Bulk Statistics Collector for B-STDX/STDX User's Guide Addendum

Ascend Communications, Inc.

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About This Addendum

Overview

This addendum describes changes that need to be made to the *Bulk Statistics Collector for B-STDX/STDX User's Guide (80032, Revision 01)*.

The *Bulk Statistics Collector for B-STDX/STDX User's Guide* contains all of the procedures you need to successfully install, upgrade, and use the Bulk Statistics Collector for B-STDX/STDX application.

What You Need to Know

As a reader of this guide, you should be familiar with basic UNIX operating-system commands. You should possess a working knowledge of relational database software if you plan to use SYBASE to store the statistical data that the Bulk Statistics Collector for B-STDX/STDX produces.

Customer Comments

Customer comments are welcome! Please fill out the Customer Comment Form located at the back of this guide and return it to us.

How To Use This Addendum

Table 1 describes the contents of this addendum.

Table 1. Addendum Contents

Read	To Learn About
Chapter 1	Changes to the following items in the *Bulk Statistics Collector for B-STDX/STDX User's Guide (80032, Revision 01)*: • Disk space calculation • Frame relay circuit statistics • Immediate translation
Chapter 2	Changes that need to be made to Chapter 2, "Installation," in the *Bulk Statistics Collector for B-STDX/STDX User's Guide (80032, Revision 01)*. Chapter 2 in this addendum replaces Chapter 2 of the *Bulk Statistics Collector for B-STDX/STDX User's Guide.*

Conventions

This guide uses the following conventions to emphasize certain information, such as user input, screen options and output, and menu selections. For example:

Convention	Indicates	Example
`Courier Bold`	User input on a separate line.	**`eject cdrom`**
[*bold italics*]	Variable parameters to enter.	**[*your IP address*]**
`Courier Regular`	Output from a program.	`Please wait...`
Boldface	User input in text.	Type **cd install** and ...
Menu => Option	Select an option from the menu.	CascadeView => Logon
Black border surrounding text	Notes and warnings.	See examples below.
Italics	Book titles, new terms, and emphasized text.	*CascadeView/UX Network Management Station Installation Guide*

Provides helpful suggestions or reference to materials not contained in this manual.

Warns the reader to proceed carefully in order to avoid equipment damage or personal harm.

1

Miscellaneous Changes

Overview

This chapter describes miscellaneous changes that need to be made to the *Bulk Statistics Collector for B-STDX/STDX User's Guide (80032, Revision 01)*. These changes include:

- Disk space calculation changes (page 1-2)
- Frame relay circuit statistics changes (page 1-3)
- Immediate translation changes (page 1-5)

Changes to the Bulk Statistics installation/upgrade process are included in Chapter 2 of this addendum, which replaces Chapter 2 of the *Bulk Statistics Collector for B-STDX/STDX User's Guide (80032, Revision 01)*.

Disk Space Calculation Changes

Page B-2

Formulas 2 and 4 on page B-2 need to be multiplied by N, which is the number of days that the statistics are being archived. The text for formulas 2 and 4 should appear as follows:

Formula 2: r(A) = r(D) * .40 * N

Formula 4: t(A) = t(D) * .40 * N

Page B-4

The statement on page B-4 that “Formulas 1 through 3 indicate the amount of space required for a 24-hour period” should be changed to “Formulas 1 through 4 indicate the amount of space required for a 24-hour period.”

Page B-5

Formulas 2 and 3 need to be multiplied by 24. The text for formulas 2 and 3 should appear as follows:

Formula 2: Translated Data = 24 x (# Circuits x 409) + (# Trunks x 184)

Formula 3: Hexadecimal Delta Calculation = 24 x (# Circuits x 465) + (# Trunks x 255)

Page B-6

Formula 4 needs to be multiplied by 24. The text for formula 4 should appear as follows:

Formula 4: Utilization Calculation Data = 24 x (# Circuits x 145) + (# Trunks x 133)

Delete the note at the bottom of page B-6.

Page B-7

In the “Total Space Required If You are Not Using the Decimal Translator” section of page B-7, replace the formula with the following:

> Total Disk Space = (Raw Statistics) x (1 + number of days it will be archived) + (Translated Data) x (1 + number of days it will be archived) + (Hexadecimal Delta Calculation Data) x (1 + number of days it will be archived) + (Utilization Calculation) x (1 + number of days it will be archived)

In the “Total Space Required If You are Using the Decimal Translator” section of page B-7, replace the formula with the following:

> Total Disk Space = (Raw Statistics) x (1 + number of days it will be archived) + (Translated Data) x (1 + number of days it will be archived) + (Hexadecimal Delta Calculation Data) x (1 + number of days it will be archived) + (Decimal Delta Calculation Data) x (1 + number of days it will be archived) + (Utilization Calculation) x (1 + number of days it will be archived)

Frame Relay Circuit Statistics Changes

Pages 6-6 and 6-7

The file format for *FRCKT_DELT.IP.date* needs to include the new Frame Relay circuit statistics. These new statistics come after cktRtAvgDelay, which used to be the last field in the format. The new fields are:

```
cktInDEFrames,
cktInDEFramesPeak,
cktInODEFrames,
cktInODEFramesPeak,
cktInFECNFrames,
cktInFECNFramesPeak,
cktInBECNFrames,
cktInBECNFramesPeak,
cktOutDEFrames,
cktOutDEFramesPeak,
cktOutODEFrames,
cktOutODEFramesPeak,
<newline>
```

Page 6-13

Table 6-1, which begins on page 6-10, needs to include descriptions for the new Frame Relay circuit statistics. The following rows should appear in Table 6-1 after the variable cktRtAvgDelay, which is at the bottom of page 6-13.

Variable	Description
cktInDEFrames	The number of inbound DE-marked frames since the last reset.
cktInODEFrames	The number of inbound ODE-marked frames since the last reset.
cktInFECNFrames	The number of inbound frames indicating forward congestion since the last reset.
cktInBECNFrames	The number of inbound frames indicating backward congestion since the last reset.
cktOutDEFrames	The number of outbound DE-marked frames since the last reset.
cktOutODEFrames	The number of outbound ODE-marked frames since the last reset.

Page A-9

Table A-4, which lists the column names and the type of data in the FrCktStat Sybase table, needs to include the new Frame Relay circuit statistics. The following rows should appear in Table A-4 after the variable cktRtAvgDelay, which is the last entry on page A-9.

Column Name	Type
cktInDEFrames	numeric(10,0)
cktInDEFramesPeak	numeric(10,0)
cktInODEFrames	numeric(10,0)

Column Name	Type
cktInODEFramesPeak	numeric(10,0)
cktInFECNFrames	numeric(10,0)
cktInFECNFramesPeak	numeric(10,0)
cktInBECNFrames	numeric(10,0)
cktInBECNFramesPeak	numeric(10,0)
cktOutDEFrames	numeric(10,0)
cktOutDEFramesPeak	numeric(10,0)
cktOutODEFrames	numeric(10,0)
cktOutODEFramesPeak	numeric(10,0)

Immediate Translation Changes

Page 4-6

The section entitled “Immediate Translation” on page 4-6 should be changed to read as follows:

> If you select the immediate translation option, the translation process executes once every 15 minutes at 0, 15, 30, and 45 minutes past the hour. The translator appends the new data to the end of the translated files at the end of the 15-minute period. If a file does not exist, the translator creates it. If you delete a translation file during the day, the next execution of the translation process creates a new file that starts with the current period’s data. Immediate translation enables you to freely access the data in the translated files throughout the day.

2

Installation and Upgrade

Before You Begin

☑ Before installing or upgrading the Bulk Statistics Collector for B-STDX/STDX application, you should check the hardware and software configurations described in “Configuration Examples” on page 1-3 of the *Bulk Statistics Collector for B-STDX/STDX User’s Guide.*

Software Included

The Bulk Statistics Collector for B-STDX/STDX media supplies the following software:

- Bulk Statistics Collector for B-STDX/STDX application
- CascadeView tftpserv - the CascadeView/UX tftp daemon

The SYBASE 11 medium is also provided with Bulk Statistics.

Overview of Installation/Upgrade and Configuration

Figure 2-1 depicts the installation/upgrade and configuration process for Bulk Statistics Collector for B-STDX/STDX.

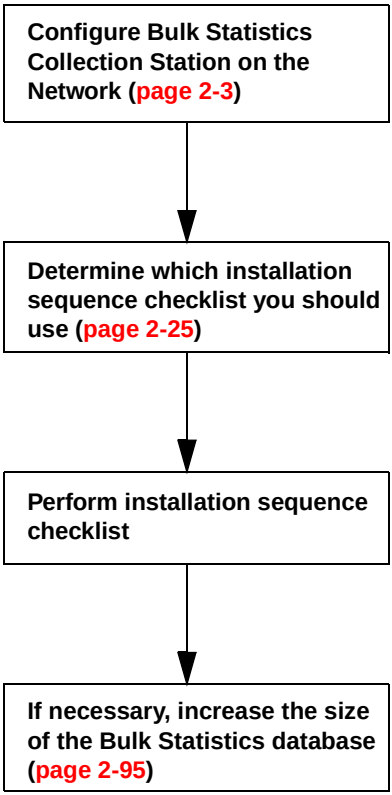

Figure 2-1. Overview of Installation/Upgrade and Configuration Process

Configuring Bulk Statistics Collection Stations on the Network

When to Configure a Bulk Statistics Collection Station

If your Bulk Statistics collection station will be on a workstation other than the NMS, you must configure the collection station to communicate with the switch network. This must be done before you perform the installation sequence checklist.

Configuring Bulk Statistics Collection Station Overview

The procedures you use to configure the collection station depend on how you want to send Bulk Statistics data to the collection station. The following overviews will direct you to the appropriate procedures:

- "Sending Bulk Statistics Data Through a PVC/Management DLCIs"
- "Sending Bulk Statistics Data via SMDS In-band Management Port"
- "Sending Bulk Statistics Data with Default Routing"

Sending Bulk Statistics Data Through a PVC/Management DLCIs

When to Use

Use this method if you plan to run the Bulk Statistics Collector for B-STDX/STDX in a frame relay network that has 20 or more switches and/or more than 4000 PVCs, and your Bulk Statistics collection station is not on the CascadeView/UX NMS workstation. Work with your network consultant if you select this method.

If your Bulk Statistics collection station is on the CascadeView/UX NMS workstation, skip these procedures and go to "Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist" on page 2-25.

Purpose

Sending Bulk Statistics data and traps via PVCs has the following benefits:

- Eliminates the involvement of the switch control processors (CPs), which would otherwise be needed to route the Bulk Statistics data through the network
- Eliminates any Bulk Statistics gateway switch limitations

Steps

Use the following sequence of steps to send Bulk Statistics data through a PVC as regular data:

Step 1. Perform "Creating a PVC with Management DLCIs" on page 2-6.

Step 2. Perform "Disabling the SNMP Trap Mechanism" on page 2-17.

Step 3. Perform "Creating and Saving a Route from the Bulk Statistics Collection Station to the Switch Network" on page 2-22.

Sending Bulk Statistics Data via SMDS In-band Management Port

When to Use

Use this method when the Bulk Statistics collection station is remotely connected to the network via SMDS services, and is not on the CascadeView/UX NMS workstation.

If the collection station is on the CascadeView/UX NMS workstation, skip these procedures and go to "Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist" on page 2-25.

Purpose

By configuring an SMDS logical port to communicate with a Bulk Statistics collection station via SMDS in-band management, the collection station receives Bulk Statistics data from the switches without having to send the data through the CP of the gateway switch.

Steps

Use the following sequence of steps to send Bulk Statistics data via SMDS in-band management:

Step 1. Perform "Defining an SMDS In-Band Management Port" on page 2-11.

Step 2. Perform "Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations" on page 2-15.

Step 3. Perform "Disabling the SNMP Trap Mechanism" on page 2-17.

Step 4. Perform "Creating and Saving a Route from the Bulk Statistics Collection Station to the Switch Network" on page 2-22.

Sending Bulk Statistics Data with Default Routing

When to Use

Use this method if you are *not* using a Management DLCI to transfer Bulk Statistics data, if your Bulk Statistics collection station is *not* remotely connected to the network via SMDS services, and if your Bulk Statistics collection station is *not* on the CascadeView/UX NMS workstation.

If your Bulk Statistics collection station is on the CascadeView/UX NMS workstation, skip these procedures and go to "Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist" on page 2-25.

Steps

Use the following sequence of steps to send Bulk Statistics data via default routing:

Step 1. Perform "Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations" on page 2-15.

Step 2. Perform "Disabling the SNMP Trap Mechanism" on page 2-17.

Step 3. Perform "Creating and Saving a Route from the Bulk Statistics Collection Station to the Switch Network" on page 2-22.

Creating a PVC with Management DLCIs

When to Use This Procedure

See "Sending Bulk Statistics Data Through a PVC/Management DLCIs" on page 2-3.

Description

In this configuration, Bulk Statistics data and traps from a switch are processed as follows:

1. All Bulk Statistics data is sent to a Management DLCI on the switch, and looped back as data to another logical port on the switch.
2. Data is sent over a PVC to a Management DLCI on the Bulk Statistics gateway switch.
3. Data is sent directly from the Management DLCI on the Bulk Statistics gateway switch to a router.
4. The router distributes data to the Bulk Statistics collection station on the local area network.

Bulk Statistics Gateway Switch

You can connect the Bulk Statistics collection station to the network through any switch (including the NMS gateway switch). This switch is called the Bulk Statistics gateway switch in this procedure (see Figure 2-2 and Figure 2-3).

To Create a PVC with Management DLCIs

To create a PVC with Management DLCIs, perform the following steps:

1. Connect the Bulk Statistics collection station to a LAN that is connected to a router (see Figure 2-2 and Figure 2-3).
2. At the Bulk Statistics gateway switch, create a FR-UNI-DCE logical port (refer to the *Network Configuration Guide for B-STDX/STDX*).
3. On the FR-UNI-DCE logical port you created in Step 2, create a Management DLCI (refer to the *Network Configuration Guide for B-STDX/STDX*).
4. Create one NMS path from the Bulk Statistics gateway switch to the Bulk Statistics collection station (refer to "Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations" on page 2-15).

