CHAPTER 8

Generating Reports

This chapter describes the Summary Report application and the Wingz Report application.

Overview of Summary Reports and Wingz Reports

The CWM Summary Report application is designed to provide easy access to basic performance reports. Once you select the report type, object instance, and plot duration, the report data is retrieved from the CWM Statistics Collection Manager (SCM), and is plotted within the respective Report Application window.

The Performance Data reports are based on historical statistics collected by the CWM SCM. To generate a report, you must select the appropriate statistic type. No restrictions exist on the bucket interval setting for Summary Reports. When the bucket interval changes within the report plot period, the Summary Report application makes an adjustment to normalize the data according to the plot interval. The CWM Summary Report application issues an error when a bucket interval change is detected within the plot period.

Note Restrictions exist on the bucket interval setting for Wingz Reports. The bucket interval must match the bucket interval set in SCM.

The following CWM Summary Reports are available:

- Resource Capacity
  - Network Report
  - Top Utilization Report
- Performance Data
  - Connection

    Connection Traffic Summary

    Connection Traffic Dropped Summary (not currently supported for CESM)
  - Trunk

    Trunk Traffic Summary
  - Port

    Port Traffic Summary

Launching WingZ Reports

The current Wingz based Report application provides a very complex and flexible interface that allows you to select and manipulate a large number of statistic types.

To launch Wingz reports, complete the following procedure:

Step 1 Open a terminal window.

Step 2 Enter the **runwingz** command at the prompt.

Note If you enter an uppercase w, for example, **Wingz**, the **Statistics** button will not be displayed on the Wingz toolbar.

Entering the **runwingz** command at the prompt displays the CWM Statistics window, shown in Figure 8-1, "CWM Statistics Window".

Figure 8-1 CWM Statistics Window

This application provides access to your network statistics stored in the Informix OnLine database via the **Statistics** menu in the CWM Statistics window. The **Statistics** menu provides options to display data reports, edit object linkage, and deactivate statistics generation on non-existent nodes.

Statistics Menu

You select this menu to access the following menu options:

Raw Data Report Option

You select this option to filter the graphical reports of data according to the choices provided in the menu.

Remove non-active Node Option

You select this option to remove statistics for nodes no longer in use.

Initialize Option

You select this option to reset the **Statistics** pull-down windows.

Note Timestamps on the statistics buckets collected by CWM are synchronized with network time.

Raw Data Reports

The **Raw Data Report** option displays the Raw Data Report window. This window provides options allowing you to enable customization of your reports. You select this option to generate reports for Connections, Service Lines, Trunks, and Ports. Once you select one of these object types in the Raw Data Report form, associated parameter fields are displayed.

You use the same procedure to configure all types of Raw Data Reports.

Figure 8-2 Raw Data Report Window

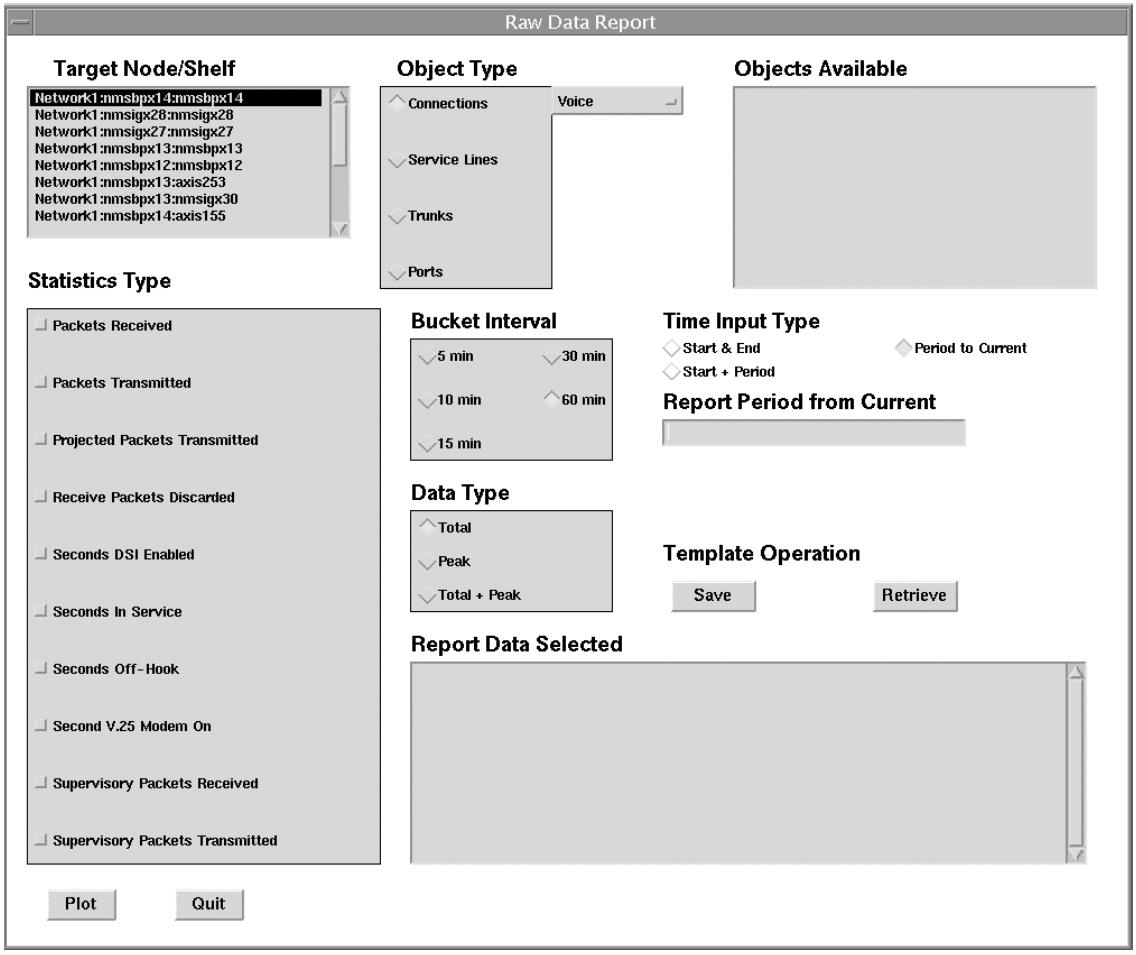


Table 8-1 Time Input Type

Time Input Type	Description
Start & End	Use this parameter to define statistics spanning a starting date and time, to an ending date and time.
Start + Period	Use this parameter to define statistics beginning at a starting date and time, and spanning a specified period or minutes (m), days (d), and/or hours (h). Example: To indicate a single value for one day and two hours and 10 minutes, type: *1d 2h 10m*
Period to Current (default)	Use this parameter to define statistics from the present backwards, with values of minutes (m), hours (h), or days (d). Type the number of m, h, or d into the Report Period field. Example: To indicate a value for 24 hours, type: *24h*

