



H217IP NetEx[®]
for IBM OS/390 and MVS/ESA Operating Systems

Release 5.0.1

Memo To Users

October 2, 2001

Introduction

This Memo To Users (MTU) contains supplementary and release dependent information for NetEx/IP users. It should be carefully reviewed prior to installation of the product.

H217IP Release 5.0.1 provides a new base release of offload NetEx, both DXE and NESiGate resident for OS/390 and MVS/ESA Operating Systems. H217IP Release 5.0.1 provides the same base level of functionality as the latest DX only release as well as additional support for NESiGate devices allowing NetEx protocol to operate on IP networks.

H217IP uses NESiGate software running in an IBM Netfinity® server as a channel adapter on either an ESCON® or Bus & Tag channel. The NESiGate device allows NetEx/IP to communicate with other NetEx/IP hosts using IP protocol on standard IP networks. For compatibility and ease of migration, H217IP continues to support legacy DX/DXE adapters for HYPERchannel data transfers. NESiGate devices must be used to enable IP support.

The *H217IP NetEx/IP for IBM OS/390 and MVS/ESA Operating Systems Software Reference Manual* has been updated for this release.

This H217IP distribution has been installed with SMP/E and its functionality tested successfully.

Note: Netfinity and ESCON are registered trademarks of IBM Corporation.

Support

Support for NetEx/IP and its applications is available via:

- 24x7 (in an emergency, 9x5 non-emergency) telephone support 800-854-0359
- the worldwide web at: <http://www.netex.com/nesi/support/>
- email <mailto:support@netex.com>

On-line versions of current Memo To Users and reference manuals for this and other NetEx/IP products may be found at: <http://www.netex.com/support/>

New Features

An IBM Netfinity is supported as a new channel adapter, allowing the use of standard IP datagrams over 10BaseT, 100BaseT, 1000BaseT or FDDI. Support for other IP media may be added at any time.

Service Notes

There are no service notes at this time. This is the initial release of this product.

Installation Notes

This section describes the H217IP installation procedure. H217IP is distributed in SMP RELFILE format with an FMID of N2X0501.

Note: DO NOT INSTALL H217IP INTO H210 OR H210IP SMP/E LIBRARIES.

Installation requires using the base tape supplied by Network Executive Software. The base tape contains the files shown in Table 1.

| File | Data Set Name | Description |
|------|---------------|---|
| 1 | SMPMCS | MVS/ESA SMP(/E) modification control statements |
| 2 | N2X0501.F1 | MVS/ESA NETEX JCLIN |
| 3 | N2X0501.F2 | MVS/ESA NETEX macros |
| 4 | N2X0501.F3 | MVS/ESA NETEX source modules |
| 5 | N2X0501.F4 | MVS/ESA NETEX load modules |
| 6 | N2XCNTL | NETEX sample JCL |
| 7 | N2XSAMP | NETEX sample programs |
| 8 | N2XCSRC | “C” Configuration Manager source modules |

Files 1 through 5 are used by the SMP (/E) installation process. File 6 is an unloaded PDS that must be loaded to disk before the install process. File 7 contains sample NetEx application programs that can be loaded to disk by using the sample JCL in Figure 1 on page 5.

| Member Name | Description |
|-------------|---|
| ACCEPTTE | This sample JCL executes SMP/E ACCEPT. |
| APPLYE | This sample JCL executes SMP/E APPLY. |
| CCONFIG | This sample JCL executes the “C” Configuration Manager. |
| LNKAPEND | This is a sample JCL to link-edit appendages. |
| LOADSAMP | This is a sample JCL to IEBCOPY-LOAD sample program PDS. |
| MAPNET | This sample JCL executes the Network Adapter Mapping program. |
| MCS0501 | This is SMP MCS for H217IP V5R0M1 |
| NCTL | This sample JCL loads DX NETEX NCT. |
| NTXALLOC | This sample procedure allocates NETEX datasets. |
| NTXSMPE | This is a NETEX SMP/E procedure. |
| N2XALTBL | This is a sample JCL to assemble and link-edit N2XALTBL. |

| File 6 (N2XCNTL) is an unloaded PDS containing the following JCL members: | |
|--|---|
| Member Name | Description |
| N2XHELP | This is a NETEX help file member. |
| RECEIVEE | This sample JCL executes SMP/E RECEIVE. |
| SAMPREQ | This sample JCL executes REQUEST program. |
| SAMPSEV | This sample JCL executes SERVER program. |
| SMPEALOC | This sample JCL allocates NETEX SMP/E control database. |
| SMPEUCL | This is a sample JCL to UCL-initialize the NETEX SMP/E CSI. |
| USERMOD | This contains sample SMP(/e) USERMOD control statements. |
| UXITLINK | This is a sample JCL to link-edit user exits into H217IP. |
| XECEAT | This sample JCL executes the NETEX FORTRAN 'EAT' program. |
| XECER1 | This sample JCL executes the NETEX FORTRAN exerciser 1 program. |
| XECER2 | This sample JCL executes the NETEX FORTRAN exerciser 2 program. |
| XECGEN | This sample JCL executes the NETEX FORTRAN 'GEN' program. |

| File 7 (N2XSAMP) is an unloaded PDS containing the following source members: | |
|---|--|
| Member Name | Description |
| DLOOP | This is a sample Driver Loopback exerciser program. |
| DREQUEST | This is a sample assembler requestor program using NETEX Driver Inter-face. |
| DSERVER | This is a sample assembler server program using NETEX Driver Interface. |
| NETEXEAT | This sample FORTRAN data sink program receives Pdata. |
| NETEXER1 | This sample FORTRAN program transmits and receives Pdata, offers (SOFFER), and expects to receive a connect (SCONNECT) from NETEXER2 |
| NETEXER2 | This sample FORTRAN program transmits and receives Pdata; connects (SCONNECT) to NETEXER1 |
| NETEXGEN | This sample FORTRAN data generator program transmits Pdata. |
| NRBCHK | This FORTRAN program evaluates an NRB. |
| N2XUX1EX | This is sample assembler user exit #1 program |
| N2XUX2EX | This is sample assembler user exit #2 program. |
| OREQUEST | This sample assembler requestor program transmits and receives ODATA. |
| OSERVER | This sample assembler server program transmits and receives ODATA. |
| XREQUEST | This sample assembler requestor program transmits and receives data using session and driver interface functions. |

| File 7 (N2XSAMP) is an unloaded PDS containing the following source members: | |
|---|--|
| Member Name | Description |
| XSERVER | This sample assembler server program transmits and receives data using session and driver interface functions. |

Installation

Following are steps the basic steps necessary to install H217IP:

1. Load JCL PDS from tape file 6, and load sample program source module PDS from file 7.
2. Update IEAAPpx member of SYS1.PARMLIB.
3. Allocate NetEx Datasets.
4. Allocate SMP(/E) Datasets.
5. Add procedure NTXSMPE to PROCLIB.
6. Run UCLIN job.
7. Run RECEIVE job.
8. Update N2XSSNMS to create N2X allocation table.
9. Run APPLY (CHECK) job.
10. Define the configuration and run the Configuration Manager to build a PAM file.
11. Load the PAM using the NCT Loader.
12. Test H217IP.
13. Run ACCEPT (CHECK) job.

