



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

Version 7 Release 7

Program Number 5648-063

for Use with
VSE/ESA

Document Date: October 1998

GI10-0988-00

Note!

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

This program directory, dated October 1998, applies to Network Control Program Version 7 Release 7 for VSE (NCP V7R7 VSE), program number 5648-063 for the following:

CLC	Feature Numbers	System Names
77F	5851/5852/6188	VSE/ESA

and to all subsequent releases and modifications until otherwise indicated in new editions.

A form for reader's comments appears at the back of this publication. When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

© **Copyright International Business Machines Corporation 1984, 1998. All rights reserved.**

Note to U.S. Government Users — Documentation related to restricted rights — Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

Contents

Notices	vii
Notice to Users of Online Versions of This Book	viii
Trademarks	viii
1.0 Introduction	1
2.0 Program Materials	3
2.1 Basic Machine-Readable Material	3
2.2 Optional Machine-Readable Material	4
2.3 Program Publications	4
2.3.1 Basic Program Publications	4
2.3.2 Optional Basic Program Publications	4
2.3.3 Optional Licensed Program Publications	5
2.3.4 Softcopy Publications	5
2.3.5 Publications Associated with NCP V7R7 VSE	5
2.4 Program Source Materials	6
2.5 Publications Useful During Installation	6
3.0 Program Support	9
3.1 Preventive Service Planning	9
3.2 Statement of Support Procedures	9
4.0 Program and Service Level Information	11
4.1 Program Level Information	11
4.2 Service Level Information	11
4.3 Cumulative Service Tape	11
5.0 Installation Requirements and Considerations	13
5.1 Target System Requirements	13
5.1.1 Operating System Requirements	13
5.1.2 Machine Requirements	13
5.1.3 Programming Requirements	13
5.1.4 DASD Storage Requirements	13
5.2 Program Considerations	14
5.2.1 Operating System Requirements	14
5.2.2 Machine Requirements	14
5.2.3 Programming Requirements	17
5.2.3.1 Minimum Requisites	17
5.2.3.2 Functional Requisites	17
5.2.3.3 Compatibility Requisites	18
5.2.3.3.1 NCP	18
5.2.3.3.2 VTAM	18

5.2.3.3.3 NPM	23
5.2.3.3.4 TPF	25
5.2.3.3.5 NetView	25
5.2.3.3.6 TCAM	26
5.2.3.3.7 TCP/IP	26
5.2.4 System Considerations	27
5.2.5 Special Considerations	27
6.0 Installation Instructions	29
6.1 Installing NCP V7R7 VSE	29
6.1.1 Step 1: Define VSE Product Library	29
6.1.2 Step 2: Install Production Sublibrary	29
6.2 Installation Using the VSE Interactive Interface	30
Appendix A. APARs Incorporated into this Program	31
Reader's Comments	33

Figures

1. Basic Material: Program Tape	3
2. Program Tape: File Content	3
3. Basic Material: Program Publications	4
4. Optional Basic Program Publications	4
5. Optional Material: Licensed Program Publications	5
6. Softcopy Publications	5
7. Publications Associated with NCP V7R7 VSE	6
8. Publications Useful During Installation	7
9. PSP Information	9
10. Component ID	9
11. DASD Storage Requirements	13
12. Minimum Microcode Levels for the 3745	16
13. NCP APAR Required for NCP V7R1 Compatibility with V7R7	18
14. VTAM APAR Required for Frame Relay Switched Dial Backup Support	19
15. VTAM APAR Required for APPN Logical Resource Depletion Notification	19
16. VTAM APAR Required for PU and LU Name Association between Host and Downstream Device Support	19
17. VTAM APAR Required for IP Support Over 3745 Frame-Relay Switched Physical Lines	19
18. VTAM APAR Required for NCP Frame Relay Over Token Ring	19
19. VTAM APARs Required for NCP V7R7	20
20. VTAM APAR Required for Compatibility with NCP Spare SDLC Lines	20
21. VTAM APAR Required for Compatibility with NCP IP over FR Dynamic Reconfiguration	20