1. After you define a time value, select an object name in the Objects Available field. This results in the display of the selected statistics in the Report Data field.
2. Click on the **Plot** button to start the query. A Querying database window is displayed for each statistic retrieved during the search process. When no statistics are found, the "No data available" message is displayed. When statistics are enabled and collected, a Select Graph Type window is displayed.

A displayed Raw Data Report can be printed selecting the **Page Preview** or **Print** option in the **File** menu on the Wingz menu bar (titled CWM Statistics).

Remove Non-Active Nodes

Select this option from the **Statistics** menu to display the **Remove Node** menu. In the **Target Node** pane, select the nodes you want to delete, then click on the **Apply** button. When no non-active nodes exist, a "No non-active node is defined in the database" message is displayed.

Initialize

Select this option to reset the Statistics window.

Delete Statistical Records

Use the **delstrecs** function to delete statistical records associated with an object database that no longer exists.

To start a delete statistics operation, type **delstrecs** on the CWM console command line. You are asked to indicate a retention period in days. Records older than the specified number of days are deleted. More recent records are retained.

To delete all records not associated with an active object, and to delete all unmatched records regardless of age, type a zero when prompted for retention period. You should perform this operation periodically to clean out the statistics database.

Launching Summary Reports

To launch summary reports, complete the following procedure:

Step 1 Open a terminal window.

Step 2 Enter the **NWReport** command at the prompt.

The summary report window (see Figure 8-3) displays statistical and graphical data for the selected report type.

Configuring Summary Reports

This section describes how to use summary reports.

Select a report type option from either the **Resource Capacity** or **Performance Data** menus. When you select the **Resource Capacity** menu's **Network Report** option, a statistical and graphical view of the resources being utilized at every node in the network is displayed in the **Result** pane in this window.

Select any of the **Performance Data** menu's options for a list of report filters available through Connection - Connection Traffic Summary, Connection - Connection Traffic Dropped, Trunk - Trunk Traffic, or Port - Port Traffic Summary windows, respectively. You need to select the desired report filter options in these windows, then click on the **Plot** button. The statistical and graphical data is then displayed in the Report Application window.

Note Unlike the Wingz application, only one report is displayed at a time.

When a report is displayed in the **Result** pane, print or save it in an ASCII file.

File—Save Menu Option

Select this option to save the data used to plot the graph into a CSF (Comma Separated Format) file you specify. When multiple graphs are displayed, each graph is saved in a separate file. A unique file name is created by appending a number to the file name specified. The graphs are numbered left to right. Each file has a ".csf" extension and the files are saved in the /usr/users/svplus/report directory.

File—Print Menu Option

Select this option to choose a printer or file name. Select file name, and a postscript image is saved to the /usr/users/svplus/report/<*file_name*>.ps file, where <*file_name*> is the name of the file specified. When multiple graphs or tables are displayed on the screen, all graphs or tables are saved in the same file.

File—Exit Menu Option

Select this option to terminate the Report Application. The Report Application window is closed.

Resource Capacity—Network Report Menu Option

Select this option to display basic node information for all nodes in the network in the Network Report window. This report provides a view of the resources being utilized at every node in the network.

Resource Capacity—Top Utilization Report Menu Option

Select this option to display the top utilized trunks, ports, or connections for the entire network or a specified node.

Performance Data—Connection - Connection Traffic Summary Menu Option

Select this option to specify the connection to be plotted and the plot duration through the Connection Traffic Summary window.

Upon specifying the desired report options and clicking on the **Plot** button, the total traffic transmitted and received, as well as, the availability for a selected PVC are displayed in the Report Application window. Data for both ends of the connection are plotted side by side in this window.

Performance Data—Connection - Connection Traffic Dropped Summary Menu Option

Select this option to specify the connection to be plotted and the plot duration through the Connection Traffic Dropped window.

Upon specifying the desired report options and clicking on the **Plot** button, the totals of the dropped traffic for a selected PVC are displayed in the Report Application window. Data for both ends of the connection are plotted side by side in this window.

Note The Connection Traffic Dropped Summary menu option is not currently supported for CESM cards.

Performance Data—Trunk -Trunk Traffic Summary Menu Option

Select this option to specify the trunk to be plotted and the plot duration through the Trunk Traffic Summary window.

Upon specifying the desired report options and clicking on the **Plot** button, the total traffic transmitted and received and the unavailability for a selected trunk are displayed in the Report Application window. Data for both ends of the trunk are plotted side by side.

Note For Cisco MGX 8220 feeder trunks, only the routing node end of the trunks are supported as the Cisco MGX 8220 end-point does not support the required statistic types.

Performance Data—Port - Port Traffic Summary Menu Option

Select this option to specify the port to be plotted and the plot duration through the Port Traffic Summary window.

Upon specifying the desired report options and clicking on the **Plot** button, the total traffic transmitted and received and the unavailability for a selected port are displayed in the Report Application window. Data for both ends of the port are plotted side by side.

Note For Cisco MGX 8220 feeder trunks, only the routing node end of the trunks are supported as the Cisco MGX 8220 end-point does not support the required statistic types.

