Cisco Service Control Application Reporter

User Guide

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OL-8411-03

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*Cisco **SCA Reporter** User Guide*

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Preface

This preface describes who should read the *Cisco Service Control Application Reporter User Guide*, how it is organized, and its document conventions.

Document Revision History

Cisco Service Control Release	Part Number	Publication Date
Release 3.0.5	OL-8411-03	November, 2006

DESCRIPTION OF CHANGES

Editorial changes only

Cisco Service Control Release	Part Number	Publication Date
Release 3.0.3	OL-8411-02	May, 2006

DESCRIPTION OF CHANGES

- Updated Online Help
- Added Troubleshooting Section
- Added Glossary

Cisco Service Control Release	Part Number	Publication Date
Release 3.0.0	OL-8411-01	December, 2005

Audience

This guide is intended for experienced network administrators who are responsible for generating reports of the daily operation using the Cisco Service Control Application Reporter (SCA Reporter).

Organization

This guide is organized as follows:

Chapter	Title	Description
Chapter 1	*Overview* ("General Overview" on page 1-1)	Provides a brief overview of the Cisco Service Control solution and describes the components of the system.
Chapter 2	*System Overview* (on page 2-1)	Provides an introduction to the ***Cisco Service Control Application Reporter***, explains some basic concepts, and provides instructions on how to install and launch the SCA Reporter. It also provides Basic terminology and a Quick Start section.
Chapter 3	*Using the SCA Reporter* (on page 3-1)	Describes basic and advanced configuration of the SCA Reporter. It also describes how to navigate in the GUI.
Chapter 4	*Defining Reports* (on page 4-1)	Describes the features of the SCA Reporter, including creating a new report, generating a report, modifying an existing report, and deleting a report.
Chapter 5	*Working with Reports* (on page 5-1)	Describes the available actions for the SCA Reporter, including viewing and adjusting the chart display.
Chapter 6	*The SCA Reporter Command-Line Interface* (on page 6-1)	Explains how to use the SCA Reporter Command-Line Interface to generate reports.
Appendix A	*Installing and Upgrading SCA Reporter Templates* (on page A-1)	Describes how to install and upgrade SCA Reporter templates.
Appendix B	*Troubleshooting* (on page B-1)	Describes SCA Reporter error messages, and their probable causes and solutions.
Appendix C	*The SCA Reporter as a Tool in the SCA BB Console* (on page C-1)	Describes the SCA Reporter as a tool in the SCA BB Console.
Appendix D	*SCA Reporter Templates* (on page D-1)	Describes the report parameters of the SCA Reporter templates, organized by template groups.

Related Documentation

The following publications are available for the Cisco Service Control Application Reporter:

- *Cisco Service Control Application for Broadband User Guide*
- *Cisco Service Control Application for Broadband Reference Guide*
- *Cisco Service Control Management Suite Collection Manager User Guide*

The following publications may also be useful:

- The SCE platform installation and configuration guides:
  - *Cisco SCE 1000 2xGBE Installation and Configuration Guide*
  - *Cisco SCE 2000 4xGBE Installation and Configuration Guide*
  - *Cisco SCE 2000 4/8xFE Installation and Configuration Guide*
- *Cisco Service Control Engine (SCE) CLI Command Reference*

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in **boldface**.
italic font	Arguments for which you supply values are in *italics*.
[ ]	Elements in square brackets are optional.
{x | y | z}	Alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string, or the string will include the quotation marks.
`screen` font	Terminal sessions and information that the system displays are in `screen` font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font.
`italic screen` font	Arguments for which you supply values are in *`italic screen`* font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note Means *reader take note*. Notes contain helpful suggestions or references to materials not covered in this manual.

Caution Means *reader be careful*. In this situation, you might do something that could result in loss of data.

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- *http://www.cisco.com*
- *http://www-china.cisco.com*
- *http://www-europe.cisco.com*

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package that ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

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- Registered Cisco Direct Customers can order Cisco Product documentation from the networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/pcgi-bin/marketplace/welcome.pl

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We appreciate your comments.

Obtaining Technical Assistance

Cisco provides *Cisco.com* (on page ix) as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

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To access Cisco.com, go to http://www.cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website *http://www.cisco.com/tac*.

P3 and P4 level problems are defined as follows:

- P3—Your network is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for *Cisco.com* (on page ix), go to *http://tools.cisco.com/RPF/register/register.do*.

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at *http://www.cisco.com/tac/caseopen*.

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to *http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml*.

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

General Overview

This chapter provides a general overview of the Cisco Service Control solution. It introduces the Cisco Service Control concept and the Service Control capabilities. It also briefly describes the hardware capabilities of the Service Control Engine (SCE) platform and the Cisco specific applications that together compose the total Cisco Service Control solution.

This chapter contains the following sections:

- The Cisco Service Control Concept 1-1
- Cisco Service Control Capabilities 1-2
- The SCE Platform 1-3
- Management and Collection 1-4

The Cisco Service Control Concept

The Cisco Service Control solution is delivered through a combination of purpose-built hardware and specific software solutions that address various service control challenges faced by service providers. The SCE platform is designed to support classification, analysis, and control of Internet/IP traffic.

Service Control enables service providers to create profitable new revenue streams while capitalizing on their existing infrastructure. With the power of Service Control, service providers have the ability to analyze, charge for, and control IP network traffic at multigigabit wire line speeds. The Cisco Service Control solution also gives service providers the tools they need to identify and target high-margin content-based services and to enable their delivery.

As the downturn in the telecommunications industry has shown, IP service providers' business models need to be reworked to make them profitable. Having spent billions of dollars to build ever larger data links, providers have incurred massive debts and faced rising costs. At the same time, access and bandwidth have become commodities where prices continually fall and profits disappear. Service providers have realized that they must offer value-added services to derive more revenue from the traffic and services running on their networks. However, capturing real profits from IP services requires more than simply running those services over data links; it requires detailed monitoring and precise, real-time control and awareness of services as they are delivered. Cisco provides Service Control solutions that allow the service provider to bridge this gap.

Service Control for Broadband Service Providers

Service providers of any access technology (DSL, cable, mobile, and so on) targeting residential and business consumers must find new ways to get maximum leverage from their existing infrastructure, while differentiating their offerings with enhanced IP services.

The Cisco Service Control Application for Broadband adds a new layer of service intelligence and control to existing networks that can:

- Report and analyze network traffic at subscriber and aggregate level for capacity planning
- Provide customer-intuitive tiered application services and guarantee application SLAs
- Implement different service levels for different types of customers, content, or applications
- Identify network abusers who are violating the Acceptable Use Policy
- Identify and manage peer-to-peer, NNTP (news) traffic, and spam abusers
- Enforce the Acceptable Use Policy (AUP)
- Integrate Service Control solutions easily with existing network elements and BSS/OSS systems

Cisco Service Control Capabilities

The core of the Cisco Service Control solution is the purpose-built network hardware device: the Service Control Engine (SCE). The core capabilities of the SCE platform, which support a wide range of applications for delivering Service Control solutions, include:

- Subscriber and application awareness—Application-level drilling into IP traffic for real-time understanding and controlling of usage and content at the granularity of a specific subscriber.
  - Subscriber awareness—The ability to map between IP flows and a specific subscriber in order to maintain the state of each subscriber transmitting traffic through the SCE platform and to enforce the appropriate policy on this subscriber's traffic.

    Subscriber awareness is achieved either through dedicated integrations with subscriber management repositories, such as a DHCP or a Radius server, or via sniffing of Radius or DHCP traffic.
  - Application awareness—The ability to understand and analyze traffic up to the application protocol layer (Layer 7).

    For application protocols implemented using bundled flows (such as FTP, which is implemented using Control and Data flows), the SCE platform understands the bundling connection between the flows and treats them accordingly.
- Application-layer, stateful, real-time traffic control—The ability to perform advanced control functions, including granular BW metering and shaping, quota management, and redirection, using application-layer stateful real-time traffic transaction processing. This requires highly adaptive protocol and application-level intelligence.
- Programmability—The ability to quickly add new protocols and easily adapt to new services and applications in the ever-changing service provider environment. Programmability is achieved using the Cisco Service Modeling Language (SML).

Programmability allows new services to be deployed quickly and provides an easy upgrade path for network, application, or service growth.

- Robust and flexible back-office integration—The ability to integrate with existing third-party systems at the Service Provider, including provisioning systems, subscriber repositories, billing systems, and OSS systems. The SCE provides a set of open and well-documented APIs that allows a quick and robust integration process.
- Scalable high-performance service engines—The ability to perform all these operations at wire speed.

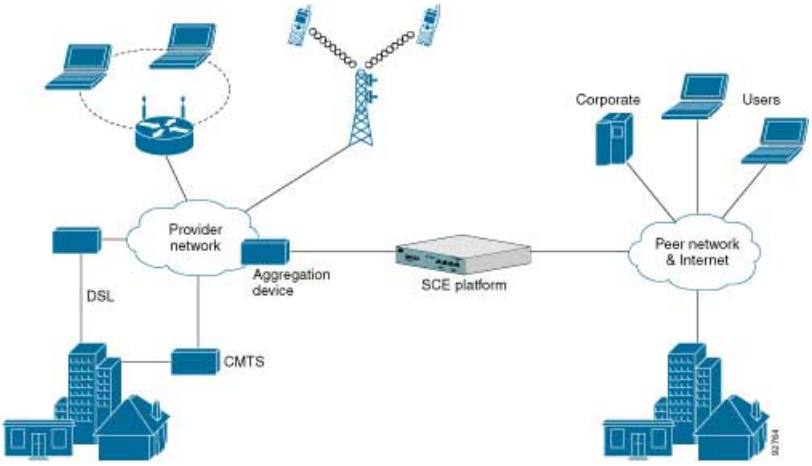
The SCE Platform

The SCE family of programmable network devices is capable of performing application-layer stateful-flow inspection of IP traffic, and controlling that traffic based on configurable rules. The SCE platform is a purpose-built network device that uses ASIC components and RISC processors to go beyond packet counting and delve deeper into the contents of network traffic. Providing programmable, stateful inspection of bidirectional traffic flows and mapping these flows with user ownership, the SCE platforms provide real-time classification of network usage. This information provides the basis of the SCE platform advanced traffic-control and bandwidth-shaping functionality. Where most bandwidth shaper functionality ends, the SCE platform provides more control and shaping options, including:

- Layer 7 stateful wire-speed packet inspection and classification
- Robust support for over 600 protocols and applications, including:
  - General—HTTP, HTTPS, FTP, TELNET, NNTP, SMTP, POP3, IMAP, WAP, and others
  - P2P file sharing—FastTrack-KazaA, Gnutella, BitTorrent, Winny, Hotline, eDonkey, DirectConnect, Piolet, and others
  - P2P VoIP—Skype, Skinny, DingoTel, and others
  - Streaming and Multimedia—RTSP, SIP, HTTP streaming, RTP/RTCP, and others
- Programmable system core for flexible reporting and bandwidth control
- Transparent network and BSS/OSS integration into existing networks
- Subscriber awareness that relates traffic and usage to specific customers

The following diagram illustrates a common deployment of an SCE platform in a network.

Figure 1-1: SCE Platform in the Network



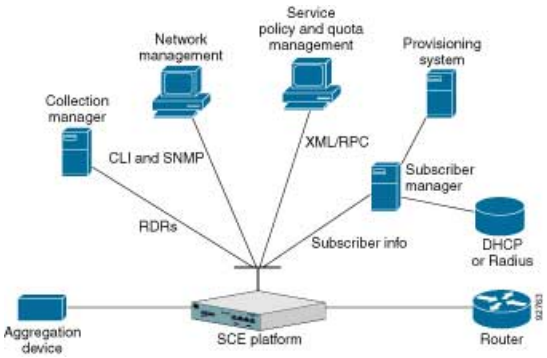
Management and Collection

The Cisco Service Control solution includes a complete management infrastructure that provides the following management components to manage all aspects of the solution:

- Network management
- Subscriber management
- Service Control management

These management interfaces are designed to comply with common management standards and to integrate easily with existing OSS infrastructure.

Figure 1-2: Service Control Management Infrastructure



Network Management

Cisco provides complete network FCAPS (Fault, Configuration, Accounting, Performance, Security) Management.

Two interfaces are provided for network management:

- Command-line interface (CLI)—Accessible through the Console port or through a Telnet connection, the CLI is used for configuration and security functions.
- SNMP—Provides fault management (via SNMP traps) and performance monitoring functionality.

Subscriber Management

Where the Cisco Service Control Application for Broadband (SCA BB) enforces different policies on different subscribers and tracks usage on an individual subscriber basis, the Cisco Service Control Management Suite (SCMS) Subscriber Manager (SM) may be used as middleware software for bridging between the OSS and the SCE platforms. Subscriber information is stored in the SM database and can be distributed between multiple platforms according to actual subscriber placement.

The SM provides subscriber awareness by mapping network IDs to subscriber IDs. It can obtain subscriber information using dedicated integration modules that integrate with AAA devices, such as Radius or DHCP servers.

Subscriber information may be obtained in one of two ways:

- Push Mode—The SM pushes subscriber information to the SCE platform automatically upon logon of a subscriber.
- Pull Mode—The SM sends subscriber information to the SCE platform in response to a query from the SCE platform.

Service Configuration Management

Service configuration management is the ability to configure the general service definitions of a service control application. A service configuration file containing settings for traffic classification, accounting and reporting, and control is created and applied to an SCE platform. SCA BB provides tools to automate the distribution of these configuration files to SCE platforms. This simple, standards-based approach makes it easy to manage multiple devices in a large network.

Service Control provides an easy-to-use GUI to edit and create these files and a complete set of APIs to automate their creation.

Data Collection

The Cisco Service Control solution generates usage data and statistics from the SCE platform and forwards them as Raw Data Records (RDRs), using a simple TCP-based protocol (RDR-Protocol). The Cisco Service Control Management Suite (SCMS) Collection Manager (CM) software implements the collection system, listening in on RDRs from one or more SCE platforms and processing them on the local machine. The data is then stored for analysis and reporting functions, and for the collection and presentation of data to additional OSS systems such as billing.

CHAPTER 2

System Overview

The SCA Reporter is the Cisco Service Control Application tool that allows you to produce reports based on the traffic analysis performed by the Service Control Engine (SCE) platform. The information is sent from the SCE platform and is stored in a database. The SCA Reporter can query and retrieve information from the database and present the results in a comprehensive range of reports, including global monitoring, subscriber monitoring, P2P, and traffic discovery statistics reports.

This chapter contains the following sections:

- System Components 2-1
- System Requirements 2-2
- Installing and Uninstalling the SCA Reporter 2-3
- Launching and Exiting the SCA Reporter 2-7
- Basic Reporter Terminology 2-8
- Quick Start 2-9

System Components

The SCA Reporter is a valuable tool for understanding the habits and resource consumption of the applications and subscribers that use your network. It can also be used to judge the efficacy of various rules and the possible impact of their implementation on the network.

The SCA Reporter is available only in a deployment with a database. You can generate reports using any of the following methods:

- Standalone application
- Command-line interface (CLI)—See *The SCA Reporter Command-Line Interface* (on page 6-1)
- Tool of the SCA BB Console—See *The SCA Reporter as a Tool in the SCA BB Console* (on page C-1)

The available reports can be presented in a variety of charts (for example, stacked-bar or area) or in tabular form. You can adjust the chart display for various presentation options (for example, 3D). You can export both tabular and chart reports to files. You can also modify the reports by changing the values assigned to the parameters (for example, time boundaries). You can duplicate, export, and save reports.

After generating an initial report, you can generate reports using the SCA Reporter Command-Line Interface (CLI) without using the GUI.

SCA Reporter consists of visual components (known as *views*). The following are the views and the tasks that are completed in each view:

- Templates View—Used to select a template, create a new report instance, and generate a report.
- Properties View—Used to view parameters and values of the object in focus, which can be template groups, templates, report instances, and chart display parameters. You can also configure report instance and chart display parameters.
- Report View—Used to view the appearance of the report when chart tab is selected and to view the data when the table tab is selected. When a report is selected, you can navigate to the report instance that generated it.
- Progress View—Used to monitor reports executed or exported. You can view progress details in this view, and also choose to generate reports in the background so that you can continue working on other reports.

Generating a report can be divided into three broad steps:

Step 1 Create a report instance and execute the report from the *Templates View*.

Step 2 Configure the parameters of the report in the *Properties View*.

Step 3 Adjust the chart display and view reports in tabular or graphic form, using the *Report View*.

You can generate multiple reports simultaneously and later export them. While the reports are executing, you can monitor them and put them in the background by using the *Progress View*.

System Requirements

You can install the SCA Reporter GUI front end on any computer running Windows 98, Windows 2000, Windows NT, or Windows XP.

The computer should have a minimum of 512 MB of memory; 1024 MB of memory is recommended.

Installing and Uninstalling the SCA Reporter

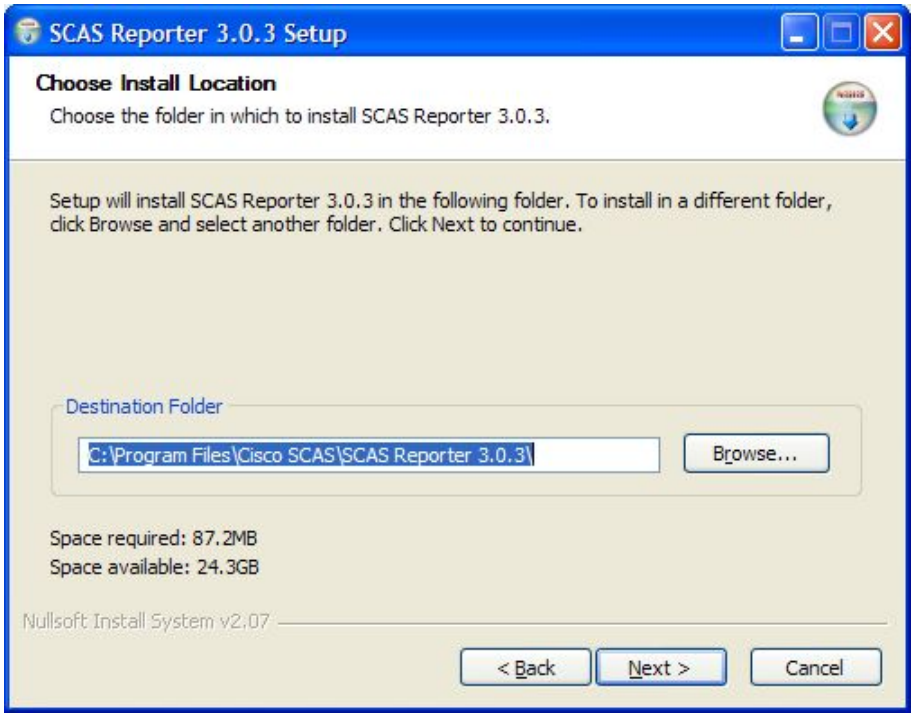
To install the SCA Reporter:

Step 1 Navigate to the SCA Reporter installation file, `SCAS Reporter 3.0.5 Setup.exe`, and double-click it.

The Welcome screen of the SCAS Reporter 3.0.5 Setup Wizard appears.

Step 2 Click **Next**.

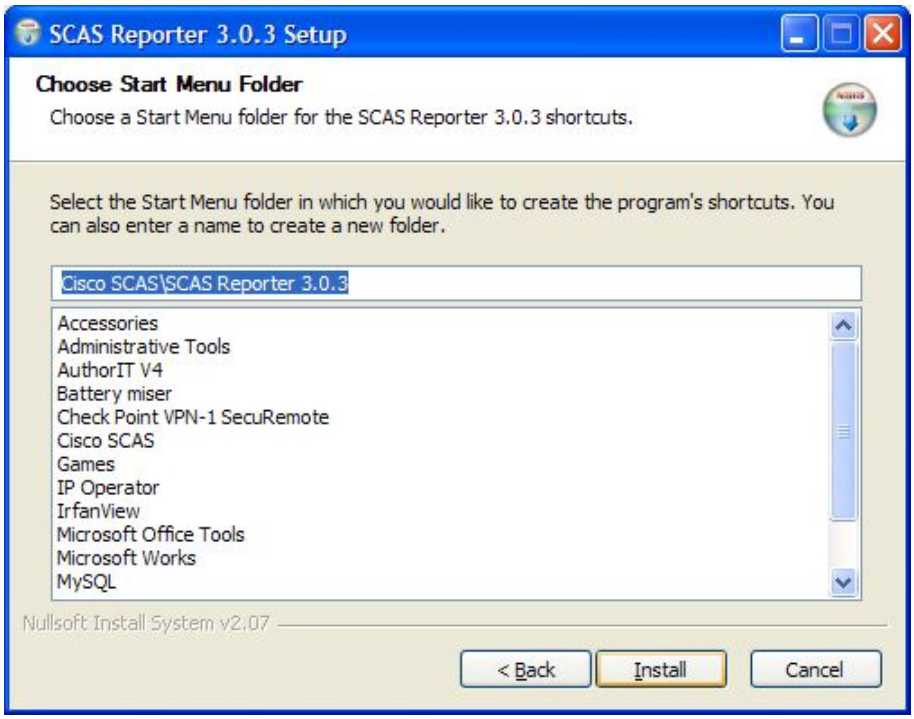
The Install Location screen of the Setup Wizard opens.



Step 3 (Optional) Click **Browse** to choose a different destination folder.

Step 4 Click **Next**.

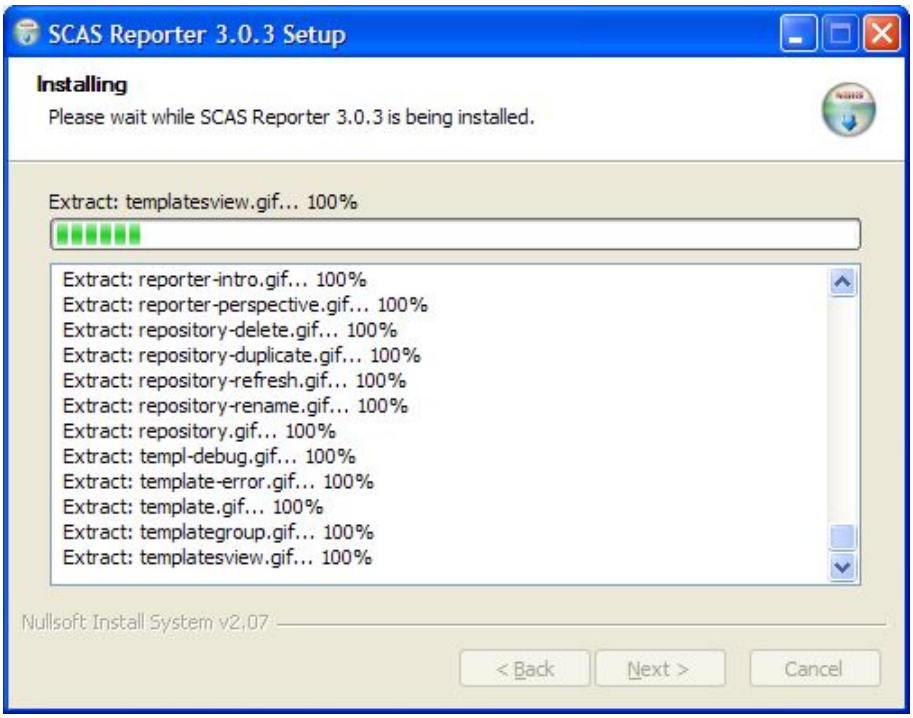
The Start Menu Folder screen of the Setup Wizard opens.



Step 5 (Optional) Enter a different Start Menu folder in the Start Menu Folder field.

Step 6 Click **Install**.

The Installing screen of the Setup Wizard opens.

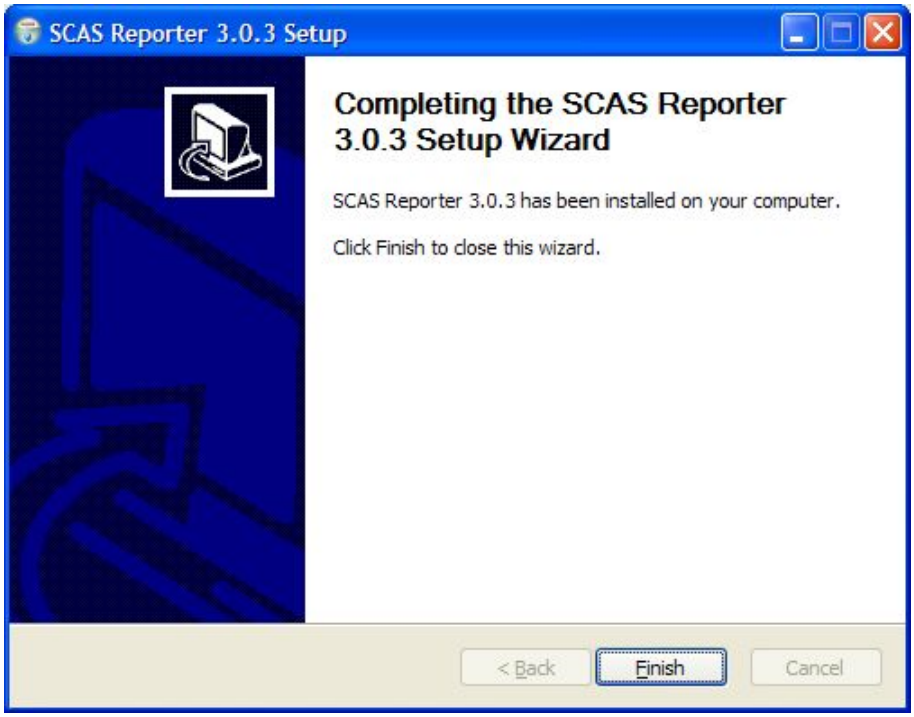


Step 7 Wait until installation is complete.

The Next button is enabled.

Step 8 Click **Next**.

The Installation Complete screen of the Setup Wizard opens.



Step 9 Click **Finish**.

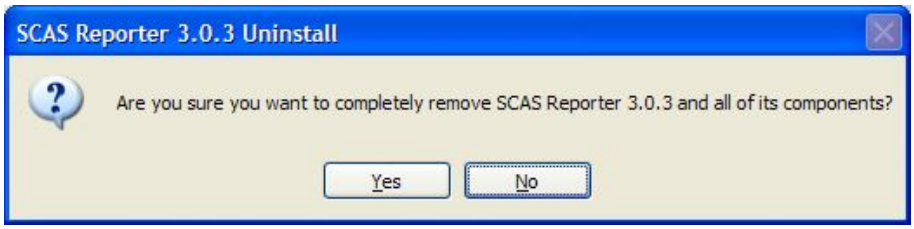
The SCAS Reporter 3.0.5 Setup Wizard closes

The SCA Reporter is now installed on the machine.

Uninstalling the SCA Reporter

To uninstall the SCA Reporter:

Step 1 Choose **start** > **All Programs** > **Cisco SCAS** > **SCAS Reporter 3.0.5** > **Uninstall**.



Step 2 Click **Yes**.

Step 3 Click **OK**.

The SCA Reporter is uninstalled from the machine.

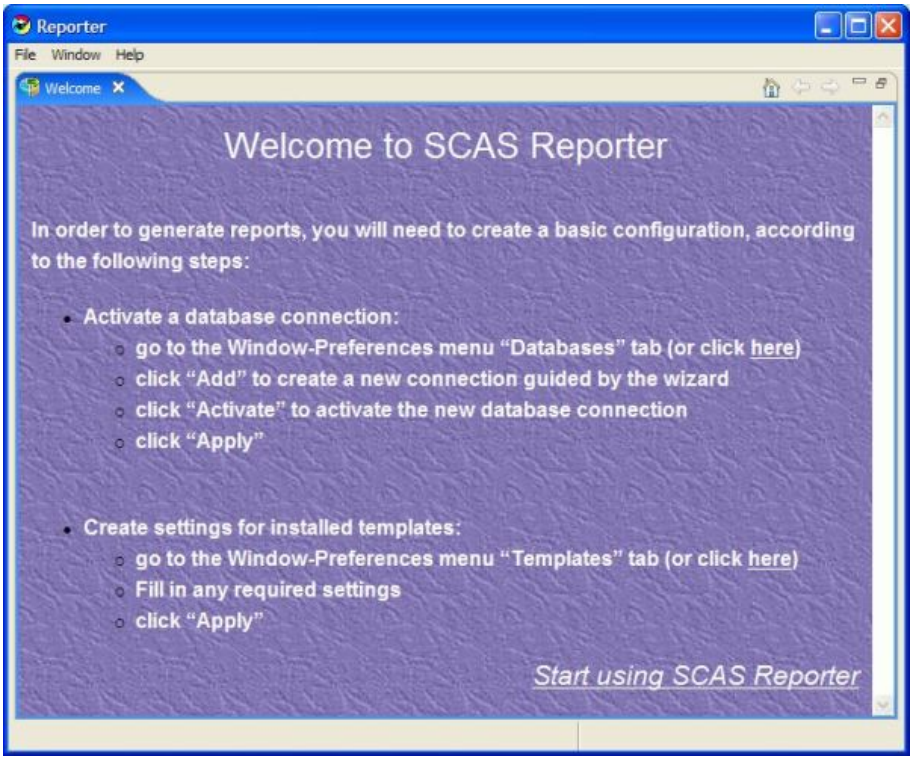
Launching and Exiting the SCA Reporter

You can access the SCA Reporter from the **Start** menu.

To access the SCA Reporter from the Start Menu:

Choose **start** > **All Programs** > **Cisco SCAS** > **SCAS Reporter 3.0.5** > **SCAS Reporter 3.0.5**.

The main SCA Reporter window appears, open to the Welcome tab.



Exiting the SCA Reporter

To exit the SCA Reporter:

From the main menu, choose **File** > **Exit**.

SCA Reporter disconnects from the database and closes.

Basic Reporter Terminology

This section defines terms and concepts that are necessary for understanding the SCA Reporter configuration and operation.

Repository

The part of the SCA Reporter configuration that is associated with a particular Cisco application. It consists of template groups and repository preferences.

For example, “SCA BB 3.0”.

Template Group

A collection of templates sharing a common theme.

For example, “Subscriber Reports”.

Template

A specification of a particular report, consisting of parameters and SQL code (which is not visible to the user).

For example, “Global Bandwidth per Service”.

Report (or Report Instance)

An instance of a template in which some or all parameters have set values.

Parameter

An item of a template whose value determines some aspect of the report instance.

If a report has undefined mandatory parameters, you cannot execute it. Some parameters have a default value, which is used if the user has not supplied a different value.

Repository Preferences

Configuration items that are dictated by the repository. Normally they are mandatory.

The SCA BB repository has only one preference: IP of SCE for policy data.

Quick Start

When you first use the SCA Reporter, you must set up and generate your first report, and then you can work with the report.

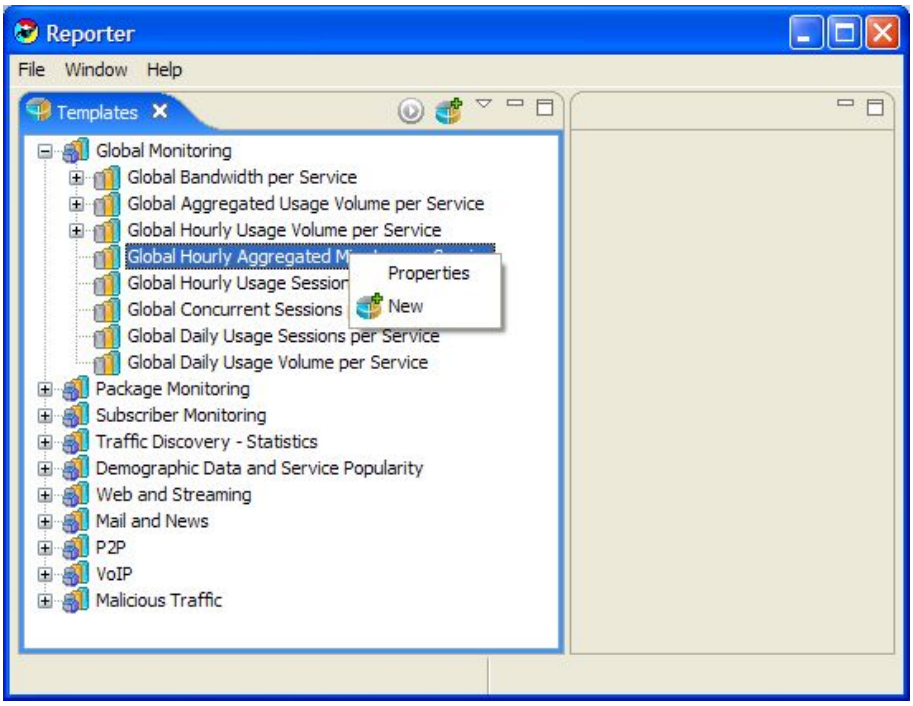
To generate your first report:

Step 1 Add and configure a database for the SCA Reporter (see *Configuring a Database Connection* (on page 3-1)).

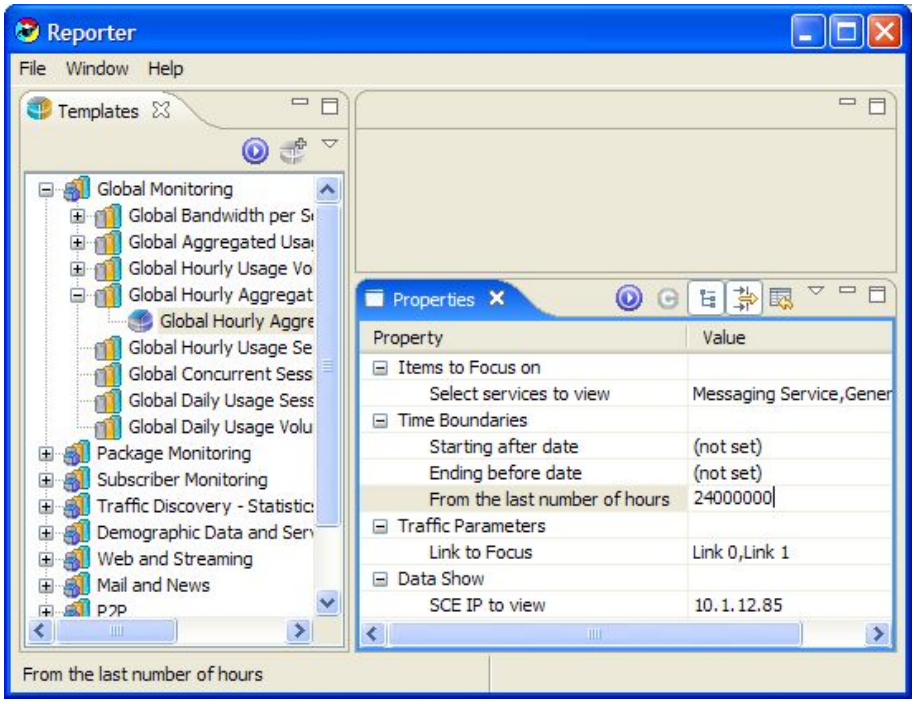
Step 2 Set the IP address of the SCE (see *Setting the IP Address of the SCE* (on page 3-5)).

