



C I S C O S Y S T E M S

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# Cisco ATM SBus Adapter Release Note for Release 1.1

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These release notes describe the features, modifications, and caveats for the Cisco ATM SBus adapter Release software 1.1.

## Documentation

The *Cisco ATM SBus Adapter User Guide* is available in printed form and in electronic form on UniverCD.

## Important Notes

This section describes warnings and cautions about using the Cisco ATM SBus adapter software Release 1.1.

## Solaris and SunOS Systems

Before you implement and use the Cisco ATM SBus adapter on a Solaris or SunOS system, consider the following information:

- This software has been tested with Solaris 2.3, Solaris with mandatory patch level 1, and Solaris 2.4. Make sure to apply any mandatory patches to your operating system. On a Solaris system, to display installed patches, enter the **showrev -p** command.
- Currently, only one Cisco ATM SBus adapter per host is supported.
- The Cisco ATM SBus adapter does not support early versions of the SPARCstation 10-model 40 with bus speeds less than 20MHz. These workstations will exhibit cell loss (reported as CRC errors) under some heavily-loaded conditions.
- The Cisco ATM SBus adapter utility does not save permanent ARP table entries. To save permanent ARP table entries, modify the `catmlancfg.db` file.
- When you use Cisco ATM SBus adapter utility to initialize and then delete a VLAN without starting it, the Cisco ATM SBus adapter driver does not recognize that the VLAN existed. A “no such interface” error message appears. This error message can be ignored.

- If you use the window manager menu (accessed by clicking on the icon at the top left corner of the window) instead of the OK or Close options to exit windows that are periodically updated, the Cisco ATM SBus Adapter utility will exit with a segmentation fault. This fault is recorded and stored in a core dump files.
- When you select menu options in the Cisco ATM SBus Adapter utility, the windows displayed are inactive until subwindows are closed.
- The Cisco ATM SBus Adapter Utility can be accessed from a remote system by setting the DISPLAY environment variable appropriately, just like for any other X application. You cannot access the Cisco ATM SBus Adapter utility remotely using Telnet.
- The default MTU size is 9180. In Solaris, if the MTU size for a VLAN is changed using atmstat or the catmlancfg utility, the MTU size must be set explicitly to the new value in the IP layer using the **ifconfig** command:

```
ifconfig <interface_name> mtu <mtu_size>
```

In SunOS, the MTU size cannot be changed.

- The Cisco ATM SBus adapter utility does not function as expected if the Numlock function on the keyboard has been activated.
- Some tables shown in the Cisco ATM SBus adapter utility are wider than the normal screen width. You can view the right portion of the table by scrolling to the right. Data in these tables is updated after a preset interval. When data is updated, the screen is returned to the left portion of the table. To ease this inconvenience, set the refresh interval to a longer period of time, so that the right side of the screen is visible for a longer period.
- The Timer value for the ARP table (shown in the Cisco ATM SBus adapter utility) is in minutes.
- Performance on the SPARCstation 5 is relatively poor.
- As of this release date, this release has not been tested on a SPARCserver 2000. Contact Cisco's Technical Assistance Center for details on the status of the supportability of this release on a SPARCserver 2000.
- You can set the physical transmission mode to SDH or SONET by modifying the catmlancfg.db file. The transmission mode can be specified after the line "BEGIN\_LINK" and before the definition of VLANs.

The syntax is as follows:

**SONET\_FRAMING\_TYPE: STS-3c|SDH**

The following example shows how to set the transmission mode to SONET (STS-3c):

```
BEGIN_LINK_GLOBAL
SONET_FRAMING_TYPE: STS-3c
END_LINK_GLOBALS
```

## SunOS Systems Only

Before you implement and use the Cisco ATM SBus adapter on a SunOS system, consider the following information:

- The Cisco ATM SBus adapter software release 1.1 for SunOS might not be included in this package. If the diskettes for this release have not been included in this package, contact Cisco's Technical Assistance Center for current information about the availability of this release.

- Cisco ATM SBus adapter software release 1.1 has been tested with SunOS 4.1.3, patched level U1.
- The Cisco ATM SBus adapter driver for SunOS cannot be unloaded. However, you can remove the driver using the `/etc/uninstall_Catm` command.
- In SunOS, the IP layer supports packet sizes of up to 32K only. If you attempt to transmit or receive packets greater than this size, an error is reported.