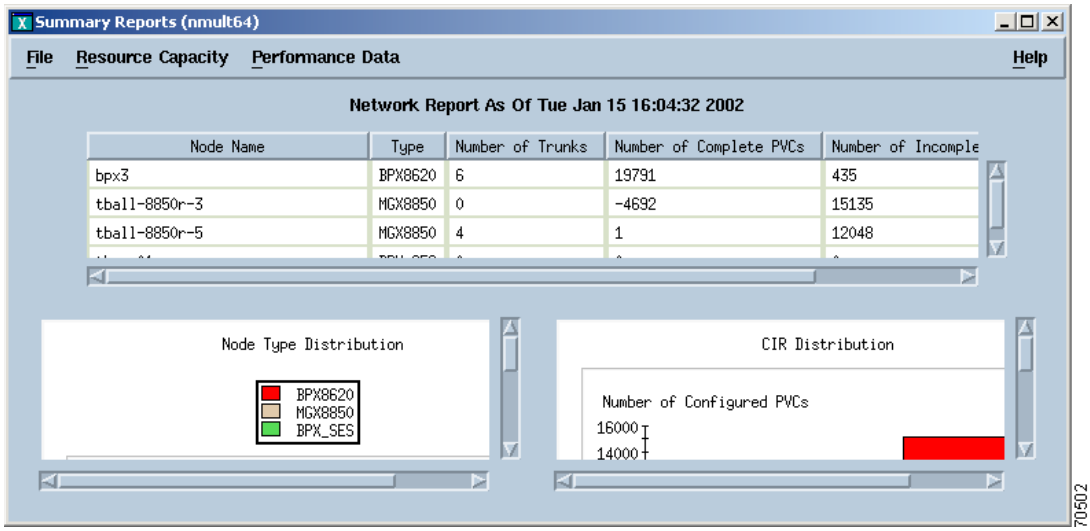
Result Pane

This pane is used to display statistical and graphical data, as well as status and error messages.

Network Report

The Network Report window is displayed when you select the **Resource Capacity** menu's **Network Report** option in the Summary Reports application window, as shown in Figure 8-3. This report provides you a view of the resources being utilized at every node in the network.

Figure 8-3 Network Report Window



This is a two part report. The report's top half displays statistical information in tabular format for each node in the network. The following information is listed for each node:

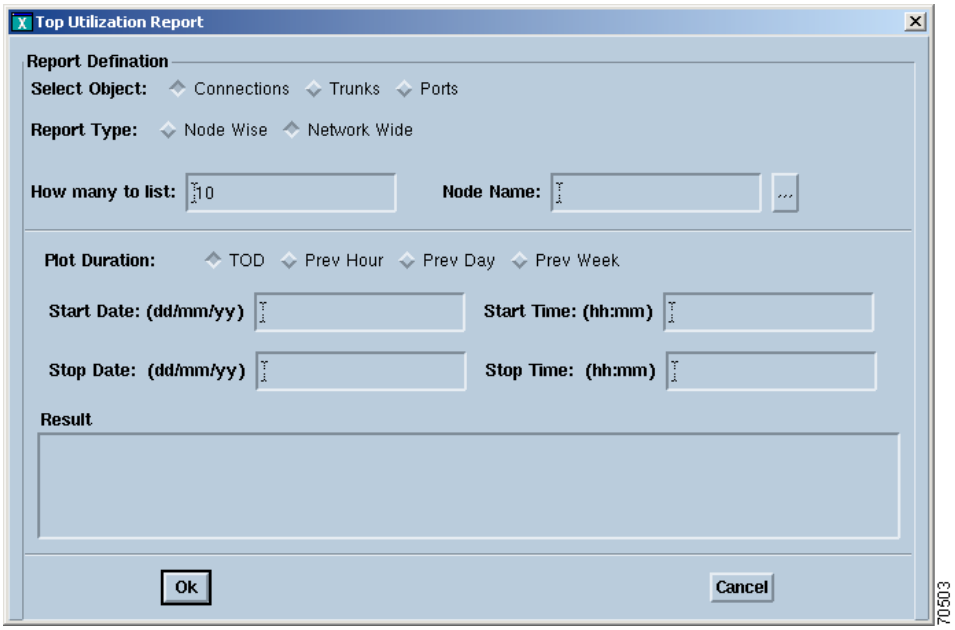
- node name
- node type
- number of trunks on this node
- number of completed connections originating/terminating on this node
- number of incomplete connection on this node (part of a multi-segment connection)
- total CIR originating/terminating on this node

The report's bottom portion displays two graphs. The first graph is a pie chart displaying the break-down by node type (Cisco BPX 8600, Cisco MGX 8220, Cisco MGX 8800, Cisco IGX 8400, or other). The second graph displays the CIR distribution in the network.

Top Utilization Reports

The Top Utilization Reports is displayed when you select the **Resource Capacity** menu's **Top Utilization Report** option in the Report Application window, as shown in Figure 8-4. The Top Utilization Report lists as the top 10 (or as many as you select with a maximum of 50) utilized trunks, ports, or PVCs depending on which object is selected. The user can specify a network wide report or a report for a given node. The user also can specify the number of top utilized objects. In addition, if the user specifies a report for a given node, then the node must be specified.

Figure 8-4 Top Utilization Report Window



After the report is generated, a bar graph is displayed giving the respective utilization of each port, trunk, or PVC.

When you select to list the Top Utilized Trunks, the report application retrieves the required statistics, described in Table 8-2, and performs the following calculations for each trunk:

- percent bytes received from the network (number of packets/cells) received per second/line load) * 100.
- percent bytes transmitted to the network (number of packets/cells) transmitted per second/line load) * 100.
- percent utilization of the trunk = percent bytes received from the network + percent bytes transmitted to the network.

Table 8-2 Required Statistics for Top Utilized Trunks Report

Trunk Type	Percentage of Cells Received (Stats ID)	Percentage of Cells Received (Stats ID)
Narrow Band	—	Total packets transmitted (23)
Cisco IGX 8400-ATM	Total cells received (38)	Total cells transmitted (37)
Cisco BPX 8600-ATM	BXM: Total Cells Rx (219	Total cells transmitted to line (52)

Report Definition Pane

This Report Definition pane is comprised of the following components:

Select Object

Click on the button **Connections**, **Trunks**, or **Ports** to select the object for report generation.

Report Type

Choose either the network wide or node report. The default is **network wide**.

How many to list

Specify the number of objects to be listed in the report. The default is **10** and the maximum is **50**.

