# Install the System Software

This chapter describes the procedures for manually installing Cisco VCO/4K system software.

**Note** If you are installing system software in a redundant system, it is recommended that you use the Live Upgrade procedure described in Chapter 2, "Perform a Live Upgrade to a New System Software Release." Using Live Upgrade eliminates the need to power down your system, thereby preserving call flow. If you are installing system software in a non-redundant system, you must use the installation procedures described in this chapter.

# Install Release 5.x(x) System Software

**Caution** If you deviate from these detailed installation instructions, data may become lost. Read all the material in this section before you install the software. If you encounter any problems during the installation, contact Cisco Systems Technical Response Center (TAC).

To perform an upgrade of the system and/or optional software, you must take both redundant and non-redundant systems off-line for a brief period.

**Note** To upgrade current system software to version 5.2, version 4.2 FSR00 or greater is required. If you are currently running a system software version less than V4.2, you must perform a two-stage upgrade: upgrade from V3.3.xx to V4.2, then from V4.2 to V5.2. A database conversion is required for each upgrade. Refer to *Generic V4.2 Release Notes* to upgrade to V4.2. Contact TAC if you are running a version of the system software prior to V3.3.3.

## Overview of the Installation Procedure

Redundant systems require software installation on both sides, and since the optional software varies from customer to customer, there will very likely be a slightly different path for each upgrade. If you follow the instructions sequentially and perform the tasks as they apply to your system, you will be assured of a successful installation.

You must perform a database conversion when you install system software version 5.2, regardless of the software version from which your current database originated. The conversion utility is designed to determine what is required, and to perform the appropriate conversions. If conversions are not required, the system takes no action.

## Determine File Sizes

Variations in existing installations may occur, therefore, you may have difficulty converting from your current database to V5.2. To determine if this is the case, you need to know the size of several of your files. Complete the following steps to display the file sizes in your current database directory.

Step 1    Go to Maintenance > Disk Utilities > Show Directory.

Step 2    At the `What Directory?` prompt, type `c:/dbase`, and then press **Enter**.

The file sizes in your system should match the file sizes in A:/DBASE on system software diskette 2 for your current release version. If the size of any of the files does not match, contact TAC immediately. Failure to have technical support evaluate the file size inconsistency may result in problems when you convert your current database to the V5.2 format.

## What You Need

You need the following software, hardware, and firmware to perform the installation.

### Software

- System software version 4.2.0.24 or higher.
- Multiple diskettes
  - Six (6) system software diskettes are labeled "Generic". The system software diskettes are labeled from 1 to 6, indicating the sequence in which the diskettes must be loaded when you install the system software.
  - The remaining diskettes contain Ethernet, MIB, Telerouter, and ISDN optional software.

### Hardware

- AAC card Rev COUR (or later) is required for C-bus operation
- 68030 16MB CPU (or Combined Controller with 68030 16MB)

  Note    CPUs labeled CPU (with no underline) are 8-MB/25-MHz CPUs and need to be replaced with 16-MB/33-MHz CPUs at this time. CPUs labeled <u>CPU</u> (underlined) do not need replacement.

### Firmware

- NBC-3 Card Boot V1.02 or V1.03

**Other**

For redundant systems, be sure you can connect a system console to both system controllers. Depending on your equipment's arrangement, you can:

- Set up a separate system console for each controller (A- and B-side).
- Use an A/B transfer switch wired to both system controller CPU-TM front panels to switch access.
- Physically remove and reconnect the system console cable from one CPU-TM front panel to the other.

# Install the Software

The following section provides instructions for installing system software Version 5.2. Installation procedures for optional software follow the system software installation.

## Database Backup

Complete the following steps to backup your database before you begin the installation process.

**Step 1**    Insert a blank diskette into the disk drive.

**Step 2**    Access the Disk Utilities Menu and press **E**.

A copy of the switch's active side database is now placed onto the diskette in the disk drive.

**Step 3**    Wait for the backup to complete, then press **A**.

The Disk Directory screen is displayed.

**Step 4**    Type **a:/**.

**Step 5**    Verify that the diskette's database file sizes match the file sizes on system software diskette 2, and verify that all .tbl files were copied.

**Step 6**    Remove the diskette and label it appropriately.

**Step 7**    For redundant systems, change the standby side to active and repeat Step 1 to Step 6 for the new active side of the VCO/4K.

You have completed the database backup. Continue with the installation instructions.

