

# Installing the Cisco ATM SBus Adapter Software

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After you have installed the Cisco ATM SBus adapter, you must install the adapter software. In addition, you need to modify the network configuration files and reboot the system. The installation instructions in this section serve as a guide to complete the installation process.

You should be familiar with the UNIX operating system and a UNIX text editor. Also, you should know the system's superuser login password.

## Installation Overview

Before installing the Cisco ATM SBus adapter software, make sure that the SPARCstation, SPARCserver, or compatible system meets the following requirements:

- Cisco ATM SBus adapter installed
- Operating system. One of the following operating systems can be used:
  - Solaris 2.3 or higher
  - Sun OS 4.1.3 or higher
- 3.5-inch floppy disk drive (on system or accessible through the network)
- 32 MB RAM (minimum)

## Log In with Superuser Access

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To install the Cisco ATM software, perform the following steps:

- Log In with Superuser Access
- Install the Software Package
- Configure the Adapter. This requires modifying the following files:
  - /etc/hosts file
  - /etc/netmasks database file
  - /etc/catmlancfg.db adapter configuration file (This file can be modified using the ATM SBus adapter utility. See the “Using the ATM SBus Adapter Utility” chapter.)
  - /etc/catmilmi.db adapter configuration file (This file can be modified using the ATM SBus adapter utility. See the “Using the ATM SBus Adapter Utility” chapter.)

Refer to the following subsections for detailed explanations of these steps.

## Log In with Superuser Access

You need to log in to the UNIX system as superuser. Ask your system administrator if you do not know your superuser login and password.

## Install the Software Package

This section explains the steps necessary to install the Cisco ATM SBus adapter software package onto a system running either Solaris or SunOS operating systems. Refer to the appropriate subsection for instructions.

If you are unsure of the version number of the workstation operating system, type the following at the command line:

```
root@SYS1% uname -rs
```

The version of the currently running operating system is returned.

## Solaris Installation Procedure

The software installation procedure is automated to support installation and deinstallation of the Cisco ATM SBus adapter software files using the UNIX package add utility (pkgadd). The two distribution diskettes contain a complete set of installation files. Make sure at least one workstation on the network has a floppy disk drive. You can install the software from a local system or you can perform the installation over the network. The network installation involves spooling the contents of the diskettes to a directory located on the server for subsequent mounting and installation from all clients.

### Local Installation

To install the software directly onto the workstation, make sure the workstation has a floppy disk drive, then perform the following steps:

**Step 1** Before invoking the pkgadd command, make sure that the vold daemon is not running on the workstation that has the floppy disk drive. To determine if the vold daemon is running and to obtain its process ID, enter the following command:

```
root@sys1% ps | grep vold
```

**Step 2** If the vold daemon is running, log in as the superuser and terminate the process by entering the following command

```
root@sys1% kill <vold pid>
```

The “vold” process can be restarted after the pkgadd process is finished.

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**Note** Use the command without command options. For example, the **kill -9** command does not work for this procedure.

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**Step 3** Insert the floppy diskette designated disk 1 into the floppy drive.

**Step 4** Issue the **package add** command, providing the name of the floppy disk drive. The installation files are copied to the system’s /etc, /bin, and /kernel directories unless otherwise specified.

```
root@SYS1%pkgadd -d dev/diskette Catm
```

## Install the Software Package

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**Step 5** For each of the floppies, the following message is displayed during the pkgadd command:

```
Type [go] when ready,  
or[e] to eject the diskette,  
or [q] to quit:
```

Insert the first floppy and type **go** to begin installation. After installation of a floppy diskette is complete, type **e** to eject the floppy diskette.