Step 1. Load JCL and Sample Program Data Sets

Load the sample job file from the distribution tape using the JCL in Figure 1. This file contains sample jobs to complete the installation.

```
//LOADJCL JOB ,LOADJCL,
//          CLASS=A,
//          MSGCLASS=A
//
//*          SAMPLE JCL to IEBCOPY-load a PDS with NETEX JCL.
//*
//* Note: Substitute the appropriate values in the following
//* JCL DD-statements for:
//*      'tape'
//*      'prefix'
//*      'disk'
//*      'volser'
//*
//LOADJCL EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*,DCB=BUFNO=001
//SYSUT1 DD DISP=OLD,
//          DSN=N2XCNTL,
//          LABEL=(6,SL),
//          UNIT=tape,           <=== 'tape'
//          VOL=SER=N2X501
//SYSUT2 DD DISP=(,CATLG,DELETE),
//          DSN=prefix,         <=== 'prefix'
//          SPACE=(CYL,(2,3,25)),
//          UNIT=disk,          <=== 'disk'
//          VOL=SER=volser      <=== 'volser'
//SYSUT3 DD DSN=&&SYSUT3,
//          SPACE=(CYL,(5,2)),
//          UNIT=disk           <=== 'disk'
//SYSUT4 DD DSN=&&SYSUT4,
//          SPACE=(CYL,(5,2)),
//          UNIT=disk           <=== 'disk'
//SYSIN DD *,DCB=BLKSIZE=080
//COPY INDD=SYSUT1,OUTDD=SYSUT2
//
```

Figure 1. Job to Load Sample Job JCL PDS

Step 2. Update IEAAPPxx Member of SYS1.PARMLIB

The IEAAPPxx member of SYS1.PARMLIB (or other PARMLIB library being used), must be updated with the names of the three EXCP appendages that H217IP uses. They are IGG019X1, IGG019X2, and IGG019X3. These appendages are part of the H217IP user interface.

CAUTION:

Ensure that these appendages (X1, X2, and X3) are not already defined. The installation of this product will overwrite any other copy of these modules that may exist in SYS1.SVCLIB.

The following example shows what IEAAPPxx should look like:

```
SIOAPP X1,  
CHEAPP X2,  
ABEAPP X3
```

Refer to the IBM Data Management Manual for full details on appendage installation.

Step 3. Allocate NetEx Datasets

Run the NTXALLOC job (Figure 2 on page 7) to allocate the NetEx datasets. Substitute appropriate values for the 'xINDEX', 'xUNIT', and 'xVOL' parameters.

The H217IP NetEx datasets will contain the following:

| Table 2. H217IP NetEx Datasets | | |
|--------------------------------|--------------|-----------------------------|
| Dataset | Type | Contents |
| NTXSRC | Distribution | Source code |
| NTXMAC | Distribution | Macros |
| NTXMOD | Distribution | Assembled modules |
| NTXLOAD | Target | Load modules |
| NTXFLOAD | Target | User interface load modules |
| SVCLIB | Target | EXCP appendages (X1,X2,X3) |
| NTXTGTM | Target | Macros |
| NTXTGTS | Target | Source |

```
//NTXALLOC JOB ,NTXALLOC,
//          CLASS=A,
//          MSGCLASS=A
//
//*          Allocate NETEX TARGET and DISTRIBUTION libraries
//*
//*          Note: Substitute the appropriate values in the following
//*          JCL PROC-statements for:
//*          'DINDEX'
//*          'DUNIT'
//*          'DVOL'
//*          'PINDEX'
//*          'PUNIT'
//*          'PVOL'
//*          'TGTINDEX'
//*          'TGTUNIT'
//*          'TGTVOL'
//*
// NTXALLOC PROC DINDEX='',          DLIB    INDEX
//          DUNIT=SYSDA,          DLIB    UNIT TYPE
//          DVOL=,          DLIB    VOLUME
//          PINDEX='',          PARM    INDEX
//          PUNIT=SYSDA,          PARM    UNIT TYPE
//          PVOL=,          PARM    VOLUME
//          TGTINDEX='',          TARGET  INDEX
//          TGTUNIT=SYSDA,          TARGET  UNIT TYPE
```

```

//          TGTVOL=          TARGET  VOLUME
//IEFBR14  EXEC  PGM=IEFBR14
//NTXFLOAD DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&TGTINDX..NTXFLOAD,
//          UNIT=&TGTUNIT,
//          VOL=SER=&TGTVOL,
//          SPACE=(CYL,(1,1,10)) ,
//          DCB=(RECFM=U,BLKSIZE=6144)
//NTXLOAD  DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&TGTINDX..NTXLOAD,
//          UNIT=&TGTUNIT,
//          VOL=SER=&TGTVOL,
//          SPACE=(CYL,(3,1,10)) ,
//          DCB=(RECFM=U,BLKSIZE=6144)
//NTXMAC   DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&DINDEX..NTXMAC,
//          UNIT=&DUNIT,
//          VOL=SER=&DVOL,
//          SPACE=(CYL,(1,1,25)) ,
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//NTXMOD   DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&TGTINDX..NTXMOD,
//          UNIT=&DUNIT,
//          VOL=SER=&DVOL,
//          SPACE=(CYL,(3,1,10)) ,
//          DCB=(RECFM=U,BLKSIZE=6144)
//NTXPARM  DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&PINDEX..NTXPARM,
//          UNIT=&PUNIT,
//          VOL=SER=&PVOL,
//          SPACE=(TRK,(5,5,5)) ,
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//NTXSRC   DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&DINDEX..NTXSRC,
//          UNIT=&DUNIT,
//          VOL=SER=&DVOL,
//          SPACE=(CYL,(3,1,10)) ,
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//NTXTGTM  DD  DISP=( ,CATLG,DELETE) ,
//          DSN=TGTINDX..NTXTGTM,
//          UNIT=&TGTUNIT,
//          VOL=SER=&TGTVOL,
//          SPACE=(TRK,(1,1,25)) ,
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//NTXTGTS  DD  DISP=( ,CATLG,DELETE) ,
//          DSN=&TGTINDX..NTXTGTS,
//          UNIT=&TGTUNIT,
//          VOL=SER=&TGTVOL,
//          SPACE=(CYL,(3,1,10)) ,
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//NTXALLOC PEND
//ALLOC    EXEC  NTXALLOC
//

```

Figure 2. NTXALLOC to Allocate NetEx Datasets

Step 4. Allocate SMPE Datasets

Run the SMPEALOC job to allocate the SMPE datasets. Substitute appropriate values for the 'prefix', 'disk' and 'volser' parameters.

