example IOCP and, for the 3746-900, NCP macroinstructions that correspond to the configuration in each example.

Some examples have been coded for NCP (SNA); some have been coded for 3746 IP or 3746 APPN/HPR. See Table 5.

Table 5. Variations of ESCON Example Configurations Coded for SNA, IP, and APPN/HPR.

Example and Page Number	3746 Model	3745 Mode	SNA (NCP)	IP (3746)	APPN/HPR (3746)	Host Mode
1 on Page 42	950	-	-	Yes	-	Basic
2 on Page 46	950	-	-	-	Yes	Basic
3 on Page 50	900	Single	Yes	Yes	Yes	Basic ESCD
4 on Page 62	900	Single	Yes	-	-	Basic
5 on Page 67	900	Single	Yes	-	-	Basic ESCD
6 on Page 80	900	Backup	Yes	-	-	LPAR ESCD
7 on Page 98	900	Dual	Yes	-	-	LPAR ESCD
8 on Page 121	900	Dual	Yes	-	-	EMIF ESCD

Figure 11 on page 41 shows the *CCM User's Guide*, SH11-3081 port and host link panels used during ESCON configuration. The example shown is for a 3746 Network Node configuration in an APPN/HPR network.

IOCP and NCP Output Files

The *CCM User's Guide*, SH11-3081 output files have to be completed before they can be used for IOCP and NCP generation.

IOCP Output Files

Make the following changes, as necessary, in the IOCP output files:

- Replace "____" with your own labels.
- The CUNUMBR of the CNTLUNIT macroinstruction must be unique in your IOCP.
- For ESCON Directors, define them with CNTLUNIT and IODEVICE macros if they are not yet defined in your IOCP GEN.
- For VM:

  - If you want to run this file with a VM IOCP, you must remove the ADAPTER=TYPE7 line from each of the IODEVICE macro examples in this chapter.
  - Create the DMKRIO or HCPRIO file.
- For HCD/MVS (for the HCD migration task), you must define at least one NIO console by adding an MVSCP NIPCON macro.
- For EMIF, if you use duplicate device numbers in two or more partitions, you must add the PART= parameter to each of the IODEVICE macros.

NCP Output Files

Make the following changes, as necessary, in the NCP output files:

- Replace "_____" with your own labels.
- Match PU labels with physical resource (PHYSRSC) values.
- For VTAM activation, add a PCCU macroinstruction for VTAM activation, if you want to use this NCP with a VTAM.

Figure 10 shows the main parameters given in the example diagrams that follow in this section.

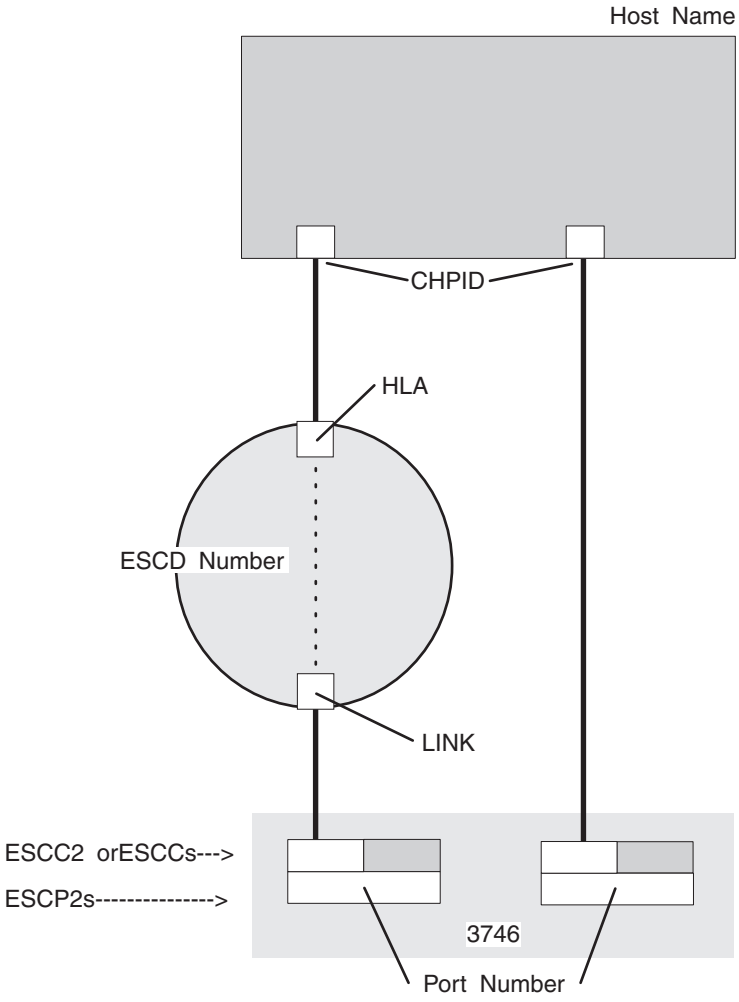


Figure 10. Main Parameters in Example Diagrams

Configuration Example

Figure 11 shows the relationship between a configuration diagram and CCM configuration parameters.

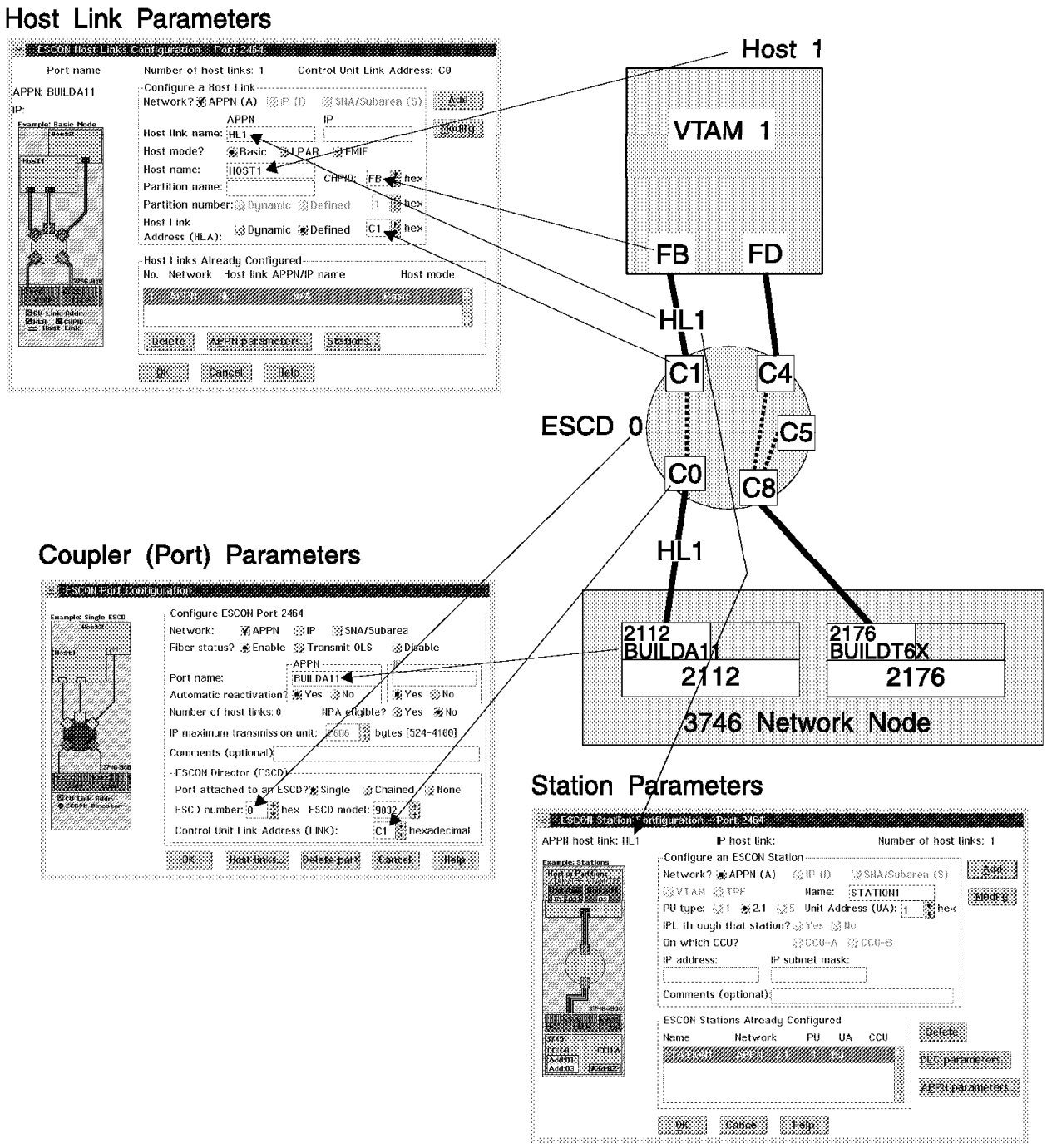


Figure 11. CCM Parameters

For further information about CCM, refer to the *IBM Controller Configuration and Management: User's Guide*, SH11-3081.

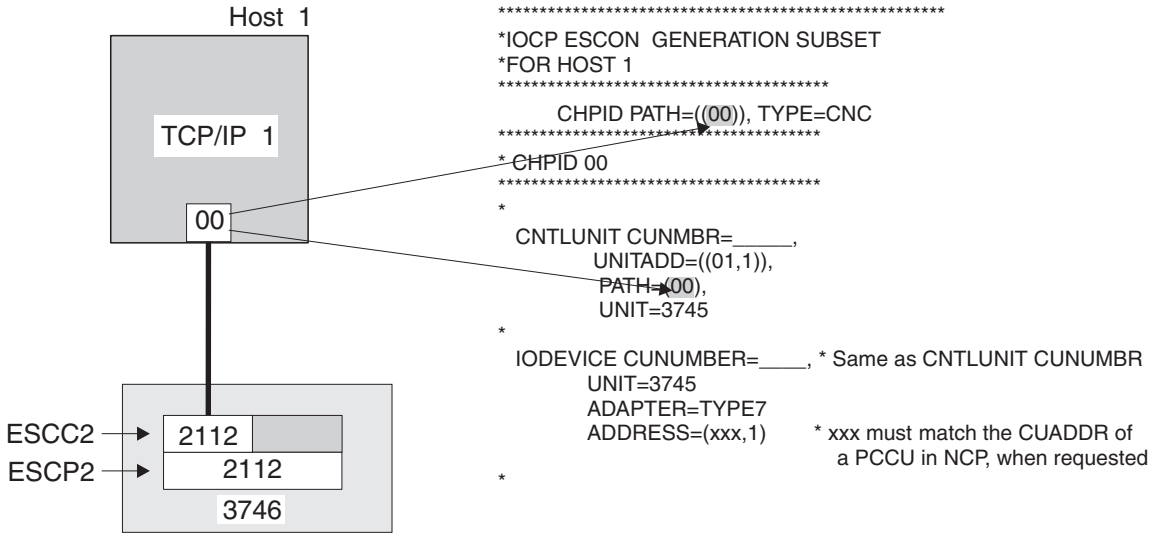
Example 1 (IP)

The characteristics of this example are:

3746 model 950
Network type IP
CCU mode
ESCD None
Host mode Basic

The following configuration figure includes its associated IOCP file:

Example 1: IOCP Macros for Host 1



CCM User's Guide, SH11-3081 Worksheets for Example 1

Example 1: ESCON Port Configuration

Port number: *2112*	
Network:	□ *APPN* √ IP □ SNA Subarea
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	PLI2112 alphanumeric characters
Automatic Reactivation	√ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	□ *Single* □ Chained √ None
ESCD number	_____hexadecimal (default: *0*)
ESCD Model	□ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	_____hexadecimal (default: *80*)

Example 1: ESCON Port – Host Link Configuration

Port number: *2112*	
Network	□ *APPN (A)* √ IP (I) □ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	*HLI12112* (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*0*_____hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *80*)

Example 1: ESCON Port – Station Configuration

Port number: *2112* Port name : *PLI2112* Host link name: *HLI12112*	
Network	□ *APPN (A)* √ IP (I) □ SNA/Subarea (S)
Access Method	□ VTAM □ TPF
Name:	*. STI12112* (alphanumeric characters)
PU type	√ 1 □ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	*2.1.1.1* (IP dotted notation)
IP subnet mask:	*255.0.0.0* (IP dotted notation)
Comments	*TCP/IP1*

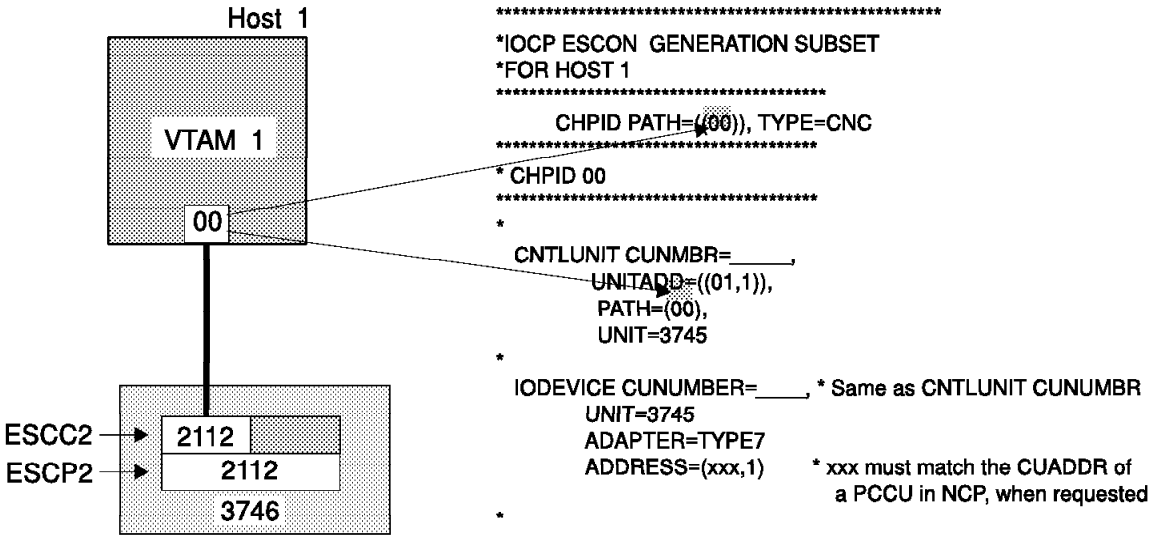
Example 2 (APPN)

The characteristics of this example are:

3746 model 950
Network type APPN/HPR
CCU mode
ESCD None
Host mode Basic

The following configuration figure includes its associated IOCP file:

Example 2: IOCP Macros for Host 1



CCM User's Guide, SH11-3081 Worksheets for Example 2

Example 2, ESCON Port Configuration

Port number: *2112*	
Network:	√ *APPN* □ IP □ SNA Subarea
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	*PLA2112* alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation (APPN)	√ *Yes* □ No
NPA eligible	□ Yes √ No
Port attached to an ESCD?	□ *Single* □ Chained √ None
ESCD number	_____hexadecimal (default: *0*)
ESCD Model	□ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	_____hexadecimal (default: *80*)

Example 2, ESCON Port – Host Link Configuration

Port number: *2112*	
Network	√ *APPN (A)* □ IP (I) □ SNA/Subarea (S)
Host Link Name (APPN)	*HLA12112* (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*0*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *80*)