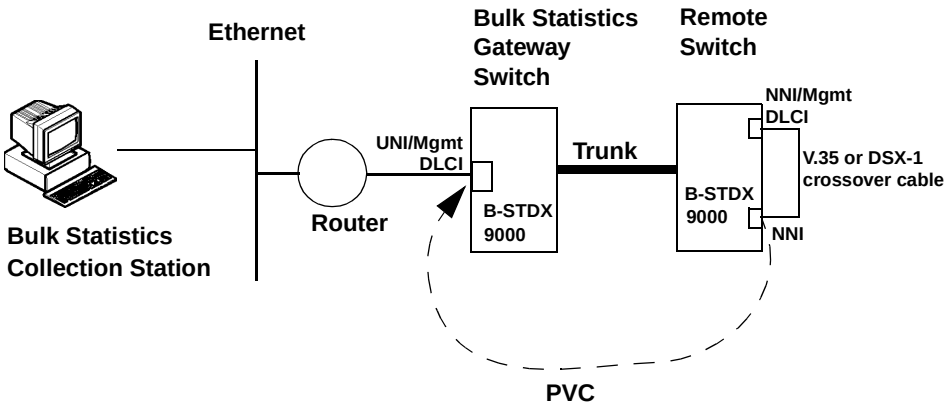

Figure 2-2. Configuration for a Large Network — V.35 or DSX-1

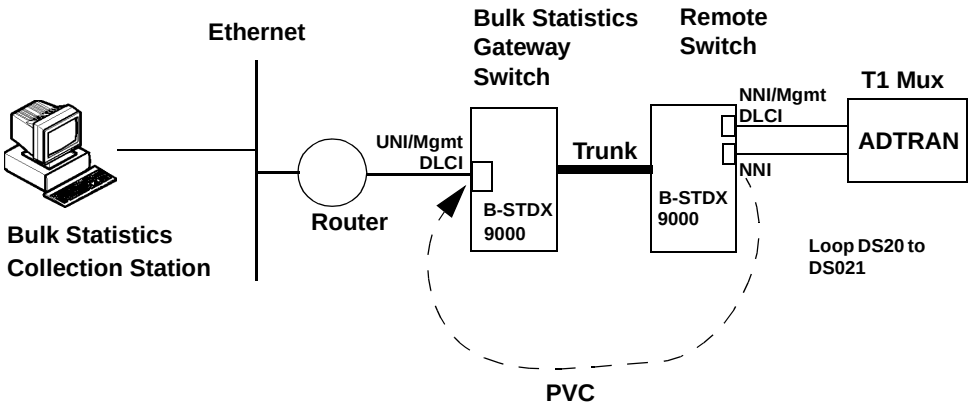

Figure 2-3. Configuration for a Large Network — Channelized T1

5. Attach the router to the FR-UNI-DCE logical port that you created on the Bulk Statistics gateway switch in Step 2.

6. On a remote switch from which you want to create a PVC to carry the Bulk Statistics data, create a FR-NNI logical port (refer to the *Network Configuration Guide for B-STDX/STDX*).

7. On the remote switch, create another FR-NNI. If you will be using a crossover cable to loop together the FR-NNIs in Step 10 (see Figure 2-2 on page 2-7), create the FR-NNI on a different physical port than you used in Step 6.

8. On the FR-NNI you created on the remote switch in Step 7, create a Management (refer to the *Network Configuration Guide for B-STDX/STDX*).

9. Create one NMS path from the remote switch to the Bulk Statistics collection station (refer to "Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations" on page 2-15).

10. Loop the FR-NNI logical port you created in Step 6 to the FR-NNI you created in Step 7.

11. Define a PVC between the FR-NNI logical port you configured on the remote switch in Step 6 and the FR-UNI-DCE logical port on the Bulk Statistics gateway switch you configured in Step 2 (refer to the *Network Configuration Guide for B-STDX/STDX*). For the PVC endpoint on the remote switch, use the same DLCI number that you used for the Management DLCI you defined in Step 8 on the remote switch.

12. Repeat Step 6 through Step 11 for each remote switch from which you want to create a PVC to carry the Bulk Statistics data.

13. When you have created all the PVCs you want, continue to "Disabling the SNMP Trap Mechanism" on page 2-17.

Clustering the Collection of Bulk Statistics Data

You can cluster the collection of Bulk Statistics data by creating a PVC with management DLCIs (see page 2-7) on *some* of your switches. Switches that are not configured with such a PVC will route Bulk Statistics data over the switch network until the data comes to one of the switches configured with a PVC/managment DLCI. The data will then be sent over the PVC to the management DLCI on the Bulk Statistics gateway switch, and then to the collection station. Figure 2-4 shows an example of clustering the collection of Bulk Statistics data. Talk with your Network Consultant to determine if clustering should be used in your network.

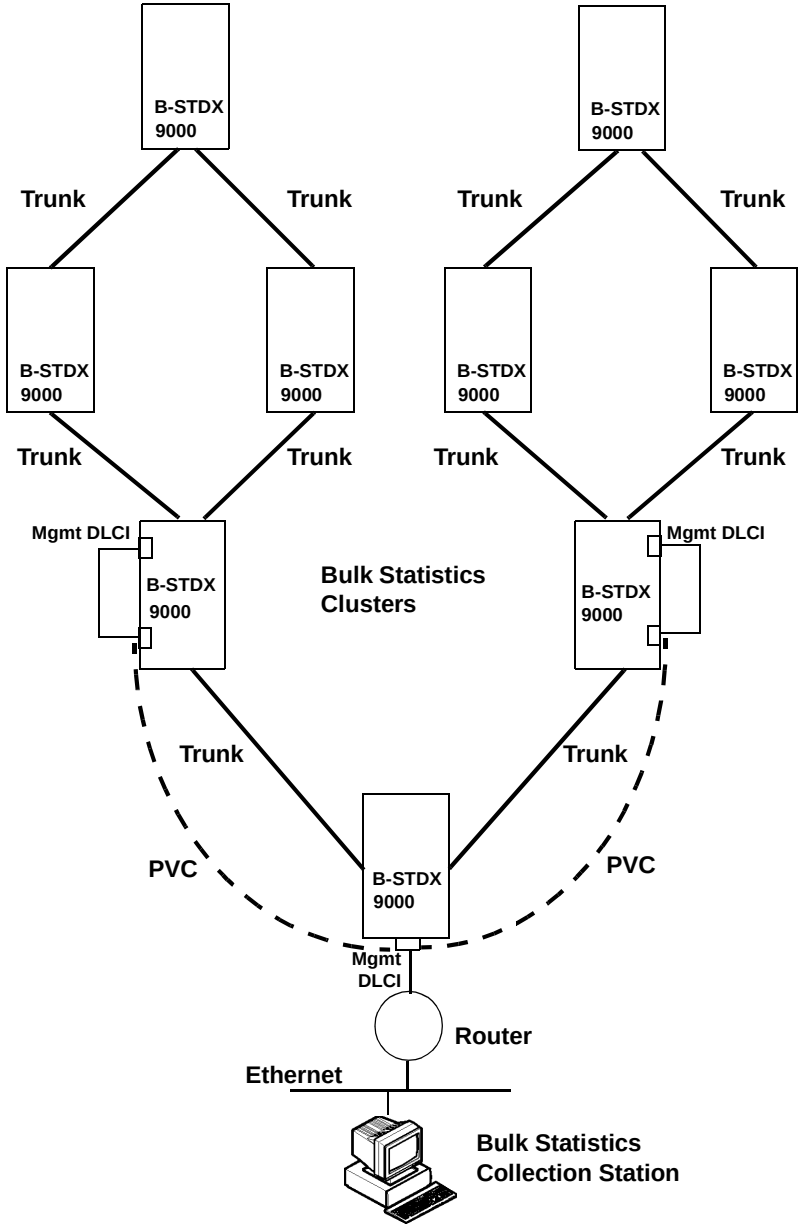

Figure 2-4. Clustering the Collection of Bulk Statistics Data

Defining an SMDS In-Band Management Port

When to Use This Procedure

See "Sending Bulk Statistics Data via SMDS In-band Management Port" on page 2-4.

Before You Begin

The instructions in this section assume that your SMDS logical ports on the Bulk Statistics gateway switch have already been configured in CascadeView. For complete logical port configuration instructions, see the *Network Configuration Guide for B-STDX/STDX*.

Bulk Statistics Gateway Switch

You can connect the Bulk Statistics collection station to the network through any switch (including the NMS gateway switch). This switch is called the Bulk Statistics gateway switch in this procedure.

To Define an SMDS In-band Management Port

To define an SMDS in-band management port:

1. On an NMS workstation, bring up the CascadeView network map for the switching system on which Bulk Statistics is installed. (If you have to start CascadeView, see the *Network Configuration Guide for B-STDX/STDX*.)
2. Select Misc ⇒ CascadeView Logon and log in to the network map.
3. On the network map, select the Bulk Statistics gateway switch for this switch network. This is the switch to which the Bulk Statistics collection station is remotely connected via SMDS services.
4. From the Administer menu, choose Cascade Parameters ⇒ Set All SMDS Parameters ⇒ Set All Management Addresses. The Set All SMDS Management Address dialog box appears (see Figure 2-5).

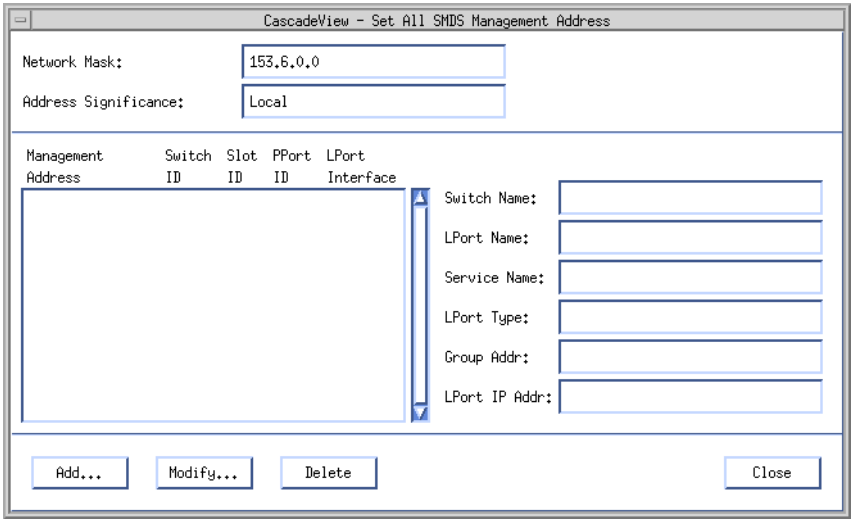

Figure 2-5. Set All SMDS Management Address Dialog Box

5. Choose Add. The Select End Logical Port dialog box appears (see Figure 2-6).

6. Complete the Select End Logical Port dialog box fields as follows:

   Switch Name — Select the name of the Bulk Statistics gateway switch.

   LPort Name — Select the name of the logical port for which you are defining the In-Band management address.

   The following message may be displayed:

   ```
   Cannot define management address before the feeder address
   is defined.
   ```

   If the message was displayed, define the feeder address (see the *Network Configuration Guide for B-STDX/STDX*).

   LPort Type — Displays the logical port type.

   LPort Bandwidth — Displays the logical port bandwidth.

   Slot ID — Displays the I/O slot number in which the card resides.

   PPort ID — Displays the port number for the port you are configuring.

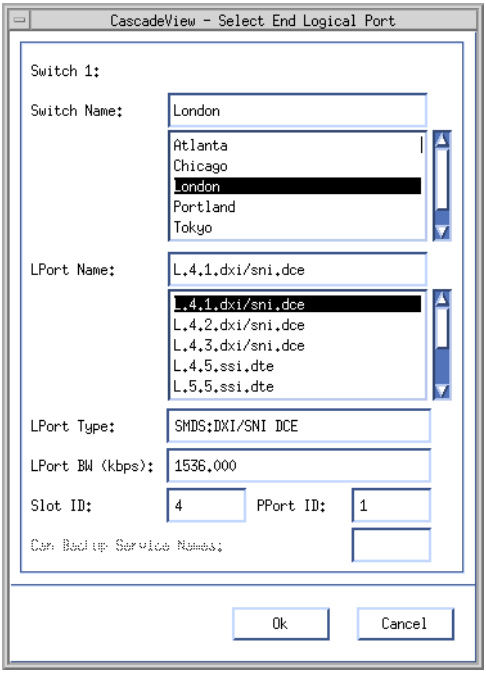

Figure 2-6. Select End Logical Port Dialog Box

7. Choose OK. The Add SMDS Management Address dialog box appears (see Figure 2-7).

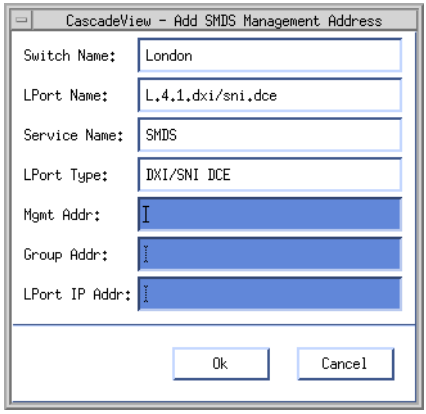

Figure 2-7. Add SMDS Management Address Dialog Box

8. Complete the Add SMDS Management Address dialog box as follows:

   Switch Name — Displays the name of the selected switch.

   LPort Name — Displays the name of the logical port configuration.

   Service Name — Displays the type of service (SMDS).

   LPort Type — Displays the type of logical port configuration (SSI or DXI).

   Mgmt Addr — If the LPort Type is SSI, the management address is already entered automatically in this field. If the LPort Type is DXI, you have to manually enter the individual address to which the logical port subscribes.

   Group Address — If applicable, enter the Group address configured on the router to which the management address is provisioned.

   LPort IP Address — Enter the configured IP address of the selected logical port.

9. Choose OK. The Set All SMDS Management Address dialog box reappears and displays the SMDS Management Address you just defined.

10. Go to "Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations" on page 2-15.

Setting NMS Paths from the Switch Network to the Bulk Statistics Collection Stations

Purpose

Setting an NMS path from a switch to the Bulk Statistics collection station allows the collection station to communicate properly with the switch network.

When to Perform This Procedure

See "Configuring Bulk Statistics Collection Station Overview" on page 2-3.

Bulk Statistics Gateway Switch

You can connect the Bulk Statistics collection station to the network through any switch (including the NMS gateway switch). This switch is called the Bulk Statistics gateway switch in this procedure.

To Set the NMS Path

To set the NMS path, perform the following steps:

1. On an NMS workstation, bring up the CascadeView network map for the switching system on which the Bulk Statistics collection station is installed. (If you have to start CascadeView, see the *Network Configuration Guide for B-STDX/STDX*).
2. Select Misc ⇒ CascadeView Logon and log in to the network map.
3. On the network map, select the switch from which you are creating an NMS path as follows:
   - If you came to this procedure from a step within "Creating a PVC with Management DLCIs", select the switch specified in that step.
   - If you did not come to this procedure from a step within "Creating a PVC with Management DLCIs", select the Bulk Statistics gateway switch.
4. From the Administer menu, choose Cascade Parameters ⇒ Set NMS Paths. The Set NMS Paths dialog box appears (see Figure 2-8).