An interactive installation script appears while the adapter software package is being installed, as follows:

```
The following packages are available:  
 1  Catm      Loadable ATM drivers  
      (sparc) 1.1(1)
```

```
Select package(s) you wish to process (or 'all' to process  
all packages). (default: all) [?,??,q]: 1
```

**Step 6** When the package selection prompt appears, enter the number corresponding to the Catm driver software. The interactive installation script begins, as follows:

```
Processing package instance <Catm> from </opt>
```

```
Loadable ATM drivers  
(sparc) 1.1(1)  
Cisco Systems  
Using </opt> as the package base directory.  
## 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
```

**Step 7** When the installation confirmation prompt appears, confirm superuser script execution by typing **y** and pressing the **Return** key. The script continues, as follows:

```
Installing Loadable ATM drivers as <Catm>

## Executing preinstall script.
## Installing part 1 of 2.
/bin/atmstat2.Z
/bin/catmilmid.Z
/bin/catmlancfg.Z
/bin/catmsig.Z
/etc/atmstat.Z
/etc/atmgui.dat.Z
/etc/catmilmi.db.sample.Z
/etc/catmlancfg.db.sample.Z
/etc/catmmib.txt.Z
/etc/rc2.d/S69catm.Z
/kernel/drv/catm.Z
/usr/man/man1/catmilmid.1.Z
/usr/man/man1/catmlancfg.1.Z
/usr/man/man1/catmsig.1.Z
/usr/man/man4/atms.4.Z
## Installing part 2 of 2.
/bin/atmstat1.Z
[ verifying class <none> ]
## Executing postinstall script.
*****

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

*****

Installation of <Catm> was successful.

The following packages are available:
  1  Catm      Loadable ATM drivers
      (sparc) 1.1(1)
```

## Install the Software Package

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**Step 8** When the script is finished, edit the system network configuration files and ATM adapter configuration files as discussed in the “Configure the Adapter” section later in this chapter.

**Step 9** Issue the system shutdown command as follows:

```
root@SYS1% usr/sbin/init -i0
```

**Step 10** Reboot the system.

## Network Installation

The software for the Cisco ATM SBus adapter is contained in a directory called Catm. The Catm directory can be spooled to a specified directory on a network server. This directory is then network file system (NFS) mounted or copied over the network to the client machines where the package is to be installed. The package is then added from the server or from the client workstation. This is useful when the client machine does not have a floppy disk drive.

To install the Cisco ATM SBus adapter software package over the network, perform the following steps:

**Step 1** Before invoking the **pkgadd** command on the server, make sure that the vold daemon is not running. To determine if the vold daemon is running and to obtain its process ID, enter the following command:

```
root@sys1% ps | grep vold
```

**Step 2** If the vold daemon is running, log in as superuser and terminate the process by entering the following command

```
root@sys1% kill <vold pid>
```

The vold process can be restarted after the pkgadd process is finished.

**Step 3** Insert the floppy designated disk 1 into the floppy drive at the server.

**Step 4** Spool the package to a server directory. Execute the following command:

```
root@SYS1%pkgadd -s server_dir -d /dev/diskette Catm
```

- Step 5** Insert the first floppy and type **go** to begin installation. After installation of a floppy diskette is complete, type **e** to eject the floppy diskette. For each of the floppies, the following message is displayed during the pkgadd command:

```
Type [go] when ready,  
or[e] to eject the diskette,  
or [q] to quit:
```

- Step 6** Locally from each client workstation that contains a Cisco ATM SBus adapter, install the Catm package by entering the following commands:

```
root@SYS1% mount -F nfs server_name:server_dir mount_dir  
root@SYS1% pkgadd -d mount_dir Catm
```

An interactive installation script appears while the adapter software package is being installed, as follows:

```
The following packages are available:
```

```
 1 Catm      Loadable ATM drivers  
             (sparc) 1.1(1)
```

```
Select package(s) you wish to process (or 'all' to process  
all packages). (default: all) [?,??,q]: 1
```

- Step 7** When the package selection prompt appears, enter the number corresponding to the Catm driver software. The interactive installation script begins, as follows:

```
Processing package instance <Catm> from </opt>
```

```
Loadable ATM drivers  
(sparc) 1.1(1)  
Cisco Systems  
Using </opt> as the package base directory.  
## 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.
```

