

**Program Directory for  
Advanced Communications Function (ACF)  
Network Control Program (NCP)**

Version 7 Release 8, Modification Level 1

Program Number 5648-063

FMID HNC7812

for Use with  
MVS/ESA  
OS/390  
z/OS

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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 vi.

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## 1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of Network Control Program. This publication refers to Network Control Program as NCP V7R8.1 MVS. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

2.0, "Program Materials" on page 4 identifies the basic and optional program materials and documentation for NCP V7R8.1 MVS.

3.0, "Program Support" on page 9 describes the IBM support available for NCP V7R8.1 MVS.

4.0, "Program and Service Level Information" on page 10 lists the APARs (program level) and PTFs (service level) incorporated into NCP V7R8.1 MVS.

5.0, "Installation Requirements and Considerations" on page 11 identifies the resources and considerations for installing and using NCP V7R8.1 MVS.

6.0, "Installation Instructions" on page 30 provides detailed installation instructions for NCP V7R8.1 MVS. It also describes the procedures for activating the functions of NCP V7R8.1 MVS, or refers to appropriate publications.

Before installing NCP V7R8.1 MVS, read 3.2, "Preventive Service Planning" on page 9. This section tells you how to find any updates to the information and procedures in this program directory.

Do not use this program directory if you are installing NCP V7R8.1 MVS with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the program directory as required.

If you are installing NCP V7R8.1 MVS using the MVS Custom-Built Product Delivery Offering (CBPDO, 5751-CS3), a softcopy program directory is provided on the CBPDO tape which is identical to the printed copy shipped with your order. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for NCP V7R8.1 MVS are included on the CBPDO tape.

The 3746 Model 900 CSS feature is a licensed offering that allows the operation of an IBM 3746 Model 900 attached to a 3745 Communication Controller. Prior to NCP V7R6, you were required to license, order, and install separate software media. Starting with NCP V7R6 the media containing the 3746 Model 900 CSS feature code has been incorporated into the base code of NCP. You are no longer required to install separate 3746 Model 900 CSS software media when attaching the IBM 3746 Model 900 to a 3745 Communication Controller. Please note that you **must** still obtain a license for the 3746 Model 900 CSS feature. Refer to the NCP V7R6 announcement letter (297-342) dated September 9, 1997 for additional licensing instructions.

Airline Control Interconnect (ALCI) RPQ is a free feature offered in NCP V7R8.1. Previously, you were required to license, order, and install the ALCI RPQ as a separate feature. Starting with NCP V7R6, the ALCI RPQ has been incorporated into the NCP base product tape. You are no longer required to order and install separate media for ALCI. You must continue to license the ALCI feature as in previous releases. Refer to the NCP V7R8 announcement letter (299-223) dated August 17, 1999 for additional hardware requirements information.

Starting with EP R14, users of EP Standalone must install NCP. Users of PEP and EP Standalone will now install EP in the NCP distribution libraries, ANCPMAC1 and ANCPMOD1, using the NCP target and distribution zones. A single EP installation can now be used in environments requiring both PEP and EP Standalone.

IBM recommends that you use an OS/390 ServerPac to install this level of NCP. If you use a ServerPac, you get the service integrated in the product. ServerPac is available at no additional charge when you have an OS/390 license.

A good place to start any task regarding this program is *NCP V7R8, SSP V4R8, and EP Release 14 Library Directory* (SC30-4025). This directory gives you an overview of NCP, SSP, and EP and directs you to a variety of tasks related to these programs.

---

## 1.1 NCP V7R8.1 MVS Description

NCP V7R8.1 MVS executes in the IBM 3745 Communication Controller for which it has been generated and into which it has been loaded.

NCP V7R8.1 MVS performs a wide range of functions for the data communication network, such as transmission control, communication control, error recording and recovery, and diagnosis.

### 1.1.1 Transmission Control

Standard functions of the network control program include: recognizing and reacting appropriately to control characters, controlling communication line time-outs, checking for errors. It also includes assembling serial bit-streams, received from a data link, into characters in a buffer.

### 1.1.2 Communication Control

The network control program takes over most of the control of the links from the communication access method, performing such functions as data link activation and deactivation, control character insertion and deletion, dynamic buffering, and communication line speed selection.

### **1.1.3 Error Recording/Recovery and Diagnostics**

The network control program maintains several types of error records and provides diagnostic capabilities. These include permanent line error recording, statistics recording, dynamic display of controller storage, and online testing. This support is provided in combination with the IBM 3745 maintenance and operator subsystem (MOSS) and the appropriate operator console.

### **1.1.4 Emulation Mode Support**

When executing in a channel-attached communication controller, NCP V7R8.1 MVS can operate data links in emulation mode as well as network control mode, through the partitioned emulation programming (PEP) extension to NCP V7R8.1 MVS. The PEP extension allows the communication controller to emulate most operations of an IBM 2701 Data Adapter Unit or an IBM 2702 or 2703 Transmission Control Unit (or any combination of the three) for certain data links, while performing network control functions for other links. For the IBM 3745, the facilities offered by MOSS and the appropriate operator console are available to the user of emulation mode support.

---

## **1.2 NCP V7R8.1 MVS FMIDs**

NCP V7R8.1 MVS consists of FMID HNC7812.

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## 2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for NCP V7R8.1 MVS is 5648-063.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by NCP V7R8.1 MVS. Ask your IBM representative for this information if you have not already received a copy.

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### 2.1 Basic Machine-Readable Material

The distribution medium for this program is 9-track magnetic tape (written at 6250 BPI), 3480 cartridge, or 4mm cartridge. The tape or cartridge contains all the programs and data needed for installation. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 30 for more information about how to install the program.

Figure 1 describes the tape or cartridge.

**Note:** The program tape and cartridge contain "Restricted Materials of IBM."

Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
6250 tape	5801	1	MVSOBJ HNC7812	NC7812
3480 cart.	5802	1	MVSOBJ HNC7812	NC7812
4 mm cart.	6498	1	MVSOBJ HNC7812	NC7812

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### 2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for NCP V7R8.1 MVS.

