

# Cisco Unified Service Statistics Manager 8.7

## Deployment Best Practices

For further information, questions and comments please contact [ask-ucms@cisco.com](mailto:ask-ucms@cisco.com)

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# Contents

<a href="#"><u>Introduction</u></a>	<b>3</b>
<a href="#"><u>Product Overview</u></a>	<b>3</b>
<a href="#"><u>Features and Benefits</u></a>	4
<a href="#"><u>Service Statistics Workflow</u></a>	<b>5</b>
<a href="#"><u>Preinstallation Tasks</u></a>	<b>6</b>
<a href="#"><u>Server Requirements</u></a>	6
<a href="#"><u>Postinstallation Tasks</u></a>	<b>6</b>
<a href="#"><u>Integrating with Operations Manager and Service Monitor</u></a>	6
<a href="#"><u>Administration Tab</u></a>	8
<a href="#"><u>User Scenarios</u></a>	<b>8</b>
<a href="#"><u>Creating a Capacity Planning Home View</u></a>	8
<a href="#"><u>Capacity Trend Reports</u></a>	11
<a href="#"><u>Creating a Trunk Group</u></a>	11
<a href="#"><u>Creating a Trunk Capacity Trend Report</u></a>	15
<a href="#"><u>SLA Creation</u></a>	18
<a href="#"><u>Modify/Create Attribute Set</u></a>	18
<a href="#"><u>Create a Trunk Utilization SLA</u></a>	21
<a href="#"><u>Super-SLA</u></a>	24
<a href="#"><u>SLA Capacity Trends</u></a>	28
<a href="#"><u>Troubleshooting</u></a>	<b>28</b>
<a href="#"><u>Installation Failing</u></a>	28
<a href="#"><u>Logon Failure</u></a>	29
<a href="#"><u>Autodiscovery</u></a>	29
<a href="#"><u>Data Collection Failure</u></a>	30
<a href="#"><u>Cisco Unified Service Statistics Manager Licensing</u></a>	<b>30</b>

## Introduction

This document outlines best practices for a successful deployment of Cisco® Unified Service Statistics Manager (SSM). It documents the initial deployment and ongoing operational environments.

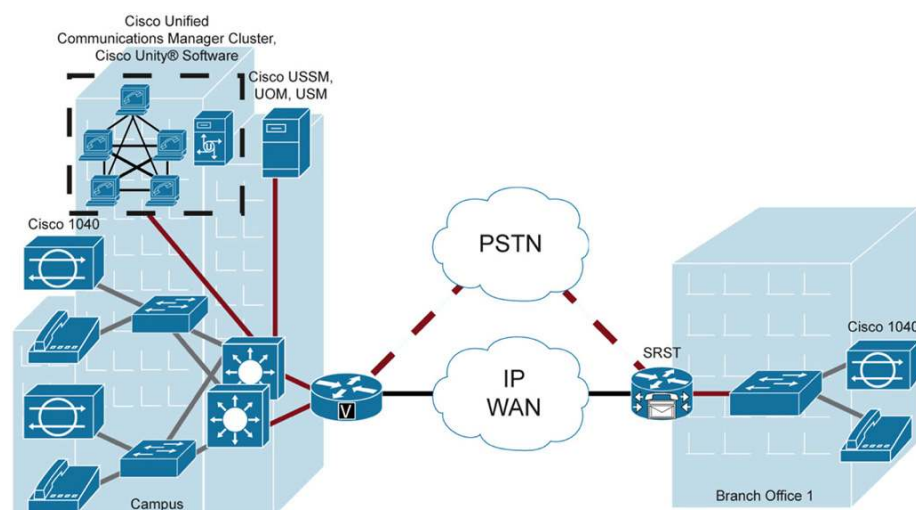
This document is not an alternative to the installation guide or the user guide, as it does not cover all the features and functions of the product. It is a supplement to the installation guide and the user guide. Detailed steps are provided for best practices wherever relevant.

## Product Overview

Cisco Unified Service Statistics Manager, which is part of the Cisco Unified Communications Management Suite, provides advanced statistics analysis and reporting capabilities for Cisco Unified Communications deployments. Cisco Unified Service Statistics Manager 8.7 is an easy-to-use web-based software product that features a variety of advanced reports for executive, operations, and capacity planning functions. Cisco Unified Service Statistics Manager provides ready-made reports as well as customizable reports that provide visibility into key metrics including call volume, call quality, resource utilization, and capacity across the Cisco Unified Communications System, including across multiple Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager) clusters, gateways, and related devices. It helps enable users to view information based on network, service, business, and user criteria and to define service-level agreement (SLA) constructs as well as to measure and verify them based on collected Unified Communications statistics. Customizable report templates and automatic report invocation and scheduling provide users with a great deal of flexibility.

Cisco Unified Service Statistics Manager 8.7 can be deployed for statistics analysis and reporting for small, medium-sized, and large Cisco Unified Communications deployments. Cisco Unified Service Statistics Manager 8.7 integrates with and relies on the data collection capabilities of Cisco Prime™ Unified Operations Manager (UOM) 8.7 and Cisco Prime™ Unified Service Monitor (USM) 8.7; the latter two products are prerequisites for the deployment of Cisco Unified Service Statistics Manager 8.7. For small and medium-sized deployments (generally up to 10,000 Cisco Unified IP phones), Cisco Unified Service Statistics Manager 8.7, Cisco Prime Unified Service Monitor 8.7, and Cisco Prime Unified Operations Manager 8.7 may be deployed on the same Windows-based server/workstation. For larger deployments, it is recommended that Cisco Prime Operations Manager 8.7 be run on a separate server. Figure 1 shows a sample deployment.

**Figure 1.** Deployment Example



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## Features and Benefits

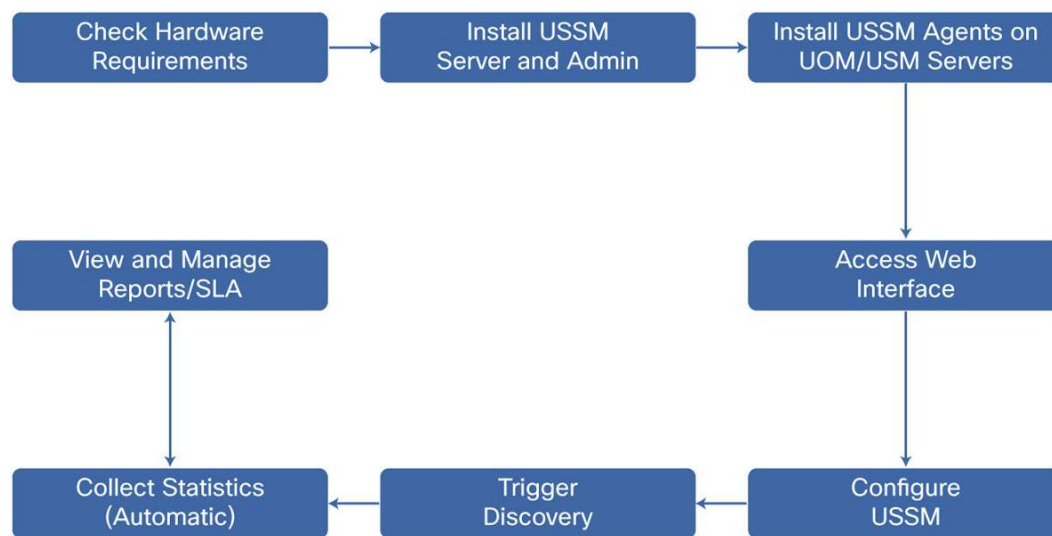
Cisco Unified Service Statistics Manager provides the following features and benefits:

- Integrates with and uses the data collection capabilities of Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor to harvest and consolidate Cisco Unified Communications statistics information from a variety of Cisco devices and systems, including Cisco Unified Communications Manager, Cisco Unified Communications Manager Express (formerly known as Cisco Unified Call Manager Express), Cisco Unity® software, Cisco Unity Connection, Cisco Unity Express, and Cisco IOS® Software-based voice gateways; the collected data stored in a consolidated database can be partitioned based on a variety of network, service, user, and business criteria for detailed analysis and reporting.
- Provides a variety of ready-made reports on key metrics including call volume, call quality, and resource utilization across the Cisco Unified Communications System. Cisco Unified Service Statistics Manager 8.7 provides a variety of reports for executive, operations, and capacity planning personnel. These include:
  - Call volume, call duration, service quality, call completion, and mean opinion score (MOS) reports across multiple Cisco Unified Communications Manager clusters, with capabilities to get more information about specific clusters and time periods.
  - A variety of top-N reports based on calls, users, endpoints, and other entities in the Cisco Unified Communications deployment.
  - Gateway and trunk traffic and utilization reports over time, with capacity trending and capabilities to get more detailed information.
  - Call failure analysis reports over time, including cause code information.
  - Top-N upgrade and downgrade candidates reports for capacity planning and trending.
  - IP phone and inventory reports.
  - IP telephony testing reports, including IP SLA test results over time.
  - A variety of exception and operations reports, including most frequently dialed numbers, longest calls, calls to specified number, and more.
  - A variety of SLA reports, including SLA capacity trends, SLA compliance history, SLA executive summary, SLA health summary, and more.
- Helps enable the user to personalize reports, customizing the content as well as the format and presentation of the reports.
- Facilitates the distribution of reports to executive, operations, and capacity planning personnel through email as well as a user-friendly web-based portal that features a customizable dashboard displayed when the user logs in. Users can specify the reports to be shown on their dashboard as well as the layout in a user-friendly manner. The product features intuitive navigation and detailed reporting from aggregate to fine levels.
- Provides powerful scheduling features, facilitating the generation and distribution of user-specified reports automatically at specific times.
- Facilitates the export of data and reports to external applications and users in a variety of formats, including HTML, PDF, and comma-separated value (CSV) file formats.