Node Name

Specify the node and interface shelf names if the report is for a node only. Click on the "**...**" button to display the Node: Shelf Selection window. Select a node name and corresponding shelf name from this window. This area is inactive if you have selected a network wide report.

Plot Duration

Selections for time of day (**TOD**), previous hour (**Prev Hour**), previous day (**Prev Day**), and previous week (**Prev Week**) are displayed. Indicate the Start Date and Stop Date in dd/mm/yy (day/month/year) format and the Start Time and Stop Time in hh.mm (hour.minute) format.

OK

Choose this button to generate the report.

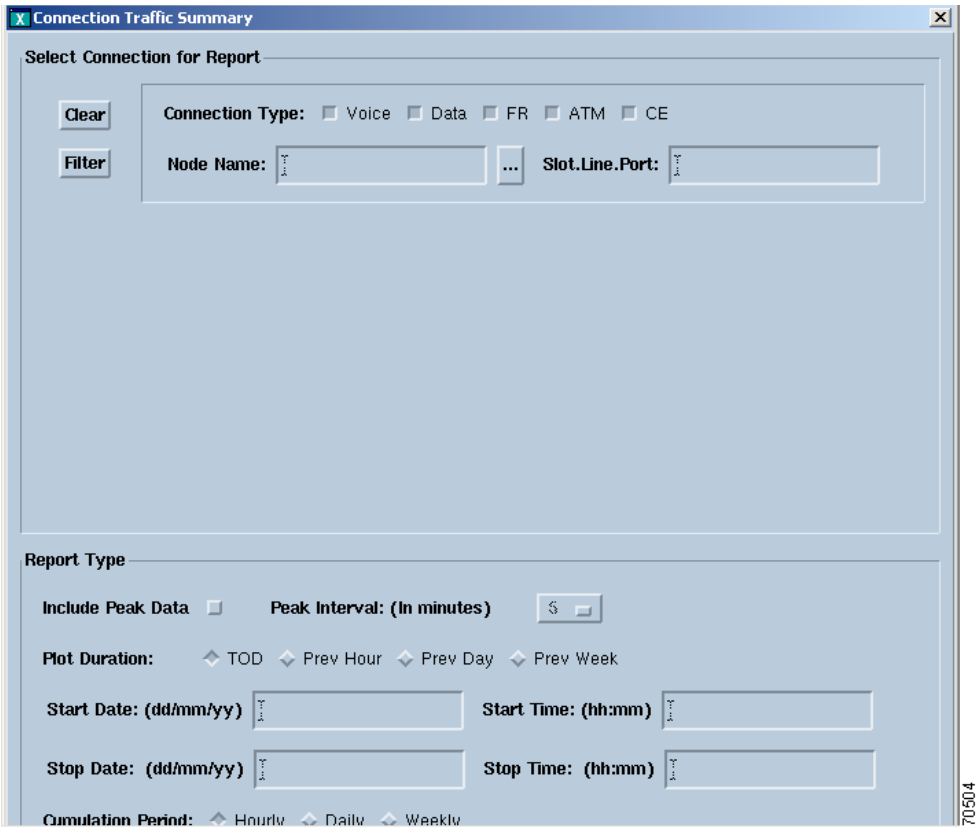
Cancel

Choose this button to clear all fields and return to the Report Main Window.

Connection Traffic Summary

The Connection Traffic Summary window is displayed when you select the **Performance Data** menu's **Connection Traffic Summary** option from the **Connection** submenu in the Performance Data's menu, as shown in Figure 8-5. You must select a PVC and plotting time interval, then click on the **Plot** button to have the statistical information pertaining to connection traffic, plotted into graphs for both ends of the connection and displayed in the Report Application window.

Figure 8-5 Connection Traffic Summary Window



The statistic types used to plot this report are based on the end-point type of the connection. Table 8-3 describes the statistic types needed. The Report Application retrieves all instances (within the plot period) of the statistic types from the database and calculates the following:

- percent received from the network = (number of bits per second / CIR) * 100
- percent transmitted to the network = (number of bits per second / CIR) * 100
- percentage of time in service = (seconds in service / (bucket interval * 60)) * 100

The following conversions are used to convert to bits per second:

- for FR endpoints, convert bytes received to bits per second (number of bytes received / (bucket interval * 60)) * 8
- for ATM/CE endpoints, convert cells received to bits per second, using **Connection Manager's** conversion formula (each cell has a 48 byte payload)
  - bps = (number cells received / (bucket interval * 60)) * 48 * 8
- for VOICE/DATA endpoints, convert packets to bits per second (each packet has 24 bytes)
  - bps = ((number packets received / (bucket interval * 60)) * 24 * 8

When the **Include Peak Data** button is enabled, the percent peak values of the total traffic transmitted and received for a selected PVC are displayed along with the average values in the same graph. The average raw counts are displayed in tabular form.

Data for both ends of the connection are plotted side by side. The statistic types used to plot this report are based on the end-point type of the connection. The Report Application retrieves peak instances (within the plot period) of all statistic types from the database and calculates the following:

- peak number of bytes received from the network (in percentage of CIR) = (peak number of bits received per second / CIR) * 100
- peak number of bytes transmitted to the network (in percentage of CIR) = (peak number of bits transmitted per second / CIR) * 100

The following conversions are used to convert to bits per second:

- For FR endpoints, convert bytes received to bits per second (peak number of bytes received * 8) / (peak interval * 60)
- for ATM/CE endpoints, convert cells received to bits per second, using **Connection Manager**'s conversion formula (each cell has a 48 byte payload)
  - peak bps = (peak number cells received * 48 * 8) / (peak interval * 60)
- for VOICE/DATA endpoints, convert packets to bits per second (each packet has 24 bytes)
  - peak bps = (peak number packets received * 24 * 8) / (peak interval * 60)

Table 8-3 Required Statistics for Connection Traffic Summary Report

End-point Type	Percentage of Bytes Received (Stats ID)	Percentage of Bytes Transmitted (Stats ID)	Percentage of Time in Service (Stats ID)
FR	Bytes received (9)	Bytes transmitted (11)	Seconds In Service (16)
ASI - ATM	Cells received Port (29)	Cells transmitted Port(45)	—
AUSM - ATM	Total cells received (68)	Total cells transmitted (61)	Seconds In Service (16)
Cisco MGX 8220 - CE	Total cells received (72)	Total cells transmitted (71)	—
Voice	Packets received (4)	Packets transmitted (6)	Seconds In Service (16)
Data	Packets received (4)	Packets transmitted (6)	Seconds In Service (16)

Select Connection for Report Pane

This Select Connection for Report pane is comprised of the following components:

Clear Button

Click on this button to clear the **Connection Identifier** pane and return to the default settings.