The IBM 3746 Model 900 Feature had been optional machine-readable material, but is now incorporated in the base code of NCP. Please see section 1.0, "Introduction" on page 1 for more information.

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### 2.3 Program Publications

The following sections identify the basic and optional publications for NCP V7R8.1 MVS.

## 2.3.1 Basic Program Publications

Figure 2 on page 5 identifies the basic unlicensed program publications for NCP V7R8.1 MVS. One copy of each of these publications is included when you order the basic materials for NCP V7R8.1 MVS. For additional copies, contact your IBM representative.

<i>Figure 2. Basic Material: Unlicensed Publications</i>	
Publication Title	Form Number
Licensed Program Specifications: Network Control Program Version 7 Release 8, Modification Level 1	GC31-6226
Network Control Program Version 7 Release 8 Migration Guide	SC30-4024
Network Control Program, System Support Programs, and Emulation Program Resource Definition Guide	SC31-6223
Network Control Program, System Support Programs, and Emulation Program Resource Definition Reference	SC31-6224
Planning for NetView, NCP, and VTAM	SC31-8063
Planning for Integrated Networks	SC31-8062
NCP and 3745/46 Today Summer '01	G325-3426

There are no basic *licensed* program publications for NCP V7R8.1 MVS.

## 2.3.2 Optional Program Publications

Figure 3 identifies the optional unlicensed program publications for NCP V7R8.1 MVS. One copy of each of these publications is included when you order the optional materials for NCP V7R8.1 MVS. For additional copies, contact your IBM representative.

An asterisk (\*) beside the Form Number indicates it contains "Restricted Materials of IBM."

<i>Figure 3. Optional Material: Unlicensed Publications</i>		
Publication Title	Form Number	Feature Number
NCP Version 7 and X.25 NPSI Version 3 Planning and Installation	SC30-3470	None
ALCI Licensed Program Specifications	GH33-7054	None
ALCI Installation and Operation	SH33-7013	None

Figure 4 identifies the optional licensed program publications for NCP V7R8.1 MVS. The first copy is available at no charge to licensees of the optional material by ordering the 7xxx Feature Number. Order additional copies using the 8xxx Feature Number. A fee is charged for additional copies.

<i>Figure 4. Optional Material: Licensed Publications</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Feature Number</b>
Network Control Program and Emulation Program Reference Summary and Data Areas	LY43-0030*	7100-8100
Network Control Program and Emulation Program Reference	LY43-0029*	7101-8101
Network Control Program (NCP) X.25 Diagnosis, Customization, and Tuning	LY30-5610*	7105-8103
ALCI Diagnosis Guide and Reference	LY33-7027*	7102-8102

### 2.3.3 Softcopy Publications

All NCP V7R8.1 MVS manuals, licensed and unlicensed, except for *NCP Licensed Program Specifications*, are offered in displayable softcopy form on the media listed in Figure 5. The first copy is available at no charge to licensees of the basic material by ordering the 7xxx Feature Number. Order additional copies using the 8xxx Feature Number. A fee is charged for additional copies.

An asterisk (\*) beside the Form Number indicates it contains “Restricted Materials of IBM.”

<i>Figure 5. Optional Material: Licensed Publications</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Feature Number</b>
ACF/NCP, ACF/SSP, EP, NPSI, and NTuneMON Softcopy Collection Kit CD-ROM	LK2T-0414*	7110-8110

You can read the books on the Softcopy Collection Kit CD-ROM using any of the following products:

IBM Library Reader, a limited-function BookManager product shipped on the CD.

The full-function IBM BookManager product, available for a variety of platforms, including MVS. For more information, or to order BookManager for your platform, refer to the IBM BookManager home page at <http://booksrv2.raleigh.ibm.com>.

Adobe Acrobat Reader, available for downloading at <http://www.adobe.com/prodindex/acrobat/readstep.html>. The Softcopy Collection Kit CD-ROM includes Acrobat Reader (PDF) book files for NCP V7R7 and later.

### 2.3.4 Publications Associated with NCP V7R8.1 MVS

Figure 6 lists publications that may be helpful when you use this program. To order copies, contact your IBM representative. A fee is charged for each publication.

An asterisk (\*) beside the Form Number indicates it contains “Restricted Materials of IBM.”

<i>Figure 6. Publications Associated with NCP V7R8.1 MVS</i>	
<b>Publication Title</b>	<b>Form Number</b>
Network Control Program, System Support Programs, and Emulation Program Diagnosis Guide	LY43-0033*
Network Control Program, System Support Programs, and Emulation Program Messages and Codes	SC31-6222
Network Control Program, System Support Programs, and Emulation Program Generation and Loading Guide	SC31-6221
Network Control Program Version 7 Release 8, System Support Programs Version 4 Release 8, and Emulation Program Release 14 Library Directory	SC30-4025
Network Control Program and System Support Programs Customization Guide	LY43-0031*
Network Control Program and System Support Programs Customization Reference	LY43-0032*
Network Control Program, System Support Programs, and Emulation Program Trace Analysis Handbook	LY43-0037*

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## 2.4 Program Source Materials

Customers with access to View Program Listings (VPL), such as through S/390 SoftwareXcel, can use the VPL facility for online viewing of available program listings. Those customers without access to VPL can contact their IBM representative.

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## 2.5 Publications Useful During Installation

The publications listed in Figure 7 may be useful during the installation of NCP V7R8.1 MVS. To order copies, contact your IBM representative.

