H267IPI NetEx/IP® Requester

for OpenVMS on HP Integrity Systems

Release 7.0

Memo To Users

March 31, 2009

Introduction

The H267IPI product implements the requester based NetEx/IP product for OpenVMS operating systems on HP Integrity servers. H267IPI has been tested on OpenVMS 8.3.

No known problems as of this release.

Installation Notes

The installation procedures documented in the software reference manual for this product are no longer valid. Please follow the installation instructions documented here.

Installation Procedure

Overview

Use the installation procedure described in this section to install H267IPI for the first time, or to change all or part of the previous H267IPI Requester installation.

> **Note:** Please read through this section before going through the installation.

Installation Steps

The steps required for installing the H267IPI NetEx/IP Requester environment are listed below:

1. Receive Software License key.
2. Load the distribution.
3. Verify TCP/IP installation.
4. Modify SYS$MANAGER files.
5. Customize the .DXNRLRC configuration file.
6. Verify operation.
7. Review and Modify NCT File(s).
8. Load NCT.
9. Link NetEx/IP into the Calling Program(s).

Step 1. Receive Software License key

You must obtain a valid license key for this product for each host that will be running it. This key must be installed in the "NESikeys" file which resides in the root directory.

To obtain a key, you must first obtain your MAC address. You can get this by running the "GETMAC" routine in the `dxnrl_ut:` directory. Contact NetEx Software's Customer Support with the MAC address and the product designator (H267IPI in this case).It is suggested that you e-mail your request to Customer Support at support@netex.com and we will return your key(s) via e-mail. The key can then be entered in the "NESikeys" file.

Step 2. Load the Distribution Media

1. Logon to a system privileged account.
2. Save any previous configuration files.
3. Create the directory where the product is to be installed and define a system logical name DXNRL_ROOT to point to that directory.

```
$ CREATE/DIRECTORY [XXX.YYY]
$ DEFINE/SYSTEM DXNRL_ROOT XXX:[XXX.YYY]
```

4. The CD is not in VMS format so it must be loaded onto a PC and the data set (H267IPI070.A) should be transferred via FTP from the PC to the selected directory on the OpenVMS system.

5. Once the data set is loaded into the host directory, its file attributes must be modified. Use the following command to change the attributes of the data set.

```
$ SET FILE/ATTR=(RFM=FIX,LRL=9216) H267IPI070.A;1
```

6. Run VMSINSTAL

```
$ @SYS$UPDATE:VMSINSTAL H267IPI XXX:[YYY]
```

VMSINSTAL will ask you some questions; see your Hewlett Packard manual for assistance.

If the system logical name DXNRL_ROOT is not defined on your system, you will be asked for the name of the device that H267IPI will be installed on. If any of the required directories are not present, the installation program will ask you if you want to specify the UIC of the directory, allow you to do so if desired, and create that directory.

Step 3. Verify TCP/IP Installation

Determine the Internet Protocol (IP) address of the NESiGate LAN Offload adapter (for example, 129.191.18.18). Verify the physical connection to the adapter on the network by entering the command:

```
$ TCPIP
$ TCPIP> LOOP ipaddr
$ TCPIP> EXIT
```

ipaddr

This is the IP address, for example 129.191.18.18

Step 4. Modify SYS$MANAGER Files

Go to the system manager directory by entering the following command:

```
$ SET DEFAULT SYS$MANAGER
```

Now, edit the file SYSTARTUP_VMS.COM and add the following lines to this file:

```
$ DEFINE/SYSTEM DXNRL_ROOT xx:[yyy]
$ @DXNRL_ROOT:SYSTARTUP
```

xxx – This is the device

yyy - This is the directory where NETEX is installed.

The SYSTARTUP_VMS.COM file creates the logical names and installs the shareable images needed for NETEX to function properly.

Now edit SYLOGIN.COM and add the following line to this file:

```
$ @DXNRL_ROOT:SYLOGIN
```

The SYLOGIN.COM file defines the foreign commands needed to use the H267IPI utility programs. You should also issue this command now so the foreign commands are defines for your process.

Step 5. Customize the .DXNRLRC Configuration File

Step 5a. Build the NETEX Configuration File for Ethernet

The NETEX configuration file for Ethernet/TCP is used by the server process to select a NESiGate LAN Offload adapter.