- Cisco Unified Service Statistics Manager 8.7 adds the following new reports:
  - Device pool-based reports
  - Route group utilization reports
  - Session Initiation Protocol (SIP) trunk in call volume reports
  - Call Admission Control (CAC) location bandwidth reports
  - Erlangs and Common Channel Signaling (CCS) added for capacity planning

## Service Statistics Workflow

**Figure 2.** Cisco Unified Service Statistics Manager Workflow



Cisco Unified Service Statistics Manager uses the short-term wealth of operational data collected from Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor to perform long-term analysis and reporting (Figure 2). It is therefore mandatory to have Unified Operations Manager and Unified Service Monitor operational prior to deploying Unified Service Statistics Manager.

Service Statistics Manager has the following components:

- **Service Statistics Manager server:** The primary component of Service Statistics Manager. It hosts the database and web interface. It is responsible for talking to remote Service Statistics Manager agents and gathers data from Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor.
- **Service Statistics Manager agent:** Sends data to the Service Statistics Manager server for data mining. Required to be running in all Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor servers.
- **SSM web user interface:** Primary user interface for viewing reports, graphs, and SLAs and for administering the dial plan, call quality, and so on.
- **SSM administration console:** Java console for administering users, groups, and agents. Uses Java Remote Method Invocation (RMI) to communicate with the Service Statistics Manager server. A maximum limit of four instances of the administration console can be installed and used to manage Service Statistics Manager.

## Preinstallation Tasks

### Server Requirements

- The hardware configuration needed to operate Cisco Unified Service Statistics Manager at different scalability levels and the client requirements are detailed in the Quick Start Guide for Cisco Unified Service Statistics Manager available at [http://www.cisco.com/en/US/products/ps7285/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7285/prod_installation_guides_list.html).

Hardware requirements for installing Service Statistics Manager on a system with Operations Manager and Service Monitor are provided in the [Coresident Guidelines](#) section in the Installation Guide for Cisco Prime Unified Operations Manager 8.7 (Includes Service Monitor).

## Postinstallation Tasks

### Integrating with Operations Manager and Service Monitor

- This section assumes that installation procedures as specified in the Quick Start Guide (installation guide) have been completed.

The Quick Start Guide for Cisco Unified Service Statistics Manager provides a checklist (Table 10, Configuration Checklist) of installation procedures. Make sure that the installer has checked all the items on the checklist (for example, things to do in Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor - make sure Cisco Voice Transmission Quality is turned on, make sure that Cisco Prime Unified Operations Manager polling is being done and displayed for desired statistics, and so on) **before** using Cisco Unified Service Statistics Manager.

After Cisco Unified Service Statistics Manager has been installed, integration with Operations Manager and Service Monitor will have to be configured. To accomplish this:

1. Log in to the Cisco Unified Service Statistics Manager GUI through [Error! Hyperlink reference not valid.](#), where hostname is the name of the machine running SSM. See Figure 3.

**Figure 3.** Log In to Cisco Unified Service Statistics Manager

2. Then click **Administration > Show** (in the Advanced section - see Figure 4).

**Figure 4.** Click Show in the Advanced Section

The screenshot shows the Cisco Unified Service Statistics Manager Administration interface. The top navigation bar includes links for Views, Reports, Custom Graphs, SLA, and Administration. The main content area is divided into sections: Dashboard View, Home View, Advanced, and Downloads. In the Advanced section, there are links for Attribute Sets, Schedules, Phone-Based Groups, Call Quality, and Operations Manager/Service Monitor Details. The 'Operations Manager/Service Monitor Details' link is highlighted with a red box.

**Figure 5.** Enter the Operations Manager Server Name, Username, and Password and Click Discover

The screenshot shows the Cisco Unified Service Statistics Manager Administration interface with the 'Discover' dialog box open. The dialog box prompts for the following information:

- Operations Manager IP Address/Hostname: 192.168.137.102
- Enter Username (Web Console):
- Password:

The 'Discover' button is highlighted with a red box. A red arrow points from the 'Discover' button in the dialog box to the 'Discover' button in the main interface.

3. Enter the IP address of the Operations Manager server, username, and password. See Figure 5.
4. Click **Discover**.

Service Monitor software associated with Operations Manager will be discovered as well.

## Administration Tab

There are other functions in the Administration tab that you should explore, such as changing the default Admin password, selecting the Dashboard and Home views, and setting Advanced options. See Figure 6.

**Figure 6.** Functions in the Administration Tab

The screenshot displays the 'Administration' tab of the Cisco Unified Service Statistics Manager. The top navigation bar includes links for Views, Reports, Custom Graphs, SLA, and Administration. The main content area is divided into several sections:

- User ID and Password:** Shows the current User ID as 'admin' and a masked password field with an 'Edit' link.
- Dashboard View:** Features a 'Show Dashboard View' dropdown menu set to 'None' and an 'Apply' button.
- Home View:** Features a 'Select Home View' dropdown menu set to 'Default' and an 'Apply' button.
- Advanced:** A list of configuration options with links to edit them:
  - Attribute Sets: Edit (Create attribute sets for use in SLA and Reports Administration pages)
  - Schedules: Edit (Create new schedules (for example, 24x7) for use in Reporting Administration)
  - Phone-Based Groups: Edit (Configure phone-based groups)
  - Call Quality: Edit (Configure call quality ranges)
  - Operations Manager/Service Monitor Details: Show (Display Operations Manager/Service Monitor details)
- Downloads:** A table listing software packages for download.

Package Name	File(s)	Description
SOM Agent Software	<a href="#">Agent.exe</a>	Setup program for installing SOM Agent Software on Windows machines.
SOM Admin Software	<a href="#">Admin.exe</a>	Setup program for installing SOM Admin Software on Windows machines.

## User Scenarios

### Creating a Capacity Planning Home View

Users can create a Capacity Planning Home view that includes top-N gateways and trunk utilization, trunk capacity trends, call volume, and voice-mail port utilization. The sample Capacity Planning Home view is displayed in Figure 7.

1. Click the **Create** button.
2. Enter **Capacity Planning Home** in the View Title field.
3. Click **Add Reports**.
4. Select the reports for this view.



**Figure 7.** Creating a Capacity Planning Home View

The screenshot shows the Cisco Unified Service Statistics Manager interface. At the top, there is a header with the Cisco logo and the title "Cisco Unified Service Statistics Manager". Below the header, there are tabs for "Views", "Reports", "Custom Graphs", "SLA", and "Administration". The "Reports" tab is currently selected. The main area displays a list of reports with checkboxes for selection. The reports are organized into two columns. The first column lists various reports, and the second column lists the corresponding aggregation type, frequency, and filter settings. The "Add To View" button is highlighted at the bottom left of the report list.

Report Name	Aggregation Type	Frequency	Filter	Admin	
<input type="checkbox"/> Top N Gateways - T1 & E1 PRI Utilization	Top N Performers	Daily	General	No Filter	admin
<input type="checkbox"/> Top N Gateways by Utilization - Monthly	Top N Performers	Monthly	General	No Filter	admin
<input type="checkbox"/> Top N Service Availability Across Clusters by Time - Monthly	Top N Performers	Monthly	General	No Filter	admin
<input type="checkbox"/> Top N Trunks - Monthly	Top N Performers	Daily	General	No Filter	admin
<input checked="" type="checkbox"/> Top N Trunks by Utilization - Monthly	Top N Performers	Monthly	General	No Filter	admin
<input type="checkbox"/> Top N Users	Top N Users	Weekly	General	No Filter	admin
<input type="checkbox"/> Total Duration Across Clusters - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
<input type="checkbox"/> Total Traffic Across Clusters - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
<input type="checkbox"/> Traffic Summary - Day of Month	Traffic Summary	Weekly	General	No Filter	admin
<input type="checkbox"/> Traffic Summary - Day of week	Traffic Summary	Weekly	General	No Filter	admin
<input type="checkbox"/> Traffic Summary - Hour of Day	Traffic Summary	Daily	General	No Filter	admin
<input type="checkbox"/> Trunk Traffic Over Time	Time Aggregation	Daily	General	No Filter	admin
<input checked="" type="checkbox"/> Trunk Utilization - Daily	Time Aggregation	Daily	General	No Filter	admin
<input type="checkbox"/> Trunk Utilization - Monthly	Time Aggregation	Monthly	General	No Filter	admin
<input type="checkbox"/> Trunk Utilization - Weekly	Time Aggregation	Weekly	General	No Filter	admin
<input type="checkbox"/> Voicemail Port Utilization - Daily	Instance Aggregation	Daily	General	No Filter	admin
<input type="checkbox"/> Voicemail Port Utilization - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
<input type="checkbox"/> Voicemail Port Utilization - Weekly	Instance Aggregation	Weekly	General	No Filter	admin
<input checked="" type="checkbox"/> Voicemail Port Utilization Over Time - Daily	Time Aggregation	Daily	General	No Filter	admin
<input type="checkbox"/> Voicemail Port Utilization Over Time - Monthly	Time Aggregation	Monthly	General	No Filter	admin
<input type="checkbox"/> Voicemail Port Utilization Over Time - Weekly	Time Aggregation	Weekly	General	No Filter	admin

At the bottom left of the report list, there are two buttons: "Add To View" (highlighted) and "Cancel".