<i>Figure 7 (Page 1 of 2). Publications Useful During Installation</i>	
<b>Publication Title</b>	<b>Form Number</b>
MVS Software Manufacturing Offerings General Information	GC23-0351
MVS/ESA JCL Reference	GC28-1829
MVS/ESA JCL User's Guide	GC28-1830
MVS/ESA System Codes	GC28-1815
MVS/ESA System Messages Volume 1	GC28-1812
MVS/ESA System Messages Volume 2	GC28-1813

Figure 7 (Page 2 of 2). Publications Useful During Installation

<b>Publication Title</b>	<b>Form Number</b>
OS/390 MVS JCL Reference	GC28-1757
OS/390 MVS JCL User's Guide	GC28-1758
OS/390 MVS System Codes	GC28-1780
OS/390 MVS System Messages, Vol 1 (ABA-ASA)	GC28-1784
OS/390 MVS System Messages, Vol 2 (ASB-EWX)	GC28-1785
OS/390 MVS System Messages, Vol 3 (GDE-IEB)	GC28-1786
OS/390 MVS System Messages, Vol 4 (IEC-IFD)	GC28-1787
OS/390 MVS System Messages, Vol 5 (IGD-IZP)	GC28-1788
OS/390 SMP/E Commands	SC28-1805
OS/390 SMP/E Messages and Codes	SC28-1738
OS/390 SMP/E Reference	SC28-1806
OS/390 SMP/E User's Guide	SC28-1740
SMP/E: Messages and Codes	SC28-1108
SMP/E: Reference Guide	SC28-1107
SMP/E: User's Guide	SC28-1302



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## 3.0 Program Support

This section describes the IBM support available for NCP V7R8.1 MVS.

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### 3.1 Program Services

Contact your IBM representative for specific information about available program services.

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### 3.2 Preventive Service Planning

Before installing NCP V7R8.1 MVS, you should review the current Preventive Service Planning (PSP) information. If you obtained NCP V7R8.1 MVS as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO tape.

If you obtained NCP V7R8.1 MVS on a product tape, or if the CBPDO is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for NCP V7R8.1 MVS are:

UPGRADE	SUBSET	Description
NCP781	HNC7812	NCP V7R8.1 MVS

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### 3.3 Statement of Support Procedures

For help with problem determination and problem source identification, refer to *Network Control Program, System Support Programs, and Emulation Program Diagnosis Guide*.

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 9 identifies the component ID (COMPID) for NCP V7R8.1 MVS.

FMID	COMPID	Component Name	RETAIN Release
HNC7812	564806300	NCP V7R8.1	812

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## 4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of NCP V7R8.1 MVS. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

---

### 4.1 Program Level Information

The following APAR fixes against previous releases of NCP have been incorporated into this release. They are listed by FMID.

FMID HNC7802

IR41339	IR41979	IR43069
IR41343	IR42059	IR43158
IR41345	IR42082	IR43187
IR41347	IR42166	IR43197
IR41349	IR42300	IR43304
IR41351	IR42305	IR43376
IR41354	IR42308	IR43580
IR41355	IR42352	IR43684
IR41433	IR42370	IR43730
IR41492	IR42409	IR43743
IR41524	IR42422	IR44025
IR41526	IR42442	IR44236
IR41552	IR42460	IR44304
IR41572	IR42481	IR44429
IR41610	IR42545	IR44510
IR41644	IR42546	IR44621
IR41679	IR42557	IR44867
IR41723	IR42597	IR44878
IR41736	IR42599	IR45042
IR41822	IR42600	IR45560
IR41896	IR42608	IR45561
IR41936	IR42860	IR45562
IR41969	IR42920	IR45698

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### 4.2 Service Level Information

No PTFs against this release of NCP have been incorporated into the product tape.

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## 5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating NCP V7R8.1 MVS. The following terminology is used:

*Driving system:* the system used to install the program.

*Target system:* the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.

When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

---

### 5.1 Driving System Requirements

This section describes the environment of the driving system required to install NCP V7R8.1 MVS.

#### 5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

#### 5.1.2 Programming Requirements

*Figure 10 (Page 1 of 2). Driving System Software Requirements*

<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>
Any <b>one</b> of the following:	
5668-949	System Modification Program/Extended (SMP/E) Release 1.8.1 with PTF UR51070
5645-001	OS/390 SMP/E Version 1 Release 2 with PTF UR51071
5645-001	OS/390 SMP/E Version 1 Release 3 with PTF UR51067
5647-A01	OS/390 SMP/E Version 2 Release 4 with PTF UR51067

Figure 10 (Page 2 of 2). Driving System Software Requirements

Program Number	Product Name and Minimum VRM/Service Level
5647-A01	OS/390 SMP/E Version 2 Release 5 or 6 with PTF UR51068
5647-A01	OS/390 SMP/E Version 2 Release 7 or higher

## 5.2 Target System Requirements

This section describes the environment of the target system required to install and use NCP V7R8.1 MVS.

NCP V7R8.1 MVS installs in the NCP (P004) SREL.

### 5.2.1 Machine Requirements

This program operates on any IBM 3745 Communication Controller. The Controller Load and Dump Program (CLDP) is used to load and dump the 3745 when attached to the host via an OEMI channel, ESCON channel, or remotely via a 3745 base frame SDLC link through another controller. For other connections, loads and dumps require an active NCP and an owning VTAM. The MODIFY DUMP and MODIFY LOAD transfer facility commands of the owning VTAM are then used to load and dump the IBM 3745. For more information, refer to *IBM 3720/3745 Communication Controllers Remote Loading/Activation Guide* (SA33-0161).

The IBM 3745 Communication Controller must have the appropriate features and microcode level installed when the IBM 3745 expansion frame, the IBM 3746 Model 900, is installed. The IBM 3746 Model 900 provides ESCON attachment capability for the IBM 3745, as well as additional higher performance token-ring adapters, communication line adapters, and frame relay capability on the communication line adapters for the IBM 3745. The communication line adapters support SDLC, frame relay, X.25 NPSI with NPSI V3R8 or later, and X.25 ODLC.

When the 3746 Model 900 is attached, the NCP V7R8.1 3746 Model 900 feature license is required at the appropriate usage tier level.

For 3746 Model 900 IP internal coupling with NCP, the 3746 Model 900 Network Node Processor Feature 5022 or 5122, the IP Routing Feature 5033, and either Feature 5810 or Feature 5811 are required.

For 3746 Model 900 Frame Relay and ISDN DYNWIND Keyword expanded options, either Feature 5810 or Feature 5811 is required.

For the higher performance frame relay capability on the communication line adapters in the 3746 Model 900, either Feature 5810, Feature 5811, or ECA number 134 is required.