With the NESiGate LAN Offload adapter, the NETEX configuration file associates the site-determined NETEX host name with the IP address of the appropriate NESiGate adapter. When a NETEX application is started and an SOFFR or SCONNECT request is executed, the server process will examine the configuration file to select an adapter.
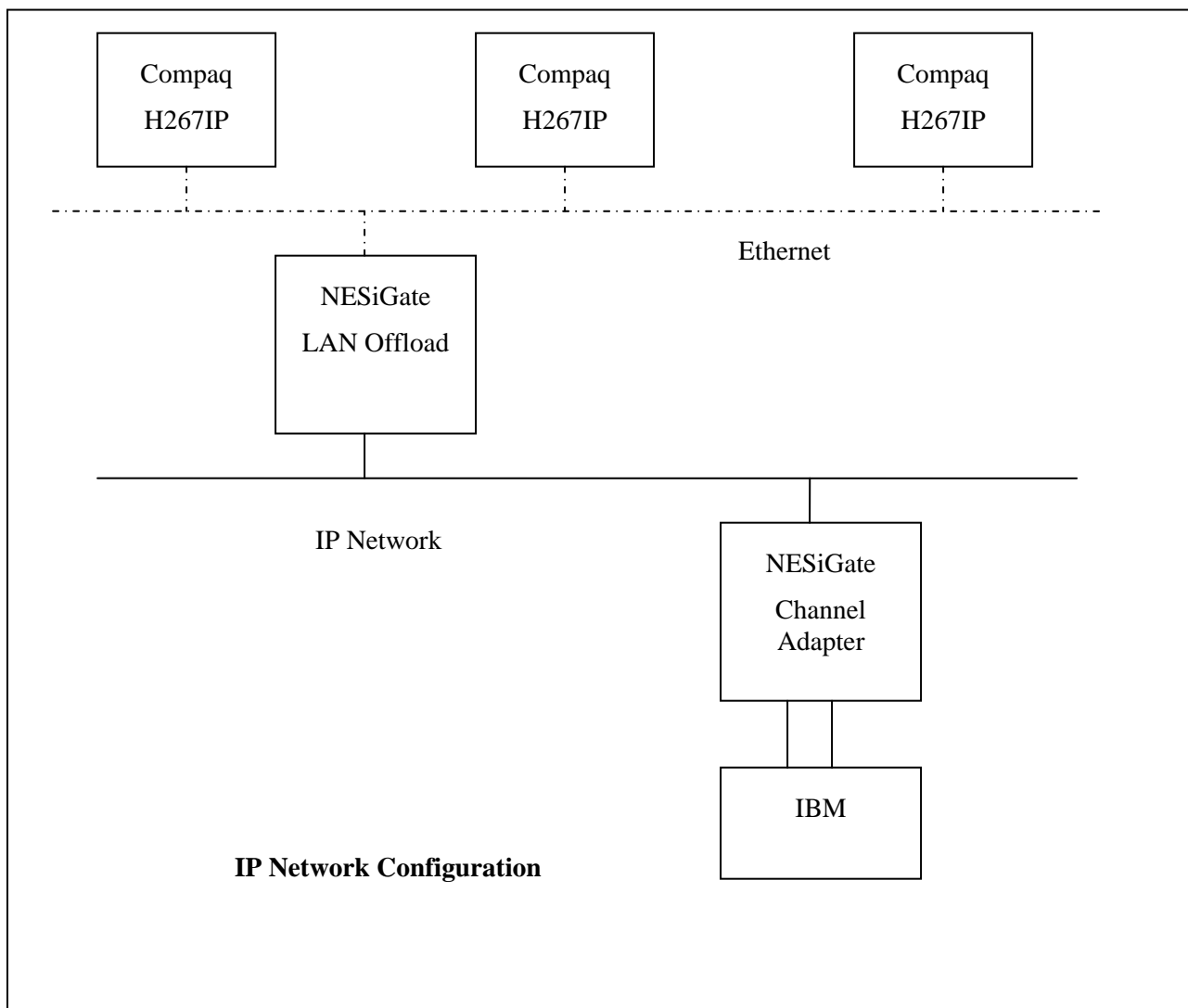
Figure 1. Network Configuration Examples

An example of a simple configuration file is Figure 2. The file, .DXNRLRC, is on the installation tape. Use the sample below and the file, .DXNRLRC, to write your own configuration file.

```
*      Simple DX Client Interface Library (DXNRLRC) configuration file example
*
local    TX1
netex    dxnsp1    0.0.0.0  129.191.18.101
```

Figure 2. Default Configuration File .DXNRLRC

The "local" directive is the local host name (for this NETEX example - "TX1"). This name will be associated with offers (SOFFRs) originating from the local host and will allow the offload NETEX to select the correct offer (SOFFR) if the same application name is offered (SOFFR) by applications on multiple hosts attached to the same NESiGate adapter. For multiple hosts with same name offered to be serviced, the MULTIHOST parameter in the NESiGate LAN Offload adapter must be set to ON.