## ILMI Registration on the Switch

If you are using the adapter with a switch that does not support ILMI registration, you must set up manual ILMI registration on the switch. For example, the LightStream 100, Release 2.5 or lower does not support ILMI registration. To set up manual registration of the routes on the switch, use the **route add** command. For example, to add the route for an end station with IP address 99.1.1.145, connected to port 12, issue the following command:

```
route add 390000000000000000000000000000006301019100 nsap 12 5 0 0
```

where the values are as follows:

- 39000000000000000000000000000000 is the net prefix specified in the `/etc/catmilmi.db` file
- 63010191 is the end station identifier (ESI) address (the IP address in hexadecimal)
- 00 is the selector
- nsap is the type
- 12 is the primary line number
- 5 is the secondary line number
- 0 is the first tunneling VPI number
- 0 is the secondary tunneling VPI number

### Troubleshooting the Adapter Installation and Configuration

For the adapter to function properly, it must be installed and set up correctly for your configuration. This section contains steps to follow for troubleshooting your configuration. It also contains sample files for specific configurations.

Use the following guidelines for setting up or troubleshooting your configuration:

- Step 1** Make sure that the system memory is at least 32 MB.
- Step 2** Make sure that the operating system has the most current patches installed for Solaris 2.3/2.4 or SunOS 4.1.3/4.1.4.
- Step 3** Make sure the adapter is installed properly in the correct SBus slot.
- Step 4** Make sure the green LED light on the adapter is on.
- Step 5** Make sure the LED on the switch port to which the adapter is connected is steady green.
- Step 6** If the adapter software was previously installed, did you remove it using the `pkgrm` (Solaris only)?
- Step 7** Was the software successfully installed using the `pkgadd` command (Solaris) or the `extract_unbundled` command (SunOS).
- Step 8** Make sure all files were installed. Refer to the “Cisco ATM SBus Adapter Software Files” section for a list of installed files.
- Step 9** Make sure the `/etc/catmlancfg.db` file is configured for each workstation.
- Step 10** Make sure the adapter driver is installed properly (`/dev/catm,prtconf`).
- Step 11** Make sure the IP addresses are set up properly (`/etc/hosts`).
- Step 12** Make sure the netmasks file is set up properly (`/etc/netmasks`).
- Step 13** If the switch does not support ILMI functions, make sure the correct netprefix exists on SunOS workstations.
- Step 14** Make sure the netprefix is set up for the switch.
- Step 15** Make sure the `catmsig` and `catmilmid` files exist in the `/etc/rc2.d/S69catm` file (Solaris) or the `/etc/catmstartup` file (SunOS).
- Step 16** Execute the `ping` command after the systems are booted.
- Step 17** Make sure that the configuration is correct. Refer to Table 1 for configuration specifications for your particular configuration.

**Table 1 Configuration Matrix**

Configuration	/etc/catmlancfg.db	/etc/system	/bin/catmilmid	/bin/catmsig	Switch
PVC back to back No switch	Set configuration the same for both ARP client and ARP server.	Configure the file for the appropriate operating system. Refer to the “Setting Systems for Connecting Adapters Back to Back (SunOS)” section or the “Setting Systems for Connecting Adapters Back to Back (Solaris)” section, as appropriate.	Kill process	Kill process	—
PVC Switch no signalling (UNI 3.0) no ILMI	Set configuration the same for both ARP client and ARP server.	Configure the file for the appropriate operating system. Refer to the “Setting Systems for Connecting Adapters Back to Back (SunOS)” section or the “Setting Systems for Connecting Adapters Back to Back (Solaris)” section, as appropriate.	Kill process	Kill process	Set PVC
PVC Switch signalling (UNI 3.0) no ILMI	Configure for either ARP client or ARP server.	—	Normal boot	Normal boot	Set PVC
PVC Switch signalling (UNI 3.0) ILMI	Configure for either ARP client or ARP server.	—	Normal boot	Normal boot	Set PVC
SVC signalling (UNI 3.0) no ILMI	Configure for either ARP client or ARP server.	—	Set switch prefix in /etc/catmilmi.db.	Normal boot	Add route using <b>route add</b> command.
SVC signalling ILMI	Configure for either ARP client or ARP server.	—	—	Normal boot	Automatic

### Setting Systems for Connecting Adapters Back to Back (SunOS)

For SunOS systems, to connect adapters back to back, install the patch for the Cisco ATM SBus adapter driver binary as follows:

```
# cd /sys/catm
# adb -w zz.o
zipc_svc?W 0 (0 to turn SVC off; 1 to turn SVC on)
^D
# reboot
```

### Setting Systems for Connecting Adapters Back to Back (Solaris)

For Solaris systems, to connect adapters back to back, add the following line to the `/etc/system` file:

```
set catm:zipc_svc = 0 (0 to turn signalling off)
```

### Modifying the `catmlancfg.db` File

You configure the `catmlancfg.db` file depending on the type of configuration, as follows:

- PVC Connection to ARP Server (Client)
- PVC Connection to ARP Server (Server)
- ATM Client Without ARP Server (All Systems)
- SVC Connection to an ARP Server (Client)
- SVC Connection to an ARP Server (Server)

Refer to the appropriate section for guidelines on configuring the `catmlancfg.db` file.