5. Click **Add to View** after selecting the reports.

**Figure 8.** Click Finish to Add the Reports

The screenshot displays the Cisco Unified Service Statistics Manager web interface. At the top, the Cisco logo is on the left, and the title 'Cisco Unified Service Statistics Manager' is centered, with a subtitle 'A product from the Cisco Unified Communications Management Suite' below it. A navigation bar contains tabs for 'Views', 'Reports', 'Custom Graphs', 'SLA', and 'Administration'. Below the navigation bar, the 'View Type' is set to 'Report based' and the 'Date Created' is 'Monday 08/20/2007 05:56 PM'. The 'Layout Type' is set to '4 column(s)' and the 'Date Last Accessed' is 'Thursday 04/10/2008 11:07 AM'. The main section is titled 'Reports in View' and contains three buttons: 'Delete Selected', 'Add Reports', and 'Order'. Below these buttons is a 'Select All' checkbox. A table lists various reports, each with a 'Delete' checkbox and a 'Report Title'. The reports listed are: 'Top N Gateways - T1 & E1 PRI Utilization', 'Top N Gateways - CPU Utilization', 'Call Volume Over Time Across Clusters - Weekly', 'Capacity Trends - Trunks', 'Voicemail Port Utilization Over Time - Daily', 'Trunk Utilization - Daily', 'Traffic Summary - Day of week', 'Total Traffic Across Clusters - Monthly', 'Gateway Utilization - Daily', and 'Call Volume and Duration Across Clusters - Monthly'. At the bottom of the table is another 'Select All' checkbox. Below the table, the 'Finish' button is highlighted with a red rectangle, and the 'Cancel' button is next to it.

View Type: Report based      Date Created: Monday 08/20/2007 05:56 PM

Layout Type: 4 column(s)      Date Last Accessed: Thursday 04/10/2008 11:07 AM

**Reports in View**

Delete Selected    Add Reports    Order

☐ Select All

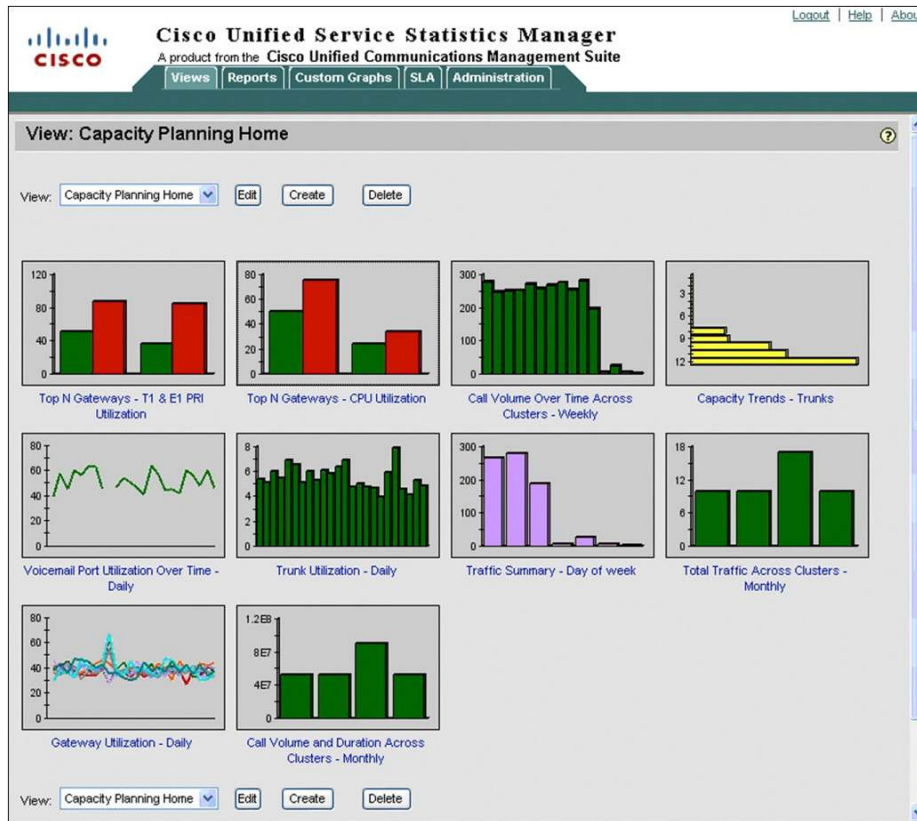
Delete	Report Title
<input type="checkbox"/>	Top N Gateways - T1 & E1 PRI Utilization
<input type="checkbox"/>	Top N Gateways - CPU Utilization
<input type="checkbox"/>	Call Volume Over Time Across Clusters - Weekly
<input type="checkbox"/>	Capacity Trends - Trunks
<input type="checkbox"/>	Voicemail Port Utilization Over Time - Daily
<input type="checkbox"/>	Trunk Utilization - Daily
<input type="checkbox"/>	Traffic Summary - Day of week
<input type="checkbox"/>	Total Traffic Across Clusters - Monthly
<input type="checkbox"/>	Gateway Utilization - Daily
<input type="checkbox"/>	Call Volume and Duration Across Clusters - Monthly

☐ Select All

**Finish**    Cancel

6. Click **Finish** (see Figure 8).

**Figure 9.** To View Details, Click the Appropriate Graph or Title



Details of each report can be viewed by clicking the graph or title (Figure 9).

### Capacity Trend Reports

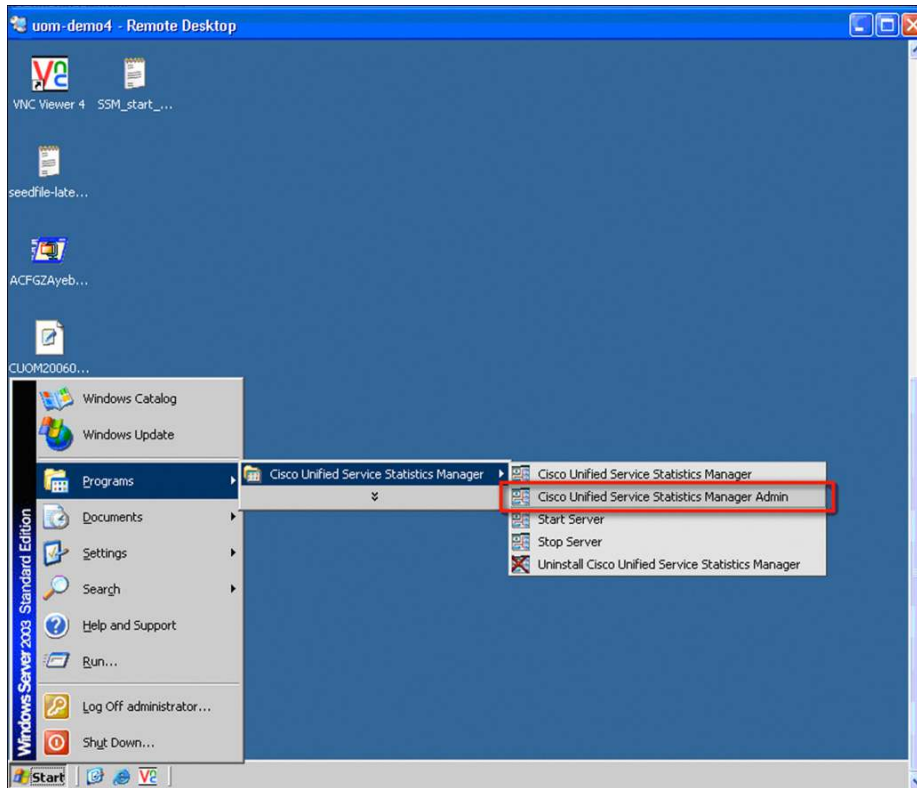
Capacity trend reports will predict threshold violations in the specified time period based on the monitored attributes. The report will display whether the threshold has been violated or the days to violation.