Step 3 Confirm that there is an active database and that the system is configured correctly (see *Checking System Conditions* (on page B-2)).

Step 4 Open the *Templates View* and select a template. From the drop-down menu in the tab, select **New** (see *Creating a New Report Instance* (on page 4-3)).



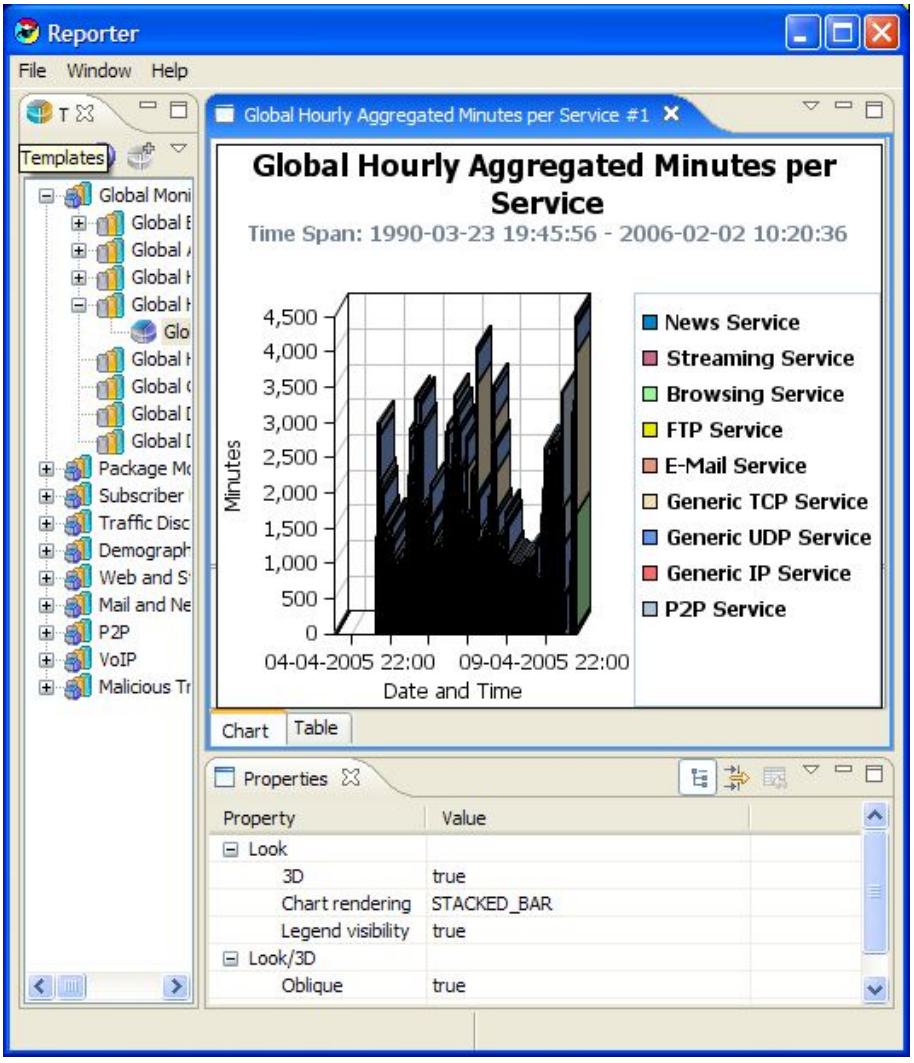
Step 5 Fill in values for mandatory and other report parameters (see *Configuring Parameters of a Report Instance* (on page 3-19)).



Step 6 Click (**Execute**) to generate the report.

Step 7 View your Report.

The Chart display parameters are in the *Properties View*.



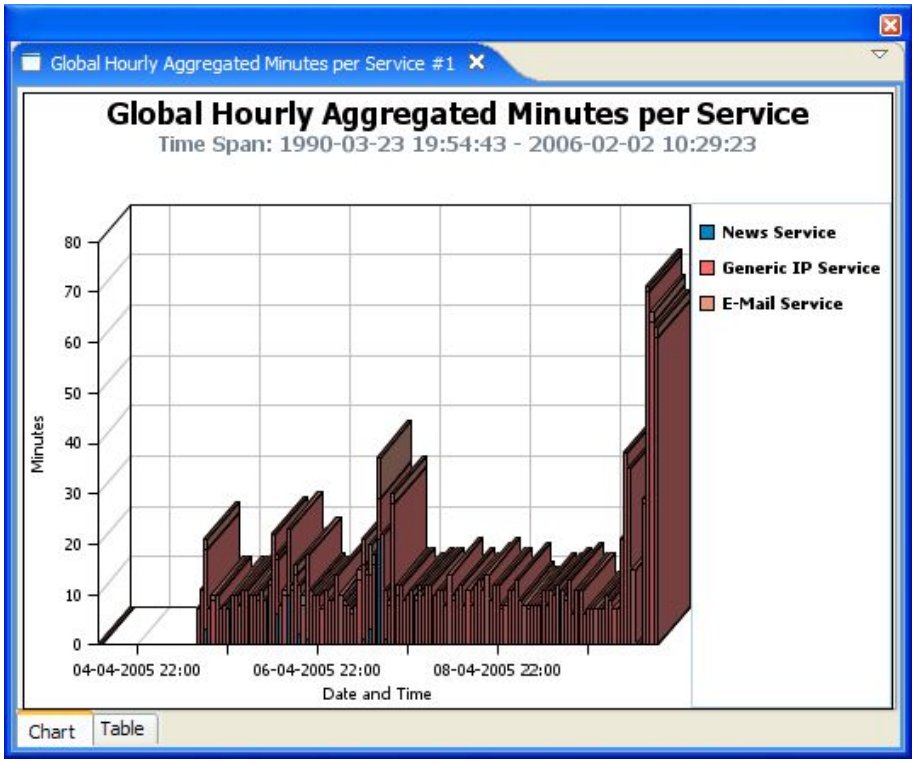
To work with your first report:

Step 1 In the *Report View*, from the drop-down menu in the tab, select **Go To Report**.

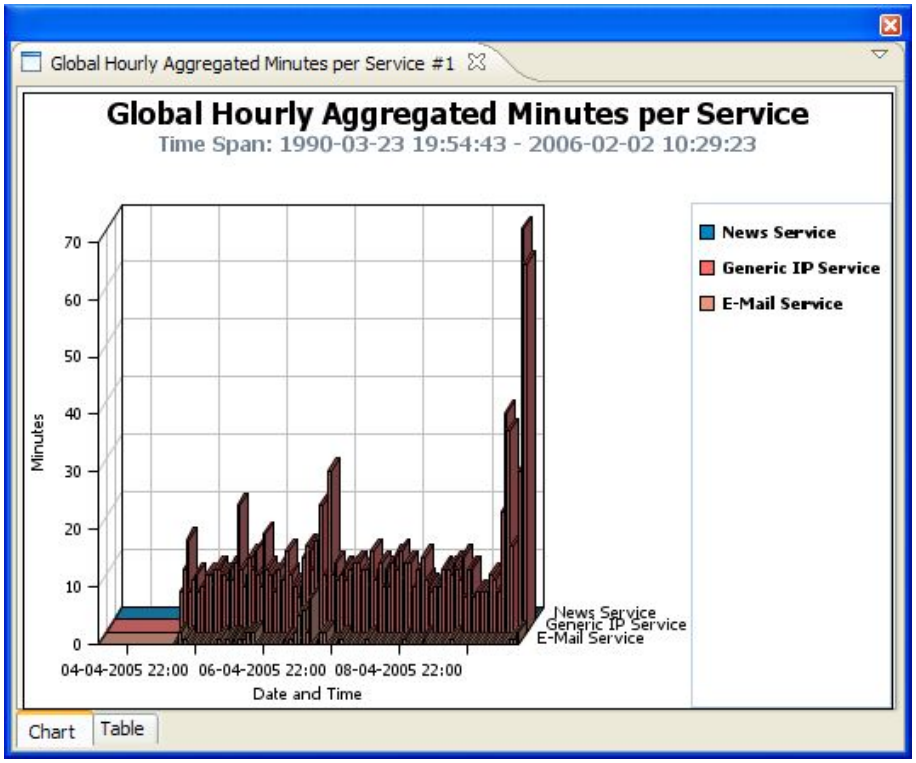
The Report parameters are in the *Properties View*.

Step 2 Click the **Select Services to View** parameter, and check **E-Mail Services**, **Generic IP Services**, and **News Services**.

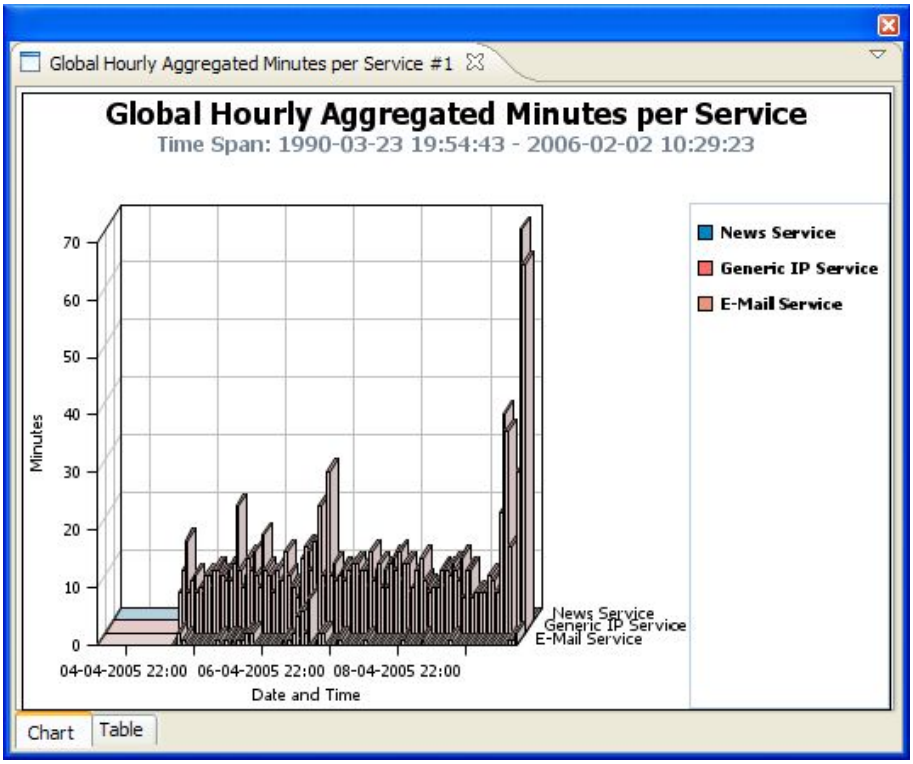
Step 3 Click (**Execute**) to regenerate the report.



Step 4 Click the **Chart Rendering** parameter, and change its value from STACKED_BAR to STAIR *(see Configuring Parameters of a Chart Display* (on page 3-21)).

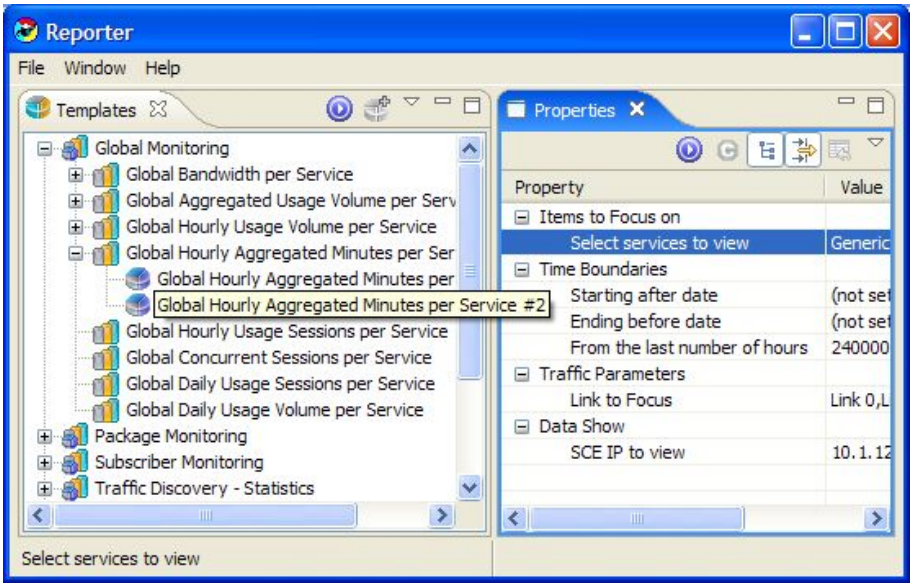


Step 5 Click the **Settings** parameter, change the Ambient Light sliding scale, and click **OK**.



Step 6 To export the report to a file, from the main menu, choose **File** > **Export** (see *Exporting Single or Multiple Reports* (on page 5-20)).

Step 7 To duplicate the report, from the drop-down menu in the tab, select **Duplicate**.



Step 8 Exit the SCA Reporter (see *Exiting the SCA Reporter* (on page 2-8)).

Using the SCA Reporter

This chapter explains how to use the GUI, which includes navigating and configuring.

This chapter contains the following sections:

- Creating a Basic Configuration for the SCA Reporter 3-1
- Creating an Advanced Configuration for the SCA Reporter 3-6
- Navigating in the Reporter: Views 3-8
- Accessing Online Help 3-28

Creating a Basic Configuration for the SCA Reporter

You must create a basic configuration for the SCA Reporter, which includes selecting a database type, connecting to a database, activating the database, and setting the IP of the SCE platform for policy data.

In bundled mode, the Cisco Service Control Management Suite (SCMS) Collection Manager (CM) is used with the Sybase Adaptive Server Enterprise (Sybase ASE). The Sybase data management platform supports transaction-intensive enterprise applications. It enables you to store and retrieve information online and can warehouse information as needed. (For more information, see the *Cisco Service Control Management Suite Collection Manager User Guide*.) The CM can also be configured to work with Oracle and MySQL databases.

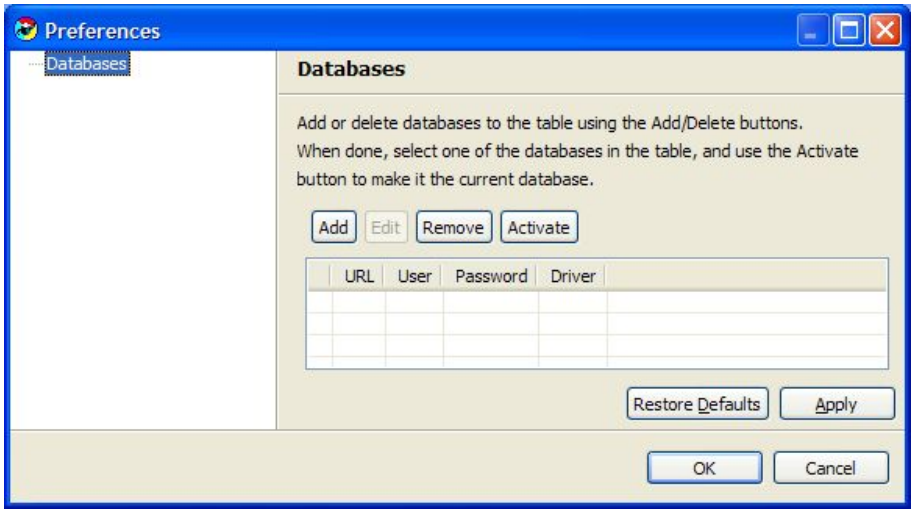
After a database is activated, you must select one IP address of an SCE device in the database. The choice is made for each repository, represented by a tab in the Preferences dialog box. All options presented in the *Templates View* of the SCA Reporter (available packages, services, etc.) are determined by the service configuration currently applied to the configured SCE platform. Each report is generated according to the SCE device to which it is configured. In the sample configuration, there is one SCE device connected to the database and one repository preference.

Configuring a Database Connection

To activate a database connection:

Step 1 From the main menu, choose **Window** > **Preferences**.

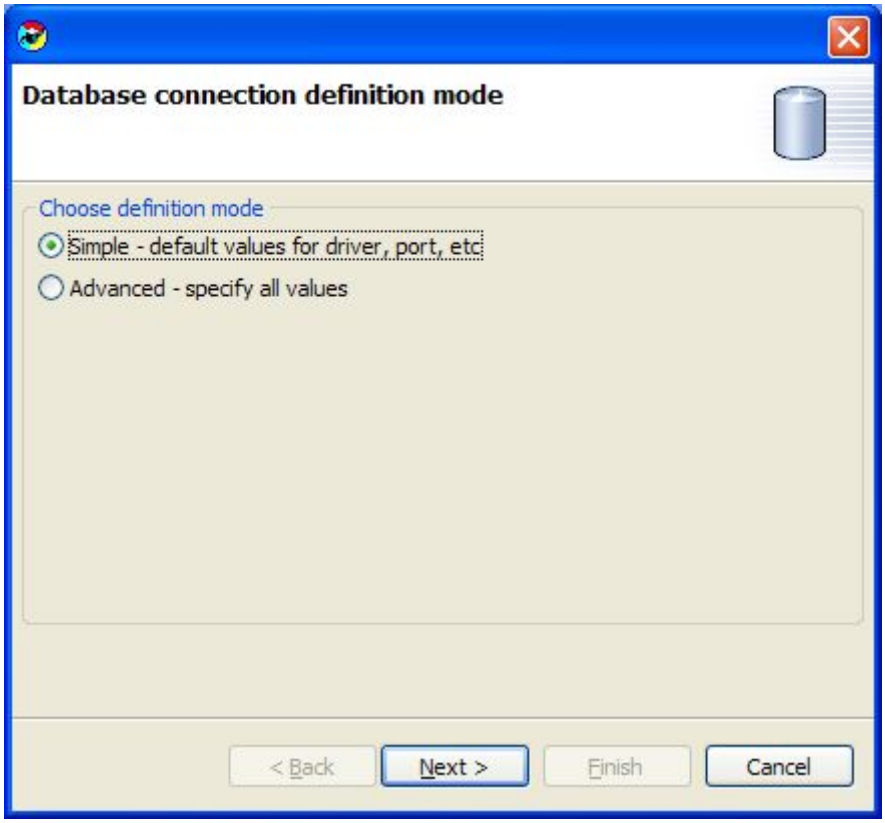
The Preferences dialog box appears.



Step 2 From the Preferences tree, select Reporter > Databases.

Step 3 In the Databases pane, click **Add**.

The Add Database wizard appears, open to the Database connection definition mode screen.



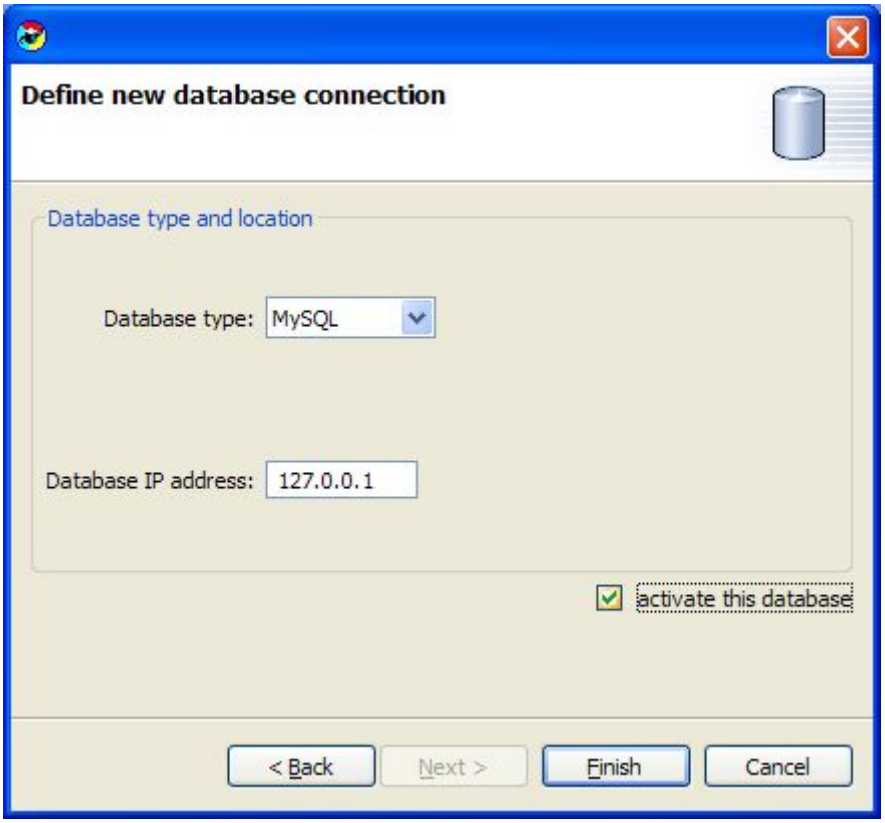
Step 4 Select one of the **Choose definition mode** radio buttons:

- **Simple**
- **Advanced**

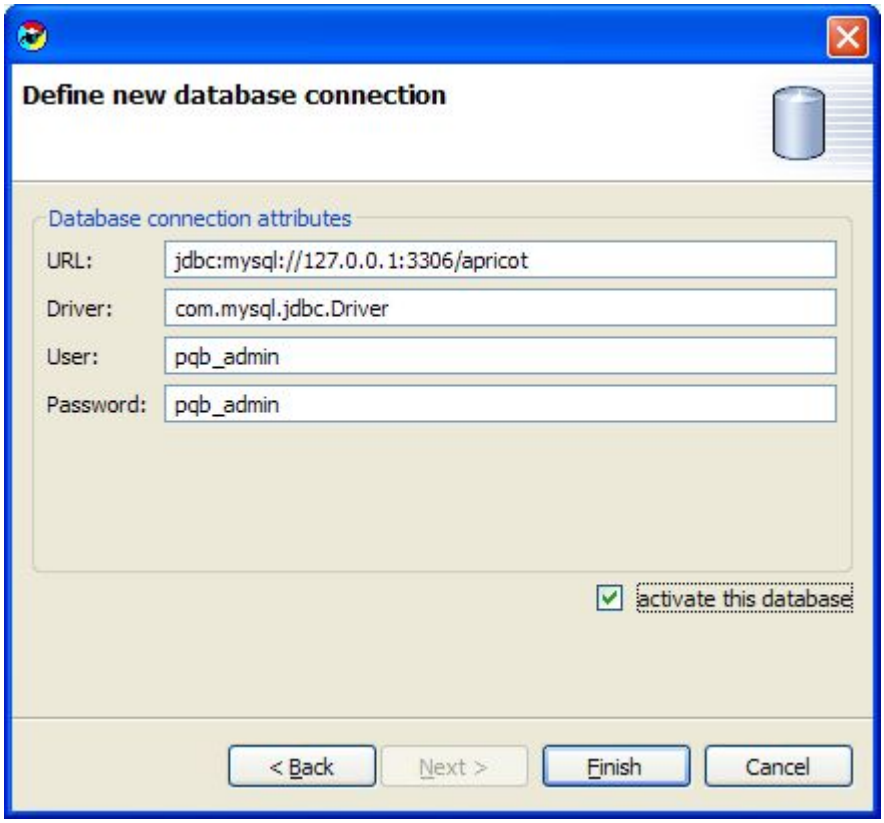
Step 5 Click **Next**.

The Define new database connection screen of the Add Database wizard opens. The actual screen depends on the definition mode you selected in step 4:

- The simple screen:



- The advanced screen:



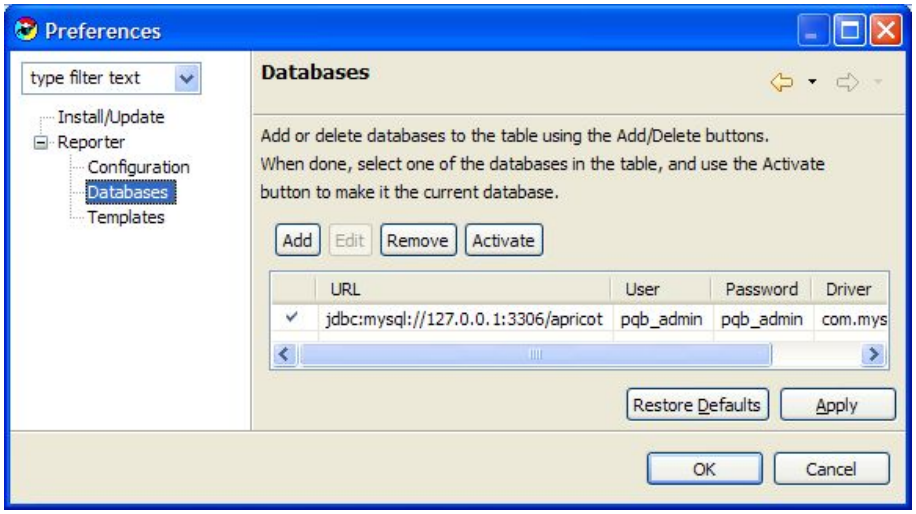
Step 6 Fill in all the fields.

Step 7 Check the **activate this database** check box.

Step 8 Click **Finish**.

The Add Database wizard closes.

The definition of the database is added to the list in the Preferences dialog box.



Step 9 Click **Apply**.

The system activates the database.

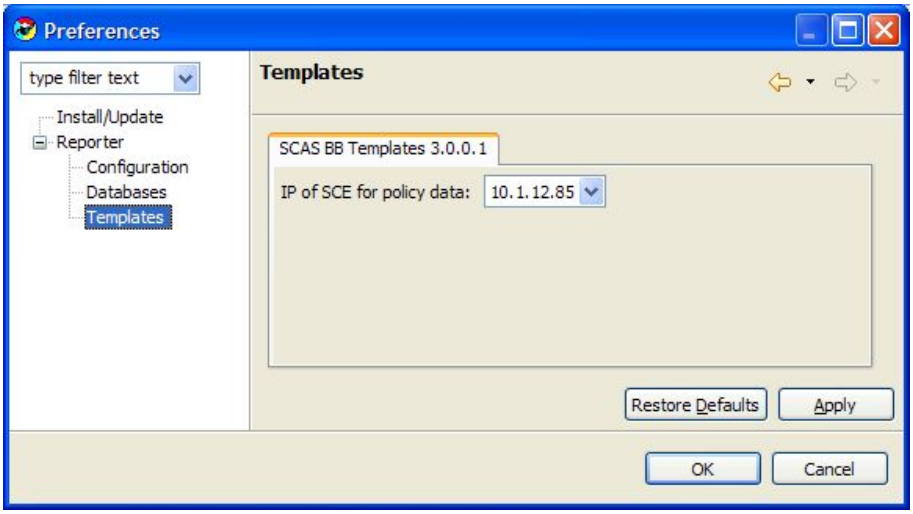
Note Clicking **Apply** is necessary to set the **IP of SCE for policy data** parameter (see *Setting the IP Address of the SCE* (on page 3-5)).

Setting the IP Address of the SCE

To set the IP address of an SCE platform:

Step 1 From the main menu, choose **Window** > **Preferences**.

The Preferences dialog box appears.



Step 2 In the Preferences tree, select **Reporter** > **Templates**

Step 3 In the Templates pane, from the **IP of SCE for policy data** drop-down list, select the IP of SCE for the SCA BB templates repository.

Step 4 Click **Apply**.

The IP address of the SCE platform is set for policy data.

Note There may be more than one SCE platform, but you choose only one, when they all have the same policy data.

Note If more than one repository (set of templates) is available in the Reporter, two tabs are displayed in the Preferences dialog box. In each, you choose one SCE platform. In this case, there will be two sets of template groups in the *Templates View*.

Creating an Advanced Configuration for the SCA Reporter

You can also create an advanced configuration that allows you to configure some functions of the SCA Reporter**.**

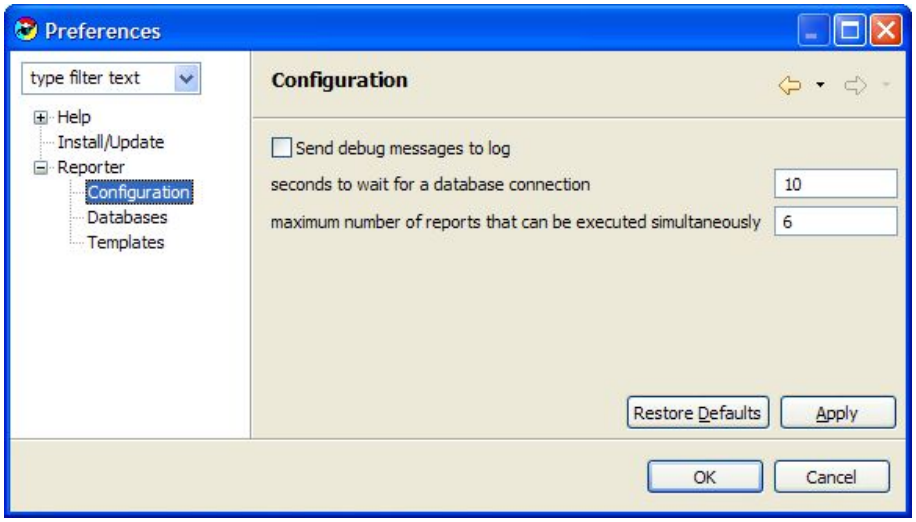
For example, you can set the following:

- Whether to log debug messages
- The number of seconds to wait for a database connection

Sending Debug Messages to Log

To send debug messages to log:

Step 1 From the main menu, choose **Window** > **Preferences**.



Step 2 In the Preferences tree, select **Reporter** > **Configuration**.

Step 3 In the Configuration pane, check the **Send debug messages to log** check box.

Step 4 Click **Apply.**

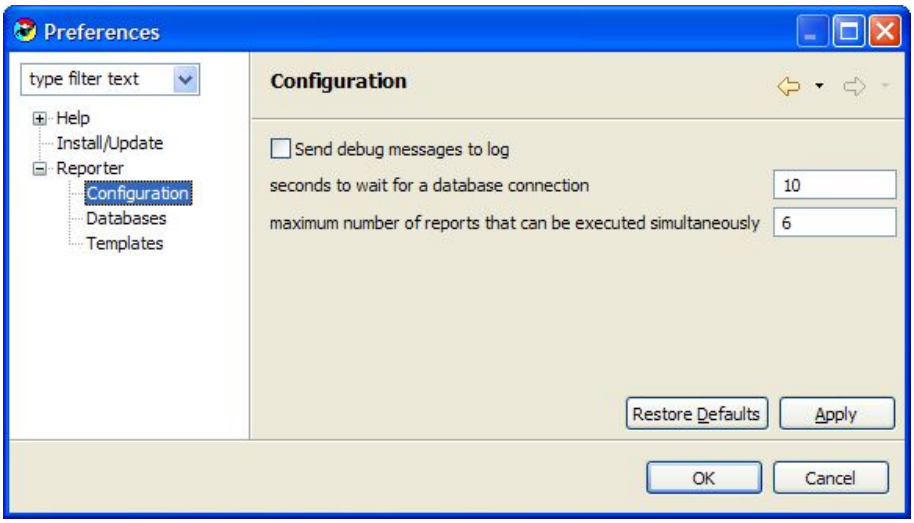
The system applies the preferences to the session.

Caution: Logging debug messages can cause the log file to grow rapidly.

Configuring Seconds to Wait for Database Connection

To configure seconds to wait for a database connection:

Step 1 From the main menu, choose **Window** > **Preferences.**



Step 2 In the Preferences tree, select **Reporter** > **Configuration**.

Step 3 In the Configuration pane, enter the number of seconds to wait for a database connection. This parameter dictates how long the SCA Reporter tries to connect to a database if the database does not respond immediately.

Step 4 Click **Apply.**

The system applies the preferences to the session.

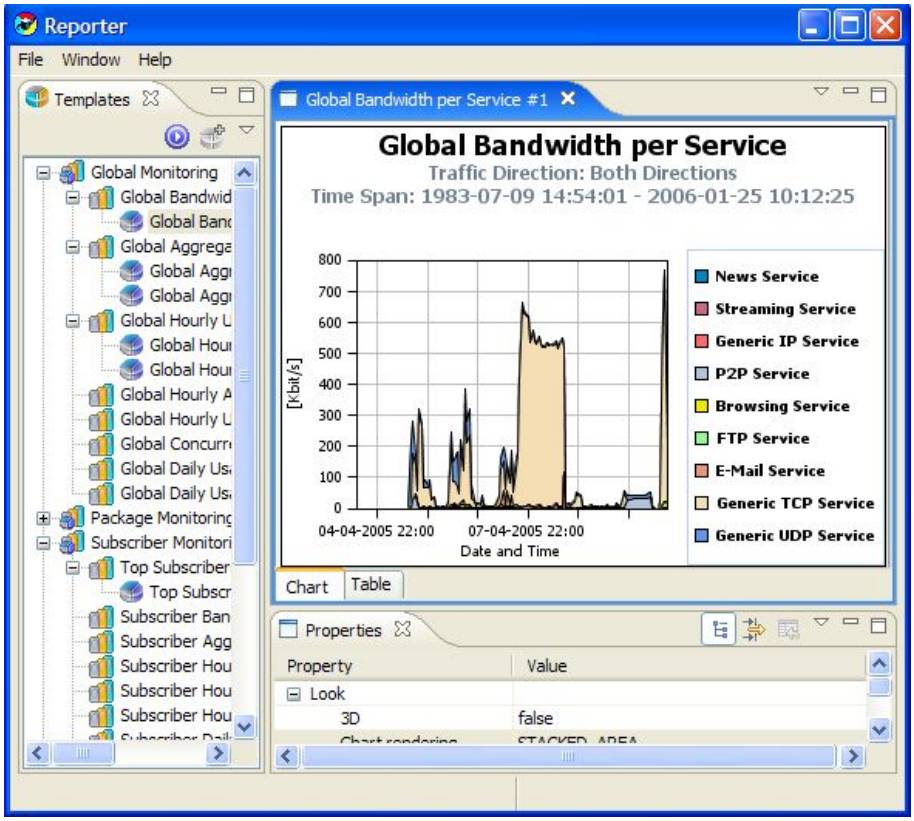
Navigating in the Reporter: Views

You can navigate to template groups, templates, and report instances in the *Templates View*. When you select an item, it is in focus and the *Properties View* shows its properties.