22.	Casual Connection and/or NNNC	20
23.	VTAM APARs Required for Selective NNNA Support	21
24.	VTAM APARs Required to Delay Activating Logical Links	21
25.	VTAM APARs Required for Compatibility with NCP Frame Relay	21
26.	VTAM APAR Required to Support NCP ESCON	22
27.	VTAM APAR Required to Perform Route INOP Reduction	22
28.	VTAM APARs Required for Coding MAXDATA for PU4s	22
29.	VTAM APAR Required for NetView and STATMON	23
30.	VTAM APAR Required for NCP Frame Relay Peripheral Node Support	23
31.	NPM APAR Required for NCP V7R7 VM and NCP IP Over Token Ring	23
32.	NPM APAR Required for ODLC LAN HPR Data Collection	23
33.	NPM APARs Required for 3746 Model 900 TIC3	23
34.	NPM APARs Required for 3746 Model 900 Processor	24
35.	NPM APARs Required for 3746 Model 900 X.25 NPSI	24
36.	NPM APARs Required for NCP Dynamic Control Blocks	24
37.	NPM APAR Required for NCP	24
38.	NPM APARs Required for Compatibility with NCP Frame Relay	24
39.	NPM APAR Required for 3746 Model 900 ISDN Function	24
40.	NPM APARs Required for 3746 Model 900 X.25 ODLC Function	25
41.	PTF APARs and PTF Required for NCP V7R7	25
42.	NetView APARs	25
43.	NetView APARs Required for Compatibility with NCP	25
44.	TCAM APAR	26
45.	TCP/IP APAR Required for Variable Length Subnet Mask	26
46.	TCP/IP APAR Required for RIP V2 Support	26
47.	TCP/IP APARs Required for Dynamic Routing Over Frame Relay	26
48.	TCP/IP APARs Required for Compatibility with NCP	26
49.	TCP/IP APAR Required for NCP Dynamic Internet Routing Function	27
50.	TCP/IP APARs Required for Direct IP Channel Communication	27
51.	TCP/IP APARs Required for IP NCPROUTE Direct over Channel	27
52.	Sample JCL to Define a VSE Library	29
53.	Sample JCL to Install Production Sublibrary	30

Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make them available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the user's responsibility.

APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
500 Columbus Avenue
Thornwood, NY 10594
USA

License holders of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

Site Counsel
IBM Corporation
P.O. Box 12195
3039 Cornwallis Road
Research Triangle Park, NC 27709 2195
USA

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement.

This document is not intended for production use and is furnished as is without any warranty of any kind, and all warranties are hereby disclaimed including the warranties of merchantability and fitness for a particular purpose.

Notice to Users of Online Versions of This Book

For online versions of this book, you are authorized to:

- Copy, modify, and print the documentation contained on the media, for use within your enterprise, provided you reproduce the copyright notice, all warning statements, and other required statements on each copy or partial copy.
- Transfer the original unaltered copy of the documentation when you transfer the related IBM product (which may be either machines you own, or programs, if the program's license terms permit a transfer). You must, at the same time, destroy all other copies of the documentation.

You are responsible for payment of any taxes, including personal property taxes, resulting from this authorization.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

Your failure to comply with the terms above terminates this authorization. Upon termination, you must destroy your machine-readable documentation.

Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

APPN	NetView
BookManager	NTuneMON
CBIPO	OS/2
CBPDO	OS/390
ESCON	RETAIN
FunctionPac	SystemPac
IBM	VM/ESA
MVS/ESA	VSE/ESA
MVS/XA	VTAM

Microsoft, Windows, Windows NT, and the Windows 95 logo are trademarks or registered trademarks of Microsoft Corporation.

Pentium® is a registered trademark of Intel Corporation in the U.S. and other countries.

Other company, product, and service names may be trademarks or service marks of others.

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 NCP V7R7 VSE. You should read all of this program directory before installing the program, and then keep it for future reference.

This program directory contains the following sections:

- 2.0, "Program Materials" on page 3 identifies the basic program materials and documentation for NCP V7R7 VSE.
- 3.0, "Program Support" on page 9 describes the IBM support available for NCP V7R7 VSE.
- 4.0, "Program and Service Level Information" on page 11 contains information about the program and service level information incorporated into NCP V7R7 VSE.
- 5.0, "Installation Requirements and Considerations" on page 13 identifies the resources and considerations for installing NCP V7R7 VSE.
- 6.0, "Installation Instructions" on page 29 provides detailed installation instructions for NCP V7R7 VSE.
- Appendix A, "APARs Incorporated into this Program" on page 31 provides a list of APARs incorporated into NCP V7R7 VSE

Usage tiers are now included on the base product tape. You no longer need to install separate tapes for usage tiers.

There is no longer a separate generation sublibrary. The generation sublibrary is now contained in the production sublibrary.

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 dated September 9, 1997 for additional licensing instructions."

Starting with EP R14, users of EP Standalone must install NCP. A single EP installation can now be used in environments requiring both PEP and EP Standalone.

Before installing NCP V7R7 VSE, read 3.1, "Preventive Service Planning" on page 9. This section tells you how to find any updates to the information and procedures in this program directory.

At the end of this program directory you will find a Reader's Comment Form. Please take the time to complete this form and return it to the address shown on the form. Your suggestions and comments help improve this program directory and make installation easier.

A good place to start any task regarding this program is the *NCP V7R7, SSP V4R7, and EP R14 Library Directory*, SC30-3971. This directory introduces the enhancements for the current release and shows where these enhancements are described in the NCP library. It gives you an overview of NCP, SSP, and EP and directs you to a variety of tasks related to these programs.

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for NCP V7R7 VSE is 5648-063. Feature numbers associated with this release are provided in the following sections.

The program announcement material describes the features supported by NCP V7R7 VSE. Ask your IBM marketing representative for this information if you have not already received a copy.

The following sections identify:

- Basic and optional program materials available with this program
- Program publications
- Program source materials
- Publications useful during installation

2.1 Basic Machine-Readable Material

This section describes the basic machine-readable material for NCP.

