INTERPHASE CORPORATION®

READ ME FIRST

SVC/PVC PCI ATM Drivers for NetWare 4.11/4.1/3.12

Description

This Read Me First supplements the Users Guide for Interphase SVC/PVC 55x5TSI, 5525TSI (Token Ring) and 55x5SI, 5525SI (Ethernet) PCI ATM adapters that use the Integrated Driver 1.5 (ID1.5) for Netware 4.11/4.1/3.12.

Release Notes

This release includes several changes and enhancements in the Interphase PCI ATM adapter drivers to improve driver's reliability and performance. New features have been added as well to provide better management and more efficiency when use your network.

New features for ID1.5

Driver Name Changed

The driver name 5515si/5515tsi has been changed to 55x5si/55x5tsi respectively, because the driver 55x5si supports both 5515 and 5575 adapters as Ethernet driver, and the same as 55x5tsi as Token-ring driver.

SNMP Support

In order to enable Interphase ATM adapter to be a SNMP agent, four additional NLMs TRAPMIB.NLM, SONETMIB.NLM, LECMIB.NLM, ATOMMIB.NLM are required to loaded with the driver. When you load drivers by Novell INSTALL module, make sure that you copy the all files above into the sys:\system volume.

ABR Support

The ABR (Available Bit Rate) service category is designed for burst traffic whose bandwidth range is known roughly. ID1.5 drivers have implemented ABR functionalities. Be aware that to fully support ABR service, an Interphase ATM (i)chip SAR+ adapter which includes hardware-based ABR in compliance with the ATM Forum Traffic Management 4.0 specification is needed.

Support of ILMI 4.0 Autoconfiguration

ID1.5 drivers support ILIM 4.0 signalling auto-configuration. When a host registers to a switch, if it support UNI 4.0, then the signalling will be configured to UNI 4.0, otherwise, the signalling will be automatically configured to switch's UNI version.

Dynamical Configuration of ELAN/MTU Support

This feature allows users to configure one client to different ELAN via Cellview other than via load line parameters, regardless what MTU size this ELAN is. The cost of this feature for Ethernet LAN Emulation is, you must load the Interphase version of ETHERTSM.NLM and its corresponding MSM.NLM into server with the 55x5si/5525si driver is loaded. Those two NLM files mentioned above are supplied with the driver package. It is strongly recommended that you save the original system files ETHERTSM.NLM and MSM.NLM before or within the installation of new drivers, especially if you happen to have new version of the MSM/TSM, in case you need them later.

Enable IP1577 from INSTALL

IP1577 now can be enabled from INSTALL module. When parameter setting box goes to 1577 ENABLE option, type Y for enable, otherwise type ENTER. Note that if you choose enable IP1577, then DO NOT bind this driver to IPX. When system prompts a dialog box, say: Network number to bind IPX to 55x5si_1 (frame 802.2), press ESC key and then choose NO. Otherwise, the IP1577 client or server can not work correctly.

New features for ID1.2

Redundant Link Support

This feature allows user to define an adapter as backup adapter for one or more primary adapters. Whenever a link on a primary adapter goes down due to physical line failure, the backup adapter will take over the functionality of the primary adapter and inherit its properties. This ensures that the host is always available to communicate with others via the network link, thus providing high reliability of the network.

To add redundant link support, you must install two or more Interphase ATM adapters in your system. Slot numbers are required for both primary and backup adapters. Backup slot number is required for only primary adapter (refer to Notes for Multi-Board Installation).

Multiple MTU Size support

ID1.2 supports multiple MTU sizes (1516, 4K and 9K). If MTU size is not specified, it will default to 1516 for Ethernet and 4k for Token Ring. To load a driver with 4K or 9K MTU size do the following to your 55x5si load line.

For 4K support, add the following parameter to your 55x5si load line:

MTU=4

Also, modify the startup.ncf file and add the following line.

SET MAXIMUM PHYSICAL RECEIVE PACKET SIZE = 5120

If you decide to load a driver with 9K support then add the following parameter to your 55x5si load line;

MTU=9

For 9K MTU size, modify the startup.ncf file to the following:

SET MAXIMUM PHYSICAL RECEIVE PACKET SIZE = 10240

In CellView, you have an option to select different MTU size for each LEC that you enable. If you select an MTU size 4K or 9K, you will also need to add the MTU size to the load line as mentioned above.