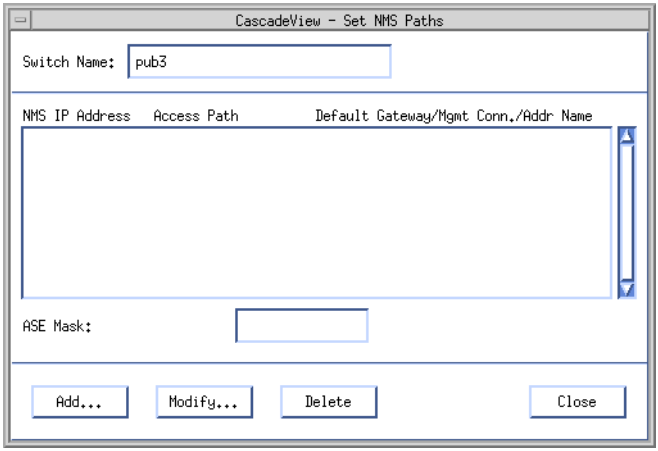

Figure 2-8. Set NMS Paths Dialog Box

5. Choose Add. The Add NMS Path dialog box appears (see Figure 2-9).

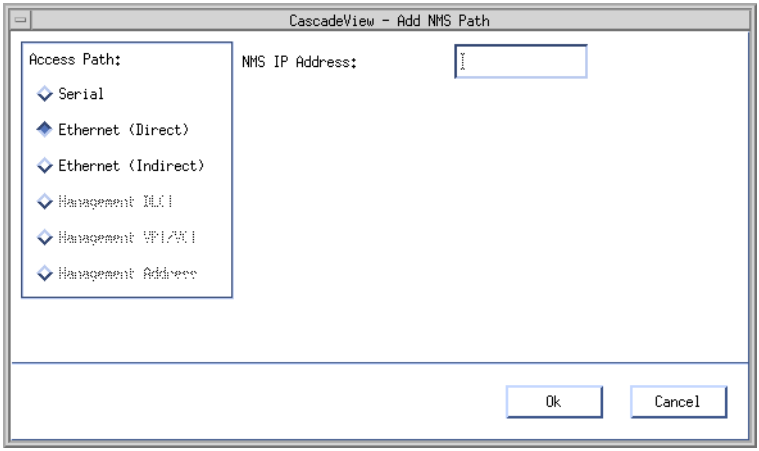

Figure 2-9. Add NMS Path Dialog Box

6. To complete the Add NMS Path dialog box:

   a. In the Access Path field, select the connection method you used to connect the Bulk Statistics collection station to the switch network (direct Ethernet, indirect Ethernet, Management Address, or Management DLCI).

   b. In the NMS IP Address field, enter the IP address of the Bulk Statistics collection station.

   c. If you connected the Bulk Statistics collection station via indirect Ethernet, enter the IP address of the router in the Default Gateway IP Address field.

      If you connected the Bulk Statistics collection station via SMDS in-band management, select the management address from the displayed list.

   d. Choose OK to add the Bulk Statistics collection station to the NMS Path list.

7. If you came to this procedure from a step within "Creating a PVC with Management DLCIs" on page 2-6, return to that step.

8. Repeat Step 6 for each Bulk Statistics collection station that is connected to this switch network. When done, choose Close from the Set NMS Path screen to return to the network map.

9. Go to "Disabling the SNMP Trap Mechanism" on page 2-17.

Disabling the SNMP Trap Mechanism

Purpose

After you have added your Bulk Statistics collection stations to the NMS Path screen, CascadeView will attempt to send SNMP trap messages to each collection station as if it were an NMS workstation. Disable the SNMP trap mechanism to prevent the SNMP trap messages from being sent to your collection stations.

When to Perform

See "Configuring Bulk Statistics Collection Station Overview" on page 2-3.

To Disable the SNMP Trap Mechanism

To disable the SNMP trap mechanism for the collection station, perform the following:

1. On the network map, select the switch you are using as the Bulk Statistics gateway switch. This is the switch to which the collection station is connected through indirect or direct Ethernet, management DLCI, or an SMDS network.

2. From the Administer menu in CascadeView, choose Cascade Parameters ⇒ Set Parameters.

   The Switch Back Panel dialog box appears (see Figure 2-10).

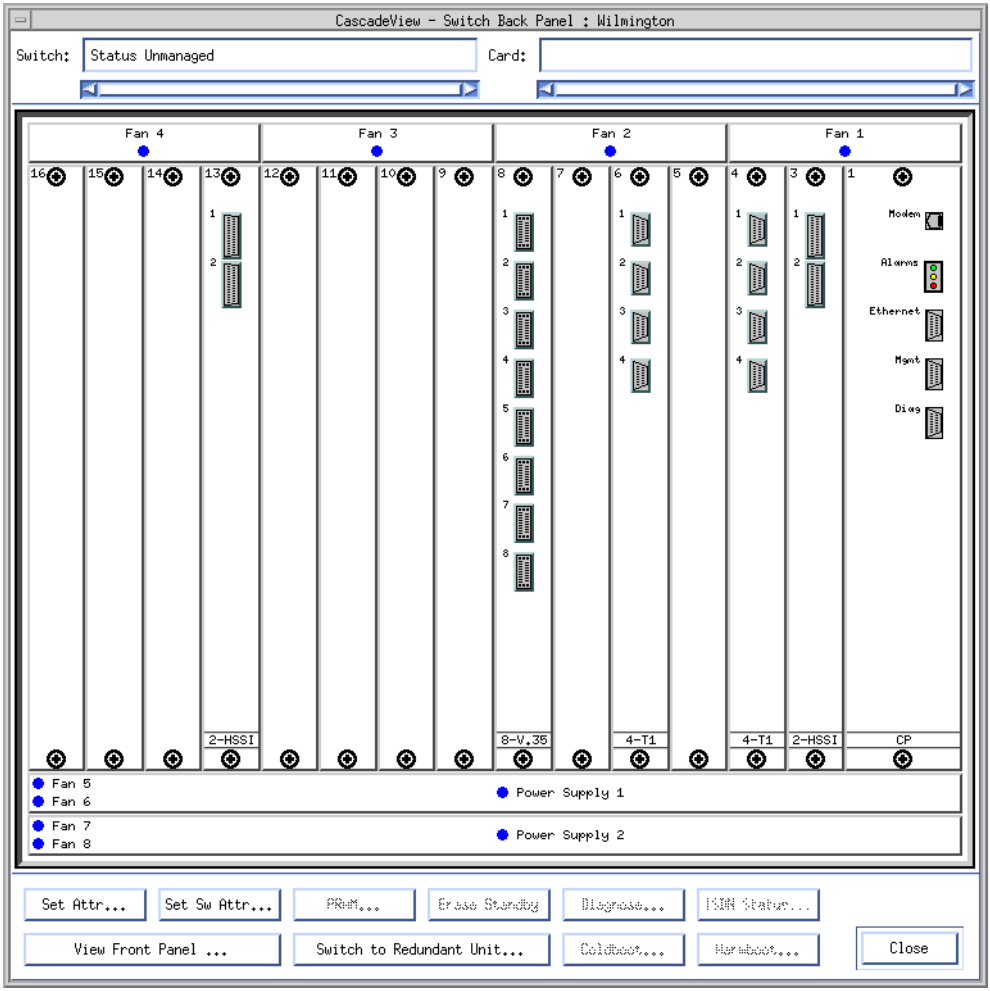

Figure 2-10. Switch Back Panel Dialog Box

3. From the Switch Back Panel screen, choose the Set Sw Attr command button. The Set Switch Attributes dialog box appears (see Figure 2-11).

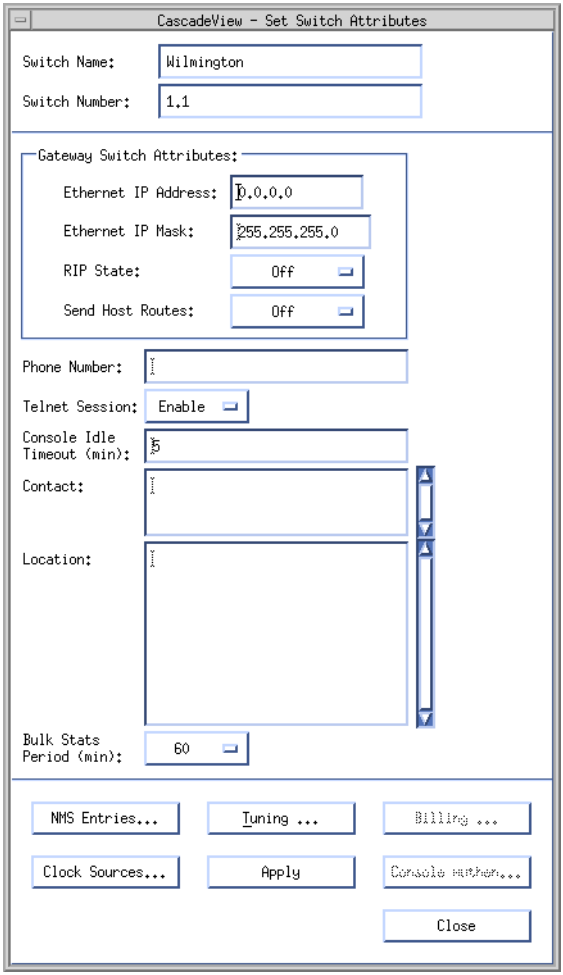

Figure 2-11. Set Switch Attributes Dialog Box

4. Choose the NMS Entries command button.

   The Set NMS Entries dialog box appears (see Figure 2-12).

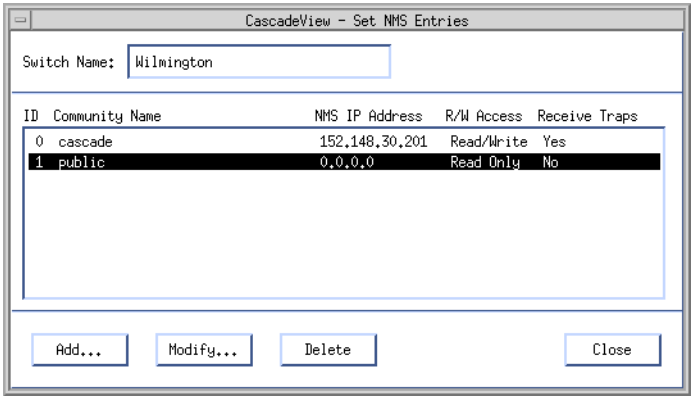

Figure 2-12. Set NMS Entries Dialog Box

5. For each Bulk Statistics collection station address listed on this screen, do the following:

   a. Choose the entry for the Bulk Statistics collection station.

   b. Choose the Modify command button.

   c. Choose No in the Receive Traps field.

   d. Choose OK, then choose Close until you are back to the network map.

6. Go to "Creating and Saving a Route from the Bulk Statistics Collection Station to the Switch Network".

Creating and Saving a Route from the Bulk Statistics Collection Station to the Switch Network

Purpose

Creating a network route from each Bulk Statistics collection station to the switch network from which it will receive statistics enables communication from the Bulk Statistics collection station to the switch network.

Saving a network route allows it to be automatically reloaded into the Sun operating system routing table when you restart the Bulk Statistics Collector for B-STDX/STDX. Unsaved network routes will be lost when Bulk Statistics is restarted, and you will have to create the route again after the restart.

When to Perform

See "Configuring Bulk Statistics Collection Station Overview" on page 2-3.

To Create the Route

To create a network route from each Bulk Statistics collection station to the switch network, perform the following:

1. On each Bulk Statistics collection station, enter the following command:

   `/usr/sbin/route add net [`*`switch network address`*`] [`*`gateway address`*`] 1`

   where:

   [*switch network address*] is the IP address of the network that includes the switches being serviced by the Bulk Statistics collection station.

   [*gateway address*] is:

   - The IP address of the router if you used indirect Ethernet or SMDS in-band management to connect the Bulk Statistics collection station to the network
   - The gateway switch address if you used direct Ethernet to connect the Bulk Statistics collection station to the network

Example: If the gateway is 162.32.92.1 and the switch network is 152.148.0.0, then enter

```
/usr/sbin/route add net 152.148.0.0 162.32.92.1 1
```

2. Go to "To Save Route Entries".

To Save Route Entries

Add the routing entries to the file */etc/rc3.d/S99bsc.routes*.

New Installations vs. Upgrades

Use of Installation/Upgrade Sequence Checklists

The Installation/Upgrade Sequence Checklists (page 2-25) specify when a step is not the same for a new installation and an upgrade. A new installation means that Bulk Statistics does not reside on the Collection Station, and an upgrade means that a previous version of Bulk Statistics does reside on the Collection Station. Unless noted, a step in an Installation/Upgrade Checklist applies to both new installations and upgrades.

See "New Installation Features" and "Upgrade Features" for a summary of their differences.

New Installation Features

The Installation/Upgrade Sequence Checklists specify the following for new installations:

- The step to set the TFTP configuration applies only to new installations.
- The step to generate a switch list data file applies to new installations only if the collection station does not have access to the NMS at runtime.
- The step to run the DB_CktStat.sh script does *not* apply to new installations.

Upgrade Features

The Installation/Upgrade Sequence Checklists specify the following for upgrades:

- The step to generate a switch list data file applies to upgrades only if the network configuration has changed (see "When to Regenerate a Switch List Data File" on page 2-94).
- The step to run the DB_CktStat.sh script applies only to upgrades.
- The step to set the TFTP configuration does *not* apply to upgrades.

Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist

Before You Begin

If your Bulk Statistics collection station is not on the CascadeView/UX NMS workstation, you must first perform the appropriate procedures in "Configuring Bulk Statistics Collection Stations on the Network" on page 2-3.

Checklist Descriptions

The sequence of steps that you use to install or upgrade the Bulk Statistics Collector for B-STDX/STDX differs depending on your use of Bulk Statistics. The following pages contain four different checklists that specify the installation/upgrade procedures that you should follow for the four most common types of Bulk Statistics installations. Table 2-1 lists these four different installation types and indicates the installation checklist that you should use for each type.

Follow these checklists for both new installations and upgrades. When a step applies only to a new installation, this is indicated.

Table 2-1. Installation/Upgrade Sequence Checklists

For this type of configuration	Use this checklist
One workstation. • **Workstation 1** CascadeView/UX HP OpenView SYBASE 11 NMS database Bulk Statistics application Bulk Statistics database. This is configuration 1 in Table 1-1.	Checklist 1, page 2-28

Table 2-1. Installation/Upgrade Sequence Checklists (Continued)

For this type of configuration	Use this checklist
Two workstations. • **Workstation 1** CascadeView/UX HP OpenView SYBASE NMS database • **Workstation 2** Bulk Statistics application SYBASE 11 Bulk Statistics database. This is configuration 2 in Table 1-1.	Checklist 2, page 2-31
Three workstations. • **Workstation 1** CascadeView/UX SYBASE HP Open View NMS database • **Workstation 2** SYBASE 11 Bulk Statistics database • **Workstation 3 to n** Bulk Statistics application on each of these workstations This is configuration 3 in Table 1-1.	Checklist 3, page 2-34

Table 2-1. Installation/Upgrade Sequence Checklists (Continued)

For this type of configuration	Use this checklist
Four workstations. • **Workstation 1** CascadeView/UX HP Open View • **Workstation 2** SYBASE NMS database • **Workstation 3** SYBASE 11 Bulk Statistics database • **Workstation 4 to n** Bulk Statistics application on each of these workstations This is configuration 4 in Table 1-1.	Checklist 4, page 2-39

Checklist 1
Single System Installation/Upgrade Sequence

Figure 2-13 illustrates this configuration type.