The distribution medium for this program is a 9-track magnetic tape (written at 6250 bpi), a 3480 cartridge, or a 4 mm cartridge. The tape or cartridge contains all the programs and data needed for installation. NCP V7R7 VSE is installed using MSHP. See section 6.0, "Installation Instructions" on page 29 for more information about how to install this program.

Figure 1 describes the program tape or cartridge.

Figure 1. Basic Material: Program Tape

Medium	Feature Number	Physical Volume	External Label Identification
6250 tape	5851	1	NCP V7R7 VSE
3480 cart.	5852	1	NCP V7R7 VSE
4 mm cart.	6188	1	NCP V7R7 VSE

Figure 2 describes the file content of the program tape or cartridge.

Figure 2. Program Tape: File Content

File	Name
1	Header
2	Product ID & History file
3	Product Production Libraries

2.2 Optional Machine-Readable Material

There are no optional machine-readable materials for this program.

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

2.3 Program Publications

The following sections identify the basic, optional, and associated publications for NCP V7R7 VSE.

2.3.1 Basic Program Publications

Figure 3 identifies the basic program publications for NCP V7R7 VSE. One copy of each of these publications is included when you order the basic materials. For additional copies, contact your IBM representative.

Figure 3. Basic Material: Program Publications

Publication Title	Form Number
Licensed Program Specifications: Network Control Program Version 7 Release 7	GC31-6226
Network Control Program Version 7 Release 7 Migration Guide	SC30-3889
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

The above publications and this program directory are included only when you order the basic machine-readable material.

2.3.2 Optional Basic Program Publications

Figure 4. Optional Basic Program Publications

Publication Title	Form Number
NCP Version 7 and X.25 NPSI Version 3 Planning and Installation	SC30-3470

2.3.3 Optional Licensed Program Publications

Figure 5 on page 5 identifies the optional licensed program publications for NCP V7R7 VSE. 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.

Figure 5. Optional Material: Licensed Program Publications

Publication Title	Form Number	Feature Number First Copy	Feature Number Additional Copy
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
NCP Version 7 and X.25 NPSI Version 3 Diagnosis, Customization, and Tuning	LY30-5610#	7105	8103

Note: A number sign symbol (#) beside the Form Number indicates it contains "Restricted Materials of IBM."

2.3.4 Softcopy Publications

All NCP V7R7 VSE manuals, licensed and unlicensed, except for *NCP Licensed Program Specifications*, are offered in displayable softcopy form on the media listed in Figure 6. 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.

Figure 6. Softcopy Publications

Title	Form Number	Feature Number First Copy	Feature Number Additional Copy
ACF/NCP, ACF/SSP, EP, NPSI, and NTuneMON Softcopy Collection Kit CD-ROM	LK2T-0414#	7110	8110

Note: A number sign symbol (#) beside the Form Number indicates it contains "Restricted Materials of IBM."

2.3.5 Publications Associated with NCP V7R7 VSE

Figure 7 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.

Figure 7. Publications Associated with NCP V7R7 VSE

Publication Title	Form Number
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 7, System Support Programs Version 4 Release 7, and Emulation Program Release 14 Library Directory	SC30-3971
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#

Note: A number sign symbol (#) beside the Form Number indicates it contains "Restricted Materials of IBM."

2.4 Program Source Materials

Microfiche is not provided with NCP V7R7 VSE. Customers with access to View Program Listings (VPL), such as through SoftwareXcel Extended, can access program listings formerly provided through microfiche.

Those customers without access to VPL can contact their IBM representative.

The VPL facility provides online viewing of program listings that are available to customers.

2.5 Publications Useful During Installation

The publications listed in Figure 8 may be useful during the installation of this program. To order copies, contact your IBM representative. A fee is charged for each publication.

Figure 8. Publications Useful During Installation

Publication Title	Form Number
VSE/ESA V2R2 Planning	SC33-6603
VSE/ESA V2R3 Planning	SC33-6603
VSE/ESA V2R1 Installation	SC33-6604
VSE/ESA V2R1 Administration	SC33-6605
VSE/ESA V2R1 Operation	SC33-6606
VSE/ESA V2R1 System Control Statements	SC33-6613
VSE/ESA POWER V6R1 Administration and Operation	SC33-6633
VSE/ICCF V6R1 User's Guide	SC33-6639

3.0 Program Support

This section describes the IBM support available for NCP V7R7 VSE.

3.1 Preventive Service Planning

Before installing NCP V7R7 VSE, check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see whether there is additional Preventive Service Planning (PSP) information. To obtain this information, specify the following UPGRADE and SUBSET values:

Figure 9. PSP Information

UPGRADE	SUBSET	RETAIN Release
NCP770	77F	77F

If you have received NCP V7R7 VSE only from IBM Software Distribution, then before installing NCP V7R7 VSE, you should also check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see if there is additional PSP information.

3.2 Statement of Support Procedures

For help with problem determination and problem source identification, refer to *NCP, SSP, and EP 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 10 identifies the component ID (COMPID) and RETAIN Release for NCP V7R7 VSE.