The *Report View* opens when a report is generated. You can navigate to the report instance that generated the report by choosing the drop-down menu item Go to report.

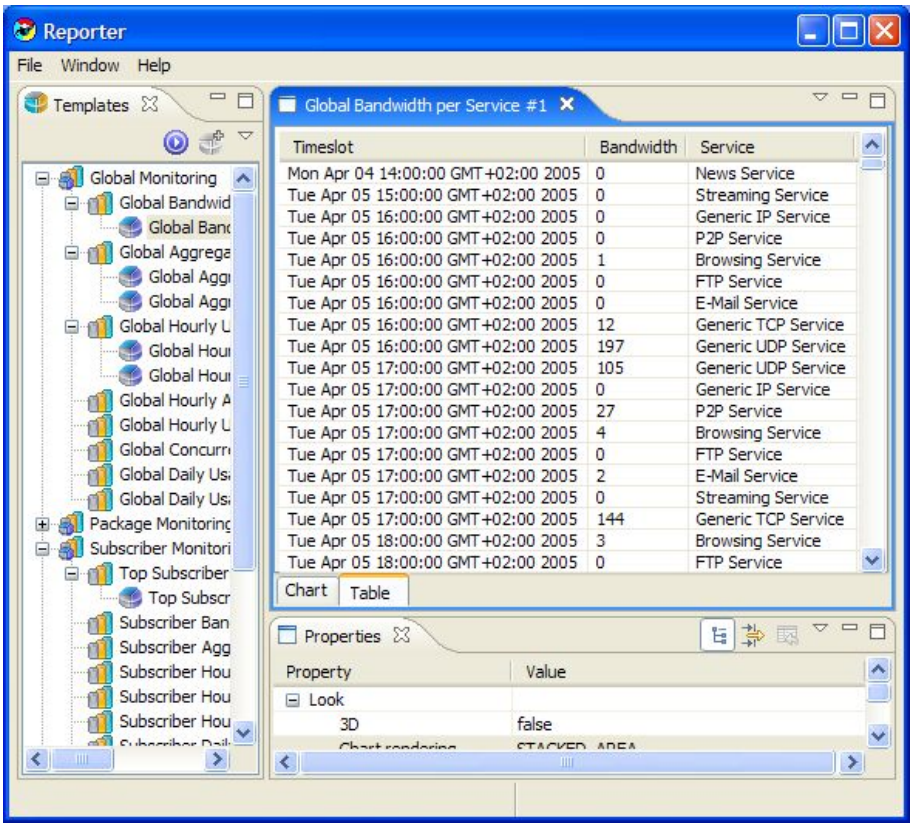
The *Templates View* tab is labeled Templates; the *Properties View* tab is labeled Properties; the *Report View* contains reports with the name of each open report on a separate tab. For example, the upper tab of a report may be labeled **Global Bandwidth per Service**. In the following figure, the report chart is displayed (the Chart tab is selected—indicated by an orange band on top of the tab's label).

Figure 3-1: Reporter Window with Views - Chart Tab



To view the raw data, select the tab labeled Table:

Figure 3-2: Reporter Window with Views - Table Tab



Reporter Menu Items

The following table lists and describes the menus and options of the SCA Reporter menu bar.

Table 3-1 SCA Reporter Menu

Menu	Option	Description	Comments
File	New Window		
	Export	Saves the report to a file	Opens the Export wizard. See *Exporting Single or Multiple Reports* (on page 5-20).
	Exit	Closes the SCA Reporter	
Window	Show View		
	Preferences	Install/Update Templates	See *Installing and Upgrading SCA Reporter Templates* (on page A-1).

Menu	Option	Description	Comments
		Databases	Allows you to add, remove, or activate databases. See *Configuring a Database Connection* (on page 3-1).
		Templates	Allows you to create settings for installed templates. See *Setting the IP Address of the SCE* (on page 3-5).
		Configuration	Allows you to set the database connection timeout and select whether to log debug messages. *See Configuring Seconds to Wait for Database Connec*tion (on page 3-7) and *Sending Debug Messages to Log* (on page 3-6).
Help	Welcome	Welcome View	Links to databases and templates preferences.
		Create a basic configuration	See *Creating a Basic Configuration for the SCA Reporter* (on page 3-1).
	Help Contents	Opens a separate Help window to search for information	See *Accessing Online Help* (on page 3-28).
	Search Help	Opens *Help View* in the SCA Reporter window to search for information	See *Accessing Online Help* (on page 3-28).
	Manage Configuration	Opens the Product Configuration dialog box	Allows you to scan for updates, view installed history, show activities, and add an extension location for browser.
	Find and Install	Opens the Install/Update wizard for new/current features	See *Installing and Upgrading SCA Reporter Templates* (on page A-1).
	Check Conditions		
	About SCA Reporter	Current Version of SCA Reporter**,** license, plug-in details, confirmation details, and confirmation details with system summary and error log	See *Installing and Upgrading SCA Reporter Templates* (on page A-1).

Viewing Menu Items

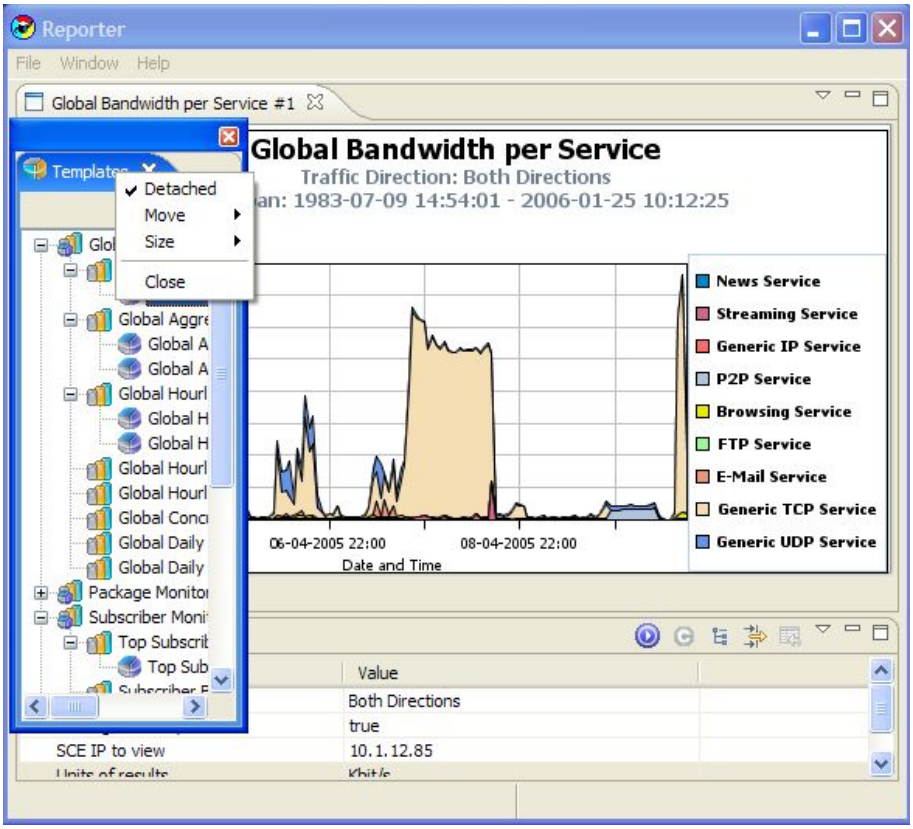
The GUI has a drop-down menu for each view. When the menu is selected, all the available actions for that view appear. You can select menu items from the menu of each view, but there are icons on the tab of the view for frequently used actions.

The GUI also has a popup menu for each view. Right-click the tab of a view, and select an option to personalize the layout of the SCA Reporter window. Some of the available actions are:

- Detached—Detach a view and move it over the SCA Reporter window
- Move—Move a view or a tab group
- Size—Change the size of a pane

The following figure shows the *Templates View* after it is detached from the SCA Reporter.

Figure 3-3: Detached Template View



The Help Menu

The Help menu accesses a number of options:

- Welcome (see *Creating a Basic Configuration for the SCA Reporter* (on page 3-1))
- Help Contents (see *Accessing Online Help* (on page 3-28))
- Search (see *Accessing Online Help* (on page 3-28))
- Manage Configuration, Provides a description of the current configuration

- Find and Install (see *Installing and Upgrading SCA Reporter Templates* (on page A-1))
- Check Conditions (see *Checking System Conditions* (on page B-2))
- About SCAS Reporter Details (see *Installing the Reporter Templates* (on page A-1) and *Viewing the Error Log* (on page B-3))

Properties View

The *Properties View* always shows the properties of the item that is selected in the view in focus. You can control how the properties are presented by clicking on one of the following buttons:

- (**Show Categories**)—To view the parameters with or without their categories
- (**Show Advanced Properties**)—To view all parameters or only mandatory ones
- (**Restore Default Value**)—To reset a selected parameter to its default value:
  - When a parameter is not mandatory, it is unset.
  - When a parameter is mandatory and has a default value, it is reset to the default value.
  - When a parameter is mandatory and does not have a default value, the parameter is not changed.

To change the value of a parameter, select the parameter and reconfigure it (see *Configuring Parameters of a Report Instance* (on page 3-19) and *Configuring Parameters of a Chart Display* (on page 3-21)). Then re-execute the report so that the new report will appear with the new configuration.

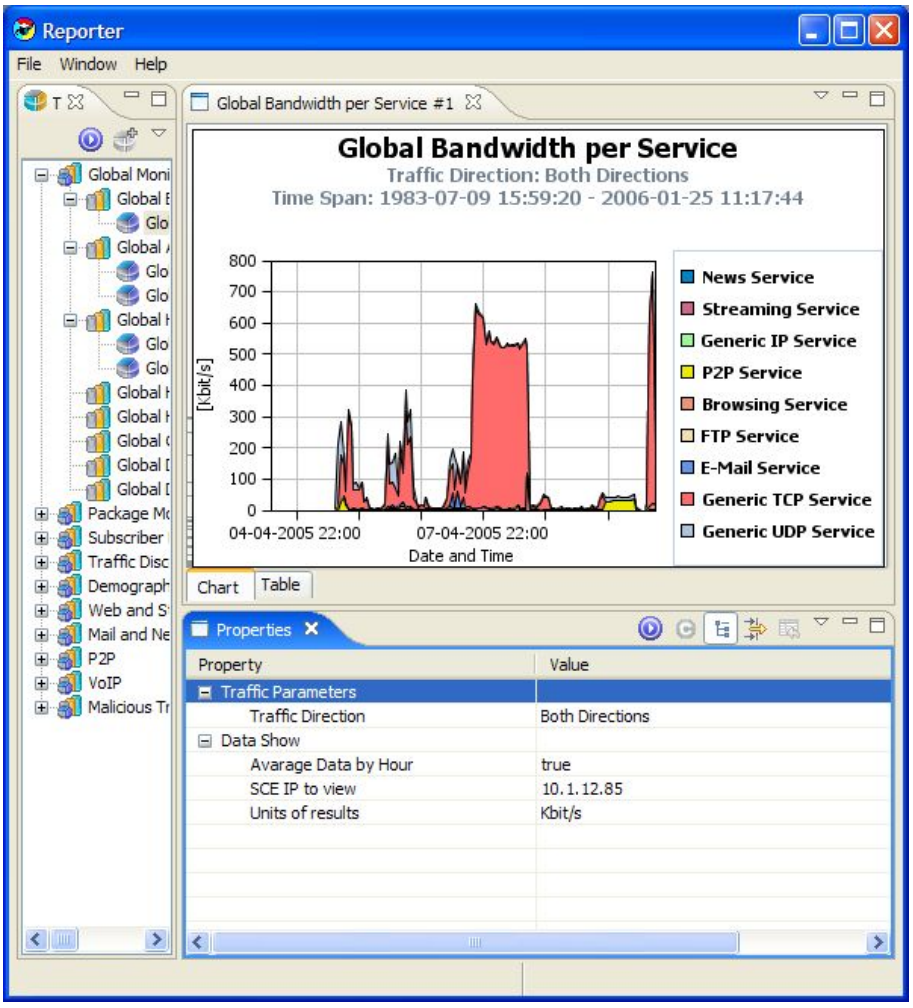
In the following example, notice the actions and how they affect displayed parameters in the *Properties View*.

To shift the displayed parameters in the Properties View:

Step 1 Generate a report from the **Global Bandwidth per Service** template.

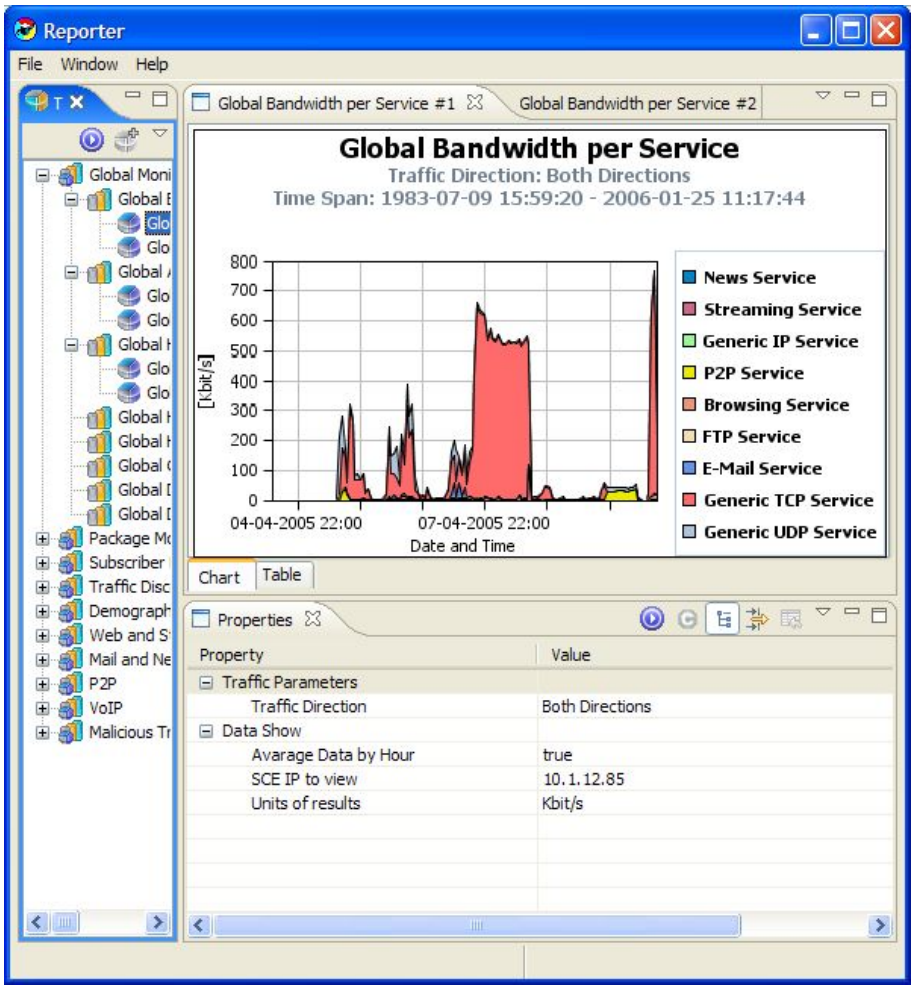
The parameters in the *Properties View* are chart display parameters (because a chart is displayed in the *Report View*).

The default value of the **Units of Results** parameter is Mbps. The chart below is shown with kbps. To change the value, select the report instance so that the report parameters are shown in the *Properties View*, set **Units of Results** to kbps and, from the drop-down menu in the tab, select **Execute**.



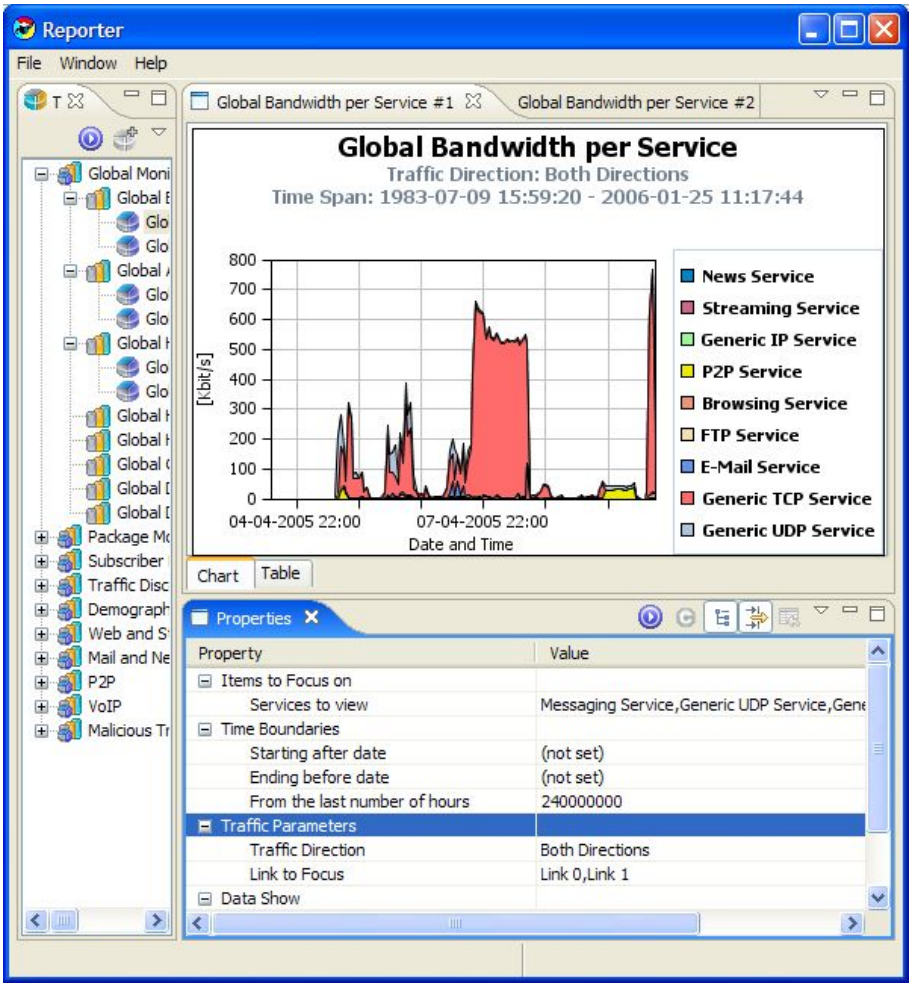
Step 2 In the *Report View*, from the drop-down menu in the tab, select **Go to report**.

In the *Properties View*, the display shifts from chart display parameters to report instance parameters. The report instance used to generate the report is selected, and the view in focus shifts from the *Report View* to the *Templates View*. The mandatory parameters are displayed.



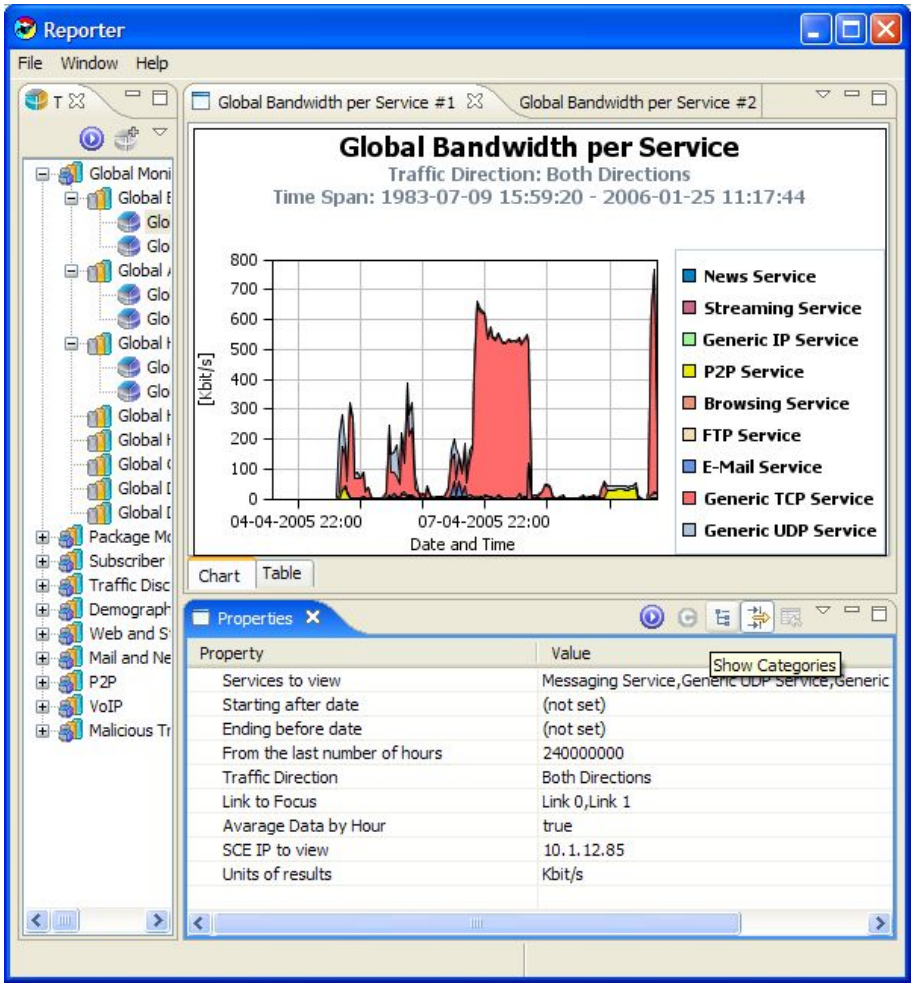
Step 3 In the *Properties View*, from the drop-down menu in the tab, select **Show Advanced Properties**.

All the parameters are displayed.



Step 4 Click (**Show Categories)** to toggle viewing parameters with or without displaying categories.

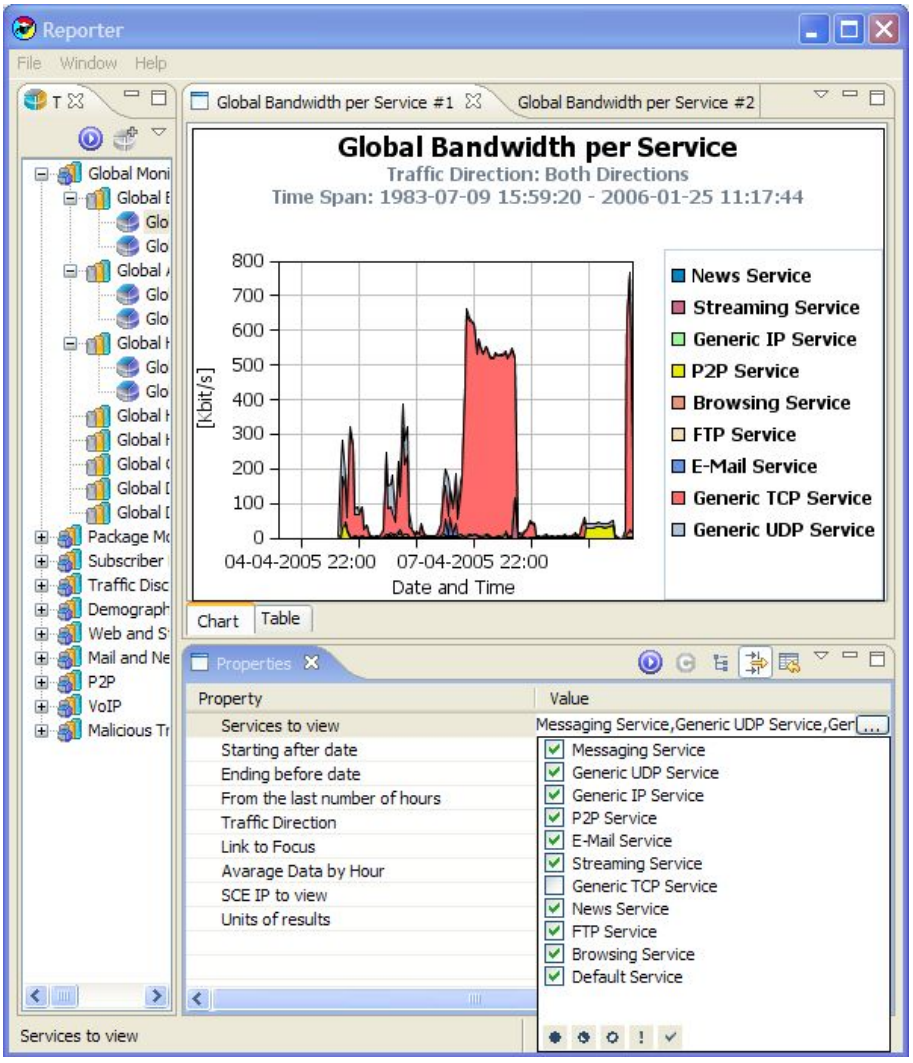
Category names are removed from the *Properties View*.



Step 5 Click **Services to View**, and uncheck **Generic TCP Service**.

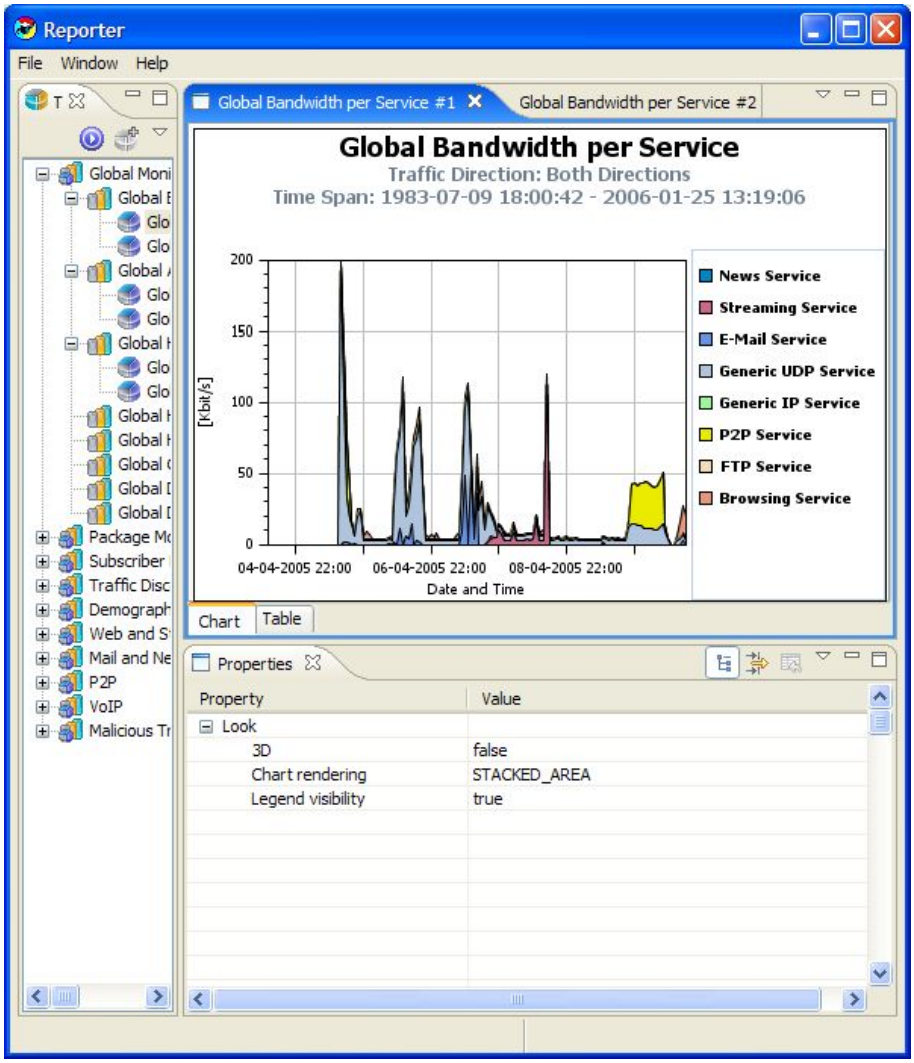
Step 6 Click (**Check**) to select the new choices.

The **Services to View** parameter is updated.



Step 7 Click (**Execute**) in the *Properties View*.

Generic TCP Service is removed from the legend and from the graph.



Configuring Parameters

When working with reports, you may want to assign values to report instance parameters. You would use a similar method to assign values to chart display parameters. How the field is applied to the value of the parameter depends on the type of parameter. In report parameters, the new value is applied the next time the report is generated. In chart display parameters, the value is applied as soon as the field is applied.

Types of parameters include:

- No Value—When no value is assigned, **(not set)** is displayed.
- Free Text—Any text string can be entered.
- Boolean—The value toggles between True and False.
- Date—Click the icon to open a Choose Date and Time dialog box.

- Single Choice—Click the icon to open a drop-down menu.
- Multiple Choice—Click the icon to open a dialog box where more than one value can be checked.

  The icons of the Multiple Choice dialog box are described in the following table.

Table 3-2 Parameter Option Icons

Icon	Option	Description
	Select All	Select all values.
	Invert Selection	Uncheck the checked boxes and check the unchecked.
	Select None	Uncheck all boxes.
	Cancel	Exit the Parameter Option dialog box without saving.
	OK	Save and exit the Parameter Option dialog box.

Note Some parameters are mutually exclusive. **From the last number of hours** and **Starting after date and time** cannot both be implemented, even if both are selected.
Thus, if you want to define the time frame to begin at a specified time, select **Starting after date**. Even if **From the last number of hours** is also chosen, the report time frame will be according to the date and time values.

Configuring Parameters of a Report Instance

The following is an example of assigning values to report instance parameters.

To assign values to report instance parameters:

Step 1 In the *Templates View*, choose (or create) a report instance.

The report instance is selected in the *Templates View*, and the report parameters are displayed in the *Properties View*.

If the parameter that you are modifying is not displayed, click (**Show Advanced Properties**).

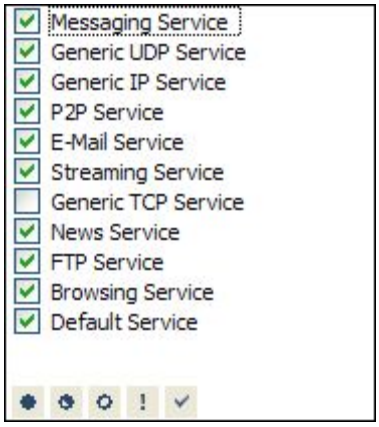
Step 2 Click in the **Traffic Direction** parameter row, and click the icon that appears.

A drop-down menu of parameter values opens.

Step 3 Select a value.

Step 4 Click in the **Services to View** parameter row, and click the icon that appears.

A checklist of parameter values appears.



Step 5 Check the services you want to view.

Step 6 Click (**OK**).

Step 7 Click in the **Ending Before Date** parameter row, and click the icon that appears.

A choose date and time dialog box appears.

Step 8 Select a date and time, and click **OK**.

Step 9 Click (**Execute**).

The report is generated with the configured values.

Configuring Parameters of a Chart Display

You can configure chart display parameters, which are those in the Look category of the *Properties View*. When you commit the changes, the chart display is updated. There are also adjustments that are made directly in the *Report View* (see *Adjusting Chart Display* (on page 5-6)).

The following is a table displays the Chart Display parameters and their descriptions:

Table 3-3 Chart Display Parameters

Parameter	Type	Default	Values	Comments
3D	Boolean	False	True, False	If True, the chart is three-dimensional.
Chart Rendering	Single choice	Stacked Area	See list following table	The chart can be displayed in many graphical formats.
Legend Visibility	Boolean	True	True, False	If True, the legend is displayed in the chart.
Oblique	Boolean	True	True, False	Only displayed when **3D** is True. If True, there is always 90 degrees between the x and y axes when the graph is rotated.
Settings	Sliding scale	See following table	See following table	Only displayed when **3D** is True. Sliding scales of eight characteristics (see following table).

Possible values for the **Chart Rendering** parameter:

- BAR
- STACKED_BAR
- STACKED100_BAR
- SUPERIMPOSED_BAR
- AREA
- STACKED_AREA
- STACKED100_AREA
- POLYLINE
- STACKED_POLYLINE
- STACKED100_POLYLINE
- SCATTER
- STAIR
- STACKED_STAIR
- STACKED100_STAIR
- SUMMED_STAIR
- PIE

Table 3-4 Chart properties set by the Settings parameter:

Property	Values	Default
Rotation	-90 ... 90	35
Elevation	-90 ... 90	45
Depth	0 ... 100	20
Depth Gap	0 ... 100	0
Zoom	0 ... 200	1.0
Ambient Light	0 ... 100	0.1

Property	Values	Default
Light Latitude	-90 ... 90	0.0
Light Longitude	-90 ... 90	0.0

The following is an example of assigning values to chart display parameters.

To assign values to chart display parameters:

Step 1 In the *Templates View*, choose (or create) a report instance.

The report instance is selected in the *Templates View*, and the report instance parameters are displayed in the *Properties View*.

Step 2 Click (**Execute**).

The report is selected in the *Report View* and the chart display parameters are displayed in the *Properties View*.

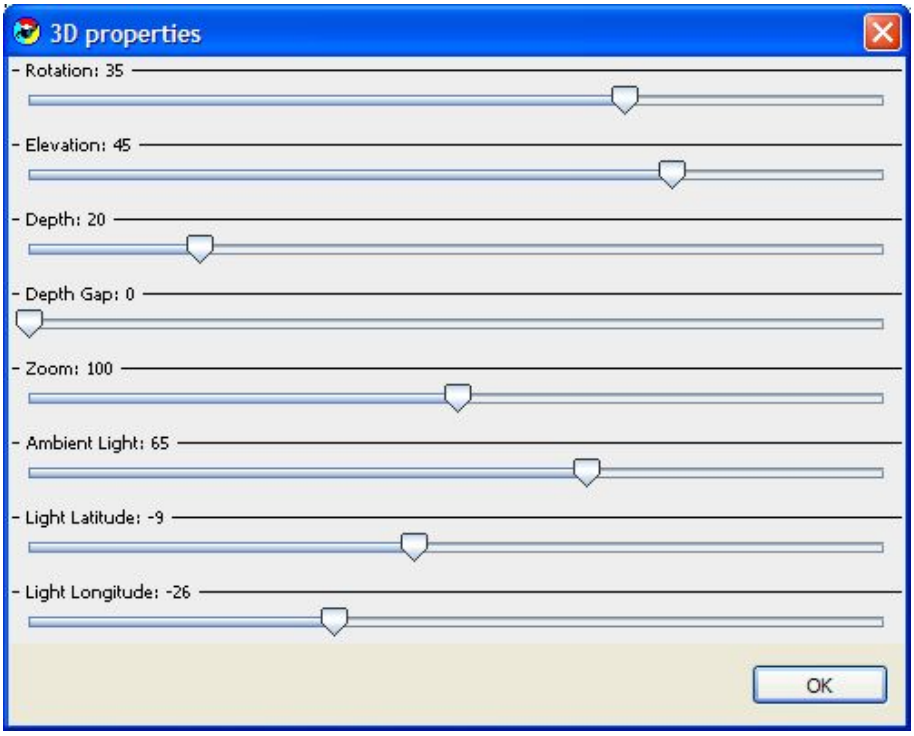
Step 3 Select the **Chart Rendering** row. From the drop-down list, choose the type of chart you want to display.