### Creating a Trunk Group

If your environment consists of trunk groups, those trunk groups must be created in Cisco Unified Service Statistics Manager. Reports then can be generated using those groups. This is accomplished in the Service Statistics Manager Administration Console.

1. Launch the console from **Start > Programs > Cisco Unified Service Statistics Manager > Cisco Unified Service Statistics Manager Admin** (Figure 10) and log in (Figure 11).

**Figure 10.** Launch the Administration Console

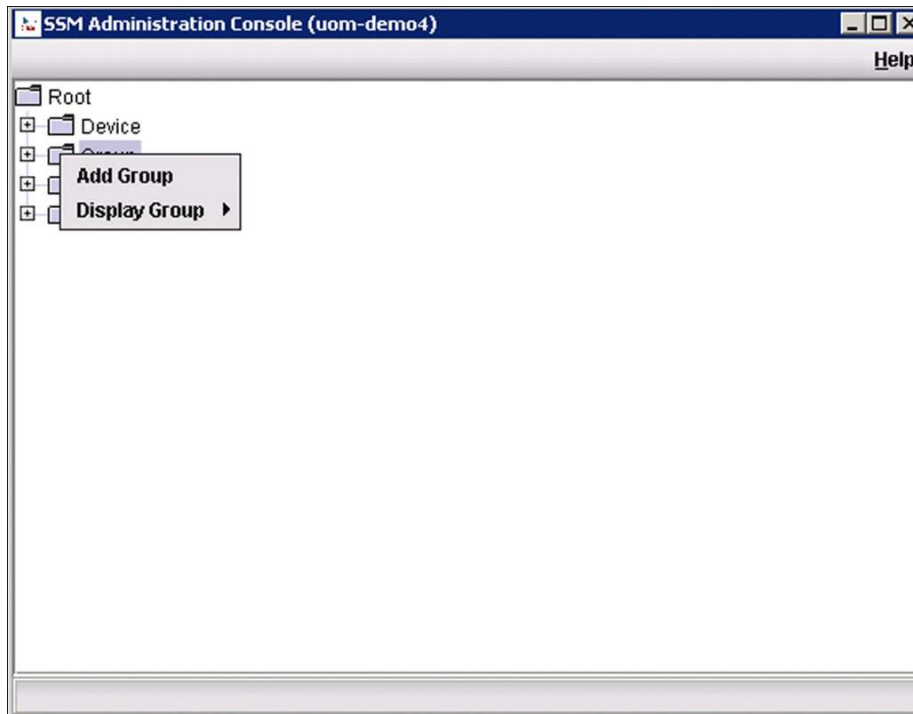


**Figure 11.** Log In



2. Right-Click **Group** > **Add Group** (see Figure 12).

**Figure 12.** Click Add Group



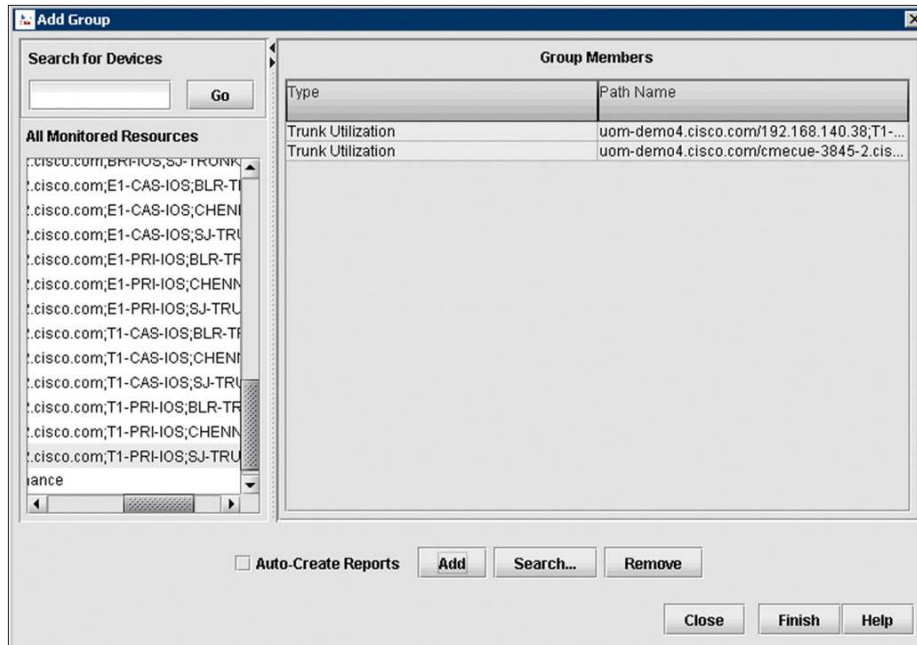
3. Enter the group name (Figure 13).

**Figure 13.** Add the Group Name

The screenshot shows the 'Add Group' dialog box. It has a title bar 'Add Group'. Inside, there are two text input fields: 'Group Name\*' with the text 'San Jose Trunks' and 'Group Description' which is empty. Below these fields are two radio button options. The first option, 'Group made by selecting each Managed Object', is selected with a filled radio button. The second option, 'Group made by grouping existing groups', is unselected with an empty radio button. At the bottom right, there are four buttons: 'Close', 'Next>', 'Finish', and 'Help'.

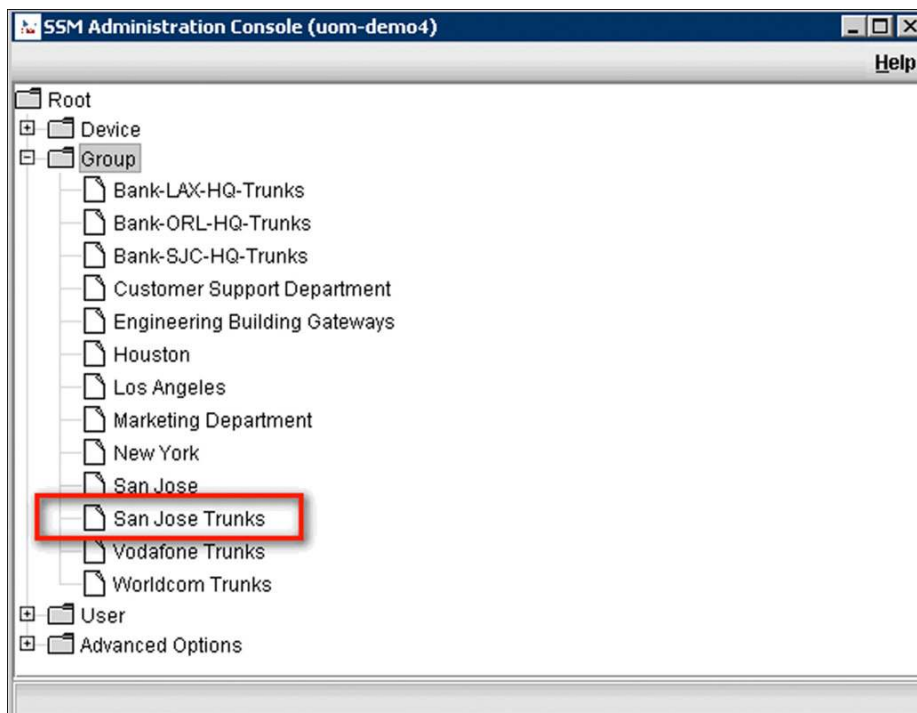
4. Expand the **All Monitored Resources** tree to **Trunk Utilization**. Select the trunks in the San Jose group and click **Add** (Figure 14).

**Figure 14.** Click Add to Add the Resources



5. Click **Finish**.

**Figure 15.** Creating a Trunk Capacity Trend Report

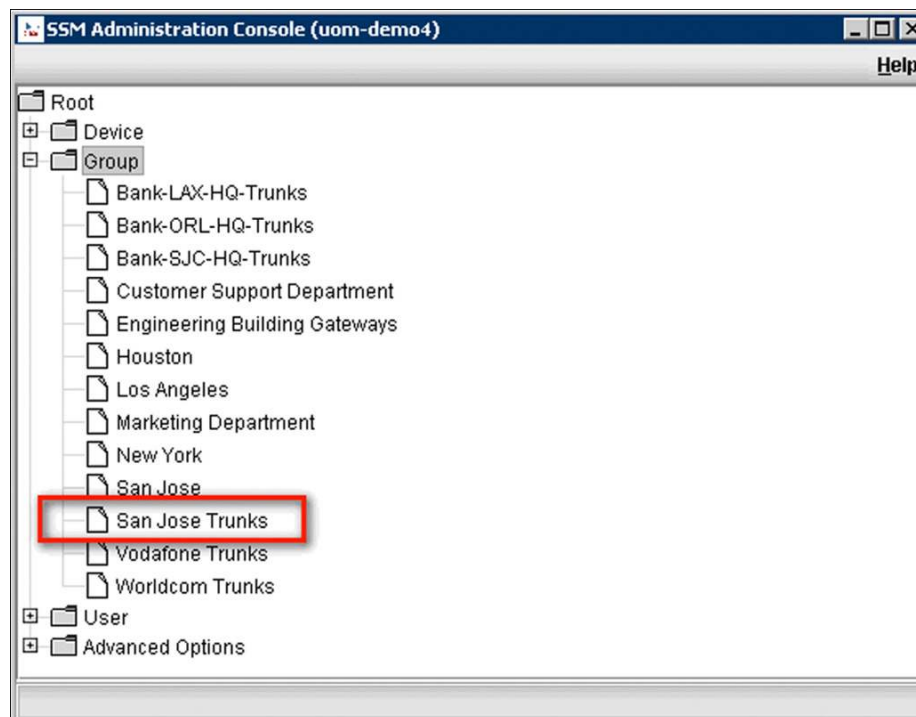


### Creating a Trunk Capacity Trend Report

The San Jose Trunks group created (Figure 15) will be used in the capacity trend report.