Figure 10. Component ID

COMP ID	Component Name	REL
564806300	NCP V7R7 VSE	77F

4.0 Program and Service Level Information

This section identifies the program and service level of NCP V7R7 VSE. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated into the product. Information about the cumulative service tape is also provided.

4.1 Program Level Information

See Appendix A, "APARs Incorporated into this Program" on page 31 for a list of APAR fixes against previous releases incorporated into this release.

4.2 Service Level Information

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

4.3 Cumulative Service Tape

A cumulative service tape, containing PTFs not incorporated into this release, may be included with this program.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing NCP V7R7 VSE. In most cases, you can install NCP V7R7 VSE on a running system (target system). However, sometimes two systems may be required. If two systems are required, then the following terminology is used:

1. The system used to install the program (driving system).
(There is no driving system in an NCP V7R7 VSE environment.)
2. The system on which the program is installed (target system).

5.1 Target System Requirements

This section describes the environment of the target system required to install NCP V7R7 VSE.

5.1.1 Operating System Requirements

The operating system requirements for NCP V7R7 VSE are defined by SSP V4R7 VSE, licensed program number 5868-064.

5.1.2 Machine Requirements

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

5.1.3 Programming Requirements

A platform-dependent BookManager product is required to display softcopy publications on CD-ROM. Limited function DOS, Windows, and OS/2 versions of these products are available on your CD-ROM. For more information or to order full-function releases of these products, or VM or MVS versions, refer to the IBM BookManager home page at <http://booksrv2.raleigh.ibm.com>.

5.1.4 DASD Storage Requirements

Figure 11 provides the space requirements for installing this program. Space requirements are larger than needed for installation to allow for PTF service which may be applied at a later date.

Figure 11. DASD Storage Requirements

Device Type	Tracks	Blocks
3380	680	N/A
3390	640	N/A
FBA	N/A	42 160

5.2 Program Considerations

This following sections list the programming considerations for installing NCP V7R7 VSE.

5.2.1 Operating System Requirements

The operating system requirements for NCP V7R7 VSE are defined by SSP V4R7 VSE , licensed program number 5868-064.

5.2.2 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 and later, and X.25 ODLC.

When the 3746 Model 900 is attached, the NCP V7R6 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 Feature 5800 are required.

For 3746 Model 900 Frame Relay and ISDN DYNWIND Keyword expanded options, Feature 5800 is required.

For the higher performance frame relay capability on the communication line adapters in the 3746 Model 900, Feature 5800 or ECA number 134 is required.

For Automatic Network Routing (ANR) over ESCON, Feature 5800 or ECA number 137 is required.

For High Performance Routing (HPR) using frame-relay on the communication line adapters in the 3746 Model 900, Feature 5800 or ECA number 137 is required.

For 3746 Model 900 processor performance and storage utilization NPM information, Feature 5800 or ECA number 137 is required.

For 3746 Model 900 TIC3 utilization NPM information, Feature 5800 or ECA number 137 is required.

For 3746 Model 900 communication line adapter X.25 NPSI support, Feature 5800 or ECA number 137 is required.

For 3746 Model 900 frame-relay Boundary Access Node (BAN) support, Feature 5800 or ECA number 138 is required.

For 3746 Model 900 frame-relay SAP multiplexing support, Feature 5800 or ECA number 138 is required.

For 3746 Model 900 frame-relay HPR NPM information, Feature 5800 or ECA number 138 is required.

For 3746 Model 900 Network Node tier C level support, Feature 5800 or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 X.25 support, Feature 5800 or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 frame-relay frame handler switching, Feature 5800 or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 native IP over ESCON support, Feature 5800 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, Feature 5800 or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 ISDN primary rate, Feature 5800 or ECA number 159 (EC # D22570D) is required.

For 3746 Model 900 duplicate TIC addressing, Feature 5800 or ECA number 157 (EC # D22570C) is required.

For 3746 Model 900 frame-relay Boundary Access Node (BAN) for subarea links, Feature 5800 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, Feature 5800 or ECA number 155 is required.

For 3746 Model 900 frame-relay port sharing between the network node processor (NNP) and NCP, Feature 5800 or ECA number 157 is required.

For 3746 Model 900 X.25 port sharing between the network node processor (NNP) and NCP, Feature 5800 or ECA number 167 is required.

For 3746 Model 900 Automatic Network Routing (ANR) over frame-relay Boundary Access Node (BAN), Feature 5800 or ECA number 155 is required.

For 3746 Model 900 NPM support for ISDN, Feature 5800 or ECA number 167 is required.

For 3746 Model 900 HPR over X.25 ODLC, Feature 5800 or ECA number 146 (EC # D22560D) is required.

For 3746 Model 900 Frame Relay automatic backup over ISDN, Feature 5800 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 12. Minimum Microcode Levels for the 3745

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

For 3746 Model 900 support for

- 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 non-disruptive route switch for connections on a TIC3

Feature Number 5800 and ECA 185 are required with one of the following:

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

The NCP V7R7 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.