The report is updated.

Step 4 To display the chart in three dimensions, click the **3D** parameter.

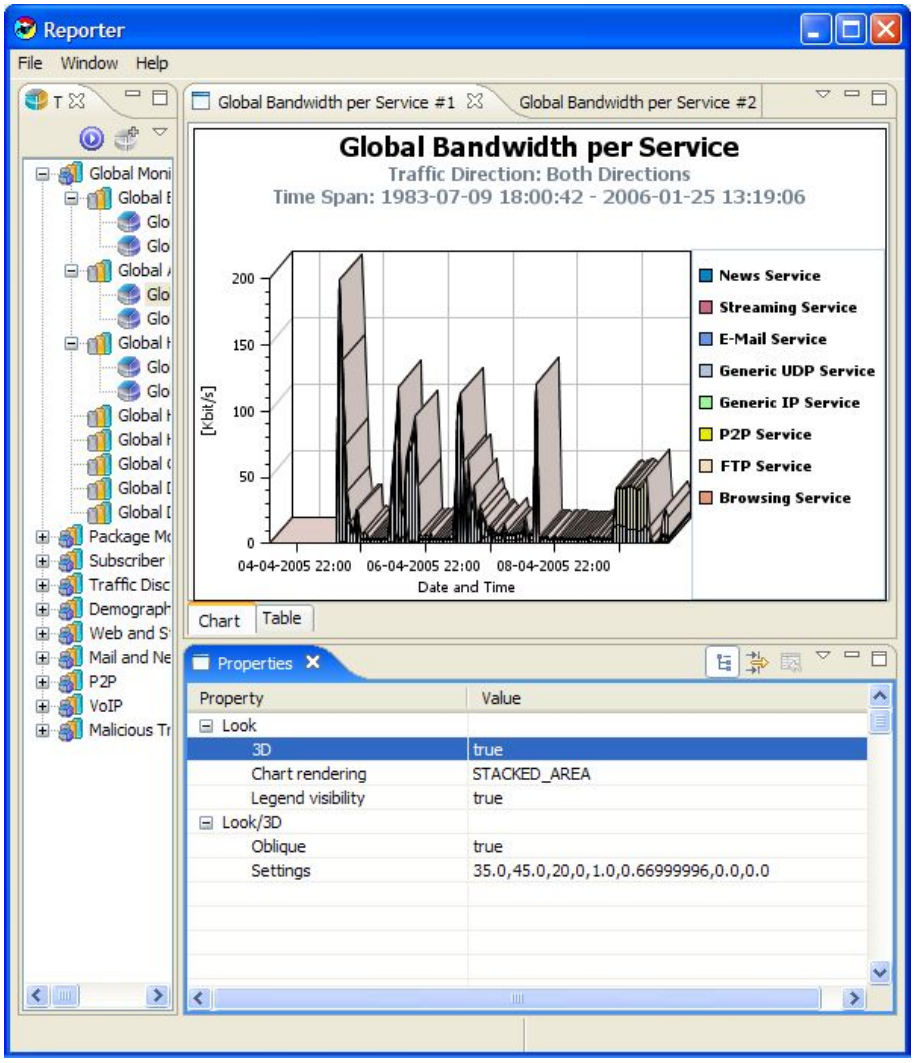
The value changes from False to True and the Oblique and Settings parameters appear.

Step 5 Select the **Settings** parameter and set the three-dimensional properties using the sliding scales.



Step 6 Click **OK**.

The new values are assigned to the Settings parameter. Changes can be viewed in the *Report View*.



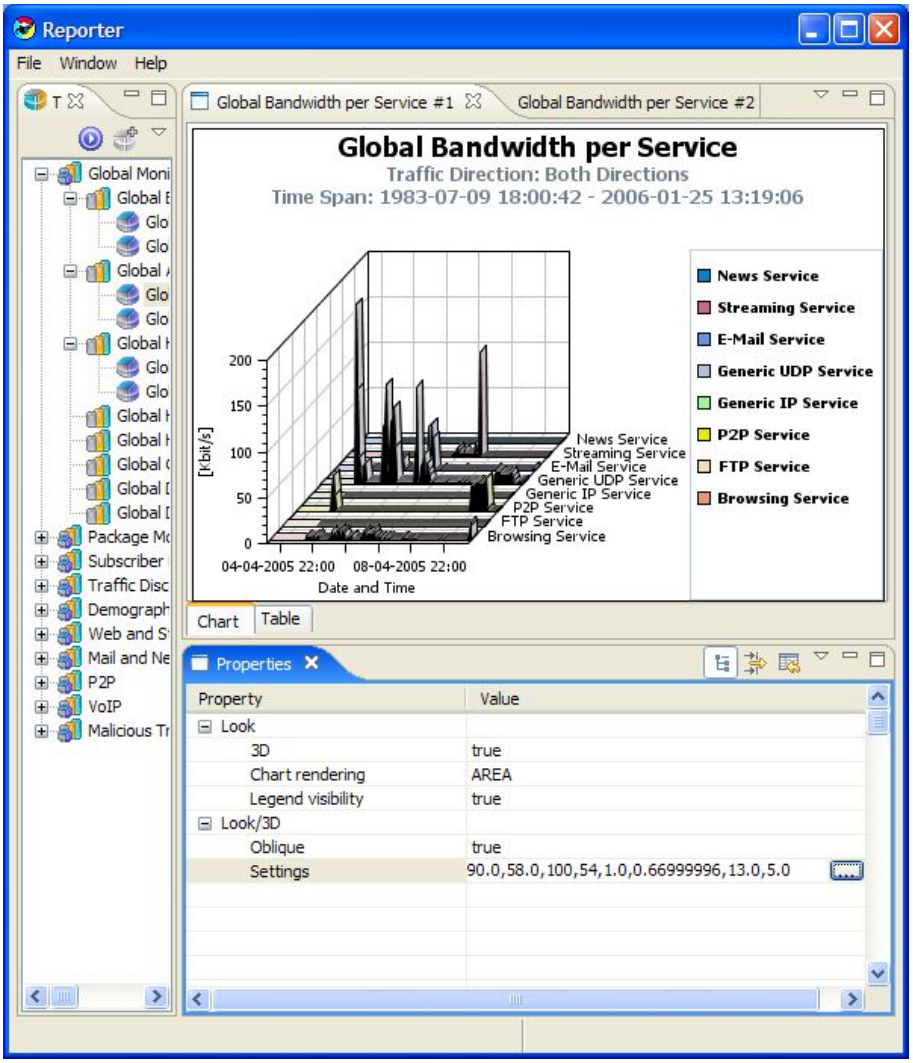
To configure chart display parameters of the Look category:

Step 1 Select a report.

Step 2 Set the 3D parameter to True.

Step 3 Set the Chart Rendering parameter to AREA.

Step 4 Set the Legend Visibility parameter to True.



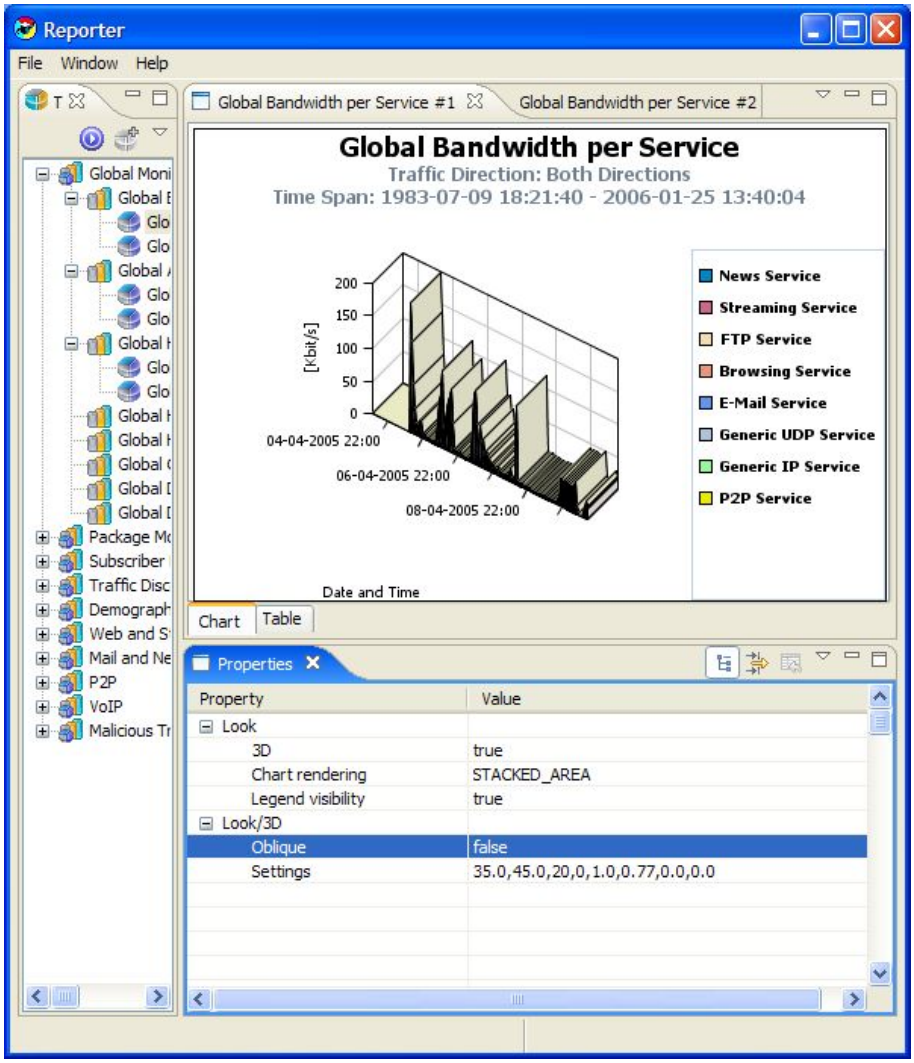
To configure chart display parameters of the Look/3D category:

Step 1 Select a report.

Step 2 Set the 3D parameter to True.

Step 3 Set the Oblique parameter to false so that the angle between the x-axis and the y-axis is not 90 degrees.

Step 4 Configure the Settings parameter.



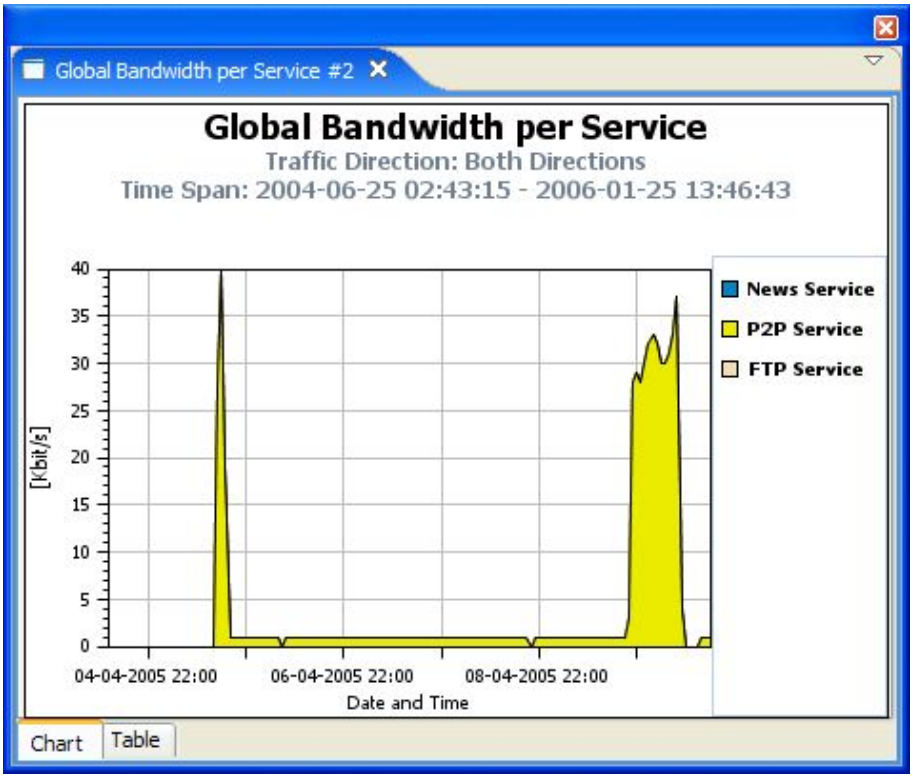
Configuring Parameters: Example

The following is an example of configuring parameters.

To configure average data by hour:

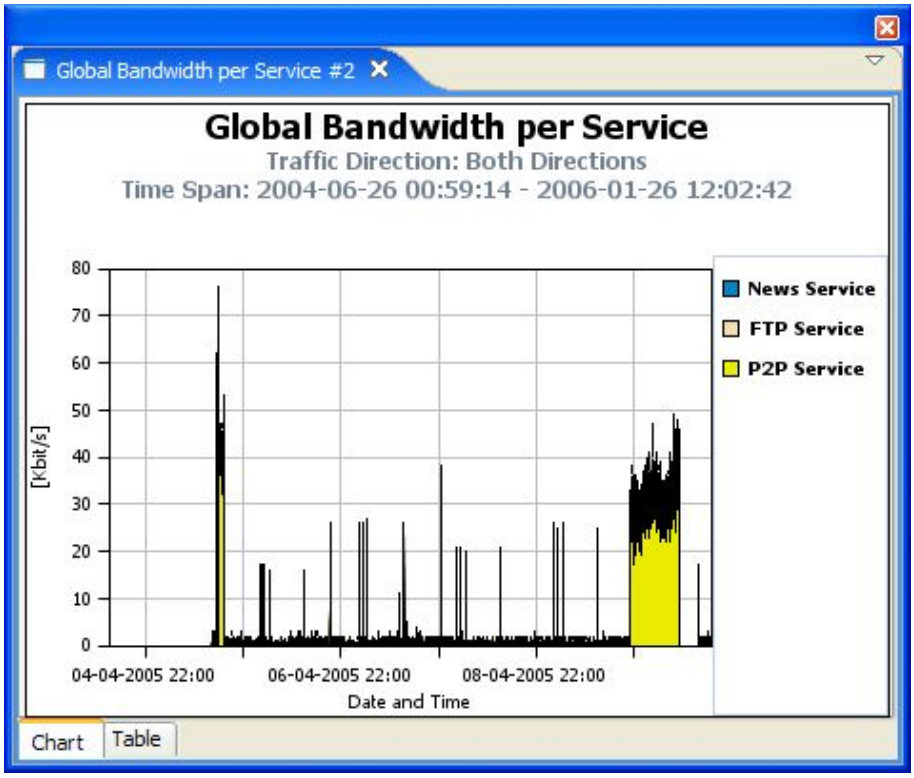
Step 1 Select a report instance.

Mandatory parameters are visible in the *Properties View*. In this example, the mandatory parameters are Average Data by Hour, SCE IP to View and Traffic Direction. When any of the parameters are not set, the report cannot be generated.



Step 2 Set the Configure Average Data by Hour parameter to False.

Step 3 From the drop-down menu in the tab, select **Execute**.



Accessing Online Help

You can access relevant parts of this user guide from the SCA Reporter.

To access online help:

From the **Help** menu, choose **Help Contents**.

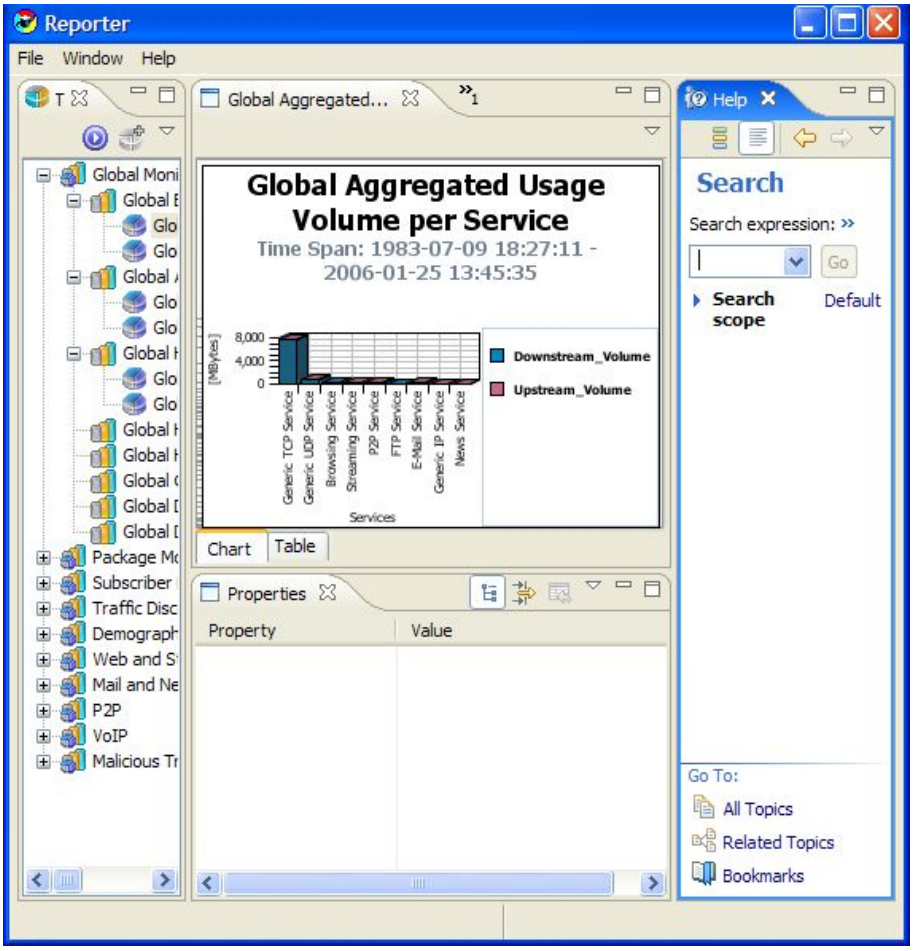
Online help opens in a separate window.

You can also search online help from the current tool.

To search online help:

Step 1 From the **Help** menu, choose **Search**.

A new area containing a Help tab is added next to the current tool.



Step 2 Enter a word, phrase, or more complex search expression in the **Search expression** field.

The Go button is enabled.

Click >> **(Expand)** for an explanation of how to construct search expressions.

Step 3 Click **Go**.

Help topics containing your search expression are listed under Local Help.

Step 4 Click a help topic to view its contents.

You can bookmark topics for later reference.

Step 5 By clicking the appropriate link at the bottom of the Help tab, you can switch to:

- All topics
- Related topics
- Bookmarks

Defining Reports

The SCA Reporter supplies templates for a wide variety of reports, such as:

- Global or package hourly or daily usage volume per service
- Top server/clients/protocols/web hosts/e-mail senders/newsgroups
- Subscriber hourly or daily usage volume per service
- Top P2P consumers/uploaders/downloaders/protocols
- Global, package, or subscriber bandwidth per service

The *Properties View* presents all the parameters of the report, both mandatory and non-mandatory, so that you can select the desired values. For example, if you want to see global bandwidth per service, create a new report from the *Templates View* of the SCA Reporter. The *Properties View* allows you to specify the desired service(s), traffic direction, and time frame (either start/end time or previous number of hours). For a complete description of all templates see *SCA Reporter Templates* (on page D-1).

The report is defined in the *Templates View*. When the report is generated, it is displayed in the *Report View*. The *Properties View* displays the chart display parameters. To view the report instance parameters, go to report instance in the *Templates View*. This shifts the parameters that appear in the *Properties View*. You can duplicate the existing report instance. After that, modify the report instance by adjusting the chart display and report instance parameters. Renaming the original or duplicated report instance helps manage the reports. You can delete the report instance when you no longer require it (see *Properties View* (on page 3-12)).

When you create a report, you select the desired report template and then specify values for the various report parameters.

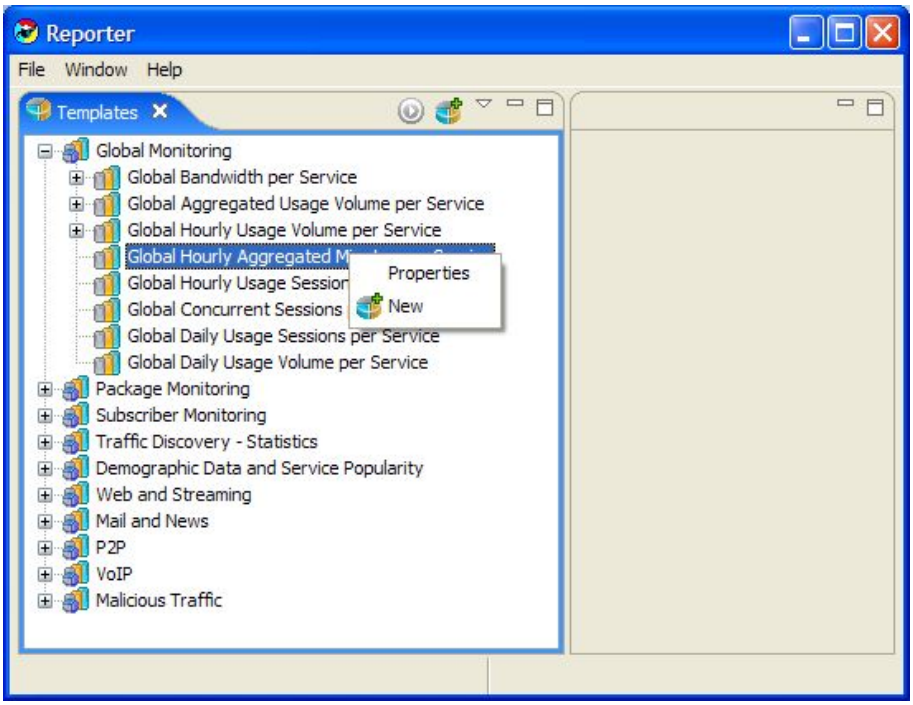
The procedure for defining a report depends on the report selected and the number of changes made to the basic report description. Also, the exact steps in selecting specific values for parameters may vary. Therefore, the following example is intended only as a general guide to the process of creating a new report instance.

This chapter contains the following sections:

- Creating a New Report Instance 4-3
- Duplicating an Existing Report Instance 4-4
- Modifying an Existing Report Instance 4-5
- Renaming an Existing Report Instance 4-7
- Deleting a Report Instance 4-8

Creating a New Report Instance

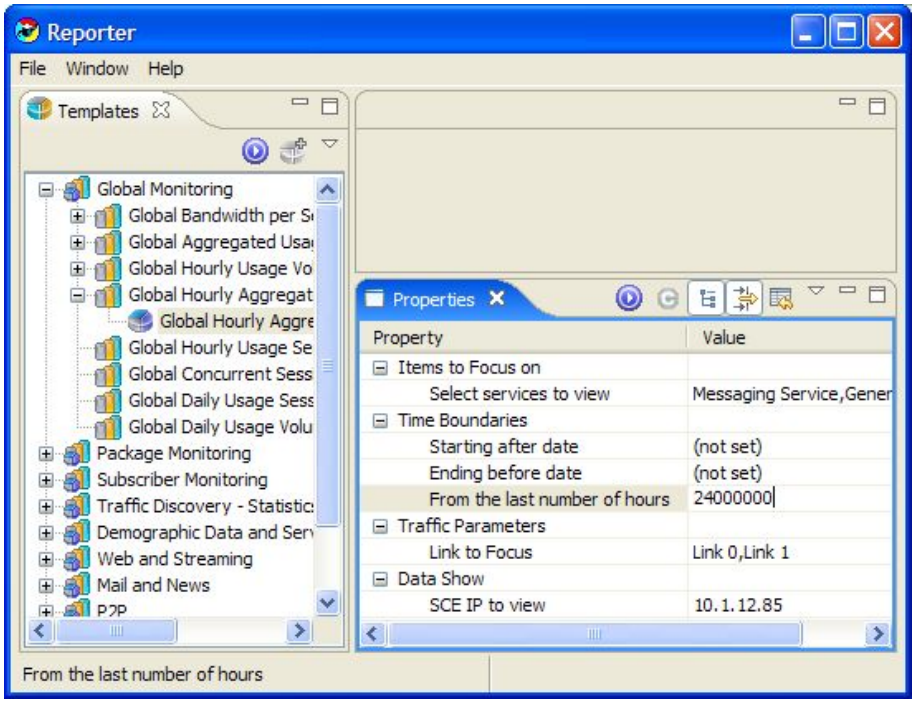
The following example illustrates defining the **Global Hourly Aggregated Minutes per Service** report.



To create a new report:

Step 1 Select a template from the *Templates View* (for example, **Global Monitoring** > **Global Hourly Aggregated Minutes per Service**). Right-click the template, and, from the popup menu that appears, choose **New**.

A new report instance is displayed and the report parameters appear in the *Properties View*.



Step 2 Click (**Execute**).

The report is generated with default values. The *Report View* and the *Properties View* appear. When mandatory parameters are set, the Chart Display parameters (Look category) appear in the *Properties View*. An error may appear when the mandatory parameters are not all defined.

Duplicating an Existing Report Instance

Duplicating an existing report instance is a useful way to create a new report that is similar to an existing report. It is faster to duplicate a report and then make changes than to define the report from scratch.

To create a duplicate report instance:

Step 1 In the *Templates View*, click a report instance.

Step 2 From the drop-down menu in the tab, select **Duplicate**.

The report is duplicated.

Modifying an Existing Report Instance

You can locate and then modify an existing report instance.

To modify an existing report instance:

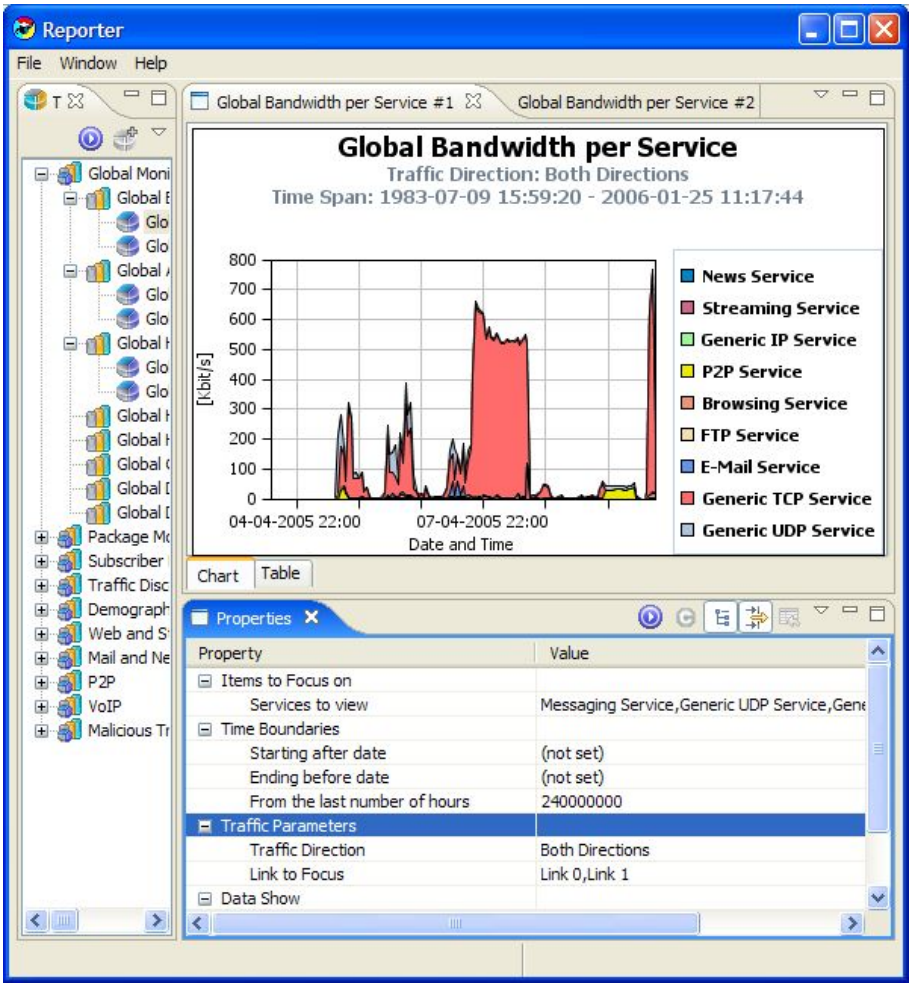
Step 1 Do one of the following:

- Select an existing report from the *Report View* and, from the drop-down menu in the tab, select **Go to report**.
- Select a report instance from the *Templates View*.

The existing report instance is selected in the *Templates View* and the report instance parameters are displayed in the *Properties View*.

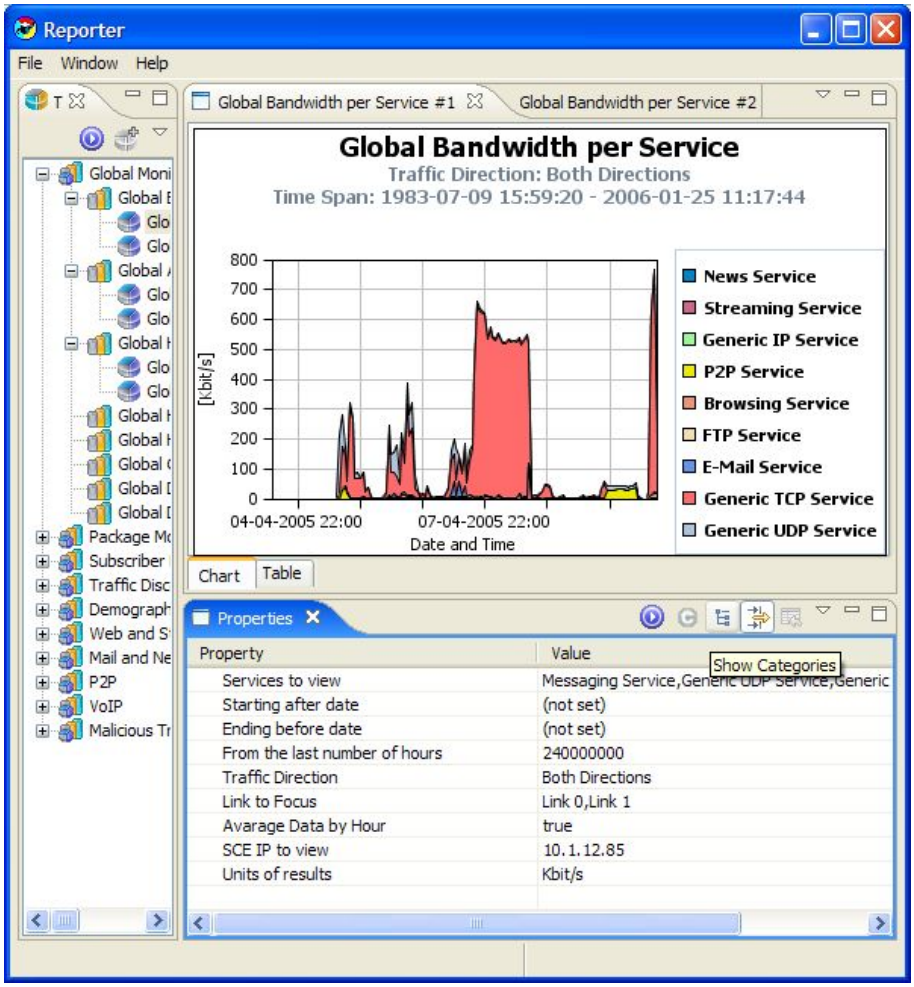
Step 2 If only mandatory parameters are displayed in the *Properties View*, click (**Show Advanced Properties**).

All parameters are displayed in the *Properties View*.



Step 3 Click (**Show Categories)** when Categories are displayed in the *Properties View*.

The Categories are not displayed in the *Properties View*.



Step 4 Edit the parameters by clicking on the row of the parameter, making changes, and then committing the changes.

Change the Services to view—Uncheck **Generic UDP Service** and **P2P Service**.

The changes are saved for the next time the report is executed.

Step 5 Click (**Execute**).

The report is regenerated without **Generic UDP Service** and **P2P Service**. The *Report View* opens. The Chart Display Parameters are displayed in the *Properties View*.

Renaming an Existing Report Instance

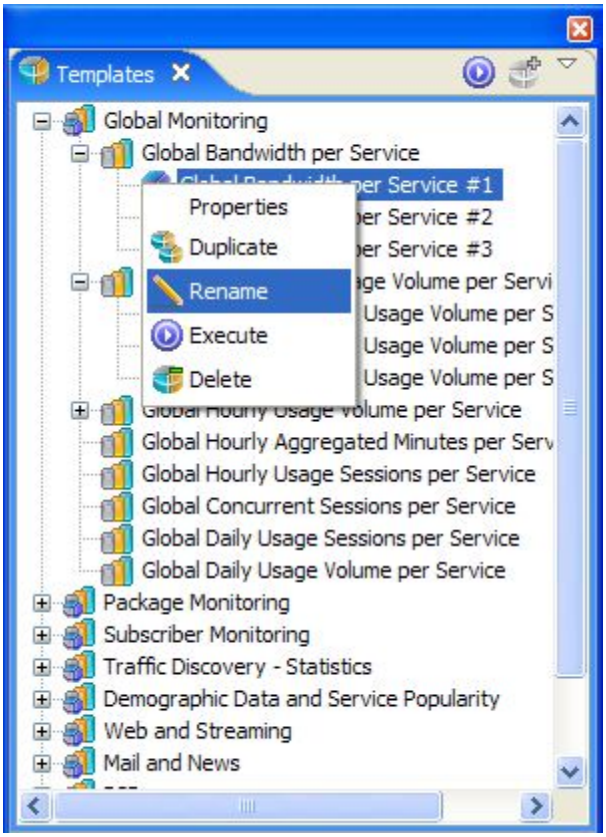
You can rename an existing report instance. This is useful when the same report is generated on a regular basis. The date or other identifying information can be included in the name of the report.