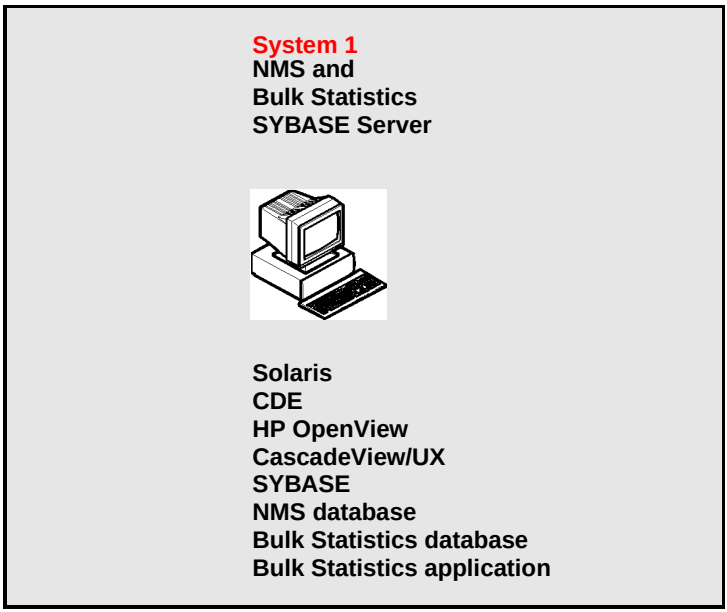

Figure 2-13. Checklist 1 Configuration

1. If CascadeView/UX, Solaris, CDE, and HP OpenView are already installed, proceed to Step 2. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

2. If you will be using SYBASE to store your statistical data or if SYBASE is not installed, then upgrade to or install SYBASE 11.

   - To upgrade to SYBASE 11, see the *SYBASE 11 SQL Server Upgrade Guide*.
   - To install SYBASE 11, see the *Network Management Station Installation Guide*.

3. If this is a new installation, set the TFTP configuration. See "Setting the TFTP Server Configuration" on page 2-44.

4. If you are using SYBASE to store Bulk Statistics data, make sure that the SYBASE server is running before you proceed to Step 5. Type the following command to verify that the SYBASE server is running:

   ```
   <SYBASE pathname>/install/showserver
   ```

   where

   <SYBASE pathname> is the pathname for SYBASE, for example */opt/sybase*.

   If SYBASE is running, the system displays the SYBASE process status.

   If SYBASE is not running, type the following command:

   ```
   cd <SYBASE pathname>/install
   startserver -f RUN_CASCADE
   ```

5. Install the Bulk Statistics Collector for B-STDX/STDX (refer to "Installing Bulk Statistics Collector for B-STDX/STDX with pkgadd Utility" on page 2-49).

6. If this is an upgrade and you experienced performance problems purging data from the Sybase CktStat table with your previous version of Bulk Statistics, perform "Running the DB_CktStat.sh Script" on page 2-70.

7. If this is a new installation, or you are going to monitor more switches than before, define an NMS entry for the Bulk Statistics collection station on each switch. See "Defining an NMS Entry" on page 2-86.

Testing the Configuration

Before starting Bulk Statistics collection from the Bulk Statistics collection station make sure that you can use the ping command to access the following:

- Bulk Statistics collection station
- NMS SYBASE Server (if it is different)
- Ethernet IP address of the gateway switch
- The internal IP address of a switch from which you will be gathering statistics

If you cannot ping these devices, the Bulk Statistics Collector will fail.

Running Bulk Statistics

To run Bulk Statistics, refer to “Collecting Bulk Statistics” on page 3-7.

Checklist 2
Dual System Installation/Upgrade Sequence

Figure 2-14 illustrates this configuration type.

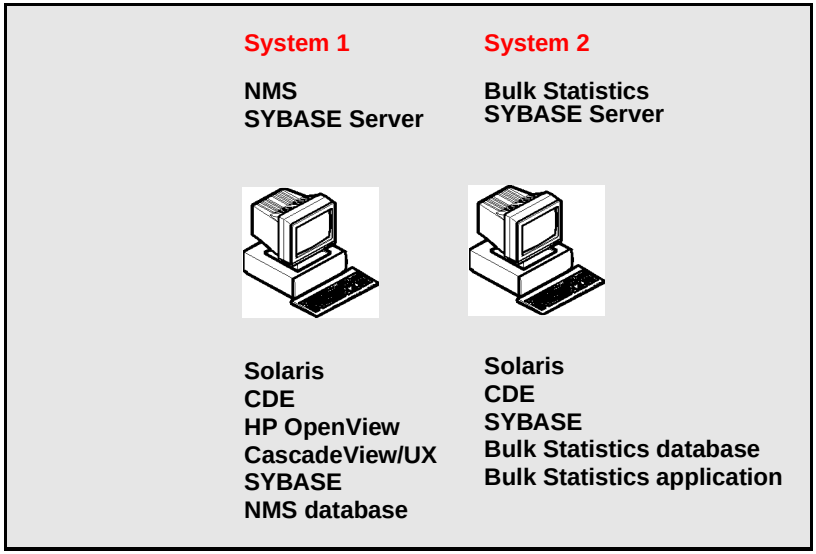

Figure 2-14. Checklist 2 Configuration

1. If Solaris, CDE, SYBASE, HP Open View, and CascadeView/UX are already installed on System 1, proceed to Step 2. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

2. If Solaris and CDE are already installed on System 2 (referred to as the Bulk Statistics SYBASE Server), proceed to Step 3. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

3. If you will be using SYBASE to store your statistical data, then upgrade to or install SYBASE 11 on System 2 as follows:

   - To upgrade to SYBASE 11, refer to Chapter 13, “Upgrading to SYBASE 11.”
   - To install SYBASE 11, refer to Chapter 12, “SYBASE 11 Installation.”

4. If this is a new installation, set the TFTP configuration on System 2. See "Setting the TFTP Server Configuration" on page 2-44.

5. Make sure that the SYBASE server is running before you proceed to Step 6. Type the following command to verify that the SYBASE server is running:

   ```
   <SYBASE pathname>/install/showserver
   ```

   where

   <SYBASE pathname> is the pathname for SYBASE, for example */opt/sybase*.

   If SYBASE is running, the system displays the SYBASE process status.

   If SYBASE is not running, type the following command:

   ```
   cd <SYBASE pathname>/install
   startserver -f RUN_CASCBSTAT
   ```

6. Review the following installation prerequisites:

   - Use CASCBSTAT as the Bulk Statistics SYBASE Server name rather than CASCADE.

7. Install the Bulk Statistics package on System 2 (refer to "Installing Bulk Statistics Collector for B-STDX/STDX with pkgadd Utility" on page 2-49).

8. If this is an upgrade and you experienced performance problems purging data from the Sybase CktStat table with your previous version of Bulk Statistics, perform "Running the DB_CktStat.sh Script" on page 2-70 on System 2.

9. If this is a new installation, or you are going to monitor more switches than before, define an NMS Entry for the Bulk Statistics collection station on each switch that you plan to collect statistics from. See "Defining an NMS Entry" on page 2-86.

10. If this is a new installation, or you are going to monitor more switches than before, create a switch list data file. See "The Switch List Data File" on page 2-90.

Testing the Configuration

Before starting Bulk Statistics collection from the Bulk Statistics collection station make sure that you can use the ping command to access the following:

- Bulk Statistics collection station

- NMS SYBASE Server (if it is different)
- Ethernet IP address of the gateway switch
- The internal IP address of a switch from which you will be gathering statistics

If you cannot ping these devices, the Bulk Statistics Collector will fail.

Running Bulk Statistics

To run Bulk Statistics, refer to “Collecting Bulk Statistics” on page 3-7.

Checklist 3
Three System Installation/Upgrade Sequence

Figure 2-15 illustrates this configuration type.

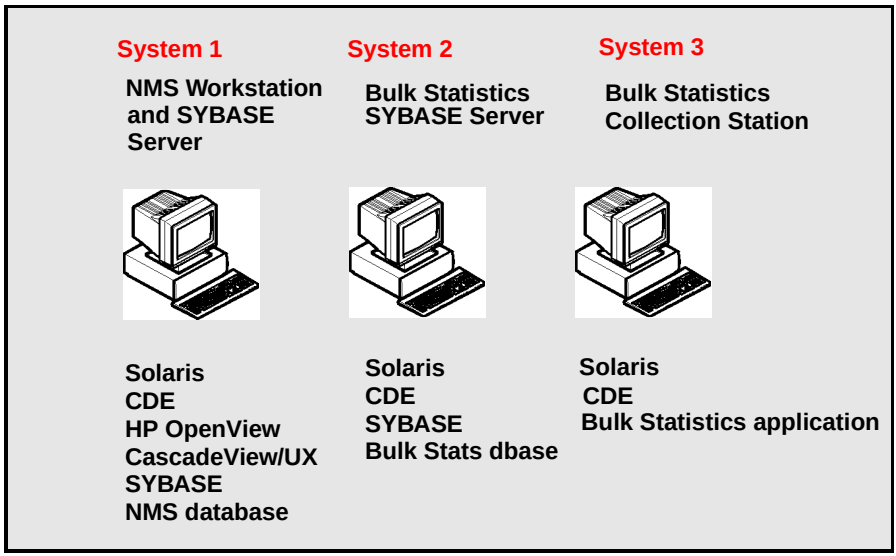

Figure 2-15. Checklist 3 Configuration

Use the following steps to perform this type of installation/upgrade:

1. If Solaris, CDE, SYBASE, HP Open View, and CascadeView/UX are already installed on System 1, proceed to Step 2. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

2. If Solaris and CDE are already installed on System 2 and System 3, proceed to Step 3. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

3. If you will be using SYBASE to store your statistical data, then upgrade to or install SYBASE 11 on System 2 as follows:

   - To upgrade to SYBASE 11, refer to Chapter 13, “Upgrading to SYBASE 11.”
   - To install SYBASE 11, refer to Chapter 12, “SYBASE 11 Installation”.

On the Bulk Statistics SYBASE Server (System 2)

1. Verify that you are logged in as the sybase user by typing:

   whoami <Return>

2. Type the following command to verify that the SYBASE server is running:

   $SYBASE/install/showserver <Return>

   If the server is not running, type the following commands:

   cd install <Return>
   startserver -f RUN_CASCBSTAT <Return>

3. Edit the following file to set up network file system (NFS) mounts and export the file system:

   vi /etc/dfs/dfstab <Return>

4. While holding down the Shift key, type **$G** to go to the end of the file.

5. While holding down the Shift key, type **A** and press Return to append a line onto the file.

6. Type the following command:

   share -f nfs -o rw -d "sybase 11" <SYBASE pathname> <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

7. Press the Escape key.

8. While holding down the Shift key, type **:wq!** to save and end the file.

9. At the command prompt, type:

   shareall <Return>

On Each Bulk Statistics Collection Station

1. Verify that you are logged in as the root user. You should see a # prompt.
2. Edit the following file to mount the file system:

   vi /etc/vfstab <Return>

3. While holding down the Shift key, type **$G** to go to the end of the file.
4. While holding down the Shift key, type **A** and press Return to append a line onto the file.
5. Type the following command:

   [SYBASE host name]:<SYBASE pathname> - <SYBASE pathname> nfs - yes - <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

6. Press the Escape key.
7. While holding down the Shift key, type **:wq!** to save and end the file.
8. At the command prompt, type

   mkdir <SYBASE pathname> <Return>

   mount <SYBASE pathname> <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

9. To add the SYBASE host IP address and SYBASE host name to the host file, type the following command:

   vi /etc/hosts <Return>

10. While holding down the Shift key, type **$G** to go to the end of the file.
11. While holding down the Shift key, type **A** and press Return to append a line onto the file.

12. Add the following line to the file:

    ```
    [SYBASE host IP] [SYBASE host name]
    ```

13. Press the Escape key.

14. While holding down the Shift key, type **:wq!** to save and end the file.

15. Use the ping command to make sure that System 3 can access System 2:

    ```
    ping -s [SYBASE host name]
    ```

16. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, set the TFTP configuration. See "Setting the TFTP Server Configuration" on page 2-44.

Continuing with Bulk Statistics Installation/Upgrade

Perform the following steps on each Bulk Statistics collection station.

1. Install the Bulk Statistics package (refer to "Installing Bulk Statistics Collector for B-STDX/STDX with pkgadd Utility" on page 2-49).

2. If this is an upgrade and you experienced performance problems purging data from the Sybase CktStat table with your previous version of Bulk Statistics, perform "Running the DB_CktStat.sh Script" on page 2-70.

3. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, or you are going to monitor more switches than before, define an NMS Entry for the Bulk Statistics collection station on each switch that you plan to collect statistics from. See "Defining an NMS Entry" on page 2-86.

4. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, or you are going to monitor more switches than before, create a switch list data file. See "The Switch List Data File" on page 2-90.

Testing the Configuration

Before starting Bulk Statistics collection from the Bulk Statistics collection station make sure that you can use the ping command to access the following:

- Bulk Statistics collection station
- NMS SYBASE Server (if it is different)
- Ethernet IP address of the gateway switch
- The internal IP address of a switch from which you will be gathering statistics

If you cannot ping these devices, the Bulk Statistics application software will fail.

Running Bulk Statistics

To run Bulk Statistics, refer to “Collecting Bulk Statistics” on page 3-7.

Checklist 4
Four System Installation/Upgrade Sequence

Figure 2-16 illustrates this configuration type.