#### PVC Connection to ARP Server (Client)

To set a PVC connection to a PVC ARP server, modify the `catmlancfg.db` file on the client as follows:

```
BEGIN_LINK 0

BEGIN_VLAN 0
  PROTOCOL : IPATM
  MYIPADDR : qaclient-ip0 (Client host name in /etc/hosts file)
  IPARPSERVER_CONNECT_METHOD : PVC
  IPARPSERVER_CONNECT : VPI=0, VCI=100 (PVC connection using VPI/VCI)
END_VLAN

END_LINK
```

### PVC Connection to ARP Server (Server)

To set a PVC connection to a PVC ARP server, you must modify the catmlancfg.db file on the server as follows:

```
BEGIN_LINK 0

  BEGIN_VLAN 0
    PROTOCOL : IPATM
    MYIPADDR : qaserver-ip0 (Server host name in /etc/hosts file)
    IPARPSERVER_CONNECT_METHOD : LOCAL
    IPATM_ADD : IPADDR = qaclient-ip0, VPI = 0, VCI = 100 (PVC—Provide client IP, VPI, and VCI)
  END_VLAN

END_LINK
```

### ATM Client Without ARP Server (All Systems)

To set up an ATM client without an ARP server, modify the catmlancfg file on all systems as follows:

```
BEGIN_LINK 0

  BEGIN_VLAN 0
    PROTOCOL : IPATM
    MYIPADDR : qaclient-ip0 (Client host name in /etc/hosts file)
    IPARPSERVER_CONNECT_METHOD : NONE (No ARP server)
    IPATM_ADD : IPADDR = qatarget-ip0, ATMADDR=qatarget-atm0 C (SVC-Destination IP and ATM)
    IPATM_ADD : IPADDR = qatarget-ip0, VPI=0, VCI=100 (PVC - Destination IP, VPI and VCI)
    IPATM_ADD: < 1 line for each target system>
  END_VLAN

END_LINK
```

### SVC Connection to an ARP Server (Client)

To set an SVC connection with an ARP server configuration, modify the catmlancfg.db on the client as follows:

```
BEGIN_LINK 0

  BEGIN_VLAN 0
    PROTOCOL : IPATM
    MYIPADDR : qaclient-ip0 (Client host name in /etc/hosts file)
    IPARPSERVER_CONNECT_METHOD : SVC
    IPARPSERVER_CONNECT ATMADDR: qaserver-atm0 (Server host name in /etc/atms file)
  END_VLAN

END_LINK
```

### SVC Connection to an ARP Server (Server)

To set an SVC connection with an ARP server configuration, modify the `catmlancfg.db` file on the server as follows:

```
BEGIN_LINK 0

  BEGIN_VLAN 0
    PROTOCOL : IPATM
    MYIPADDR : qaserver-ip0 (Server host name entry in /etc/hosts file)
    IPARPSERVER_CONNECT_METHOD : LOCAL
  END_VLAN

END_LINK
```

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**Note** If the switch does not support the ILMI function, you must provide the switch prefix in the `/etc/catmilmi.db` file. Refer to the “Sample `/etc/catmilmi.db` File” section for more information.

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### Sample `/etc/atms` File

The `/etc/atms` file contains the ATM addresses for clients and servers. An ATM address is 20 bytes in length and is constructed using the following values:

- 13 bytes of the switch prefix
- 2 bytes of trailing zeros
- 4 bytes hexadecimal equivalent to the IP address
- 1 byte of zeros

The following is a sample from the `/etc/atms` file showing ATM addresses for various clients:

```
#
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:63:01:01:01:00   qaclient-atm0
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:62:01:01:01:00   qaclient-atm1
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:61:01:01:01:00   qaclient-atm2
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:60:01:01:01:00   qaclient-atm3
#
```

The following is a sample from the `/etc/atms` file showing ATM addresses for various servers:

```
#
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:63:01:01:02:00   qaserver-atm0
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:62:01:01:02:00   qaserver-atm1
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:61:01:01:02:00   qaserver-atm2
39:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:60:01:01:02:00   qaserver-atm3
#
```



## Sample /etc/catmilmi.db File

The /etc/catmilmi.db file contains the network prefix (the first 13 bytes of the ATM address). The following is a sample from the /etc/catmilmi.db file showing the network prefix (NET\_PREFIX):

```
#
BEGIN_LINK 0

NET_PREFIX : 39:00:00:00:00:00:00:00:00:00:00:00:00

END_LINK
#
```