5.2.3 Programming Requirements

5.2.3.1 Minimum Requisites:

A minimum requisite is defined as one of the following:

- *Installation Requisite:* A product that is required at installation time. i.e. this product **will not install** successfully unless this requisite is met.
- *Run Time Requisite:* A product that is **not** required for the successful installation of this product, but **is** needed at run time in order for this product to work.

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

This program is generated using SSP V4R7 for VSE. In addition to providing the generation function for this release, SSP provides utilities for loading, dumping, and trace formatting for NCP.

NCP V7R7 VSE is supported in conjunction 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. The following are host-resident programs:

- SSP V4R7
- Telecommunication Access Method (TCAM) V2R4
- OS/390 Release 4 or later
- OS/390 Releases 1, 2, 3
- VTAM V4R1 or later
- VTAM V3R3 or later

5.2.3.2 Functional Requisites:

The following are host-resident programs:

- TME10 NetView for OS/390 V1R1 or later
- NetView V2R1 or later
- NetView V1R3

Alert processing related to parallel transmission groups for channel links is provided by NetView V1R3, or later, releases.

- NetView Performance Monitor V1R6 or later
- Transaction Processing Facility (TPF) V3 or V4

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.

- TCP/IP with OS/390 (CS/390 IP V2R5)
- TCP/IP V2R2 or later

The following are controller-resident programs:

- Emulation Program (EP) R14
- Network Terminal Option (NTO) R11
- Network Routing Facility (NRF) R9
- X.25 NCP Packet Switching Interface (NPSI) V3R9
- X.21 Short Hold Mode/Multiple Port Sharing (X.21 SH/MPS) V2 R3.1
- X.25 SNA Interconnection (XI) Program Product V2R4.2

The following levels of NCP are supported as communicating with NCP V7R7 VSE as long as program services are available for the particular level of NCP.

- NCP V7R7
- NCP V7R6
- NCP V7R5
- NCP V7R4
- NCP V7R3
- NCP V7R2
- NCP V7R1
- NCP V6R3
- NCP V6R2
- NCP V5R4
- NCP V4R3.1

5.2.3.3 Compatibility Requisites:

The following sections describe cross product service considerations for NCP, VTAM, NPM, TPF, NetView, TCAM, and TCP/IP.

5.2.3.3.1 NCP:

The NCP APAR listed in Figure 13 is required for NCP V7R1 NTRI Subarea Links to be compatible with NCP V7R7.

Figure 13. NCP APAR Required for NCP V7R1 Compatibility with V7R7

Product Name	APAR
NCP V7R1	IR32286

5.2.3.3.2 VTAM:

The VTAM APAR shown in Figure 14 is required for 3745 and 3746 Model 900 Frame Relay Switched Dial Backup support.

Figure 14. VTAM APAR Required for Frame Relay Switched Dial Backup Support

Product Name	APAR
VTAM V4R4	OW27985

The VTAM APARs shown in Figure 15 are required for APPN Logical Resource Depletion Notification.

Figure 15. VTAM APAR Required for APPN Logical Resource Depletion Notification

Product Name	APAR
VTAM V4R4	OW25754

The VTAM APARs shown in Figure 16 are required for PU and LU Name Association between Host and Downstream device support.

Figure 16. VTAM APAR Required for PU and LU Name Association between Host and Downstream Device Support

Product Name	APAR
VTAM V4R4	OW25501

The VTAM APAR shown in Figure 17 is required for IP support over 3745 frame-relay switched physical lines.

Figure 17. VTAM APAR Required for IP Support Over 3745 Frame-Relay Switched Physical Lines

Product Name	APAR
VTAM V4R4	OW34198
OS/390 R5	OW34198
OS/390 R6	OW34198

The VTAM APARs listed in Figure 18 are required for the NCP Frame Relay over Token Ring function.

Figure 18. VTAM APAR Required for NCP Frame Relay Over Token Ring

Product Name	APAR
VTAM V4R2 MVS/ESA	OW09797
VTAM V4R2 VSE/ESA	DY44000

The VTAM APARs listed in Figure 19 are required for the VTAM levels shown in Figure 19 to communicate with NCP V7R7 VSE.

Figure 19. VTAM APARs Required for NCP V7R7

Product Name	APAR
VTAM V3R2 MVS/XA	OY22547
VTAM V3R2 MVS/370	OY23877
VTAM V3R2 VM	VM37705
VTAM V3R1.2 VSE	DY38541

The VTAM APAR listed in Figure 20 is required for compatibility with NCP Spare SDLC lines support.

Figure 20. VTAM APAR Required for Compatibility with NCP Spare SDLC Lines

Product Name	APAR
VTAM V4R2 MVS/ESA	OW06708

The VTAM APAR listed in Figure 21 is required for compatibility with NCP Internet Protocol over Frame Relay Dynamic Reconfiguration function.

Figure 21. VTAM APAR Required for Compatibility with NCP IP over FR Dynamic Reconfiguration

Product Name	APAR
VTAM V4R3 MVS/ESA	OW15600

The VTAM APARs listed in Figure 22 are required for casual connection and/or NNNC.