To rename a report instance:

Step 1 In the *Templates View*, choose a report instance.

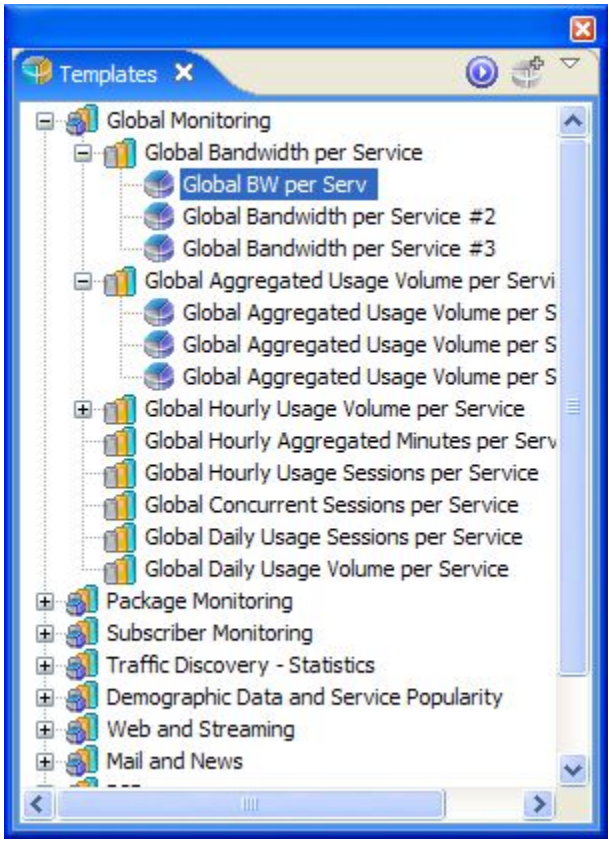
Step 2 Right-click the report instance and, from the popup menu that appears, choose **Rename**.

The report instance is highlighted and you can edit its name.



Step 3 Type in a new name and press **Enter**.

The report instance is listed with the new name.



Deleting a Report Instance

You can delete report instances.

To delete a report instance:

Step 1 In the *Templates View*, choose a report instance, (or several instances, by pressing the **Ctrl** key while selecting the report instances).

Step 2 From the drop-down menu in the tab, select **Delete**.

Each report instance is deleted.

Working with Reports

You use the *Templates View* of the SCA Reporter to define and generate a report, and the generated report is displayed in the *Report View*. You can display the report in chart or tabular form. You can adjust a chart display, save it, and export it to a file.

This chapter contains the following sections:

- Report Actions 5-1
- Generating a Report 5-3
- Viewing Reports 5-5
- Adjusting Chart Display 5-6
- Exporting Single or Multiple Reports 5-20

Report Actions

The views found on the SCA Reporter display menu items. Some commonly used actions have icons for easy navigation.

The actions and their icons are described in the following table.

Table 5-1 Actions

Action	Icon	Description	Comments
Home		Opens the *Welcome View*.	
Menu		Displays all the available actions for the view.	Common to all views. Has different actions depending on the view.
Execute		Generates the selected report.	In *Properties View* and *Templates View*.

Action	Icon	Description	Comments
New or Report (From Legend)		Creates a new report instance.	In *Templates View*—When you select a report template, the icon is new. In *Report View*—When you right-click a legend item, the Subset of Template Groups and Templates View appear. Choose a template, and click **OK**. The report instance is created (modified).
Refresh		Refreshes the *Templates View* so that only the report groups are displayed.	In *Templates View*.
Show Cmd		Opens a window displaying the CLI command for the report.	In *Templates View*—The CLI commands are placed on the clipboard. You can paste them into a vanilla text editor, edit them, and then execute them from a command file shell or a command prompt.
Delete		Deletes the report.	In *Templates View*.
Duplicate		Creates a copy of the report instance.	In *Templates View*.
Rename		Highlights the report instance so that you can rename it.	In *Templates View*.
Show Categories		Toggles between displaying parameters with and without categories.	In *Properties View*.
Show Advanced Properties		Toggles between displaying mandatory parameters and all parameters.	In *Properties View*.
Restore Default Value		Restores parameter default value.	In *Properties View*—Default values can be a value or **(not set)**. Mandatory parameters have a value. Default values of non-mandatory parameters may have the value **(not set)**.
Go to report	—	Navigates from the selected report in the *Report View* to the report instance in the *Templates View*.	In *Report View*.
Export raw data	—	Opens browsers to save the report data.	In *Report View*.
Show List		Indicator the number of reports that have been executed. When you select this option, the reports are listed.	In *Report View*—To display a report, choose from the bolded report names. The number in the icon indicates how many reports are not in view.

Action	Icon	Description	Comments
Preferences	—	A dialog box appears for choosing preference for whether to show system tasks or not. Sleeping (waiting) tasks are shown in both cases.	In *Progress View* The icon is displayed while system tasks are running.
Remove All Finished Tasks		Removes all completed tasks.	In *Progress View*.

Generating a Report

You can generate a report that was defined previously. The reports are found in the *Templates View*. You can duplicate, modify, rename, or delete the reports (see *Defining Reports* (on page 4-1)). You can also generate multiple reports, put the process in the background, and continue working on other reports.

To generate a report when a report instance is selected:

Step 1 In the *Templates View*, select a report instance.

The report instance parameters are displayed in the *Properties View*.

Step 2 Click (**Execute**).

The report is regenerated and is displayed in the *Report View*.

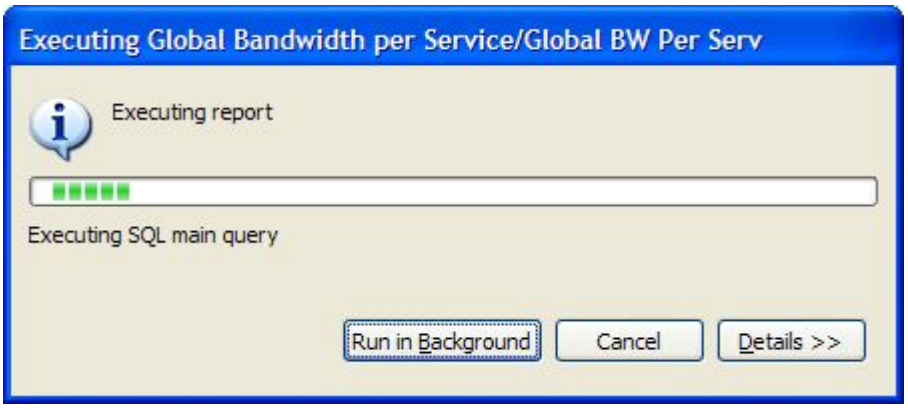
To generate multiple reports:

Step 1 From the *Templates View*, select the report instances while pressing **Ctrl**.

The selected report instances are highlighted.

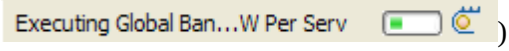
Step 2 Click (**Execute**).

A Progress dialog box appears while reports are being generated.



Step 3 Do one of the following:

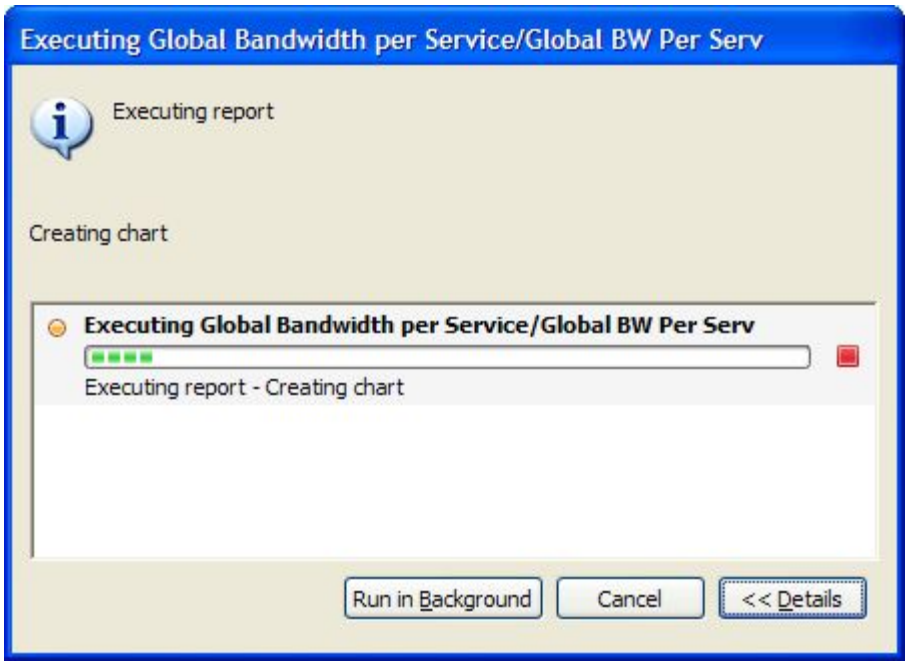
- Wait until the system task status at the bottom right corner of the SCA Reporter indicates that report generation is complete.

  (While the report is being generated, the system task status shows:
  

)

- Click **Details**.

  The status of all reports that are being generated is displayed.



- Click **Run in Background**.

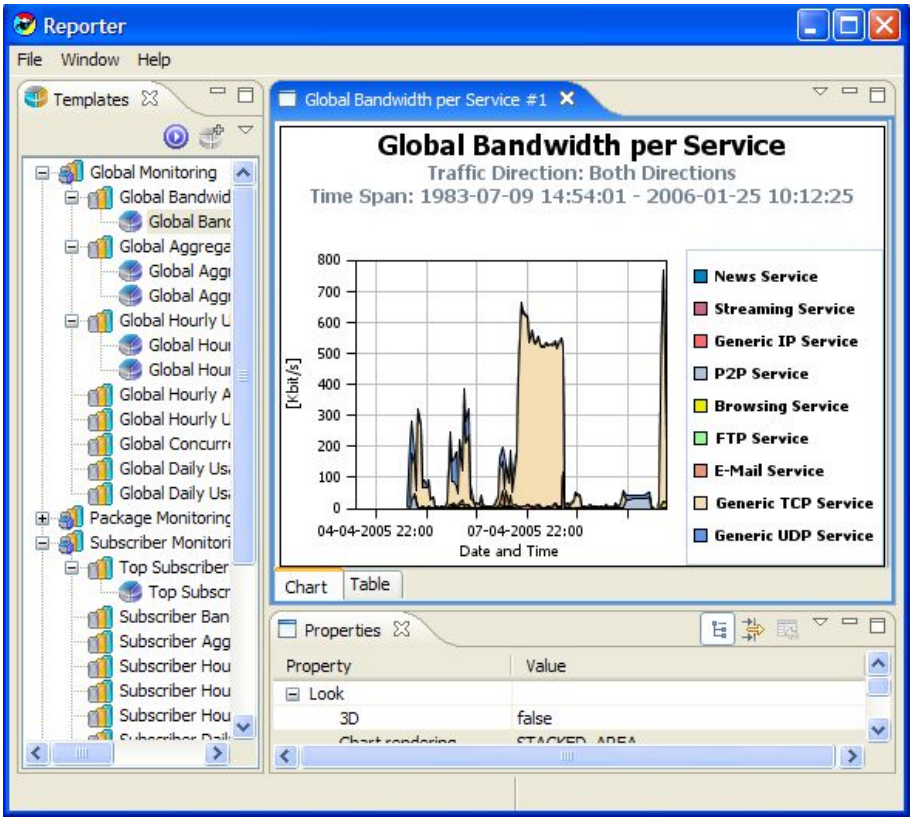
  Report generation continues running in the background. When it finishes, the reports are displayed in the *Report View*.

Note You can cancel a running report generation by clicking **Cancel** in its *Progress View*. It can take the Database Server a short time to acknowledge a cancel request, but you can move the cancelled report to the background and continue your work uninterrupted.

Viewing Reports

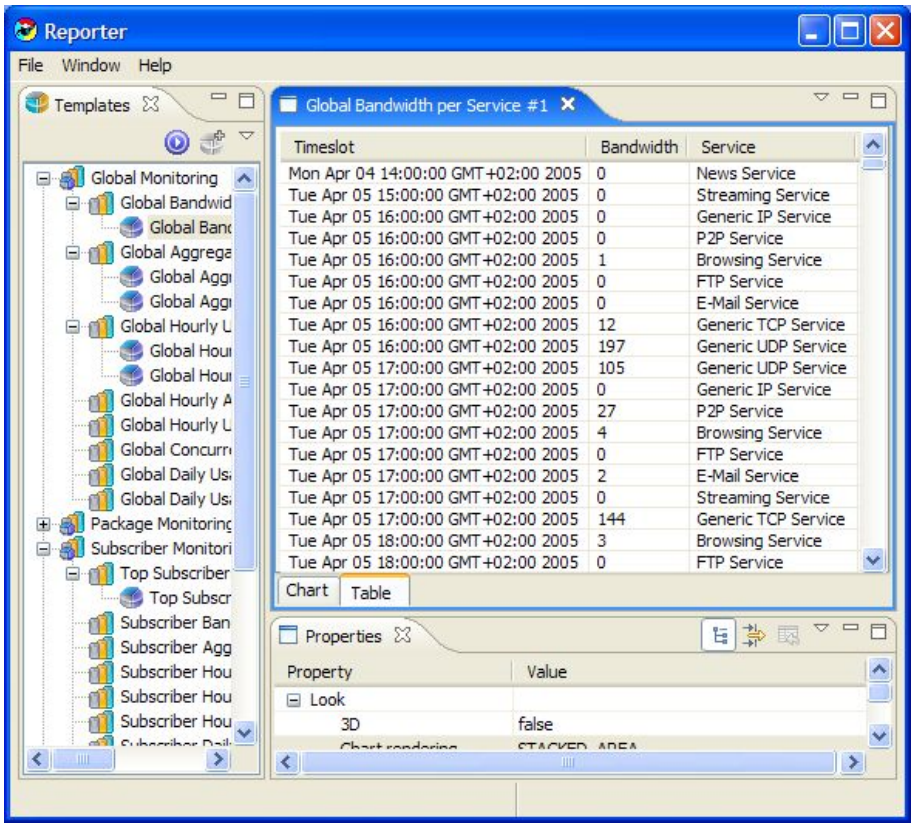
You can view reports in the *Report View* as charts or as tables. To select the desired view, click the appropriate tab located at the bottom-left of each report.

Figure 5-1: Example Report Displayed as Chart



The table is useful for locating specific information.

Figure 5-2: Example Report Displayed as Table



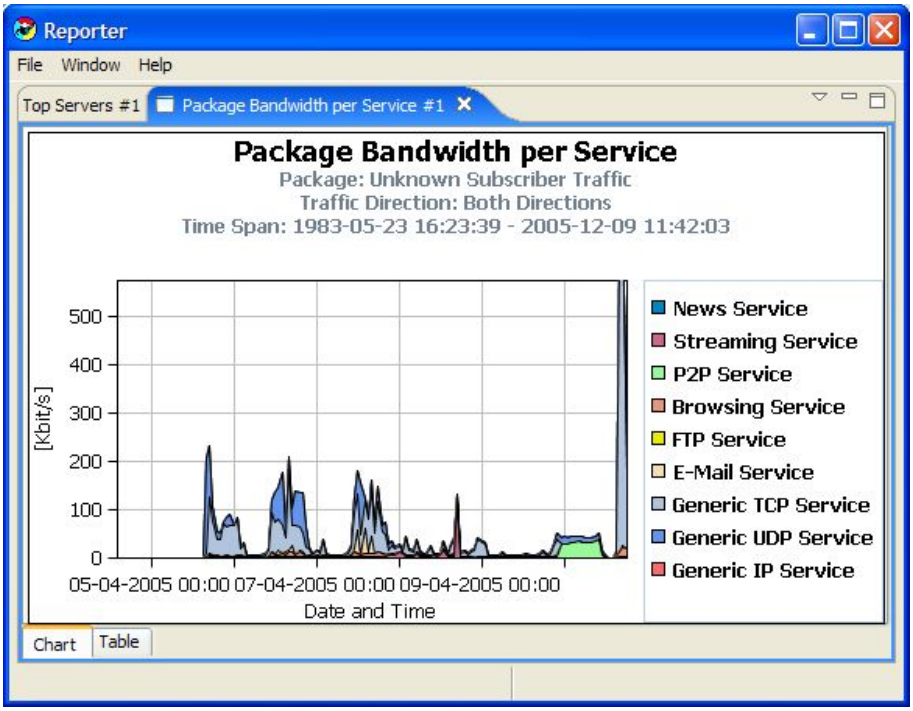
Adjusting Chart Display

You can change the appearance and type of any report chart by modifying chart display parameters, such as three-dimensional display settings and chart rendering. You can also change the appearance of a report in the following ways:

- Drag the legend to a different spot in the report.
- Hide the legend.
- Hide items from the legend; the corresponding items in the graph will be removed from view.
- Zoom in or out—drag the graph so that the desired section is in focus.

To adjust the chart display:

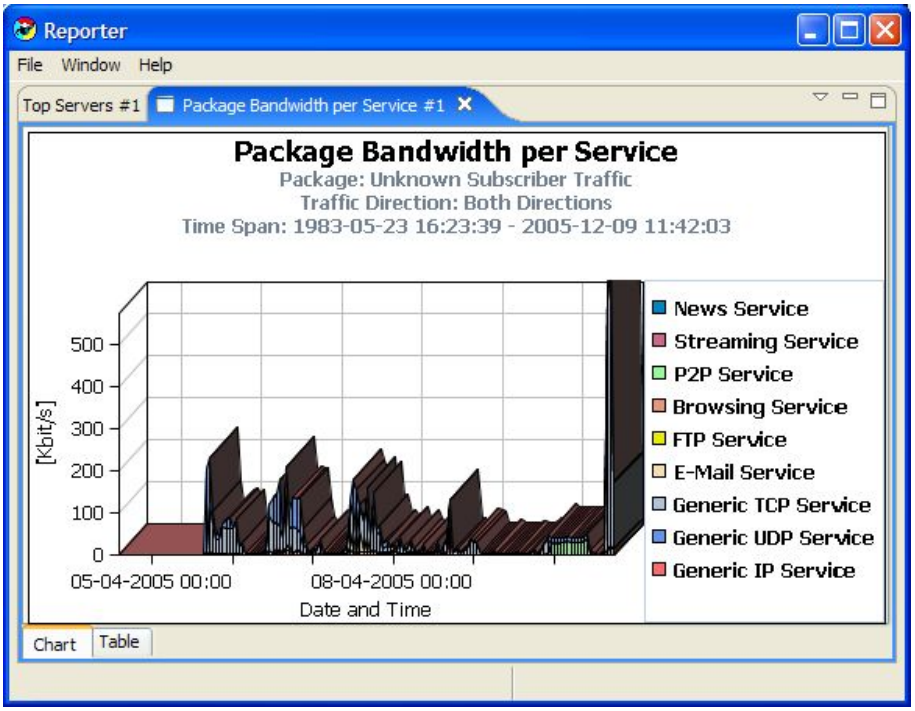
Step 1 Select a report in the *Report View*.



Step 2 In the *Properties View*, configure the chart display parameters by changing 3D to True.

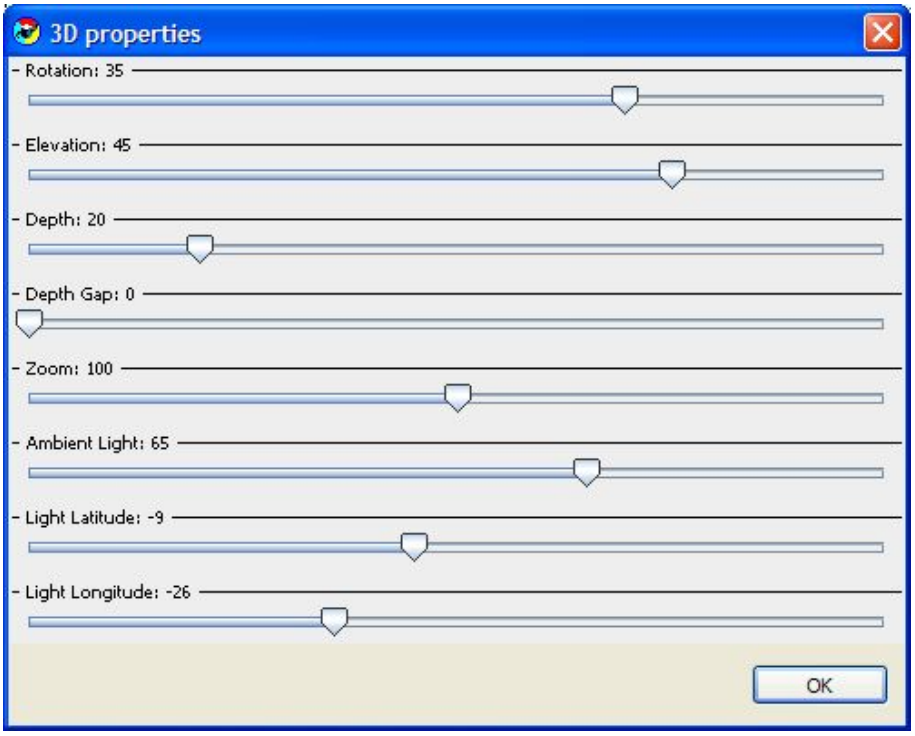
The Look/3D category is added to the *Properties View*.

The report chart is now displayed in three dimensions.



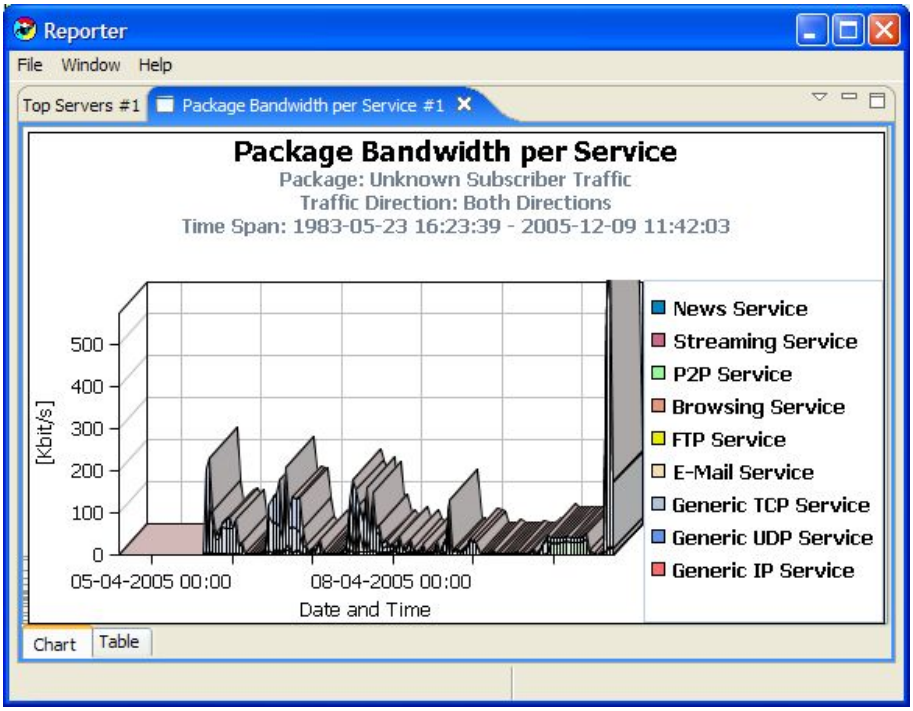
Step 3 In the *Properties View*, select the Settings parameter.

The 3D properties dialog box appears.



Step 4 Move the Ambient Light sliding scale to the right, and click **OK**.

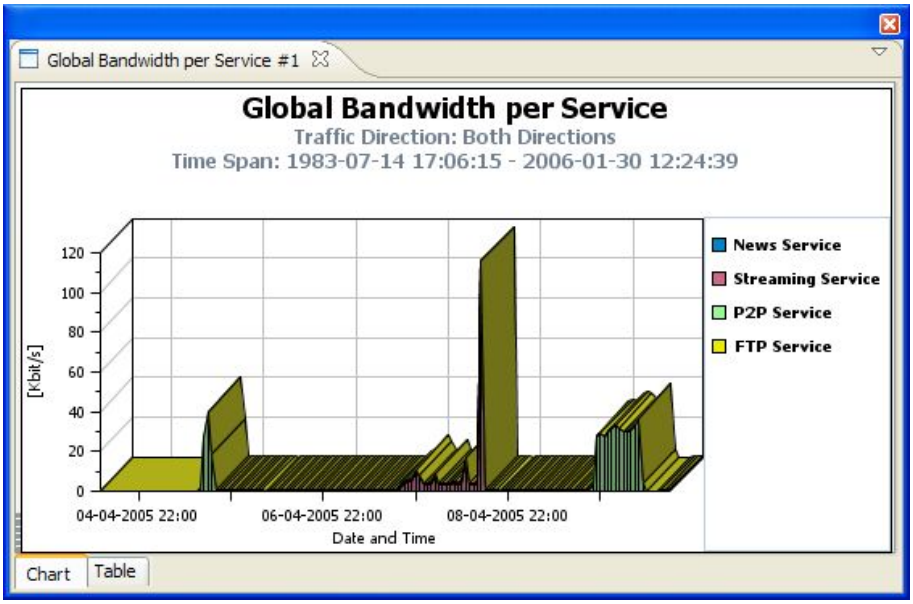
The graph is lightened.



To adjust the three-dimensional properties and view the outcome:

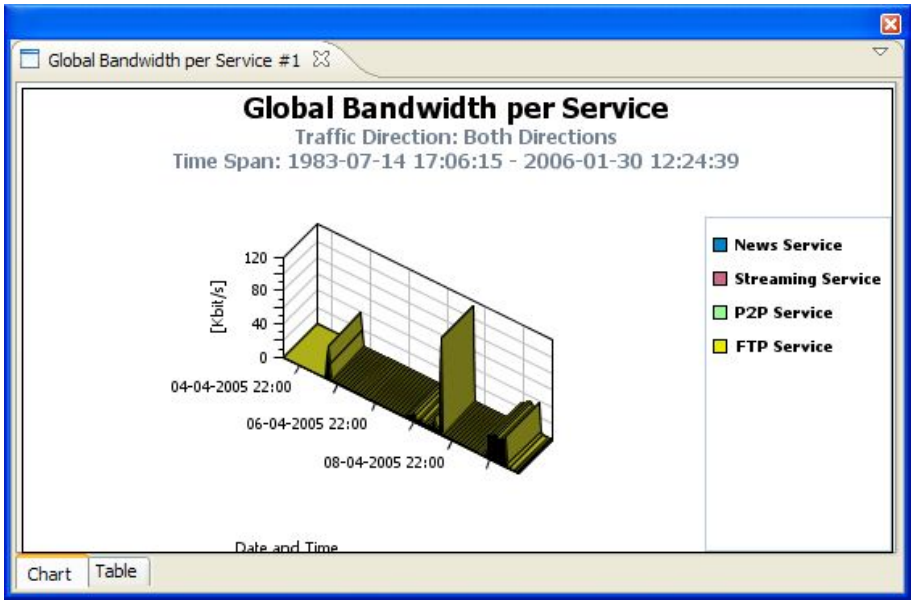
Step 1 Generate a report.

Step 2 In the *Properties View*, set 3D to True.



Step 3 In the *Properties View*, set Oblique to False.

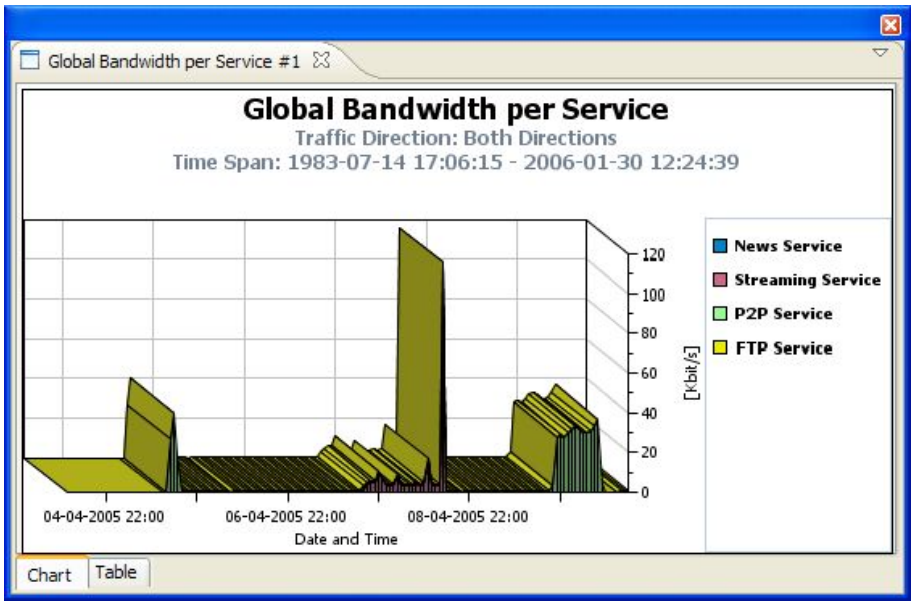
The display of the graph changes to match the new parameter setting.



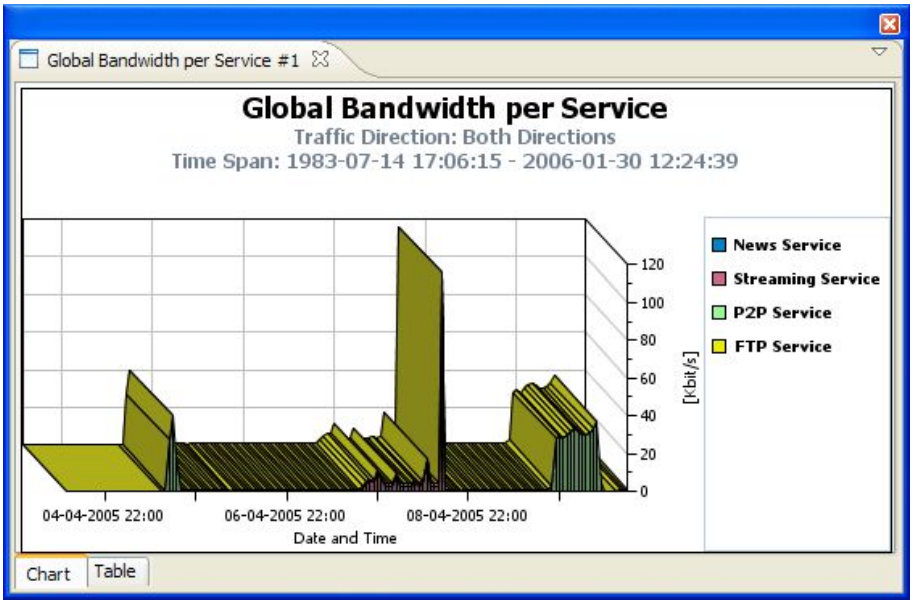
Step 4 In the *Properties View*, change Oblique back to True.

Step 5 In the *Properties View*, select the Settings parameter, use the sliding scale to change the Rotation parameter from 35° to -50°, and click **OK**.

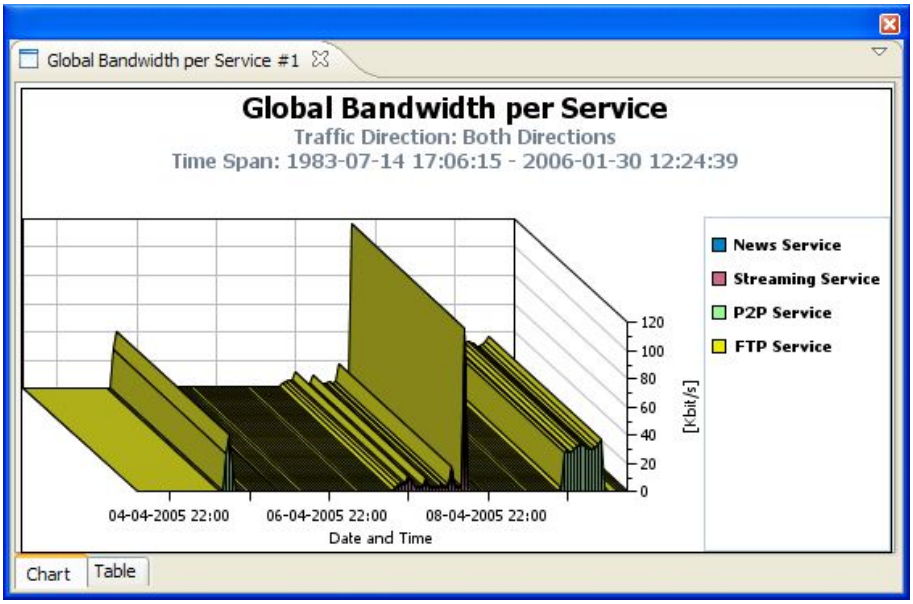
The graph is rotated.



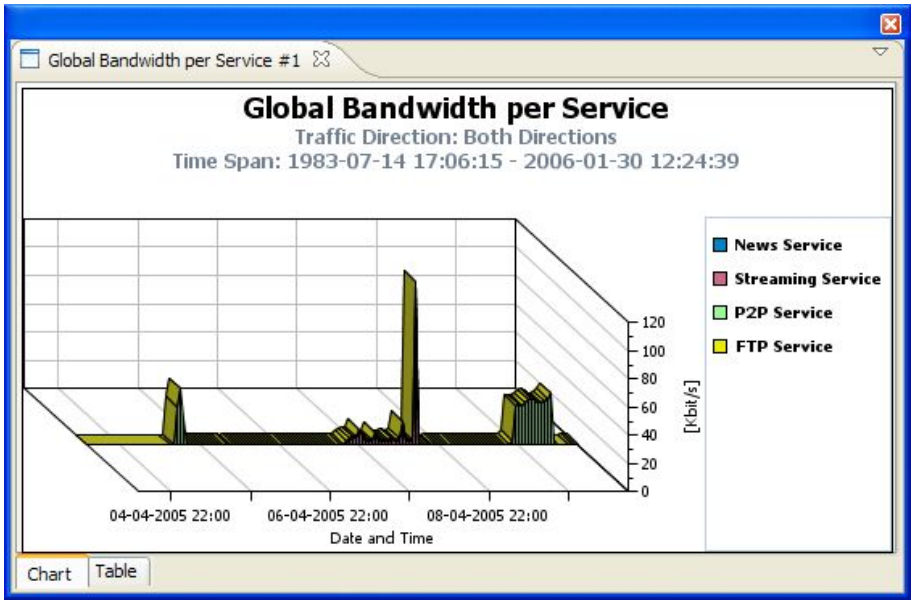
Step 6 Change the Elevation parameter from 45° to 90°, and click **OK**.