On Disk 1, the Incremental Install Basic System Software option installs the system software and downloads files onto the hard disk. This selection does not format the hard drive.

**Note**    The MIB software is installed on the host computer. Refer to the "Install the MIB Software" section on page 1-14.

## Install the System Software

After you confirm the hardware and firmware V5.2 requirements, as described in the current *Cisco VCO/4K System Software Version 5.n(n) Release Notes*, install the new system software on your system.

**Note**    Replace any firmware that needs updating before installing the software.

**Note**    If you are performing an original installation, ensure that the power is removed from the switch before you begin.

**Step 1**    Select the AAC to the A-side.

**Step 2**    Insert Disk 1 into the floppy diskette drive (A-side if this is a non-redundant system, B-side if you are returning to this procedure to install software for the B-side).

**Step 3**    Connect or switch the administration console to the A-side CPU-TM, or go to the A-side system console.

**Step 4**    If you are performing an original installation, apply power to the A-side. If you are not performing an original installation, reboot the switch.

After the system performs diagnostic tests, one of two Installation Utilities menus is displayed:

- Users of system software version 5.1(2) and lower, refer to Figure 1-1.

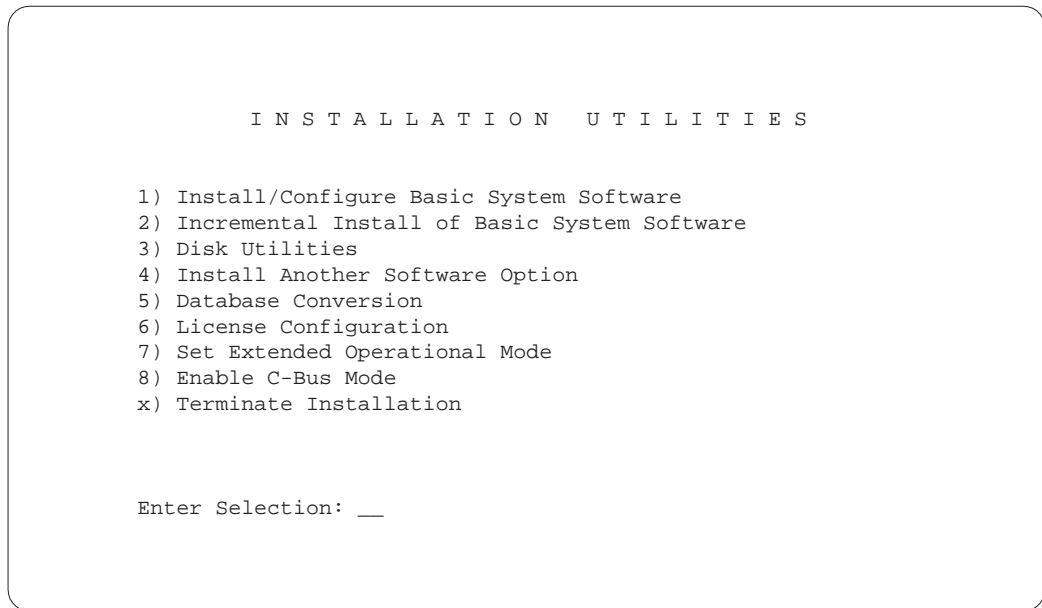- Users of system software version 5.1(3) and higher, refer to Figure 1-2.

The cursor is located in the Enter Selection data entry field.

*Figure 1-1    Installation Utilities Menu—V5.1(2) and Lower*

```
              I N S T A L L A T I O N    U T I L I T I E S


        1) Install/Configure Basic System Software
        2) Incremental Install of Basic System Software
        3) Disk Utilities
        4) Install Another Software Option
        5) Database Conversion
        6) License Configuration
        7) Set Extended Operational Mode
        8) Enable C-Bus Mode
        x) Terminate Installation



        Enter Selection: __
```

*Figure 1-2    Installation Utilities Menu—V5.1(3) and Higher*

```
                I N S T A L L A T I O N    U T I L I T I E S


        1) Install/Configure Basic System Software
        2) Incremental Install of Basic System Software
        3) Disk Utilities
        4) Install Optional Software Package
        5) Database Conversion
        6) License Configuration
        7) Set Extended Operational Mode
        8) Enable C-Bus Mode
        x) Terminate Installation




        Enter Selection: __
```

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**Step 5**    Type **2** (Incremental Install of Basic System Software) and then press **Return**.