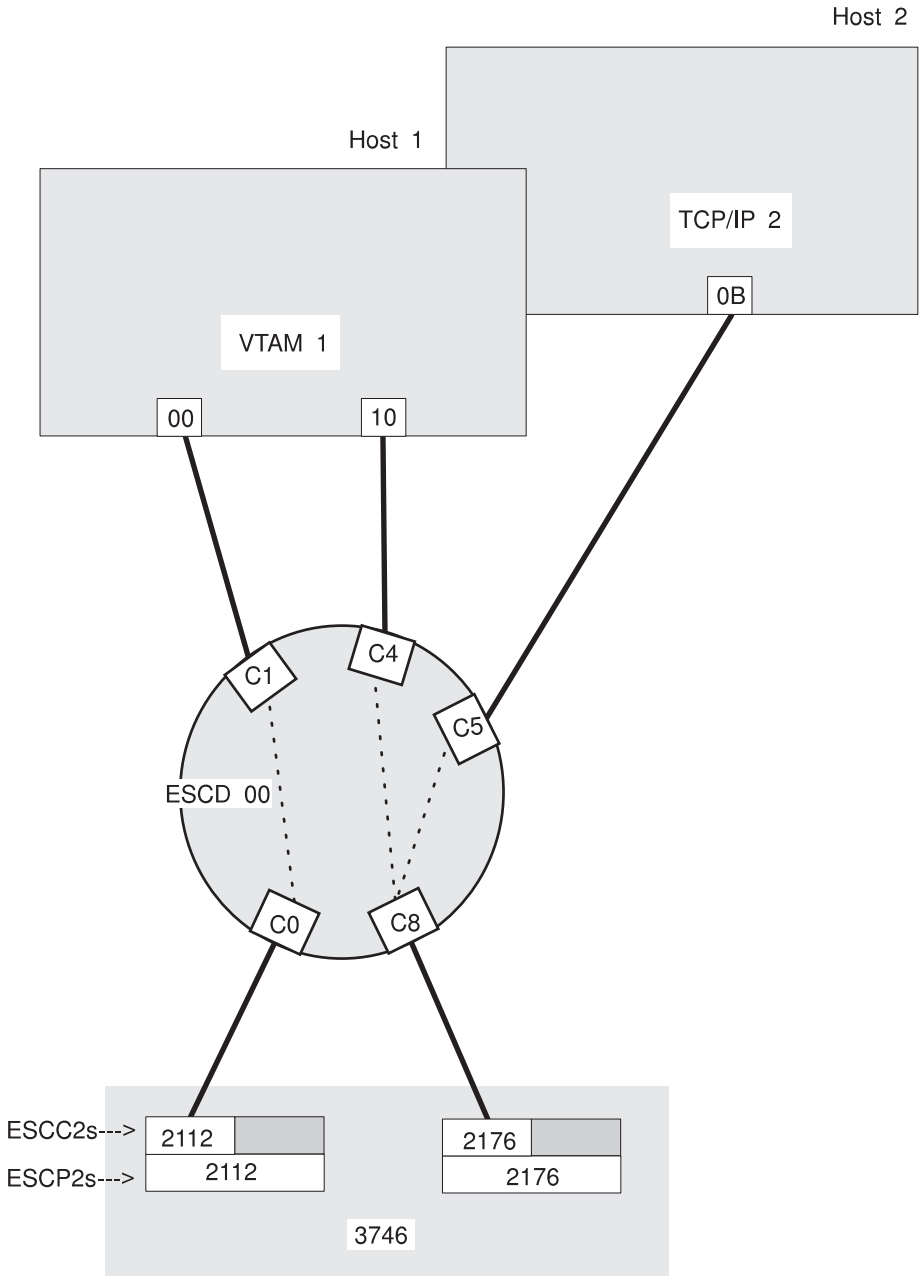
Example 2, ESCON Port – Station Configuration

Port number: *2112* Port name : *PLA2112* Host link name: *HL012112*	
Network	√ *APPN (A)* □ IP (I) □ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 3 (SNA, IP, APPN/HPR)

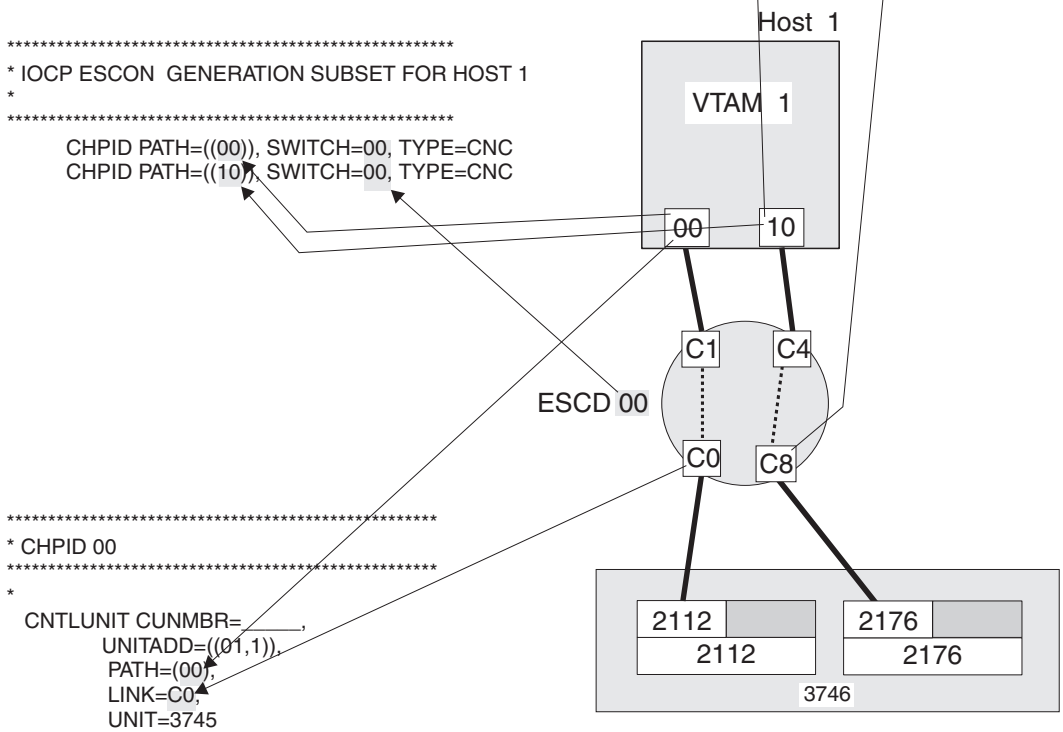
The characteristics of this example are:

3746 model	900
Network type	SNA, IP, APPN/HPR
CCU mode	Single
ESCD	One
Host mode	Basic



Example 3: IOCP Macros for Host 1

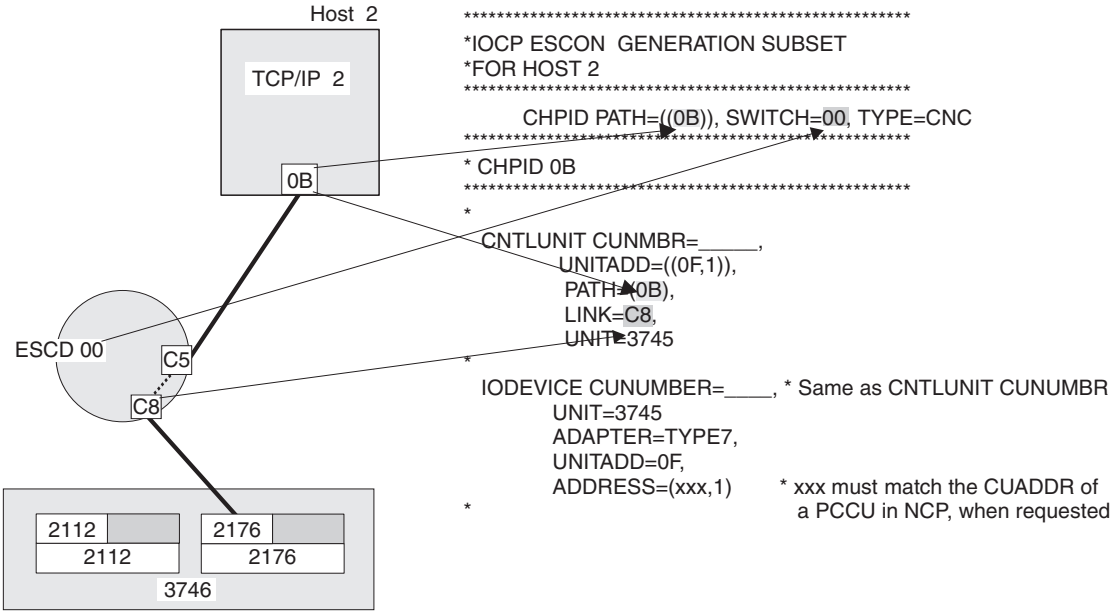
```
************************************************************
* CHPID 10
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((0E,1)),
           PATH=(10),
           LINK=C8,
           UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=0E,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
************************************************************
```




```
*****************************************************
* IOCP ESCON  GENERATION SUBSET FOR HOST 1
*
*****************************************************
       CHPID PATH=((00)), SWITCH=00, TYPE=CNC
       CHPID PATH=((10)), SWITCH=00, TYPE=CNC

*****************************************************
* CHPID 00
*****************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1)),
           PATH=(00),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
```

Example 3: IOCP Macros for Host 2



CCM User's Guide, SH11-3081 Worksheets for Example 3

Example 3: ESCON Port Configuration

Port number: *2112*	
Network:	√ *APPN* □ IP □ SNA Subarea
Name	*PLA2112*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	*PLA2112* alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	√ *Yes* □ No
NPA eligible	√ Yes □ No
IP maximum transmission unit	_____bytes (524-4100, default: *2060*)
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0*_____hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C0*_____hexadecimal (default: *80*)

Example 3: ESCON Port – Host Link Configuration

Port number: *2112*	
Network	√ *APPN (A)* □ IP (I) □ SNA/Subarea (S)
Host Link Name (APPN)	*HL012112* (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*0*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C1*hexadecimal (default: *80*)

Example 3: ESCON Port – Station Configuration

Port number: *2112* **Port name :** *PL2112* **Host link name:** *HL012112*	
Network	√ *APPN (A)* □ IP (I) □ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	*STA2112* (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 3: ESCON Port Configuration

Port number: *2176*	
Network:	□ *APPN* √ IP √ SNA Subarea
Name	*PL2176*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	*PLI2176* alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	√ *Yes* □ No
NPA eligible	□ Yes □ No
IP maximum transmission unit	_____bytes (524-4100, default: *2060*)
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C8* hexadecimal (default: *80*)

Example 3: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*10*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C4*hexadecimal (default: *80*)

Example 3: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*E* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 3: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* √ IP (I) □ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	*HLI22176* *(alphanumeric characters)*
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*B*_____hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C5*_____hexadecimal (default: *80*)

Example 3: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PLI2176* **Host link name:** *HLI2176*	
Network	□ *APPN (A)* √ IP (I) □ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	*STIE2176* (alphanumeric characters)
PU type	√ 1 □ *2.1* □ 5
Unit address (UA)	*F* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	*2.4.3.5* (IP dotted notation)
IP subnet mask:	*255.0.0.0* (IP dotted notation)
Comments	*TCP/IP2*

NCP Output File for Example 3

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,               * PU label must match PHYSRSC X
             XMONLNK=YES,                                         X
             PUTYPE=1
*
*
*********************************************************************
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                          X
             PHYSRSC=PU2176    * Must match PU label
*                                of 2176 physical definition
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                         X
             MAXPU=16,                                            X
             MONLINK=CONT
________ PU   PUTYPE=5,                                           X
             ADDR=0F,                                             X
             MONLINK=YES,                                         X
             ANS=CONT
*
*********************************************************************
```

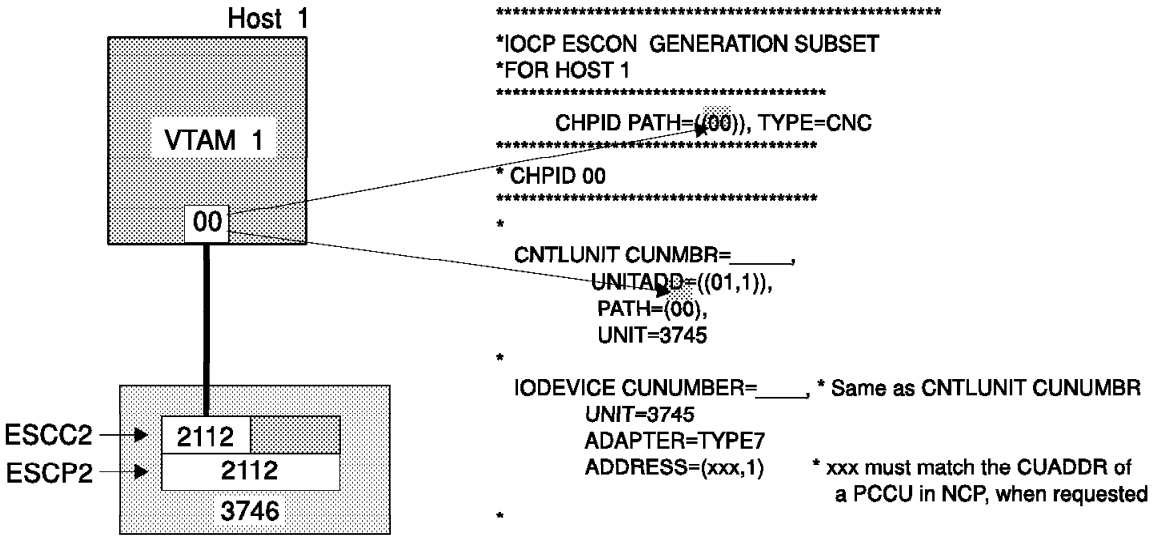
Example 4 (SNA)

The characteristics of this example are:

3746 model	900
Network type	SNA/subarea
CCU mode	Single
ESCD	None
Host mode	Basic

The following configuration figure includes its associated IOCP file:

Example 4: IOCP Macros for Host 1



CCM User's Guide, SH11-3081 Worksheets for Example 4

Example 4: ESCON Port Configuration

Port number: *2112*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2112*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	□ *Single* □ Chained √ None
ESCD number	_____hexadecimal (default: *0*)
ESCD Model	□ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	_____hexadecimal (default: *80*)

Example 4: ESCON Port – Host Link Configuration

Port number: *2112*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*0*_____hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *80*)

Example 4: ESCON Port – Station Configuration

Port number: *2112* Port name : *PL2112* Host link name: _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

NCP Output File for Example 4

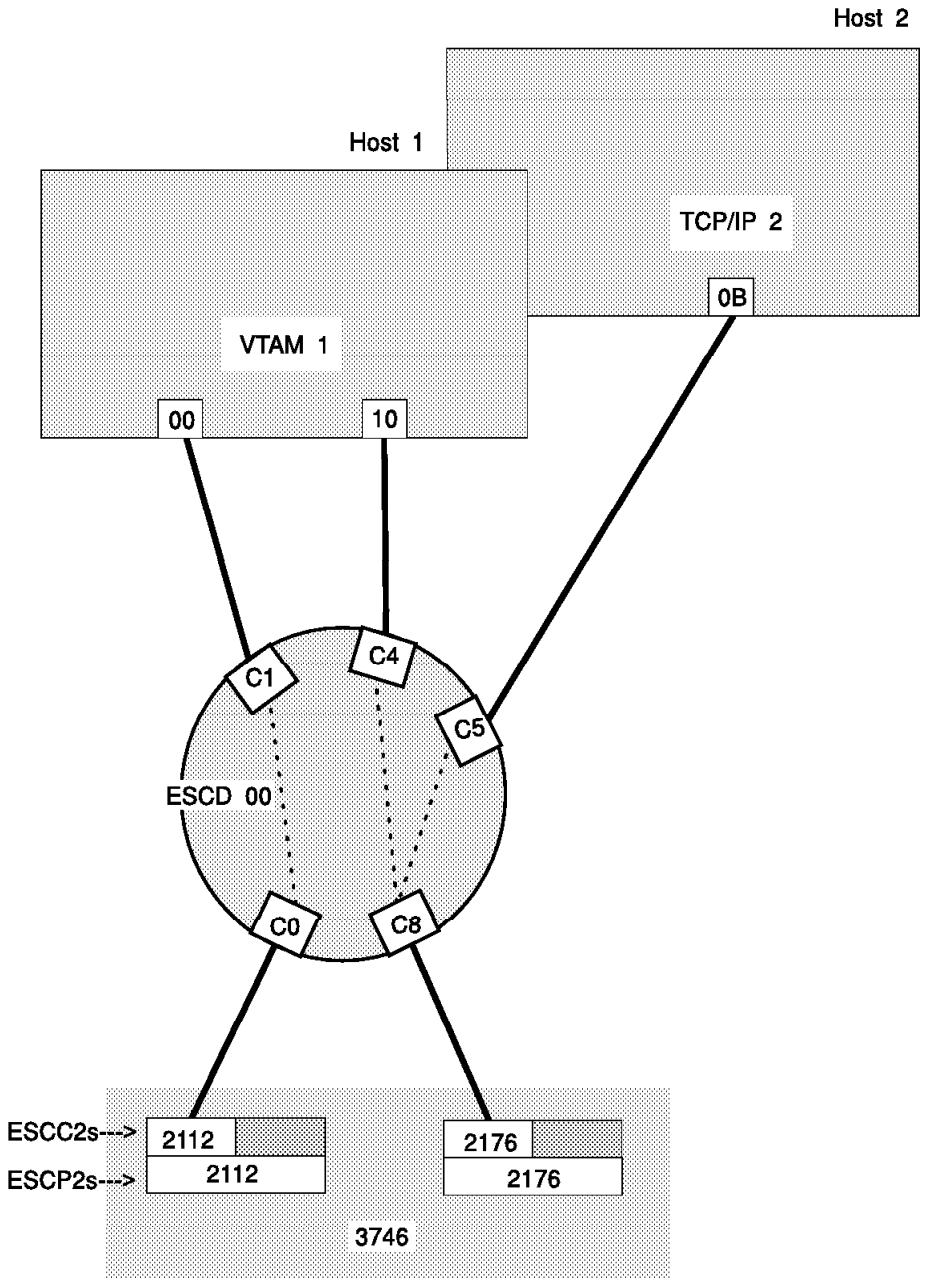
This example is for single CCU without an ESCD and without a host partition (no LP).

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES
*********************************************************************
*
_______ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2112
*********************************************************************
*
_______ LINE ADDRESS=2112
*
PU2112   PU ANS=CONT,             * PU label must match PHYSRSC    X
               XMONLNK=YES,                                        X
               PUTYPE=1
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2112
*********************************************************************
*
_______ GROUP LNCTL=CA,                                            X
               PHYSRSC=PU2112       * Must match PU label of
*                                     2112 physical definition
*********************************************************************
*  ESCP 2112  ESCC 2112  HOST/PART: HOST 1  HOST LINK 1
*********************************************************************
*
_______ LINE HOSTLINK=1,                                           X
               MAXPU=16,                                           X
               MONLINK=CONT
_______ PU   PUTYPE=5,                                             X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*********************************************************************
```