Step 7 Change the Depth parameter from 20 to 60, and click **OK**.



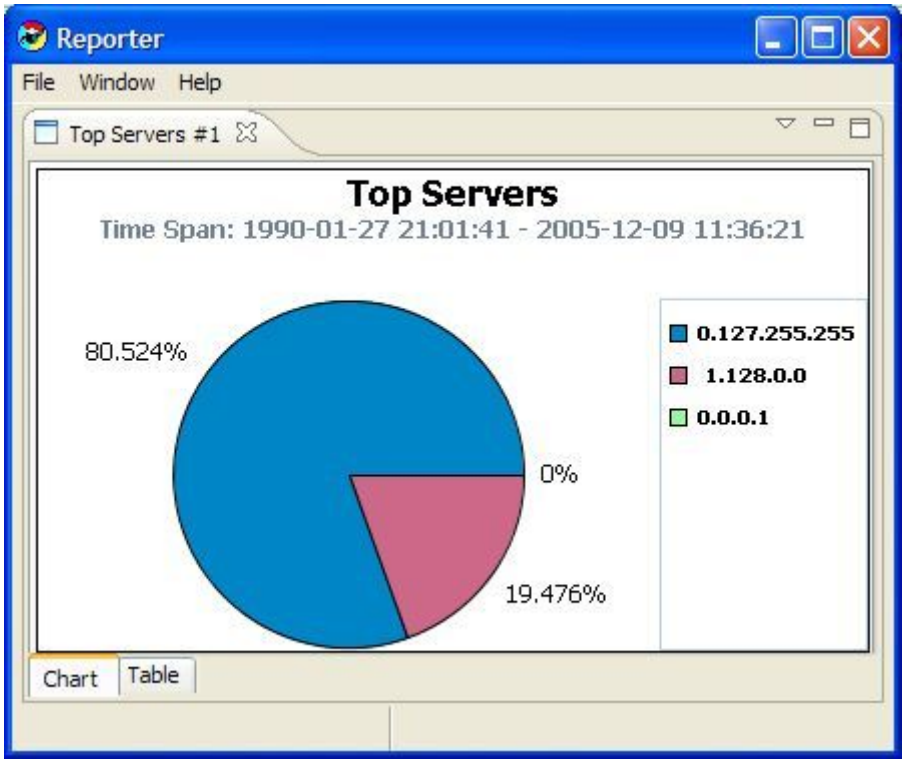
Step 8 Change the Depth Gap parameter from 0 to 90, and click **OK**.



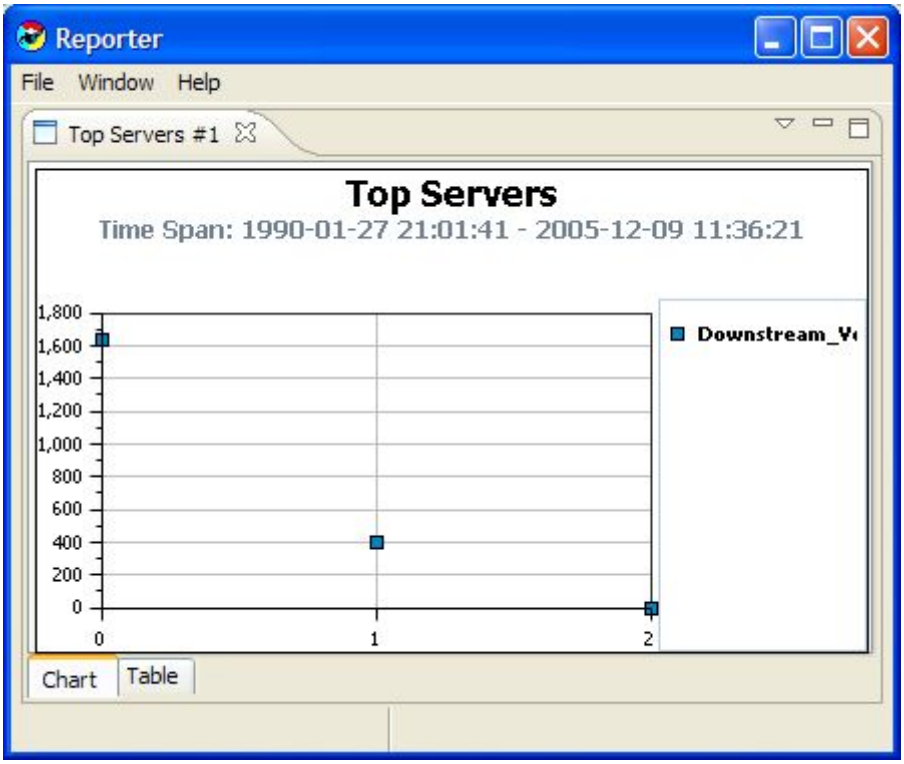
To choose the type of chart:

Step 1 Generate a report.

Step 2 In the *Properties View*, set the Chart Rendering property to PIE CHART.



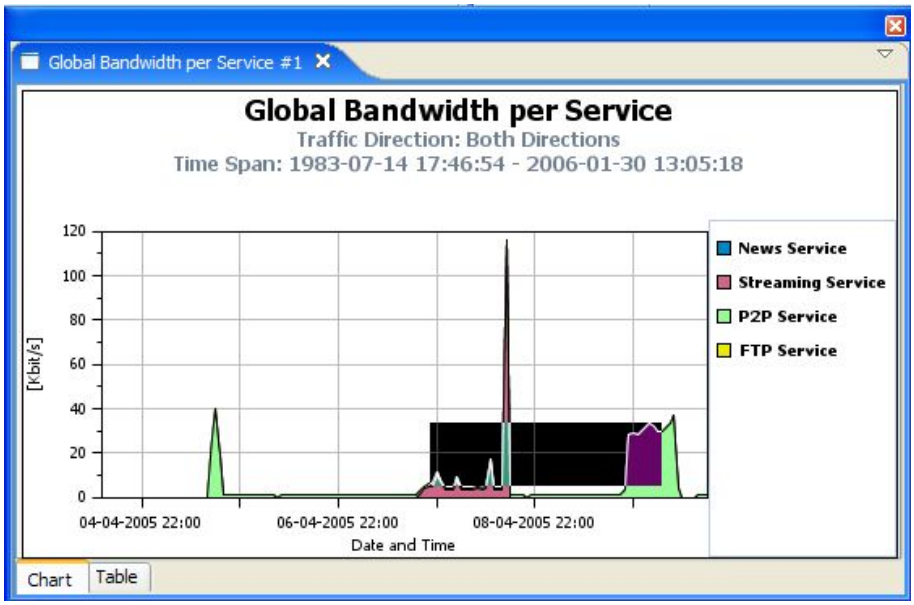
Step 3 In the *Properties View*, set the Chart Rendering property to SCATTER.



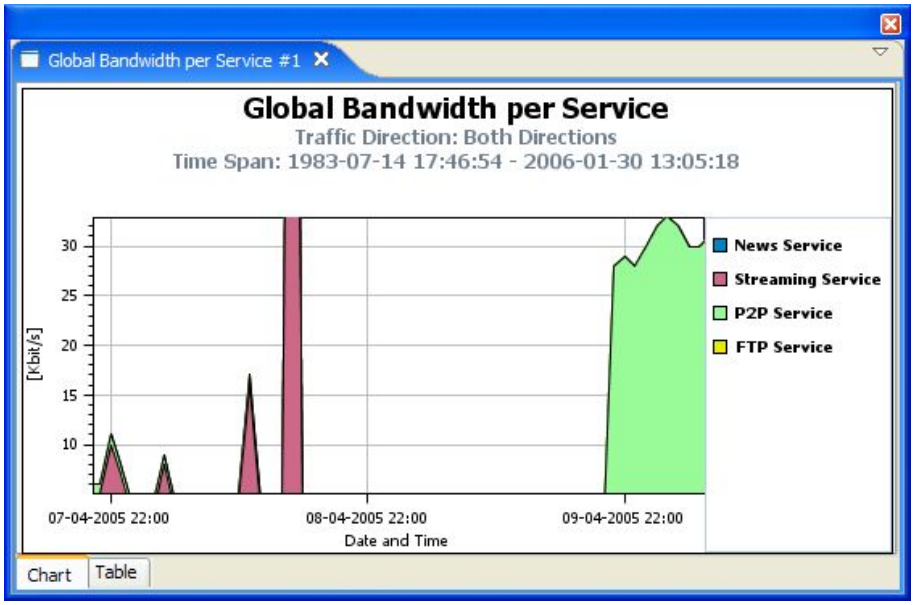
You can zoom in or out of graphs. There is no difference between two- and three-dimensional graphs.

To zoom-in on a two-dimensional graph:

Mark off a rectangle by dragging the mouse over the chart.

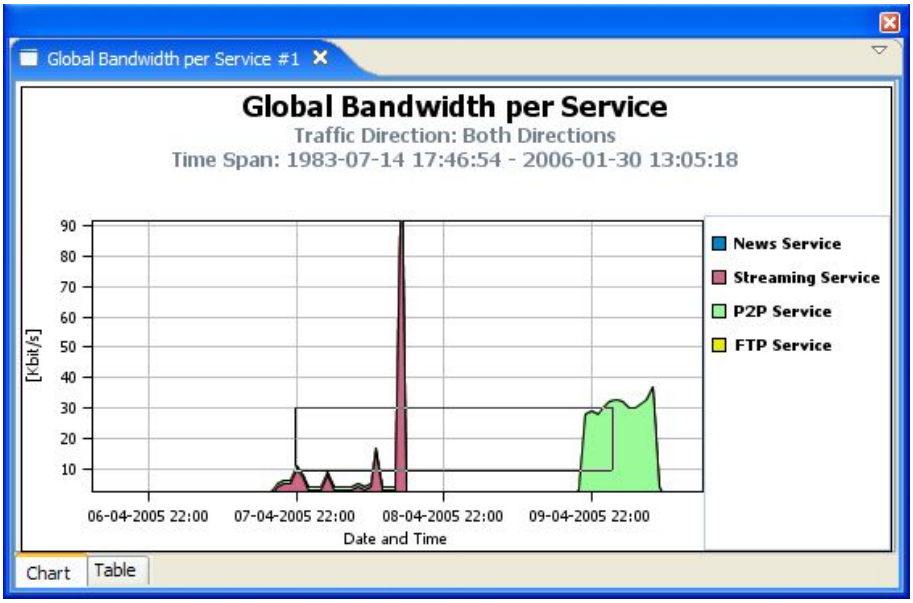


A plus icon appears, and the view zooms in.

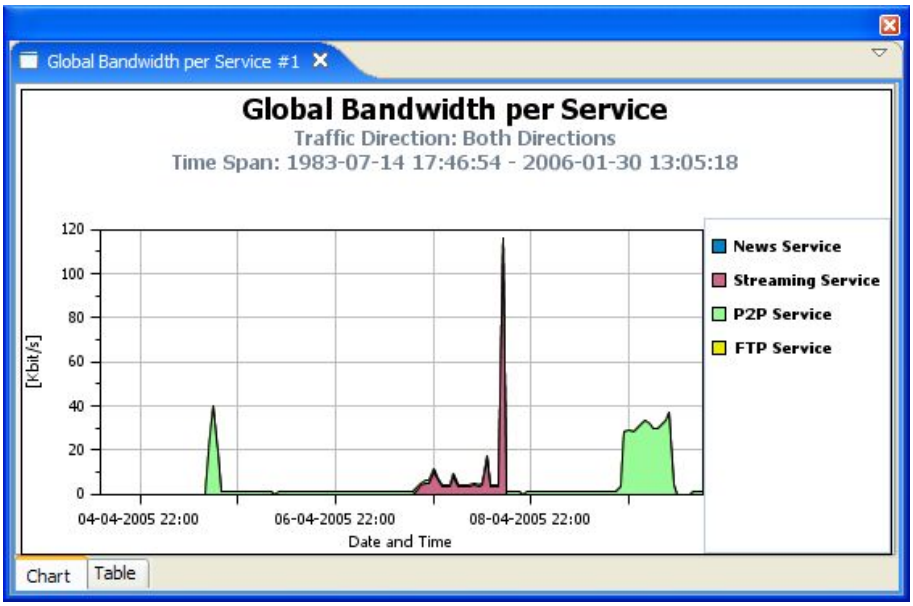


To zoom-out of a two-dimensional graph:

Mark off a rectangle by dragging the mouse over the chart while pressing the **Shift** key.

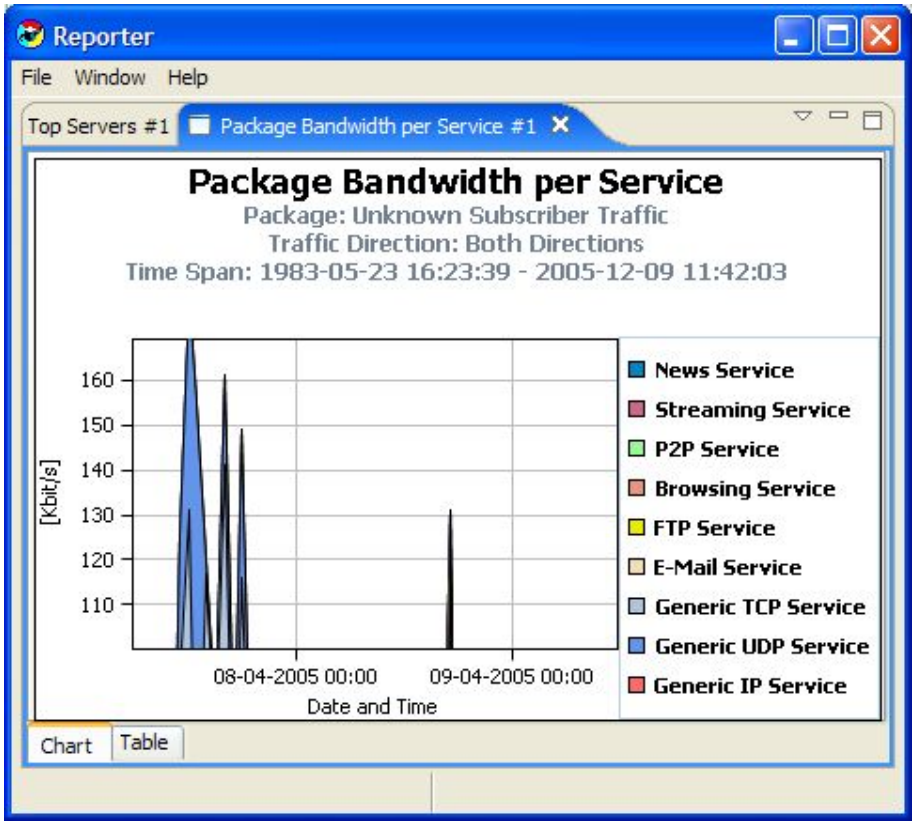


A minus icon appears, and the view zooms out.



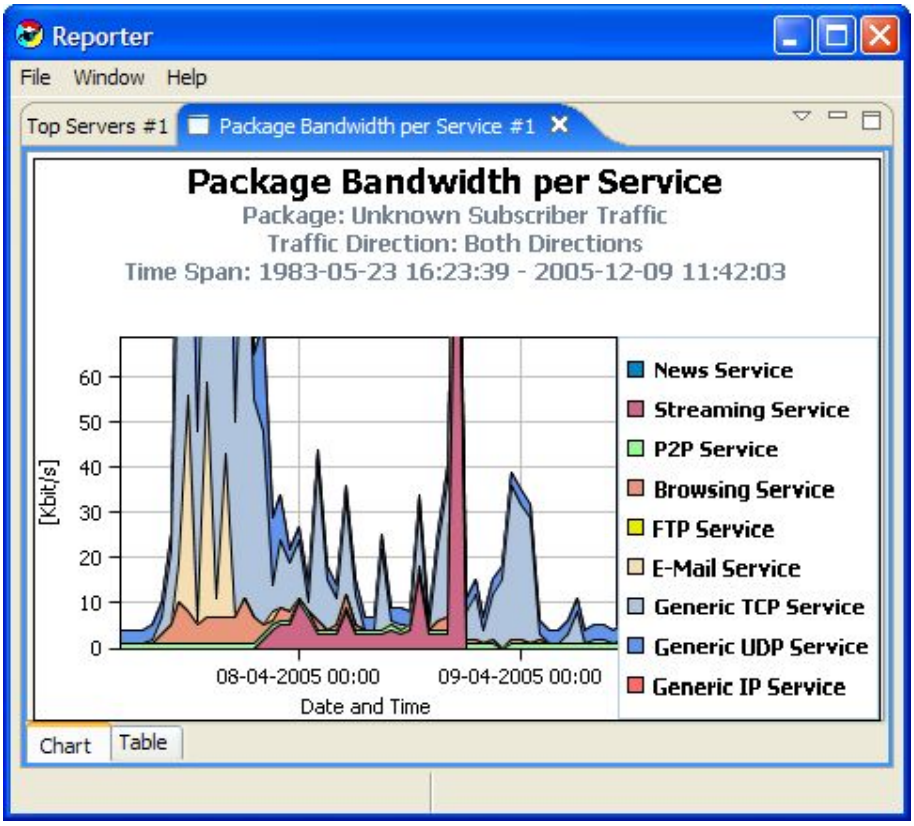
To drag the graph:

Step 1 Zoom in to the top part of a chart.



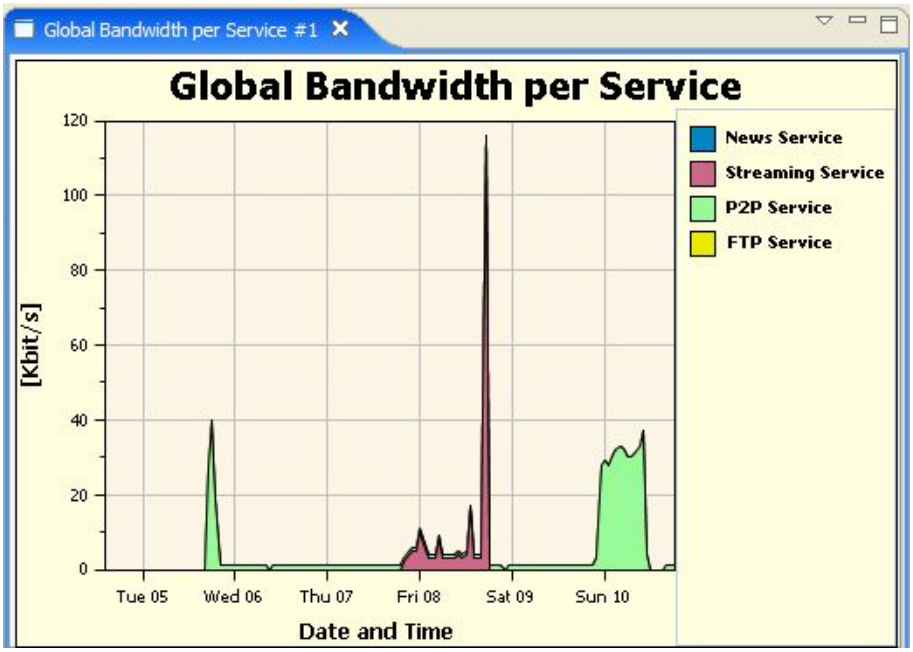
Step 2 To move the chart down, right-click it while dragging the chart.

The graph moves up, and the bottom of the chart appears.



To hide services:

Step 1 Generate a report.

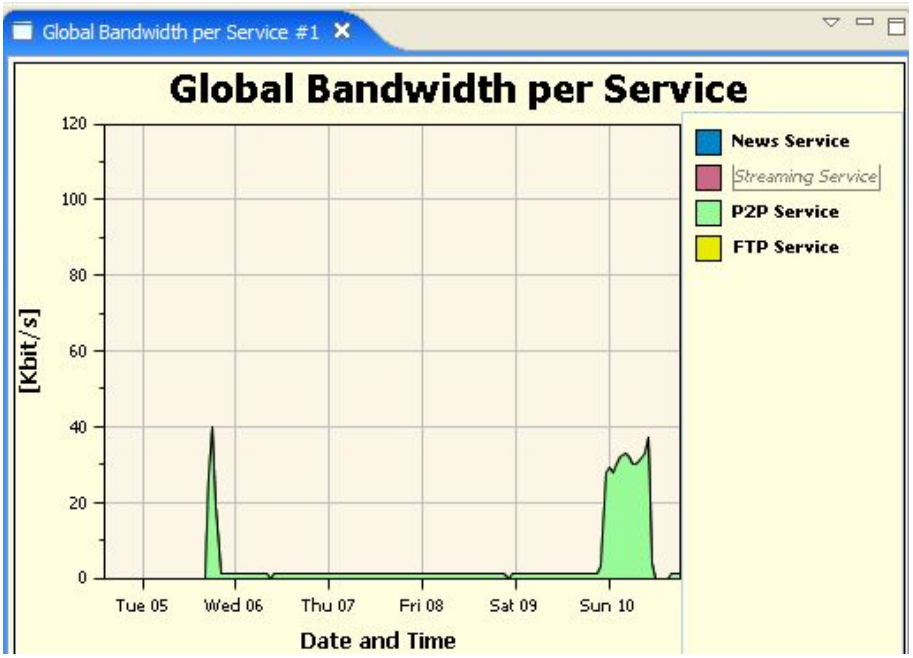


Step 2 Right-click **Streaming Service** in the legend.

A popup menu appears.

Step 3 Choose **Hide**.

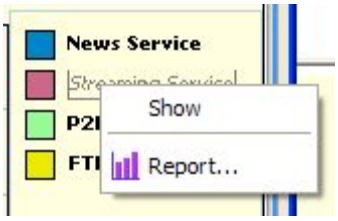
The service is dimmed out in the legend, and the service is removed from the chart.



To show hidden services:

Step 1 Right-click **Streaming Service** in the legend.

A popup menu appears.



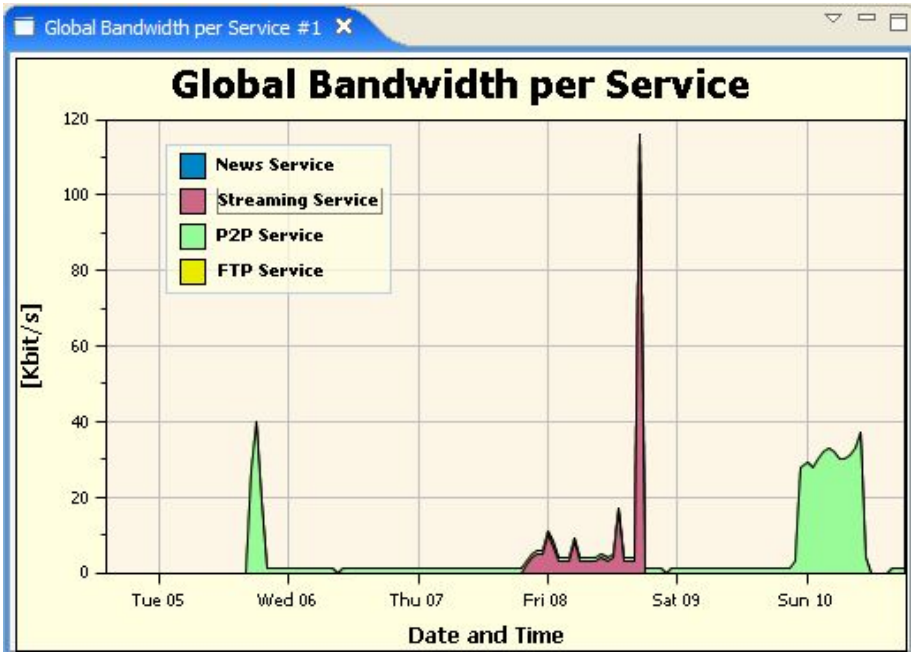
Step 2 Choose **Show**.

The service is displayed in the chart and in the legend.

To move the legend:

Right-click the legend and drag it.

The legend moves to its new position in the chart.



Note Particular legend items are displayed in the same color each time the SCA Reporter is run.

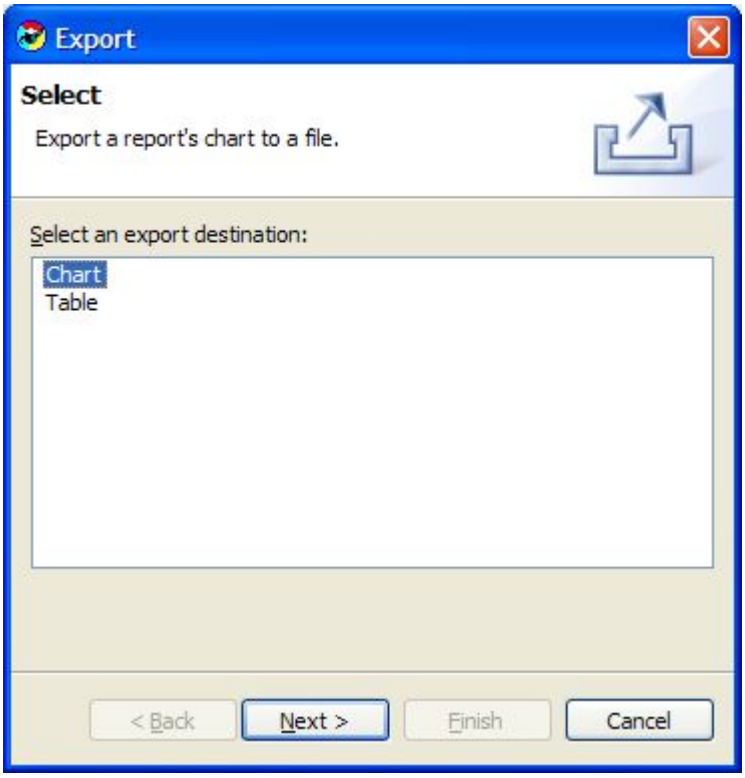
Exporting Single or Multiple Reports

You can export charts to most graphic formats, and you can export tables to CSV or Quoted CSV formats, which you can open as spreadsheets. You can export multiple reports in one export operation.

To export a report:

Step 1 After executing one or more reports, select **File** > **Export**.

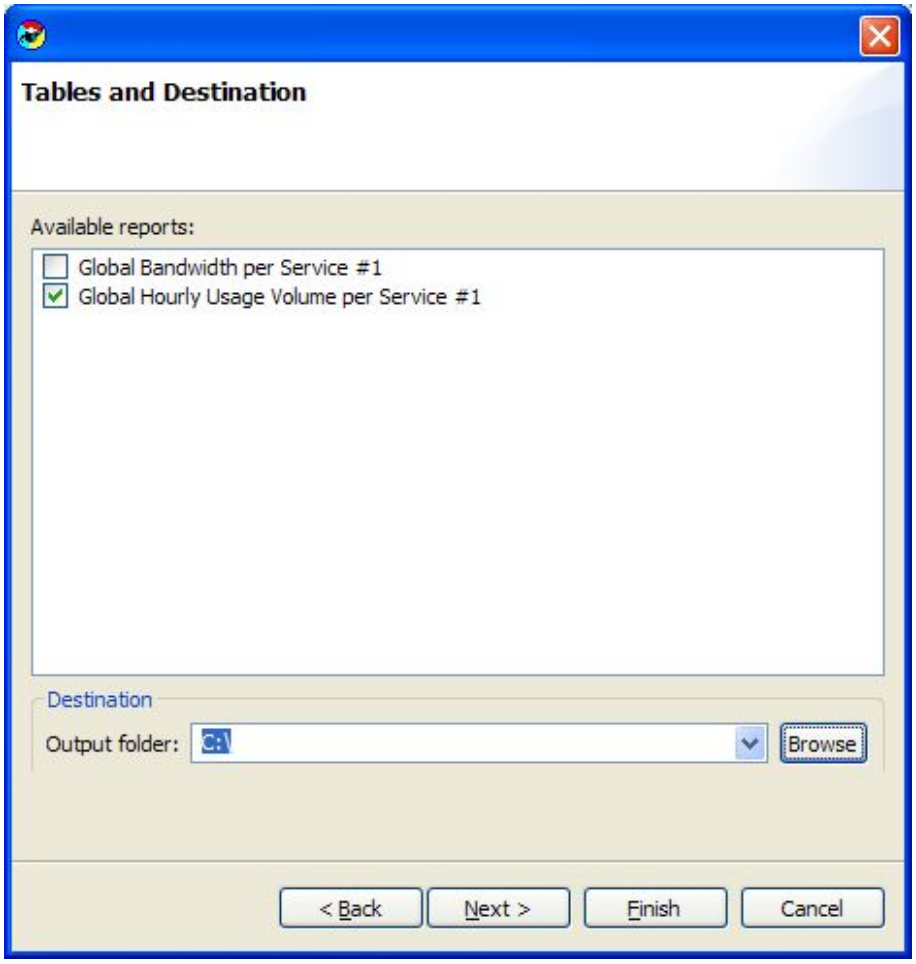
The Export wizard appears.



Step 2 Select **Chart** or **Table**.

Step 3 Click **Next**.

The Tables and Destinations screen of the Export wizard opens.



Step 4 Check one or more of the Available reports.

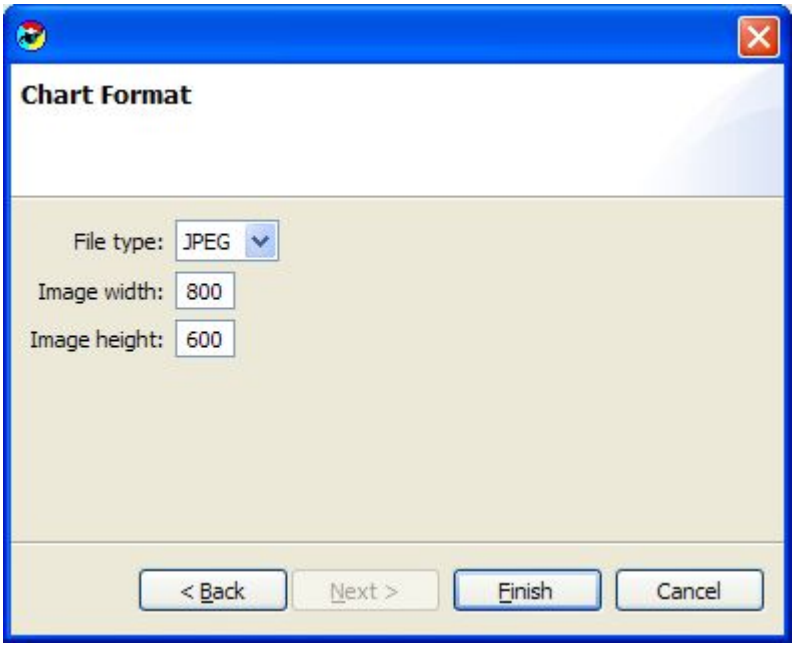
Step 5 To change the Output folder, click **Browse**.

Step 6 Click **Next**.

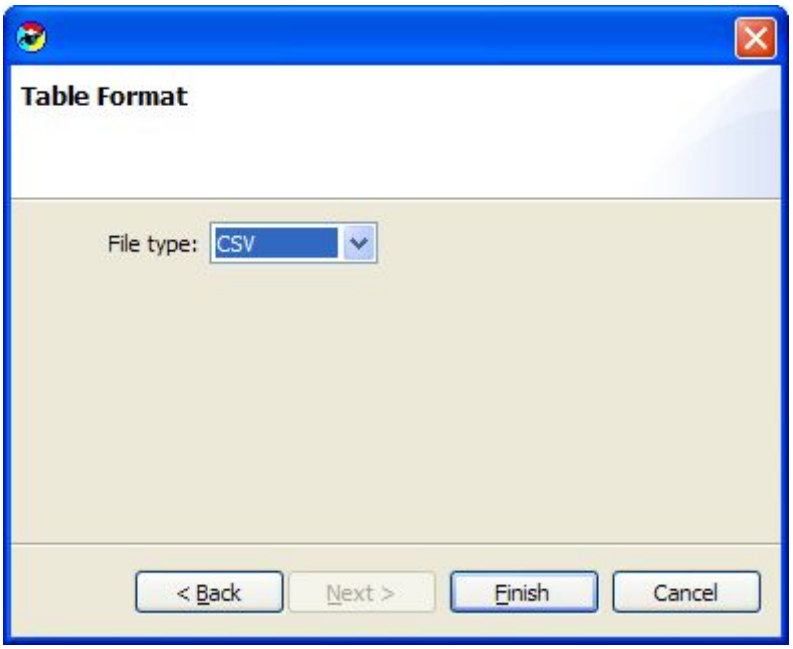
The Format screen of the Export wizard opens. (The screen that opens depends on whether you chose Chart or Table in step 2.)

Step 7 Do one of the following:

- (For Chart) From the File type drop-down list, choose a file type—In the Image width and Image height fields, enter values in pixels.



- (For Table) From the File type drop-down list, choose a file type.



Step 8 Click **Finish.**

Each report selected is saved in a separate file.

CHAPTER 6

The SCA Reporter Command-Line Interface

This chapter describes the various ways of using the Service Control Application Reporter Command-Line Interface (CLI) for executing the SCA Reporter features, including the syntax, switches, and options of the application.

This chapter contains the following sections:

- Command-Line Interface Overview 6-1
- Syntax and Usage 6-2

Command-Line Interface Overview

The SCA Reporter Command-Line Interface (CLI) is a command-line application that complements the functionality of the SCA Reporter GUI. The CLI, which provides capabilities and flexibility beyond that of its SCA Reporter GUI counterpart, can be integrated into third-party applications to generate usage-based and statistics-based output.

Note You must execute a report once using the GUI, since the CLI uses the generated name of the report instance. After you have verified that the report is satisfactory, you can change the CLI parameters without using the GUI.

Syntax and Usage

You can execute the SCA Reporter as a command-line version that accepts input passed as parameters. After a report is generated, in the *Templates View*, from the drop-down menu in the tab, select **Show Cmd**, to create the initial CLI Command with the name of the report. The database information and the SCE platform IP parameters are included along with the configured parameters for the report instance.

The command is automatically copied to the clipboard so that you can paste it into a command file shell or a command prompt and then execute it with some minor changes. For automated reporting, other switches are added. For example, the filename to save the data and the format in which to save it are not included in the CLI for this report. (The format indicates if the report is in graphic (JPEG) or tabular (CSV) form.)

Not all parameters that exist in the original report are included in the `params` switch. When a parameter is not specifically listed in the CLI invocation, the value is taken from the report from which the command is based.