Filter Button

Click on this button to populate the **Connection Identifier** pane with the connections matching the report filter options specified.

Connection Type Buttons

Click on a button (**Voice, Data**, **FR**, **ATM**, or **CE**) to select that particular connection type. A list of the connections corresponding to that connection type are displayed in the **Connection Identifier** pane once you click on the **Filter** button. By default, all connection types are selected.

Node Name

Specify the node and interface shelf names for the end point in this field. Click on the "**...**" button to display the Node:Shelf Selection window. Select a node name and corresponding shelf name from this window. The default is all connections (this field is blank).

Slot.Line.Port

Specify the end-point's slot and port numbers in this field. The default is all ports (this field is blank).

Connection List

This region is populated when you select the **Filter** button. All connections matching the filter criteria are displayed in this region. Select a single entry from the list for plotting.

Each entry in the list has the following format:

Connection Identifier—the local and remote endpoints are displayed in this column. When certain fields are not applicable, "**..**" is displayed. For example, for routing nodes, <*interfaceshelfname*> is displayed as "**..**".

- The format of the endpoints is as follows:
  - For Frame Relay: <*nodename*>.<*interfaceshelfname*>.<*slot*>.<*line*>.<*port*>.<*DLCI*>
  - For ATM: <*nodename*>.<*interfaceshelfname*>.<*slot*>.<*line*>.<*port*>.<*vpi*>.<*vci*>
  - For CE, Voice, and Data: <*nodename*>.<*interfaceshelfname*>.<*slot*>.<*line*>.<*port*>
- **Type**—the end-point types for the local and remote ends are displayed in this column.
- **CIR**—the CIRs for the local and remote ends are displayed in this column.

Report Type Pane

The Report Type pane is comprised of the following components:

Include Peak Data

Specify Include Peak Data along with Peak Interval to display the highest value in that interval.

Peak Interval

Select peak intervals from the values of 1, 5, 6, 10, 12, and 15 minutes if the Include Peak Data button has been enabled. The default value is 5 minutes (300 seconds).

Note You must select the same peak interval as the one enabled during statistics collection.

Plot Duration

Selections for time of day (**TOD**), previous hour (**Prev Hour**), previous day (**Prev Day**), and previous week (**Prev Week**) are displayed. The default value is **TOD**.

When you select **Prev Hour**, **Prev Day**, or **Prev Week**, the **Start Date/Start Time** fields are inactive, and when the **Stop Date/Stop Time** fields are blank, they are populated with the current date and time. When you modify the stop date/time, the modified value is used for the plot duration. When you select **TOD**, both **Start Date/Start Time** and **Stop Date/End Time** fields are activated, and the **Stop Date/End Time** fields are populated with the current date and time.

Start Date/Start Time

Specify the starting date and time for the graph in this field.

Stop Date/End Time

Specify the stop date and time for the graph in this field.

Cumulation Period

Click on the appropriate button (**Hourly**, **Daily**, or **Weekly**) to set the report's plot interval. The default selection is **Hourly**.

Result Pane

The Result Pane displays status and error messages:

Plot Button

Click on this button to initiate the plotting of the report. The data and graphs are displayed in the Report Application window.When statistic entries are not found, an error message is displayed in the **Result** pane. Otherwise, the **Result** pane displays the number of entries found.

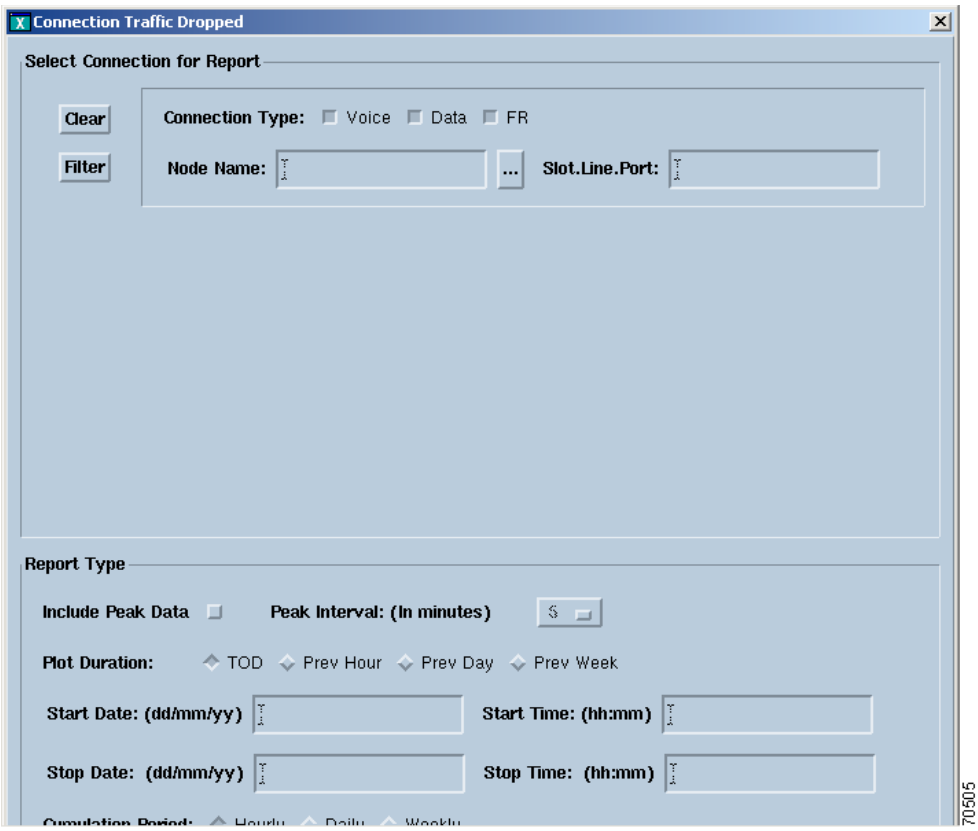
Cancel Button

Click on this button to cancel the current report filter operation and close this window.

