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**H690IP NetEx/IP™**  
**for Sun SPARC Solaris Systems**

**Release 7.0.2-1**

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**Memo to Users**  
February 12, 2014

## Document Revision Record

Revision	Description
MTU-H690IP-01 (05/2000)	<ul style="list-style-type: none"> <li>● H690FD FD NETEX product converted to H690IP NetEx/IP product with support for NetEx over IP networks.</li> <li>● New NetEx operator commands added: “SET IPROUTE”, “DISPLAY IPROUTE”, and “CLEAR IPROUTE”.</li> <li>● New “NTX_DEFAULT” parameters added: “IPRECV”, “IPSEND”, and “IPCHKSUM”</li> <li>● Introduced support for 64-bit Solaris systems.</li> <li>● Introduced support for 32-bit x86-based Solaris systems.</li> <li>● Product distribution converted to PKGADD format.</li> <li>● Removed product source from distribution.</li> <li>● Default installation directory changed to “/usr/nesi/netex/”.</li> </ul>
MTU-H690IP-02 (08/2002)	<ul style="list-style-type: none"> <li>● Product updated to release 6.6.0.</li> <li>● Added the ability modify NetEx/IP code conversion tables without the need to modify source code.</li> </ul>
MTU-H690IP-03 (02/2004)	<ul style="list-style-type: none"> <li>● Product updated to release 6.6.4.</li> <li>● Announced new “NTX_DEFAULT” parameters: “ROPCLASS”, “NODNS”, and “PREFPROT”.</li> <li>● Announced new NetEx/IP Operator commands: “HALT Adapter”, “START Adapter”, and “DISPLAY Halted”.</li> </ul>
MTU-H690IP-04 (04/2004)	<ul style="list-style-type: none"> <li>● Product updated to release 6.6.4-1.</li> <li>● Minor documentation updates.</li> </ul>
MTU-H690IP-05 (06/2009)	<ul style="list-style-type: none"> <li>● Product updated to release 6.6.4-1B1.</li> <li>● Corrections added to interoperate with H210IP installations using macros to define the NetEx/IP network.</li> <li>● Removed references to x86 versions of Solaris.</li> <li>● Removed references to HCM driver and FDDI support.</li> </ul>
MTU-H690IP-R7.0.2 (12/2013)	<ul style="list-style-type: none"> <li>● Product updated to release 7.0.2</li> <li>● New license key</li> </ul>
MTU-H690IP-R7.0.2-1 (2/12/14)	<ul style="list-style-type: none"> <li>● Product updated to release 7.0.2-1</li> <li>● Required gnu library static in build (optional in Solaris distribution)</li> </ul>

# Introduction

The H690IP product implements the host-based NetEx/IP for Sun SPARC 32- & 64-bit Solaris operating systems. This product has been tested with Solaris releases 8, 9, and 10.

## ***Related Documentation***

Additional information about this NetEx/IP software may be found in the following:

- *NetEx/IP for Unix Systems Release 7.0.2 Software Reference Manual*
- *“C” Configuration Manager and NetEx® Alternate Path Retry (APR)*

## ***Support***

Support for NetEx/IP, and associated products, is available via:

- Telephone: 24x7 at (800) 854-0359
- The worldwide web: <http://www.netex.com>
- E-mail: [support@netex.com](mailto:support@netex.com)

An on-line version of the current “Memo to Users” and Reference Manual may be found at <http://www.netex.com>.

# Service Notes

The following items should be reviewed prior to a new installation or upgrade from a prior release.

1. This release of NetEx/IP for Sun SPARC Solaris systems **removes** support for NetEx HYPERchannel networks.
2. There is a known issue in this version of NetEx/IP when “**segsz**” is set to a value greater than “**maxblk**” in the NTX\_DEFAULT file. If “**segsz**” is greater than “**maxblk**”, NetEx/IP will be in an unusable state. The following symptoms may occur:
  - a. Repetitive "D-read failed" and "NETEX: failed read, stat = 1006, err=0" messages in the NetEx/IP log file (/usr/share/nesi/netex/site/ntxlog).
  - b. An inability to initiate or accept NetEx connections on the host.
  - c. Very slow responses to NetEx operator commands.

The recommend workaround at this time is to specify a “**segsz**” value that is less than the value of “**maxblk**”. Please take into consideration that the NetEx/IP software will round the value of “**segsz**” up to the nearest value that is a multiple of 4. The following examples should better illustrate this point:

**Example 1: (Valid)**

```
maxblk = 64000
segsz = 32768
```

**Example 2: (Valid)**

```
maxblk = 32767
segsz = 16000
```

**Example 3: (Invalid)**

```
maxblk = 32767
segsz = 40000 (greater than maxbi)
```

**Example 4: (Invalid)**

```
maxblk = 32767
segsz = 32767 (rounds up to 32768 which is greater than maxbi)
```

3. All NetEx/IP applications, including “ntx”, remain as 32-bit applications. However, they will run on both 32- and 64-bit systems.
4. There has been a change to the displayed messages in ntxlog during NetEx/IP startup. After the initialization parameters and release level has been displayed, the following messages will be shown:

```
** 0009 Fri Aug 22 12:56:30 2003 - NETEX driver interface initialization
pending *
** 0010 Fri Aug 22 12:56:30 2003 - NETEX entering "intra-host" mode *
** 0011 Fri Aug 22 12:56:31 2003 - NETEX initialization complete. *
** 0012 Fri Aug 22 12:56:31 2003 - NETEX exiting "intra-host" mode *
```

This is now the normal sequence of messages and not an indication of an error.