## Install the Software Package

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```
Do you want to continue with the installation of this package [y,n,?]
y
```

- Step 8** When the installation confirmation prompt appears, confirm superuser script execution by typing **y** and pressing the **Return** key. The script continues, as follows:

```
Installing Loadable ATM drivers as <Catm>
```

```
## Executing preinstall script.
## Installing part 1 of 2.
/bin/atmstat2.Z
/bin/catmilmi.Z
/bin/catmlancfg.Z
/bin/catmsig.Z
/bin/catmstat.Z
/etc/ZincApp.Z
/etc/atmgui.dat.Z
/etc/catmilmi.db.sample.Z
/etc/catmlancfg.db.sample.Z
/etc/catmmib.txt.Z
/etc/rc2.d/S69catm.Z
/kernel/drv/catm.Z
/usr/man/man1/catmilmi.1.Z
/usr/man/man1/catmlancfg.1.Z
/usr/man/man1/catmsig.1.Z
/usr/man/man4/atms.4.Z
## Installing part 2 of 2.
/bin/atmstat1.Z
[ verifying class <none> ]
## Executing postinstall script.
*****
```

```
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
```

```
*****
```

```
Installation of <Catm> was successful.
```

```
The following packages are available:
 1 Catm      Loadable ATM drivers
              (sparc) 1.1(1.2)
```



**Step 9** Edit the system network configuration files and ATM adapter configuration files as discussed in the “Configure the Adapter” section later in this chapter.

**Step 10** When the script is finished, issue the system shutdown command, as follows:

```
root@SYS1% usr/sbin/init -i0
```

**Step 11** Repeat Step 6 through Step 10 for each Cisco ATM SBus adapter client workstation.

## SunOS Installation Procedure

The Cisco ATM SBus adapter software is in floppy diskette media. You install the software on the system from the local floppy drive using the SunOS `extract_unbundled` utility. To properly initiate the utility, perform the following steps:

The following command examples use `SYS1` as the hostname.

**Step 1** Issue the following command:

```
root@SYS1# extract_unbundled -DEFAULT
```

**Step 2** The utility prompts for a device name. Provide the floppy\_name by typing **fd0c**, as follows:

```
Enter Device Name (e.g. rst0, rmt0, rfd0c) : /dev/rfd0c
```

**Step 3** The utility prompts for a floppy disk. Insert the SunOS installation disk labeled “Disk 1” into the floppy disk drive and press **Return**.

After the floppy is read, the following interactive installation script appears:

```
This package contains scripts which will be executed with superuser  
permission during the process of installing this package.  
Do you want to continue with the installation [y|n]? y
```

## Install the Software Package

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- Step 4** When the installation confirmation prompt appears, confirm superuser script execution by typing **y** and pressing the **Return** key. The superscript begins, as follows:

```
/usr/etc/extract_unbundled : Extracting Installation Scripts
x +install/copyright.d, x bytes, x tape blocks, 1
x +install/ZincApp, 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
bar: Insert volume 2 and press Return when ready.
```

- Step 5** When prompted for a second floppy disk, insert the SunOS installation disk labeled “Disk 2” into the floppy disk drive and press the **Return** key. The script continues, as follows:

```
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
bar: Insert volume 3 and press Return when ready.
```

- Step 6** When prompted for a third floppy disk, insert the SunOS installation disk labeled “Disk 3” into the floppy disk drive and press the **Return** key. The script continues, as follows:

```
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/ZincApp...
```

```
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 7** Edit the system network configuration files and ATM adapter configuration files as discussed in the “Configure the Adapter” section.
- Step 8** Reboot the system log using the /usr/etc/reboot command.