For Automatic Network Routing (ANR) over ESCON, either Feature 5810, Feature 5811, or ECA number 137 is required.

For High Performance Routing (HPR) using frame-relay on the communication line adapters in the 3746 Model 900, either Feature 5810, Feature 5811, or ECA number 137 is required.

For 3746 Model 900 processor performance and storage utilization NPM information, either Feature 5810, Feature 5811, or ECA number 137 is required.

For 3746 Model 900 TIC3 utilization NPM information, either Feature 5810, Feature 5811, or ECA number 137 is required.

For 3746 Model 900 communication line adapter X.25 NPSI support, either Feature 5810, Feature 5811, or ECA number 137 is required.

For 3746 Model 900 frame-relay Boundary Access Node (BAN) support, either Feature 5810, Feature 5811, or ECA number 138 is required.

For 3746 Model 900 frame-relay SAP multiplexing support, either Feature 5810, Feature 5811, or ECA number 138 is required.

For 3746 Model 900 frame-relay HPR NPM information, either Feature 5810, Feature 5811, or ECA number 138 is required.

For 3746 Model 900 Network Node tier C level support, either Feature 5810, Feature 5811, or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 X.25 support, either Feature 5810, Feature 5811, or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 frame-relay frame handler switching, either Feature 5810, Feature 5811, or or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 native IP over ESCON support, either Feature 5810, Feature 5811, or ECA number 142 (EC # D22510) is required.

For 3746 Model 900 ESCON reporting of an offline sequence as an INOP01, microcode fix MCF MD22414.418 is required.

For 3746 Model 900 HPR non-ERP over TIC3 support, either Feature 5810, Feature 5811, or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 ISDN primary rate, either Feature 5810, Feature 5811, or ECA number 159 (EC # D22570D) is required.

For 3746 Model 900 duplicate TIC addressing, either Feature 5810, Feature 5811, or ECA number 157 (EC # D22570C) is required.

For 3746 Model 900 frame-relay Boundary Access Node (BAN) for subarea links, either Feature 5810, Feature 5811, or ECA number 157 (EC # D22570C) is required.

For 3746 Model 900 TIC3 and ESCON port sharing between the network node processor (NNP) and NCP, either Feature 5810, Feature 5811, or ECA number 155 is required.

For 3746 Model 900 frame-relay port sharing between the network node processor (NNP) and NCP, either Feature 5810, Feature 5811, or ECA number 157 is required.

For 3746 Model 900 X.25 port sharing between the network node processor (NNP) and NCP, either Feature 5810, Feature 5811, or ECA number 167 is required.

For 3746 Model 900 Automatic Network Routing (ANR) over frame-relay Boundary Access Node (BAN), either Feature 5810, Feature 5811, or ECA number 155 is required.

For 3746 Model 900 NPM support for ISDN, either Feature 5810, Feature 5811, or ECA number 167 is required.

For 3746 Model 900 HPR over X.25 ODLC, either Feature 5810, Feature 5811, or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 Frame Relay automatic backup over ISDN, either Feature 5810, Feature 5811, or ECA number 167 is required.

For 3746 Model 900 ESCON retrying of the activation if the host is powered off, microcode fix MCF MD22714.403 is required.

For 3746 Model 900 duplicate TIC addressing for subarea connections, EC # D46130 is required.

For 3746 Model 900 support for RIP V2 multicasting, ESS microcode patch EGAL2 is required.

A microcode EC for the 3745 is required for the Dynamic Internet Protocol routing function of this program when using the Ethernet Subsystem (ESS). Following are the minimum 3745 microcode EC levels to support this function:

*Figure 11. Minimum Microcode Levels for the 3745*

<b>EC Number</b>	<b>Model</b>
C37967	210, 310, 410, 610
C38006	130, 150, 160, 170
D39894	21A, 31A, 41A, 61A
D40002	17A

For 3746 Model 900 support for the following, Feature 5810 or Feature 5811 and ECA 185 are required:

- Committed Information Rate (CIR) on frame-relay lines controlled by NCP
- Frame-relay switched support for frame-relay switched lines controlled by NCP
- Routing information change (RIF) notification to NTuneMON after a nondisruptive route switch for connections on a TIC3

In addition to Feature 5810 or Feature 5811 and ECA 185, the above three items require:

- Service Processor Type 2 (Feature 5052)
- Service Processor Part Number 55H7630 (Feature 5021 - type 3172 with Pentium 90 processor) equipped with
  - CD-ROM drive (Feature 5051)
  - Service Processor memory expansion (Feature 5028)

For 3746 Model 900 support for the following, Feature 5810 or Feature 5811 and type 3 processors are required:

- 32 logical connections on ESCON
- Token Ring (TIC3) connection balancing
- Frame Relay BAN connection balancing

The NCP V7R8.1 minimum size load module may exceed 1 megabyte. This is supported in base microcode levels for the x1A and 17A models. Patches exist for x10 and 1x0 models. Please see Technical Data Recording (TDR) H124890 for more information.

### 5.2.1.1 Controller RPQs

NCP V7R8.1 MVS, through the Airline Control Interconnect feature, provides support for the 3745 RPQs listed in Figure 12.

Airline Control (ALCI) RPQ is a free feature offered in NCP V7R8.1. Previously, you were required to license, order, and install the ALCI RPQ as a separate feature. Starting with NCP V7R6, the ALCI RPQ has been incorporated into the NCP base product tape. You are no longer required to order and install separate media for ALCI. You must continue to license the ALCI feature as in previous releases.

Refer to the NCP V7R8 announcement letter dated August 17, 1999 for additional hardware requirements information.

<i>Figure 12. 3745 RPQs</i>	
<b>RPQ Number</b>	<b>Controller</b>
7L1092	3745 Models 210, 310, 410, 610, 21A, 31A, 41A, 61A
7L1216	3745 Models 210, 310, 410, 610, 21A, 31A, 41A, 61A
7L1148	3745 Model 170
7L1148	3745 Model 160 (EMEA Countries)
7L1213	3745 Model 160 (EMEA Countries)

### 5.2.2 Programming Requirements

### 5.2.2.1 Mandatory Requisites

A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

TCAM or VTAM can reside in the host depending upon the specific requirements of the customer installation.