## ***New Features***

The additions and changes made in this release are:

1. This release (H690IP-R7.0.2) adds support for Solaris 11.
2. Logging of messages has been improved. Messages may now be logged to the product log and/or the system syslog facility. The default is both. Sample configuration files are included for syslogd and logrotate.
3. The ability to have NTXOPER commands in the ntx\_default file has been implemented. This allows the user to have SET IROUTE commands and/or any other NTXOPER command executed automatically at startup.
4. The following ntx\_default parameters will be fully utilized now for protocol-2 in order to improve performance over long distances: **mbufin**, **mbufout**, **defmsecsonewaydelay**, and **maxkbitspersec**.

# Installation

For installation procedures for H690IP please refer to the appropriate appendix in the general NetEx/Unix Software Reference Manual.

# Update Summary

## 7.0.2-1

Required gnu library static in build (library is optional in Solaris distribution)

The following tickets have been resolved in this release:

- 2157 Problem Creating Pam File
- 2826 Improper COPYRIGHT Statement
- 3015 Change the NetEx defaults for maxses and msglvl
- 3215 Nesigate Netex slow thruput with small segs and no delay
- 3407 "SET SESMAX" description refers to invalid "SESLIM" parm
- 3593 NTXMGEM "Blocks" parm maxes out at 99995.
- 5113 Ntx stop script kills non ntx processes
- 5348 Replace ntxeat/ntxgens with common source
- 5504 Programmed netex defaults not used if no default file
- 5537 Need to add a NCT.samp file to the installation
- 5577 reading new code conversion table is broken
- 5810 Clean up transport session when User Offer times out (left orphaned session, causing maxses to be reached erroneously).
- 5820 Copyright statements need to be updated
- 5824 max allowable size of pamlist is 512 chars - exceeding that will core dump netex at startup
- 5832 display of defaults in netex log shows ropclass as gblither
- 5838 unable to APR through a unknown adapter
- 5851 Enhance ntxoper client command processing
- 5845 ntxoper commands accept string values that only partially match
- 5857 Level2: Warning: Local NCT entry not defined as PROTOCOL=4
- 5865 Remove the ntxrmtop support; this functionality is available in ntxoper
- 5883 Display log implemented using external command

## 6.6.4-1B1

1. The GCC compiler has been used rather than the Sun compiler.
2. Support for HCM has been removed.
3. A correction has been added to allow H690 to interoperate with H210IP systems that are using macros to define the network map rather than a PAM file generated by the Configuration Manager.

## 6.6.4-1

1. There are three new parameters available in the NTX\_DEFAULT file:

**ROPCLASS** (Remote Operator Class) – Maybe be set to “A” or “G”. “A” will allow privileged instructions such as SET, HALT, etc. to be issued via the remote operator facility. “G” only allows non-privileged operator commands (DISPLAY, etc.). The default value is “G”.

**NODNS** – When set to 1 (true), NetEx/IP will skip DNS lookups when the PAMFILE is read. The default is 0 (false). This is only useful if the user intends to ONLY use the “SET IPRROUTE” command to manually map toGNA addresses to toIP addresses.

**PREFPROT** – Defines the default preferred protocol type to use when connecting to hosts that support multiple NetEx/IP protocol types. Valid values are 2 or 4. Default is 4.

2. There are three new NetEx/IP operator commands:

**HALT Adapter <uuss>** - Command to halt local or remote adapters.

**STart Adapter <uuss>** - The operator may start an adapter that is halted to NetEx/IP.

**Display HALTED** - The operator may display a list of halted adapters.

3. The driver initialization has been changed to properly keep track of whether or not the software is in local loopback mode.
4. The code conversion table handling has been corrected for problems seen at some customer sites.
5. A correction has been made to speed up the processing of batched operator commands.

## 6.0-6.6.0

1. Correct transport disconnects, to prevent sessions hanging for DEADTIME.
2. Protocol 4 corrections.

## 6.0-6.5.8

1. Driver fixes - properly handle both output & input completions.
2. Allow multiple local/remote adapters with same NETADDR.
3. Numerous NetEx/IP operator command additions.
4. Corrected APR logic to use proper segment sizes talking with hosts with non-standard word sizes (Unisys).
5. Protocol 4 corrections.