1. Select the **Reports** tab and click **Create** (see Figures 16 and 17).

**Figure 16.** Creating a Capacity Trends Report



2. Click the **Selected Groups** option.
3. Highlight **San Jose Trunks** and move to **Selected Groups**.
4. Click the **Single Attribute** option.
5. Select **Trunk Utilization** and **Utilization** from the drop-down lists.
6. Enter the Capacity Threshold.
7. Select the appropriate time duration for the **"Show Instance that will violate in the next:"** and **"Use data of the last:"** options.

8. Click **Next** (see Figure 18).

**Figure 17.** Choosing Report Options

The screenshot shows the Cisco Unified Service Statistics Manager interface. The top navigation bar includes 'Views', 'Reports', 'Custom Graphs', 'SLA', and 'Administration'. The 'Group Selection' section has two radio buttons: 'No Filter' and 'Selected Groups' (which is selected). Below this is a 'Search for:' text box. There are two list boxes: 'Available Groups' on the left and 'Selected Groups' on the right. The 'Available Groups' list includes: Bank-SJC-HQ-Trunks, Customer Support Department, Engineering Building Gateways, Houston, Los Angeles, Marketing Department, New York, San Jose, Vodafone Trunks, and Worldcom Trunks. The 'Selected Groups' list contains 'San Jose Trunks'. Below the list boxes, there are options for 'Single Attribute' (selected) and 'Attribute Set'. The 'Single Attribute' section has a dropdown for 'Trunk Utilization' and a sub-dropdown for 'Utilization'. The 'Attribute Set' section has a dropdown for 'Trunk Utilization' and buttons for 'New' and 'Edit'. There is also a 'Capacity Threshold' section with radio buttons for 'Above' and 'Below' (selected), and a text box with the value '4'. The 'Report Options' section includes a checkbox for 'Hide Attribute Name Column'. Below this are three fields: 'Show Instance that Will Violate in the Next:' with a value of '7' and a unit dropdown set to 'Day(s)'; 'Use Data for the Last:' with a value of '4' and a unit dropdown set to 'Week(s)'; and 'Maximum Number of Bars in Graph:' with a value of '20'. At the bottom of the 'Report Options' section, there are 'Cancel', '< Back', and 'Next >' buttons. A small information icon is followed by two bullet points: 'The value for Use Data for the Last x Days field should be at least equal to the value for the Show Instances that Will Violate Thresholds in the Next x Days field.' and 'Only certain types of attributes are suitable for Capacity Trending reports. Please refer to the documentation for more details.'

9. Select the **3D Bar** radio button for the Graph Type.
10. Select the **“Show Device name with Monitor Info”**, **“Show Source Agent with Monitor Info”**, and **“Show Report Details at:”** check boxes.
11. Select the **“Generate This Report Immediately After Adding to the Schedule”** check box.
12. Click **Finish**.



Figure 18. Enter Report Details

**Cisco Unified Service Statistics Manager**  
A product from the Cisco Unified Communications Management Suite

Views | Reports | Custom Graphs | SLA | Administration

Logout | Help | About

### Edit Report: Capacity Trend - SJ Trunks (Step 3 of 3) - Enter Report Details

#### Report Display Options

Graph Type: ☐ 2D Bar ☒ 3D Bar

Number of Rows per Page (applicable for tables):

☒ Show Device name with Monitor Info

☒ Show Source Agent with Monitor Info

☒ Show Report Details at: ☒ Top of the Page ☐ Bottom of the Page

☐ Show Comments at: ☐ Top of the Page ☐ Bottom of the Page

Global Comments:

Font size:

**Help:**

- Press the Enter key to start a new line.
- Use spaces for indentation.
- To link the report to a URL, specify a fully qualified URL between <url> and </url>. (For example, <url>http://www.cisco.com</url>.)
- Font size applies to the entire global comments section.

#### E-Mail Options

Enter E-Mail Address:

List of added E-Mail Addresses:

#### Schedule Options

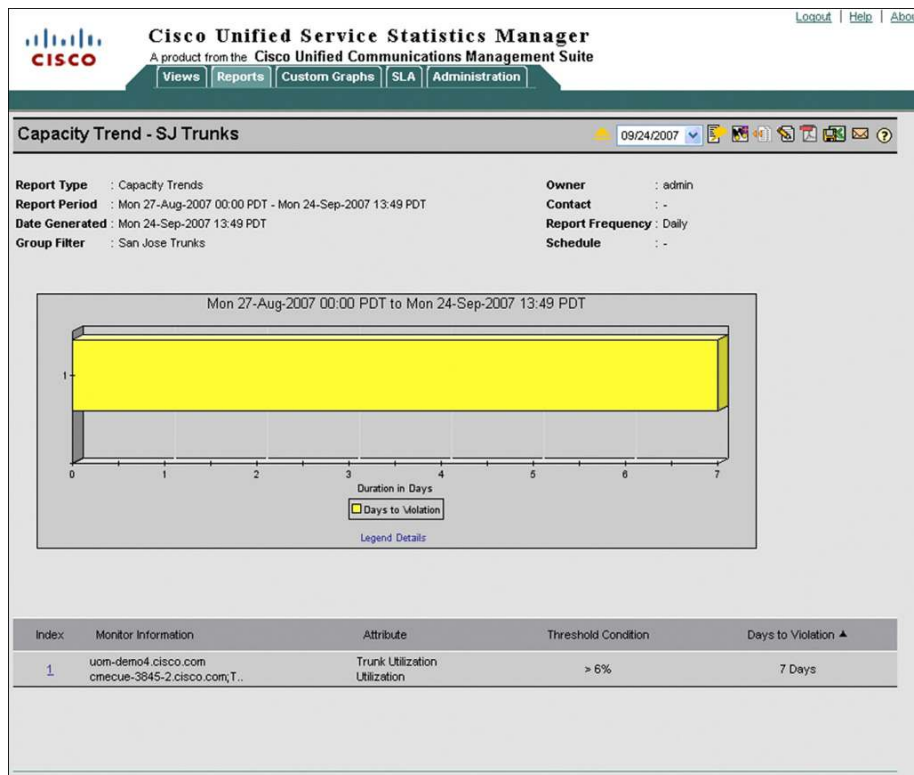
Report Frequency: ☒ Daily ☐ Weekly ☐ Monthly

Sharing: ☐ Share This Report with Everybody ☐ Share This Report with My User Group ☒ Do Not Share This Report

☒ Generate This Report Immediately After Adding to the Schedule

13. Click the **Capacity Trend** report from the Reports table (Figure 19).

**Figure 19.** The Capacity Trend Report for San Jose Trunks



## SLA Creation

You can create service-level agreements to measure any attributes of elements managed by Service Statistics Manager. You can use the default attributes or modify them and create others.

### Modify/Create Attribute Set

Modify the Trunk Utilization attribute set and add a Call Count attribute.

1. In the Administration tab, select the **Edit** option for **Attribute Sets** (Figure 20).

**Figure 20.** Edit the Attribute Sets

**Cisco Unified Service Statistics Manager**  
A product from the Cisco Unified Communications Management Suite

Views | Reports | Custom Graphs | SLA | Administration

**Administration**

**User ID and Password**

User ID: admin  
Password: \*\*\*\*\* [Edit](#)

**Dashboard View**

Show Dashboard View: None [Apply](#)

**Home View**

Select Home View: Default [Apply](#)

**Advanced**

<a href="#">Attribute Sets</a> <a href="#">Edit</a>	Create attribute sets for use in SLA and Reports Administration pages.
<a href="#">Schedules</a> <a href="#">Edit</a>	Create new schedules (for example, 24x7) for use in Reporting Administration.
<a href="#">Phone-Based Groups</a> <a href="#">Edit</a>	Configure phone-based groups.
<a href="#">Call Quality</a> <a href="#">Edit</a>	Configure call quality ranges.
<a href="#">Operations Manager/Service Monitor Details</a> <a href="#">Show</a>	Display Operations Manager/Service Monitor details.