Command-Line Usage

The following is an example of a command line for invoking the **SCAS Reporter** application:

```
reportercmd -report "Global Bandwidth per Service #1" -dbdriver
"com.mysql.jdbc.Driver" -dburl "jdbc:mysql://127.0.0.1:3306/apricot"
-dbuser "pqb_admin" -dbpassword "pqb_admin" -policysce "10.1.12.85" -params
"numhours=240000000;seip=10.1.12.85;avgdata=true;link=Link 0,Link
1;traficdir=Both Directions;services=Messaging Service,Generic UDP
Service,Generic TCP Service,News Service,FTP Service,Browsing
Service,Default
Service" -o "myfile" -format "jpeg"
```

The following are the switches for the non-parameter arguments that must be added:

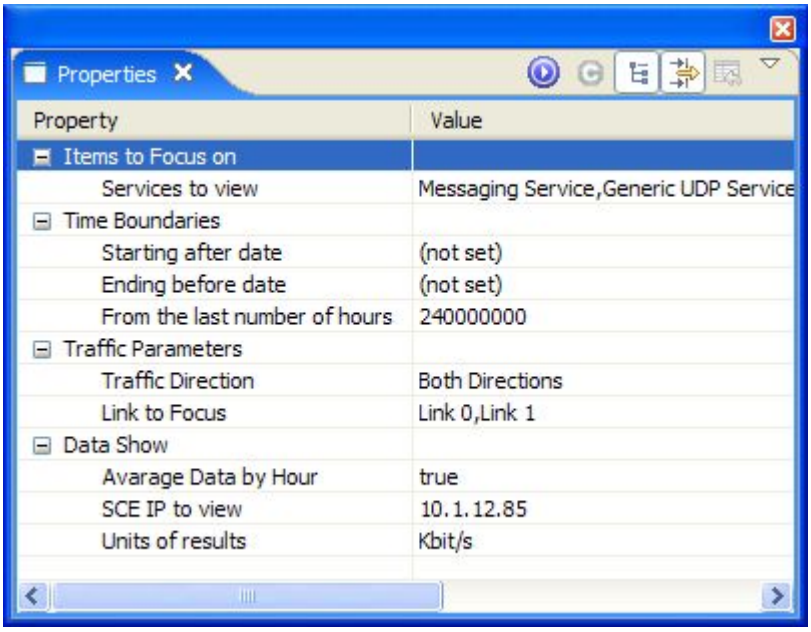
```
-o "filename" -format "jpeg or csv"
```

To generate Reporter commands:

Step 1 Select a report instance and execute the report from the *Templates View*.

The report is generated.

Step 2 (Optional) Reconfigure report instance and chart display parameters so you have a satisfactory report instance on which to base your CLI.



Step 3 From the drop-down menu in the tab, select **Show Cmd**.

Step 4 Click **OK**.

The command, with all the switches and parameters, is placed on the clipboard.

Step 5 Do one of the following:

- Open a file from which to execute the command from a shell and save the file in the Reporter directory.
- Open a command prompt from which to execute the CLI command and change the directory to the Reporter directory.

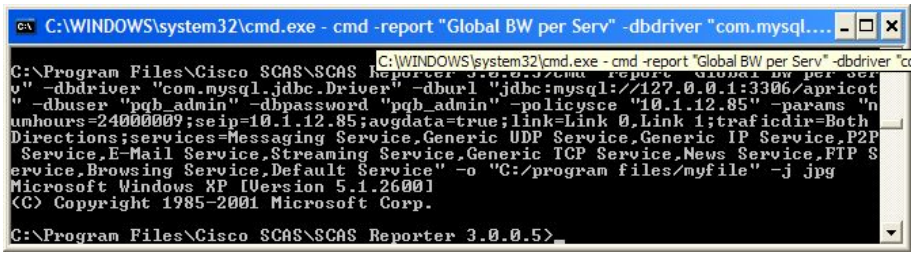
Step 6 Paste the clipboard contents.

The command is pasted in the file or in the command line.

Step 7 Add the following mandatory flags:

- **`-o "`***`filename`***`"`**
- **`-format "`***`jpeg or csv`***`"`**

Step 8 (Optional) Change parameters. For example, you may want to change the `numhours` parameter.



Step 9 Execute the command for automated reporting.

The exported file is saved in the defined directory with a time stamp appended to the name of the report.

Command-Line Switches

The following are switches in the command line for invoking the SCA Reporter application:

- **`-report`**
- **`-dbdriver`**
- **`-dburl`**
- **`-dbuser`**
- **`-dbpassword`**
- **`-policysce`**
- **`-params`**
- **`-o`**
- **`-format`**

Command-Line Options

The following table describes the options of the command line for invoking the SCA Reporter application:

Table 6-1 Command-Line Options for SCA Reporter Application

Option	Action by SCA Reporter	Comments
`-report` *report-name*	Generates a report using report-name.	Use this parameter when generating a report from one of the report instances.
`-dbdriver` *db-driver*	Driver for the database.	Same database that is configured in the SCA Reporter.
`-dburl` *db-url*	URL for the database.	
`-dbuser` *db-user*	User for the database.	
`-dbpassword` *db-password*	Password for the database.	
`-policysce` *IP of SCE for policy data*	(Required) Configuration of IP of SCE for policy data of templates.	Same IP of SCE for policy data that is configured in the SCA Reporter.
`-params` *numhours=,...*	Parameter from the *Properties View*.	When a particular parameter is not listed, the default value is used.
`-o` *filename*	(Required) Name of file to which to direct output.	If the filename already exists, the original file is overwritten.
`-format` *jpeg*	(Required) Generates report as a chart or table in the specified report-format.	`-format csv` used in spreadsheets for table data.

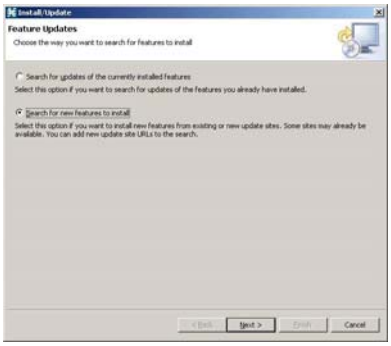
Installing and Upgrading SCA Reporter Templates

This appendix describes the how to install and upgrade SCA Reporter templates.

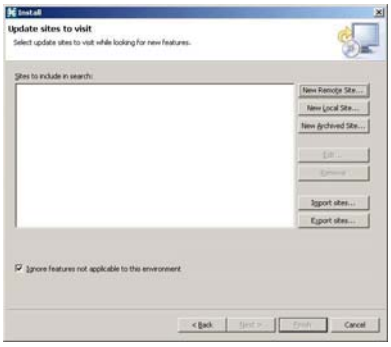
Installing the Reporter Templates

To install the Reporter templates:

Step 1 From the main menu, choose **Help** > **Find and Install**.



Step 2 Check the **Search for new feature to install** radio button, and click **Next.**

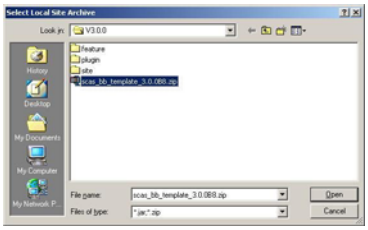


Step 3 Click **New archived site**.

The Select Local Site Archive dialog box appears.

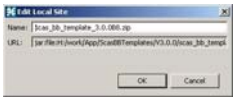
Step 4 Browse to the archive file and select it.

The file is named *SCAS_bb_template_<version>B<build>.zip*. For example, the file may be named *SCAS_bb_template_3.0.5B8.zip*.



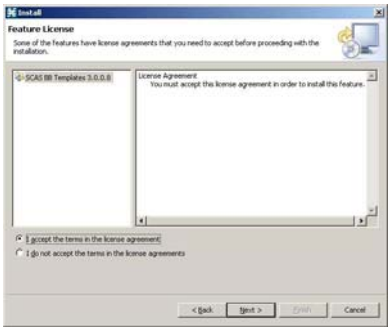
Step 5 Click **Open**.

The Edit Local Site dialog box appears with the zip name and the URL with the content.



Step 6 Click **OK**.

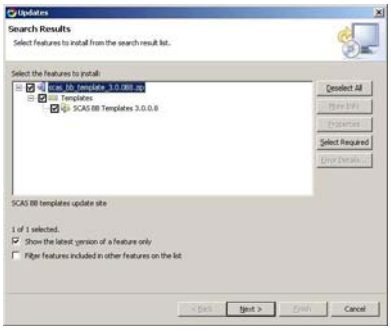
Step 7 Click **Finish**.



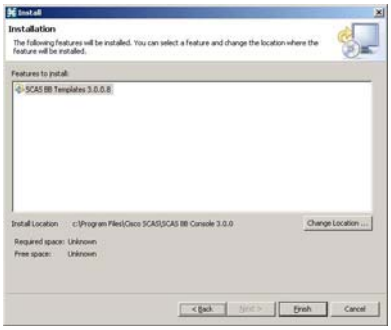
Step 8 Accept the agreement, and click **Next**.

The Updates dialog box appears with the installed features available for the site.

Step 9 Select the required feature, which should be named *SCAS BB Templates <version>.<build>*. For example, the file may be named *SCAS BB Template 3.0.5.8*.

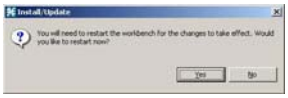


Step 10 (Optional) To install the feature in a different location, click **Change Location** and browse to the required location.



Step 11 Click **Finish**.

Step 12 Click **Install** or **Install All**.



Step 13 Click **Yes**, and wait for the application to come up.

The computer restarts.

The new Reporter templates are installed.

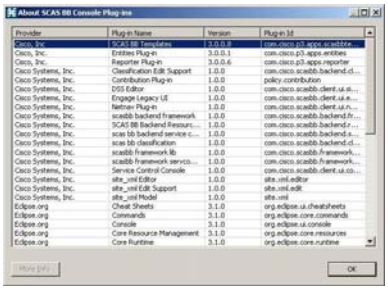
To verify installation of Reporter templates:

Step 1 From the main menu, choose **Help** > **About SCAS Reporter**.

The About SCAS Reporter dialog box appears.

Step 2 Click **Plug-in Details**.

The About SCAS Reporter Plug-ins dialog box appears.



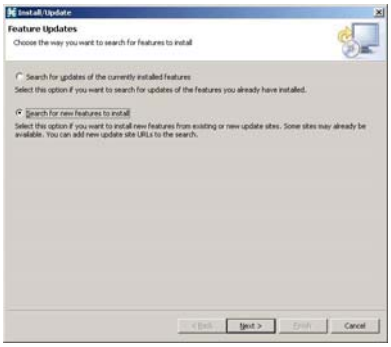
Step 3 Verify that the newly installed version is displayed in the Reporter plug-in list, and click **OK**.

The About SCAS Reporter Plug-ins dialog box closes.

Upgrading the Reporter Templates

To upgrade the SCA Reporter templates:

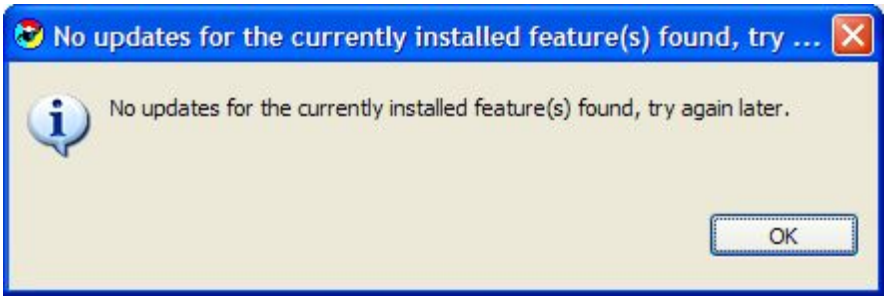
Step 1 From the main menu, choose **Help** > **Find and Install**.



Step 2 Check the **Search for updates of the currently installed features** radio button, and click **Finish**.

One of the following occurs:

- There are no updates.



- There are updates.

  The wizard appears (see *Installing the Reporter Templates* (on page A-1)).

APPENDIX B

Troubleshooting

The SCA Reporter went through extensive testing. However, if you encounter problems use the information in this appendix to help isolate the cause of the problems. The procedures in this appendix assume that you are troubleshooting the initial system startup, and that the GUI is in the original factory configuration. If you have changed any default settings, the recommendations in this appendix might not apply.

Using the Troubleshooting Appendix

This appendix describes the subsystems for more efficient problem solving. If you are unable to solve your problem, contact a customer service representative for assistance and further instructions. Provide the representative with the following information:

- Type of software and release number
- Brief description of your problem
- Brief explanation of the steps you have taken to isolate and resolve the problem
- Maintenance agreement or warranty information

General

Searching the Help menu allows you to learn more about the SCA Reporter while you are working. You can get assistance with the following functions from the Help Menu (see *The Help Menu* (on page 3-11)):

- Creating a Basic Configuration
- Accessing Online Help
- Checking System Conditions
- Managing Configuration
- Installing and Upgrading Templates
- Viewing Plug-in Details

You can also access Online Help while working in the SCA Reporter (see *Accessing Online Help* (on page 3-28)).

General Setup Errors

Check the following if the GUI does not open:

- Ensure you have enough memory.
- Uninstall an old release before installing a new release.
- The database is installed and populated.
- The IP address of the computer is not connected to another device.

Database Setup

You can also select **Help** > **Welcome**, for guidance in creating a basic configuration. On the *Welcome View* are explanations, a shortcut to the Add Database wizard for activating a database, and another shortcut for setting IP of the SCE platform in the templates preference. There is also a shortcut for starting the SCA Reporter.

Checking System Conditions

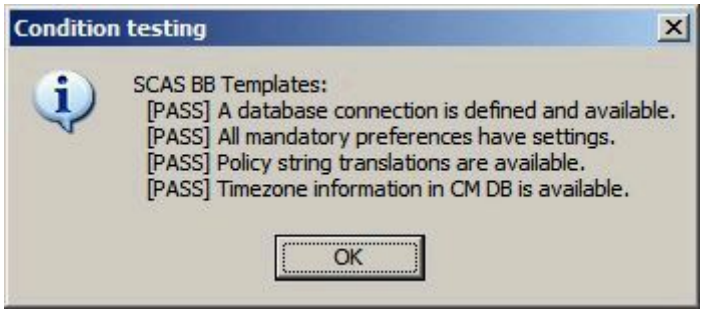
You can check that:

- The database connection is defined correctly and that the connection is active
- The system is configured correctly

To check system conditions:

From the main menu, choose **Help** > **Check Conditions**.

A Condition testing message appears.



Viewing the Error Log

To configure debug message logging, see *Sending Debug Messages to Log* (on page 3-6). When this mode is activated, you can view the error log.

To view the error log:

Step 1 From the main menu, choose **Help** > **About SCAS Reporter**.

The About SCAS Reporter dialog box appears.

Step 2 Click **Configuration Details**.

Step 3 Click **View Error Log**.

Command-Line Interface

To assist you in using and troubleshooting the SCA Reporter Command-Line Interface (CLI), refer to the following sections of the *Cisco Service Control Engine (SCE) CLI Command Reference*:

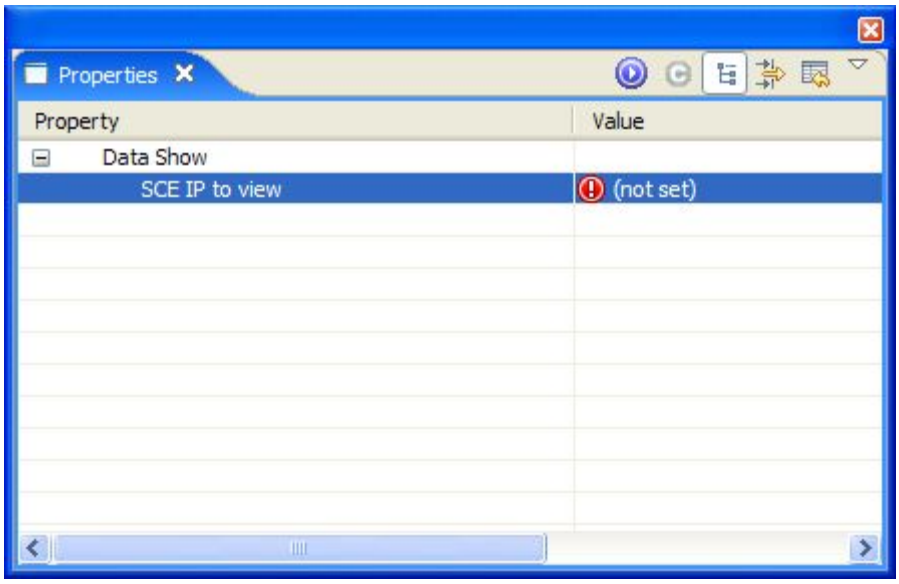
- CLI Help Features
- Navigational and Shortcut Features
- Managing Command Output

Parameter Definition Errors

Mandatory Parameters Not Defined

In this example, a mandatory parameter is not set.

Figure B-1: Mandatory Parameters Not Set

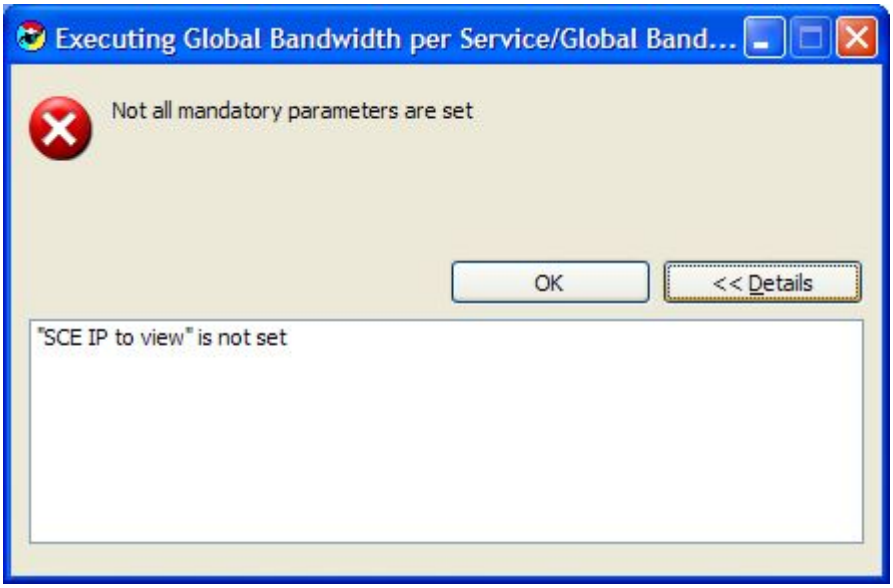


When the report is executed, an error message appears.

Figure B-2: Mandatory Parameters Not Set

Click **Details** to view more specifics on the error.

Figure B-3: Mandatory Not Set - Details



Template Repository Errors

Where the database structure has changed, but the Repository was not updated, there may be errors (see *Installing and Upgrading SCA Reporter Templates* (on page A-1)).

Note The files used for installing and upgrading may need to be updated before the installation.

APPENDIX C

The SCA Reporter as a Tool in the SCA BB Console

This appendix describes the SCA Reporter as a tool in the SCA BB Console. For more information about the SCA BB Console, see the *Cisco Service Control Application for Broadband User Guide*.

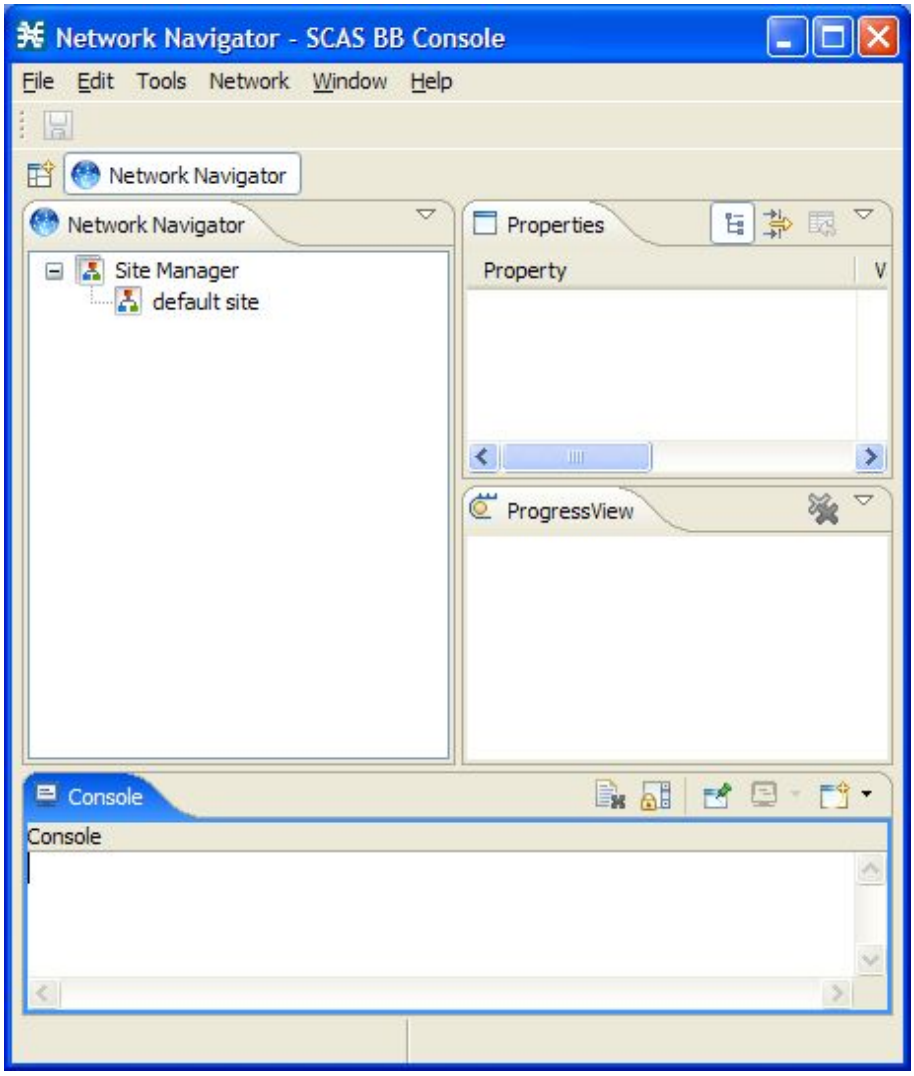
Accessing the SCA Reporter

The SCA Reporter is a tool in the SCA BB Console and is accessed by opening a *Perspective*.

To access the SCA Reporter from the SCA BB Console:

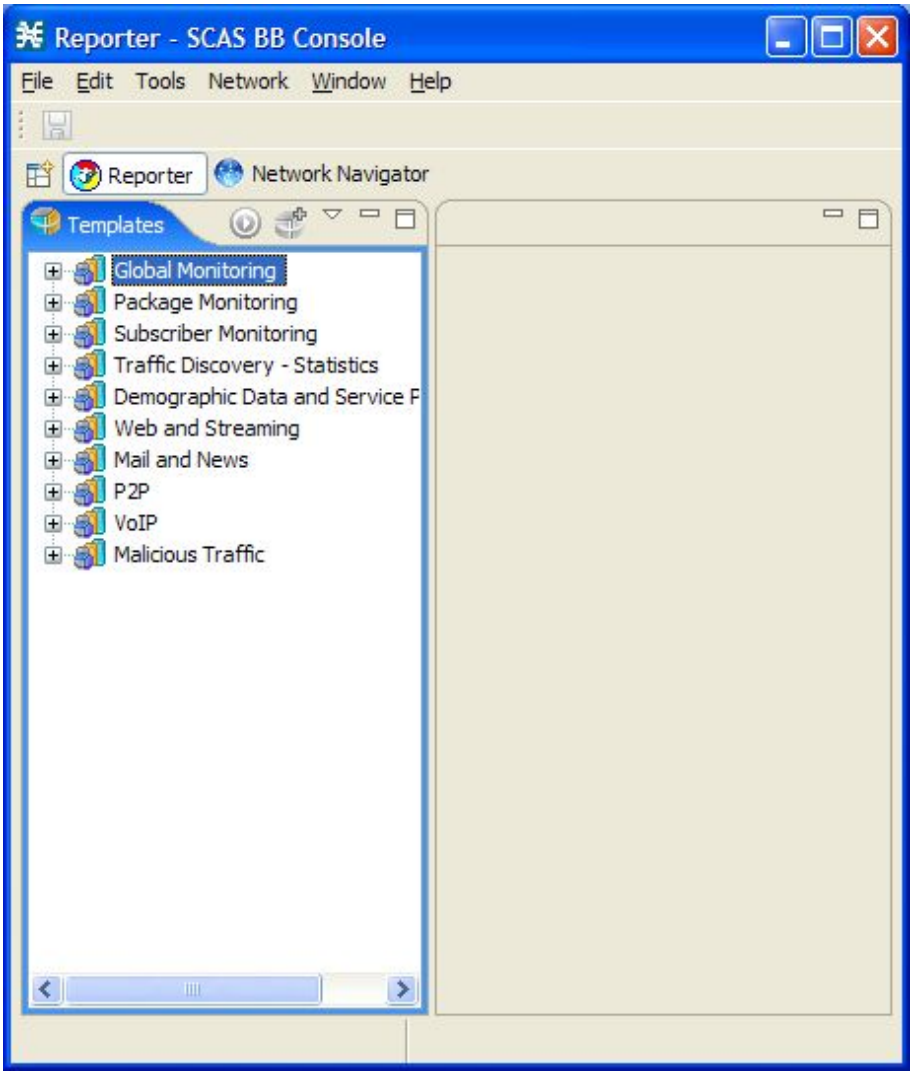
Step 1 Choose **start** > **All Programs** > **Cisco SCAS** > **SCAS BB Console 3.0.5** > **SCAS BB Console 3.0.5.**

The SCA BB Console window appears.



Step 2 From the Console main menu, choose **Tools**> **Reporter**.

The **Reporter** perspective opens.



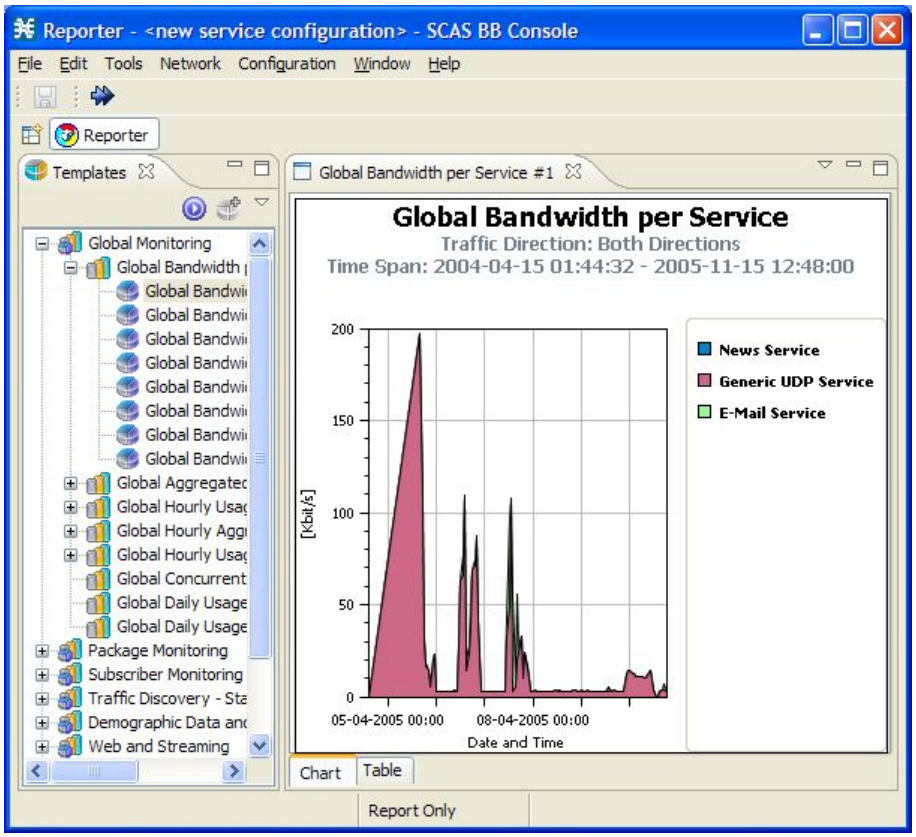
Navigating in the SCA BB Console: Perspectives

The Reporter tool has a standard toolbar and menu bar. Underneath the menu bar is the perspective bar. When you open a tool, a button is added to the perspective bar. To switch between open tools, click the appropriate button on the perspective bar.

The default view for the Reporter tool is the *Templates View*. When a report is executed, the *Report View* and *Properties View* are also displayed.

The configuration and operation of the SCA Reporter as a tool in the SCA BB Console is identical to its configuration and operation as a standalone. This includes navigation (see *Navigating in the Reporter: Views* (on page 3-8)).

Figure C-1: SCA BB Console Perspective



Note The title of the Console window shows the active tool and the active service configuration.

SCA Reporter Templates

This appendix describes the SCA Reporter templates.

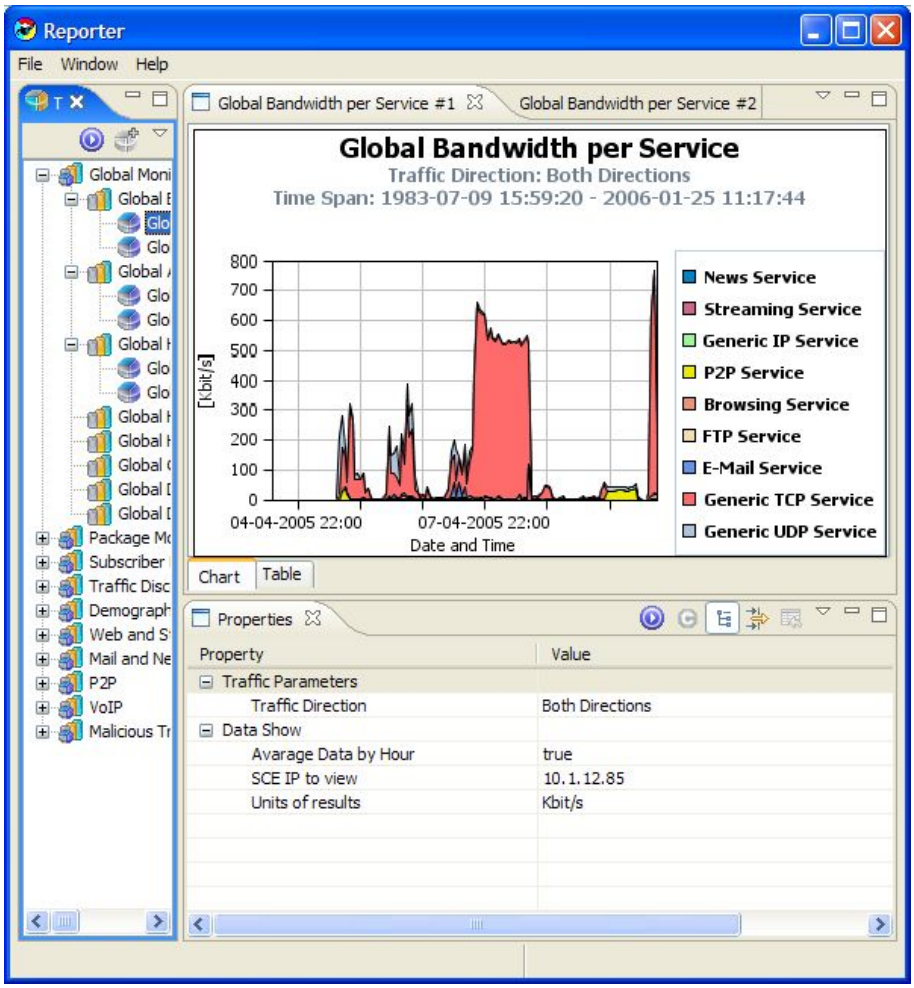
Report Templates Overview

The SCA Reporter provides groups of templates from which to generate reports. Each template allows you to create new report instances. Default filter values are assigned to the parameters, some of which are common to all the instances in a given group. You can impose additional constraints by configuring the parameters.

Note The default filters are the values that are initially applied to the parameters. When generating reports, you reconfigure parameters. In order to reset parameters to their default values, select parameters and click (**Restore Default Value**). Mandatory parameters are always displayed in the *Properties View* and must be set. Nonmandatory parameters may be assigned a value of **(not set)**. To view all parameters, click (**Show Advanced Properties**).

You generate a report instance by selecting a report template from the list of available groups in the *Templates View*. The figure below shows a selected report instance named **Global Bandwidth per Service #1** that was generated from the **Global Bandwidth per Service** template in the **Global Monitoring** group. The *Properties View* displays the values of the mandatory parameters of the report instance **Global Bandwidth per Service #1**.

Figure D-1: Templates View



There are two main categories of reports:

- Monitoring reports—Provide insight as to how network resources are utilized according to the configured services in the system at various granularities (global, package, subscriber).
- Traffic Discovery reports—Provide statistical information on network activity and help identify the characteristics of the traffic traversing the network.

The following table lists parameters that appear in reports generated from more than one template group. (Parameters that are relevant to only one template group are listed with the description of the group.)

Table D-1 Common Parameters for Reports

Parameter	Field Type	Default	Comments
Items to Focus on			
One of the following is included in most templates:			
• Services to View	Multiple Choice	(not set)	When not set, all services are selected.
• Select Service to View	Single Choice	(not set)	Mandatory parameter.
• Focus on the service	Single Choice	(not set)	When not set, all services are selected.
One of the following is included in many templates:			
• Packages to View	Multiple Choice	(not set)	When not set, all packages are selected.
• Package	Single Choice	(not set)	Mandatory parameter.
Subscriber name	Free Text	(not set)	Mandatory parameter for Subscriber reports. IP address (decimal format) or subscriber name.
Time Frames to focus	Multiple Choice	(not set)	When not set, all four time frames are selected.
Time Boundaries			
Starting After Date	Time/Date	(not set)	
Ending Before Date	Time/Date	(not set)	When not set, the report is bound to the current time.
• From the Last Number of Hours	Free Text	24	Ignored when the Starting After Date and Ending Before Date parameters are both set.
• From the Last Number of Days	Free Text	7	
Specific Time	Date/Time	(not set)	Mandatory parameter. Appears in three report types instead of the other three time boundary parameters. The selected time is rounded to the nearest hour/day.
Traffic Parameters			

Parameter	Field Type	Default	Comments
Link to Focus	Multiple Choice	(not set)	List of available links to focus.
One of the following is included in many templates:			
• Traffic Direction	Single Choice	Depends on template	Depends on template: • Direction only • Direction and metric
• Filter to Metric	Single Choice	Depends on template	Depends on template: • Metric only • Metric and direction
Data Show			
SCE IP	Single Choice	(not set)	Mandatory parameter. IP address of specific SCE platform.
Units of Results	Single Choice	Depends on template	
Limit number of results	Free Text	10	
Average data by hour	Boolean	True	If this option is selected, a single value is used for each hour: Average of all samples. This option is recommended when generating the report for 24 or more hours.
Show other Consumption	Boolean	False	
Aggregation Period	Single Choice	Hourly	
Subscriber Id	Free Text	(not set)	Pattern that represent group of subscribers.