## 6.0

1. Added NetEx/IP protocol 4 support.
2. Added software licensing code.

## 5.0 N1

1. Rel 3.5 with IP support
2. New “ntx\_default” parameters – iprecv, ipsend, ipchksum, ip1intrf.
3. New NetEx operator commands (details in Reference Manual change pages):
  - a. **D**isplay **I**Proute [ **GNA** | **all** ]
  - b. **C**lear **I**Proute [ **GNA** | **all** ]
  - c. **S**et **I**Proute **GNA** **ip-address**

## 3.5 N1

1. This release is the first produced from a single controlled source tree.
2. HCMD has been modified to accept the following command line parameters:
  - a. **-f /dev/<fddi-name>**: This is primarily for SPARC systems and allows the user to restart an already installed and functioning HCMD when the FDDI device system name is changed by Solaris. The default is “/dev/pf”. On non-SPARC systems, this parameter should not be used unless recommended by NetEx Software.
  - b. **-s <number>**: Where *number* is the number of bytes to strip off the end of the FDDI buffer. If the host’s FDDI device is identified as “/dev/pf\*”, HCMD **may** require that “-s 4” be supplied when the start command is issued. If the Sun FDDI driver is being used, this parameter will be required if the Solaris FDDI driver has not had patch 108701-09 applied.
  - c. **-p <max-ppa-num>**: Pyramid systems, in particular, require this parameter as the ppa-num maps to the device num (i.e., the *dev-namexx* shown on a “netstat -rn” for the FDDI device). This should not be required for H690IP.
3. HCMD has also been modified to not overflow its buffers when an HP-UX system has a large number of network devices.
4. A “start” and “stop” command has been added to the hcmd directory. The start command checks for running copies of HCMD and will not start if an HCMD process is already running. The syntax is:

```
start [optional command line flags]
```
5. The NetEx driver code section has been modified for the upcoming NetEx over IP product.
6. Modifications to support a common source tree and the re-locatable package installs.

## 3.5 R1 M5

1. This release has many minor and a few major fixes. We have not had a session manager hang in our test environment since making these changes.

2. NETEX or HCMD can be updated without updating the kernel (HCM) code. If you have more than one FDDI interface, you should update the kernel code also.
3. NETEX - Handle duplicated messages arriving during connections and confirmations. Previous to this, these messages could hang the session (normally the session manager).
4. NETEX - Fix a session manager bug caused by remote console requests. These requests sometimes caused one or more other requests on the work queues to be lost (again, normally the session manager).
5. NETEX - Minor fix for exiting if the maximum number of sessions was detected at a funny time.
6. USER INTERFACE - The copying of host and application names was changed to allow callers to specify part of the NRB as the source of the data (BFX).
7. HCM DRIVER - If two or more FDDI interfaces were used, HCMD could hang during an attempt to kill HCMD or shutdown the system. This resulted in a CPU (processor) hanging.
8. NETEX - The number of requests that the session manager will queue was raised from 6 to 25 and made configurable.
9. HCMD - Fix the 'interface' keyword implementation.
10. USER INTERFACE - Fixed a bug in part of the interface that is only used for DRIVER LEVEL services. This bug could result in driver users not being informed of arriving data and three bytes of data in user space being clobbered.
11. All log entries (/usr/nsc/netex/site/ntxlog) are time stamped.
12. NETEX interface messages have been changed to contain NETEX in the message.

### **3.5 R1 M4**

1. Supports both of the FDDI drivers, the original SUN 2.0 board that SUN built and the newer SUN 3.0 board that comes from NPI.
2. Minor fixes for a special configuration only used at one site.
3. Changes to the 'DISPLAY TRANSPORT nn' command to look more like MVS.

### **3.5 R1 M3**

1. Fixed a bad file type on the file '/usr/nsc/netex/conf/cm'. Also made sure that NetEx could be rebuild on site if needed.
2. Added code to HCM to reject routing information from a different domain and network. This is in preparation for handling multiple DOMAIN/NETWORK values.
3. Fixed sessions hanging due to blocks arriving out of order. This problem occurs with the new link adapters 701, 703, 751, and 753 after CDA 6.0. If you have this problem, the DX NetEx must also be upgraded to level '2.0.2'. Note that data was never corrupted, the session just hangs forever.
4. Fixed a problem in the session manager that left sessions hung on an offer. The remote NetEx failed to complete the initial exchange during session establishment and the user would hang. This would show up as the user not being offered, but an attempt to connect to the user would result in a BUSY (3501) status. Now the offer must complete within CONTO or the user will be given a READ\_TIMEOUT.

### **3.4 R1 M2**

1. Fixed a minor problem in trunk mask handling. This problem only occurred if the same trunk was attached as one value (e.g. t3) on one adapter and a different value (e.g. t2) on another adapter.
2. Added code to support using the NetEx file descriptor in user SELECT calls.
3. Shortened the instruction path for SWAIT(0).

### **3.4 R1 M1**

1. This release of H690FD has minor changes to support a design change in SOLARIS 2.3.
2. In addition, the change for 2.3 support allowed H690FD to run 50% faster on a multiprocessor test system. The same performance improvement should be expected on SOLARIS 2.2.