Example 5 (SNA)

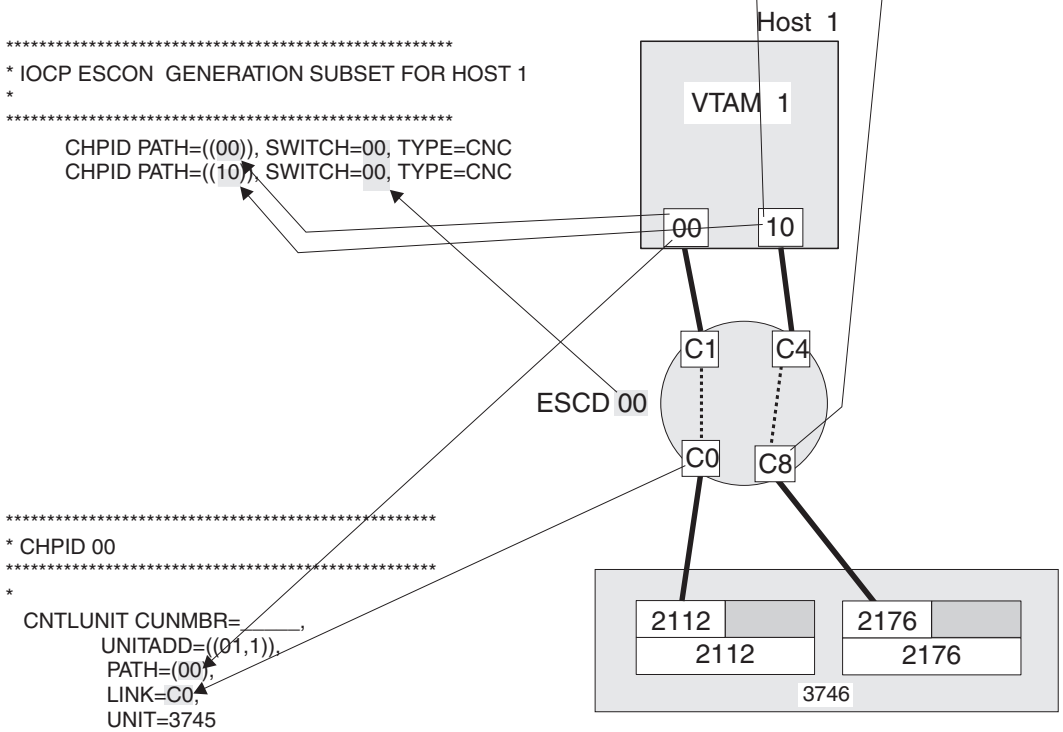
The characteristics of this example are:

3746 model 900
Network type SNA/subarea
CCU mode Single
ESCD One
Host mode Basic



Example 5: IOCP Macros for Host 1

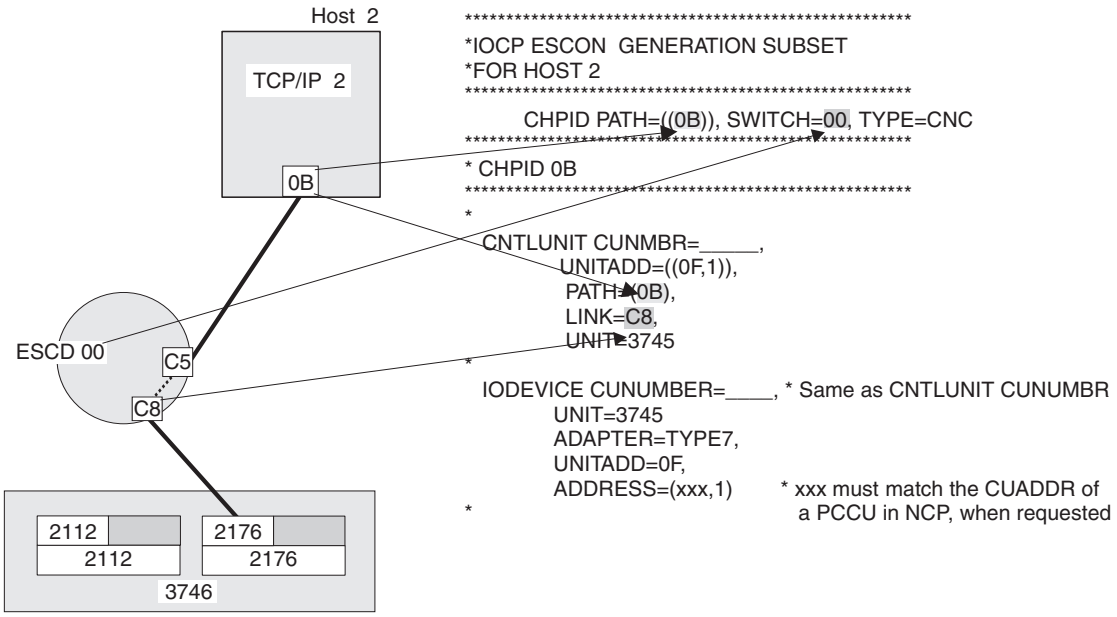
```
************************************************************
* CHPID 10
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((0E,1)),
            PATH=(10),
            LINK=C8,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=0E,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
************************************************************
```




```
*****************************************************
* IOCP ESCON  GENERATION SUBSET FOR HOST 1
*
*****************************************************
       CHPID PATH=((00)), SWITCH=00, TYPE=CNC
       CHPID PATH=((10)), SWITCH=00, TYPE=CNC

*****************************************************
* CHPID 00
*****************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1)),
            PATH=(00),
            LINK=C0,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
```

Example 5: IOCP Macros for Host 2




```
**************************************************
*IOCP ESCON  GENERATION SUBSET
*FOR HOST 2
**************************************************
        CHPID PATH=((0B)), SWITCH=00, TYPE=CNC
**************************************************
* CHPID 0B
**************************************************
*
        CNTLUNIT CUNMBR=_____,
                 UNITADD=((0F,1)),
                 PATH=(0B),
                 LINK=C8,
                 UNIT=3745
*
        IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
                 UNIT=3745
                 ADAPTER=TYPE7,
                 UNITADD=0F,
                 ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                        a PCCU in NCP, when requested
```

CCM User's Guide, SH11-3081 Worksheets for Example 5

Example 5: ESCON Port Configuration

Port number: *2112*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2112*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C0* hexadecimal (default: *80*)

Example 5: ESCON Port – Host Link Configuration

Port number: *2112*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*0*_____hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C1*_____hexadecimal (default: *80*)

Example 5: ESCON Port – Station Configuration

Port number: *2112* **Port name :** *PL2112* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 5: ESCON Port Configuration

Port number: *2176*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2176*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C8* hexadecimal (default: *80*)

Example 5: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*10*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C4*hexadecimal (default: *80*)

Example 5: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*E* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 5: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	√ *Basic* □ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	_____ (alphanumeric characters)
CHPID	*B*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C5*hexadecimal (default: *80*)

Example 5: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*F* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM4* _____

NCP Output File for Example 5

This example is for single CCU with an ESCD and without a host partition (no LP).

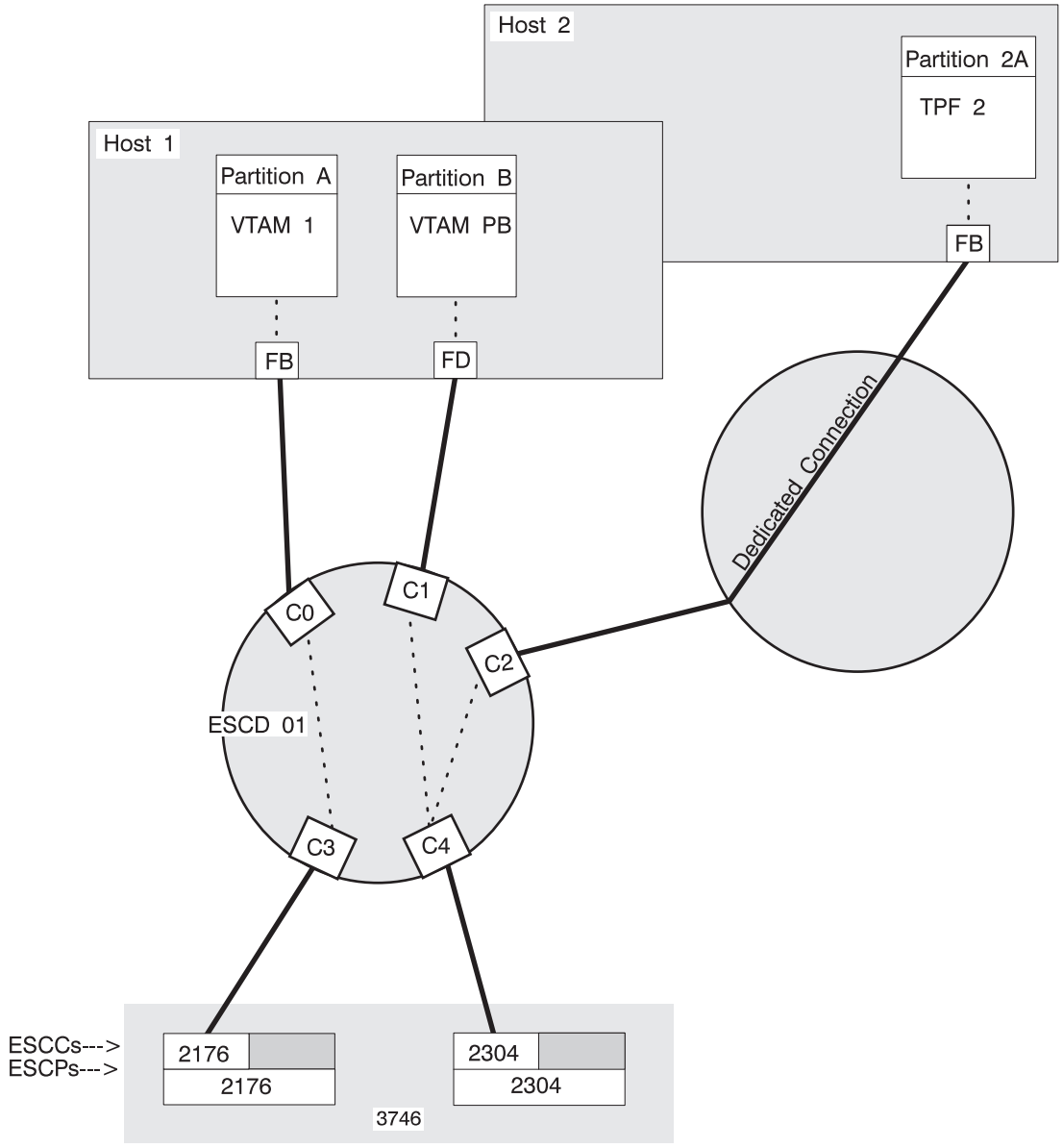
```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2112                             *
*********************************************************************
*
________ LINE ADDRESS=2112
*
PU2112   PU ANS=CONT,                * PU label must match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label must match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2112                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2112    * Must match PU label
*                                  of 2112 physical definition
*
*********************************************************************
```

```
*********************************************************************
*  ESCP 2112  ESCC 2112  HOST/PART: HOST 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                           X
               MAXPU=16,                                            X
               MONLINK=CONT
________ PU   PUTYPE=5,                                             X
               ADDR=01,                                             X
               MONLINK=YES,                                         X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                            X
               PHYSRSC=PU2176    * Must match PU label
*                                  of 2176 physical definition
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                           X
               MAXPU=16,                                            X
               MONLINK=CONT
________ PU   PUTYPE=5,                                             X
               ADDR=0E,                                             X
               MONLINK=YES,                                         X
               ANS=CONT
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 2  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                           X
               MAXPU=16,                                            X
               MONLINK=CONT
________ PU   PUTYPE=5,                                             X
               ADDR=0F,                                             X
               MONLINK=YES,                                         X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*********************************************************************
```