- SCE IP—All reports include a parameter that enables filtering to a specific SCE platform. This parameter is mandatory and set to be remembered. Remembered means that if this parameter is set, it is also set for all subsequent reports.
- Time Boundaries Parameters—The following time boundaries parameters are included for all reports except for Top Subscribers, Top Talkers, and Relative Consumption of Top Subscribers.
  - Starting After Date
  - Ending Before Date
  - From the Last Number of Hours/Days

  The parameter **From the last number of hours/days** is set to a default value in all the reports. When all three Time Boundaries parameters are set, the **last number of hours** is ignored. When the parameter **Ending before date** is not set, the report is bound to the current time.

The following subsections describe the mainstream reports in each category.

Monitoring Reports

Monitoring reports provide information on the distribution and consumption of network resources. Reports in this category are useful for the understanding of how the network is used at different granularities (such as for the entire link, or for traffic generated by all subscribers in a particular package counter, or for traffic generated by a particular subscriber). These reports are critical for the tuning of the Service Control solution's configuration according to the changing network patterns.

Monitoring reports are created from Link, Subscriber, and Package RDRs (that are generated by the SCE platform). These RDRs provide periodic usage information (at the various granularities) that is processed according to the selected report template to provide the final report.

Reports of this type typically show a specific *metric* for a set of *service counters* at a selected *granularity. F*or example, *bandwidth* for *P2P and Browsing* service counters at a *link* granularity, or *volume* for the *Streaming* service counter for subscribers in the *Gold* package counter.

Selecting the service counters on which to report is done via the SCA Reporter. The available service counters are those defined in the service configuration of the SCE platform from which the reports are generated.

Granularity

A report's granularity controls what part of the traffic the selected report addresses. The following granularities are supported:

- Global—Provides visibility into all traffic processed by the SCE platforms being reported on. Use this global granularity to view the global distribution of network resources (for example, total P2P bandwidth for the last 24 hours)
- Package—Reports on traffic mapped to subscribers in a particular package counter. Use package granularity to monitor how network resources are used by subscribers assigned to a particular package counter (for example, the total volume of streaming traffic for all subscribers assigned to the Gold package counter in the last 10 days). See the "Using the Service Configuration Editor: Traffic Control" chapter of the *Cisco Service Control Application for Broadband User Guide* for a description of how to define different packages in the system.

  To generate package counter reports, subscribers must be defined (in any of the subscriber modes) and assigned to a particular package. See the "Using the Subscriber Manager GUI Tool" chapter of the *Cisco Service Control Application for Broadband User Guide* for a description of how to manage subscribers.
- Subscriber—Provides insight into the activity of a single subscriber as defined in the Service Control solution. Use subscriber granularity to view how a particular subscriber is utilizing network resources (for example, the number of P2P sessions generated by subscriber *xyz* for each hour during the last 12 hours). Subscriber reports are available for those subscribers flagged for real-time reporting. (For a description of managing real-time subscriber reporting, see the "Using the Service Configuration Editor: Traffic Accounting and Reporting" chapter of the *Cisco Service Control Application for Broadband User Guide*.)

Each report template generates a report in a specific granularity (global, package, or subscriber). Each type of report is accessible from the corresponding report template group:

- Global reports are accessible from the *Global Monitoring* (on page D-10) group.

- Package reports are accessible from the *Package Monitoring* (on page D-10) group.
- Subscriber reports are accessible from the *Subscriber Monitoring* (on page D-11) group.

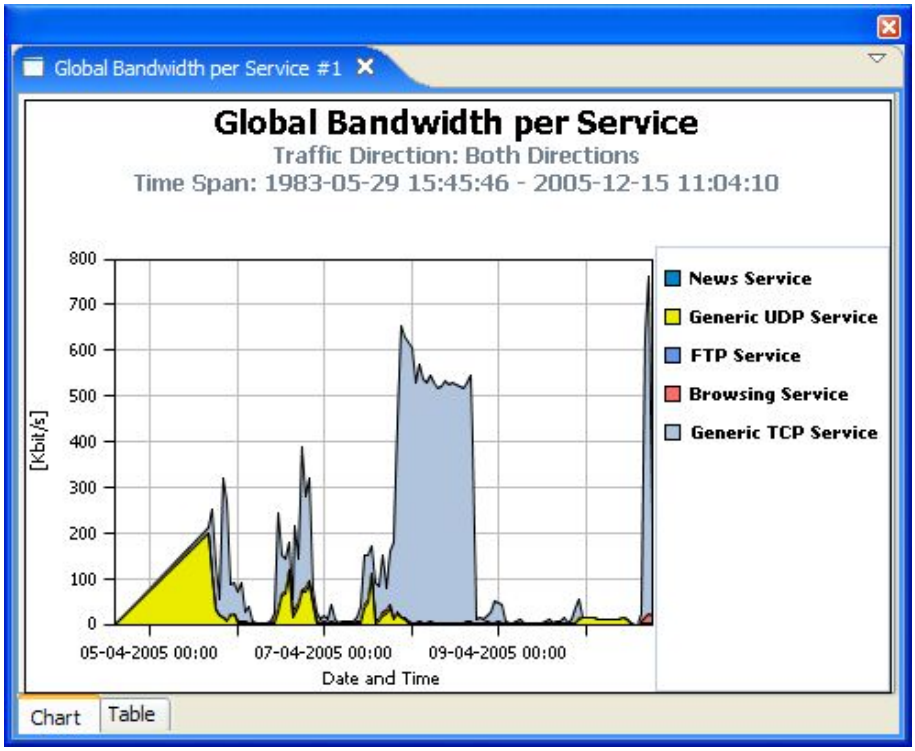
Metrics

A metric is the statistic that is being reported on. The following metrics are available:

- Bandwidth—Represents the total kilobits per second (kbps) consumed by the selected services. By default, bandwidth graphs are presented as **stacked-area** (where each area/series indicates the bandwidth of a particular service).

  When generating a bandwidth report, you can select the **direction**: upstream or downstream (to focus on a particular direction), or both (*default*). An additional option is to perform an **hourly average** of samples so as to create a single sample for each hour. This is recommended when generating a report for more than several hours, when a single sample per hour is usually sufficient and reduces the number of samples displayed (it also increases performance and improves the visualization of the data).

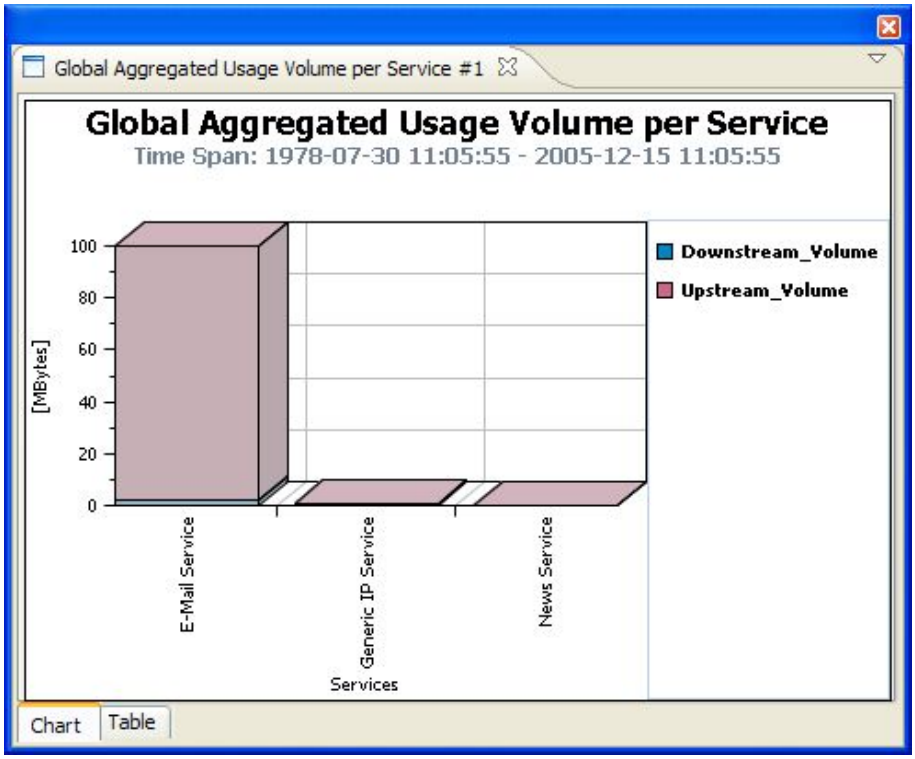
Figure D-2: Global Bandwidth per Service



- Volume—Represents the total volume (in kilobytes or megabytes) for a specific period of time, for the selected service counters. As opposed to the bandwidth metric (which provides normalized volume over time), volume reports provide the total volume consumed, grouped by specific time durations. By default, volume graphs are presented as **stacked-bar charts** (where each bar/series indicates the volume of a particular service counter).

Volume reports accumulated usage either for specific durations of time (hours or days), or for the entire duration of the report. An example of a report that groups volume by duration is Global Hourly Usage Volume, which generates a bar that accounts for the total volume consumed (by each service counter) during each hour of the selected time frame. As a different example, the Global Aggregated Usage Volume per Service report accounts for all volume of each service counter for the entire time frame of the report.

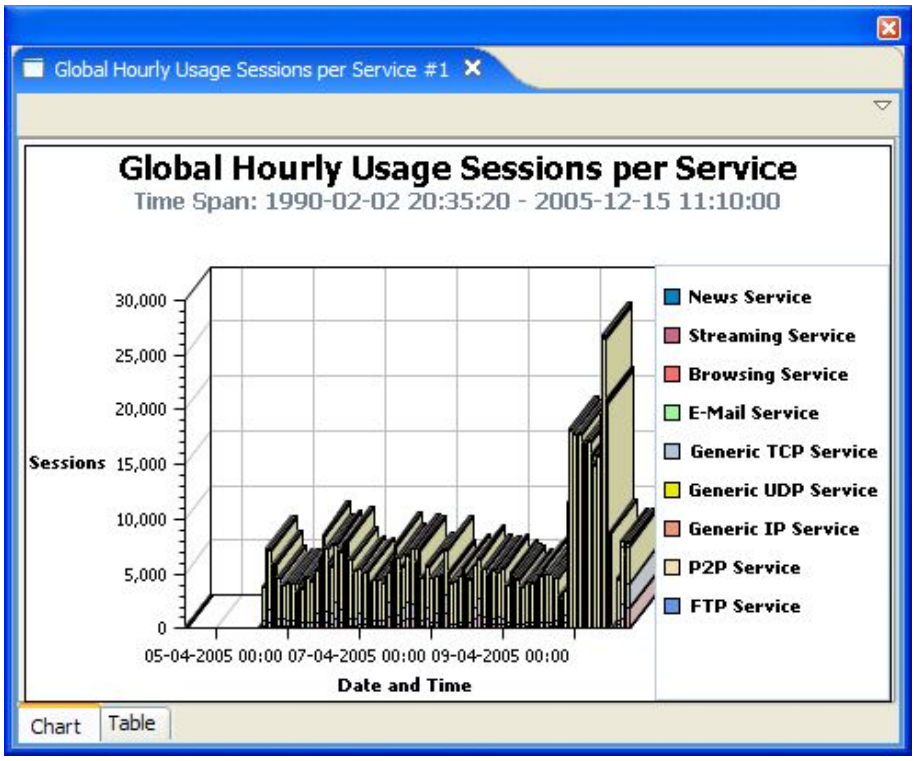
Figure D-3: Global Aggregated Usage Volume per Service



- Sessions—Counts the number of sessions. A session is a single network transaction (for example, RTSP stream or P2P file download). By default, sessions graphs are generated as **stacked-bar charts** (where each bar/series indicates the total number of sessions of a particular service counter).

Like volume reports, sessions reports can be grouped into specific durations (hours or days), so as to account for the total number of sessions in a particular hour/day consumed by a particular service counter.

Figure D-4: Global Hourly Usage Sessions per Service



Traffic Discovery Reports

Traffic discovery reports provide raw statistics for analyzing network activities. They are useful for obtaining statistics on the general activity in the IP network, and are the key for the definition of the service configuration of the system.

The generation of traffic discovery reports is based on Transaction RDRs (generated by the SCE platform). These sampled RDRs provide the statistical information from which the various Traffic Discovery histograms and charts are created.

Traffic Discovery reports generate histograms and distribution charts that are grouped by the selected *criteria* and ordered by the selected *order-parameter*. For example: Top *Protocols* sorted by *Total Volume*, or Top *Web-hosts* sorted by *Hit-Count*.

Criteria

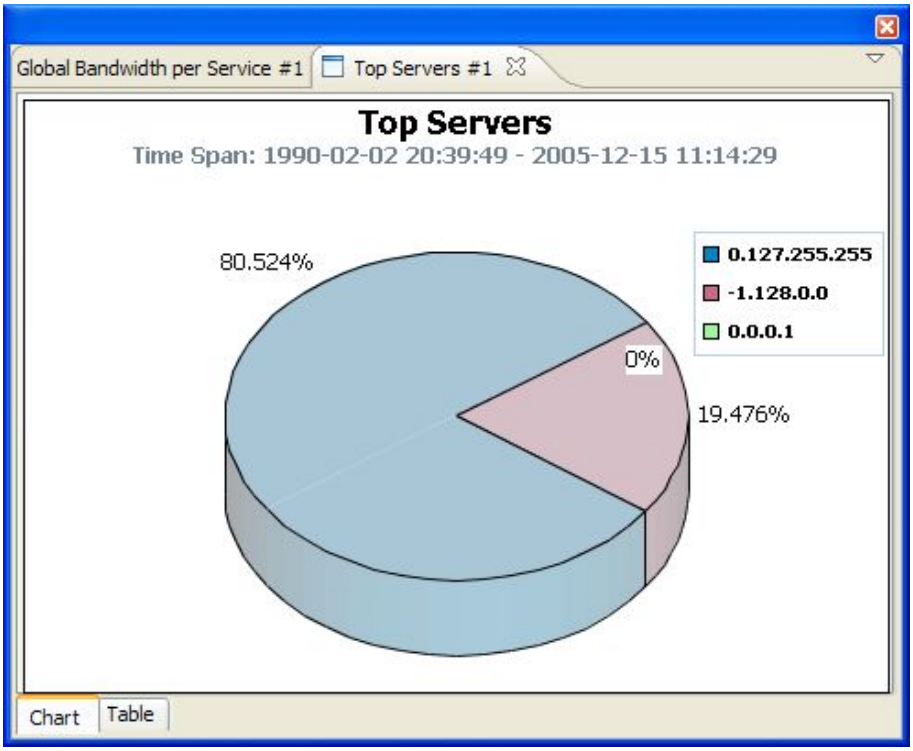
Each report template focuses on a particular criterion based on Layers 3–7, such as:

- Top Servers/Client IP addresses
- Top Server/Client Port numbers
- Top HTTP web-hosts
- Top NNTP news-groups

Report templates focusing on statistics from Layers 3 and 4 (for example, IP addresses and port numbers) are found in *Traffic Discovery - Statistics* (on page D-12). Report templates focusing on application- and protocol-specific information are in *Mail and News Reports* (on page D-14).

The following is an example of a report on Top Servers that focuses on IP address.

Figure D-5: Top Servers - Focusing on IP Addresses



Order Parameter

The order parameter indicates the parameter that the report will be sorted by. Available parameters are:

- Total Volume—Extrapolated total volume (both upstream and downstream)
- Upstream Volume—Extrapolated upstream volume
- Downstream Volume—Extrapolated downstream volume
- Hit-Counts—Extrapolated Number of transactions

You can limit each report to a specific number of results, which allows focusing on the top areas of activity (according to the selected order-parameter), as illustrated in the following two examples.

- Top Newsgroups Ordered by Volume
- Top Protocols Ordered by Volume

Global Monitoring

The Global Monitoring group of reports allows you to view statistics regarding the traffic bandwidth or volume that was consumed. The bandwidth/volume consumption can be presented per service for the entire link.

The Global Monitoring group includes the following report templates:

- Global Bandwidth per Service—Shows the distribution of bandwidth among the different services defined in the system for all traffic, regardless of subscriber or package
- Global Aggregated Usage Volume per Service—Shows the total volume of traffic (upstream and downstream) for each service counter (for all traffic, regardless of subscriber or package)
- Global Hourly Usage Volume per Service—Shows the distribution of volume among the different service counters defined in the system, grouped by hour
- Global Hourly Aggregated Minutes per Service—Shows the total number of minutes spent for service counters defined in the system, grouped by hour
- Global Hourly Usage Sessions per Service—Shows the distribution of sessions among the different service counters defined in the system, grouped by hour
- Global Concurrent Session per Service—Shows the distribution of concurrent sessions among the different service counters defined in the system
- Global Daily Usage Sessions per Service—Shows the distribution of sessions among the different service counters defined in the system, grouped by day
- Global Daily Usage Volume per Service—Shows the distribution of volume among the different service counters defined in the system, grouped by day

Package Monitoring

The Package Monitoring group of reports allows you to view statistics of bandwidth or volume of traffic used by a package. The reports are provided per service counter for the total volume used by the package. The volume consumption can be presented per service for the package.

The Package Monitoring group includes the following report templates:

- Package Bandwidth per Service—Shows the distribution of bandwidth among the different service counters defined in the system for all subscribers belonging to a particular package
- Package Aggregated Usage Volume per Service—Shows the total volume of traffic (upstream and downstream) for each service counter (for subscribers in a specific package)
- Package Hourly Usage Volume per Service—Shows the distribution of volume among the different service counters defined in the system, for the traffic of subscribers in a specific package counter, grouped by hour
- Package Hourly Aggregated Minutes per Service—Shows the total number of minutes spent for service counters for a specific package counter defined in the system, grouped by hour
- Package Hourly Usage Sessions per Service—Shows the distribution of sessions among the different service counters defined in the system, for the traffic of subscribers in a specific package, grouped by hour

- Package Concurrent Session per Service—Shows the distribution of concurrent sessions among the different Service Counters for a specific package counter defined in the system
- Package Daily Usage Sessions per Service—Shows the distribution of sessions among the different service counters defined in the system, for the traffic of subscribers in a specific package counter, grouped by day
- Package Daily Usage Volume per Service—Shows the distribution of volume among the different service counters defined in the system, for the traffic of subscribers in a specific package counter, grouped by day

Subscriber Monitoring

The Subscriber Monitoring group of reports allows you to view statistics regarding the bandwidth or volume of traffic used by the subscriber. The reports are provided per service counter for the total volume consumed by the subscriber. The Top Subscribers report identifies the subscribers that consume the largest traffic volume. Subscriber bandwidth and volume reports are available for those subscribers configured for real-time monitoring. See "Selecting Subscribers for Real-Time Usage Monitoring" in the "Additional Management Tools and Interfaces" chapter of the *Cisco Service Control Application for Broadband User Guide* for a description of how to configure real-time subscribers.

The Subscriber Monitoring group includes the following report templates:

- Top Subscribers—Shows a list of the top subscriber volume consumption in a specific hour/day
- Subscriber Bandwidth per Service—Shows the distribution of bandwidth among the different service counters defined in the system for a particular subscriber
- Subscriber Aggregated Usage Volume per Service—Shows the most popular Service counter for a particular subscriber
- Subscriber Hourly Usage Volume per Service—Shows the hourly distribution of volume among the different service counters defined in the system for a particular subscriber
- Subscriber Hourly Aggregated Minutes per Service—Shows the total number of minutes spent for service counters for a specific package counter defined in the system, grouped by hour
- Subscriber Hourly Usage Sessions per Service—Shows the hourly distribution of sessions among the different service counters defined in the system for a particular subscriber
- Subscriber Daily Usage Sessions per Service—Shows the daily distribution of sessions among the different service counters defined in the system for a particular subscriber
- Subscriber Daily Usage Volume per Service—Shows the daily distribution of volume among the different service counters defined in the system for a particular subscriber

Traffic Discovery - Statistics

The Traffic Discovery - Statistics group of reports allows you to view statistics compiled from the source and destination IP addresses and ports of the system traffic.

Note The reports in this group are not per subscriber; they supply general port and IP address information.

Table D-2 Parameter of the Traffic-Discovery Statistics Group only

Parameter	Field Type	Default	Comments
Traffic Parameters			
Transport Protocol	Single choice	TCP	

The Traffic Discovery - Statistics group includes the following report templates:

- Top Servers—Shows the most popular servers for certain services

  Server refers to the IP address of the other side of the flow initiator. It may be located on the Subscriber side or on the Network side.

- Top Client—Shows the most popular client IP for certain services

  Client refers to the IP address of the flow initiator. It may be located on the Subscriber side or on the Network side.

- Top Server Ports—Shows the most popular server ports for certain services
- Top Service Ports—Shows the most popular server ports of a certain service or services
- Top Protocols—Shows the most popular protocol for certain services
- Top IP Protocols—Shows the most popular IP protocol for certain services
- Top Server IP to Server Port—Shows the most popular server IP to server port for certain services
- Top Client IP to Server Port—Shows the most popular client IP to server port for certain services
- Top Client IP to Server IP—Shows the most popular client IP to server IP for certain services
- Top Client IP to Server IP and Server Port—Shows the most popular server IP and server port for certain services.

Demographic Data and Service Popularity Reports

The Demographic Data and Service Popularity group of reports allows you to view statistics of the demographic data.

The Demographic Data and Service Popularity group includes the following report templates:

- Global Active Subscriber per Service—Shows the distribution of subscribers among the different services defined in the system for all traffic, regardless of subscriber or package
- Package Active Subscriber per Service—Shows the distribution of bandwidth among the different services defined in the system for specific subscriber package
- Service Popularity among Subscribers—Shows the percentage of subscribers using a specific service defined in the system
- Service Popularity among Subscribers of a Specific Package—Shows the percentage of subscribers using a specific service in a specific package defined in the system
- Relative Consumption of Top Subscribers—Shows the relative consumption of a specific number of subscribers compared to “other”
- Service Popularity among Subscribers (Average)—Shows the total number of subscribers using a specific service compared to subscribers using all other services
- Service Popularity among Subscribers of a Specific Package (Average)—Shows the total number of subscribers using a specific service compared to subscribers using all other services in a specific package

Web and Streaming Reports

The Web and Streaming group of reports allows you to compile statistics presenting the most popular servers or hosts for the various predefined system services (such as Browsing, Streaming, and Downloading) and for user-defined services.

Table D-3 Parameter of the Web and Streaming Group only

Parameter	Field Type	Default	Comments
Items to Focus on			
Where host contains	Free Text	(not set)	Filter to hosts containing the given pattern.

The Web and Streaming group includes the following report templates:

- Top Web Hosts—Shows the most popular web servers
- Top Rtsp Hosts—Shows the most popular real-time streaming protocol (RTSP) servers
- Top FTP Servers—Shows the most popular FTP file hosts
- Top MMS Servers—Shows the most popular MMS hosts
- Top Service Servers—Shows the most popular servers of a certain service or services

- Service Distribution by Subscriber Packages—Shows the most popular web servers, grouped by the package of the requesting subscriber
- Rtsp Host Distribution by Subscriber Packages—Shows the most popular RTSP servers, grouped by the package of the requesting subscriber
- FTP Server Distribution by Subscriber Packages—Shows the most popular FTP file servers, grouped by the package of the requesting subscriber
- MMS Server Distribution by Subscriber Packages—Shows the most popular Microsoft Manager Server servers, grouped by the package of the requesting subscriber
- Service Distribution by Subscriber Packages—Shows the distribution of service usage according to the subscriber packages

Mail and News Reports

The Mail and News group of reports allows you to view statistics of the mail and news traffic.

The Mail and News group includes the following report templates:

- Top SMTP Servers—Shows the most popular SMTP hosts
- Top POP3 Servers—Shows the most popular POP3 hosts
- Top NNTP Servers—Shows the most popular NNTP hosts
- Top E-mail Sender—Shows the top e-mail sender
- Top E-mail Recipients—Shows the top e-mail recipients
- Top NNTP Consumers—Shows the top NNTP Consumers
- Top Newsgroups—Shows the most popular newsgroups
- SMTP Server Distribution by Subscriber Packages—Shows the most popular SMTP servers, grouped by the package of the requesting subscriber
- POP3 Server Distribution by Subscriber Packages—Shows the most popular POP3 servers, grouped by the package of the requesting subscriber
- NNTP Server Distribution by Subscriber Packages—Shows the most popular NNTP servers, grouped by the package of the requesting subscriber
- Top Subscriber to Newsgroup—Shows the top subscriber to newsgroup for certain services
- Top E-mail Account Owners—Shows the top e-mail account owners

P2P Reports

The P2P group of reports allows you to view statistics of the P2P traffic.

The P2P group includes the following report templates:

- Top P2P Protocols—Shows the most popular P2P protocol for certain services
- Top P2P Consumers—Shows a list of the top P2P subscriber volume consumption
- Top P2P Downloaders—Shows the top P2P download consumers

- Top P2P Uploaders—Shows the most popular P2P upload consumers
- Top P2P File Extensions—Shows the most popular P2P file extensions

VoIP Reports

The VoIP group of reports allows you to view statistics of the VoIP traffic.

The VoIP group includes the following report templates:

- Global Bandwidth per VoIP Service—Shows the distribution of bandwidth among the different VoIP services defined in the system for all traffic, regardless of subscriber or package
- Global Concurrent Calls per VoIP Service—Shows the distribution of concurrent sessions among the different VoIP service counters defined in the system, grouped by day
- Global Hourly Call Minutes per VoIP Service—Shows the distribution of Call Minutes among the different VoIP service counters defined in the system, grouped by day
- Package Bandwidth per VoIP Service—Shows the distribution of bandwidth among the different VoIP services defined in the system for the traffic of subscribers in a specific package
- Packet Concurrent Calls per VoIP Service—Shows the distribution of concurrent sessions among the different VoIP service counters defined in the system, grouped by day
- Package Hourly Call Minutes per VoIP Service—Shows the distribution of Call Minutes among the different VoIP service counters defined in the system, grouped by day
- Subscriber Bandwidth per VoIP Service—Shows the distribution of bandwidth among the different VoIP services defined in the system for the traffic of subscribers in a specific package
- Subscriber Hourly Call Minutes per VoIP Service—Shows the distribution of Call Minutes among the different VoIP service counters defined in the system, grouped by day
- Top SIP Domains—Shows the most popular SIP Domains
- Top Talkers—Shows a list of the top talker volume/session/minutes consumption in a specific hour/day for a specific/all VoIP services

Malicious Traffic

The Malicious Traffic group of reports allows you to view statistics of the malicious events accrued in the system.

Table D-4 Parameters of the Malicious Traffic Group only

Parameter	Field Type	Default	Comments
Traffic Parameters			
IP protocol	Single Choice	(not set)	
Filter to port	Free Text	(not set)	
Detected IP side	Single Choice	(not set)	

The Malicious Traffic group includes the following report templates:

- Global Scan or Attack Rate—Shows the rate (session/sec) of scan/attacks originating from the hosts (typically because of a worm or zombie)
- Global DoS Rate—Shows the rate (sessions/sec) of DoS attacks on the targeted host
- Top Scanning or Attacking Hosts—Shows the top hosts identified as DoS attacking
- Top DoS Attacked Hosts—Shows the top DoS-attacked hosts
- Infected Subscribers—Shows the distribution of infected subscribers over time among the different IP protocols in the system
- DoS Attacked Subscribers—Shows the distribution of DoS-attacked subscribers over time among the different IP protocols defined in the system
- Top DoS Attacked Subscribers—Shows the top DoS-attacked subscribers
- Top Scanning or Attacking subscribers—Shows the top subscribers identified as DoS attacking
- Top Scanned or Attacked Ports—Shows the top scanned or attacked ports

Glossary of Terms

C

CLI

A management interface to the database used for transmitting reports. The CLI is invoked through the **Show_Cmd** action and is automatically copied to the clipboard so that you can paste it into a command file shell or a command prompt, and then execute it with some minor changes. For automated reporting, other switches are added.

CM

A software application running on a Solaris or Linux platform that is responsible for receiving RDRs from the SCE platform and processing them.

Command-Line Interface

See CLI.

D

Downstream Volume

Amount of traffic entering the SCE platform from the network side (that is, toward the subscribers).

G

Global

Provides visibility into all traffic processed by the SCE platforms being reported on. Used to view distribution of network resources.

Granularity

Chosen to specify what part of the traffic the selected report addresses. The following granularities are supported: Global, Package, and Subscriber.

H

Hit-Count

Extrapolated number of transactions.

M

Metric

The statistic that is being reported on. The following metrics are available: bandwidth (Kbps), volume (kilobytes or megabytes), and sessions (number).

Monitoring Reports

Reports that provide information on the distribution and consumption of network resources.

O

Order Parameter

Used to indicate the parameter by which the report will be sorted. Available parameters are total volume, upstream volume, downstream volume, and hit-count.

P

Package

A collection of business policy rules, defining access levels to various services, charging parameters, and traffic control actions to be taken upon predefined events. Subscribers are assigned packages (plans) that determine how their network transactions are controlled and charged.

Parameter

An item of a template whose value determines some aspect of the report instance. An example is "From the last X hours".

- Some parameters are mandatory—You cannot execute a report if there are mandatory parameters with no value.
- Some parameters have a default value—A value that is used where the user has not supplied one.

Q

Quota

A (subscriber's) limit for a specific metric, such as bandwidth or volume.

R

Raw Data Record

See RDR.

RDR

A data record produced by the SCE platform that reports events in the traffic. RDRs produced by the SCE platform are sent to the Cisco Service Control Management Suite Collection Manager and then stored in the Collection Manager database or forwarded to third-party systems. The RDR typically contains a quota (*see* Quota) request or reports service usage.

Report

An instance of a template with some or all parameters having set values. Also known as a *report instance*.

Repository

The part of the SCA Reporter configuration that is associated with a particular Cisco application. It consists of Template Groups and Repository Preferences. An example is "SCA BB 3.0".

Repository Preferences

Configuration items that are dictated by the Repository. Normally, they are mandatory in order to generate reports. The "SCA BB" repository has just one preference, the "IP of SCE for policy data" preference.

Rule

A service is assigned to a package by defining a rule for the package.

S

SCA BB Console[bb]

The user interface used for controlling the Cisco Service Control Application for Broadband. You use the Console to create, modify, and apply service configurations.

SCE platform

The SCE platform is a purpose-built service component and active enforcing system designed for enhancing service providers and backbone carrier networks. By identifying, classifying, and manipulating complex traffic flows at wire speed, the SCE platform transforms simple transport networks into differentiated service delivery infrastructures for a wide variety of value-added IP applications, such as video streaming, VoIP, tiered services, and bilateral application-level SLAs.

The SCE platform seamlessly interfaces with existing network elements—including routers, switches, aggregators, subscriber management devices, and operational support systems—using industry-standard interfaces and communications protocols.

The need to guarantee that packets passing through the network are processed at the rate at which they arrive makes it necessary to provide a custom-made hardware solution.

The SCE platform comes in three models—SCE 1000, SCE 2000 4xGBE, and SCE 2000 4/8xFE. There may be one or more SCE platforms in the provider network. In the SCE platform, network transactions are analyzed and mapped to services that enforce the provider's policies.

The SCE platform also implements the business logic of the system solution and performs transaction analysis in real-time. When so instructed, the SCE platform creates a Raw Data Record (RDR) that is sent for storage to the system's data repository, the Cisco Service Control Management Suite Collection Manager, or carries out other operations such as bandwidth or volume control.

Service

A value-added offering given by the service provider to its subscribers on top of its access network.

For each such commercial service the providers offer to their subscribers, a corresponding service is defined in the Cisco Service Control solution for classifying and identifying network transaction associated with the service, reporting on its usage, and controlling its traffic according to the business policy.

Service Configuration

The definition of services in the Cisco Service Control solution, the mapping of network transactions to their corresponding services, and the behavior of the SCE platform on them. A service configuration includes the definition of services, packages, bandwidth controllers, filter rules, and so on.

Service Control

The basic Cisco concept for enabling service providers to differentiate subscribers, detect real-time events, create premium services, actively control applications, and leverage their existing infrastructure.

Service Control Application

An SML program (*see* SML) that determines how the SCE platform operates.

Service Control Engine platform

See SCE platform.

Service Control Management Suite Collection Manager

See CM.

Service Control Management Suite Subscriber Manager

See SM.

Service rule

A service is assigned to a package by defining a service rule for the package.

Session (also called Transaction)

An instance of communication between network hosts. A precise definition of a session is application-protocol (Layer 7) dependent.

SM

A middleware software component used where dynamic binding of subscriber information and service configurations is required. The SM manages subscriber information and provisions it in real time to multiple SCE platforms. It can store subscriber service configurations information internally, and act as a stateful bridge between the AAA system (for example, RADIUS and DHCP) and the SCE platforms.

SML

The Cisco scripting language, which allows the definition of service-related events and the execution of actions on those events.

Subscriber

There are two types of subscribers:

- Introduced Subscriber—A specific customer with an externally generated name. May be mapped to more than one IP address.
- Anonymous subscriber group—A subscriber with an internally generated name, generated automatically by the SCE platform according to an anonymous subscriber group specification. Always mapped to a single IP address. The actual identity of the subscriber is unknown to the system.

T

Template

A specification of a particular report, consisting of parameters and SQL code (which is not visible to the user). An example is “Global Bandwidth per Service”.

Template group

A collection of templates sharing some common theme. An example is “Subscriber Reports”.

Time-Based Rule

An added-value rule that can be attached either to the default service rule or to any other rule. A time-based rule is applied for one of the user-defined time frames.

Traffic Discovery Report

Provide statistical information on network activity and help identify the characteristics of the traffic traversing the network.

Transaction (also called Session)

An event in traffic that is recognized by a service control application. A transaction is distinguished according to its Layer 3, Layer 4, or Layer 7 characteristics. Different protocols may have different transaction types.

U

Upstream Volume

Amount of traffic entering the SCE platform from the subscriber side.

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