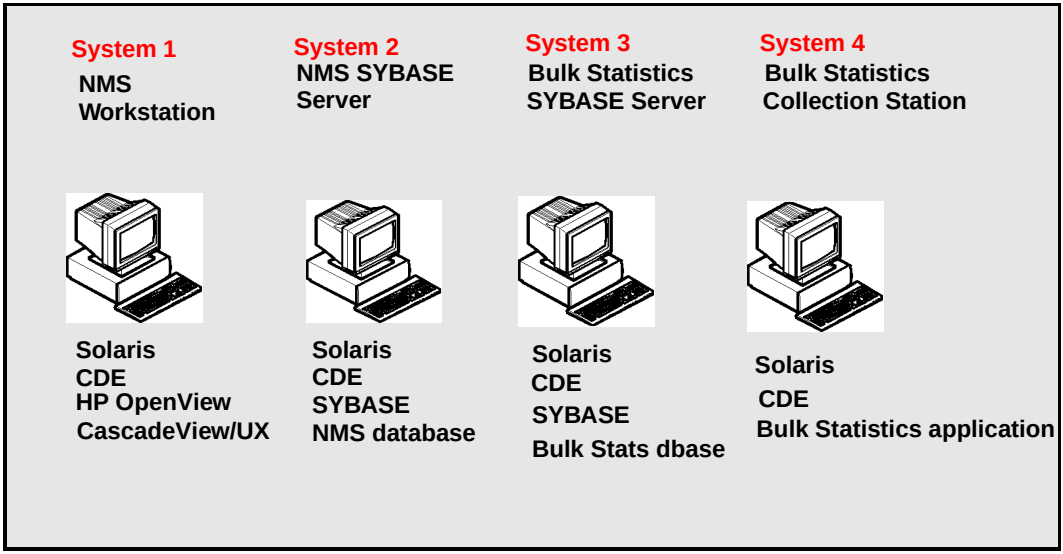

Figure 2-16. Checklist 4 Configuration

Use the following steps to perform this type of installation/upgrade:

1. If Solaris, CDE, HP Open View, and CascadeView/UX are already installed on System 1, proceed to Step 2. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

2. If Solaris, CDE, and SYBASE are already installed on System 2, proceed to Step 3. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

3. If Solaris and CDE are already installed on System 3 and System 4, proceed to Step 4. If not, see the *Network Management Station Installation Guide* for instructions on how to install these products.

4. If you will be using SYBASE to store your statistical data, then upgrade to or install SYBASE 11 on System 3 as follows:

   - To upgrade to SYBASE 11, refer to Chapter 13, "Upgrading to SYBASE 11."
   - To install SYBASE 11, refer to Chapter 12, "SYBASE 11 Installation."

On the Bulk Statistics SYBASE Server (System 3)

1. Verify that you are logged in as the sybase user by typing:

   whoami <Return>

2. Type the following command to verify that the SYBASE server is running:

   $SYBASE/install/showserver <Return>

   If the server is not running, type the following commands:

   cd install <Return>
   startserver -f RUN_CASCBSTAT <Return>

3. Edit the following file to set up network file system (NFS) mounts and export the file system:

   vi /etc/dfs/dfstab <Return>

4. While holding down the Shift key, type **$G** to go to the end of the file.

5. While holding down the Shift key, type **A** and press Return to append a line onto the file.

6. Type the following command:

   share -f nfs -o rw -d "sybase 11" <SYBASE pathname> <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

7. Press the Escape key.

8. While holding down the Shift key, type **:wq!** to save and end the file.

9. At the command prompt, type:

   shareall <Return>

On Each Bulk Statistics Collection Station

1. Verify that you are logged in as the root user. You should see a # prompt.
2. Edit the following file to mount the file system:

   vi /etc/vfstab <Return>

3. While holding down the Shift key, type **$G** to go to the end of the file.
4. While holding down the Shift key, type **A** and press Return to append a line onto the file.
5. Type the following command:

   [SYBASE host name]:<SYBASE pathname> - <SYBASE pathname> nfs - yes - <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

6. Press the Escape key.
7. While holding down the Shift key, type **:wq!** to save and end the file.
8. At the command prompt, type

   mkdir <SYBASE pathname> <Return>

   mount <SYBASE pathname> <Return>

   where

   <*SYBASE pathname*> is the pathname for SYBASE, for example */opt/sybase*.

9. To add the SYBASE host IP address and SYBASE host name to the host file, type the following command:

   vi ./host <Return>

10. While holding down the Shift key, type **$G** to go to the end of the file.
11. While holding down the Shift key, type **A** and press Return to append a line onto the file.
12. Add the following line to the file:

    ```
    [SYBASE host IP] [SYBASE host name]
    ```

13. Press the Escape key.
14. While holding down the Shift key, type **:wq!** to save and end the file.
15. Use the ping command to make sure that System 4 can access System 3:

    ```
    ping -s [SYBASE host name]
    ```

16. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, set the TFTP configuration. See "Setting the TFTP Server Configuration" on page 2-44.

Continuing with Bulk Statistics Installation/Upgrade

Perform the following steps on each Bulk Statistics collection station.

1. Install the Bulk Statistics package (refer to "Installing Bulk Statistics Collector for B-STDX/STDX with pkgadd Utility" on page 2-49) on the Bulk Statistics collection station.
2. If this is an upgrade and you experienced performance problems purging data from the Sybase CktStat table with your previous version of Bulk Statistics, perform "Running the DB_CktStat.sh Script" on page 2-70.
3. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, or you are going to monitor more switches than before, define an NMS Entry for the Bulk Statistics collection station on each switch that you plan to collect statistics from. See "Defining an NMS Entry" on page 2-86.
4. If this is a new installation of the Bulk Statistics Collector for B-STDX/STDX, or you are going to monitor more switches than before, create a switch list data file. See "The Switch List Data File" on page 2-90.

Testing the Configuration

Before starting Bulk Statistics collection from the Bulk Statistics collection station make sure that you can use the ping command to access the following:

- Bulk Statistics collection station
- NMS SYBASE Server (if it is different)
- Ethernet IP address of the gateway switch
- The internal IP address of a switch from which you will be gathering statistics

If you cannot ping these devices, the Bulk Statistics Collector will fail.

Running Bulk Statistics

To run Bulk Statistics, refer to “Collecting Bulk Statistics” on page 3-7.

Setting the TFTP Server Configuration

When you perform a new installation of the Bulk Statistics Collector for B-STDX/STDX, perform the following steps to set the TFTP server configuration so that it automatically executes when you bring up the workstation.

When you perform a new installation of the Bulk Statistics Collector for B-STDX/STDX application software, a copy of tftpserv is copied to ***/opt/BulkStats/bin****. If you are using Bulk Statistics on a SPARCStation that also has CascadeView/UX, your system will already have a copy of tftpserv and the TFTP configuration will have already been specified. However, you should use the steps in this section to set the TFTP configuration to the version of tftpserv in /opt/BulkStats/bin. The reason for this is to ensure that you are using the most current version of tftpserv.*

If your configuration has the collection station separate from the NMS workstation, perform these steps on the Bulk Statistics collection station.

1. Logon as the **root user** and enter the root password. You should see a # prompt in the command line.
2. Type the following command:

   `vi /etc/inetd.conf` `<Return>`

3. Locate the comment statement(s) for tftpboot. Use the following steps to do this:

   a. Type the following command:

      `/tftpboot` `<Return>`

      The vi editor then displays the first instance of tftpboot. (Pressing the *n* character causes the editor to search for any additional instances of tftpboot comment statements.)

4. Verify that a pound sign (#) appears at the beginning of the statement.
   - If a pound sign (#) appears at the beginning of the statement:
     - Press the Escape key.
     - Type **:quit!** <Return>
     - Proceed to Step 10.
   - If a pound sign (#) does not appear at the beginning of the statement:
     - Add a # to the beginning of the line.
     - Complete all of the remaining steps.
5. Press the Escape key.
6. Type the following command:

   :wq! <Return>
7. Type the following command (this command produces output):

   ps -ef <Return>
8. Locate the inetd process and write down the process id (pid) that is listed for that process.
9. Type the following command:

   kill -HUP *[the process id you located in Step 8]* <Return>

Using a KILL option other than -HUP may cause the system to halt.

10. To verify that the inetd process is running, type:

    ps -ef <Return>

    At this point, no tftp daemon is running on your host.
11. Type the following command:

    vi /etc/inittab <Return>

12. While holding down the **Shift key**, type **$G** to move to the end of the file.
13. While holding down the **Shift key**, type **A** and press Return to append a line onto this file.
14. Add the following statement to the end of the file:

    tf:3:respawn:/opt/BulkStats/bin/tftpserv > /dev/null <Return>

    These commands invoke the Cascade tftp daemon to listen to the default tftp port for requests, rather than being started by inetd. No tracing is turned on.

    If you see the following line:

    tf:3:respawn:/opt/CascadeView/bin/tftpserv > /dev/null

    delete the line, so that the system uses the Bulk Statistics pathname for tftpserv.
15. Press the Escape key.
16. Type the following command:

    :wq! <Return>
17. At the # prompt, type **init Q** and press Return to force the system to read the inittab file. The system then starts the Cascade tftp daemon.

Checking the TFTP Server

1. Type the following command to make sure that the TFTP Server is active:

   ps -ef | grep -i tftp <Return>
2. The system should respond by displaying the following line:

   /opt/BulkStats/bin/tftpserv

   If the system does not display this line, the TFTP server is not running.

Configuration and Reconfiguration

Configuration File Automatic Update

The Bulk Statistics installation package automatically updates the configuration file with the configuration values that you specify during the installation process. If you install Bulk Statistics for the first time, the system uses a configuration file template during installation. If you install Bulk Statistics as an upgrade, the install script uses the existing configuration file and appends any new values to the file, and saves the old configuration file as cvbulkstat.cfg.old. The cvbulkstat.cfg file is included in the **/opt/BulkStats/etc** directory.

The DSQUERY variable in the cvbulkstat.cfg file will vary depending on your system's configuration. DSQUERY is set to CASCADE for configurations 1 and 3 in Table 2-1 on page 2-25 and is set to CASCBSTAT for configurations 2 and 4. The installation script prompts you for this server name.

The Configuration File

Figure 2-17 illustrates the contents of the cvbulkstat.cfg file.

```
#  @(#)cvbulkstat.cfg  (version: 2.5)
#  Cascade Bulk Statistics for UNIX configuration file template
#  Copyright 1997 Ascend Communications, Inc.
#  All rights reserved.
#
#  Default path to Sybase directory
SYBASE=/opt/sybase
#  Default Bulk Statistics Sybase database server name
DSQUERY=CASCBSTAT
#  Default Bulk Statistics Sybase database configuration
#  - perform bulkcopy (0 = don't do bulkcopy)
#  - database name
#  - username
#  - password
#  - purge age (i.e., maximum lifetime of data in database)
CVBSTAT_DB=0
```

```
CVBSTAT_DB_NAME=cascstat
CVBSTAT_DB_USER=
CVBSTAT_DB_PASSWORD=
CVBSTAT_DB_LIFETIME=30
#  Default archive directory
#  Must specify the full path to the archive directory
CVBSTAT_ARC_DIR=/opt/BulkStats.var
#
#  User defined shell script to run after the archive
operation
#  Must specify the full path to the shell script
CVBSTAT_ARC_FUNC=
# Translation of BSTDX_RAW_STATS files
# Value of 0 = perform translation at midnight
#          1 = perform translation when raw stats file arrives
CVBSTAT_XLATE_IMMEDIATE=1
# Archived files lifetime (in days)
CVBSTAT_ARC_LIFETIME=30
export SYBASE DSQUERY CVBSTAT_DB_NAME CVBSTAT_ARC_DIR
export CVBSTAT_ARC_FUNC
export CVBSTAT_ARC_LIFETIME CVBSTAT_DB_LIFETIME
export CVBSTAT_DB_USER CVBSTAT_DB_PASSWORD
export CVBSTAT_XLATE_IMMEDIATE CVBSTAT_DB
```

Figure 2-17. cvbulkstat.cfg file

Reconfiguration

If you want to change configuration values after you have installed the Bulk Statistics package, refer to the “Reconfiguration Script” on page 2-71.

Installing Bulk Statistics Collector for B-STDX/STDX with pkgadd Utility

When to Use

Use this procedure to install the Bulk Statistics Collector for B-STDX/STDX when the appropriate Installation/Upgrade Sequence Checklist directs you to (refer to "Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist" on page 2-25).

Before You Begin

- ☑ You should start with the appropriate Installation/Upgrade Sequence Checklist, which tells you when to run this installation (refer to "Selecting the Appropriate Bulk Statistics Installation/Upgrade Sequence Checklist" on page 2-25).
- ☑ If you are running the Bulk Statistics Collector for B-STDX/STDX, you must stop it before you can run the installation.
- ☑ Check the *Bulk Statistics Collector for B-STDX/STDX Software Release Notes (SRN)*. The SRN notes any special conditions that may have resulted in changes to the installation.

Who Can Run the Installation

You must be a root user in order to install the Bulk Statistics Collector for B-STDX/STDX software package.

Configuration Options

During the installation of the Bulk Statistics package, you will be prompted to specify configuration options. You should familiarize yourself with the current or planned processing configuration before you begin the installation. For example:

- If you will be collecting statistics from pre-4.2 switches, do you want decimal output for trunk and circuit delta and peak calculations, in addition to the hexadecimal output? (For 4.2 switches, decimal is the only output.)
- Are you using SYBASE to store Bulk Statistics data?
- Do you want the system to perform a user-defined shell script after the execution of the nightly archiving? Examples of such of such a shell script are:
  - Script to move archived files to another machine
  - Script to save logfiles (to keep logs for more than one day)
  - Script to archive translated files or move them to another machine for post-processing (e.g., report production)

Sequence of Procedures

Perform the following procedures in the order given. Do not skip any procedures unless a step tells you to.

Aborting the Installation

You can abort the installation at any time by entering **q** at a prompt. If you abort the installation process, you must rerun the entire installation. If you do not do this, you will not be able to start the Bulk Statistics Collector for B-STDX/STDX.

Starting the Installation

1. If you are installing from a CD, insert the Bulk Statistics Collector for B-STDX/STDX CD into the CD drive.

2. At the system prompt, enter the following command from the root directory:

   pkgadd -d <*pathname to package*>

   Example 1: Installing from the CD ROM drive */cdrom/cdrom0*:

   pkgadd -d /cdrom/cdrom0

   Example 2: Installing from a directory */tmp*, in which the package has been previously placed:

   pkgadd -d /tmp/BulkStats_9000.pkgtrans.02.05.04.00

3. When the following message is displayed:

   ```
   The following packages are available:
      1  ASNDbstdx     Bulk Statistics for BSTDX/STDX
                     (Sparc) 02.05.04.0

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

   Enter **1** to install Bulk Statistics Collector for B-STDX/STDX. The following message appears:

   ```
   Processing package instance <ASNDbstdx> from <media drive>

   Bulk Statistics for BSTDX/STDX
   (Sparc) 02.05.04.0
   ```

   The following message also appears if a Bulk Statistics package is already installed on your system:

   ```
   This appears to be an attempt to install the same
   architecture and version of a package which is already
   installed.  This installation will attempt to overwrite this
   package.
   ```

4. Go to appropriate step as follows:

   Option 1:

   - If the following message is displayed:

```
**********************************************************
NOTE: The package base directory will be ignored.
BSTDX Bulk Stats will be installed into /opt/BulkStats.
**********************************************************

Will you be using Sybase to store your delta and peak
calculations [y/n]?
```

   Go to Step 8.

   Option 2:

   - If the following message is displayed:

```
Enter path to package base directory [?,q]
```

   Go to Step 6.

   Option 3:

   - If the following message is displayed:

```
Bulk Statistics collection is currently enabled and must
be disabled before the installation can be performed.