The following message is displayed:

```
Do You Wish To Back-Up The System Data Base? (Y/N) =N?_
```

**Step 6**    Press **Return** (this defaults to N).

> ✎
>
> **Note**    The system does not back up the database at this time. Make certain that the
> database was backed up previously.

The following message is displayed:

```
Insert disk 2 of Installation Set

Press return to continue
```

**Step 7**    Remove the current diskette from the drive, insert Disk 2, and then press **Return**.

The system copies the files from Disk 2 to the C: drive in the /BOOT, /DBASE, /LOG and /TRACE
directories. When all the files from Disk 2 are copied, the following message is displayed:

```
Insert disk 3 of Installation Set

Press return to continue
```

**Step 8**    Remove the current diskette from the drive, insert Disk 3, and then press **Return**.

The system copies the files from Disk 3 onto the C: drive.

This pattern, of the system copying from the diskette and then prompting for the next, continues until all
diskettes have been loaded and copied onto the system. Continue to remove and insert the installation
diskettes when prompted to do so.

When the installation is complete, the Installation Utilities menu is displayed again. (See Figure 1-2.)

**Step 9**    If no optional software is to be installed, perform a database conversion now. (Refer to the "Perform a
Database Conversion" section on page 1-7 for instructions.) If optional software is to be installed,
proceed to Step 10.

✎

**Note**    Users of system software version 5.1(3) and higher, proceed to Step 11; to install optional software products which are included on two diskettes. Users of system software version 5.1(2) and lower, proceed to Step 10 to install optional software products each of which are contained on separate diskettes.

**Step 10**    Optional software needs to be installed every time you update the system software to ensure NVRAM update. For options such as TeleRouter, ISDN-NFAS, or Ethernet, type **4** (Install Another Software Option, and then press **Return**.

The following message is displayed:

```
Insert Another Install Disk
Press Return To Continue
```

When you install a software option (such as TeleRouter, etc.) on a system, the installation process makes changes to the non-volatile RAM (NVRAM) on the CPU. These changes make operation of software options specific to the CPU on which you installed the options. For this reason:

- Software options must be installed on both system controllers in a redundant system.
- Optional software must be installed every time you update the system software to ensure NVRAM update.
- Software options must be reinstalled if the CPU is replaced.

    Due to the reliability of the CPU, failures requiring replacement are rare occurrences.

Instructions for installing Ethernet for the Host and SNMP communications—for users of system software version 5.1(2) and lower—are contained in the "Install Ethernet for Host and SNMP Communication" section on page 1-7.

**Step 11**    Insert the first optional software package diskette.

The following message is displayed:

```
Do You Wish To Back-Up The System Data Base? (Y/N) =N?_
```

**Step 12**    Press **Return**. (This defaults to N).

The following message is displayed:

```
Copying download Files....
```

**Step 13**    Insert the second optional software package diskette.

The following message is displayed:

```
Do You Wish To Back-Up The System Data Base? (Y/N) =N?_
```

**Step 14**    Press **Return**. (This defaults to N).

The following message is displayed, followed by the Installation Utilities menu.

```
Copying download Files....
```

The optional software package installation is complete. Perform a database conversion now; refer to the "Perform a Database Conversion" section on page 1-7 for instructions.

# Perform a Database Conversion

> **Note** A DB CONVERT ERROR message may be generated when you perform an incremental install and then perform a database conversion.

> To upgrade current system software to V5.2, system software V4.2 FSR00 or greater is required. If you are currently running V3.3.05 or V3.3.06, you must perform a two-stage upgrade: upgrade from V3.3.xx to V4.2.00, then from V4.2.00 to V5.2. A database conversion is required for each upgrade. Refer to the *Generic V4.2 Release Notes* for possible upgrade restrictions.

Performing a database conversion is required. To perform a database conversion, complete the following steps.

**Step 1** Select option **5** from the Installation Utilities menu.

The conversion takes a few seconds. The following message is displayed on the screen:

```
Data base path for conversion: C:/dbase/
```

If the database does not need to be converted, that is, it had previously been converted, no other messages are displayed. However, if you do convert the database, several other messages may be displayed. For example:

```
Converting the System Configuration table ...
```

**Step 2** If finished with the installation, press **X** (Terminate Installation).

**Step 3** Proceed to "Install the Software on the B-Side" section on page 1-12.

The CPU reboots and installs the new software.