Connection Traffic Dropped Window

The Connection Traffic Dropped window is displayed when you select the **Performance Data** menu's **Connection Traffic Dropped** option from the **Connection** submenu in the Performance Data's menu, as shown in Figure 8-6. You must select a PVC and plotting time interval, then click on the **Plot** button to have the statistical information pertaining to the total traffic dropped for a selected PVC, plotted into graphs for both ends of the connection and displayed in the Report Application window.

Figure 8-6 Connection Traffic Dropped Window



The statistic types used to plot this report are based on the end-point type of the connection. Table 8-4 describes the statistics types needed. The Report Application retrieves all instances (within the plot period) of the statistics types from the database and calculates the following:

- Percentage of received bytes dropped = (number of bps of received bytes dropped / CIR) * 100
- Percentage of transmitted bytes dropped = (number of bps of transmitted bytes dropped / CIR) * 100

When the **Include Peak Data** button is enabled, the percent peak values of the dropped traffic for a selected PVC are displayed. Data for both ends of the connection are plotted side by side. The statistic types used to plot this report are based on the end-point type of the connection. The Report Application retrieves statistics from the database and calculates the following:

- Peak number of bytes received bytes dropped (in percentage of CIR) = (peak number of bits received per second) / CIR) * 100
- Peak number of bytes transmitted dropped (in percentage of CIR) = (peak number of bits transmitted per second) / CIR) * 100

The following conversions are used to convert to bits per second:

- For FR endpoints, convert bytes received to bits per second (peak number of bytes received * 8) / (peak interval * 60)
- For ATM/CE endpoints, convert cells received to bits per second, using **cmgrd**'s conversion formula (each cell has a 48 byte payload)

  peak bps = (peak number cells received * 48 * 8) / (peak interval * 60)

- For VOICE/DATA endpoints, convert packets to bits per second (each packet has 24 bytes)

  peak bps = (peak number packets received * 24 * 8) / (peak interval * 60)

Note Cells discarded is not supported on ASI and AUSM.

Table 8-4 Required Statistics for Connection Traffic Dropped Report

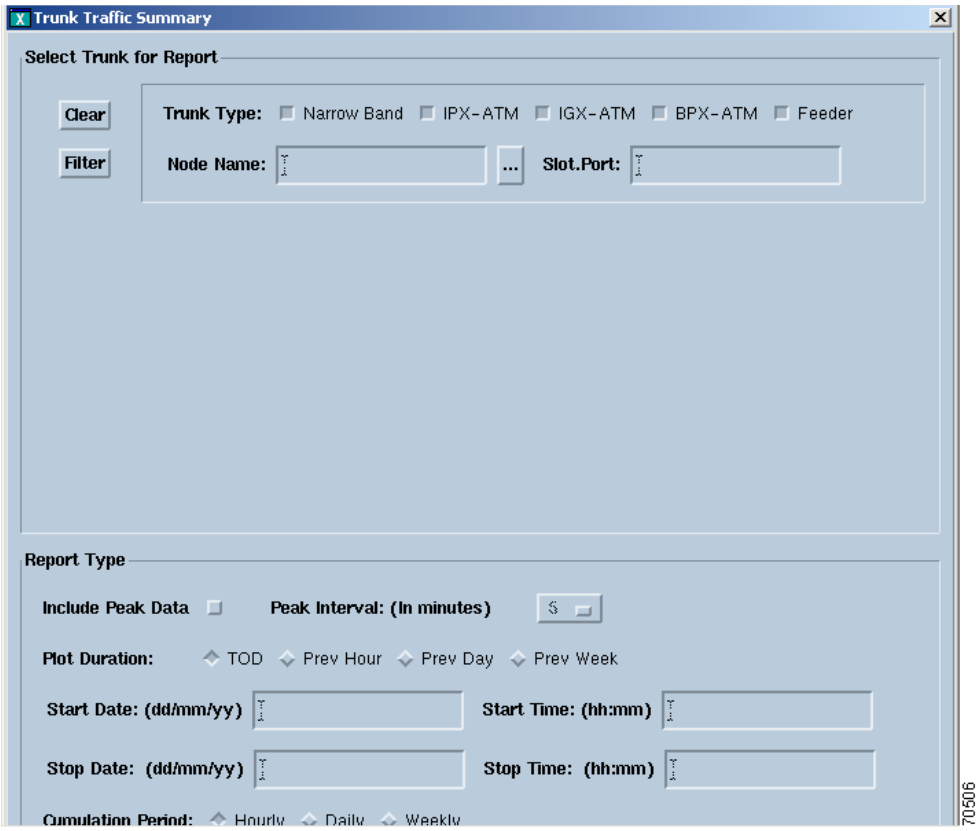
End-point Type	Percentage of Received Bytes Discarded (Stats ID)	Percentage of Transmitted Bytes Discarded (Stats ID)
FR	Received bytes discarded (10)	Transmitted bytes discarded (12)
ASI - ATM	—	—
AUSM - ATM	—	—
Voice	Received bytes discarded (5)	—
Data	Received bytes discarded (5)	—

Trunk Traffic Summary Window

The Trunk Traffic Summary window is displayed when you select the Performance Data menu's Trunk Traffic Summary option in the Report Application window, as shown in Figure 8-7. You must select a trunk type and plotting time interval, then click on the Plot button to have the statistical information pertaining to the trunk traffic, plotted into graphs and displayed in the Report Application window.

Note For Cisco MGX 8220 feeder trunks, only the routing node end of the trunks are supported as the Cisco MGX 8220 end-point does not support the required statistic types.