This program is generated using SSP V4R8.1 for MVS. In addition to providing the generation function for this release, SSP provides utilities for loading, dumping, and trace formatting for NCP.

This program is supported with the following licensed programs at the function level of the version and release for as long as program services are available for the particular version and release.

<i>Figure 13. Mandatory Requisites</i>	
<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>
5655-041	System Support Program V4R8.1
Any <b>one</b> of the following:	
5735-RC3	TCAM V2R4
5647-A01	SNA Services feature of eNetwork Communications Server for OS/390 V2R4 or later
5645-001	SNA Services feature of eNetwork Communications Server for OS/390 R1, R2 or R3
5695-117	VTAM V4R3 MVS/ESA or later
5685-085	VTAM V3R4.2 MVS/ESA

**Note:** Refer to section 5.4.1, "Compatibility Requisites" on page 21 for specific requirements for VTAM and TCAM.

### 5.2.2.2 Functional Requisites

A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

This program is supported with the following licensed programs at the functional level of the version and release for as long as program services are available for the particular version and release.

#### 5.2.2.2.1 Host-Resident Programs



<i>Figure 14. Functional Requisites: Host-Resident Programs</i>		
<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>	<b>Function</b>
5648-D72	NTuneMON V3R2	NTuneMON
5748-T14	Transaction Processing Facility (TPF) V4	Transaction Processing Facility
<b>Note:</b> Either Type 5 or Type 2.1 attachment capability is provided. Type 5 attachment requires SNA Network Interconnection (SNI) support in the channel-attached NCP. See Controller RPQs for related 3745 RPQs supported by NCP V7R8.1 MVS.		
5655-HAL	TCP/IP V3R1 or higher	TCP/IP
Any <b>one</b> of the following:		
5655-007	NetView V3R1 MVS/ESA	NetView
5685-111	NetView V2R4 MVS/ESA	NetView
5697-B82	TME 10 NetView for OS/390 R1 or higher	NetView
Any <b>one</b> of the following:		
5655-043	NetView Performance Monitor V2R2 or higher	NetView Performance Monitor
5665-333	NetView Performance Monitor V1R6	NetView Performance Monitor

Refer to section 5.4.1, "Compatibility Requisites" on page 21 for specific requirements for these programs.

#### **5.2.2.2 Controller-Resident Programs::**

One or more of the following programs can reside in the controller depending upon the specific requirements of the customer installation.

<i>Figure 15. Controller-Resident Programs/Functional Requisites</i>		
<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>	<b>Function</b>
5735-XXB	Emulation Program (EP) R14	Emulation Program
5735-XX7	Network Terminal Option (NTO) R11	Network Terminal Option
5668-963	Network Routing Facility (NRF) R9	Network Routing Facility
5668-035	X.25 NCP Packet Switching Interface (NPSI) V3R9	X.25 NCP Packet Switching Interface
5668-042	X.21 Short Hold Mode/Multiple Port Sharing (X.21 SH/MPS) V2R3.1	X.21 Short Hold Mode/Multiple Port Sharing
5685-035	X.25 SNA Interconnection (XI) Program Product V2R4.2	X.25 SNA Interconnection

**Note:** Use of the Partitioned Emulation Programming (PEP) extension of NCP for MVS requires the appropriate release of the Emulation Program (EP) for IBM Communication Controllers.

The following levels of NCP are supported as communicating with NCP V7R8.1 MVS as long as program services are available for the particular level of NCP.

<i>Figure 16. Functional Requisites</i>		
<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>	<b>Function</b>
5668-854	NCP V4R3.1	NCP
5668-738	NCP V5R4	NCP
5668-231	NCP V6R2 or higher	NCP
5648-063	NCP V7R1 or higher	NCP

### 5.2.2.3 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product which must be present on a sharing system. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD at different time intervals.

NCP V7R8.1 MVS has no toleration/coexistence requisites.

### 5.2.2.4 Incompatibility (Negative) Requisites

A negative requisite identifies products which must *not* be installed on the same system as this product.

NCP V7R8.1 MVS has no negative requisites.

## 5.2.3 DASD Storage Requirements

NCP V7R8.1 MVS libraries can reside on 3390 DASD.

Space requirements for SMP/E libraries (data sets) must take into consideration other programs that may use these libraries. The following products share data sets:

- NCP V7R8.1
- EP R14
- NTO R11
- NRF R9
- NTuneMON V3R2

Figure 17 lists the total space required for each type of library.

Figure 17. Total DASD Space Required by NCP V7R8.1 MVS

Library Type	Total Space Required
Target	778 tracks of 3390
Distribution	780 tracks of 3390

**Notes:**

1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:

- U** Unique data set, allocated by this product and used only by this product. In order to determine the correct storage needed for this data set, this table provides all required information; no other tables (or program directories) need to be referenced for the data set size.
- S** Shared data set, allocated by this product and used by this product and others. In order to determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and others. This data set is NOT allocated by this product. In order to determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.5, "Allocate SMP/E Target and Distribution Libraries" on page 32.

3. All target and distribution libraries listed have the following attributes:

- The default name of the data set may not be changed
- The default block size of the data set may be changed
- The data set may not be merged with another data set that has equivalent characteristics
- The data set should be PDS

4. All target libraries listed have the following attributes:

- The data set may be SMS managed
- It is not required for the data set to be SMS managed

It is not required for the data set to reside on the IPL volume  
 The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

5. All target libraries listed which contain load modules have the following attributes:

- The data set may not be in the LPA
- The data set may not be in the LNKLST
- It is not required for the data set to be APF authorized

The following figures describe the target and distribution libraries required to install NCP V7R8.1 MVS. The storage requirements of NCP V7R8.1 MVS must be added to the storage required by other programs having data in the same library or path.