Please stop Bulk Statistics collection via the BulkStat
application and then exit the application.

pkgadd: ERROR: request script did not complete
successfully
```

   Go to Step 5.

5. Stop Bulk Statistics collection, exit the Bulk Statistics application, and restart the installation of Bulk Statistics.

6. Enter a temporary working directory, which will be used during the installation process (for example, **/tmp**).

The installation process will place files in this temporary working directory, and will automatically delete them at the end of the installation process. The Bulk Statistics Collector will be installed into */opt/BulkStats*.

7. If the following message is displayed:

```
The selected base directory <directory name> must exist
before installation is attempted.

Do you want this directory created now [y,n,?,q]
```

Enter **Y**.

8. When the following message is displayed:

```
**********************************************************
NOTE: The package base directory will be ignored.
BSTDX Bulk Stats will be installed into /opt/BulkStats.
**********************************************************

Will you be using Sybase to store your delta and peak
calculations [y/n]?
```

Perform one of the following steps:

- Type **Y** to indicate that you will be using SYBASE Bulk Copy to import the delta and peak calculations to the Bulk Statistics SYBASE database. Proceed to "SYBASE Use".
- Type **N** to indicate that you do not plan to use SYBASE to store the delta and peak calculations. Proceed to "Archiving" on page 2-57.

If you later decide to use the SYBASE Bulk Copy utility to import the delta and peak calculations, you must run the "Reconfiguration Script" on page 2-71.

SYBASE Use

1. When the following message is displayed:

   ```
   Enter the directory where Sybase is installed
   (default: /opt/sybase):
   ```

   Press Enter to accept the default SYBASE directory location or enter an alternate directory path.

2. When the following message is displayed:

   ```
   Enter the Sybase database server name
   [default: CASCBSTAT]
   ```

   Perform one of the following steps:

   - If you are using configuration 2, 3, or 4 (see Table 2-1 on page 2-25), press Enter to accept CASCBSTAT as the database server name.
   - If you are using configuration 1 (see Table 2-1 on page 2-25), enter **CASCADE** as the database server name.

3. If the following message is displayed:

   ```
   <name> not found in /opt/sybase/interfaces.
   Please verify and re-enter the database server again.
   ```

   Check the database server name and re-enter it.

4. When the following message is displayed:

   ```
   Enter the Sybase system administrator user name
   [default: sa]
   ```

   Press Enter to accept the default administrator user name or enter a different name.

5. When the following message is displayed:

   ```
   Enter the Sybase system administrator password
   (default: superbase):
   ```

   Press Enter to accept the default user password or enter a different password. If you are using Bulk Statistics on the same server as CascadeView/UX, accept *superbase* as the password.

6. When the following message is displayed:

   ```
   Enter the database name you wish to use <minimum of 6 chars>
   [default: cascstat]
   ```

   Press Enter to accept the default database name or enter a different name.

7. If the following message is displayed after Step 6:

   ```
   In order to conserve space, the database will be purged each
   night of entries whose collection dates are a specified
   number of days in the past.

   Enter the number of days before an entry is to be purged
   [default: 30]
   ```

   Go to “Database Purging” on page 2-57.

8. If the following message is displayed after Step 6:

```
A Sybase database with the name <database name> already
exists.

Creating the Bulk Statistic Sybase database using this name
will erase all of its existing data.

Do you want to overwrite it? [y/n]
```

Perform one of the following steps:

- If you want to overwrite the existing database:
  a. Enter **Y**. All existing data in the database will be deleted.
  b. When the following message is displayed:

```
The database will be overwritten in the postinstall
section of pkgadd.
```

Go to "Database Purging" on page 2-57.

- If you do not want to overwrite the existing database:
  a. Enter **N**. The database will be used for Bulk Statistics, but the data currently in the database will not be removed.
  b. Go to "Database Purging" on page 2-57.

9. If the following message is displayed after Step 6:

```
Error encountered while determining if cascstat exists.

Please verify you have the Sybase server name, system
administrator user name and password entered correctly.

You may re-install by running this program again and
entering the correct information.

pkgadd: ERROR: request script did not complete successfully

Installation of <ASNDbstdx> failed. No changes were made to
the system.
```

Verify you know the correct Sybase server name, system administrator user name, and password, and go to Step 3 on page 2-51 to restart the installation.

Database Purging

1. When the following message is displayed:

   ```
   In order to conserve space, the database will be purged each
   night of entries whose collection dates are a specified
   number of days in the past.

   Enter the number of days before an entry is to be purged
   [default: 30]
   ```

   Perform one of the following steps:

   - Press Enter to accept the default of 30 days.

     Bulk Statistics will purge the Bulk Statistics SYBASE database of any entries that have dates that are more than 30 days in the past.

   - Enter a number to specify the number of days that will pass before an entry is purged from the Bulk Statistics database.

2. Proceed to “Archiving”.

Archiving

1. When the following message is displayed:

   ```
   In order to conserve space, archived files that are older
   than a specified number of days will be deleted nightly.

   Enter the number of days to keep archived files
   [default: 30]
   ```

   Perform one of the following steps:

   - Press Enter to accept the default of 30 days.

     Bulk Statistics will delete any Bulk Statistics archived files that have dates that are older than 30 days.

- Enter a number to specify the number of days that will pass before the system deletes a file from the Bulk Statistics database.

2. Proceed to "User-Defined Shell Script".

User-Defined Shell Script

1. When the following message is displayed:

```
You may specify a user-defined script that will be executed
nightly after the execution of the nightly archive process.

Enter the full pathname of the script
[default: ]
```

Enter the full path and name of the shell script you want to run at the end of nightly processing, or press Enter to accept the default.

2. Proceed to "Immediate Translation".

Immediate Translation

1. When the following message is displayed:

```
For data that is collected from B-STDX switches running
release 4.2 or above, the Collector can translate the data
and store it in the database once every 15 minutes.
Otherwise, translation can be performed nightly as is now
performed for switches running pre-4.2 releases.

Immediate translation is currently enabled.

Do you wish to enable immediate translation? [y/n]
```

Perform one of the following steps:

- If you want to enable immediate translation, enter **Y**. The following message is displayed

```
Translation will be performed immediately.
```

- If you do not want to enable immediate translation and instead want to translate all statistics at midnight, enter **N**. The following message is displayed:

  ```
  Translation will be performed nightly.
  ```

2. Proceed to "Decimal Format Translation".

Decimal Format Translation

1. When the following message is displayed:

   ```
   Decimal format translation is not supported for data that is
   collected from B-STDX switches executing firmware release
   4.2 and above.

   The next question concerning decimal translation is
   applicable only if you plan on executing this version of the
   Bulk Statistics Collector with one or more B-STDX switches
   running pre-4.2 firmware.

   Do you wish to continue? [y/n]
   ```

   Perform one of the following steps:

   - If you are collecting statistics from any pre-4.2 switches and want to maintain the trunk and circuit delta and delta peak calculations in decimal format (see "Decimal Translator (Optional)" on page 8-5) as well as hexadecimal format:

     a.Enter **Y**.

     b.Go to Step 2.

- If you are not collecting statistics from any pre-4.2 switches or if you want to maintain the trunk and circuit delta and peak calculation for pre-4.2 switches in only hexadecimal format:

  a. Enter **N**.

  b. When the following message is displayed:

  ```
  No additional questions concerning decimal translation
  will be asked.
  ```

  Proceed to "Resetting the SNMP Set Log File" on page 2-61.

2. When the following message is displayed:

```
By default, the trunk and circuit delta and peak calculation
output are in hexadecimal.

You have the option of producing decimal output that is
compatible with the existing DOS translator.
Would you like decimal output also? [y/n]
```

Perform one of the following steps:

- If you would like to have the system translate the trunk and circuit delta and peak calculations from hexadecimal to decimal, enter **Y**, and go to Step 3.

- If you want to maintain the trunk and circuit delta and peak calculation only in hexadecimal format, perform the following:

  a.Enter **N**.

  b.When the following message is displayed:

  ```
  No additional questions concerning decimal translation
  will be asked.
  ```

  Proceed to "Resetting the SNMP Set Log File" on page 2-61.

3. When the following message is displayed:

```
Would you like to execute the decimal format translator
nightly?
[y/n]
```

Perform one of the following steps:

- If you are collecting statistics from any pre-4.2 switches and want to execute the decimal format translator during the nightly processing (rather than immediately executing the decimal format translator):

  a. Enter **Y**.

  b. When the following message is displayed:

```
No additional questions concerning decimal translation
will be asked.
```

  Go to "Resetting the SNMP Set Log File".

- If you want the decimal translator to translate statistics immediately at the end of each hour's collection:

  a. Enter **N**.

  b. When the following message is displayed:

```
No additional questions concerning decimal translation
will be asked.
```

  Go to "Resetting the SNMP Set Log File".

Resetting the SNMP Set Log File

1. When the following message about log files (refer to "Bulk Statistics SNMP Log Files" on page 3-10) is displayed:

```
Each SNMP set request to initiate a transfer to the
collection station is logged to a file. Would you like this
log file reset nightly? If so, the file will be reset and the
current day's log will be stored for one full day.
[y/n]
```

Perform one of the following steps:

- If you want the system to delete the log files each night, enter **Y**.

  This option causes the system to append a *.old* extension onto the current day's log file during the nightly processing, and to create new log files for the next day's collection, so that:

  BulkStatSet.log changes to **BulkStatSet.log.old**, and

  BulkStatSetP2.log changes to **BulkStatSetP2.log.old**

- If you want the system to keep the log files, enter **N**.

  Information from the next day's collection will be appended to the current log files.

2. Proceed to "Completing the Installation".

Completing the Installation

1. Go to appropriate step as follows:

   Option 1:

   - If the following message is displayed:

     ```
     Enter path to package base directory [?,q]
     ```

     Go to Step 2.

   Option 2:

   - If the following message is displayed:

     ```
     Using <directory name> as the package base directory.
     ## Processing package information.
     ## Processing system information.
     ## Verifying package dependencies.
     ## 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
     <ASNDbstdx> [y,n,?]
     ```

     Go to Step 6.

Option 3:

- If the following message is displayed:

  ```
  Using <directory name> as the package base directory.
  ## Processing package information.
  ## Processing system information.
  ## Verifying package dependencies.
  ## Verifying disk space requirements.
  ## Checking for conflicts with packages already
  installed.

  The following files are already installed on the system
  and are being used by another package:
  ```

  This message is followed with a list of files in the temporary package base directory.

  Go to Step 5.

2. Enter a temporary working directory, which will be used during the installation process (for example, **/tmp**).

   The installation process places files in this temporary working directory, and automatically deletes them at the end of the installation process. The Bulk Statistics Collector will be installed into */opt/BulkStats*.

3. If the following message is displayed:

   ```
   The selected base directory <directory name> must exist
   before installation is attempted.

   Do you want this directory created now [y,n,?,q]
   ```

   Enter **Y**.

4. When the following message is displayed:

```
Using <directory name> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying package dependencies.
## 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 <ASNDbstdx>
[y,n,?]
```

Go to Step 6.

5. When the following message is displayed:

```
Do you want to install these conflicting files?
```

Perform one of the following steps.

- If you want to install this version of Bulk Statistics:

  a.Enter **Y**.

  b.When the following message is displayed:

```
## 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
<ASNDbstdx> [y,n,?]
```

  Go to Step 6.

- If you do not want to install this version of Bulk Statistics:

  a.Enter **N**.

  b.When the following message is displayed:

  ```
  Do you want to continue with the installation of
  <ASNDbstdx> [y,n,?]
  ```

  Enter **N**. Installation is terminated, and the following message is displayed:

  ```
  Installation was terminated due to user request. No
  changes were made to the system.
  ```

6. Perform one of the following steps:

   - If you do not want to continue with the installation, enter **N**.

     Installation is terminated, and the following message is displayed:

     ```
     Installation was terminated due to user request. No
     changes were made to the system.
     ```

   - If you want to install Bulk Statistics Collector for B-STDX/STDX, enter **Y**.

     The following message is displayed:

     ```
     Installing Bulk Statistics for BSTDX as <ASNDbstdx>
     ## Executing preinstall script.
     ## Installing part 1 of 1.

     /tmp/BulkStatsTemp/bin/BulkStat
     /tmp/BulkStatsTemp/bin/BulkStatLogSet.sh
     /tmp/BulkStatsTemp/bin/BulkStatMain
     /tmp/BulkStatsTemp/bin/BulkStatSetP1.sh
     /tmp/BulkStatsTemp/bin/BulkStatSetP2.sh
     /tmp/BulkStatsTemp/bin/CMUsnmpget
     /tmp/BulkStatsTemp/bin/CMUsnmpset
     /tmp/BulkStatsTemp/bin/CalcCktDelta
     /tmp/BulkStatsTemp/bin/CalcCktUtil
     /tmp/BulkStatsTemp/bin/CalcTrkDelta
     /tmp/BulkStatsTemp/bin/CalcTrkUtil
     /tmp/BulkStatsTemp/bin/bcp_bulkstat_CktStat.sh
     ```

```
/tmp/BulkStatsTemp/bin/bcp_bulkstat_FrCktStat.sh
/tmp/BulkStatsTemp/bin/bcp_bulkstat_FrLportStat.sh
/tmp/BulkStatsTemp/bin/bcp_bulkstat_SmdsLportStat.sh
/tmp/BulkStatsTemp/bin/bcp_bulkstat_TrkStat.sh
/tmp/BulkStatsTemp/bin/bcp_bulkstat_TrunkStat.sh
/tmp/BulkStatsTemp/bin/bsdump
/tmp/BulkStatsTemp/bin/bst
/tmp/BulkStatsTemp/bin/crcvstdb.scr
/tmp/BulkStatsTemp/bin/crcvsttb.scr
/tmp/BulkStatsTemp/bin/crcvsttbp2.sh
/tmp/BulkStatsTemp/bin/crcvsttbp2_alter.scr
/tmp/BulkStatsTemp/bin/cv-bst20-bulkcopy-in.sh
/tmp/BulkStatsTemp/bin/cv-bst20-bulkcopy-out.sh
/tmp/BulkStatsTemp/bin/cvBulkStatArchiveRaw.sh
/tmp/BulkStatsTemp/bin/cvBulkStatCron.sh
/tmp/BulkStatsTemp/bin/cvBulkStatDBPurge.sh
/tmp/BulkStatsTemp/bin/cvBulkStatInstall
/tmp/BulkStatsTemp/bin/cvBulkStatSelectColumnName.sh
/tmp/BulkStatsTemp/bin/cvBulkStatSelectDbName.sh
/tmp/BulkStatsTemp/bin/cvBulkStatSelectTblName.sh
/tmp/BulkStatsTemp/bin/cvBulkStatXlateP2.sh
/tmp/BulkStatsTemp/bin/cvGenSwList
/tmp/BulkStatsTemp/bin/nbst
/tmp/BulkStatsTemp/bin/rmage
/tmp/BulkStatsTemp/bin/tftpserv
/tmp/BulkStatsTemp/etc/cvbulkstat.cfg
/tmp/BulkStatsTemp/etc/installBulkStats.crontab
[ verifying class <none> ]
## Executing postinstall script.
/<directory name>/BulkStatsTemp has been removed.
```

If you overwrote or created a new database, a set of lines similar to the following will then be displayed:

```
A user with the specified login name already exists.
(return status = 1)
A user with the same name already exists in the database.
(return status = 1)
Msg 3701, Level 11, State 6:
Line 1:
Cannot drop the database 'cascstat', because it doesn't
exist in the system catalogs.
```

```
CREATE DATABASE: allocating 10240 pages on disk
'cascview_device'
CREATE DATABASE: allocating 10240 pages on disk
'log_device'
sp_addgroup CascadeView
New group added.
(return status = 0)
New user added.
(return status = 0)
Creating trunk statistics table TrkStat.
Creating circuit statistics table CktStat.
Database option 'abort tran on log full' turned ON for
database 'cascstat'.
Run the CHECKPOINT command in the database that was
changed.
(return status = 0)
Checkpoint command has been executed.
Creating trunk statistics table TrunkStat.
Creating Frame Relay circuit statistics table FrCktStat.
Creating Frame Relay Logical Port statistics table
FrLportStat.
Creating SMDS Logical Port statistics table
SmdsLportStat.
```

7. If the following message is displayed after Step 6:

```
This package contains a new script that has been added to
modify the CkStat table index. If you have been experiencing
performance problems purging data from this table, we
recommend that you execute this script. The existing index
will be removed and a new index will be created.