Figure 8-7 Trunk Traffic Summary Window



The statistic types used to plot this report are based on the trunk's end-point type. Table 8-5 describes the statistic types needed. The Report Application retrieves all instances (within the plot period) of the statistics types from the database and calculates the following:

- percentage of bytes received from network = (number of packets or cells received per second / line load) * 100
- percentage of bytes transmitted to the network = (number of packets or cells transmitted per second / line load) * 100
- percentage of time unavailable = (unavailable seconds / (bucket interval * 60)) * 100

When the **Include Peak Data** button is enabled, the percent peak values of the total traffic transmitted and received for a selected trunk are displayed. The percent peak values are plotted in the same graph with the percent average data. Data for both ends of the trunk are plotted side by side. The Report Application retrieves statistics from the database and calculates the following:

- peak number of bytes received from the network (in percentage of line load) = ((peak number of packets or cells received) / (peak interval * line load)) * 100
- peak number of bytes transmitted to the network (in percentage of line load) = ((peak number of packets or cells transmitted) / (peak interval * line load)) * 100

The statistic types used to plot this report are based on the end-point type of the connection.

Table 8-5 Required Statistics for Trunk Traffic Summary Report

Trunk Type	Percentage of Cells Received (Stats ID)	Percentage of Cells Transmitted (Stats ID)	Percentage Unavailable (Stats ID)
Narrow band	—	Total packets transmitted (23)	—
Cisco IPX - ATM	Total cells received from line (68)	Total cells transmitted to line (61)	Unavailable Seconds (39)
Cisco IGX 8400 - ATM	Total cells received (38)	Total cells transmitted (37)	—
Cisco BPX 8600 - ATM	BXM: Total Cells Rx (219)	Total cells transmitted to line (52)	Unavailable Seconds (39)

Select Trunk for Report Pane

The Select Trunk for Report pane is comprised of the following components:

Clear Button

Click on this button to clear the **Trunk Identifier** pane and return to the default settings.

Filter Button

Click on this button to populate the **Trunk Identifier** pane with the trunks matching the report filter options specified.

Trunk Type

A set of toggle buttons corresponding to the trunk types supported (**Narrow Band**, **IPX-ATM**, **IGX 8400-ATM**, **BPX 8600-ATM**, and **Feeder**) are displayed in this area. By default, all trunk types are selected.

Node Name

Specify the node and interface shelf names for the local end point in this field. Click on the "**...**" button to display the Node: Shelf Selection window. Select the node name and corresponding shelf name from this window. The default is all nodes (the field is blank).

Slot.Port

Specify the end-point's slot number in this field. The default is all slots (the field is blank).

Trunk List

This region is populated when you select the **Filter** button. All trunks matching the filter criteria are displayed in this region. A single entry from the list for plotting can be selected.

Each entry in the list has the following format:

- **Trunk Identifier**—the local and remote endpoints are displayed in this column. The format of the endpoints is as follows: <*nodename*>.<*slot*>.<*port*>.<*vtrk*>
- **Card Type**—the end-point card type for the local and remote ends are displayed in this column.
- **Load**—the line loads for the local and remote ends are displayed in this column.

Report Type Pane

The Report Type pane is comprised of the following components:

Include Peak Data

Specify Include Peak Data along with Peak Interval to display the highest value in that interval.

Peak Interval

Select peak intervals from the values of 1, 5, 6, 10, 12, and 15 minutes if the Include Peak Data button has been enabled. The default value is 5 minutes (300 seconds).

Note You must select the same peak interval as the one enabled during statistics collection.

Plot Duration

Selections for time of day (**TOD**), previous hour (**Prev Hour**), previous day (**Prev Day**), and previous week (**Prev Week**) are displayed. The default value is **TOD**.

When you select **Prev Hour**, **Prev Day**, or **Prev Week**, the **Start Date/Start Time** fields are inactive, and when the **Stop Date/Stop Time** fields are blank, they are populated with the current date and time. When you modify the stop date/time, the modified value is used for the plot duration. When you select **TOD**, both **Start Date/Start Time** and **Stop Date/End Time** fields are activated, and the **Stop Date/End Time** fields are populated with the current date and time.

Start Date/Start Time

Specify the starting date and time for the graph in this field.

Stop Date/End Time

Specify the stop date and time for the graph in this field.

Cumulation Period

Click on the appropriate button (**Hourly**, **Daily**, or **Weekly**) to set the report's plot interval. The default selection is **Hourly**.

Result Pane

Status and error messages are displayed in this pane.

Plot Button

Click on this button to initiate the plotting of the report. When statistic entries are not found, an error message is displayed in the **Result** pane. Otherwise, the **Result** pane displays the number of entries found.