**Downloads**

2. Click **Add** or **Edit** an existing attribute, for example, **System Utilization**.
3. Add attributes (Figures 21 and 22).

**Figure 21.** The Attribute Set Administration Dialog Box

**Attribute Set Administration**

Attribute Set Type: No filter [v](#)

[Add](#) [Delete](#)

☐ Select All

Select	Name ▲	Type	Edit
<input type="checkbox"/>	Call Quality	Global	<a href="#">Edit</a>
<input type="checkbox"/>	Gateway Utilization	Global	<a href="#">Edit</a>
<input type="checkbox"/>	IP SLA	Global	<a href="#">Edit</a>
<input type="checkbox"/>	System Utilization	Global	<a href="#">Edit</a>
<input type="checkbox"/>	Trunk Utilization	Global	<a href="#">Edit</a>
<input type="checkbox"/>	Unified CM Performance	Global	<a href="#">Edit</a>

☐ Select All

**Figure 22.** The Edit Attribute Set Dialog Box

**Edit Attribute Set**

Attribute Set Name: **Trunk Utilization**

☐ Select All

Select	Monitor Type ▲	Attributes
<input type="checkbox"/>	Trunk Utilization	Utilization (%)

☐ Select All

4. Select **Trunk Utilization** and click **Next**.
5. Select the **Call Count** attribute and click **Next** (Figures 23 and 24).

**Figure 23.** Select Trunk Utilization

**Edit Attribute Set**

Attribute Set Type: Global ▼

**1. Monitor Type (Select all that apply)**

Search for:

- Cell Quality
- Cell Volume
- Gateway Utilization
- IPSLA Data Jitter
- IPSLA Gatekeeper RD
- IPSLA Ping Echo
- IPSLA Ping Path Echo
- IPSLA UDP Echo
- System Utilization For Gateway
- System Utilization For IPCC
- System Utilization For Unified CM
- System Utilization For Unity
- Trunk Utilization**
- Unified CM Performance
- Unity Performance

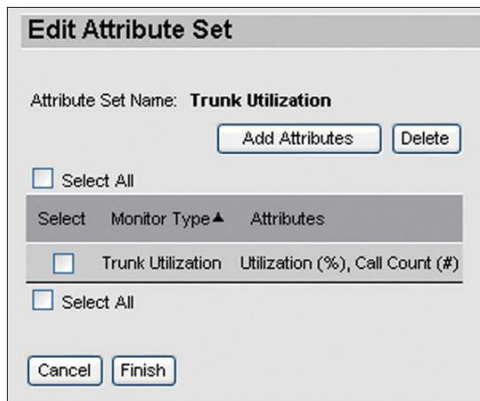
**2. Attributes (Select attributes to be added to the attribute set)**

Trunk Utilization

Search for:

- Call Count**
- Utilization

**Figure 24.** Select the Call Count Attribute



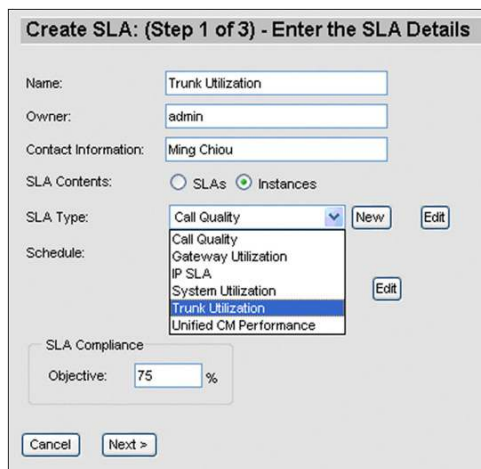
The 'Edit Attribute Set' dialog box shows the 'Attribute Set Name' as 'Trunk Utilization'. It has 'Add Attributes' and 'Delete' buttons. Below is a table with columns 'Select', 'Monitor Type', and 'Attributes'. The table contains one row: 'Trunk Utilization' with 'Utilization (%)' and 'Call Count (#)' as attributes. There are 'Select All' checkboxes above and below the table. At the bottom are 'Cancel' and 'Finish' buttons.

Select	Monitor Type	Attributes
<input type="checkbox"/>	Trunk Utilization	Utilization (%), Call Count (#)

Create a Trunk Utilization SLA

1. On the SLA tab, click **SLA Administration > Add**.
2. Enter the name and contact information, then select **Trunk Utilization** from the SLA Type drop-down list and fill in **75%** for the SLA Compliance Objective (Figure 25).
3. Click **Next**.

**Figure 25.** Entering the SLA Details



The 'Create SLA: (Step 1 of 3) - Enter the SLA Details' dialog box contains the following fields: 'Name' (Trunk Utilization), 'Owner' (admin), 'Contact Information' (Ming Chiou), 'SLA Contents' (radio buttons for SLAs and Instances, with Instances selected), 'SLA Type' (a dropdown menu with 'Call Quality' selected and a list of options including 'Trunk Utilization' highlighted), 'Schedule' (with an 'Edit' button), 'SLA Compliance' (with 'Objective' set to 75%), and 'Cancel' and 'Next >' buttons.

4. Select the trunks to monitor and click **Next** (Figure 26).

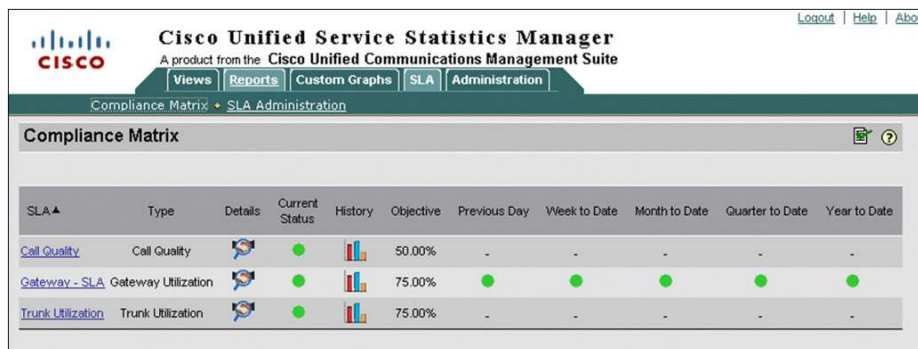
**Figure 26.** Select the Elements to Monitor

5. Select all or individual trunks, enter the condition parameters, and click **Apply** and **Finish** (Figure 27).

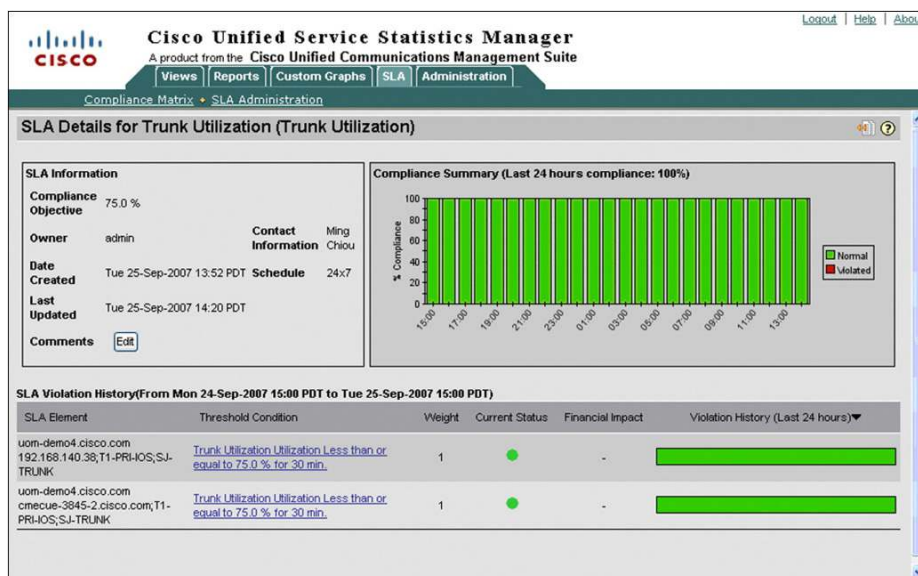
**Figure 27.** Enter the Service-Level Objective Values