RFC 1577 support

ID1.2 also supports RFC 1577. To enable 1577, first load Ethernet_II frame type and bind it to an IP then add the following parameter to the load line.

IPENABLE=Y

Example:

load 55x5si channel=1 frame=Ethernet_II Name=55x5si_ip IPENABLE=Y bind IP 55x5si_ip addr=xxx.xxx.xxx.xxx mask=xxx.xxx.xxx.xxx

After adding the parameter “IPENABLE=Y” to load line, modify the 1577 parameter in CellView.

SONET/SDH Framing Type Options

This feature allows users to configure the synchronous frame interfaces with either SONET (Synchronous Optical Network) or SDH (Synchronous Digital Hierarchy) framing. This can be configured on adapter basis via CellView.

Non-zero VPIs Support

This feature allows users to configure a VPI to be used by all services on a specific adapter other than the default VPI of zero. This can be done via Cellview.

Support up to 4K VCs

4K VCs per adapter are now supported. Drivers and interfaces are enhanced to recognize new server level adapters that can support 4K VCs and allows user to configure/enable this new extended range.

Dynamical Configuration of LEC/LES/LECS Support

This feature allows users to enable or disable LEC, LES and LECS via Cellview without rebooting the machine.

Support of 16 LANE Clients and Servers

This feature increases our current client LANE clients and servers to 16. Benefits include reduced routing for a mixed environment with Ethernet, Token Ring and FDDI.

Enhanced LEC Support

This feature allows users to configure LECs as Enhanced VCs via Cellview which means that VCs will not be released if LANE services are lost.

ILMI Autoconfiguration Support

This feature allows signalling to query the switch MIB and “negotiate” parameter setup. Users are able to configure a specific UNI version via UNI parameter through load line to allow the interface to autoconfigure the UNI version.

ILMI Service Registry for primary LECS

This feature allows the LEC to query the switch’s Service Registry MIB for a list of LECS addresses as well as Cisco SSRP support by LEC. This will simplify Network Management.

SMP Support

The driver is now fully multi-processor (MP) safe.

Notes for Cellview

- ID1.2 supplies 3 NLM utilities to enable new capabilities. The CellView NLM allows configuration of the adapter and displays statistics. A companion NLM, cvconf, allows automatic re-configuration of the board from system boot. A third NLM, cvinit, will initialize the configuration file.

- After using CellView NLM to change or configure the adapter, the line “load cvconf” should be added to autoexec.ncf (after the load asig line and before the load cellview line) for automatic configuration. This NLM reads the configuration files built by CellView and issues board configuration commands. This is an alternate method from using command line parameters. The benefit of this NLM will let users eliminate typing too many parameters on the load line.

- Resetting CellView parameters. In case of configuration file corruption or other problems, the command “load cvinit -d” will reset all configuration files to their proper defaults.

Notes for Multi-Board Installation

- If your machine is installed with multiple boards, the slot number must be specified in a load line when you load a driver to any of those boards. Example:

  If you are installing 2 boards located in slots 2 and 3, set up your autoexec.ncf file and add the following lines.

  load <driver> CHANNEL=number ELAN=name FRAME=type NAME=name SLOT=2

load <driver> CHANNEL=number ELAN=name FRAME=type NAME=name SLOT=3

o If you don't know the slot numbers available for the machine, following is an easy way to detect:

- Run server without autoexec.ncf file: c:\nwserver> server -na
- After server is up, try to load ATM driver: load 55x5si
- Then the system will tell you the slot number available: e.g. Supported Slot values are 2, 3

o If you load two drivers on two different adapters, the order of the slot numbers is not so important. However, if you load only one driver for one of the adapters for some reason, you have to specify the first available slot number for loading.

o As ID1.2 Redundant Link Support, you can configure one of the boards as a backup board, by adding a key word BACKUP in the load line. Example:

If you want configure 2 boards located in slots 2 and 3 as one to be a primary board and another to be a backup board, set up your autoexec.ncf file and add the following lines.

load <driver> CHANNEL=number ELAN=name FRAME=type NAME=name SLOT=2 BACKUP=3

load <driver> CHANNEL=number ELAN=name FRAME=type NAME=name SLOT=3

NOTE 1: You should take the last slot number on the system supported slot value list (SLOT 3 for the above example) as a backup board.

