

Solaris Driver Installation

Addendum to 5515/5525/5575 PCI ATM Adapter Users Guide

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Solaris Driver Installation

Overview

This addendum explains how to install the driver for up to eight PCI ATM adapters in an endstation running Solaris[®] version 2.5 or later. During installation of the driver, up to four LECs and one RFC-1577 client can be initialized per adapter.

The driver supports the following features:

- LAN Emulation clients (SVC)
 - Ethernet[®]
 - Token Ring
- LAN Emulation services (LES, BUS and LECS)
 - Ethernet
 - Token Ring
- IP-ATM (RFC-1577) client (SVC)
- IP-ATM (RFC-1577) server
- PVC option for each client based on RFC-1483



Caution

Your ATM switch must be capable of supporting the UNI 3.0/3.1 signalling standard for SVCs. Some switch vendors allow the mixing of the two standards. Some vendors require that all ports be set to either UNI 3.0 or UNI 3.1. Check your switch documentation for the proper settings. The default setting for the PCI ATM adapter is UNI 3.0.

If any *Read Me First* documentation is in your installation kit, review it before installing the driver. It contains any changes and updates to this users guide since the printing date. Also, check for a **readme** file in the appropriate directory on the installation CD-ROM. There are two directories for Solaris,

x86_solaris for Intel x86 machines, and
sparc_solaris for the Sun UltraSPARC.

Driver Requirements

The endstation must meet the following minimum requirements:

- Intel® x86 or Pentium® system with PCI bus, or an UltraSPARC™ system with PCI bus
- Solaris operating system version 2.5 or later
- System memory:
 - 16 MB minimum
 - up to 24 MB with multiple clients and servers enabled
- CD-ROM drive
- A hard disk with free space consisting of:
 - 5MB in the **/root** partition
 - 1MB in the **/usr** partition
- Superuser login
- IP address, broadcast address, net mask, and **ifconfig** options for each client being initialized

Installing the Driver

The driver can be installed prior to installing the adapter(s). Where feasible, however, it is recommended the adapter(s) be installed first.

To install the PCI ATM driver for Solaris, do the following:

1. Log in as **root**.
2. Check the available disk space by entering:
3. If needed, check for an existing installation of the driver by entering:

```
df -k
```

```
pkginfo
```

If **INPHatm**, **INPHia**, **INPHipatm**, or **INPHpa** is in the list of installed packages, remove it as explained in *Removing a Driver* on page 8.

4. Insert the CD-ROM in the local drive and run the installation script by entering

```
pkgadd -d /cdrom/cdrom0/<path> INPHatm
```

where

```
<path> = x86_solaris
```

```
<path> = sparc_solaris
```

for Intel x86 and UltraSPARC machines, respectively.

The installation may take several minutes to complete. Figure 1 on page 4 shows a sample of the output to the screen during a typical driver installation.

```
Processing package instance <INPHatm from
</sw/atm/drivers/solaris/RELEASE/SX00321-C00>
5515/5525 Integrated driver
(sparc) SX00321-C00
Interphase Corporation
Using </opt> as the package base directory.
Enter maximum number of Adapters to configure (1-8) [2]:
Enter number of LE Clients for Adapter 0 to configure (0-4) [4]:
Enter hostname for interface li0 [engr-atm0]:
Enter hostname for interface li1 [engr-atm1]:
Enter hostname for interface li2 [engr-atm2]:
Enter hostname for interface li3 [engr-atm3]:
Enter number of IP-ATM Clients for Adapter 0 to configure (0-1) [0]:
Enter number of LE Clients for Adapter 1 to configure (0-4) [3]:
Enter hostname for interface li4 [engr-atm4]:
Enter hostname for interface li5 [engr-atm5]:
Enter hostname for interface li6 [engr-atm6]:
Enter number of IP-ATM Clients for Adapter 1 to configure (0-1) [0]:
Don't forget to add the following host names to the hosts database:
    engr-atm0
    engr-atm1
    engr-atm2
    engr-atm3
    engr-atm4
    engr-atm5
    engr-atm6
Don't forget to update your netmasks database with the
correct information for the 7 VLAN(s).
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
This package contains scripts which will be executed with super-user permission
during the process of installing this package.
Do you want to continue with the installation of this package [y,n,?] y
```

Figure 1. Sample INPHatm Installation

5. Answer the prompts as follows:

a. Enter number of adapters.