# Install Ethernet for Host and SNMP Communication

> **Note** Users of system software version 5.1(3) and higher, do not use the information and instructions in the remaining parts of this section. Access the System Configuration Menu screen and access the Ethernet/NFS/SNMP Configuration screen to configure Ethernet, NFS, and SNMP communication, if you installed an updated CPU. When the Ethernet/NFS/SNMP configuration is complete, reboot the CPU from the AAC.

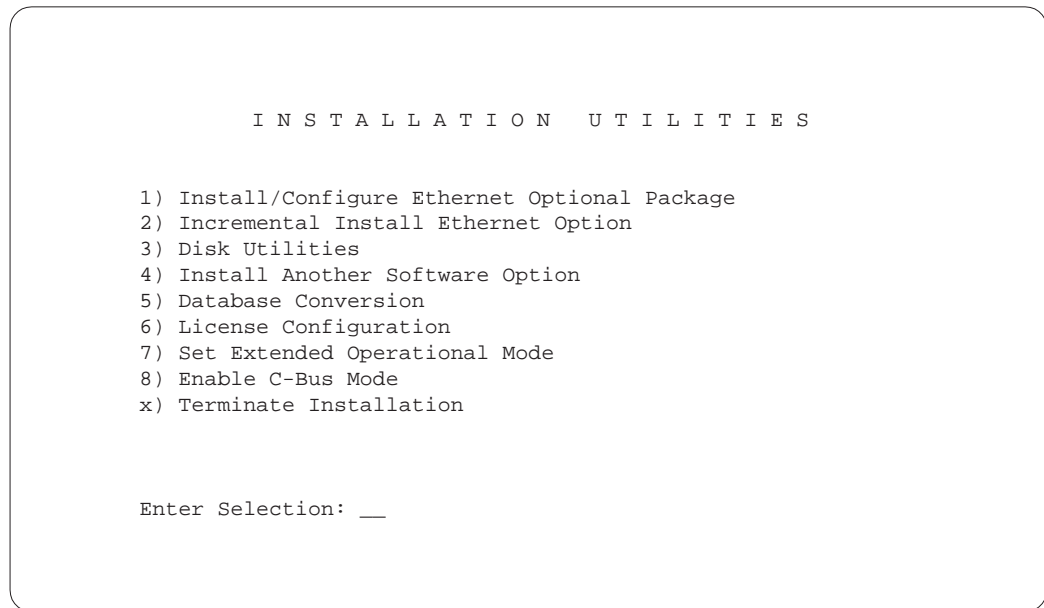> When complete, refer to "Install the Software on the B-Side" section on page 1-12.

To install and configure the Ethernet optional software, follow these steps.

**Step 1**    Insert the Ethernet software diskette and press **Return**.

After the system loads the Ethernet files from the diskette, the Ethernet Installation Utilities menu is displayed. (See Figure 1-3.)

The cursor is located in the Enter Selection data entry field.

*Figure 1-3    Ethernet Installation Utilities Menu*

```
              I N S T A L L A T I O N     U T I L I T I E S


      1) Install/Configure Ethernet Optional Package
      2) Incremental Install Ethernet Option
      3) Disk Utilities
      4) Install Another Software Option
      5) Database Conversion
      6) License Configuration
      7) Set Extended Operational Mode
      8) Enable C-Bus Mode
      x) Terminate Installation



      Enter Selection: __
```

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**Step 2**    To install and configure the Ethernet software, type **1** (Install/Configure Ethernet Optional Package) and then press **Return**.

The following message is displayed:

```
        Do You Wish To Back-Up The System Data Base? (Y/N) =N?_
```

**Step 3**    Press **Return** (this defaults to N).

You will not be backing up the database at this time.

The Ethernet Configuration menu is displayed. (See Figure 1-4.)

*Figure 1-4    Ethernet Configuration Menu*

```
              E T H E R N E T    C O N F I G U R A T I O N


        1) Install Ethernet Options
        2) Edit Ethernet Parameters
        3) Edit SNMP Management Station Parameters
        4) Edit NFS Parameters
        5) Edit Gateway Routing Table Parameters
        6) Exit Ethernet Configuration



        Enter Selection: __
```

## Install Ethernet Options

**Step 1**    Type **1** and press **Return**.

The following message is displayed:

```
Copy A:/BOOT/ETHERMGR.EXE
1 file(s) copied
Ethernet Option Enabled
```

**Note**    If you do not need to edit Ethernet parameters (system Ethernet address and/or subnet mask), SNMP management station parameters, NFS parameters, or gateway routing parameters, type **6** and press **Enter** to exit the Ethernet installation. Otherwise, continue with the next section.
If you installed an updated CPU as part of this upgrade, you must edit Ethernet/NFS/SNMP parameters.