See Figure 3 below for an example of the SMPEALOC job.

```
//SMPEALOC JOB      ,SMPEALOC,
//                  CLASS=A,
//                  MSGCLASS=A
//*
//*                Allocate NETEX SMP/E control datasets.
//*
//*                NOTE: Substitute appropriate values in the following DD-
//*                statements for:
//*                'prefix'
//*                'disk'
//*                'volser '
//*                'catalogname'
//*
//*
//*
//*
//NONVSAM EXEC      PGM=IEFBR14
//SMPLOG DD         DISP=(,CATLG,DELETE),   CREATE NEW SMPLOG
//                  DSN=prefix.SMPLOG,     PREFIX DSN
//                  SPACE=(CYL,1),
//                  UNIT=disk,              SPECIFY DATASET UNIT-TYPE
//                  VOL=SER=volser,        SPECIFY DATSET VOLUME-SERIAL
//                  DCB=(RECFM=VB,LRECL=260,BLKSIZE=3200)
//SMPLOGA DD       DISP=(,CATLG,DELETE),   CREATE NEW ALTERNATE SMPLOG
//                  DSN=prefix.SMPLOGA,    PREFIX DSN
//                  SPACE=(CYL,1),
//                  UNIT=disk,              SPECIFY DATASET UNIT-TYPE
//                  VOL=SER=volser,        SPECIFY DATASET VOLUME-SERIAL
//                  DCB=RECFM=VB,LRECL=260,BLKSIZE=3200)
//SMPMTS DD        DISP=(,CATLG,DELETE),   CREATE NEW SMPMTS
//                  DSN=prefix.SMPMTS,    PREFIX DSN
//                  SPACE=(CYL,(1,1,25)),
//                  UNIT=disk,              SPECIFY DATASET UNIT=TYPE
//                  VOL=SER=volser,        SPECIFY DATASET VOLUME-SERIAL
//                  DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//SMPPTS DD        DISP=(,CATLG,DELETE),   CREATE NEW SMPPTS
//                  DSN=prefix.SMPPTS,    PREFIX DSN
//                  SPACE=(TRK,(5,5,5)),
//                  UNIT=disk,              SPECIFY DATASET UNIT-TYPE
//                  VOL=SER=volser,        SPECIFY DATASETQ VOLUME-SERIAL
//                  DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPSCDS DD       DISP=(,CATLG,DELETE),   CREATE NEW SMPSCDS
//                  DSN=prefix.SMPSCDS,   PREFIX DSN
//                  SPACE=(TRK,(5,5,5)),
//                  UNIT=disk,              SPECIFY DATASET UNIT-TYPE
//                  VOL=SER=volser,        SPECIFY DATASET VOLUME-SERIAL
```

```

//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPSTS   DD   DISP=(,CATLG,DELETE),   CREATE NEW SMPSTS
//          DSN=prefix.SMPSTS,         PREFIX DSN
//          SPACE=(CYL,(3,1,10)),
//          UNIT=disk,                  SPECIFY DATASET UNIT-TYPE
//          VOL=SER=volser,             SPECIFY DATASET VOLUME-SERIAL
//          DCB=(RECFM=FB,LRECL=080,BLKSIZE=3120)
//*
//*          ALLOCATE AND INITIALIZE SMP/E VSAM CSI
//*
//MAKECSI EXEC PGM=IDCAMS,
//          REGION=1024K
//WORKV    DD   DISP=SHR,
//          UNIT=disk,                  SPECIFY WORK UNIT-TYPF
//          VOL=SER=volser             SPECIFY WORK VOLUME-SERIAL
//ZPOOL    DD   DISP=SHR,
//          DSN=SYS1.MACLIB(GIMZPOOL)
//SYSPRINT DD   SYSOUT=*,DCB=BUFNO=01
//SYSIN    DD   *,DCB=BLKSIZE=080
DEFINE
  CLUSTER
    (
      NAME(prefix.CSI)
      VOLUMES(volser)
      RECORDSIZE(24 143)
      KEYS(24 0)
      FREESPACE(10,5)
      SHR(2)
      UNIQUE
      IMBED
    )
  DATA
    (
      NAME(prefix.SMPCSI.DATA)
      CONTROLINTERVALSIZE(4096)
      CYLINDERS(5 1)
    )
  INDEX
    (
      NAME(prefix.SMPCSI.INDEX)
      CYLINDERS(1 1)
    )
  CATALOG(catalogname)
REPRO
  INFILE(ZPOOL)
  OUTDATASET(prefix.CSI)
//

```

Figure 3. SMPEALOC Job to Allocate SMP Datasets

Step 5. Add Procedure NTXSMPE to PROCLIB

Tailor the NTXSMPE procedure to meet your requirements and add it to your PROCLIB.

See Figure 4 for an example of the NTXSMPE job.

```
//*
//*          NETEX SMPE PROC
//*
NOTE: If this PROC will be used as 'instream' JCL,
NOTE: a 'PEND' statement must be added at the end.
NOTE: 'SYSDA' has been set as the default unit-type.
NOTE: 'SYS1' has been set as the default system type.
NOTE: Substitute the appropriate values in the following
NOTE: JCL PROC-statement for:
'cindex'
'dindex'
'genindx' - default SYS1
'rindex' - default SYS1
'sindex'
'tgtindx'
'tunit' - default SYSDA
'tvol'
//NTXSMPE PROC SMPARM='PROCESS=END', QUIT IF CSI IS IN USE
//          CINDEX='', VSAM CSI INDEX
//          DINDEX='', NETEX DLIB INDEX
//          SINDEX='', NETEX SMP/E INDEX
//          TGTINDX='', NETEX TARGET INDEX
//          GENINDEX=SYS1, SYSTEM GEN INDEX (AMODGEN)
//          RINDEX=SYS1, SYSTEM DLIB INDEX
//          TUNIT=SYSDA, TEMP WORK UNIT
//          TVOL= TEMP WORK VOLUME
//GIMSMP EXEC PGM=GIMSMP, SMP/E
//          REGION=4000K, REGION-SIZE REQUEST
//          PARM='&SMPARM', PASS CSI-USE PARM
//          TIME=1440
//
SMP/E CONSOLIDATED SOFTWARE INVENTORY(CSI) VSAM
ZONE DSN'S WILL NOT BE SPECIFIED IN THIS PROC
//SMPCSI DD DISP=SHR,
//          DSN=&CINDEX..CSI
//
SMP/E PERMANENT DATA SETS
//SMPHOLD DD DUMMY
//SMPLOG DD DUMMY,DCB=BUFNO=001
//
//* SMPLOG DD DISP=MOD,
//*          DSN=&SINDEX..SMPLOG
//* SMPLOGA DD DISP=MOD,
//*          DSN=&SINDEX..SMPLOGA
```

```

//*
//SMPMTS DD DISP=OLD,
// DSN=&SINDEX..SMPMTS MACRO TEMPORARY STORE DATASET
//SMPPTS DD DISP=OLD,
// DSN=&SINDEX..SMPPTS PTF TEMPORARY STORE DATASET
//SMPSCDS DD DISP=OLD,
// DSN=&SINDEX..SMPSCDS SAVE CONTROL DATASET
//SMPSTS DD DISP=OLD,
// DSN=&SINDEX..SMPSTS SOURCE TEMPORARY STORE DATASET
//*
//* SMP/E TEMPORARY DATA SETS
//* DSN FOR RELATIVE FILES CALCULATED BY SMP/E
//* HIGH-LEVEL DSN QUALIFIER IS TAKEN FROM THE OPTIONS
//* 'DSPREFIX' ENTRY.
//SMPTLIB DD DSIP=OLD,
// UNIT=&TUNIT,
// VOL=SER=&TVOL
//*
//* THE FOLLOWING SMP/E PERMANENT DATA SETS ARE USED
//* WHEN APPLYING CERTAIN PTF'S THAT HAVE MACRO AND/OR
//* SOURCE TEXT.
//* SMP/E SYSIN/SYSOUT DATA SETS
//* UCLIN SPECIFIED SYSOUT DDNAME'S FOR PGMS
//* NOTE ASSEMBLY OUTPUT DIFFERENT SYSOUT CLASS
//*
//SMPCNTL DD DDNAME=SYSIN CONTROL STATEMENT INPUT
//SMPPUNCH DD DUMMY,DCB=BUFNO=01 DUMMY
//SMPLIST DD SYSOUT=*,DCB=BUFNO=01 LIST OUTPUT DATASET
//SMPOUT DD SYSOUT=*,DCB=BUFNO=01 MESSAGE OUTPUT DATASET
//SMPRPT DD SYSOUT=*,DCB=BUFNO=01 REPORT OUTPUT DATASET
//SYSPRINT DD SYSOUT=*,DCB=BUFNO=01 MORE OUTPUT(?! )
//ASMPRINT DD SYSOUT=D,DCB=BUFNO=01 ASSEMBLY OUTPUT
//SMPSNAP DD SYSOUT=*,DCB=BUFNO=01 SNAP OUTPUT 4 SEVERE ERR
//*
//* SMP/E TEMPORARY WORK DATA SETS
//* WRK1 - IEBUPDTE, IEBCOPY INPUT
//* WRK2 - IEBUPDTE, IEBCOPY INPUT
//* WRK3 - OBJECT MODULES
//* WRK4 - IMASPZAP INPUT
//* WRK5 - LINK-EDIT MODULES
//*
//SMPWRK1 DD DISP=(,DELETE),
// UNIT=&TUNIT,
// SPACE=(3120,(0364,0380,500)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPWRK2 DD DISP=(,DELETE),
// UNIT=&TUNIT,
// SPACE=(3120,(0364,0380,500)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPWRK3 DD DISP=(,DELETE),
// UNIT=&TUNIT,
// SPACE=(3120,(0364,0380,500)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPWRK4 DD DISP=(,DELETE),
// UNIT=&TUNIT,
// SPACE=(3120,(0364,0380,500)),