6. The Trunk Utilization SLA is created; to view it, click **Compliance Matrix** (Figures 28 and 29).

**Figure 28.** Click Compliance Matrix to View the Trunk Utilization SLA

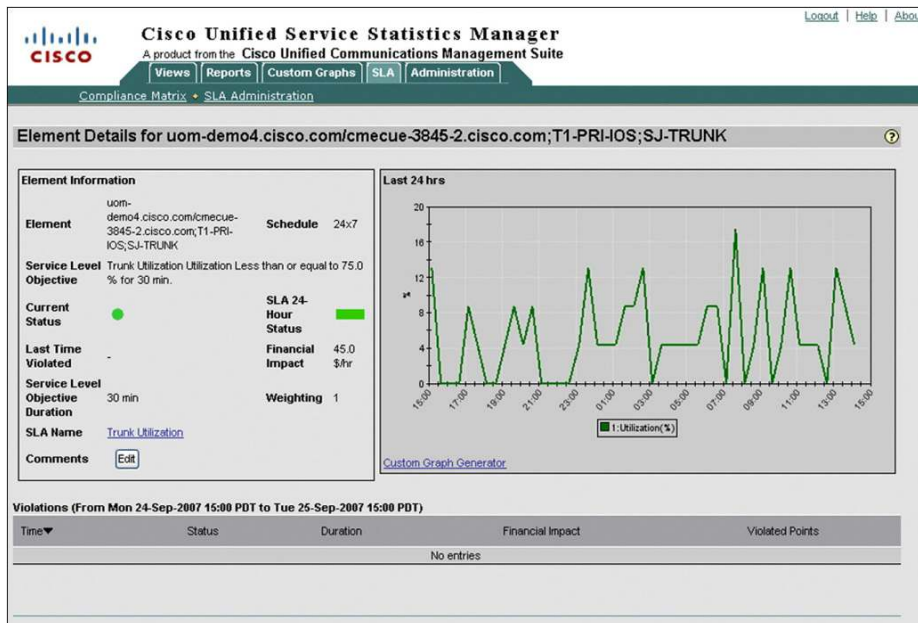


**Figure 29.** Details for the Trunk Utilization SLA



7. Click one of the **Threshold Condition** links to see more details (Figure 30).

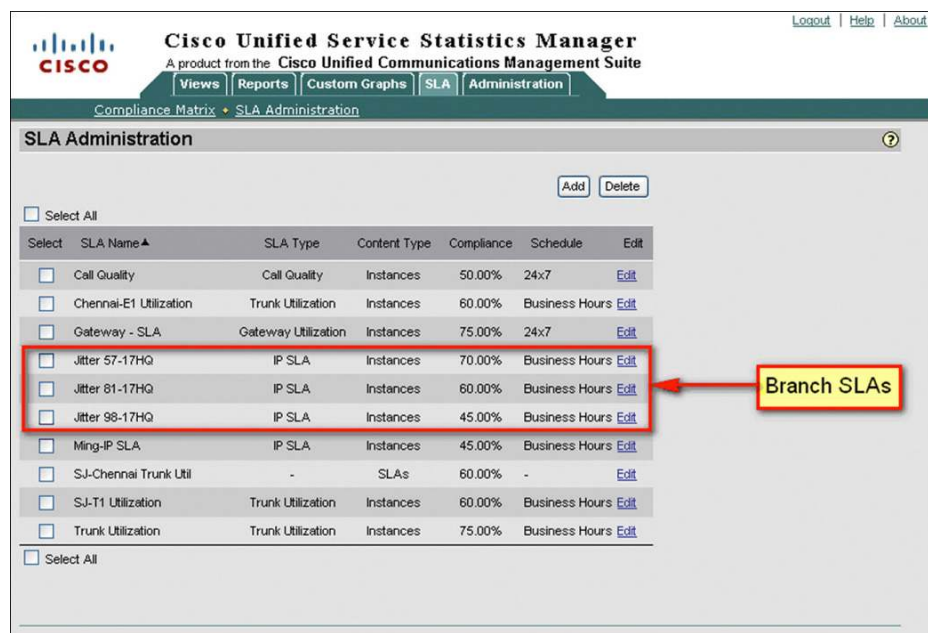
**Figure 30.** The Threshold Condition Links Provide More Details



## Super-SLA

Individual SLAs can be rolled up into a super-SLA; for example, jitter for trunks from three branches can roll up to a higher-level regional SLA. Create the individual jitter SLAs through SLA Administration (refer to the “Create a Trunk Utilization SLA” section for creating the SLAs). Once the branch-level SLAs have been created, the main/super-SLA can be created (Figure 31).

**Figure 31.** Branch SLAs





1. Click **Add** in SLA Administration to create the regional SLA (Figure 32).

**Figure 32.** Enter the SLA Details

The screenshot shows the 'Create SLA: SJ-Jitter (Step 1 of 3) - Enter the SLA Details' form in the Cisco Unified Service Statistics Manager. The form includes the following fields and options:

- Name:** SJ-Jitter
- Owner:** admin
- Contact Information:** (empty field)
- SLA Contents:** ☒ SLAs ☐ Instances
- ☐ Use this SLA for grouping only, and not to calculate Aggregate Compliance values.
- SLA Compliance:**
  - Objective:** 60 %
- Buttons:** Cancel, Next >

2. Select the three branch SLAs from the list and click the top arrow (Figure 33).

**Figure 33.** Select the SLAs

The screenshot shows the 'Create SLA: SJ-Jitter (Step 2 of 3) - Select SLAs' form in the Cisco Unified Service Statistics Manager. The form includes the following elements:

- Search for:** (empty search box)
- Available SLAs:**
  - Chennai-E1 Utilization (Trunk Utilization)
  - Trunk Utilization (Trunk Utilization)
  - SJ-Chennai Trunk Util
  - Ming-IP SLA (IP SLA)
  - Call Quality (Call Quality)
  - SJ-T1 Utilization (Trunk Utilization)
  - Gateway - SLA (Gateway Utilization)
- Selected SLAs:**
  - Jitter 81-17HQ (IP SLA)
  - Jitter 57-17HQ (IP SLA)
  - Jitter 98-17HQ (IP SLA)
- Buttons:** Cancel, < Back, Next >

- The weight can be changed, or you can accept the default setting; click **Finish** (Figure 34).

**Figure 34.** Enter a Weight for the Selected SLAs

SLA Name	SLA Type	Weight
Jitter 98-17HQ Instances		1
Jitter 57-17HQ Instances		1
Jitter 81-17HQ Instances		1

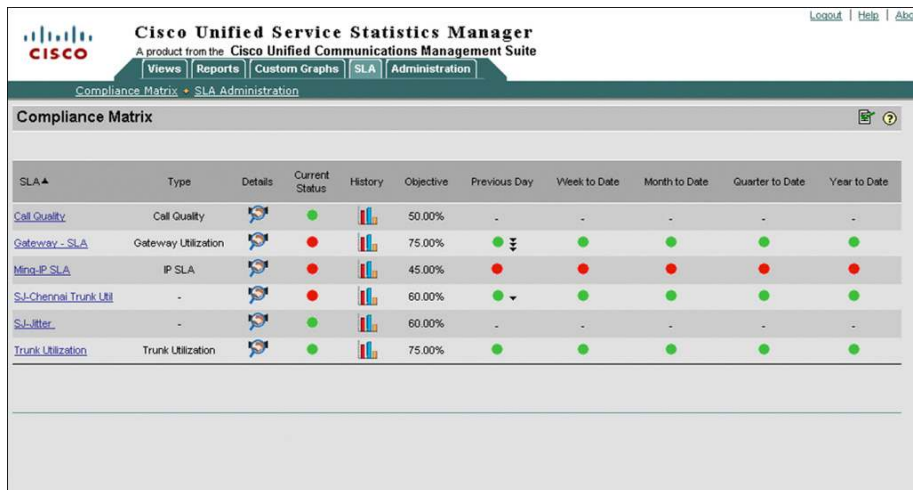
- The newly created SLA is shown in the SLA Administration table (Figure 35).

**Figure 35.** The SLA Administration Table

SLA	Type	Details	Current Status	History	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
<a href="#">Cell Quality</a>	Cell Quality				50.00%	-	-	-	-	-
<a href="#">Gateway - SLA</a>	Gateway Utilization				75.00%					
<a href="#">Ming-P SLA</a>	IP SLA				45.00%					
<a href="#">SJ-Chennai Trunk Util</a>	-				60.00%					
<a href="#">SJ-Jitter</a>	-				60.00%	-	-	-	-	-
<a href="#">Trunk Utilization</a>	Trunk Utilization				75.00%					

- Click the Compliance Matrix to view the status of the SLAs. The table will display only the SJ-Jitter SLA since the branch SLAs have been rolled up into SJ-Jitter (Figure 36).