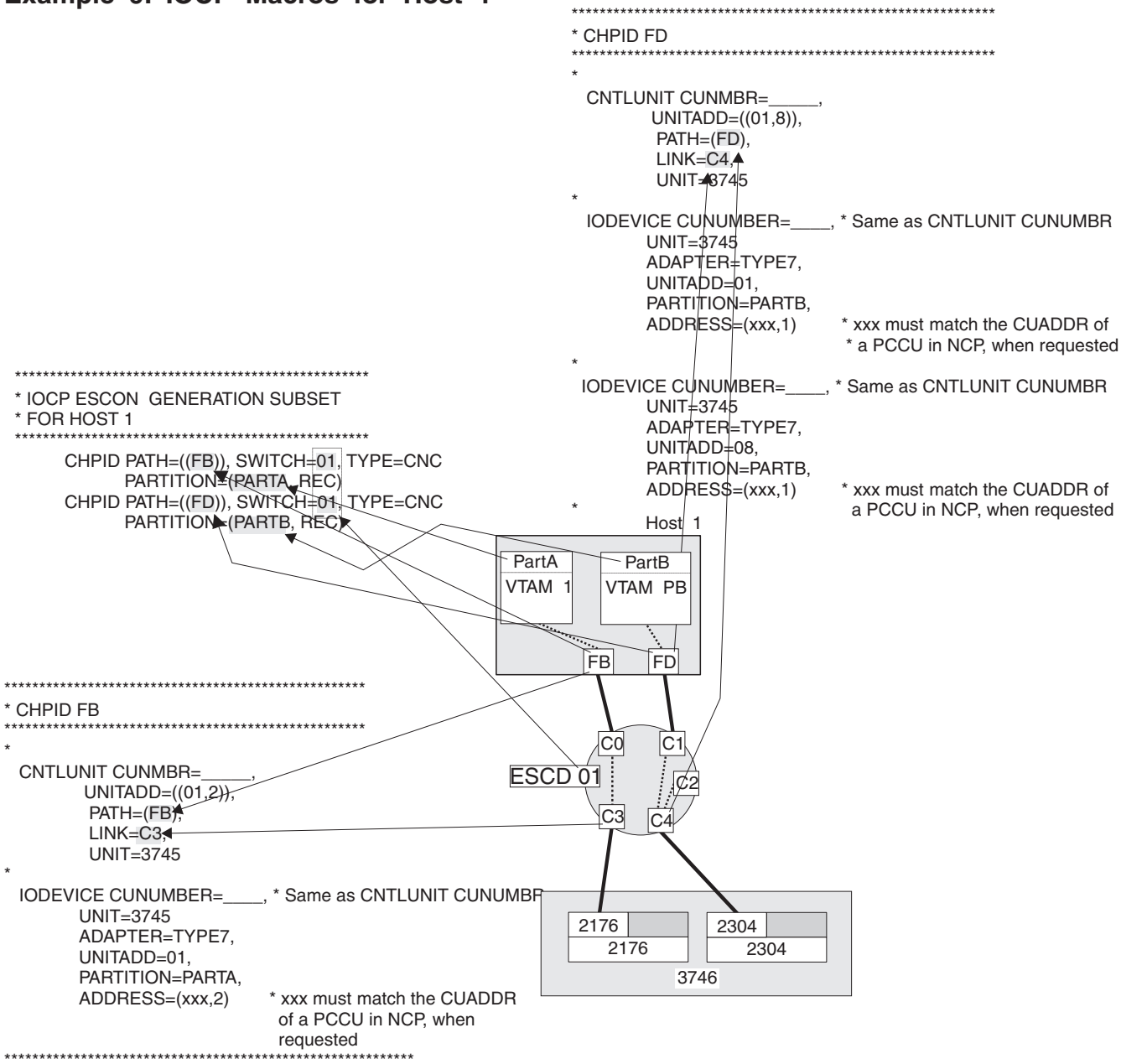
Example 6 (SNA)

The characteristics of this example are:

3746 model 900
Network type SNA/subarea
CCU mode Twin-backup
ESCD Cascaded
Host mode LPAR



Example 6: IOCP Macros for Host 1

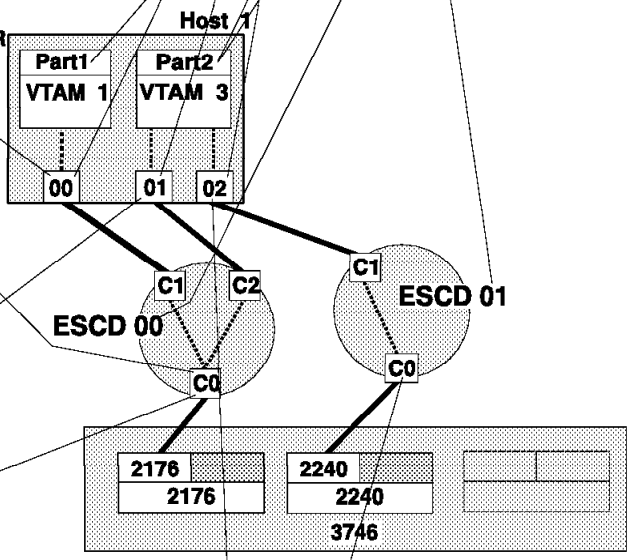


Example 7: IOCP Macros for Host 1

```
*****************************************************
* CHPID 00
*****************************************************
*
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((02,1)),
           PATH=(00),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=02,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR
*                                 of a PCCU in NCP, when
*                                 requested
*****************************************************
```

```
*****************************************************
* CHPID 01
*****************************************************
*
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((02,1)),
           PATH=(01),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____,  * Same as CNTLUNIT CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=02,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
*****************************************************
```

```
*****************************************************
* IOCP ESCON  GENERATION SUBSET
* FOR HOST 1
*****************************************************
       CHPID PATH=((00)), SWITCH=00, TYPE=CNC,
             PARTITION=(PART1, REC)
       CHPID PATH=((01)), SWITCH=00, TYPE=CNC,
             PARTITION=(PART2, REC)
       CHPID PATH=((02)), SWITCH=01, TYPE=CNC,
             PARTITION=(PART2, REC)
```




```
*****************************************************
* CHPID 02
*****************************************************
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((01,1)),
           PATH=(02),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____,    * Same as CNTLUNIT
                            * CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=01,
           ADDRESS=(xxx,1)  * xxx must match the
                            * CUADDR of
                            * a PCCU in NCP,
*                             when requested
```

CCM User's Guide, SH11-3081 Worksheets for Example 6

Example 6: ESCON Port Configuration

Port number: *2176*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2176*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*1* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C3* hexadecimal (default: *80*)

Example 6: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PARTA* (alphanumeric characters)
CHPID	*FB*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C0*hexadecimal (default: *80*)

Example 6: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 6: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** *HL012176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 6: ESCON Port Configuration

Port number: *2304*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2304*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	□ *Single* √ Chained □ None
ESCD number	*1* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C4* hexadecimal (default: *80*)

Example 6: ESCON Port – Host Link Configuration

Port number: *2304*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PARTB* (alphanumeric characters)
CHPID	*FD*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C1*hexadecimal (default: *80*)

Example 6: ESCON Port – Station Configuration

Port number: *2304* **Port name :** *PL2304* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAMPB* _____

Example 6: ESCON Port – Station Configuration

Port number: *2304* **Port name :** *PL2304* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*8* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAMPB* _____

Example 6: ESCON Port – Host Link Configuration

Port number: *2304*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART2A.* (alphanumeric characters)
CHPID	*FB* hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C2* hexadecimal (default: *80*)

Example 6: ESCON Port – Station Configuration

Port number: *2304* **Port name :** *PL2304* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	□ VTAM √ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*TPF2* _____

Example 6: ESCON Port – Station Configuration

Port number: *2304* **Port name :** *PL2304* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	□ VTAM √ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*TPF2* _____

NCP Output File for Example 6

This example is for twin CCUs with two ESCDs (one cascaded) and two hosts with partitions (LPs).

For CCU A

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label much match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2304                             *
*********************************************************************
*
________ LINE ADDRESS=2304
*
PU2304   PU ANS=CONT,                * PU label much match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2176         * Must match PU label
*                                       of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION A  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
________ PU   PUTYPE=5,                                            X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
```

```
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2304                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                            X
               PHYSRSC=PU2304          * Must match PU label
*                                        of 2304 physical definition
*
*********************************************************************
*  ESCP 2304  ESCC 2304  HOST/PART: HOST 1/PARTITION B  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                           X
               MAXPU=16,                                            X
               MONLINK=CONT
________ PU   PUTYPE=5,                                             X
               ADDR=01,                                             X
               MONLINK=YES,                                         X
               ANS=CONT
*
*********************************************************************
*  ESCP 2304  ESCC 2304  HOST/PART: HOST 2/PARTITION 2A HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                           X
               MAXPU=16
________ PU   PUTYPE=2,                                             X
               ADDR=01,                                             X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*********************************************************************
```

For CCU B

Note: The macros for CCU B are the same as for CCU A, except that the ADDR values are different.

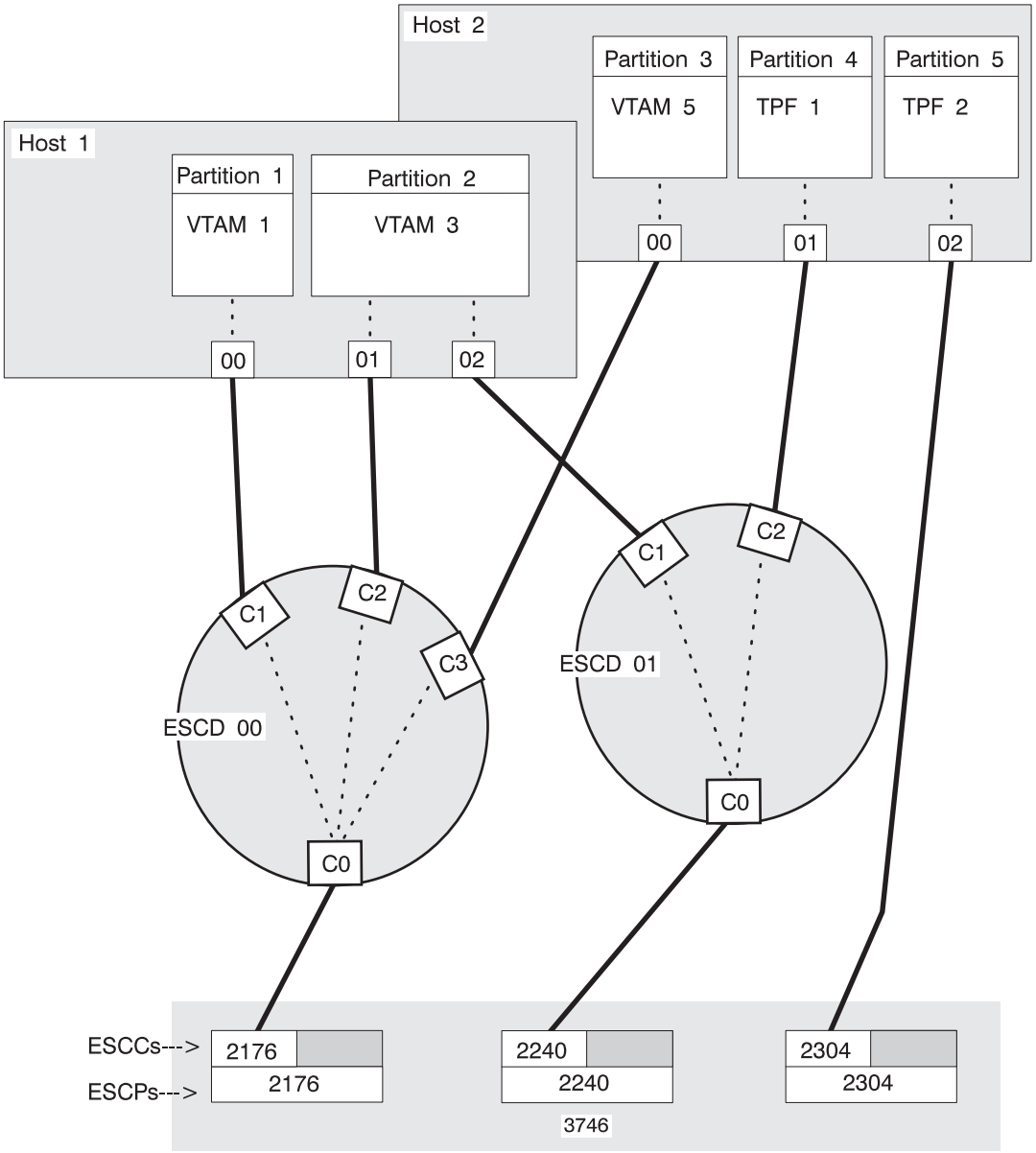
```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label much match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2304                             *
*********************************************************************
*
________ LINE ADDRESS=2304
*
PU2304   PU ANS=CONT,                * PU label much match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
             PHYSRSC=PU2176         * Must match PU label
*                                     of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION A  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
             MAXPU=16,                                             X
             MONLINK=CONT
________ PU   PUTYPE=5,                                            X
             ADDR=02,                                              X
             MONLINK=YES,                                          X
             ANS=CONT
*
*********************************************************************
```

```
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2304                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                            X
               PHYSRSC=PU2304          * Must match PU label
*                                        of 2304 physical definition
*
*********************************************************************
*  ESCP 2304  ESCC 2304  HOST/PART: HOST 1/PARTITION B  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                           X
               MAXPU=16,                                            X
               MONLINK=CONT
________ PU   PUTYPE=5,                                             X
               ADDR=08,                                             X
               MONLINK=YES,                                         X
               ANS=CONT
*
*********************************************************************
*  ESCP 2304  ESCC 2304  HOST/PART: HOST 2/PARTITION 2A HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                           X
               MAXPU=16
________ PU   PUTYPE=2,                                             X
               ADDR=02,                                             X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*
*********************************************************************
```

Example 7 (SNA)

The characteristics of this example are:

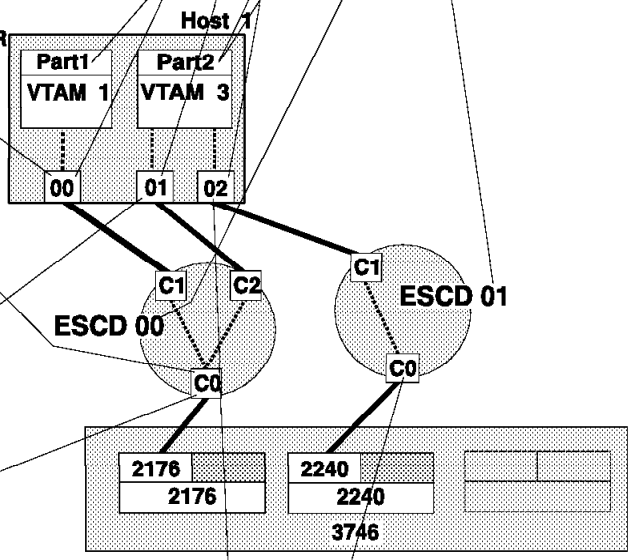
3746 model 900
Network type SNA/subarea
CCU mode Twin-dual
ESCD Two
Host mode LPAR



Example 7: IOCP Macros for Host 1

```
*******************************************************
* CHPID 00
*******************************************************
*
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((02,1)),
           PATH=(00),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=02,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR
*                               of a PCCU in NCP, when
*                               requested
*******************************************************
```

```
*******************************************************
* IOCP ESCON  GENERATION SUBSET
* FOR HOST 1
*******************************************************
      CHPID PATH=((00)), SWITCH=00, TYPE=CNC,
            PARTITION=(PART1, REC)
      CHPID PATH=((01)), SWITCH=00, TYPE=CNC,
            PARTITION=(PART2, REC)
      CHPID PATH=((02)), SWITCH=01, TYPE=CNC,
            PARTITION=(PART2, REC)
```




```
*******************************************************
* CHPID 01
*******************************************************
*
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((02,1)),
           PATH=(01),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=02,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
*******************************************************
```

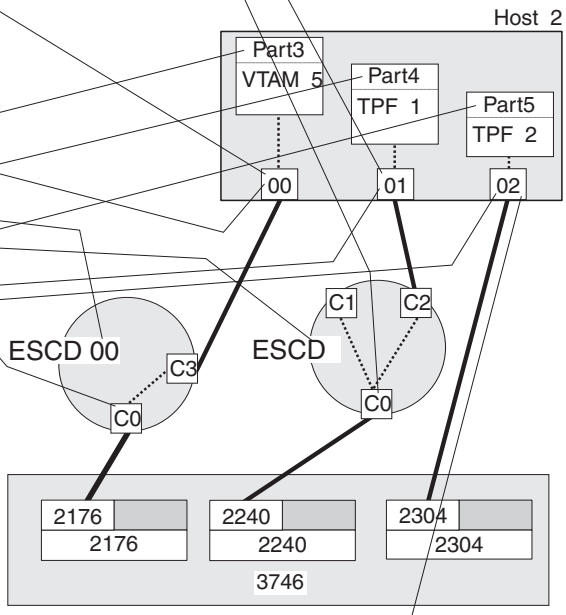
```
*******************************************************
* CHPID 02
*******************************************************
  CNTLUNIT CUNUMBR=_____,
           UNITADD=((01,1)),
           PATH=(02),
           LINK=C0,
           UNIT=3745
*
  IODEVICE CUNUMBR=____,    * Same as CNTLUNIT
                            * CUNUMBR
           UNIT=3745,
           ADAPTER=TYPE7,
           UNITADD=01,
           ADDRESS=(xxx,1)  * xxx must match the
                            * CUADDR of
                            * a PCCU in NCP,
*                             when requested
```

Example 7: IOCP Macros for Host 2