**Note:** The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

*Figure 18. Storage Requirements for NCP V7R8.1 MVS Target Libraries*

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SNCPMAC1	Macro	ANY	S	PDS	FB	80	528	61
SNCPMOD1	Text	ANY	S	PDS	U	0	250	283

*Figure 19. Storage Requirements for NCP V7R8.1 MVS Distribution Libraries*

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
ANCPMAC1	S	PDS	FB	80	528	61
ANCPMOD1	S	PDS	U	0	250	283
ANCP SAMP	S	PDS	FB	80	2	2

NCP, EP, NTO, NRF, and the NTuneNCP tuning feature of NTuneMON share target and distribution libraries (data sets). If you install more than one of these products, you must allocate additional space for these data sets. Figure 20 shows the data sets and the space used by each of the products. To obtain an estimate of the total space needed, add the values for the products you are installing. If you install any other routines into these data sets, you will need additional space for those routines.

Figure 20. Storage Requirements for NCP and NCP-Related Products

Data Set Name or Library Name	NCP V7R8.1		EP R14		NTO R11		NRF R9		NTuneMON V3R2	
	Blk	Dir. Blk	Blk	Dir. Blk	Blk	Dir. Blk	Blk	Dir. Blk	Blk	Dir. Blk
	SNCPMAC1	1061	61	20	1	52	3	57	2	–
SNCPMOD1	253	280	62	6	98	17	87	17	2	2
ANCPMAC1	1061	61	20	1	52	3	57	2	–	–
ANCPMOD1	253	280	62	6	98	17	87	17	2	2
ANCP SAMP	4	1	2	2	3	1	2	1	–	–

## 5.3 FMIDs Deleted

Installing NCP V7R8.1 MVS may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install NCP V7R8.1 MVS into separate SMP/E target and distribution zones.

**Note:** These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

## 5.4 Special Considerations

### 5.4.1 Compatibility Requisites

The following sections contain system considerations for NCP, NPSI, VTAM, NPM, TCAM, and TCP/IP.

#### 5.4.1.1 NCP

The NCP APAR listed in Figure 21 is required for NCP V7R1 NTRI subarea links to be compatible with NCP V7R8.1.

Figure 21. NCP APAR Required for NCP V7R1 Compatibility with NCP V7R8.1.

Product Name	APAR
NCP V7R1	IR32286

### 5.4.1.2 NPSI

The NPSI APAR listed in Figure 22 is required for an alert to be issued when a NPSI incoming call fails due to a lack of logical resources.

<i>Figure 22. NPSI APAR Required for Incoming Call Failure for Lack of Logical Resources</i>	
<b>Product Name</b>	<b>APAR</b>
NPSI V3R9	IR40805

### 5.4.1.3 VTAM

The VTAM APARs listed in Figure 23 are required to cause a BIND to be extended, if the BF(SLU) is an APPN link.

<i>Figure 23. VTAM APARs Required to Cause BIND to be Extended</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R4	OW32193
VTAM V4R3 MVS/ESA	OW32193
OS/390 V2R7	OW36244
OS/390 V2R6	OW36244
OS/390 V2R5	OW36244

The VTAM APARs listed in Figure 24 are required for IP support over 3745 Frame Relay Switched physical lines.

<i>Figure 24. VTAM APARs Required for IP Support over 3745 Frame Relay Switched Physical Lines.</i>	
<b>Product Name</b>	<b>APAR</b>
OS/390 V2R6	OW34198
OS/390 V2R5	OW34198
VTAM V4R4	OW34198

The VTAM APAR listed in Figure 25 is required for 3745 and 3746 Model 900 Frame Relay Switched Dial Backup support.

*Figure 25. VTAM APAR Required for Frame Relay Switched Dial Backup Support*

<b>Product Name</b>	<b>APAR</b>
VTAM V4R4	OW27985

The VTAM APAR listed in Figure 26 is required for APPN Logical Resource Depletion Notification.

<i>Figure 26. VTAM APAR Required for APPN Logical Resource Depletion Notification</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R4	OW25754

The VTAM APAR listed in Figure 27 is required for PU and LU Name Association between Host and Downstream Device support.

<i>Figure 27. VTAM APAR Required for PU and LU Name Association between Host and Downstream Device Support</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R4	OW25501

The VTAM APARs listed in Figure 28 are required for the NCP Frame Relay over Token Ring function.

<i>Figure 28. VTAM APARs Required for NCP Frame Relay Over Token Ring</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R2 MVS/ESA	OW09797
VTAM V4R2 VM/ESA	VM59813
VTAM V4R2 VSE/ESA	DY44000

The VTAM APAR listed in Figure 29 is required for compatibility with NCP Spare SDLC lines support.

<i>Figure 29. VTAM APAR Required for Compatibility with NCP Spare SDLC Lines</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R2 MVS/ESA	OW06708

The VTAM APARs listed in Figure 30 are required for compatibility with NCP Frame Relay support.

<i>Figure 30. VTAM APARs Required for Compatibility with NCP Frame Relay</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R2 MVS/ESA	OW04338
VTAM V4R2 MVS/ESA	OW04575
VTAM V4R2 MVS/ESA	OW05013
VTAM V4R2 MVS/ESA	OW06065



The VTAM APAR listed in Figure 31 is required for the NCP Internet Protocol over Frame Relay Dynamic Reconfiguration function.

<i>Figure 31. APAR Required for NCP IP Over FR Dynamic Reconfiguration function</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V4R3 MVS/ESA	OW15600

The VTAM APARs listed in Figure 32 are required for selective NNNA support.

<i>Figure 32. VTAM APARs Required for Selective NNNA Support</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4.1 MVS/ESA	OY52318
VTAM V3R4 MVS/ESA	OY52318

The VTAM APARs listed in Figure 33 are required to delay activating logical links until the associated physical resources are active.

<i>Figure 33. VTAM APARs Required to Delay Activating Logical Links</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4.1 MVS/ESA	OY55462
VTAM V3R4.1 MVS/ESA	OY55304

The VTAM APARs listed in Figure 34 are required to support the NCP ESCON function.