Figure 22. Casual Connection and/or NNNC

Product Name	APAR
VTAM V3R3 MVS/ESA	OY30487
VTAM V3R3 MVS/ESA	OY30488
VTAM V3R2.1 VM	VM40123
VTAM V3R2.1 VSE	DY39165
VTAM V3R2 MVS/XA	OY26312
VTAM V3R2 MVS/XA	OY26327
VTAM V3R2 MVS/370	OY29600

The VTAM APARs listed in Figure 23 are required for selective NNNA support.

Figure 23. VTAM APARs Required for Selective NNNA Support

Product Name	APAR
VTAM V3R3 MVS/ESA	OY52318
VTAM V3R4 MVS/ESA	OY52318
VTAM V3R4.1 MVS/ESA	OY52318
VTAM V3R3 MVS/XA	OY52319

The VTAM APARs listed in Figure 24 are required to delay activating logical links until the associated physical resources are active.

Figure 24. VTAM APARs Required to Delay Activating Logical Links

Product Name	APAR
VTAM V3R4.1 MVS/ESA	OY55462
VTAM V3R4.1 MVS/ESA	OY55304

The VTAM APARs listed in Figure 25 are required for compatibility with NCP Frame Relay support.

Figure 25. VTAM APARs Required for Compatibility with NCP Frame Relay

Product Name	APAR
VTAM V4R1 MVS/ESA	OW04338
VTAM V4R2 MVS/ESA	OW04338
VTAM V4R1 MVS/ESA	OW04575
VTAM V4R2 MVS/ESA	OW04575
VTAM V4R1 MVS/ESA	OW05013
VTAM V4R2 MVS/ESA	OW05013
VTAM V4R2 MVS/ESA	OW06065

The VTAM APARs listed in Figure 26 are required to support the NCP ESCON function.

Figure 26. VTAM APAR Required to Support NCP ESCON

Product Name	APAR
VTAM V3R3 MVS/ESA	OY58783
VTAM V3R3 MVS/ESA	OY29256
VTAM V3R3 MVS/ESA	OY35599
VTAM V3R3 VM/ESA	OY54982
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
VTAM V3R3 VM/ESA	VM54982

The VTAM APARs listed in Figure 27 are required to reduce the number of messages generated when a ROUTE INOP occurs.

Figure 27. VTAM APAR Required to Perform Route INOP Reduction

Product Name	APAR
VTAM V3R4 MVS/ESA	OY48223
VTAM V3R4.1 MVS/ESA	OY48223

The VTAM APARs listed in Figure 28 are required to avoid VTAM error messages when coding the MAXDATA keyword for PU4s in the NCP definition.

Figure 28. VTAM APARs Required for Coding MAXDATA for PU4s

Product Name	APAR
VTAM V3R3 MVS/ESA	OY58078
VTAM V3R3 MVS/XA	OY58281
VTAM V3R4 MVS/ESA	OY58078
VTAM V3R4.1 MVS/ESA	OY58078
VTAM V3R3 VM/SP	VM54590
VTAM V3R3 VM/ESA	VM54591
VTAM V3R4.1 VM/SP	VM54903
VTAM V3R4.1 VM/ESA	VM54904

The VTAM APAR listed in Figure 29 is required for users of NetView and STATMON.

Figure 29. VTAM APAR Required for NetView and STATMON

Product Name	APAR
VTAM V3R4.1 MVS/ESA	OY55988

The VTAM APAR shown in Figure 30 is required for compatibility with NCP Frame Relay Peripheral Node support.

Figure 30. VTAM APAR Required for NCP Frame Relay Peripheral Node Support

Product Name	APAR
VTAM V4R1	OW00206

5.2.3.3.3 NPM:

The NPM APAR listed in Figure 31 is required for compatibility with NCP V7R7 VSE. This APAR is also required for the NCP Internet Protocol over Token Ring function.

Figure 31. NPM APAR Required for NCP V7R7 VM and NCP IP Over Token Ring

Product Name	APAR
NPM V2R2 MVS/ESA	OW12520

The NPM APAR listed in Figure 32 is required for ODLC LAN HPR data collection.

Figure 32. NPM APAR Required for ODLC LAN HPR Data Collection

Product Name	APAR
NPM V2R2 MVS/ESA	OW17876

The NPM APARs listed in Figure 33 are required for the 3746 Model 900 TIC3 utilization NPM information function.

Figure 33. NPM APARs Required for 3746 Model 900 TIC3

Product Name	APAR
NPM V2R1 MVS/ESA	OW10584
NPM V2R2 MVS/ESA	OW10584

The NPM APARs listed in Figure 34 are required for the 3746 Model 900 processor utilization NPM information function.

Figure 34. NPM APARs Required for 3746 Model 900 Processor

Product Name	APAR
NPM V2R1 MVS/ESA	OW08565
NPM V2R2 MVS/ESA	OW08565

The NPM APARs listed in Figure 35 are required for the 3746 Model 900 X.25 NPSI function.