## Edit Ethernet Parameters

**Step 1**    To edit Ethernet parameters, type **2** (Edit Ethernet Parameters) and then press **Return**.

The following message is displayed:

```
System Internet Address = 107.3.254.98?
```

> **Note** The Ethernet and Internet address numbers that you see in the screen messages in this section are only examples. In your system these numbers are replaced by numbers that represent your system addresses.

**Step 2** Set the Internet address of this system and then press **Return**.

The following message is displayed:

```
Set System Internet Address To 107.3.254.98 (Y/N) =Y?
```

**Step 3** If you change the address, you are prompted to confirm your new address. Type **Y** to confirm your selections.

The following confirmation message is displayed:

```
System Internet Address Configured
```

**Step 4** Set the system subnet mask, or press **Return** to accept the displayed value.

After you complete this step, you can connect a remote console to your system via Telnet.

a. If you *are not* going to manage this system with SNMP, go to the "Edit NFS Parameters" section on page 1-11.

b. If you *are* going to manage this system with SNMP, continue with the next section.

## Edit SNMP Management Station Parameters

**Step 1** Type **3** and press **Return** to set the SNMP management station Internet address.

The following message is displayed:

```
SNMP Management Internet Address = 0.0.0.0?
```

**Step 2** Set the Internet address to the address of the system that you are using as the NMS (Network Management System), and then press **Return**.

The following message is displayed:

```
Set SNMP Management Internet Station Address To 189.7.107.44 (Y/N) =Y?
```

**Step 3** Type **Y** to confirm your selections.

The following confirmation message is displayed:

```
SNMP Management Station Internet Address Configured
```

After you complete this step, the system reports SNMP trap messages to the NMS that you selected.

a. If you *are not* going to boot your system over the network, go to the "Exit Ethernet Configuration" section on page 1-12.

b. If you *are* going to boot your system over the network, continue with the next section.

## Edit NFS Parameters

**Step 1**    Type **4** to set the Network File System (NFS) server parameters.

The following selections appear one at a time. Enter the information for your system. Type **Y** and press **Return** after each selection.

```
Enable NFS Access (Y/N) =Y?

NFS Server Internet Address = 000.0.000.000?

NFS Server Name =xxx?

NFS Mount Directory Point #?

Target System Name =

Target System User Id =

Target System Group Id =

Target System Umask =

Update NFS Configuration With Above Data (Y/N) =Y?
```

**Step 2**    After you update the NFS configuration with the new data, the following message is displayed:

```
NFS Configuration Updated
```

You can now save the log files and database to a remote location.

## Edit Gateway Routing Table Parameters

**Step 1**    Type **5** to set Gateway Routing Table parameters.

The following selections appear. Enter the information for your system.

```
Route No. 1
    Destination Subnet Address =0.0.0.0?
    Gateway System Internet Address =0.0.0.0?
Route No. 2
    Destination Subnet Address =0.0.0.0?
    Gateway System Internet Address =0.0.0.0?
Route No. 3
    Destination Subnet Address =0.0.0.0?
    Gateway System Internet Address =0.0.0.0?
Route No. 4
    Destination Subnet Address =0.0.0.0?
    Gateway System Internet Address =0.0.0.0?
Update Gateway Routing Table Configuration With Above Data (Y/N) =Y?_
```

**Step 2**    Type **Y** to update the gateway routing table configuration with the data changes.

If you type **N** at the final prompt, the following message is displayed, and the Ethernet Configuration screen is displayed:

```
Gateway Routing Table Configuration Aborted
```

**Note** The Destination Subnet Address refers to the destination subnet address field in the Gateway Routing Configuration screen. The Gateway System Internet Address refers to the gateway IP address field in the Gateway Routing Configuration screen.

When finished, type **Y** and press **Return**.

### Exit Ethernet Configuration

Step 1    Type **6** (Exit Ethernet Configuration) to exit, and then press **Return**.

The Installation Utilities screen is displayed. (See Figure 1-3.)

Step 2    Remove the Ethernet diskette from drive A.