```
************************************************************
* CHPID 00
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1)),
            PATH=(00),
            LINK=C0,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           PARTITION=PART3,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
```

```
************************************************************
* CHPID 01
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1),
            PATH=(01),
            LINK=C0,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           PARTITION=PART4,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
```

```
************************************************************
* IOCP ESCON  GENERATION SUBSET
* FOR HOST 2
************************************************************
      CHPID PATH=((00)), SWITCH=00, TYPE=CNC,
            PARTITION=(PART3,REC)
      CHPID PATH=((01)), SWITCH=01, TYPE=CNC,
            PARTITION=(PART4,REC)
      CHPID PATH=((02)), TYPE=CNC, PARTITION=(PART5,REC)
```




```
************************************************************
* CHPID 02
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1)),
            PATH=(02),
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           PARTITION=PART5,
           ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                  a PCCU in NCP, when requested
```

CCM User's Guide, SH11-3081 Worksheets for Example 7

Example 7: ESCON Port Configuration

Port number: *2176*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2176*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	√ *Yes* □ No
NPA eligible	□ Yes □ No
IP maximum transmission unit	_____bytes (524-4100, default: *2060*)
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0*_____hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C0*_____hexadecimal (default: *80*)

Example 7: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	*HL012176* (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART1* (alphanumeric characters)
CHPID	*0*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C1*hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 7: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*4* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 7: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART2* (alphanumeric characters)
CHPID	*1*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C2*hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM3* _____

Example 7: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART3* (alphanumeric characters)
CHPID	*0* hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C3* hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM5* _____

Example 7: ESCON Port Configuration

Port number: *2240*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2240*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*1* hexadecimal (default: *0*)
ESCD Model	□ *9032* √ 9033 □ OEM
Control Unit Link Address (LINK)	*C0* hexadecimal (default: *80*)

Example 7: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART2* (alphanumeric characters)
CHPID	*2*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C1*hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM3* _____

Example 7: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART4* (alphanumeric characters)
CHPID	*1*hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C2*hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	□ VTAM √ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*TPF1* _____

Example 7: ESCON Port Configuration

Port number: *2304*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2304*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	□ *Single* □ Chained √ None
ESCD number	_____hexadecimal (default: *0*)
ESCD Model	□ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	_____hexadecimal (default: *80*)

Example 7: ESCON Port – Host Link Configuration

Port number: *2304*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* √ LPAR □ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART5* (alphanumeric characters)
CHPID	*2*_____hexadecimal (default: *0*)
Partition number	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* □ Defined If defined: _____hexadecimal (default: *80*)

Example 7: ESCON Port – Station Configuration

Port number: *2304* **Port name :** *PL2304* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	□ VTAM √ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*TPF2* _____

NCP Output File for Example 7

This example is for a twin CCU configuration with two ESCDs and two hosts, each with partitions (LPs).

For CCU A

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label must match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2240                             *
*********************************************************************
*
________ LINE ADDRESS=2240
*
PU2240   PU ANS=CONT,                * PU label must match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2176         * Must match PU label
*                                       of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
________ PU   PUTYPE=5,                                            X
               ADDR=02,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
```

```
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 2  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
________ PU   PUTYPE=2,                                            X
               ADDR=02,                                            X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 2/PARTITION 3  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                          X
               MAXPU=16
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2240                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2240         * Must match PU label
*                                       of 2240 physical definition
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 2  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16
________ PU   PUTYPE=2,                                            X
               ADDR=01,                                            X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 2/PARTITION 4  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
________ PU   PUTYPE=5,                                            X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*
*********************************************************************
```

For CCU B

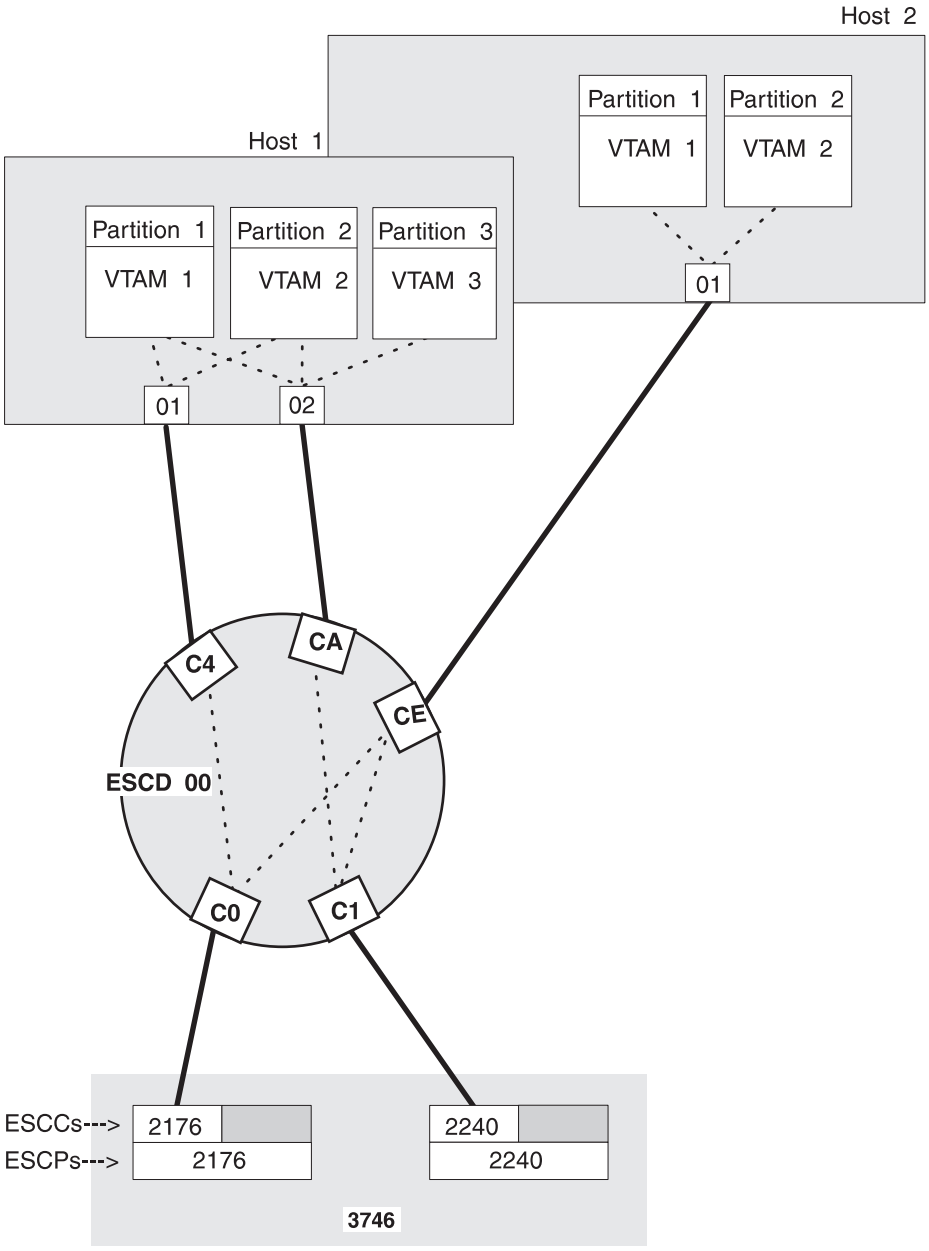
```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label must match PHYSRSC X
               XMONLNK=YES,                                        X
               PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2304                             *
*********************************************************************
*
________ LINE ADDRESS=2304
*
PU2304   PU ANS=CONT,                * PU label must match PHYSRSC X
               PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2176         * Must match PU label
*                                       of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16
*
*********************************************************************
```

```
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 2  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
               MAXPU=16
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 3  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
________ PU   PUTYPE=5,                                            X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2304                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2304         * Must match PU label
*                                       of 2304 physical definition
*********************************************************************
*  ESCP 2304  ESCC 2304  HOST/PART: HOST 2/PARTITION 5  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16
________ PU   PUTYPE=2,                                            X
               ADDR=01,                                            X
               ANS=CONT    * You can change CONT to STOP
*                            if needed
*********************************************************************
```

Example 8 (SNA)

The characteristics of this example are:

3746 model 900
Network type SNA/subarea
CCU mode Twin-dual
ESCD One
Host mode EMIF



Note: In this example, only one host link can be defined between an ESCC and a given partition. There is no possibility for an ESCC to access a partition by two different paths.

If a backup is required, a second logical link must be defined over another ESCC to access a partition by two different paths. In this example, VTAM 1 can be reached from either:

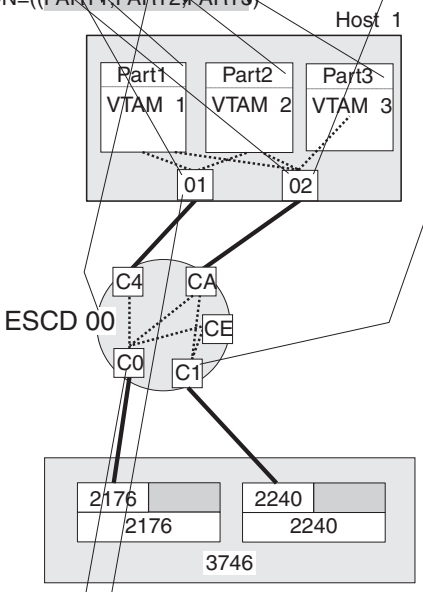
- ESCC 2176 via C0 → C4 → 01

or

- ESCC 2240 via C1 → CA → 02.

Example 8: IOCP Macros for Host 1

```
************************************************************
* IOCP ESCON  GENERATION SUBSET
* FOR HOST 1
************************************************************
        RESOURCE
PARTITION=((PART1,1),(PART2,2),(PART3,3))
        CHPID PATH=((01)), SWITCH=00, TYPE=CNC,SHARED
              PARTITION=(PART1,PART2)
        CHPID PATH=((02)), SWITCH=00, TYPE=CNC,SHARED
              PARTITION=((PART1,PART2),PART3)
```



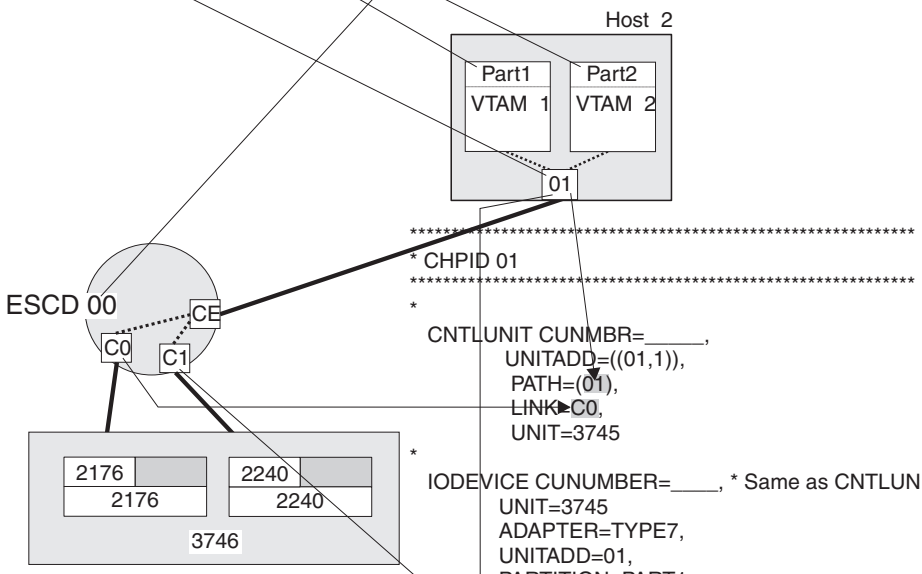

```
************************************************************
* CHPID 01
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((01,1)),
            PATH=(01),
            LINK=C0,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           PARTITION=PART1,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
 IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=01,
           PARTITION=PART2,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
************************************************************
```

```
************************************************************
* CHPID 02
************************************************************
*
  CNTLUNIT CUNMBR=_____,
           UNITADD=((02,10)),
            PATH=(02),
            LINK=C1,
            UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=02,
           PARTITION=PART1,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
*
 IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=09,
           PARTITION=PART2,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
*
 IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
           UNIT=3745
           ADAPTER=TYPE7,
           UNITADD=0B,
           PARTITION=PART3,
           ADDRESS=(xxx,1)      * xxx must match the CUADDR of
*                                 a PCCU in NCP, when requested
************************************************************
```

Example 8: IOCP Macros for Host 2

```
************************************************************
* IOCP ESCON  GENERATION SUBSET
* FOR HOST 2
************************************************************
       RESOURCE PARTITION =((PART1,1),(PART2,2))

       CHPID PATH=((01)), SWITCH=00, TYPE=CNC, SHARED,
            PARTITION=(PART1,PART2)
```




```
************************************************************
* CHPID 01
************************************************************
*
  CNTLUNIT CUNUMBR=_____,
             UNITADD=((01,1)),
              PATH=(01),
              LINK=C0,
              UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
             UNIT=3745
             ADAPTER=TYPE7,
             UNITADD=01,
             PARTITION=PART1,
             ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                    a PCCU in NCP, when requested
  CNTLUNIT CUNUMBR=_____,
             UNITADD=((01,2)),
              PATH=(01),
              LINK=C1,
              UNIT=3745
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
             UNIT=3745
             ADAPTER=TYPE7,
             UNITADD=01,
             PARTITION=PART2,
             ADDRESS=(xxx,1)       * xxx must match the CUADDR of
                                    * a PCCU in NCP, when requested
*
  IODEVICE CUNUMBER=____, * Same as CNTLUNIT CUNUMBR
             UNIT=3745
             ADAPTER=TYPE7,
             UNITADD=02,
             PARTITION=PART1,
             ADDRESS=(xxx,1)       * xxx must match the CUADDR of
*                                    a PCCU in NCP, when requested
************************************************************
```

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Example 8: ESCON Port Configuration

Port number: *2176*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2176*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C0* hexadecimal (default: *80*)

Example 8: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART1* (alphanumeric characters)
CHPID	*1*hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *1*hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C4*hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART2* (alphanumeric characters)
CHPID	*1*hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *2*hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *C4*hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM2* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2176*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART1* (alphanumeric characters)
CHPID	*1*hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *1*hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CE*hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2176* **Port name :** *PL2176* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 8: ESCON Port Configuration

Port number: *2240*	
Network:	□ *APPN* □ IP √ SNA Subarea
Name	*PL2240*
Fiber Status	√ *Enable* □ Transmit OLS □ Disable
Port name APPN	_____ alphanumeric characters
Port name IP	_____ alphanumeric characters
Automatic Reactivation	□ *Yes* □ No
NPA eligible	□ Yes □ No
Port attached to an ESCD?	√ *Single* □ Chained □ None
ESCD number	*0* hexadecimal (default: *0*)
ESCD Model	√ *9032* □ 9033 □ OEM
Control Unit Link Address (LINK)	*C1* hexadecimal (default: *80*)

Example 8: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART2* (alphanumeric characters)
CHPID	*2* hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *2* hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CA* hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** *HL012240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*9* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	□ *CCU-A* √ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM2* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART1* (alphanumeric characters)
CHPID	*2* hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *1* hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CA* hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	□ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST1* (alphanumeric characters)
Partition name	*PART3* (alphanumeric characters)
CHPID	*2* hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *3* hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CA* hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*B* hexadecimal (default: *1*)
IPL through that station	√ *Yes* □ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM3* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART1* (alphanumeric characters)
CHPID	*1* hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *1* hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CE* hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 □ *2.1* √ 5
Unit address (UA)	*2* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM1* _____

Example 8: ESCON Port – Host Link Configuration

Port number: *2240*	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Host Link Name (APPN)	_____ (alphanumeric characters)
Host Link Name (IP)	_____ (alphanumeric characters)
Host mode?	□ *Basic* □ LPAR √ EMIF
Host name	*HOST2* (alphanumeric characters)
Partition name	*PART2* (alphanumeric characters)
CHPID	*1* hexadecimal (default: *0*)
Partition number	□ *Dynamic* √ Defined If defined: *2* hexadecimal (default: *1*)
Host Link Address (HLA)	□ *Dynamic* √ Defined If defined: *CE* hexadecimal (default: *80*)

Example 8: ESCON Port – Station Configuration

Port number: *2240* **Port name :** *PL2240* **Host link name:** _____	
Network	□ *APPN (A)* □ IP (I) √ SNA/Subarea (S)
Access Method	√ VTAM □ TPF
Name:	_____ (alphanumeric characters)
PU type	□ 1 √ *2.1* □ 5
Unit address (UA)	*1* hexadecimal (default: *1*)
IPL through that station	□ *Yes* √ No
On which CCU	√ *CCU-A* □ CCU-B
IP address:	_____ (IP dotted notation)
IP subnet mask:	_____ (IP dotted notation)
Comments	*VTAM2* _____

NCP Output File for Example 8

This example is for a twin CCU configuration with one ESCD and two hosts, each with partitions using EMIF.