```

```

//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SMPWRK5  DD  DISP=(,DELETE),
//          UNIT=&TUNIT,
//          SPACE=(6144,(0183,0380,500)),
//          DCB=(RECFM=U,BLKSIZE=6144)
//SMPWRK6  DD  DISP=(,DELETE),
//          UNIT=&TUNIT,
//          SPACE=(3120,(0364,0380,500)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//*
//*          WORK DATA SETS
//*
//SYSUT1   DD  UNIT=&TUNIT,SPACE=(3120,(0380,0760))
//SYSUT2   DD  UNIT=&TUNIT,SPACE=(3120,(0380,0760))
//SYSUT3   DD  UNIT=&TUNIT,SPACE=(3120,(0380,0760))
//SYSUT4   DD  UNIT=&TUNIT,SPACE=(3120,(0038,0100)),
//          DCB=(LRECL=80,BLKSIZE=3120,RECFM=FB)
//*
//*          SMP/E-INVOKED ASSEMBLY MACRO LIBRARIES
//*
//SYSLIB   DD  DISP=SHR,
//          DSN=&TGTINDX..NTXTGTM   NETEX TARGET MACRO LIBRARY
//          DD  DISP=SHR,
//          DSN=&DINDEX..NTXMAC     NETEX DLIB MACRO LIBRARY
//          DD  DISP=SHR,
//          DSN=&RINDEX..MACLIB     MVS MACRO LIBRARY
//          DD  DISP=SHR,
//          DSN=&GENINDEX..AMODGEN   MVS SYSTEM GEN MACRO LIBRARY
//*
//*          NETEX SMP/E DISTRIBUTION LIBRARIES
//*
//NTXMAC   DD  DISP=SHR,
//          DSN=&DINDEX..NTXMAC
//NTXMOD   DD  DISP=SHR,
//          DSN=&DINDEX..NTXMOD
//NTXSRC   DD  DISP=SHR,
//          DSN=&DINDEX..NTXSRC
//*
//*          NETEX SMP TARGET LIBRARIES
//*
//NTXFLOAD DD  DISP=SHR,
//          DSN=&TGTINDX..NTXFLOAD
//NTXLOAD  DD  DISP=SHR,
//          DSN=&TGTINDX..NTXLOAD
//NTXTGTM  DD  DISP=SHR,
//          DSN=&TGTINDX..NTXTGTM
//NTXTGTS  DD  DISP=SHR,
//          DSN=&TGTINDX..NTXTGTS
//SVCLIB   DD  DISP=SHR,
//          DSN=&RINDEX..SVCLIB     MVS SVC library
//*
//*          NOTE: If this PROC will be used as 'instream' JCL,
//*          a 'PEND' statement must be added at this point.
//*          PEND

```

Figure 4. NTXSMPE Procedure

Step 6. Run UCLIN Job

Run the SMPEUCL job to prepare the SMP/E datasets. Substitute appropriate values for the DSPREFIX, NUCID and CDSID parameters. H217IP does not require the NUCID parameter, but it is required by SMP.

Figure 5 below shows an example of the SMPEUCL UCLIN job.

```
//SMPEUCL JOB      ,SMPEUCL,
//                CLASS=A,
//                MSGCLASS=A
//*
//*                UCL-initialize the SMP/E GLOBAL, DLIB, and TARGET
//*                zones.
//*
//*                NOTE: Substitute the appropriate value in the following
//*                SMP/E control-statements for:
//*                'csi-index'
//*                'dlib-zone-name'
//*                'target-zone-name'
//*                'tlib-index'
//*                '$'                NUCID
//*
//*
//*
//UCL0500 EXEC    NTXSMPE
//SYSIN          DD    *,DCB=BLKSIZE=080
SET BOUNDARY(GLOBAL)
.
UCLIN
.
ADD
  GLOBALZONE
  FMID(N2X0501)
  OPTIONS(H217)
  SREL(Z038)
  ZONEINDEX((dlib-zone-name,csi-index.CSI,DLIB),
            (target-zone-name,csi-index.CSI,TARGET))
.
ADD
  FMIDSET(H217)
  FMID(N2X0501)
.
ADD
  OPTIONS(H217)
  ASM(NTXASM)
  DSPREFIX(tlib-index)
  DSSPACE(080,160,035)
  LKED(NTXLINK)
  NOPURGE
  NUCID($)
  PAGELEN(60)
  PEMAX(9999)
  RETRYDDN
```

```

        (
          NTXFLOAD,
          NTXLOAD,
          NTXMAC,
          NTXMOD,
          NTXSRC,
          NTXTGTM,
          NTXTGTS,
          SMPMTS,
          SMPPTS,
          SMPSCDS,
          SMPSTS
        )
.
ADD
  UTILITY (NTXASM)
  NAME (ASMA90)
  PARM (DECK, NOOBJECT, SYSPARM (SUP) , USING (MAP, NOWARN) )
  PRINT (ASMPRINT)
  RC (00)
.
ADD
  UTILITY (NTXLINK)
  NAME (HEWL096)
  PARM (LET, LIST, MAP, NCAL, XREF)
  RC (08)
.
ENDUCL
.
SET BOUNDARY (target-zone-name)
UCLIN
.
ADD
  TARGETZONE (target-zone-name)
  OPTIONS (H217)
  SREL (Z038)
  RELATED (dlib-zone-name)
.
ENDUCL
.
SET BOUNDARY (dlib-zone-name) .
UCLIN
.
ADD
  DLIBZONE (dlib-zone-name)
  OPTIONS (H217)
  SREL (Z038)
  RELATED (target-zone-name)
.
ENDUCL
.
//

```

Figure 5. SMPEUCL UCLN Job

Step 7. Run the RECEIVE Job

Run the RECEIVEE job to receive H217IP.