Due to the many variables that determine the creation time of
an index, we have decided not to modify the index
automatically during the installation process. This provides
you the most flexibility in choosing the time that is most
appropriate for your situation.

The script is called DB_CktStat.sh and is contained in the
/opt/BulkStats/etc directory.

   Installation of <ASNDbstdx> was successful.
```

a. Run the DB_CktStat.sh script (page 2-70) if you have been experiencing performance problems purging data from the Sybase CktStat table.

b. Return to the installation checklist.

8. If the following message is displayed after Step 6:

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

Return to the installation checklist.

Running the DB_CktStat.sh Script

When to Use this Script

Some users had problems purging data from the Sybase CktStat table, which was caused by the CktStat table's primary key index. Run this script after upgrading Bulk Statistics if you need to update the CktStat primary key index. (New installations automatically use the new primary key index.)

Look at the CktStat primary key index (CktStatPK) to determine if you have the new index or the old index.

- If CktStatPK contains the hour and the minutes columns, you need to run the DB_CktStat.sh script to create the new index.
- If CktStatPK contains the day column, you have the new index and *do not* need to run the DB_CktStat.sh script.

Before You Begin

We recomment that you stop Bulk Statistics collection before running the DB_CktStat.sh script.

To Start DB_CktStat.sh

To start the DB_CktStat.sh script:

1. Enter the following command from the */opt/BulkStats/etc* directory.

   ```
   ./DB_CktStat.sh
   ```

Reconfiguration Script

Purpose

The reconfiguration script allows you to change Bulk Statistics configuration values without having to reinstall Bulk Statistics.

Before You Begin

If you are running the Bulk Statistics Collector for B-STDX/STDX, you must stop it before you can run the reconfiguration script.

Who Can Run the Reconfiguration Script

You must be a root user in order to run the reconfiguration script.

Starting the Reconfiguration Script

To start the reconfiguration script:

1. Enter the following command from the */opt/BulkStats/bin* directory.

   `./cvBulkStatReconfig` `<Return>`

   The following message displays:

   ```
         Ascend Communications Incorporated.
   Bulk Statistics for BSTDX/STDX configuration program.
   ```

2. Perform the appropriate step:

   - If the following message displays:

     ```
     Do you wish to modify the existing configuration? [ y/n ]
     ```

     Go to Step 3.

- If the following message displays:

  ```
  Bulk Statistics collection is currently enabled and must
  be disabled before the installation can be performed.

  Please stop Bulk Statistics collection via the BulkStat
  application and then exit the application.
  ```

  Stop Bulk Statistics collection, exit the application, and re-run the reconfiguration script.

3. Perform one of the following steps:

   - Press **Y** to continue with the reconfiguration, and go to "SYBASE Use" on page 2-72.
   - Press **N** to exit the reconfiguration program. The following message displays:

     ```
     Goodbye.
     ```

SYBASE Use

1. One of the following prompts displays:

   ```
   Bulk-copy of delta and peak calculations into Sybase is
   currently enabled.
   Do you wish to continue using Sybase? [y/n]
   ```

   or

   ```
   Will you be using Sybase to store your delta and peak
   calculations? [y/n]
   ```

   Perform one of the following steps:

   - Type **Y** to indicate that you will be using SYBASE Bulk Copy to import the delta and peak calculations to the Bulk Statistics SYBASE database, and go to Step 2.
   - Type **N** to indicate that you do not plan to use SYBASE to store the delta and peak calculations. Proceed to "Immediate Translation" on page 2-77.

2. The system displays the following message to prompt you for the SYBASE directory name.

```
Enter the directory where Sybase is installed
(default: /opt/sybase):
```

3. Press Enter to accept the default SYBASE directory location or enter an alternate directory path. The system then prompts you for the database server name.

```
Enter the name of the database server
(default:CASCBSTAT):
```

4. The database server name that you specify differs depending on your configuration. Perform one of the following steps:

   - If you are using configuration 2 or 4 (see Table 2-1 on page 2-25), press Enter to accept CASCBSTAT as the database server name.
   - If you are using configuration 1 or 3 (see Table 2-1 on page 2-25), specify CASCADE as the database server name.

   The system then prompts you for the system administrator user name.

```
Enter the Sybase system administrator user name
(default: sa):
```

5. Press Enter to accept the default SYBASE system administrator user name or enter an alternate name. The system then prompts you for the system administrator password.

```
Enter the Sybase system administrator password
(default is no password):
```

6. Press Enter to accept the default SYBASE system administrator password or enter an alternate password. *If you are using Bulk Statistics on the same server as CascadeView/UX, use superbase* as the password. The system then prompts you for the name of the Bulk Statistics database.

```
Enter the name of the database that will store the Bulk
Statistics data
(default: cascstat):
```

7. Press Enter to accept the default database name or enter an alternate name.

8. Perform one of the following steps:

   - If the Bulk Statistics database name that you specified in Step 7 *does not already exist*, proceed to Step 10.
   - If the Bulk Statistics database name that you specified in Step 7 *already exists*, the following message displays:

     ```
     A Sybase database with the name <database name> already
     exists.

     Creating the Bulk Statistic Sybase database using this
     name will erase all of its existing data.

     Do you want to overwrite it? [y/n]
     ```

9. Perform one of the following steps:

   - Type **Y** to overwrite the existing database. When the database is overwritten, all existing data is deleted. The system displays the following message:

     ```
     Existing Sybase database <database name> being
     overwritten. Hangon .. this might take several minutes.
     ```

     Proceed to Step 12 on page 2-75.

   - Type **N** if you do not want to overwrite the existing database. The system then displays the following messages:

     ```
     Existing Sybase database <database name> not overwritten
     ... continuing.
     ```

     Proceed to "Database Purging" on page 2-76.

10. If you specified a Bulk Statistics database that *does not* currently exist, the system displays the following prompt:

    ```
    <database name> does not exist as a Sybase database.
    Create <database name> ? [y/n]
    ```

11. Perform one of the following steps:

    - Type **Y** to create the database. The following message displays:

      ```
      Creating <database name> as the Bulk Statistics Sybase
      database.
      ```

      The database creation process may take a few minutes.

    - Type **N** if you do not want to create the database. The script then aborts the reconfiguration.

12. The script then displays SYBASE installation information and a message to indicate that the installation process is complete. If SYBASE encounters fatal errors, the errors are displayed. The system displays the following messages.

    ```
    Verify no fatal Sybase errors were encountered while
    creating the Bulk Statistics database.
    Enter y if no fatal errors occurred. Otherwise, enter n and
    you will need to fix the error(s) and re-run the installation
    program.

    Would you like to continue with the installation ? [y/n]
    ```

    - If you did not receive any fatal SYBASE errors, go to Step 13.
    - If you received fatal Sybase errors, go to Step 14.

13. Perform the following steps:

    a. Enter **Y**.

    b. If you receive the following message:

       ```
       Msg: 3706 Level 11, State 6: Line 1:

       Cannot drop the database 'cascstat' because it doesn't
          exist in the system catalogs.
       ```

       Ignore the message. This message is for information only and indicates that SYBASE has checked to see if 'cascstat' currently exists in the system catalogs.

    c. Go to "Database Purging" on page 2-76.

14. Perform the following steps:

    a. Enter **N**. The reconfiguration script then aborts the installation.

    b. Resolve the SYBASE errors. See the *SYBASE SQL Server Error Message Reference* for more details about SYBASE error messages.

    c. Re-run the reconfiguration script.

Database Purging

1. The following prompt displays:

```
In order to conserve space, the database will be purged each
night of entries whose collection dates are a specified
number of days in the past.

Enter the number of days before an entry is to be purged.
(default:30 days)
```

2. Perform one of the following steps:

    - Press Enter to accept the default of 30 days. Bulk Statistics will purge the Bulk Statistics SYBASE database of any entries that have dates that are more than 30 days in the past.

    - Enter a number to specify the number of days that will pass before an entry is purged from the Bulk Statistics database.

Immediate Translation

1. The following prompt displays:

```
For data that is collected from B-STDX switches running
release 4.2 or above, the collector can translate the data
and store it in the database once each hour. Otherwise
translation can be performed nightly as is now performed for
switches running pre-4.2 releases.

Immediate translation is currently enabled.

Do you wish to enable immediate translation? [y/n]
```

2. Perform one of the following steps:

   - Type **Y** if you want to use the default option and enable immediate translation. Proceed to "Decimal Format Translation - Pre-4.2 Switch Software Only" on page 2-77.
   - Type **N** if you do not want to enable immediate translation and instead want to translate all statistics at midnight. The system displays the following prompt to confirm your selection of nightly translation:

```
Translation will be performed nightly.
```

Decimal Format Translation - Pre-4.2 Switch Software Only

1. The following prompt displays:

```
Decimal format translation is not supported for data that is
collected from B-STDX switches executing firmware release
4.2 and above.

The next question concerning decimal translation is
applicable only if you plan on executing this version of the
Bulk Statistics Collector with one or more B-STDX switches
running pre-4.2 firmware.

Do you wish to continue? [y/n]
```

If you are collecting statistics from any pre-4.2 switches, when the Bulk Statistics translation is complete, the system reads the two files that the Hexadecimal translator produces and calculates the trunk and circuit hourly deltas and hourly peak deltas. The system maintains this information by default in hexadecimal format. For more information, see "Decimal Translator (Optional) on page 8-5".

2. Perform one of the following steps:

   - Type **Y** if you are collecting statistics from any pre-4.2 switches and want to maintain the trunk and circuit delta and delta peak calculations in decimal as well as hexadecimal format.

   - Type **N** if you are not collecting statistics from any pre-4.2 switches or if you want to maintain the trunk and circuit delta and peak calculation for pre-4.2 switches in only hexadecimal format. Proceed to "Resetting the SNMP Set Log File" on page 2-79.

3. The following prompt displays:

   ```
   By default, the trunk and circuit delta and peak calculation
   output are in hexadecimal.

   You have the option of producing decimal output that is
   compatible with the existing DOS translator. Would you like
   decimal output also? [y/n]
   ```

4. Perform one of the following steps:

   - Type **Y** if you would like to have the system translate the trunk and circuit delta and peak calculations from hexadecimal to decimal.

   - Type **N** if you want to maintain the trunk and circuit delta and peak calculation only in hexadecimal format. The following message displays:

     ```
     No additional questions concerning decimal translation
     will be asked.
     ```

     Proceed to "Resetting the SNMP Set Log File" on page 2-79.

5. The following prompt displays:

```
Would you like to execute the decimal format translator
nightly?
[y/n]
```

6. Perform one of the following steps:

   - Type **Y** if you are collecting statistics from any pre-4.2 switches and want to execute the decimal format translator during the nightly processing (rather than immediately executing the decimal format translator).
   - Type **N** if you want the decimal translator to translate statistics immediately at the end of each hour's collection.

Resetting the SNMP Set Log File

1. The following prompt displays:

```
Each SNMP set request to initiate a transfer to the
collection station is logged to a file. Would you like this
log file reset nightly? If so, the file will be reset and the
current day's log will be stored for one full day.
[y/n]
```

   Bulk Statistics maintains the following two log files to record every SNMP set request that Bulk Statistics makes when it polls all enabled switches for statistics.

   BulkStatSet.log — contains messages for SNMP set requests to pre-4.2 switches.

   BulkStatSetP2.log — contains messages for SNMP set requests to 4.2 switches.

   The log file records the number of SNMP retries (in the event of an error condition). The system maintains the log files in the following location:

   /opt/BulkStats/etc/

2. Perform one of the following steps:

   - Type **Y** if you want the system to delete the log files each night. This option causes the system to append a *.old* extension onto the current day's log file during the nightly processing and to create new log files for the next day's collection, so that:

     BulkStatSet.log changes to **BulkStatSet.log.old,** and

     BulkStatSetP2.log changes to **BulkStatSetP2.log.old**

     After you type **Y**, proceed to the next section, "Deletion of Archived Files" on page 2-80.

   - Type **N** if you want the system to keep the log files. Information from the next day's collection will be appended to the current log files.

Deletion of Archived Files

1. The system displays the following prompt:

```
In order to conserve space, archived files that are older
than a specified number of days will be deleted nightly.