Figure 35. NPM APARs Required for 3746 Model 900 X.25 NPSI

Product Name	APAR
NPM V2R1 MVS/ESA	OW10583
NPM V2R2 MVS/ESA	OW10583

The NPM APARs listed in Figure 36 are required for the NCP Dynamic Control Blocks function.

Figure 36. NPM APARs Required for NCP Dynamic Control Blocks

Product Name	APAR
NPM V2R1 MVS/ESA	OW09271
NPM V2R2 MVS/ESA	OW09271

The NPM APAR listed in Figure 37 is required for compatibility with NCP.

Figure 37. NPM APAR Required for NCP

Product Name	APAR
NPM V1R6 MVS	OY66928

The NPM APARs listed in Figure 38 are required for compatibility with NCP Frame Relay on 3746 Model 900 support.

Figure 38. NPM APARs Required for Compatibility with NCP Frame Relay

Product Name	APAR
NPM V2R1 MVS/ESA, MVS/XA, VM/ESA	OW07715
NPM V2R2 MVS/ESA, VM/ESA	OW07715

The NPM APAR listed in Figure 39 is required for the 3746 Model 900 ISDN function.

Figure 39. NPM APAR Required for 3746 Model 900 ISDN Function

Product Name	APAR
NPM V2R2	OW18882

The NPM APARs listed in Figure 40 on page 25 are required for the 3746 Model 900 X.25 ODLC function.

Figure 40. NPM APARs Required for 3746 Model 900 X.25 ODLC Function

Product Name	APAR
NPM V2R1	OW19297
NPM V2R2	OW19297

5.2.3.3.4 TPF:

The TPF APARs and PTF level shown in Figure 41 are required for compatibility with NCP V7R7 if you use TPF.

Figure 41. TPF APARs and PTF Required for NCP V7R7

Product Name	APAR or PTF
TPF V3R1	WP12070
TPF V3R1	WP11843
TPF V3R1	PTF Level 16

5.2.3.3.5 NetView:

The NetView APARs listed in Figure 42 are required for enhanced LPDA2 support for 786x modems.

Figure 42. NetView APARs

Product Name	APAR
NetView V1R3 MVS	OY21453
NetView V1R3 VM	VM37606

The NetView APARs listed in Figure 43 are required for compatibility with NCP V7R7 VSE.

Figure 43. NetView APARs Required for Compatibility with NCP

Product Name	APAR
NetView V2R1 MVS/ESA	OY53410
NetView V2R2 MVS/ESA	OY53410
NetView V2R1 MVS/XA	OY53578
NetView V2R2 MVS/XA	OY53578
NetView V1R3 MVS/ESA	OY53579
NetView V1R3 MVS/XA	OY53580

5.2.3.3.6 TCAM:

The TCAM APAR listed in Figure 44 on page 26 is required if your NCP is channel-attached to TCAM.

Figure 44. TCAM APAR

Product Name	APAR
TCAM V2R4 MVS	OY25731

5.2.3.3.7 TCP/IP:

The TCP/IP APAR listed in Figure 45 is required for Variable Length Subnet Mask support.

Figure 45. TCP/IP APAR Required for Variable Length Subnet Mask

Product Name	APAR
TCP/IP V3R2	PQ02781

The TCP/IP APAR listed in Figure 46 is required for RIP V2 support.

Figure 46. TCP/IP APAR Required for RIP V2 Support

Product Name	APAR
TCP/IP V3R2	PQ02781

The TCP/IP APARs listed in Figure 47 are required for the Dynamic Internet Routing over Frame Relay function.

Figure 47. TCP/IP APARs Required for Dynamic Routing Over Frame Relay

Product Name	APAR
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 APARs listed in Figure 48 are required for compatibility with NCP.

Figure 48. TCP/IP APARs Required for Compatibility with NCP

Product Name	APAR
TCP/IP V2R2 VM	PN20654
TCP/IP V2R1 MVS	PN17950

The TCP/IP APAR listed in Figure 49 on page 27 is required for compatibility with NCP Dynamic Internet Routing function.

Figure 49. TCP/IP APAR Required for NCP Dynamic Internet Routing Function

Product Name	APAR
TCP/IP V2R2.1 MVS	PN48473

The TCP/IP APAR listed in Figure 50 is required for Direct IP Channel Communication.

Figure 50. TCP/IP APARs Required for Direct IP Channel Communication

Product Name	APAR
TCP/IP V3R1 MVS	PN75734

The TCP/IP APAR listed in Figure 51 is required for the IP NCPROUTE Direct over Channel function.

Figure 51. TCP/IP APARs Required for IP NCPROUTE Direct over Channel

Product Name	APAR
TCP/IP V3R1 MVS	PN80904

5.2.4 System Considerations

There are no system considerations for NCP V7R7 VSE.

5.2.5 Special Considerations

There are no special considerations for NCP V7R7 VSE.