Figure 6 below shows an example for the RECEIVEE job.

```
//RECEIVE JOB      ,RECEIVEE,
//                CLASS=A,
//                MSGCLASS=A
//*
//*                SAMPLE JCL to SMP/E RECEIVE N2X0501
//*                Note: Substitute appropriate values in the following DD-
//*                statements for:
//*                'tape'
//*
//GET0500 EXEC NTXSMPE                                HZ17 NETEX SMP/E PROC
//SYSIN DD *,DCB=BLKSIZE=080
SET
  BOUNDARY (GLOBAL)
.
RECEIVE
  LIST
  S (N2X0501)
  SYSMODS
.
//SMPPTFIN DD DISP=OLD,
//                DSN=SMPMCS,                        SPECIFY SMPMCS
//                UNIT=(tape,,DEFER),                SPECIFY TAPE-UNIT TYPE
//                LABEL=(1,SL),                      SPECIFY LABEL=1
//                VOL=(,RETAIN,,,SER=N2X501)
//
```

Figure 6. RECEIVEE Receive Job

Step 8. Update N2XSSNMS to Create N2X Allocation Table

The N2XSSNMS module contains one or more N2XSSNM macros that are used to define the H217IP device configuration. After H217IP is received, N2XSSNMS resides in an SMP temporary dataset named xxxx.N2X0501.F2, where xxxx is the DSPREFIX specified in Step 6. Use TSO to update N2XSSNMS with the device configuration. The assembly of this module will occur as part of the SMP APPLY process.

N2XSSNMS defines the H217IP device configuration for both NESiGate and DX(E) adapters. Each NESiGate and DX(E) adapter must be described by coding an N2XSSNM statement.

The subsystem name is a one to four character name that H217IP uses to allocate a NESiGate or DX(E) device interface when a NetEx session is established. An application specifies this name via the SSNM parameter of the SOFFER, SCONNECT, or DCONNECT request. If the SSNM parameter is omitted on the application call, the request uses a default of NETX. For this reason, it is recommended the name NETX be used on at least one of the NESiGate or DX(E) adapters.

The NESiGate NetEx/IP or DX(E) NetEx coprocessor's Global Network Address (GNA) value is assigned when the NESiGate adapter is configured, or when the DX(E) unit is profiled. This value is specified as eight hexadecimal digits (4 bytes containing the DOMAIN, NETWORK, UNIT, and SMGDREF of the NESiGate NetEx/IP or DX(E) NetEx).

The addressing information specified in N2XSSNMS contains the starting NESiGate and DX(E) device addresses (subchannels) and the number of devices available for allocation. These are the actual devices that H217IP attempts to allocate when a NetEx session is established.

The WAIT-MESSAGE TIME-OUT parameter controls the length of time that read-type channel programs are active in the NESiGate or DX(E) adapter before being rejected for a lack of response. This value is specified as a decimal number from 1 to 9999 seconds. This allows for a swap-out of H217IP application programs when they are in a "LONG-WAIT" condition.

Example

Refer to Figure 7 on page 22 for the following examples.

NESiGate

The subsystem name is NETI. The NESiGate NetEx/IP's GNA for DOMAIN 01, NETWORK 01, UNIT 40, and SMGDREF 10 is 01014010. The NESiGate devices start at device number 500, and have 16 devices defined. The WAIT-MESSAGE TIME-OUT value is 5 seconds.

DX(E)

The subsystem name is NETX. The DX NETEX Coprocessor's GNA for DOMAIN 01, NETWORK 01, UNIT 11, and SMGDREF 00 is 01011100. The DX Unit channel interface starts at address 140 and has 16 subchannels. The WAIT-MESSAGE TIME-OUT value is 5 seconds.

| N2X ALLOCATION TABLE | | | |
|----------------------|--------------|-----------------------------------|--|
| N2XSSNM | SSSS,GGGGGGG | (DEV,NUM) | TTTT |
| | | | |
| | | | |
| | | | V |
| | | | WAIT MESSAGE TIME-OUT VALUE |
| | | | +--> NUMBER OF SUBCHANNELS |
| | | | +-----> BASE CHANNEL INTERFACE ADDRESS |
| | | | +-----> DX(E) NDNT1's GNA (8 HEX DIGITS) |
| | | | +-----> or NESiGate NetEx/IP GNA |
| | | | +-----> SUBSYSTEM NAME (1-4 CHARS) |
| | | | +-----> MACRO TO GENERATE A |
| | | | SUBSYSTEM NAME ENTRY- |
| | | | ONE REQUIRED FOR EACH SSNM |
| *** NESiGate Devices | | | |
| N2XSSNM NETI, | | SPECIFY SUBSYSTEM-NAME; | X |
| 01014010, | | SPECIFY GNA; | X |
| (500,16), | | SPECIFY BASE AND #-SUBCHANNELS | X |
| 005 | | SPECIFY WAIT-MESSAGE AND TIME-OUT | X |
| *** DX(E) Devices | | | |
| N2XSSNM NETX, | | SPECIFY SUBSYSTEM-NAME; | X |
| 01011100, | | SPECIFY GNA; | X |
| (140,16), | | SPECIFY BASE AND #-SUBCHANNELS | X |
| 005 | | SPECIFY WAIT-MESSAGE AND TIME-OUT | X |

Figure 7. Sample N2X Allocation Table

The N2XALTBL sample job can be used if it is necessary to change the configuration after SMPE APPLY or ACCEPT processing has been completed. During the SMPE APPLY processing, N2XSSNMS is updated in the NTXTGTM dataset. During the SMPE ACCEPT processing, N2XSSNMS is updated in the NTXMAC dataset.

```

//JOBNAME JOB ,ASSEMBLE.LINK.N2XALTBL,
//          CLASS=A,
//          MSGCLASS=A
//*
//*          ASSEMBLE, LINK-EDIT N2XALTBL
//*          Note: Substitute the appropriate values in the following
//*          JCL DD-statements for:
//*          'prefix'
//*
//N2XALTBL EXEC PGM=IEV90,
//          PARM='NODECK,OBJECT,RENT,TERM,XREF(SHORT) '
//SYSLIB DD DISP=SHR, H217 TARGET library
//          DSN=prefix.NTXTGTM <=== 'prefix'
// DD DISP=SHR, H217 DLIB library
//          DSN=prefix.NTXMAC <=== 'prefix'
//SYSPRINT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSPUNCH DD DUMMY,DCB=BUFNO=001
//SYSUT1 DD UNIT=VIO,
//          SPACE=(1024,(100,100))
//SYSLIN DD DISP=(,PASS),
//          DSN=&&OBJ, temporary only!!!
//          SPACE=(3040,(40,40)),
//          UNIT=VIO
//SYSIN DD DISP=OLD, *** AFTER APPLY ***
//          DSN=prefix.NTXTGTS(N2XALTBL) <=== 'prefix'
//*
//*          Use the following SYSIN DD if doing this AFTER the ACCEPT.
//*
//* SYSIN DD DISP=OLD, *** AFTER ACCEPT ***
//*:          DSN=prefix.NTXSRC(N2XALTBL) <=== 'prefix'
//*
//*          LINK newly assembled module into NTXLOAD.
//*
//IEWLINK EXEC PGM=IEWL,
//          PARM='LET,LIST,NCAL,RENT,XREF'
//SYSUT1 DD UNIT=VIO,
//          SPACE=(TRK,(100,100))
//SYSPRINT DD SYSOUT=*
//SYSLMOD DD DISP=SHR,
//          DSN=prefix.NTXLOAD <=== 'prefix'
//SYSLIN DD DISP=(OLD,DELETE), discard after link-edit
//          DSN=&&OBJ
// DD * , Now comes the instream
//          ENTRY N2XALTBL
//          NAME N2XALTBL(R)
//*
//*
//*          LINK into NTXMOD *** ONLY AFTER ACCEPT ***
//*
//IEWLINK EXEC PGM=IEWL,
//          PARM='LET,LIST,NCAL,RENT,XREF'
//SYSUT1 DD UNIT=VIO,
//          SPACE=(TRK,(100,100))