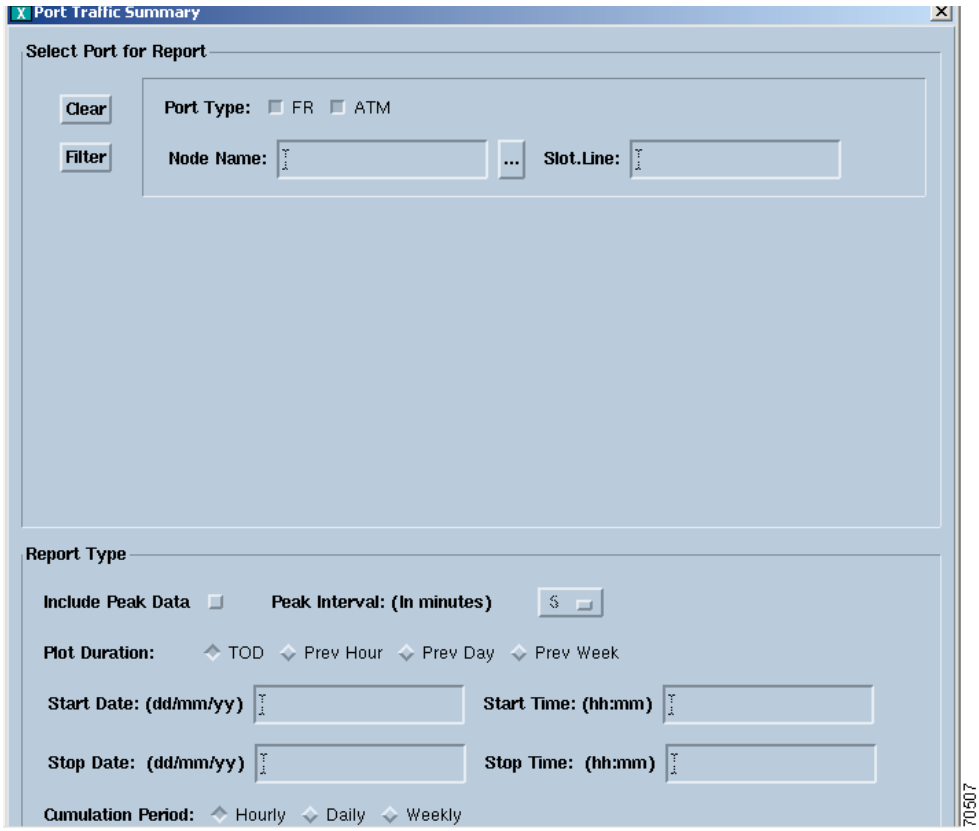
Cancel Button

Click on this button to cancel the current report filter operation and close this window.

Port Traffic Summary Window

The Port Traffic Summary window is displayed when you select the **Performance Data** menu's **Port Traffic Summary** option in the Report Application window, as shown in Figure 8-8. You must select a port type and plotting time interval, then click on the **Plot** button to have the statistical information pertaining to the port traffic, plotted into graphs and displayed in the Report Application window.

Figure 8-8 Port Traffic Summary Window



Required statistics for port traffic are described in Table 8-6. The report application retrieves all instances of the statistics types within the selected plot period from the database and calculates the following:

- Percentage of bytes received from the network = (number of bits received per second / port speed) * 100
- Percentage of bytes transmitted to the network = (number of bits transmitted per second / port speed) * 100

The following conversions are used to convert to bits per second:

- Frame Relay ports bytes received to bits per second = (number of bytes received / (bucket interval * 60)) * 8
- ATM ports convert cells to bits per second: bps = (number of cells received / (bucket interval * 60)) * 48 * 8
- Voice ports: bps = ((number of packets received / (bucket interval * 60)) * 24 *8

When the **Include Peak Data** button is enabled, the percent peak values of the total traffic transmitted and received for a selected port are displayed along with the average values in the same graph. The average raw counts are displayed in tabular form. The statistic types used to plot this report are based on the port type. The Report Application retrieves peak instances (within the plot period) of all statistic types from the database and calculates the following:

- Peak number of bytes received from the network (in percentage of port speed) = (peak number of bits received per second / port speed) * 100
- Peak number of bytes transmitted to the network (in percentage of port speed) = (peak number of bits transmitted per second / port speed) * 100

Table 8-6 Required Statistics for Port Traffic Summary

Port Type	Percentage Bytes Received (Stats ID)	Percentage Bytes Transmitted (Stats ID)
Cisco IGX 8400 Frame Relay (FRP, FRM, and UFM)	Number of Bytes Received (2)	Number of Bytes Transmitted (3)
Cisco BPX 8600 ATM (ASI, BXM)	Number of Cells Received (7)	Number of Cells Transmitted (11)
Cisco MGX 8220 Frame Relay (FRSM)	Number of Bytes Received (2)	Number of Bytes Transmitted (3)
Cisco MGX 8220 ATM (AUSM)	Total Number of Cells Received from Line (40)	Total Number of Cells Transmitted from Line (41)
Voice (UVM, CVM, CDP)	Number of Voice Packets Received (61)	Number of Voice Packets Transmitted (60)

Select Port for Report Pane

The Select Port for Report pane is comprised of the following components:

Clear Button

Click on this button to clear the **Port Identifier** pane and return to the default settings.

Filter Button

Click on this button to populate the **Port Identifier** pane with the ports matching the report filter options you specified.

Port Type

A set of toggle buttons corresponding to the port types supported (**Frame Relay**, **ATM,** and **Voice**) are displayed in this area. By default, all port types are selected.

Node Name

Specify the node name for the local end point in this field. Click on the "**...**" button to display the Node:Shelf Selection window. Select the node name and corresponding shelf name from this window. The default is all nodes (the field is blank).

Slot.Line

Specify the endpoint's slot and line number in this field. The default is all slots (the field is blank).

Port List

This region is populated when you select the **Filter** button. All ports matching the filter criteria are displayed in this region. You may select a single entry from the list for plotting.

Each entry in the list has the following format:

- **Port Identifier**—the local and remote endpoints are displayed in this column. The format of the endpoints is as follows: <*nodename*>.<*slot*>.<*line*>.<*port*>
- **Port Type**—the type of the selected port is displayed in this column.
- **Port Speed**—the port speed for the selected port is displayed in this column.

Report Type Pane

The Report Type pane is comprised of the following components:

Include Peak Data

When enabled peak performance is included in the graph along with the average performance data.

Peak Interval Option

Use this to select peak intervals from the values of 1, 5, 6, 10, 12, and 15 minutes if you have enabled the Include Peak Data button. The default value is 5 minutes (300 seconds).

Note You must select the same peak interval as the one enabled during statistics collection.

Plot Duration

Selections for time of day (**TOD**), previous hour (**Prev Hour**), previous day (**Prev Day**), and previous week (**Prev Week**) are displayed. The default value is **TOD**.

When you select **Prev Hour**, **Prev Day**, or **Prev Week**, the **Start Date/Start Time** fields are inactive, and when the **Stop Date/Stop Time** fields are blank, they are populated with the current date and time. When you modify the stop date/time, the modified value is used for the plot duration. When you select **TOD**, both **Start Date/Start Time** and **Stop Date/End Time** fields are activated, and the **Stop Date/End Time** fields are populated with the current date and time.

Start Date/Start Time

Specify the start date and time for the graph in this field.

Stop Date/End Time

Specify the stop date and time for the graph in this field.

Cumulation Period

Click on the appropriate button (**Hourly**, **Daily**, or **Weekly**) to set the report's plot interval. The default selection is **Hourly**.

Result Pane

Status and error messages are displayed in this pane.

Plot Button

Click on this button to initiate the plotting of the report. When statistic entries are not found, an error message is displayed in the **Result** pane. Otherwise, the **Result** pane displays the number of entries found.

Cancel Button

Click on this button to cancel the current report filter operation and close this window.