6.0 Installation Instructions

This program is installed in a VSE/ESA operating system. It is supplied as a copy of the production library, which includes modules and macros belonging to this program. In addition, a history file containing installation records for this program is supplied. Installation restores the production sublibrary and updates the VSE system history file.

Because VSE/ESA supports multiple releases of the same product, it is not necessary to delete earlier levels of the NCP product already installed on your system.

6.1 Installing NCP V7R7 VSE

Complete the following steps to install this product:

1. Define the VSE product library.
2. Install the production sublibrary.

6.1.1 Step 1: Define VSE Product Library

This step is unnecessary if you want to install this program into an existing VSE library. Run the JCL sample shown in Figure 52 if you want to define a new library for this program. Labels and library names in the following JCL are arbitrary.

```
// JOB DEFINE A VSE PRODUCT LIBRARY
// DLBL vvvv,'vse.ncp.lib',2099/365,SD
// EXTENT ,xxxxxx,1,0,yyyy,zzzz
// EXEC LIBR
//   DEFINE LIB=vvvv
/*
/&
xxxxxx = VOLID OF LIBRARY PACK
yyyy   = STARTING TRACK OF LIBRARY
zzzz   = SIZE OF THE LIBRARY IN TRACKS
vvvv   = VSE PRODUCT LIBRARY
```

Figure 52. Sample JCL to Define a VSE Library

6.1.2 Step 2: Install Production Sublibrary

The target library must be online during installation procedures, and label information must be available in the label area. Installation of the production sublibrary is required.

Figure 53 provides sample JCL to install the production sublibrary using MSHP.

```
// JOB INSTALL PRODUCT
// OPTION CATAL
// ASSGN SYS006,cuu
// MTC REW,SYS006
// EXEC MSHP
  INSTALL PRODUCT FROMTAPE PRODUCTION INTO=vvvv.ssss
/*
/&
cuu      =INPUT TAPE ADDRESS
vvvv     =PRODUCT LIBRARY NAME
ssss     =PRODUCT SUBLIB  NAME
```

Figure 53. Sample JCL to Install Production Sublibrary

If an earlier level of NCP is already installed, the following message is displayed:

```
M231D INSTALLATION WILL SUPERSEDE PRODUCT xxxxxx.
```

Respond by entering KEEP if you want to keep the old version or DELETE if you want to delete it.

6.2 Installation Using the VSE Interactive Interface

This product can also be installed using the VSE/ICCF installation dialogues. From the VSE FUNCTION SELECTION panel, select menu item 1, INSTALLATION. From the INSTALLATION panel, select menu item 1 to access the INSTALL PROGRAMS panel. You will be prompted for information required by the dialogues to create the product installation job. Note that the default target sublibrary is PRD2.PROD and the default history file is the VSE System History file.

If you wish to modify the default installation parameters, it is necessary to change these values in the appropriate panels, as well as in the JCL generated by the JOB DISPOSITION panel. The installation job may be executed immediately or saved in an ICCF library for verification and later execution.

Appendix A. APARs Incorporated into this Program

The following NCP V7R6 APARs are incorporated into this program:

IR36479	IR37392	IR36851	IR36485
IR36484	IR37524	IR36884	IR36486
IR36543	IR37626	IR36886	IR36487
IR36726	IR37645	IR36889	IR36488
IR36969	IR37690	IR36907	IR36493
IR37280	IR37763	IR36956	IR36494
IR37894	IR37887	IR37026	IR36495
IR37909	IR37092	IR37055	IR36506
IR37953	IR36996	IR36544	IR36515
IR37996	IR37108	IR36557	IR36480
IR38008	IR37176	IR36442	IR36481
IR38059	IR37202	IR36472	IR36482
IR38069	IR37209	IR36578	IR36483
IR38080	IR37226	IR36647	IR38222
IR38181	IR37258	IR36695	IR38261
IR37298	IR37267	IR36715	
IR37313	IR36785	IR36717	

Reader's Comments

Program Directory for Network Control Program (NCP) Version 7 Release 7 for VSE

You may use this form to comment about this document, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

For each of the topics below please indicate your satisfaction level by circling your choice from the rating scale. If a statement does not apply, please circle N.

RATING SCALE					
very satisfied	<----->	very dissatisfied	not applicable		
1	2 3 4	5	N		

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of program directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of program directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

Did you order this product as an independent product or as part of a package?

- Independent
- Package

If this product was ordered as part of a package, what type of package was ordered?

- CustomPac
 - FunctionPac
 - SystemPac
- System Delivery Offering (SDO)
- Other - Please specify type:

Is this the first time your organization has installed this product?

- Yes

___ No

Were the people who did the installation experienced with the installation of these products?

___ Yes

___ No

If yes, how many years? ___

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

Please provide the following contact information:

Name and Job Title

Organization

Address

Telephone

Thank you for your participation.

Please send the completed form to the address below:

Design & Information Development
Dept. CGF/Bldg. 656
International Business Machines Corporation
PO Box 12195
RESEARCH TRIANGLE PARK NC 27709-9990



Program Number: 5648-063 5851
5852
6188

Printed in U.S.A.

G110-0988-00