```

```
//SYSPRINT DD      SYSOUT=*
//SYSLMOD  DD      DISP=SHR,
//          DSN=prefix.NTXMOD          <=== 'prefix'
//NTXLOAD  DD      DISP=SHR,
//          DSN=prefix.NTXLOAD        <=== 'prefix'
//SYSLIN   DD      * ,
  INCLUDE  NTXLOAD (N2XALTBL)
  ENTRY    N2XALTBL
  NAME     N2XALTBL (R)
//
```

Figure 8. Sample Job to Assemble and Link N2XALTBL

Step 9. Run APPLY (CHECK) Job

Run the APPLYE job to apply H217IP. First, run with the APPLY CHECK option. When the APPLY CHECK completes successfully, remove the CHECK operand and perform the actual APPLY.

Figure 9 below shows an example of the APPLYE job.

Note: A return code of 4 is normal for the initial H217IP installation.

```
//APPLYE JOB      ,APPLYE,
//              CLASS=A,
//              MSGCLASS=A
//*
//*              SAMPLE JCL to SMP/E APPLY N2X0501
//*
//*              Note: Substitute the appropriate value in the following
//*              SMP/E 'SET BOUNDARY' control-statement for:
//*              'target-zone'
//*
//*              Note: Remove the "CHECK" to perform the actual APPLY.
//*
//APP0500 EXEC   NTXSMPE                      H217 NETEX SMP/E PROC
//SYSIN DD      *,DCB=BLKSIZE=080
  SET
    BOUNDARY(target-zone)
.
  APPLY
    CHECK
    C(ALL)
    S(N2X0501)
.
//
```

Figure 9. APPLYE APPLY CHECK Job

Step 10. Define and Run the Configuration Manager

Note: the PASCAL Configuration Manager is no longer supported. The "C" Configuration Manager should be used in its place.

The "C" Configuration Manager program takes statements that describe the entire network and produces an output file known as the PAMFILE. This PAMFILE is used by NetEx for the physical addressing information needed to access a remote host. The PAMFILE is downloaded to the NESiGate Adapter or DX NetEx Coprocessor by the NCT Loader.

Note: The "C" Configuration Manager attempts to process all columns of a control statement. Be sure that there are no sequence numbers in columns 73-80; start in column one.

The following steps describe how to use the "C" Configuration Manager.

1. Create a network description for the "C" Configuration Manager using the configuration statements described in the "C" Configuration Manager and NETEX Alternate Path Retry User Guide.
2. Create the "C" Configuration Manager control statements. The "C" Configuration Manager reads these from the INPUT DD dataset. The control statements follow:

(Note: the NCT ddname control statement is NOT used by the "C" Configuration Manager).

SELECT *hostname* - The SELECT command selects which hosts should be used as destinations in generating the PAMFILE. If the SELECT statement is omitted, or if SELECT * is specified, all hosts are selected.

If all hosts and groups defined in the configuration statements are desired as destinations, omit this control statement. If only selected hosts will be defined to NetEx (allowing them to be used as destinations), list them using one or more SELECT statements. A group name may be specified in a SELECT statement as a hostname. Use a SELECT statement for each hostname within the group name that you wish to use individually.

DESELECT *hostname* - The Deselect command deselects host and group names that should not be used as destinations. If any implicitly or explicitly SELECTed hosts are to be Deselect, list them using one or more Deselect statements.

MAKEPAM *hostname ddname* - The MAKEPAM command creates a PAMFILE for the specified host, writing it to the defined output file ddname. This command must be preceded by any necessary SELECT or Deselect statements. If there are no preceding SELECT statements, then all hosts on the network are selected. The resultant PAM represents all paths from the hostname specified on the MAKEPAM control statement, to all hostnames specified on previous SELECT control statements.

EXIT - The EXIT command stops the "C" Configuration Manager.

3. Run the "C" Configuration Manager. This is done in the second step of the sample job. If you receive errors because of this step, correct the errors in the network configuration file and then rerun the "C" Configuration Manager. An explanation of the errors for the "C" Configuration Manager can be found in the NCT Configuration File Errors section of the "C" Configuration Manager and NETEX Alternate Path Retry User Guide.

Figure 10 on page 28 shows an example of the CCONFIG job for the "C" Configuration Manager.

```
//CCONFIG JOB      ,           Accounting information;  
//                CONFIG,      Process name;  
//                CLASS=A,      Standard execute class;
```

```

//          MSGCLASS=A          Standard message class
//*
//*          SAMPLE JCL to execute the "C" Configuration Manager.
//*
//*          Note: The "C" Configuration Manager does not require
//*          a pre-initialized PAM file.
//*
//*          Note: Substitute the appropriate values in the following
//*          JCL DD-statements for:
//*          "prefix"
//*          "disk"
//*          "jcldata"
//*          "volser"
//*
//CCONFIG EXEC  PGM=CM,          "C" Configuration Manager;
//              PARM='-N DD:CONFFILE',  specify NCT DDNAME;
//              REGION=4096K          specify region
//STEPLIB  DD   DISP=SHR,
//              DSN=index.NTXFLOAD      <=== " index"
//*          Configuration Manager commands go here.
//*
//*          The "C" Configuration Manager requires that the
//*          DDNAME of the PAM dataset be specified by a
//*          preceding "DD:" to identify it as a DDNAME.
//*
//*          The command statements MUST start in column 1.
//*
//*          Note: The "NCT" statement is *** NOT *** used with the
//*          "C" Configuration Manager.
//*
//SYSIN  DD   *,DCB-BLKSIZE=080          Configuration Manager commands
SELECT *
MAKEPAM NSERIES DD:OUTFILE
EXIT
//*          Output PAM file definition.
//*
//OUTFILE  DD   DISP=(,CATLG,DELETE),
//              DSN=index.PAMFILE,      <=== " index" ;
//              SPACE=(0256,(005,010),RLSE),
//              UNIT=disk,              <=== "disk";
//              VOL=SER=volser,        <=== "volser"
//              DCB=(RECFM=F,BLKSIZE=0256,LRECL=0256)
//OUTPUT   DD   SYSOUT=*,DCB=BUFNO=001
//SYSPRINT DD   SYSOUT=*,DCB=BUFNO=001
//SYSUDUMP DD   SYSOUT=*,DCB=BUFNO=001
//*
//*          Network configuration table goes here.
//*
//CONFFILE DD   DISP=OLD,              Sample NCT from file #6;
//              DSN=jcldata(SAMPNCT)   <=== "jcldata"

```

Figure 10. Sample “C” Configuration Manager Job Member “CCONFIG”

Step 11. Load the PAM Using the NCT Loader

The Configuration Manager creates the PAMFILE that is loaded by the NCT Loader into the NESiGate NetEx/IP Adapter or the DX NetEx Coprocessor.