Enter the number of days that an archived file is to remain
in the system (default: 30 days):
```

2. Perform one of the following steps:

   - Press Enter to accept the default of 30 days. Bulk Statistics will delete any Bulk Statistics archived files that have dates that are more than 30 days in the past.

   - Enter a number to specify the number of days that will pass before the system deletes an entry from the Bulk Statistics database.

User-Defined Shell Script

1. Go to the appropriate step:

   - If the system displays the following prompt:

     ```
     Do you wish to execute a user-defined shell-script after
     the execution of the nightly archive process?
     [y/n]
     ```

     Go to Step 2.

   - If the system displays the following prompt::

     ```
     Do you wish to execute a user-defined shell-script after
     the execution of the nightly archive process?

     The following script is already defined in the
     configuration:
        <pathname>
     Answering no [n] below will remove this script from the
     configuration.
     [y/n]
     ```

   Go to Step 3.

2. Perform one of the following steps:

   - If you want the system to execute a shell script at the end of the nightly processing (see “Configuration Options” on page 2-49):

     a.Press **Y**. The system then displays the following prompt:

     ```
     Enter the full path and name of the script to be executed:
     ```

     b.Enter the full path and name of the script, and go to “Reconfiguration Completion”.

   - If you do not want to use a shell script, press **N**. Go to “Reconfiguration Completion”.

3. Perform one of the following steps:

   - If you want the system to execute a shell script at the end of the nightly processing (see “Configuration Options” on page 2-49):

     a.Press **Y**. The system then displays the following prompt:

     ```
     Enter the full path and name of the script to be executed:
        (Default: <current script name>)
     ```

     b.Enter the full path and name of the script, or press Enter to accept the default path. Go to “Reconfiguration Completion”.

   - If you do not want to use a shell script, press **N**. This will remove the user-defined shell script from the configuration file. Go to “Reconfiguration Completion”.

Reconfiguration Completion

When the reconfiguration is complete, the following message displays:

```
Saving existing configuration file to
/opt/BulkStats/etc/cvbulkstat.cfg.old

Bulk Statistics for UNIX installation completed.
```

Removing the Bulk Statistics Package

Purpose

This procedure removes the Bulk Statistics Collector for B-STDX/STDX software package from your system.

Who Can Remove

You must be a root user to remove the Bulk Statistics Collector for B-STDX/STDX software package.

Before You Begin

Before you remove the Bulk Statistics package, you must stop the Bulk Statistics application.

To Remove the Bulk Statistics Package

To remove the Bulk Statistics package:

1. At the system prompt, enter the following command from the root directory:

   `pkgrm ASNDbstdx`

2. When the following message is displayed:

   ```
   The following package is currently installed:
   ASNDbstdx      Bulk Statistics for BSTDX
                  (Sparc) 02.05.03.C

   Do you want to remove this package?
   ```

   Enter **Y**.

3. When the following message is displayed:

```
## Removing installed package instance <ASNDbstdx>

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]
```

Enter **Y**.

The following message is displayed:

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
```

4. If the following message is displayed after Step 3:

```
Bulk Statistics collection is currently enabled and must be
disabled before the installation can be performed.

Please stop Bulk Statistics collection via the BulkStat
application and then exit the application.

pkgrm: ERROR: preremove script did not complete successfully

Removal of <ASNDbstdx> failed.
```

Stop Bulk Statistics collection, exit the application, and re-run the installation.

5. If the following message is displayed after Step 3, removal of the Bulk Statistics package was successful. Procedure is complete.

```
## Removing pathnames in class <none>
## Executing postremove script.

The '/opt/BulkStats.var' and '/tftpboot/bulkstats'
directories have not been removed from your system. These
directories contain archive data and raw data (respectively)
that may be needed by some other process.

If this is not the case and the data is no longer needed, the
directories may be removed by executing the following
commands as root at the user prompt:
   rm -r /opt/BulkStats.var
   rm -r /tftpboot/bulkstats

## Updating system information.

Removal of <ASNDbstdx> was successful.
```

Defining an NMS Entry

On each switch that you plan to collect statistics from, you must define an NMS entry for the Bulk Statistics collection station. Use the following steps to do this.

1. Start CascadeView/UX and access the network map.
2. Select the switch object and from the Misc menu, choose CascadeView ⇒ Logon. Enter your operator password.
3. From the Administer menu, choose Cascade Parameters ⇒ Set Parameters. The Switch Back Panel dialog box appears for the selected switch.
4. Choose *Set Sw Attr.* The Set Switch Attributes dialog box appears (see Figure 2-18).

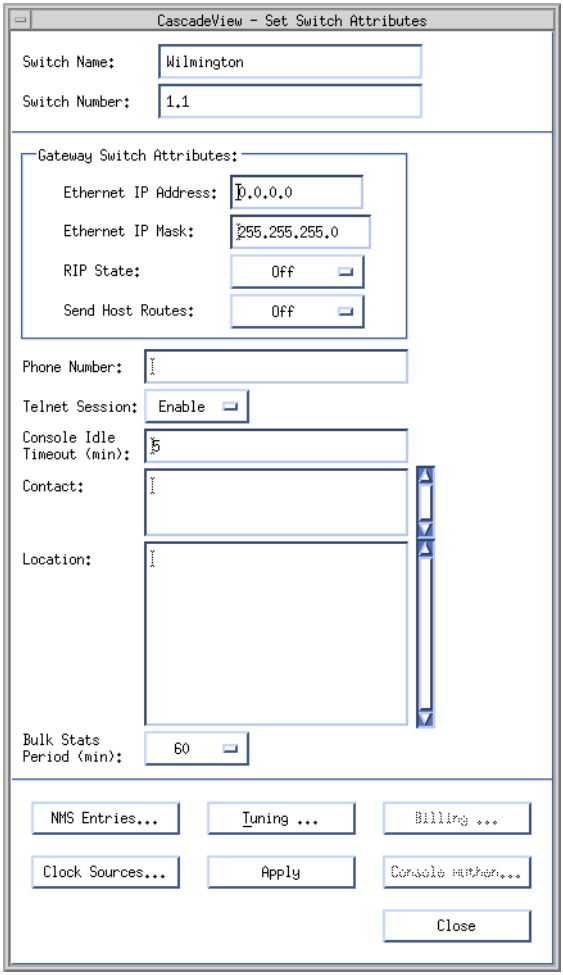

Figure 2-18. Set Switch Attributes Dialog Box

5. Choose the NMS Entries command. The Set NMS Entries dialog box appears, displaying the current NMS entries (see Figure 2-19).

   This dialog box also contains commands that enable you to modify or delete a selected NMS entry.

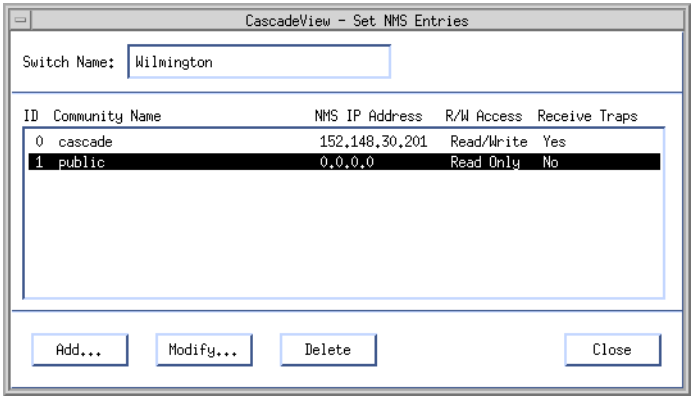

Figure 2-19. Set NMS Entries Dialog Box

6. Choose Add. The Add NMS Entry dialog box appears (see Figure 2-20).

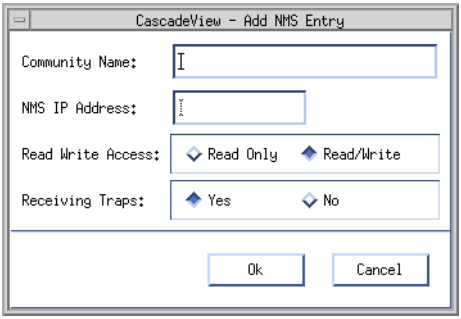

Figure 2-20. Add NMS Entry Dialog Box

7. Enter a unique community name and NMS IP address for the target Bulk Statistics collection station.

8. Select Read/Write as the access rights for this collection station.

9. Select No if the workstation is used only for Bulk Statistics collection so that the Bulk Statistics collection station does not receive traps. Select Yes if the collection station is also used as an NMS workstation.

10. Choose OK to set the parameters. The CascadeView Confirm Request dialog box appears.

11. Choose OK.

12. PRAM sync the CP on the switch (see the *Network Configuration Guide for B-STDX/STDX*).

The Switch List Data File

If you are using the Bulk Statistics Collector for B-STDX/STDX on a SPARCstation that does not have access to the NMS configuration database during runtime, you can create a switch list data file that supplies the NMS switch configuration information to the Bulk Statistics Collector for B-STDX/STDX. The switch list data file has the following format:

Switch Name, Switch ID, Collection Station IP Address, Collection Station Name, Network Number, Community Name

Each line in the switch list data file represents a switch that you are using the Bulk Statistics Collector for B-STDX/STDX to monitor.

The process of generating a switch list data file involves the following tasks:

- Defining an NMS Entry for the Bulk Statistics collection station on each switch. See “Defining an NMS Entry” on page 2-86.
- Generating the switch list data file. See “Generating the Switch List Data File” on page 2-91.

Generating the Switch List Data File

Use the following steps to generate a switch list data file that you can use as input to the Bulk Statistics Collector for B-STDX/STDX application.

You must define an NMS entry for the Bulk Statistics collection station on every switch that you plan to include in the switch list data file before you generate the switch list data file.

You must perform these steps from a SPARCstation that has access to the NMS configuration database. These instructions refer to this SPARCstation as the NMS workstation.

It is not necessary to have a copy of the Bulk Statistics Collector for B-STDX/STDX on the NMS workstation in order to create the switch list data file. However, you do need access to the cvGenSwList executable file that is included with the Bulk Statistics Collector for B-STDX/STDX. You can use a variety of different methods (such as using a symbolic link or by copying the cvGenSwList file) to obtain access to cvGenSwList.

When you try to copy the cvGenSwList file, make sure that you have write access to the file and directory to which you are writing to and copying from. If you do not, the system denies permission to write and/or copy the file.

The switch list data file only contains STDX 3000/6000 and B-STDX 8000/9000 switches.

Use the following steps to generate the switch list data file.

1. Copy /opt/BulkStats/bin/cvGenSwList from the Bulk Statistics collection station to the NMS Sybase Server.

2. To create the switch list data file, type the following command at the NMS workstation:

   cvGenSwList -c [*collection station name*] -o [*output file or directory name*] <Return>

   Where:

   -c *[collection station name]* — Specifies the Bulk Statistics collection station name. This is the name of the host where the Bulk Statistics application is running. This name must be the host name and not its IP address. If you do not use this parameter to specify the collection station name, cvGenSwList uses the current host as the collection station name.

   -o *[output file or directory name]* — Specifies the location of the switch list data file that cvGenSwList creates. If you omit the -o option, cvGenSwList uses the filename **switch_list** and creates the file in the current directory.

   The cvGenSwList command extracts the necessary NMS configuration information from the NMS configuration database and creates the switch list data file in the specified directory on the NMS workstation.

You must have access to the cvGenSwList executable file in order to run cvGenSwList.

The access table in the CascadeView/UX NMS database must have an entry for the collection station or the IP address used to invoke cvGenSwList. To make the entry, see *"Defining an NMS Entry" on page 2-86**.*

Example

For example, if the Bulk Statistics collection station name was OpCenter1 and you were executing cvGenSwList from a workstation other than OpCenter1, you would enter:

cvGenSwList -c OpCenter1

This command specifies OpCenter1 as the collection station name. It creates a switch list data file called *<current directory>/switch_list*.

If you use cvGenSwList and receive an error message indicating that the collection station is an invalid argument or cannot contact the name server, you must add the Bulk Statistics collection station to the NMS workstation's /etc/hosts/ file.

3. Copy or move the file from the NMS workstation's directory to *opt/BulkStats/etc* on the Bulk Statistics collection station.

4. After you perform these steps, check to make sure that the switch list is not empty. If it is, see "The generated switch list from cvGenSwList is empty and no errors were given" on page 11-7 of the Common Problems section.

Limiting the Number of Switches in Collection

There are times when you may want to limit the number of switches from which Bulk Statistics collects. For example, you may have 100 switches in the network but only want a specified collector to collect from 20 of these switches. You can use any of the following methods to limit the scope of the collection:

- Edit the switch list data file to contain fewer switches. You can edit the switch list data file so that it only contains the 20 selected switches.
- Use the Bulk Statistics Application dialog box (refer to "Collecting Bulk Statistics" on page 3-7) to disable 80 of the switches from collecting statistics.
- Set the collection period of any 4.2 switches to zero (refer to "Setting the Collection Period for 4.2 Switches" on page 3-3).

When to Regenerate a Switch List Data File

You must regenerate the switch list data file if any of the following conditions occur.

- You add a switch to the network and want to use the Bulk Statistics Collector for B-STDX/STDX to monitor the switch. You must regenerate the switch list data file and replace the old file (that did not reference the added switch) with the new switch list data file.

  If you have more than one Bulk Statistics collection station, you do not need to regenerate the switch list data file for every Bulk Statistics collection station. The new switch list data file is required only for the workstation that is to collect data from the new switch.

- You delete a switch that was included in a switch list data file. You must regenerate the switch list data file and replace the old file (that referenced the deleted switch) with the new switch list data file, or the SNMP set will retry the switch three times during every collection period.

- When there is a change to the community name that is associated with a switch from which you are collecting data.

A Multi-Home Collection Station

A multi-home workstation is a collection station that has more than one network interface. When the Bulk Statistics collection station is a multi-home workstation, you must generate a switch list data file that specifies the hostname that is managing the switches as the argument. This must be done before you run the Bulk Statistics Collector for B-STDX/STDX. In addition, when you run the Bulk Statistics Collector for B-STDX/STDX, **you must use the -f option,** as you do whenever you use a switch list data file with the Bulk Statistics Collector for B-STDX/STDX.

See “The Switch List Data File” on page 2-90 for more information about the switch list data file.

Increasing the Size of the Database

When you install/upgrade the Bulk Statistics Collector for B-STDX/STDX, the system creates the Bulk Statistics database using the name specified by the **CVBSTAT_DB_NAME** environment variable in **CVBULKSTAT_CONFIG_FILE**. If you are using Bulk Statistics to collect statistics from a large network, you may need to increase the size of the Bulk Statistics database (see "Estimating SYBASE Database Size" on page B-8). The default database size is 20 MB, and the default transaction log size is 20 MB.

Use the following steps to increase the size of the database.

1. Verify that you are logged on as the SYBASE user.
2. Type the following command to initiate an interactive SQL session:

   isql -U <*sa user name*> -P <*sa password*> <Return>

   Where:

   sa user name — Specifies the system administrator user name.

   sa password — Specifies the system administrator password.

3. Type the following commands to change the size of the database and the transaction log:

   1> alter database [*database name*] on [*cascview_device=X*] <Return>

   2> alter database [*database name*] on [*log_device=X*] <Return>

   3> go <Return>

   Where:

   database name — Specifies the name of the Bulk Statistics database name.

   cascview_device — Specifies the name of the device that maintains the database.

   X — Specifies the new database size in Megabytes.

   log_device — Specifies the name of the log device that maintains the database.

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