## Sample /etc/hosts File

The /etc/hosts file contains IP addresses of clients. The following is a sample from the /etc/hosts file showing IP addresses for clients:

```
#
100.1.1.150   qaclient      # Ethernet connection (le0)
99.1.1.1     qaclient-ip0  # ATM connection (VLAN 0)
98.1.1.1     qaclient-ipl  # ATM connection (VLAN 1)
97.1.1.1     qaclient-ip2  # ATM connection (VLAN 2)
96.1.1.1     qaclient-ip3  # ATM connection (VLAN 3)
#
```

## Adding the Cisco ATM SBus Adapter Software

To add the Cisco ATM SBus adapter software, enter the following command:

```
root@SYS1% add_drv -i 'ZATMSBUS' catm
```

## Removing the Cisco ATM SBus Adapter Software

To remove the Cisco ATM SBus adapter software, enter the following command:

```
root@SYS1% rem_drv catm
```

## Network Installation for SunOS

The procedure for installing the Cisco ATM SBus adapter software for SunOS in the Cisco ATM SBus Adapter User Guide is for local installation. The following procedure is for network installation:

**Step 1** Issue the following command to create and extract files into the directory called "+install":

```
root@SYS1% cd tmp
root@SYS1% bar xvfbpZ /dev/rfd0c 18
```

When prompted, remove the inserted diskette and insert the next one. The +install directory can then be exported and mounted on the client system.

**Step 2** On the client system, enter the following commands:

```
root@SYS1% cd +install
root@SYS1% ./setup
```

The superscript is executed, as follows:

```
x +install/copyright.d, x bytes, x tape blocks, 1
x +install/Atmstat, x bytes, x tape blocks, 1
x +install/atmgui.dat, x bytes, x tape blocks, 1
x +install/atms.4, x bytes, x tape blocks, 1
x +install/atmstat, x bytes, x tape blocks, 1
x +install/catm.o, x bytes, x tape blocks, 2
x +install/catmilmi.db.sample, x bytes, x tape blocks, 2
x +install/catmilmid, x bytes, x tape blocks, 2
x +install/catmilmid.1, x bytes, x tape blocks, 3
x +install/catmlancfg, x bytes, x tape blocks, 3
x +install/catmlancfg.1, x bytes, x tape blocks, 3
x +install/catmlancfg.db.sample, x bytes, x tape blocks, 3
x +install/catmmib, x bytes, x tape blocks, 3
x +install/catmsig, x bytes, x tape blocks, 3
x +install/catmsig.1, x bytes, x tape blocks, 3
x +install/catmstartup, x bytes, x tape blocks, 3
x +install/copyright.d, x bytes, x tape blocks, 3
x +install/install_unbundled, x bytes, x tape blocks, 3
/usr/etc/extract_unbundled : Begin Install Script Execution
Installing /etc/catmstartup...
Installing /sys/catm/catm.o...
Installing /bin/catmilmid...
Installing /bin/catmlancfg...
Installing /bin/catmsig...
Installing /bin/atmstat...
Installing /etc/atmgui...
Installing /etc/Atmstat...
Installing /etc/catmilmi.db.sample
Installing /etc/catmmib.txt...
Installing /usr/man/man1/catmilmid.1...
Installing /usr/man/man1/catmsig.1...
Installing /usr/man/man4/atms.4...
```

NOTE:  
original /etc/rc.local will be moved to /etc/rc.local.<Date>  
execute /etc/uninstall\_Catm to restore this copy

Installation of Catm is complete.

```
*****
Now edit /etc/catmlancfg.db to reflect your VLAN Configuration
and make sure that /etc/atms and /etc/hosts files have been
updated appropriately before Rebooting the System
*****
root@SYS1%
```

**Step 3** Edit the system network configuration files and ATM adapter configuration files as described in the “Configure the Adapter” section of the *Cisco ATM SBus Adapter User Guide*.

**Step 4** Reboot the system log using the /usr/etc/reboot command.

## Cisco ATM SBus Adapter Software Files

Following is a list of files contained in the Cisco ATM SBus adapter software:

- /bin/atmstat
- /bin/catmilmid
- /bin/catmlancfg
- /bin/catmsig
- /etc/Atmstat
- /etc/atmgui.dat
- /etc/catmilmi.db.sample
- /etc/catmlancfg.db.sample
- /etc/catmmib.txt
- /etc/rc.local (SunOS Only - Modified by install script)
- /etc/rc2.d/S69catm (Solaris Only)
- /etc/catmstartup (SunOS Only)
- /sys/catm/catm.o (SunOS Only)
- /kernel/drv/catm (Solaris Only)
- /usr/man/man1/catmilmid.1
- /usr/man/man1/catmlancfg.1
- /usr/man/man1/catmsig.1
- /usr/man/man4/atms.4

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This document is to be used in conjunction with the *Cisco ATM SBus Adapter User Guide* publication.

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