The local hostname for the NESiGate NetEx/IP or DX NetEx Coprocessor must be set to the same name as specified in the network definition for the configuration. The first step in the sample job uses NTXCONS to set the local hostname. No hostname is specified in the parameter field, so the connection will be to the NetEx console interface of the NESiGate adapter or local DX NetEx Coprocessor.

The second step in the sample job converts the Configuration Manager's output from a sequential dataset to a member of a partition dataset, which is required for the NCT loader.

The third step runs the NCT Loader. Refer to the NCT Loader Manual for further information on the NCT loader.

To load a PAM file into a NESiGate adapter or DX NetEx Coprocessor, the NCT Loader program must be told which NESiGate or DX NetEx Coprocessor will be loaded, and also the length of the PAM file records to be processed. This information is passed to the NCT Loader program via the "PARM =" keyword of the "EXEC" JCL statement.

The NCT Loader program contains default values that assume that the NESiGate or DX NetEx Coprocessor being loaded is identified by a subsystem name of "NETX", and that the PAM file being loaded contains 1024 byte records (created by the old PASCAL Configuration Manager).

The following example shows JCL with the default values specified:

```
//NCTL      JOB      ,(accounting information),
//          'NCT Loader',
//          CLASS=A
.
.
( execute NTXCONS and IEBGENER)
.
.
//NCTL      EXEC     PGM=NCTL,           specify NCT Loader program;
//          PARM='NETX 1024'          default values specification
//STEPLIB   DD       DISP=SHR,         load library shared;
//          DSN=index.NTXFLOAD        NCTL resides here...
.
.
```

Note: The "PARM=" values contain the subsystem-name left-justified 1-4 characters long, followed by one or more spaces, then followed by a 4-numeric character PAM length value.

The following example shows JCL that specifies a NESiGate or DX NetEx subsystem-name of "JOE", and a PAM file contain 256 byte records (created by the "C" Configuration Manager):

```
//NCTL      JOB      ,(accounting information),
//          'NCT Loader',
//          CLASS=A
```

```

.
.
(execute NTXCONS and IEBGENER)
.
.
//NCTL      EXEC    PGM=NCTL,           specify NCT Loader program;
//          PARM='JOE    0256'        DX "JOE"; "C" PAM file
//STEPLIB   DD      DISP=SHR,         load library shared;
//          DSN=index.NTXFLOAD       NCTL resides here...
.
.

```

Figure 11 provides a sample NCT Loader job.

```

//NCTL      JOB ,EXECUTE.NCTL,         <=== installation-specific
//          CLASS=A,
//          MSGCLASS=A
//*
//*          SAMPLE JCL to load the DX NETEX Coprocessor's NCT.
//*
//*          Note: Substitute the appropriate values in the following
//*          JCL DD-statements for:
//*          'index'
//*          'hostname'
//*
//NTXCONS   EXEC    PGM=NTXCONS
//STEPLIB   DD      DISP=SHR,
//          DSN=index.NTXLOAD         <=== 'INDEX'
//SYSUDUMP  DD      SYSOUT=*
//SYSPRINT  DD      SYSOUT=*
//SYSIN     DD      * ,
SET HOST hostname
//*
//*          Now copy the sequential PAMFILE into a PDS.
//PDSIT     EXEC    PGM=IEBGENER
//SYSPRINT  DD      SYSOUT=*
//SYSIN     DD      DUMMY,DCB=BUFNO=001
//SYSUT2    DD      DISP=(,PASS),
//          DSN=&PAM(hostname),      <=== 'hostname'
//          SPACE=(1024,(100,,1)),
//          UNIT=SYSDA
//SYSUT1    DD      DISP=SHR,
//          DSN=index.PAMFILE        <=== 'index'
//*
//*          Now execute the NCT Loader program.
//*
//NCTL      EXEC    PGM=NCTL,
//          PARM='NETX 0256'         PAM file created by "CM"
//*
//STEPLIB   DD      DISP=SHR,

```

```
//          DSN=index.NTXFLOAD      <=== 'index'
//          DISP=SHR,
//          DSN=index.NTXLOAD        <=== 'index'
//SYSPRINT DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//PAMFILES DD  DISP=(OLD,PASS),      discard after this step;
//          DSN=&&PAM                 <=== PAMFILE is in here
//SYSIN      DD  *
LOAD hostname
Hostname
QUIT
//
```

Figure 11. Sample NCT Loader Job

Note: If any errors are reported, refer to **Appendix A. NCT Loader Error Codes for DX NetEx.**

Step 12. Verify the H217IP Installation

The SERVER program “offers” its services, then sends 1000 1K blocks of data to the REQUESTor. The REQUESTor program “connects” to the SERVER program, then reads and verifies the data sent by the SERVER.

To execute the sample programs, perform the following steps:

1. Execute the SERVER program using the JCL contained in Figure 12 on page 32. This JCL is provided in file 6 of the installation tape as member SAMPSEV. Substitute the appropriate index, and change the PARM values if desired.
2. Execute the REQUESTor program using the JCL contained in Figure 13 on page 33. This JCL is provided in file 6 of the installation tape as member SAMPREQ. Substitute the appropriate index value. Specify the value of the host name where the SERVER program is executing in the PARM field, and change any other PARM values if desired. The values specified in the PARM field of the REQUESTor must match the values specified in the PARM field of the SERVER.
3. After completion, both programs display the record count.

```
//SAMPSEV JOB      , SERVER,
//                CLASS=A,
//                MSGCLASS=A
//*
//*                PARM is *** NOT *** free format.
//*                Keyword parameter values format as follows:
//*                Parameter:                required
//*                length:
//*                *****
//*                SUBSYSTEM-NAME:           4 CHAR;
//*                HOST:                     8 CHAR;
//*                APPLICATION-NAME:         8 CHAR;
//*                #-OF-RECORDS:             5 CHAR;
//*                RECORD-SIZE:              5 CHAR;
//*                CLASS:                    1 CHAR;
//*                CONNECT-DATA-LENGTH:      3 CHAR;
//*
//*                If any parameters are to be entered, all must be
//*                specified; total length of the parameter string
//*                must be 40(counting commas).
//*                Note: Substitute the appropriate values in the following
//*                JCL DD-statements for:
//*                'index'
//SERVER EXEC     PGM=SERVER,
//                PARM='NETX,NTXLCL  , SERVER ,01000,01024,0,000'
//STEPLIB DD      DISP=SHR,
//                DSN=index.NTXFLOAD          <=== 'index'
//                DD      DISP=SHR,
//                DSN=index.NTXLOAD           <=== 'index'
//SYSPRINT DD     DUMMY,DCB=BUFNO=001
//SNAPDUMP DD     SYSOUT=*,DCB=BUFNO=001
//SYSUDUMP DD     SYSOUT=*,DCB=BUFNO=001
//SYSIN DD        DUMMY,DCB=BUFNO=001
```

```
//
```