The "netex" directive defines the NESiGate LAN Offload adapter to be used by this process. The second field in the directive is a name for the NETEX. For this purpose, it is "dxnsp1" (see Figure 2). The third field should remain 0.0.0.0. The IP address for the appropriate NESiGate LAN Offload adapter is the fourth field in the "netex" entry.

When a TCP connection to a NESiGate LAN Offload adapter needs to be established by the server process, a NETEX name is used to select all entries from the configuration file that matches the specified name. The selected entries are tried in turn, until a connect succeeds. If no connect is successful, the session request is terminated.

> **Note:** You can have two or more hosts using the same NESiGate LAN Offload adapter. The "netex" directive names must be different.

The NETEX name used for selection is by default set by an application process environment variable. If no name can be determined, all entries in the configuration file are selected.

Step 6. Verify Operation

To verify that the Requester Library and the NESiGate LAN Offload adapter are working, enter the following command:

> **$** *SET DEFAULT DXNRL_UT*
> **$** *RUN NTXVERIFY*

This program will perform the following tasks:

1. Retrieve the local hostname.

2. Perform a brief intrahost session layer test.

Step 7. Review and Modify NCT File(s)

The NETEX Configuration table contains all the information that NETEX needs to make connections to other NETEXes on the network. The sample NCT file (DXNRL_CF:NCT.SIMPLE) provides only an example and must be modified to describe all the NETEXes on the network before NETEX can be started. Refer to the *"C" Configuration Manager and NETEX Alternate Path Retry (APR) User Guide* for more information on creating this file.

If there are multiple NETEX providers in the environment, then there must be a PAM file for each NETEX provider. A recommended naming convention is to have each PAM file name suffixed with a number corresponding to the NETEX provider that it accesses.

Invoke the Configuration Manager (CM) to process the text file. There are two major components in CM: the NCT preprocessor and the PAM file generator. The NCT preprocessor reads the configuration text file and transforms this file into an internal data structure called the Network Configuration Table (NCT). The second component creates a binary file (the PAM file) based on user commands and the NCT. This binary file is used by the NETEX routing mechanism. The CONFMANG (CM) program is interactive and various commands can be given to generate what the user desires. To run the Configuration Manager, enter the command:

```
$ RUN DXNRL_CF:CM
Config> nct DXNRL_CF:sample.nct
              .
              .
              .
Config> select *
              .
              .
              .
Config> makepam hostname DXNRL_CF:cm.pam
              .
              .
              .
Config> exit
```

A HELP command is also available to assist in the operation of this utility.

Each RUN CM allows only one use of the NCT preprocessor command. Multiple MAKEPAM statements are allowed to build output PAM files for various hosts, if desired. Subsequent uses of the NCT statement are rejected and not processed.

Step 8. Load NCT

To load the NCT, issue the following command:

```
$ RUN DXNRL_CF:NCTL
```

A HELP command is also available to assist in the operation of this utility.

At the nctl: prompt, enter the following command:

```
Nctl> LOAD DXNRL_CF:pamfile localhostname
```

pamfile

This variable is the name of the output file from the Configuration file, created in "Step 7. Review and Modify NCT File(s)".

localhostname

This optional parameter is the name of the host where the file will be loaded.

To exit, enter EXIT at the prompt:

```
nctl> EXIT
```

For more information on NCT Loader commands, refer to the *NCT Loader Software Reference Manual*.

Step 9. Link NETEX into the Calling Program(s)

The user interface functions must be imbedded with each executable that is intended to communicate over the network via the H267IPI Requestor. These functions exist in the object libaries NETEX.OLB and NETEXC.OLB (for C versions). The installation puts these files in DXNRL_ROOT.

To link an executable using NETEX, enter a command similar to the following example:

```
$ LINK prog.obj, DXNRL_ROOT:NETEXC.OLB/LIB,LICENSE/LIB
```

Note: To successfully invoke NETEX calls from programs written in C, the source program should incorporate the *netex.h* INCLUDE file to ensure that the parameters are properly passed to the NETEX service procedures. Other languages must create their own appropriate external definitions.

Update Summary

Release 7.0

The Memo To Users documents installation procedures which differ from the procedures in the software reference manual.