NOTE 2: DO NOT use BIND command with backup board (SLOT=3 for the above example).

Other Notes

o At least 24 MB of memory in your system is recommended.

o For Token-Ring support, add the following line to your STARTUP.NCF file. SET MAXIMUM PHYSICAL RECEIVE PACKET SIZE = 5120

o Information pertaining to pre-integrated driver usage is still applicable.

o Newer ETHERTSM.NLM and MSM.NLM files may be required. These may be obtained from the Novell Web site. www.novell.com

Netware 3.12 Installation Notes

o This driver is identical to the Netware 4.1 driver with the exception that it has specific module dependencies for NLMs (Netware Loadable Modules). Novell has provided for backward compatibility. ETHERTSM.NLM and MSM31X.NLM on the installation media are provided for this migration.

o On Netware 3.12, the driver must be installed manually. To do a manual installation copy all of the files from the installation media to the server directory.

copy a:*.* c:\server.312

copy a:\nw312*.* c:\server.312

o Edit the autoexec.ncf file to contain these lines. There is a minor difference between the Token-Ring driver.

For the ethernet (55x5si or 5525si) driver add the following lines:

load c:\server.312\ethertsm

load c:\server.312\55x5si or 5525si OPTIONAL PARAMETERS

<bind commands go here>

load c:\server.312\ASIG.NLM

For the Token-Ring (55x5si or 5525si) driver add the following lines:

load c:\server.312\MSM31X.NLM

load c:\server.312\55x5tsi or 5525tsi OPTIONAL PARAMETERS

<bind commands go here>

load c:\server.312\ASIG.NLM

Note: It is not necessary to have the ethertsm load line (loadc:\server.312\ethertsm) added for the Token-Ring driver.

If you have already installed the 55x5si or 5525si driver and want to add Token-Ring support, do the following:

a. Unload the 55x5si or 5525si (whichever is installed) driver.

b. Comment out the ethernet load line (load c:\server.312\ethertsm)

c. Change the name 55x5si to 55x5tsi or 5525si to 5525tsi as shown above in the load lines.

IMPORTANT NOTE: The Token-Ring and Ethernet drivers cannot be loaded simultaneously. You must install only one driver not both.

o Refer to the 55x5 Users Guide for the OPTIONAL PARAMETERS keyword usage. These parameters allow configuration of variables such as LECS addresses, ELAN names, etc. Netware 3.12 restricts command lines to 100 ASCII characters. This restricts usage of the OPTIONAL PARAMETERS, and a solution is under investigation.

Optional Parameter	Maximum bytes	Description
LECS_NP	13	Lane Emulation Configuration Server Network Prefix
LECS_ESI	7	Lane Emulation Configuration Server ESI/SEL
LES_NP	13	Lane Emulation Server Network Prefix
LES_ESI	7	Lane Emulation Server ESI/SEL
ELAN		This is the network name of the emulated LAN.
UNI		UNI Version - use “31” to enable UNI 3.1

Outstanding Issues

This release has the following known issues. These issues are active and in progress.

1. If you unload the ASIG.NLM and then load ASIG.NLM again without first downing the Netware server the clients may not come up.

2. In the case of multiple boards installation, if slot number is specified improperly, then the drivers will not work correctly.

3. When use INSTALL module to load multiple ELAN with multiple boards, only one instance of the drivers you loaded will be copied to the AUTOEXEC.NCF file, although multiple drivers can be loaded successfully. If this is the case, modify the AUTOEXEC.NCF as you like. Using INETCFG module is an alternate way to load multiple ELAN with multiple boards.

4. When use INSTALL module to load Token-Ring driver, it will happen to bind both IPX and IP protocol to one driver. You need modify the AUTOEXEC.NCF file, either comma out one protocol binding or load another driver.

5. A page fault abend has been experienced on SMP machines running ethernet LAN emulation under high stress situations. This abend has been traced to a transmit buffer list corruption problem in ethertsm.nlm. Interphase engineering is still working with Novell engineering on a solution.

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