Step 3    If additional optional software is to be installed, type **4** (Install Another Software Option).

## Install the Software on the B-Side

If you have a redundant system, repeat all the steps in the "Install the Software" section on page 1-3.

If you do not have a redundant system, proceed to the "Install the MIB Software" section on page 1-14.

### Verify File Synchronization

For redundant systems, after you have installed the software on both sides and rebooted the system, you must verify that file synchronization has occurred. Check the messages at the bottom of the screen until you see:

```
ACT FILE SYNC COMPLETED
```

**Note** This message may be replaced by subsequent messages before it can be seen. Check the active and standby log files to confirm completion.

When file synchronization has been verified, the installation of system software for users employing standard operational mode is complete. Return the AAC select switch to the auto position. Proceed to the "SNMP" section on page 1-13 to install the MIB software.

Users employing extended operational mode must proceed to Set Extended Operational Mode to complete the installation procedure.

## Set Extended Operational Mode

Perform the following steps to set the switch for extended mode.

⚠️
**Caution**   The system does not allow the operational mode to be set back to standard once it has been set to extended.

The mode is stored in one of the database files. If you must return to standard mode during testing, do so by reverting to the saved database files which were copied before you set the extended mode.

**Step 1**   Back up the database(s).

⚠️
**Warning**   **A backed up standard mode database is required to return to standard mode, if needed.**

**Step 2**   Remove traffic from the switch.

**Step 3**   Insert and boot Install Disk 1.

**Step 4**   Press **7** (Set Extended Operational Mode) from within the Installation Utilities screen.

**Step 5**   At the `Setting the Operational Mode To Extended Mode. Are you sure (Y/N) =N?` prompt, type **Y**. If unsure, type **N**.

**Step 6**   Bring up the switch.

**Step 7**   Verify that Extended Operational Mode is set: Go to the System Features screen and view the `Extended Operational Mode Set` field. If set for extended operation, this field should display **Y**.

📝
**Note**   Be sure to change both sides in a redundant system.

Extended operational mode is set, proceed to "SNMP" section on page 1-13 to install the MIB software.

## SNMP

If you use SNMP (Simple Network Management Protocol) to manage your switch, install the MIB software on your network management system. Otherwise, you are finished with the installation process.

📝
**Note**   You must use the current MIB file shipped with the V5.2 software release as MIB files are not backward compatible.

Cisco Systems provides snmptalk on the MIB disk but does not support the application. It runs on the SUN operating system only.

## Install the MIB Software

The following MIB software files are contained on the MIB - Supplemental diskette:

- vco.mib
- etc.ini
- mib.rt
- snmptalk

Complete the following steps to move the MIB software to a network management system:

**Step 1** Place the MIB - Supplemental Disk in the floppy drive of the Host computer.

Note that snmptalk is a SunOS executable file and is usable only on SunOS computers. The three other files can be used on a non-SunOS platform.

**Step 2** Create a directory in which the MIB files are to reside. Define the location and name of the directory.

**Step 3** Move the files from the disk into the new directory created in Step 2.

> **Note** All four files must reside in the same directory, if using a SUN workstation.

## Set up snmptalk

Once you invoke the snmptalk program, you need to enter the following setup information so it can communicate with your system. Prior to doing the setup, you need to know the Internet Protocol (IP) address of your system.

Table 1-1 shows the snmptalk setup commands.

*Table 1-1    snmptalk Setup Commands*

| Command | Meaning |
|---------|---------|
| v 1 | Use to select the SNMP Version 1 mode |
| write-comm public | Use to set write community to "public" |
| dest *nnn.nnn.nnn.nnn* | Use to enter the IP address of the VCO (where *nnn.nnn.nnn.nnn* is the IP address) |
| ? | Use to provide a list of the commands available |
| get sysUpTime.0 | Example of get command |
| tset sysLocation.0 string here | Example of set command |
| quit | Use to exit program |

> **Note** This program cannot handle white space or quotes: You must enter commands without spaces. This is a limitation of the basic test program.

The vco.mib file is the ASN.1 notation MIB for the V5.2 system. This file can be compiled by a SNMP Network Management Station and used to provide the management station with information on the VCO MIB structure. The information in this file is also listed in the *Cisco VCO/4K Management Information Base (MIB) Reference Guide*.

## Public Access

The community names for read and write access must be set to `public` for an NMS to properly access the Cisco Systems Enterprise MIB.