Figure 12. File 6 Member SAMPSEV Sample SERVER JCL

```
//SAMPREQ JOB      ,REQUEST,
//                CLASS=A,
//                MSGCLASS=A
//*
//*                PARM is *** NOT *** free format.
//*                Keyword parameter values format as follows:
//*                Parameter:                required
//*                length:
//*                *****
//*                SUBSYSTEM-NAME:          4 CHAR;
//*                HOST:                    8 CHAR;
//*                APPLICATION-NAME:        8 CHAR;
//*                #-OF-RECORDS:            5 CHAR;
//*                RECORD-SIZE:             5 CHAR;
//*                CLASS:                   1 CHAR;
//*                CONNECT-DATA-LENGTH:     3 CHAR;
//*
//*                If any parameters are to be entered, all must be
//*                specified: total length of the parameter string
//*                must be 40(counting commas).
//*
//*                Note:Substitute the appropriate values in the following
//*                JCL CID-statements for:
//*                'index'
//*
//REQUEST EXEC    PGM=REQUEST,
//                PARM='NETX,NTXLCL  ,SERVER ,01000,01024,0,000'
//STEPLIB DD      DISP=SHR,
//                DSN=index.NTXFLOAD      <=== 'index'
//                DD      DISP=SHR,
//                DSN=index.NTXFLOAD      <=== 'index'
//SYSPRINT DD     DUMMY,DCB=BUFNO=001
//SNAPDUMP DD     SYSOUT=*,DCB=BUFNO=001
//SYSUDUMP DD     SYSOUT=*,DCB=BUFNO=001
//SYSIN DD        DUMMY,DCB=BUFNO=001
//
```

Figure 13. File 6 Member SAMPREQ Sample REQUESTor JCL

The installation and functionality of H217IP should be verified before proceeding to the ACCEPT step. The Operator Interface programs, NTXCONS and NTXOPER as described in the “Operator Interface” section of H217IP Software Reference Manual. These utilities are a good way to verify the operation of H217IP.

NTXCONS can be used to connect to the NetEx Console Interface of the NESiGate NetEx/IP or DX NetEx Coprocessor, and by not specifying a hostname in the PARM field, the connection can be made even if a valid PAM has not been loaded into the Adapter. Refer to “NTXCONS - NetEx Console Interface” in the H217IP Software Reference Manual for the necessary JCL. This will verify that H217IP, the

NESiGate NetEx/IP or DX NetEx Coprocessor, and the path to NESiGate or the DX NetEx Coprocessor are functioning properly.

NTXCONS can then be run with the local hostname specified in the PARM field to again establish a session within the NESiGate NetEx/IP or DX NetEx Coprocessor. This will verify that a valid PAM has been loaded.

Use the NTXOPER program to establish sessions with other NetExes by using the remote operator interface. This will verify that the PAM entries for the remote hosts are valid, and it will also verify correct operation of the NetEx/IP network.

Continue with the verification of any NetEx applications that are normally used in your environment.

Note: Any existing H217IP applications must be relinked if they use the high level language interface, or they must be reassembled if they use the assembler interface.

Step 13. Run ACCEPT (CHECK) Job

Run the ACCEPT job to accept H217IP. First, run with the ACCEPT CHECK option. When the ACCEPT CHECK completes successfully, remove the CHECK operand and perform the actual ACCEPT.

Figure 14 below shows an example of the ACCEPT job.

```
//ACCEPTE JOB      ,ACCEPTE,
//                  CLASS=A,
//                  MSGCLASS=A
//*
//*                SAMPLE JCL to SMP/E ACCEPT N2X0501
//*
//*                Note: Substitute the appropriate value in the following
//*                SMP/E 'SET BOUNDARY' control-statement for:
//*                'dlib-zone'
//*
//*                Note: Remove the "CHECK" to perform the actual ACCEPT.
//*
//ACC0500 EXEC     NTXSMPE                      H217 NETEX SMP/E PROC
//SYSIN DD        *,DCB=BLKSIZE=080
  SET
    BOUNDARY(dlib_zone)
.
  ACCEPT
    CHECK
    C(ALL)
    S(N2X0501)
.
//
```

Figure 14. ACCEPT Run ACCEPT CHECK Job

Update Summary

This is the initial release of H217IP, NetEx/IP for OS/390 and MVS/ESA.

Appendix A. NCT Loader Error Codes

The DX NetEx driver can receive an NCT or set of configuration parameters from a remote NCT loader program. DX NetEx returns a four-octet status code through an SCLOS indicating whether the information was successfully copied into the EEPROM or not.

The first two octets contain a status code which defines the type of error or a successful operation. The following is a list of completion codes.

| | |
|-----------|---|
| 0 | Successful operation |
| 1 | DX NetEx Error NOTE: If the status code is 1, the following two bytes contain the DX NetEx error code. Otherwise, these bytes are meaningless. |
| 2 | Logical block size of SPL offsets, specified in the connect, was less than or equal to 0. |
| 3 | Type of request parameter value, specified in the connect, is not defined. |
| 4 | Size of received configuration parameters is in error. |
| 5 | NCT was too large to save in EEPROM. Nothing in the EEPROM has been changed. |
| 6 | Invalid NCT Loader version number specified on connect. |
| 7 | Invalid character set specified on connect. |
| 8 | No data received on SWRIT. |
| 9 | Not enough memory in DX NetEx to return configuration parameters. |
| 10 | Invalid data buffer received. DX NetEx encountered a chained datalist which is not supported when receiving an NCT. Nothing in the EEPROM has been changed. |
| 11 | Invalid data buffer received. DX NetEx encountered a chained datalist which is not supported when receiving an NCT. Nothing in the EEPROM has been changed. |
| 12 | DX NetEx's local host name does not match the local host name specified in the NCT. Nothing in the EEPROM has been changed. Use the SET HOST operator command to modify DX NetEx's local host name and re-run the NCT Loader program. |
| 13 | Address out of range trying to write to EEPROM. The NCT in the EEPROM is invalid. |
| 14 | Error trying to write to EEPROM. The NCT in the EEPROM is invalid. |
| 15 | Address of NCT's version number out of range trying to write EEPROM. The NCT in the EEPROM is invalid. |
| 16 | Error trying to write version number into EEPROM. The NCT in the EEPROM is invalid. |
| 17 | DX NetEx's local Session Manager DREF (SMGDREF) does not match the local host's SMGDREF specified in the NCT. Nothing in the EEPROM has been changed. |
| 18 | NCT in EEPROM is write protected – downloaded NCT is valid. NCT in EEPROM is old and valid. |

| | | | | |
|----------------|---|------------|------------|----------|
| 100-123 | Configuration parameter value out of range. Nothing in the EEPROM has been changed. See following table for specific invalid parameter value. | | | |
| | 100 | Wdogtime | 101 | Contime |
| | 102 | Idletime | 103 | Deadtime |
| | 104 | Ticktime | 105 | Unused |
| | 106 | Ackcredit | 107 | Smgq |
| | 108 | Maxoutbuf | 109 | Maxses |
| | 110 | Trunkmask | 111 | Metplvl |
| | 112 | Wrtprotect | 113 | Maxbo |
| | 114 | Maxbi | 115 | Defbo |
| | 116 | Defbi | 117 | Maxseg |
| | 118 | Ntxoper | 119 | Ntxcons |
| | 120 | Ntxnctl | 121 | Sendack |
| | 122 | Ropclass | 123 | Msglvl |

For descriptions of these parameters, see “Set Commands” in Appendix E of MAN-REF-COSW, the *NE-SiGate Channel Offload Reference Manual*.