## Configure the Adapter

After you have installed the Cisco ATM SBus adapter software, you need to modify certain configuration files to configure the adapter. Perform the following steps:

- Step 1** Modify the /etc/hosts file. For each virtual LAN interface, add the host name to IP mapping. When the workstation is rebooted, the mapping will take effect for each virtual LAN interface.

```
root@SYS1%vi /etc/hosts
```

- Step 2** Modify the etc/netmask database file. Be sure to update the information to reflect the correct netmask value for each VLAN’s IP address:

```
root@SYS1%vi /etc/netmasks
```

## Configure the Adapter

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**Step 3** The configuration database can be set up and modified in two ways:

- Edit the `catmlancfg.db` configuration files as follows:

```
root@SYS1%vi /etc/catmlancfg.db
```

Refer to Appendix B for the detailed configuration file syntax. This approach is a common practice for UNIX system administrators and gives the most direct control of configuration parameters.

- Use the ATM SBus Adapter utility (`atmstat`) to modify the configuration. This approach is more convenient for those not accustomed to working with configuration file syntax.

**Step 4** If the switch attached to this adapter supports ILMI registration, proceed to Step 5. If the switch attached to this adapter does not support ILMI registration, you must modify the `/etc/catmilmi.db` configuration database file. This file is used for configuring the network prefix to register or deregister ATM addresses with the switch.

Modify the file as follows:

```
root@SYS1%vi /etc/catmilmi.db
```

If not obtained from the network, the network prefix will be obtained from this static configuration file. The format is as follows:

```
BEGIN_LINK link_number
NET_PREFIX: 39:00:00:00:00:00:00:00:00:00:00:00
END_LINK
```

For manual registration, make sure that the 20-byte ATM addresses entered at the switch (one for each VLAN) consist of the following:

- 13 bytes of prefix that matches the prefix in `catmilmi.db`.
- 7 bytes of end station address in the form: `00:00: IP ADDR:00`, where the IP ADDR is the four-byte IP address for that VLAN in hex format.

**Step 5** Make sure that the `PATH` environment variable includes `/etc`.

**Step 6** Reboot the system as follows:

```
root@SYS1%reboot
```

After the system is rebooted and the Cisco ATM SBus adapter drivers are loaded, the following messages are displayed for a system with a Cisco ATM SBus adapter with a fiber interface:

```
Cisco : Version 1.1(1)
ATM: Driver For OC3-MultiModeFiber Successfully Initialized
```

After the system is rebooted and the Cisco ATM drivers are loaded, the following messages are displayed for a system with a Cisco ATM SBus adapter with a copper interface:

```
Cisco : Version 1.1(1)
ATM: Driver For OC3-UTP5 Successfully Initialized
```

If the drivers do not load successfully, an error message is displayed instead of these messages.

## What to Do Next

Run the ATM SBus Adapter utility from the /bin directory by entering the **atmstat** command from the UNIX prompt to change the adapter's physical transmission mode, if necessary, and to configure virtual LAN(s). By default, the adapter is set to the U.S. standard SONET physical transmission mode. This utility facilitates setting the adapter to the European standard SDH mode or to SONET mode. Refer to the "Using the ATM SBus Adapter Utility" chapter for details.

### Moving the Adapter to a New Slot

When a package is added to the workstation, a reference to the SBus slot where the adapter resides is stored in the `etc/path_to_inst` file for future use by the operating system. If the adapter is moved to a different SBus slot after the package has already been added, use a text editor, for example `vi`, to update the `etc/path_to_inst` file. The following steps apply to a Solaris workstation:

**Step 1** Remove all references to the ATM driver:

```
root@SYS1%vi /etc/path_to_inst
```

**Step 2** Remove the reference to this slot from the kernel by rebooting the system:

```
root@SYS1%init 0  
ok boot -r
```

The workstation should now be able to recognize the adapter's new slot.

### Setting User Access to the ATM SBus Adapter Utility

The ATM SBus Adapter utility is shipped with open user permissions allowing any user logged into the host to use it. The ATM SBus Adapter utility allows the user to create or delete VLANs, set the IP address for a VLAN, and to set VLAN operating parameters. If the network administrator wants to restrict access to this powerful utility, the access permissions must be changed to the appropriate level for the local network environment