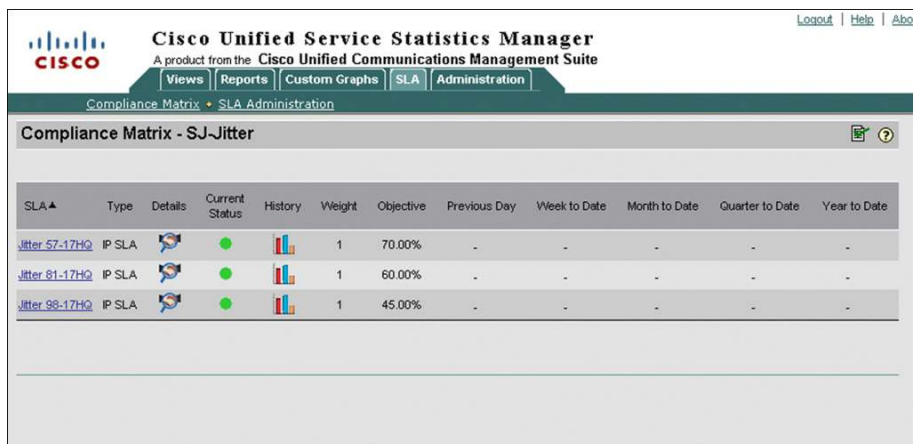
**Figure 36.** The Compliance Matrix



SLA▲	Type	Details	Current Status	History	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
<a href="#">Call Quality</a>	Call Quality		<span style="color: green;">●</span>		50.00%	-	-	-	-	-
<a href="#">Gateway - SLA</a>	Gateway Utilization		<span style="color: red;">●</span>		75.00%	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>
<a href="#">Min-IP SLA</a>	IP SLA		<span style="color: red;">●</span>		45.00%	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>
<a href="#">SJ-Channel Trunk Util</a>	-		<span style="color: green;">●</span>		60.00%	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>
<a href="#">SJ-Jitter</a>	-		<span style="color: green;">●</span>		60.00%	-	-	-	-	-
<a href="#">Trunk Utilization</a>	Trunk Utilization		<span style="color: green;">●</span>		75.00%	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>

- View the branch SLAs by clicking **SJ-Jitter** in the list of SLAs (Figure 37).

**Figure 37.** The Branch SLAs

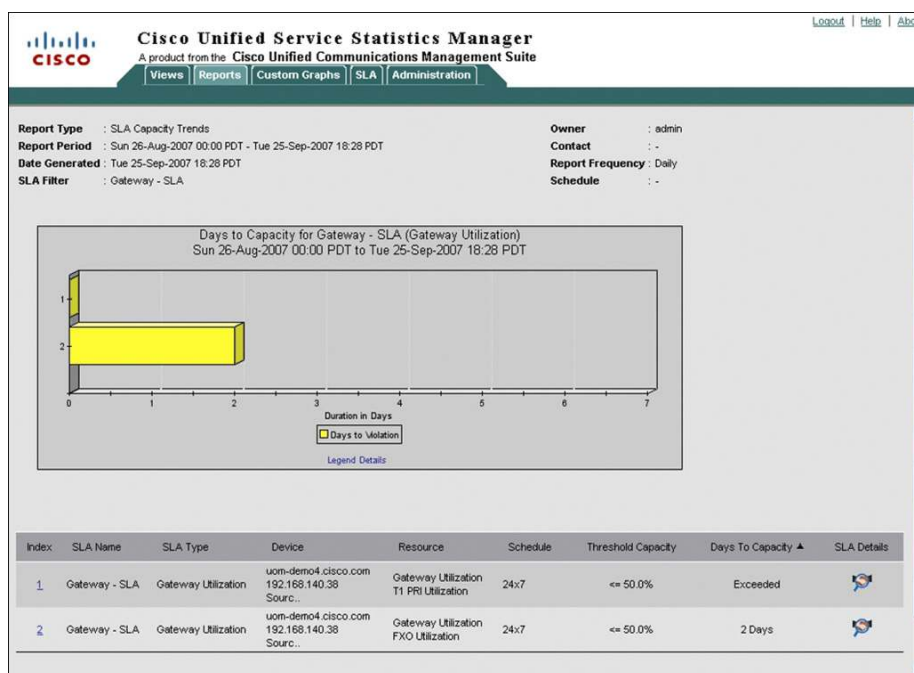


SLA▲	Type	Details	Current Status	History	Weight	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
<a href="#">Jitter 57-17HQ</a>	IP SLA		<span style="color: green;">●</span>		1	70.00%	-	-	-	-	-
<a href="#">Jitter 61-17HQ</a>	IP SLA		<span style="color: green;">●</span>		1	60.00%	-	-	-	-	-
<a href="#">Jitter 98-17HQ</a>	IP SLA		<span style="color: green;">●</span>		1	45.00%	-	-	-	-	-

## SLA Capacity Trends

Similar to the trunk capacity trend report created in the “Creating a Trunk Capacity Trend Report” section, SLA capacity trends reports can be created based on the SLAs in the Compliance Matrix (Figure 38).

**Figure 38.** SLA Capacity Trends Report



## Troubleshooting

**Note:** Cisco Unified Service Statistics Manager collects data from Cisco Prime Unified Operations Manager and Cisco Prime Unified Service Monitor. Ensure that Operations Manager and Service Monitor (optional) are running first and are operational prior to troubleshooting Service Statistics Manager.

Service Statistics Manager could run separately on its own server (standalone mode), or it could run on the same server with Operations Manager and Service Monitor (coresident mode).

If Service Statistics Manager is running in standalone mode, make sure to install Service Statistics Manager Agents in the Operations Manager and Service Monitor servers. Service Statistics Manager Agent is installed automatically if deployed in coresident mode.

Service Statistics Manager log files are located in <Install Directory>\pw\pronto\logs\. It is recommended to zip and forward these logs when opening a Cisco Technical Assistance Center (TAC) service request.

## Installation Failing

- Service Statistics Manager Installer automatically checks for system requirements prior to the start of installation. This is to help ensure that the target server complies with Service Statistics Manager's minimum system requirements.
- The TCP ports listed in Table 1 are in use by Service Statistics Manager and must be available and exempted from firewall inspections.

**Table 1.** TCP Ports Used by Service Statistics Manager

Port	Use
8008	Connector port between Apache web server and Tomcat servlet engine
8009	Connector port between Apache web server and Tomcat servlet engine used for agent and agent controller tunneling
8093	JMS server port
9149	Port JServer listens for events from agent controller/rate
12123	Agent controller listener
12124	Default agent port
12126	Agent controller callback port
12130	Checkpoint monitor port for receiving log messages (optional)
12140	CLServer port
12141	Log server port
40402	Flex LM port
45000	Message server port
48443	SSL port
48099	RMI port
48100	JBoss port
48101	Http port
48102	Database port

The following logs are useful when troubleshooting Service Statistics Manager installation issues: <Install Directory>\pw\pronto\bin\SSMPreinstall.log, proactiveenet\_server\_install.log and proactiveenet\_agent\_install.log

### Logon Failure

- Check whether Cisco Prime Unified Operations Manager is reachable from Cisco Unified Service Statistics Manager. Try launching the Operations Manager web interface from the Service Statistics Manager server; that is, open a browser to http://CUOM:1741.
- Check whether the Service Statistics Manager agent is running in the remote Operations Manager server. Windows Control Panel > Services > Agent must be running.
- Check whether the Operations Manager admin password has been changed. To synchronize the Operations Manager password with Service Statistics Manager, run <Install Directory>\pw\pronto\bin\runjava scripts.ssm.UpdateOMPassword. The script will ask for the new Operations Manager password. Then restart Service Statistics Manager from Start > Programs > SSM > Stop/Start shortcuts.
- Check the Service Statistics Manager log file at \pw\pronto\logs\ProactiveNet.log. If the log file shows multiple SSL handshake errors, run this script at \pw\pronto\bin\ConfigureSSMToSSL0M <CUOM\_IP\_Address>. Then restart Service Statistics Manager.

### Autodiscovery

- Make sure that the Operations Manager IP address and password are correct and that the Service Statistics Manager agent is running on that remote Operations Manager server.
- If Monitor Types are not getting created, make sure Performance Polling is enabled in Operations Manager. On how to enable performance polling in Operations Manager, refer to [http://www.cisco.com/en/US/partner/docs/net\\_mgmt/cisco\\_unified\\_operations\\_manager/2.3/user/guide/cfg\\_PT.html#wp1546763](http://www.cisco.com/en/US/partner/docs/net_mgmt/cisco_unified_operations_manager/2.3/user/guide/cfg_PT.html#wp1546763).

- 
- If call volume and call quality monitors are not getting created, check whether Service Monitor is configured in Operations Manager > UC Management tab > Service Monitor.
  - If new devices are added in Operations Manager or Service Monitor, make sure to rerun discovery from Service Statistics Manager.
  - To further troubleshoot autodiscovery issues, enable Service Statistics Manager detailed logging by running the following in the command line: `pw debug -p jserver -s SSMAutoDiscovery`. Log files will be stored in the `\pw\pronto\logs\Debug` folder.

#### Data Collection Failure

- Check whether Service Statistics Manager processes are still running. Run `\CUSSM\serverstatus.bat`. If Service Statistics Manager processes are not in the running state (that is, are stopped), you may restart Service Statistics Manager.
- Check whether Operations Manager and Service Monitor are operational. Try rediscovering Operations Manager and make sure discovery succeeds.

#### Cisco Unified Service Statistics Manager Licensing

The Cisco Unified Service Statistics Manager license dictates the Cisco Unified Service Statistics Manager features that are available and the number of IP phones that can be managed.

Product evaluation licenses are available and are good for 90 days.



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