<i>Figure 34. VTAM APARs Required to Support NCP ESCON</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4 MVS/ESA	OY58783
VTAM V3R4.1 MVS/ESA	OY58783
VTAM V3R4.1 MVS/ESA	OY52595
VTAM V3R4.1 MVS/ESA	OY52888
VTAM V3R4.1 MVS/ESA	OY57157

The VTAM APARs listed in Figure 35 are required to reduce the number of messages generated when a ROUTE INOP occurs.

<i>Figure 35. VTAM APARs Required to Perform Route INOP Reduction</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4.1 MVS/ESA	OY48223
VTAM V3R4 MVS/ESA	OY48223
VTAM V3R4.1 VM/ESA	VM57910

The VTAM APARs listed in Figure 36 are required to avoid VTAM error messages when coding the MAXDATA keyword for PU4s in the NCP definition.

<i>Figure 36. VTAM APARs Required for Coding MAXDATA for PU4s</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4.1 MVS/ESA	OY58078
VTAM V3R4 MVS/ESA	OY58078
VTAM V3R4 VSE/ESA	DY42989
VTAM V3R4.1 VM/ESA	VM54904

The VTAM APARs listed in Figure 37 are required for users of NetView and STATMON.

<i>Figure 37. VTAM APARs Required for NetView and STATMON.</i>	
<b>Product Name</b>	<b>APAR</b>
VTAM V3R4.1 MVS/ESA	OY55988
VTAM V3R4.1 VM/ESA	VM59204

#### 5.4.1.4 NPM

The NPM APAR listed in Figure 38 is required for compatibility with NCP V7R8.1 MVS. This APAR is also required for the NCP Internet Protocol over Token Ring function.

<i>Figure 38. NPM APAR Required for NCP V7R8.1 MVS and NCP IP Over Token Ring</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW12520

The NPM APAR listed in Figure 39 is required for ODLC LAN HPR data collection.

<i>Figure 39. NPM APAR Required for ODLC LAN HPR Data Collection</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW17876

The NPM APAR listed in Figure 40 is required for the 3746 Model 900 TIC3 utilization NPM information function.

<i>Figure 40. NPM APAR Required for 3746 Model 900 TIC3</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW10584

The NPM APAR listed in Figure 41 is required for the 3746 Model 900 processor utilization NPM information function.

<i>Figure 41. NPM APAR Required for 3746 Model 900 Processor</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW08565

The NPM APAR listed in Figure 42 is required for the 3746 Model 900 X.25 NPSI function.

<i>Figure 42. NPM APAR Required for 3746 Model 900 X.25 NPSI</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW10583

The NPM APAR listed in Figure 43 is required for the NCP Dynamic Control Blocks function.

<i>Figure 43. NPM APAR Required for NCP Dynamic Control Blocks</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW09271

The NPM APAR listed in Figure 44 is required for compatibility with NCP.

<i>Figure 44. NPM APAR Required for NCP</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V1R6 MVS	OY66928

The NPM APARs listed in Figure 45 are required for compatibility with NCP Frame Relay on 3746 Model 900 support.

<i>Figure 45. NPM APARs Required for Compatibility with NCP Frame Relay</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2 MVS/ESA	OW07715
NPM V2R2 VM	VM61164

The NPM APAR listed in Figure 46 is required for the 3746 Model 900 X.25 ODLC function.

<i>Figure 46. NPM APAR Required for 3746 Model 900 X.25 ODLC function</i>	
<b>Product Name</b>	<b>APAR</b>
NPM V2R2	OW19297

#### 5.4.1.5 TCAM

The TCAM APAR listed in Figure 47 is required if your NCP is channel-attached to TCAM.

<i>Figure 47. TCAM APAR</i>	
<b>Product Name</b>	<b>APAR</b>
TCAM V2R4 MVS	OY25731

#### 5.4.1.6 TCP/IP

The TCP/IP APAR listed in Figure 48 is required for Variable Length Subnet Mask support.

<i>Figure 48. TCP/IP APAR Required for Variable Length Subnet Mask</i>	
<b>Product Name</b>	<b>APAR</b>
TCP/IP V3R2	PQ02781

The TCP/IP APAR listed in Figure 49 is required for RIP V2 support.

<i>Figure 49. TCP/IP APAR Required for RIP V2 Support</i>	
<b>Product Name</b>	<b>APAR</b>
TCP/IP V3R2	PQ02781

The TCP/IP APARs listed in Figure 50 are required for the Dynamic Internet Routing over Frame Relay function.

<i>Figure 50. TCP/IP APARs Required for Dynamic Internet Routing Over Frame Relay</i>	
<b>Product Name</b>	<b>APAR</b>
TCP/IP V3R1 MVS	PN66582
TCP/IP V3R1 MVS	PN68188
TCP/IP V3R1 MVS	PN69619
TCP/IP V3R1 MVS	PN69951
TCP/IP V3R1 MVS	PN72929

The TCP/IP APAR listed in Figure 51 is required for Direct IP Channel Communication.

<i>Figure 51. TCP/IP APAR Required for Direct IP Channel Communication</i>	
<b>Product Name</b>	<b>APAR</b>
TCP/IP V3R1 MVS	PN75734

The TCP/IP APAR listed in Figure 52 is required for IP NCPROUTE Direct over Channel function.

<i>Figure 52. TCP/IP APAR Required for IP NCPROUTE Direct Over Channel</i>	
<b>Product Name</b>	<b>APAR</b>
TCP/IP V3R1 MVS	PN80904

---

## 6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of NCP V7R8.1 MVS.

Please note the following:

If you want to install NCP V7R8.1 MVS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.

Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.