This is the quantity of PCI ATM adapters installed in the endstation. A maximum of eight (8) adapters are allowed per endstation. Press **Enter** if you want to accept the default of one (1) adapter, or enter the actual quantity (**1 – 8**).

b. Enter number of LECs for Adapter<x>.

This is the quantity of LECs you want to initialize for Adapter<x>. A maximum of four (4) LECs are allowed per adapter. An option to enter a zero (0) is provided in case you **do not** want any LECs on the adapter and intend to initialize a 1577 client in a later step. Press **Enter** to accept the default of one (1) LEC, or enter the actual quantity (**0 – 4**).

c. Enter hostname for interface li<n>.

This is the hostname for the IP interface **li<n>**, where <n> ranges from 0 – 31 and represents the IP interface number of the LEC. Clients are mapped to the IP interface with the formula:

$$IP\ interface = (adapter\ number * 4) + client\ number$$

For example,

li0 = adapter 0, LEC 0

li1 = adapter 0, LEC 1

li2 = adapter 0, LEC 2

li3 = adapter 0, LEC 3

li4 = adapter 1, LEC 0

li5 = adapter 1, LEC 1

...

li31 = adapter 7, LEC 3

d. Enter number of IP-ATM Clients for Adapter<x>.

You can initialize only one RFC-1577 client per adapter. Press **Enter** to accept zero (disable) or enter **1** to initialize the IP-ATM client.

- e. If the IP-ATM client is initialized in the previous step, a prompt appears for entering the hostname for interface li<n>, where <n> is the adapter number + 32. For example, the IP interface number for the 1577 client on Adapter 0 is 32, Adapter 1 is 33, and so forth.
- f. If installing more than one adapter, repeat step **b** through step **e** until all adapters are processed.
- g. For the final prompt, respond with **y** if you want to continue, or respond with **n** to abort the installation.

The remainder of actions on the screen are advisory notes only.

- 6. When installation of the driver is complete, remove the CD-ROM from the local drive.

Continue the installation with the procedures in the next section.

Configuring the Adapter

With the driver installed as described in the previous section, do the following:

- 1. If the adapter(s) are not installed, halt the machine and install the adapters. See Chapter 2, *Hardware Installation*, in the *5515/5525/75 PCI ATM Users Guide* for instructions.
- 2. Configure the adapter(s) to the network with the CellView utility by entering:

cellview

See Chapter 5, *CellView Utility*, of the 5515/5525/5575 *PCI ATM Users Guide* for instructions to enable and configure the LANE clients and services, and the IP-ATM client and server to the network

3. When complete, reboot the machine with the command:

```
shutdown -y -i6 -g0
```

The installation of the driver is complete.

**Caution**

All configuration data is stored in the file */etc/atm/cvconf* for which an on-line man page is available. You are strongly encouraged to use the CellView utility to modify the parameters instead of editing them manually. If the parameters get out of sync, the driver may not work properly.

If for some reason the CellView utility will not run on your system, there are command-line utilities (such as *lec*, *les*, and *lecs*) which can modify the software currently running. However, these commands do not change the permanent settings in the *cvconf* file. The effects of these commands are lost when the machine is turned off or restarted. Whatever the case, do not mix the running of command-line and CellView utilities. Use one method consistently or unpredictable results may occur.

Removing a Driver

To remove a driver from the endstation, do the following:

1. Log in as root.
2. To remove **INPHatm** for example, enter the command:
`pkgrm INPHatm`
3. Answer the prompts or press **Enter** to accept each default as shown in Figure 2 on page 9.
4. Reboot the machine by typing:
`shutdown -y -g0 -i6`

```
The following package is currently installed:
INPHatm      5515/5525 Integrated ATM Driver
              (sparc) SX00321-C00

Do you want to remove this package [y,n,?,q] y
## Removing installed package instance <INPHatm>

This package contains scripts which will be executed
with super-user permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
Device busy
Cannot unload module: ia
Will be unloaded upon reboot.
Device busy
Cannot unload module: li
Will be unloaded upon reboot.
Usage: /usr/sbin/unlink name

## Removing pathnames in class <sed>
Modifying /etc/path_to_inst
Modifying /etc/devlink.tab
## Removing pathnames in class <none>
/usr/share/man/man7/li.7
/usr/share/man/man7/ia.7
/usr/share/man/man1m/sigstat.1m

:
:
/bin/cvconf
/bin/cellview
/Xlphase
## Updating system information.
Removal of <INPHatm> was successful.
```

Figure 2. Sample of Driver Removal

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