For CCU A

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label must match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2240                             *
*********************************************************************
*
________ LINE ADDRESS=2240
*
PU2240   PU ANS=CONT,                * PU label must match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
             PHYSRSC=PU2176         * Must match PU label
*                                     of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
             MAXPU=16,                                             X
             MONLINK=CONT
________ PU   PUTYPE=5,                                            X
             ADDR=01,                                              X
             MONLINK=YES,                                          X
             ANS=CONT
*
*********************************************************************
```

```
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 2  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
*
________ PU   PUTYPE=5,                                            X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 2/PARTITION 1  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                          X
               MAXPU=16,                                           X
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2240                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
               PHYSRSC=PU2240         * Must match PU label
*                                       of 2240 physical definition
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 2  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 1  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
               MAXPU=16
*
________ PU   PUTYPE=2,                                            X
               ADDR=02,                                            X
               ANS=CONT
*
*********************************************************************
```

```
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 3  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
*
________ PU   PUTYPE=5,                                            X
               ADDR=0B,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 2/PARTITION 1  HOST LINK 4
*********************************************************************
*
________ LINE HOSTLINK=4,                                          X
               MAXPU=16,                                           X
               MONLINK=CONT
*
________ PU   PUTYPE=5,                                            X
               ADDR=02,                                            X
               MONLINK=YES,                                        X
               ANS=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 2/PARTITION 2  HOST LINK 5
*********************************************************************
*
________ LINE HOSTLINK=5,                                          X
               MAXPU=16
*
________ PU   PUTYPE=5,                                            X
               ADDR=01,                                            X
               MONLINK=YES,                                        X
               ANS=CONT    * You can change CONT to STOP if needed
*
*********************************************************************
```

For CCU B

```
*********************************************************************
*  ESCON PHYSICAL DEFINITION FOR ALL ESCP RESOURCES                 *
*********************************************************************
*
________ GROUP LNCTL=CA
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2176                             *
*********************************************************************
*
________ LINE ADDRESS=2176
*
PU2176   PU ANS=CONT,                * PU label must match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON PHYSICAL DEFINITION: ESCP 2240                             *
*********************************************************************
*
________ LINE ADDRESS=2240
*
PU2240   PU ANS=CONT,                * PU label must match PHYSRSC X
             XMONLNK=YES,                                          X
             PUTYPE=1
*
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2176                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                           X
             PHYSRSC=PU2176         * Must match PU label
*                                     of 2176 physical definition
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 1  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                          X
             MAXPU=16,                                             X
             MONLINK=CONT
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 1/PARTITION 2  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                          X
             MAXPU=16,                                             X
             MONLINK=CONT
*
*********************************************************************
*  ESCP 2176  ESCC 2176  HOST/PART: HOST 2/PARTITION 1  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                          X
             MAXPU=16
*
________ PU   PUTYPE=2,                                             X
              ADDR=01,                                              X
              ANS=CONT    * You can change CONT to STOP if needed
*
*********************************************************************
```

```
*********************************************************************
*  ESCON LOGICAL DEFINITION: ESCP 2240                              *
*********************************************************************
*
________ GROUP LNCTL=CA,                                             X
               PHYSRSC=PU2240         * Must match PU label
*                                       of 2240 physical definition
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 2  HOST LINK 1
*********************************************************************
*
________ LINE HOSTLINK=1,                                            X
               MAXPU=16,                                             X
               MONLINK=CONT
*
________ PU   PUTYPE=5,                                              X
               ADDR=09,                                              X
               MONLINK=YES,                                          X
               ANS=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 1  HOST LINK 2
*********************************************************************
*
________ LINE HOSTLINK=2,                                            X
               MAXPU=16,                                             X
               MONLINK=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 1/PARTITION 3  HOST LINK 3
*********************************************************************
*
________ LINE HOSTLINK=3,                                            X
               MAXPU=16,                                             X
               MONLINK=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 2/PARTITION 1  HOST LINK 4
*********************************************************************
*
________ LINE HOSTLINK=4,                                            X
               MAXPU=16,                                             X
               MONLINK=CONT
*
*********************************************************************
*  ESCP 2240  ESCC 2240  HOST/PART: HOST 2/PARTITION 2  HOST LINK 5
*********************************************************************
*
________ LINE HOSTLINK=5,                                            X
               MAXPU=16,                                             X
               MONLINK=CONT
*
*********************************************************************
```

An Invalid IOCP Configuration

The ESCON configuration defined in IOCP/HCD (each ESCA has a host links and logical link stations defined) in Figure 12 is:

Invalid If there is only *one* control unit and two separate paths to two ESCAs.

Valid If there is *two* control units and two separate paths to two ESCAs.

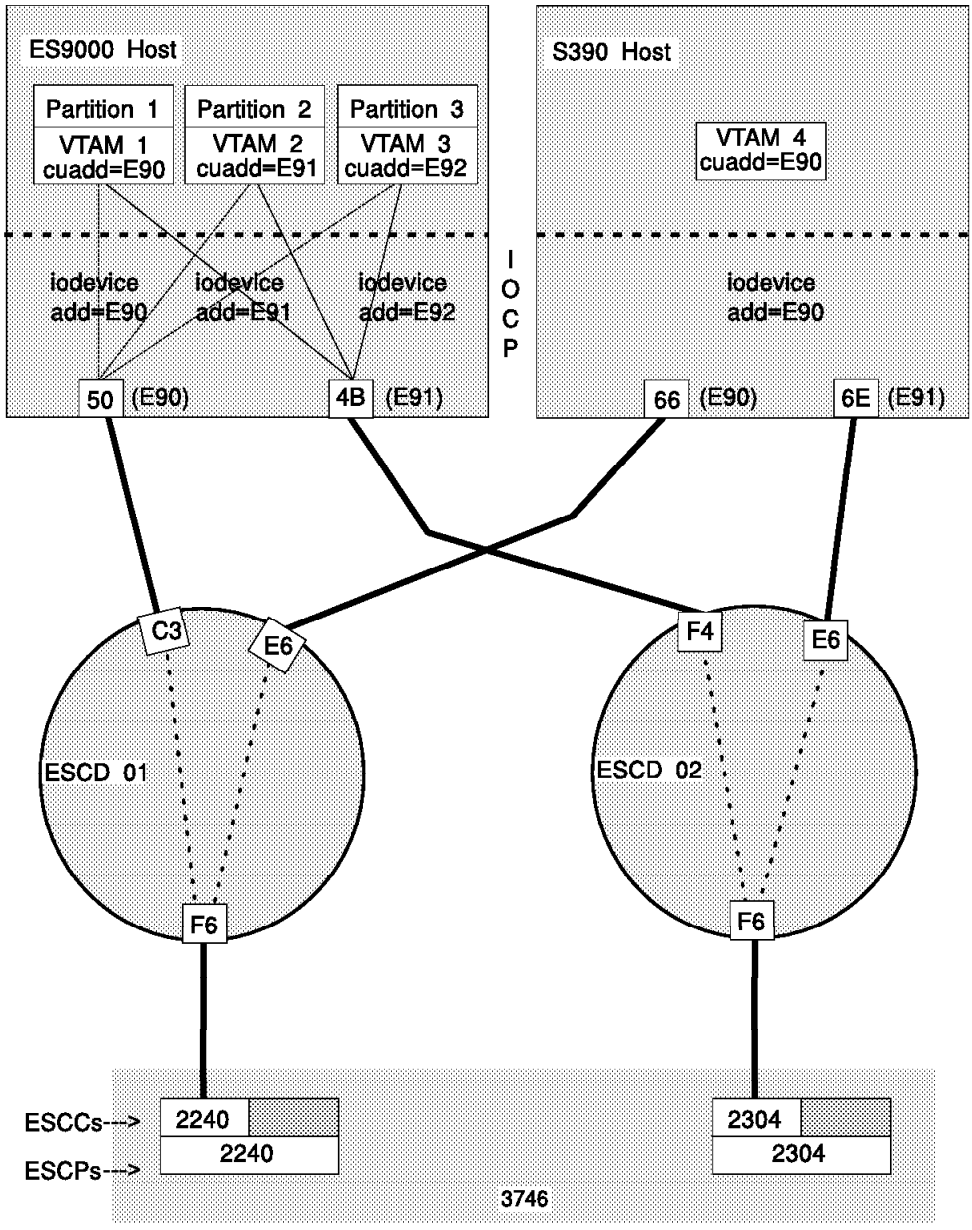

Figure 12. A Possibly Invalid ESCON Configuration

Invalid IOCP Definitions

When the following IOCP definitions are used with the ESCON configuration in Figure 12 on page 148, the results are *invalid*.

```
************************************************
*
*  INVALID IOCP WITH ONE LOGICAL CONTROL UNIT
*
************************************************
*    ES9000 (EMIF)  3 LPARS
************************************************
RESOURCE PARTITION=((PART1,1),(PART2,2),(PART3,3))
*
*
CHPID PATH=(4B),SHARED,
      PARTITION=((PART1,PART2,PART3),(PART1,PART2,PART3)),SWITCH=02,
      TYPE=CNC
CHPID PATH=(50),SHARED,
      PARTITION=((PART1,PART2,PART3),(PART1,PART2,PART3)),SWITCH=01,
      TYPE=CNC
*
*
CNTLUNIT CUNUMBR=0003,PATH=(4B,50),UNITADD=((01,004)),
      LINK=(F6,F6),UNIT=3745
IODEVICE ADDRESS=(E90,004),UNITADD=01,CUNUMBR=0003,STADET=Y,
      UNIT=3745
*
*
************************************************************************
*   S390 (BASIC)
************************************************************************
CHPID PATH=(66),SWITCH=01,TYPE=CNC
CHPID PATH=(6E),SWITCH=02,TYPE=CNC
*
CNTLUNIT CUNUMBR=0003,PATH=(66,6E),UNITADD=((01,004)),
      LINK=(F6,F6),UNIT=3745
IODEVICE ADDRESS=E93,UNITADD=01,CUNUMBR=0003,STADET=Y,
      UNIT=3745
************************************************************************
```

The problems with this type of IOCP definition are:

ES9000 (EMIF)

These definitions are invalid because two paths between the 3746 and the host (CNTLUNIT CUNUMBR=0003,PATH=(4B,50) and so on) are defined. This would be seen from VTAM as a multilink transmission group (TG), which is not supported over channel connections (only parallel TGs can be defined between VTAM and the 3746).

The PATH=(4B,50) statement tries to configure this unsupported multilink TG. This statement tries to assign device address E90 to LP 1 using CHPID 4B and 50. This would define two physical paths between the 3746 with only one control unit at the host LP.

S390 (BASIC)

These IOCP statements are invalid for the same reasons as in the ES9000 IOCP statements. There are two paths (66 and 6E) defined from the host to one control unit (CUNUMBR=0003) in the 3746 making an unsupported multilink TG.

Valid IOCP Definitions

When the following IOCP definitions are used with the ESCON configuration in Figure 12 on page 148, the results are *valid*. It has as many CNTLUNIT statements (specifying a unique path to a CHPID) as ESCON station statements.

```
*--------------------------------------------------------------------*
*    ES9000 (EMIF) 3 LPARS                                           *
*--------------------------------------------------------------------*
         RESOURCE PARTITION=((PART1,1),(PART2,2),(PART3,3))
         CHPID PATH=((4B)),SWITCH=02,TYPE=CNC,SHARED,                  X
               PARTITION=(PART2,PART1,PART3)
         CHPID PATH=((50)),SWITCH=01,TYPE=CNC,SHARED,                  X
               PARTITION=(PART1,PART2,PART3)
*
**********************************************************************
*    CHPID 50                                                        *
**********************************************************************
*                                                                    *
         CNTLUNIT CUNUMBR=0003,                                        X
               UNITADD=((01,1)),                                       X
               PATH=(50),                                    X
               LINK=F6,                                                X
               UNIT=3745
*
         IODEVICE CUNUMBR=0003,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                              X
               ADAPTER=TYPE7,                                          X
               UNITADD=01,                                             X
               ADDRESS=(E90,1)
*
         IODEVICE CUNUMBR=0003,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                              X
               ADAPTER=TYPE7,                                          X
               UNITADD=01,                                             X
               ADDRESS=(E91,1)
*
         IODEVICE CUNUMBR=0003,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                              X
               ADAPTER=TYPE7,                                          X
               UNITADD=01,                                             X
               ADDRESS=(E92,1)
*
*
**********************************************************************
*    CHPID 4B                                                        *
**********************************************************************
*                                                                    *
         CNTLUNIT CUNUMBR=0004,                                        X
               UNITADD=((01,1)),                                       X
               PATH=(4B),                                     X
               LINK=F6,                                                X
               UNIT=3745
*
         IODEVICE CUNUMBR=0004,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                              X
               ADAPTER=TYPE7,                                          X
               UNITADD=01,                                             X
               ADDRESS=(E90,1)
```

```
*
         IODEVICE CUNUMBR=0004,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                             X
               ADAPTER=TYPE7,                                         X
               UNITADD=01,                                            X
               ADDRESS=(E91,1)
*
         IODEVICE CUNUMBR=0004,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                             X
               ADAPTER=TYPE7,                                         X
               UNITADD=01,                                            X
               ADDRESS=(E92,1)

*--------------------------------------------------------------------*
*    S/390 (BASIC)                                                   *
*--------------------------------------------------------------------*