The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

---

### 6.1 Installing NCP V7R8.1 MVS

#### 6.1.1 SMP/E Considerations for Installing NCP V7R8.1 MVS

This release of NCP V7R8.1 MVS is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

#### 6.1.2 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 53. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

*Figure 53. SMP/E Options Subentry Values*

SUB-ENTRY	Value	Comment
DSSPACE	(500,100,500)	Primary, Secondary, and Directory Blocks
PEMAX	8756	The SMP/E default is larger than what is specified here

#### 6.1.3 Unload the Sample JCL from the Product Tape

The following sample installation jobs are provided on the distribution tape to help you install NCP V7R8.1 MVS:

Figure 54. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
NCPRECEV	RECEIVE	Sample RECEIVE job	IBM.HNC7812.F1
NCPALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HNC7812.F1
NCPDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HNC7812.F1
NCPAPPLY	APPLY	Sample APPLY job	IBM.HNC7812.F1
NCPACCEP	ACCEPT	Sample ACCEPT job	IBM.HNC7812.F1
NCPAPPCK	CHECK	Sample APPLY CHECK job	IBM.HNC7812.F1
NCPACCCK	CHECK	Sample ACCEPT CHECK job	IBM.HNC7812.F1

You may copy the jobs from the tape by submitting the job below. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=IBM.HNC7812.F1,UNIT=tunit,VOL=SER=NC7812,
// LABEL=(2,SL),DISP=(OLD,KEEP)
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// DCB=*.STEP1.IN,SPACE=(TRK,(1,1,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*
```

where **tunit** is the unit value matching the product tape or cartridge, **jcl-library-name** is the name of the data set where the sample jobs will reside, and **dasdvol** is the volume serial of the DASD device where the data set will reside.

You can also access the sample installation jobs by performing an SMP/E RECEIVE for FMID HNC7812, and then copying the jobs from data set **hlq.IBM.HNC7812.F1** to a work data set for editing and submission Note: "hlq" is the high-level qualifier specified as the DSPREFIX value in the SMPTLIB DDDEF or the OPTIONS entry of the global zone.

## 6.1.4 Perform SMP/E RECEIVE

Edit and submit sample job NCPRECEV to perform the SMP/E RECEIVE for NCP V7R8.1 MVS. Consult the instructions in the sample job for more information.

NOTE: If you obtained NCP V7R8.1 MVS as part of a CBPDO, you can use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the NCP V7R8.1 MVS FMIDs as well as any service, HOLDDATA,

or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

**Expected Return Codes and Messages:**

NCPRECEV job ends with return code equal zero (RC=0).

## 6.1.5 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job NCPALLOC to allocate the SMP/E target and distribution libraries for NCP V7R8.1 MVS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:**

NCPALLOC job ends with return code equal zero (RC=0).

## 6.1.6 Create DDDEF Entries

Edit and submit sample job NCPDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for NCP V7R8.1 MVS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:**

NCPDDDEF job ends with return code equal zero (RC=0). If any of the DDDEF entries already exist, the NCPDDDEF job will end with return code of 8 (RC=8). Check the output to determine the cause of the non-zero return code.

## 6.1.7 Perform SMP/E APPLY

Edit and submit sample job NCPAPPCK to perform an SMP/E APPLY CHECK for NCP V7R8.1 MVS. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Once you have taken any actions indicated by the APPLY CHECK, edit and submit sample job NCPAPPLY to perform the APPLY.

**Note:** The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from APPLY CHECK:**

NCPAPPCK job ends with return code equal zero (RC=0).



### **Expected Return Codes and Messages from APPLY:**

NCPAPPLY job ends with return code equal zero (RC=0).

If PTFs containing replacement modules are being APPLIED, SMP/E APPLY processing will linkedit/bind the modules into the target libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the APPLY step. These messages can be ignored, because the target library (SNCPMOD1) is not executable and the unresolved external references will not affect the executable system libraries. If maintenance is being applied to NCP load modules there should be no unresolved externals. This is covered in the NCP informational APAR II05374.

## **6.1.8 Perform SMP/E ACCEPT**

Edit and submit sample job NCPACCK to perform an SMP/E ACCEPT CHECK for NCP V7R8.1 MVS. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Once you have taken any actions indicated by the ACCEPT CHECK, edit and submit sample job NCPACCEPT to perform the ACCEPT.

**Note:** The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

### **Expected Return Codes and Messages from ACCEPT CHECK:**

NCPACCK job ends with return code equal zero (RC=0).

### **Expected Return Codes and Messages from ACCEPT:**

NCPACCEP job ends with return code equal zero (RC=0).

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

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## 6.2 Activating NCP V7R8.1 MVS

The SSP, NCP, and controller-resident NCP-related products share post-installation procedures. After you install all products needed for the system environment, your system is ready for post-installation maintenance processing. If a PTF cumulative service tape is included with the order, install the maintenance now.

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

To re-linkedit the NCP load modules under SMP/E, you may need to add a LOADNCP DD statement to the DDDEF job. The LOADNCP DD statement must point to the library that contains your NCP load modules. For an example, see the SYSLMOD DD statement in the *Network Control Program, System Support Programs, and Emulation Program Generation and Loading Guide*.

Run the HONE Configurator to determine your new load module size after installation. Storage requirements and load module size usually change from release to release, which affects the number of buffers in the buffer pool. Contact your IBM representative for assistance.

### 6.2.1 For an NCP-Only System

If you are installing an NCP-only system and have not already installed the SSP product, refer to the SSP program directory for product information and installation instructions. If you have already installed SSP, you have completed installation for an NCP-only system, and you are ready to generate NCP.

### 6.2.2 For a PEP (NCP and EP) System

If you are installing a PEP system and have not already installed the SSP or EP product, refer to the appropriate program directory for product information and installation instructions. You should install these products before generating NCP. If you have already installed both the SSP and EP products, you have completed installation of a PEP system, and you are ready to generate NCP and PEP.

### 6.2.3 For an EP Standalone System

If you are installing an EP standalone environment you must install NCP and EP. After NCP is installed, refer to the EP program directory for EP product information and installation instructions. If you have not installed SSP, refer to the SSP program directory for product information and installation instructions. If you have installed NCP, EP, and SSP, you have completed installation for an EP standalone system and you are ready to generate EP.

# Reader's Comments

## Program Directory for Network Control Program Version 7 Release 8, Modification Level 1 for MVS

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Installation Verification Programs						
Time to install the product						
Readability and organization of program directory tasks						
Necessity of all installation tasks						
Accuracy of the definition of the installation tasks						
Technical level of the installation tasks						
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- CustomPac
- ServerPac
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Is this the first time your organization has installed this product?

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If yes, how many years? \_\_\_

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