         CHPID PATH=((66)),SWITCH=01,TYPE=CNC
         CHPID PATH=((6E)),SWITCH=02,TYPE=CNC
*
**********************************************************************
*    CHPID 66                                                        *
**********************************************************************
*                                                                    *
         CNTLUNIT CUNUMBR=0003,                                     X
               UNITADD=((01,1)),                                    X
               PATH=(66),                                       X
               LINK=F6,                                             X
               UNIT=3745
*
         IODEVICE CUNUMBR=0003,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                             X
               ADAPTER=TYPE7,                                         X
               UNITADD=01,                                            X
               ADDRESS=(E90,1)
*
**********************************************************************
*    CHPID 6E                                                        *
**********************************************************************
*                                                                    *
         CNTLUNIT CUNUMBR=0004,                                     X
               UNITADD=((01,1)),                                    X
               PATH=(6E),                                       X
               LINK=F6,                                             X
               UNIT=3745
*
         IODEVICE CUNUMBR=0004,         * Same as CNTLUNIT CUNUMBR *   X
               UNIT=3745,                                             X
               ADAPTER=TYPE7,                                         X
               UNITADD=01,                                            X
               ADDRESS=(E90,1)
```

Using One Channel UCB Number from Multiple Hosts

You can define the same IODEVICE address in your IOGENs on more than one MVS.

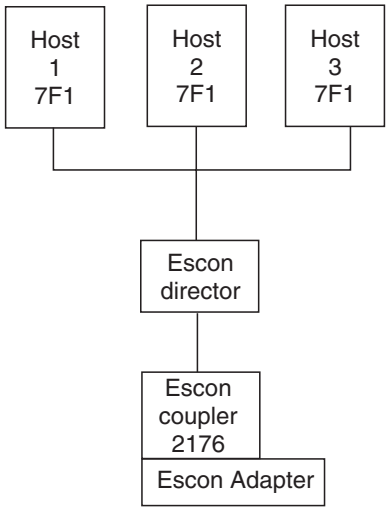

Figure 13. Multiple Hosts

There *must* be *one* host link defined for each host, as there will be one connection between each host and the ESCC. So using either CCM or EGA, once defining one ESCON you should define as many *host links* as there are hosts to be reached. In this example there are three *host links* off the ESCC 2176 (HL1, HL2, HL3). Once three *host links* have been defined, **one** logical station should be defined off *each host link:*

- HL1 -> PU1, ADDR=01
- HL2 -> PU1, ADDR=01
- HL3 -> PU1, ADDR=01

Here each PU has ADDR=01, which means that EGA/CCM will produce three sets of:

- Line/PU with ADDR=01 for NCP
- IOCP subset for each host with ONE IODEVICE specifying UNITADDR=01

As a result each host will get the same IODEVICE unit address in the form of xxx1.

ESCON Adapter Sharing between SUBAREA, CNN, APPN/HPR toward One Host

There is no real difference between VTAM-NCP subarea and VTAM-NCP in a CNN configuration. The exact naming for a combined CNN and Subarea VTAM-NCP connection is ICN (Interchange Node). Refer to *VTAM Network Implementation Guide*.

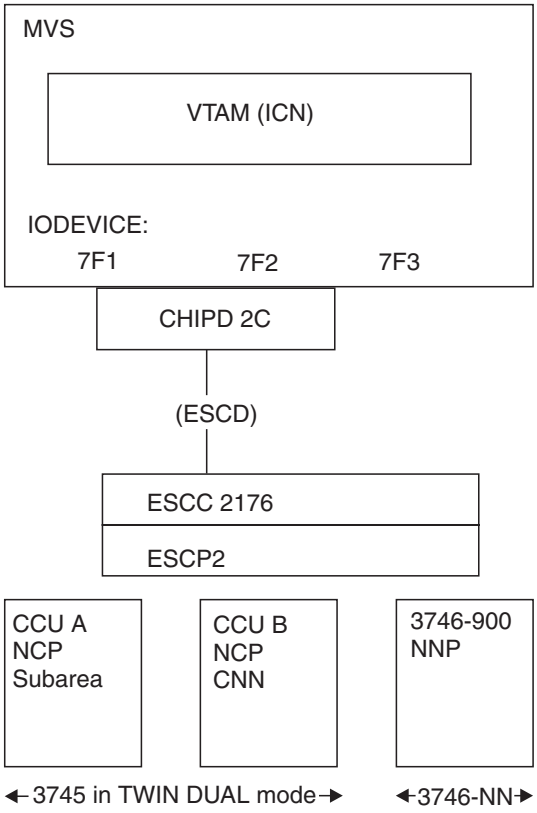

Figure 14. ESCON Adapter Sharing

To achieve this configuration, *one* host link is to be defined as there is *one* connection between the ESCC2 and *one* VTAM/HOST. There must be three logical stations defined, one for *each* distinct IODEVICE address that VTAM requires to connect to each of the control points: NCP in CCU A, NCP in CCU B, and NNP in the 346-900. The following is done using CCM:

ESCC2: 2176 APPN/SUBAREA-> BOTH
-> add Host Link HL1 APPN/SUBAREA -> Both
-> Add Station 1: Subarea, PU type=5, ADDR=01 (UA)
-> Add Station 2: Subarea, PU Type=5, ADDR=02 (UA)
-> Add station 3: APPN, PU type=2.1, ADDR=03 (UA)
This will result in an IOCP specifying:

```
CNTLUNIT....
      UNITADD=((01,3))

IODEVICE .....
      ADDRESS=(xxx,3)
```

which is the expected result allowing IOCP to define three IODEVICE distinct addresses that could be specified as 7F1, 7F2, 7F3 in the MVS IOGEN.

List of Abbreviations

AB	area border
ACF	advanced communications function
ACF/VTAM	advanced communications function for the virtual telecommunications access method
ANR	automatic network routing
APPN	advanced peer-to-peer networking
ARB	adaptive rate-based flow/congestion control
ARC	active remote connector
ARP	address resolution protocol
AS	autonomous system
ASB	autonomous system border
ASE	autonomous system external
ASCII	american national standard code for information interchange
AUTO	automatic
BAN	boundary access node
BECN	backward explicit congestion notification
BER	box event record
BGP	border gateway protocol
BOOTP	bootstrap protocol
bps	bits per second
BRS	bandwidth reservation system
BSC	binary synchronous communication
C&SM	communications and system management
CBSP	control bus and service processor
CCITT	Comité Consultative International Télégraphique et Téléphonique The international telegraph and telephone consultative committee
CCU	central control unit
CD	carrier detector
CDF-E	configuration data file - extended
CE	customer engineer
CF3745	3745 and 3746 configurator and performance model
CHPID	channel path id
CIDR	classless inter-domain routing
CIR	committed information rate
CLIST	command list
CLA	communication line adapter
CLP	communication line processor
CM	communications manager
CNN	composite network node
CNM	communication network management
COS	cost of service
CP	control point
CR	communications rate
CSU	customer service unit
DCAF	distributed console access facility
DCE	data circuit-terminating equipment
DDS	digital data service
DE	discard eligibility
DLC	data link control
DLCI	data link connection identifier
DLSw	data link switching
DLUR	dependent LU requester
DLUS	dependent LU server
DMUX	double multiplex circuit
DSU	data service unit
DTE	data terminal equipment
DX	duplex
EBCDIC	extended binary-coded decimal interchange code
EBN	extended border node
EC	engineering change
EMIF	ESCON multiple image facility
EN	end node
EP	emulation program
EPO	emergency power OFF
ESCA	ESCON channel adapter
ESCC	ESCON channel coupler
ESCD	ESCON Director
ESCON	Enterprise Systems Connection
ESCP	ESCON processor
FC	feature code
FDX	full duplex
FECN	forward explicit congestion notification

| **FRAD** frame-relay access device
FRFH frame-relay frame handler
FRSE frame-relay switching equipment
FRTE frame-relay terminating equipment
HCD hardware configuration definition
HDX half duplex
HI high
HLA host link address
HONE hands-on network environment
HPR high performance routing
HSS high-speed scanner
ICMP internet control message protocol
IML initial microcode load
INN intermediate network node or IBM information network
IOCP Input/Output Configuration Program
IP internet, or internetwork, protocol
IPL initial program load
IPR installation planning representative
ITU-T international telecommunications union - telecommunications (ex-CCITT)
KB kilobyte (processor storage) 1KB = 2^{10} bytes (1 024 bytes)
kbps kilobits per second (speed or communication volume per second) 1 kbps = 1 000 (one thousand) bits per second
LAA locally administered address
LAN local area network
LCB line connection box
LCBB line connection box base
LCBE line connection box expansion
LCP link control protocol
LDM limited distance modem
LED light emitting diode
LIB n line interface board type n
LIC n line interface coupler type n
LSA link state advertisement
LIU n line interface coupler unit type n
LIV link integrity verification
LMI local management interface
LP logical partition
LPDA® link problem determination aid
LQ line quality
LU logical unit
LSS low-speed scanner
MAC medium access control
MAU medium attachment unit
MB megabyte (processor storage) 1MB = 2^{20} bytes (1 048 576 bytes)
Mbps megabits per second (speed or communication volume per second) 1 Mbps = 1 000 000 (one million) bits per second
MCL microcode change level
MES miscellaneous equipment specification
MIB management information base
MIH missing interrupt handler
MLC machine level control
MLTG multi-link transmission group
MOSS-E maintenance and operator subsystem - extended
MTP multipoint
MUX multiplex circuit
MVS multiple virtual storage
NAU network addressable unit
NMBA nonbroadcast multiaccess
NCP Network Control Program
NDRS non-disruptive route switching
NGMF netView graphic monitor facility
NN network node
NNP network node processor
NPM netView performance monitor
NRZI non-return-to-zero inverted
NVT network virtual terminal
ODLC outboard data link control
OSPF open shortest path first
PBN peripheral border node
PCI Peripheral component interconnect
PEP partitioned emulation program
PING packet internet groper
PN peripheral node
PPP point-to-point protocol
PPPNCP point-to-point network control protocol
PTP point-to-point

PTT post, telegraph, and telephone

PU physical unit

PVC permanent virtual circuit

QUAL quality

RCV receive clock

RETAIN® remote technical assistance information network

RFS ready for sending

RIP routing information protocol

RNR receive not ready

ROS read-only storage

RR receive ready

RSF remote support facility

RTP rapid transport protocol

RTS request to send

SDLC synchronous data link control

SMUX single multiplex circuit

SNBU switched network backup

SNI SNA network interconnection

SNMP simple network management protocol

SPAU service processor access unit

SRC service reference code

S/S start-stop

SVC switched virtual circuit

TC test control

TCM trellis code modulation

TCP transmission control protocol

TG transmission group

THRES threshold

TICn Token-ring interface coupler type n

TIM time services

TOS type of service

TPF transaction processing facility

TRA Token-ring adapter

TRP Token-ring processor

TSS transmission subsystem

UDP user datagram protocol

UTP unshielded twisted pair

VTAM virtual telecommunications access method

XID exchange station identification

XMIT transmit

Glossary

This glossary defines new terms used in this manual.

adaptive rate-based flow and congestion control (ARB). A function of High Performance Routing (HPR) that regulates the flow of data over an RTP connection by adaptively changing the sender's rate based on feedback on the receiver's rate. It allows high link utilization and prevents congestion before it occurs, rather than recovering after congestion has occurred.

advanced communication function (ACF). A group of IBM licensed programs. principally VTAM programs. TCAM, NCP, and SSP, that use the concepts of Systems Network Architecture (SNA), including distribution of function and resource sharing.

advanced communications function for the virtual telecommunications access method (ACF/VTAM). An IBM licensed program that controls communication and the flow of data in an SNA network. It provides single-domain, multiple-domain, and interconnected network capability.

advanced peer-to-peer networking (APPN). Data communications 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.

automatic network routing. A function of High Performance Routing (HPR) that is provides a low-level routing mechanism that requires no intermediate storage.

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

communication controller. A device that directs the transmission of data over the data links of a network; its operation may be controlled by a program executed in a processor to which the controller is connected or it may be controlled by a program executed within the device. For example, the IBM 3745 and 3746 Network Nodes.

communications manager. A function of the OS/2 Extended Edition program that lets a workstation connect to a host computer and use the host resources as well as the resources of the other personal computers to which the workstation is attached, either directly or through a host system. The communications manager provides application programming interfaces (APIs) so that users and develop their own applications.

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

communications management configuration host node. The type 5 host processor in a communications management configuration that does all network-control functions in the network except for the control of devices channel-attached to a data host nodes. Synonymous with communications management host. See also data host node.

control panel. A panel that contains switches and indicators for the customer's operator and service personnel.

control program. A computer program designed to schedule and to supervise the execution of programs of the controller.

control subsystem. The part of the controller that stores and executes the control program, and monitors the data transfers over the channel and transmission interfaces.

customer engineer. See IBM service representative

data circuit-terminating equipment (DCE). The equipment installed at the user's premises that provides all the functions required to establish, maintain, and terminate a connection, and the signal conversion between the data terminal equipment (DTE) and the line. For example, a modem is a DCE.

Note: The DCE may be a stand-alone equipment or integrated in the 3745.

data terminal equipment (DTE). That part of a data station that serves as a data source, data link, or both, and provides for the data communication control function according to protocols. For example, the 3174 and PS/2s are DTEs.

data host node. In a communication management configuration, a type 5 host node that is dedicated to processing applications and does not control network resources, except for its channel adapter-attached or communication adapter-attached devices. Synonymous with data host. See also communications management configuration host node.

direct attachment. The attachment of a DTE to another DTE without a DCE.

ESCON channel. A channel having an Enterprise System Connection* channel-to-control-unit I/O interface that uses optical cables as a transmission medium.

ESCON channel adapter (ESCA). A communication controller hardware unit used to attach the controller to a host via ESCON fiber optics. An ESCA consists of an ESCON channel processor (ESCP) and an ESCON channel coupler (ESCC).

ESCON channel coupler (ESCC). A communication controller hardware unit which is the interface between the ESCON channel processor and the ESCON fiber optic cable.

ESCON channel processor (ESCP). A communication controller hardware unit which provides the channel data link control for the ESCON channel adapter.

distributed console access facility. (1) This program product provides a remote console function that allows a user at one programmable workstation (PS/2) to remotely control the keyboard input and monitor the display of output of another programmable workstation. The DCAF program does not affect the application programs that are running on the workstation that is being controlled. (2) An icon that represents the Distributed Console Access Facility.

enterprise systems chhnection (ESCON). A set of IBM products and services that provides a dynamically connected environment within an enterprise.

Host. See host processor

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit where 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.

High performance routing (HPR). An extension of APPN that provides faster traffic throughput, lower delays, and lower storage overheads.

IBM service representative. An individual in IBM who does maintenance services for IBM products or systems. Also called the IBM *Customer Engineer*.

initial microcode load (IML). The process of loading the microcode into an adapter, the MOSS, or the service processor.

internet. (1) A wide area network connecting disparate networks using the internetwork protocol (IP) (2) A public domain wide area network connecting thousands of disparate networks in industry, education, government and research. The Internet uses TCP/IP as the standard for transmitting information.

internet address. The numbering system used in IP internetwork communications to specify a particular network, or a particular host on that network with which to communicate.

internet control message protocol (ICMP). A protocol used by a gateway to communicate with a source host, for example, to report an error in a datagram. It is an integral part of the Internetwork Protocol (IP).

internetwork protocol. A protocol that routes data from its source to its destination in an internet environment. It is also called the *Internet Protocol*.

internetwork. Any wide area network connecting more than one network.

initial program load (IPL). The initialization procedure that causes the 3745 control program (NCP) to begin operation.

LAN-attached console. A PS/2 attached to the token-ring LAN that has the service processor attached. It is used to operate remotely the MOSS and MOSS-E functions.

IP router. A device that enables an Internetwork Protocol (IP) host to act as a gateway for routing data between separate networks.

line interface coupler (LIC). A circuit that attaches up to four transmission cables to the controller (from DTEs, DCEs or telecommunication lines).

locally administered address. In a local area network, an adapter address that the user can assign to override the universally administered address.

maintenance and operator subsystem - extended (MOSS-E). The licensed internal code loaded on the service processor hard 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.

modem (modulator-demodulator). See DCE.

multiple virtual storage (MVS). Multiple Virtual Storage, consisting of MVS/System Product Version 1 and the MVS/370 Data Facility Product operating on a System/370™ processor.

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

nonswitched line. A connection between systems or devices that does not have to be made by dialing. The

connection can be point-to-point or multipoint. The line can be leased or private. Contrast with *switched line.*.

ping. A simple IP application that sends one or more messages to a specified destination host requesting a reply. Usually used to verify that the target host exists, or that its IP address is a valid address.

remote console. A PS/2 attached to the 3746 Network Node either by a switched line (with modems) or by one of the communication lines of the user network.

remote technical assistance information network (RETAIN).

service processor. The processor attached to a 3745, 3746-900, and 3746-950 via a token-ring LAN.

remote support facility (RSF). RSF provides IBM maintenance assistance when requested via the public switched network. It is connected to the IBM RETAIN database system.

service representative. See IBM service representative

services. A set of functions designed to simplify the maintenance of a device or system.

switched line. A transmission line with which the connections are established by dialing, only when data transmission is needed. The connection is point-to-point and uses a different transmission line each time it is established. Contrast with *nonswitched line*.

synchronous data link control (SDLC). A discipline 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. SDLC conforms to subsets of the Advanced Data Communication Control Procedures of the American National Standards Institute and High-Level Data Link Control (HDLC) of the International Standards Organization.

synchronous transmission. Data transmission in which the sending and receiving instruments are operating continuously at substantially the same frequency and are maintained, through correction, in a desired phase relationship.

Token-ring adapter (TRA) type 3. 3746-900 and 3746-950 line adapter for IBM Token-Ring Network, composed of one token-ring processor card (TRP2), and two Token-Ring interface couplers type 3 (TIC 3s).

Token-ring interface coupler type 2 (TIC2). A circuit that attaches an IBM Token-Ring network to the 3745.

Token-Ring Interface Coupler type 3 (TIC3). A circuit that attaches an IBM Token-Ring network to the 3746-900 or 3746-950.

user access area. A specific area in the controller where the customer can install, remove, change, or swap couplers and cables without IBM assistance.

universally administered address. In a local area network, the address permanently encoded in an adapter at the time of manufacture. All universally administered addresses are unique.

user application network. A configuration of data processing products, such as processors, controllers, and terminals, for data processing and information exchange. This configuration may use circuit-switched, packet-switched, and leased-circuit services provided by carriers or PTT. Also called a *user network*.

V.24, V.35, and X.21. ITU-T (ex-CCITT) recommendations on transmission interfaces.

Bibliography

Customer Documentation for the 3745 (All Models), and 3746 (Model 900)

Table 6 (Page 1 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

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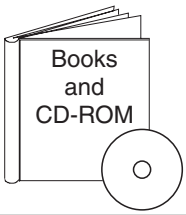
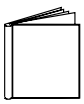


Finding Information

3745 Models A and 3746 Books

All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.

Evaluating and Configuring



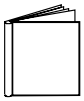
GA33-0092

IBM 3745 Communication Controller
Models 210, 310, 410, and 610

Introduction

Gives an introduction of the IBM Models 210 to 610 capabilities.

For Models A, refer to the *Overview*, GA33-0180.

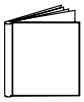


GA33-0180

IBM 3745 Communication Controller Models A and 170[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

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



GA27-4234

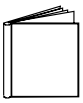
IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Overview, Installation, and Integration

Provides information for:

- Overall 3746 planning
- Installation and upgrade scenarios
- Controller and service processor network integration
- Related MOSS-E and CCM worksheets for these tasks.

Table 6 (Page 2 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900



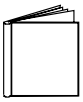
GA27-4235

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame-relay, PPP, X.25, and NCP lines.
- ISDN adapter description and configuration.



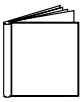
GA27-4236

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter desription and configuration.



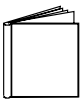
GA27-4237

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

Table 6 (Page 3 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

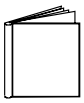
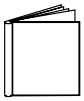
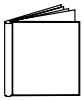
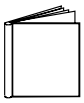
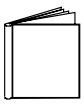
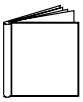
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote consoles, and RSF • MAE APPN/HPR management.
	GA27-4240	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Multiaccess Enclosure Planning*** Provides information for: • MAE adapters details • MAE ESCON planning and configuration • ATM and ISDN support.
	GA27-4241	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Protocols Description*** Provides information for: • Overview and details about APPN/HPR and IP.
	On-line information	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Controller Configuration and Management Worksheets*** Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.
Preparing Your Site		
	GC22-7064	***IBM System/360™, System/370™, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
	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.

Table 6 (Page 4 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

Preparing for Operation

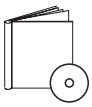


GA33-0400

IBM 3745 Communication Controller All Models[3]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Safety Information[1]

Provides general safety guidelines.

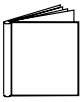


SA33-0129

IBM 3745 Communication Controller All Models[3]
IBM 3746 Nways Multiprotocol Controller Model 900

Connection and Integration Guide[1]

Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.

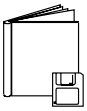


SA33-0416

Line Interface Coupler Type 5 and Type 6
Portable Keypad Display

Migration and Integration Guide

Contains information for moving and testing LIC types 5 and 6.



SA33-0158

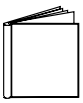
IBM 3745 Communication Controller All Models[3]
IBM 3746 Nways Multiprotocol Controller Model 900

Console Setup Guide[1]

Provides information for:

- Installing local, alternate, or remote consoles for 3745 Models 130 to 610
- Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using:
  - DCAF program
  - Telnet Client program
  - Java Console support.

Customizing Your Control Program



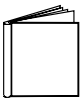
SA33-0178

Guide to Timed IPL and Rename Load Module

Provides VTAM procedures for:

- Scheduling an automatic reload of the 3745
- Getting 3745 load module changes transparent to the operations staff.

Operating and Testing

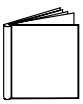


SA33-0098

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.

Table 6 (Page 5 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

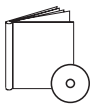
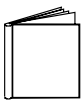
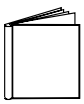
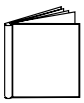
	SA33-0097	***IBM 3745 Communication Controller All Models***[3] ***Advanced Operations Guide***[1] Provides instructions for advanced operations and testing, using the 3745 MOSS console.
	On-line Information	***Controller Configuration and Management Application*** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources. It is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its online help.
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
	GA33-0479	***IBM 3745 Communication Controller Models A*** ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***NetView Console APPN Command Reference Guide*** Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.
	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.

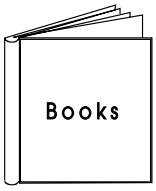
Table 6 (Page 6 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

[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 7. Additional Customer Documentation for the 3745 Models 130 to 17A

This customer documentation has the following format:

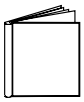


Finding Information

3745 Models A and 3746 Books

All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.

Evaluating and Configuring



GA33-0138

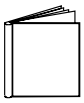
IBM 3745 Communication Controller Models 130, 150, 160, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.

Preparing Your Site



GA33-0140

IBM 3745 Communication Controller Models 130, 150, 160, and 170

Preparing for Connection

Helps for preparing the 3745 Models 130 to 170 cable installation.

For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

[1] Documentation shipped with the 3745.

Customer Documentation for the 3746 Model 950

Table 8 (Page 1 of 4). Customer Documentation for the 3746 Model 950

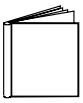
This customer documentation has the following formats:

Finding Information

3745 Models A and 3746 Books

All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.

Preparing for Operation



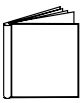
GA33-0400

IBM 3745 Communication Controller All Models[1]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Safety Information[2]

Provides general safety guidelines.

Evaluating and Configuring

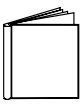


GA33-0180

IBM 3745 Communication Controller Models A and 170[3]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

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



GA27-4234

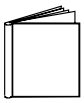
IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Overview, Installation, and Integration

Provides information for:

- Overall 3746 planning
- Installation and upgrade scenarios
- Controller and service processor network integration
- Related MOSS-E and CCM worksheets for these tasks.

Table 8 (Page 2 of 4). Customer Documentation for the 3746 Model 950



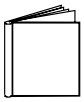
GA27-4235

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame-relay, PPP, X.25, and NCP lines.
- ISDN adapter description and configuration.



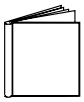
GA27-4236

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter description and configuration.



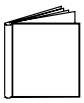
GA27-4237

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

Table 8 (Page 3 of 4). Customer Documentation for the 3746 Model 950

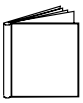
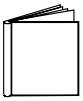
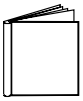
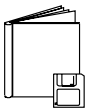
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote consoles, and RSF • MAE APPN/HPR management.
	GA27-4240	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Multiaccess Enclosure Planning*** Provides information for: • MAE adapters details • MAE ESCON planning and configuration • ATM and ISDN support.
	GA27-4241	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Protocols Description*** Provides information for: • Overview and details about APPN/HPR and IP.
	On-line information	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Controller Configuration and Management Worksheets*** Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.

Table 8 (Page 4 of 4). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller
Model 950

User's Guide[2]

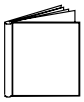
Explains how to:

- Carry out daily routine operations on Nways controller
- Install, test, and customize the Nways controller after installation
- Configure user's workstations to remotely control the service processor using:
  - DCAF program
  - Telnet client program
  - Java Console support.

On-line information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR network node and IP Router, and its resources.
It is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.

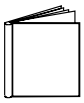


SH11-3081

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Controller Configuration and Management: User's Guide[2]

Explains how to use CCM and gives examples of the configuration process.



GA33-0479

IBM 3745 Communication Controller Models A
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

NetView Console
APPN Command Reference Guide

Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.

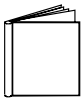
Managing Problems

On-line information

Problem Analysis Guide

An on-line guide to analyze alarms, events, and control panel codes on:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.



SA33-0175

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Alert Reference Guide

Provides information about events or errors reported by alerts for:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

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

Required Documentation

The following documents are indispensable for planning for your 3745/3746 controllers:

- *3745 Communication Controller Models A and 170, 3746 Nways Multiprotocol Controller Models 900 and 950: Overview*, GA33-0180
- *3745 Communication Controller All Models, 3746 Nways Multiprotocol Controller Model 900: Console Setup Guide*, SA33-0158.

Be sure to use the latest editions of the above documents.

Related Documentation

The following documents are also helpful for **planning** for your 3745/3746 controllers:

- *Planning for Integrated Networks*, SC31-8062
- *Planning and Reference for NetView, NCP, and VTAM*, SC31-7122.
- *Virtual Telecommunications Access Method V3 R4: Resource Definition Reference*, SC31-6438

The following Enterprise Systems Connection (**ESCON**) documents may be helpful:

- *Introducing the Enterprise Systems Connection*, GA23-0383
- *Enterprise Systems Connection Migration*, GA23-0383
- *Planning for Enterprise Systems Connection Links*, GA23-0367
- *Introducing Enterprise Systems Connection Directors*, GA23-0363.

The following *IBM International Technical Support Centers* “redbooks” are generally very helpful:

- *Frame Relay Guide*, GG24-4463
- *3746-900 and NCP Version 7 Release 2*, GG24-4464.

The following Network Control Program (**NCP**) documents may be helpful:

- For NCP V6 R2:
  - *Network Control Program V6 R2: Migration Guide*, SC31-6216
  - *Network Control Program V6 R2, ACF/SSP V3 R8, EP R11: Resource Definition Guide*, SC31-6209-01
  - *Network Control Program V6 R2, ACF/SSP V3 R8, EP R11: Resource Definition Reference*, SC31-6210-01
  - *Network Control Program V6 R2: Planning and Implementation Guide*, GG24-4012
  - *Network Control Program V6 R2, ACF/SSP V3 R8, EP R11: Library Directory*, SC31-6215.
- For NCP V6 R3:
  - *Network Control Program V6 R3: Migration Guide*, SC31-6217
  - *Network Control Program V6 R3, ACF/SSP V3 R9, EP R11: Resource Definition Guide*, SC31-6209-02
  - *Network Control Program V6 R3, ACF/SSP V3 R9, EP R11: Resource Definition Reference*, SC31-6210-02 Guide,
  - *Network Control Program V6 R3, ACF/SSP V3 R9, EP R11: Library Directory*, SC31-6218.
- For NCP V7 R1:
  - *Network Control Program V7 R1: Migration Guide*, SC31-6219
  - *Network Control Program V7 R1, ACF/SSP V4 R1, EP R12: Resource Definition Guide*, SC31-6223-00
  - *Network Control Program V7 R1, ACF/SSP V4 R1, EP R12: Resource Definition Reference*, SC31-6224-00
  - *Network Control Program V7 R1, ACF/SSP V4 R1, EP R12: Library Directory*, SC31-6220.

- For NCP V7 R2:
  - *Network Control Program V7 R2, ACF/SSP V4 R2, EP R12: Generation and Loading Guide*, SC31-6221.
  - *Network Control Program V7 R2: Migration Guide*, SC31-6258-00
  - *Network Control Program V7 R2, ACF/SSP V4 R2, EP R12: Resource Definition Guide*, SC31-6223-01
  - *Network Control Program V7 R2, ACF/SSP V4 R2, EP R12: Resource Definition Reference*, SC31-6224-01
  - *Network Control Program V7 R2, ACF/SSP V4 R2, EP R12: Library Directory*, SC31-6259.
- For NCP V7 R3:
  - *Network Control Program V7 R3: Migration Guide*, SC31-6258-01
  - *Network Control Program V7 R3, ACF/SSP V4 R3, EP R12: Resource Definition Guide*, SC31-6223-02
  - *Network Control Program V7 R3, ACF/SSP V4 R3, EP R12: Resource Definition Reference*, SC31-6224-02
  - *Network Control Program V7 R3, ACF/SSP V4 R3, EP R12: Library Directory*, SC31-6262.
- For NCP V7 R4:
  - *Network Control Program V7 R4: Migration Guide*, SC30-3786
  - *Network Control Program V7 R4, ACF/SSP V4 R4, EP R12: Resource Definition Guide*, SC31-6223-03
  - *Network Control Program V7 R4, ACF/SSP V4 R4, EP R12: Resource Definition Reference*, SC31-6224-03
  - *Network Control Program V7 R4, ACF/SSP V4 R4, EP R12: Library Directory*, SC30-3785.
- For NCP V7 R5:
  - *Network Control Program V7 R5: Migration Guide*, SC30-3833
  - *Network Control Program V7 R5, ACF/SSP V4 R4, EP R12: Resource Definition Guide*, SC31-6223-04
  - *Network Control Program V7 R5, ACF/SSP V4 R4, EP R12: Resource Definition Reference*, SC31-6224-04
  - *Network Control Program V7 R5, ACF/SSP V4 R4, EP R12: Library Directory*, SC30-3832.
- For NCP V7 R6:
  - *Network Control Program V7 R6: Migration Guide*, SC30-3833-01
  - *Network Control Program V7 R6, ACF/SSP V4 R4, EP R14: Resource Definition Guide*, SC31-6223-06
  - *Network Control Program V7 R6, ACF/SSP V4 R4, EP R14: Resource Definition Reference*, SC31-6224-06
  - *Network Control Program V7 R6, ACF/SSP V4 R4, EP R14: Library Directory*, SC30-3785.
- For NCP V7 R7:
  - *Network Control Program V7 R7: Migration Guide*, SC30-3889
  - *Network Control Program V7 R7, ACF/SSP V4 R4, EP R14: Resource Definition Guide*, SC31-6223-07
  - *Network Control Program V7 R7, ACF/SSP V4 R4, EP R14: Resource Definition Reference*, SC31-6224-07
  - *Network Control Program V7 R7, ACF/SSP V4 R4, EP R14: Library Directory*, SC30-3971.

The following **OS/2** document may be of some help:

IBM Extended Services® for OS/2 Programming Services and Advanced Problem Determination for Communications, SO4G-1007.

For the Distributed Console Access Facility (**DCAF**) Version 1.3 the following documents are needed:

- *DCAF: Installation and Configuration Guide*, SH19-4068
- *DCAF: User's Guide*, SH19-4069
- *DCAF: Target User's Guide*, SH19-6839.

To learn more about the **APPN** architecture, including high-performance routing (HPR), adaptive rate based flow and congestion control (ARB), dependent LU requesters/servers (DLURs/DLUSs), and other subjects, refer to:

- *Inside APPN - The Essential Guide to the Next-Generation SNA*, SG24-3669.
- *APPN Architecture and Protocol Implementations Tutorial* SG24-3669.

The following Virtual Telecommunications Access Method (**VTAM**), may be helpful:

- *Virtual Telecommunications Access Method V4R3: Resource Definition Reference*, SC31-6438.

For help with **TCP/IP**, refer to:

- *TCP/IP for MVS: Performance Tuning Guide*, SC31-7188.

To learn about token-ring configurations and the **IEEE 802.2** standard, refer to:

- *Token-Ring Network Architecture Reference*, SC30-3374.

These latest NetView documents may be helpful:

- *TME 10 NetView for OS/390 Version 1: Planning Guide*, GC31-8226
- *TME 10 NetView for OS/390 Version 1: Tuning Guide*, SC31-8240.

The following NetView Performance Monitor (**NPM**) documents are available:

- *NetView Performance Monitor: Concepts and Planning V2R2*, GH19-6961-01
- *NetView Performance Monitor: Concepts and Planning V2R3*, GH19-6961-02
- *NetView Performance Monitor: Concepts and Planning V2R4*, GH19-6961-03
- *NetView Performance Monitor: Concepts and Planning V3R1*, GH19-4221-00.

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