

# Cisco Unified Service Statistics Manager 1.3 Deployment Best Practices

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Cisco Unified Service Statistics Manager Licensing	

#### Introduction

This document outlines best practices for a successful deployment of Cisco Unified Service Statistics Manager. 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<sup>®</sup> 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 1.3 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 1.3 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 1.3 can be deployed for statistics analysis and reporting for small, mediumsized, and large Cisco Unified Communications deployments. Cisco Unified Service Statistics Manager 1.3 integrates with and relies on the data collection capabilities of Cisco Unified Operations Manager 2.3 and Cisco Unified Service Monitor 2.3; the latter two products are prerequisites for the deployment of Cisco Unified Service Statistics Manager 1.3. For small and medium-sized deployments (generally up to 10,000 Cisco Unified IP phones), Cisco Unified Service Statistics Manager 1.3, Cisco Unified Service Monitor 2.3, and Cisco Unified Operations Manager 2.3 may be deployed on the same Windows-based server/workstation. For larger deployments, it is recommended that Cisco Operations Manager 2.3 be run on a separate server. Figure 1 shows a sample deployment.





#### Features and Benefits

Cisco Unified Service Statistics Manager 1.3 provides the following features and benefits:

- Integrates with and uses the data collection capabilities of Cisco Unified Operations Manager and Cisco
  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 CallManager Express), Cisco Unity<sup>®</sup>
  software, Cisco Unity Connection, Cisco Unity Express, and Cisco IOS<sup>®</sup> 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 1.3 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.

#### Service Statistics Workflow



Figure 2. Cisco Unified Service Statistics Manager Workflow.

Cisco Unified Service Statistics Manager (SSM) uses the short-term wealth of operational data collected from Cisco Unified Operations Manager and Cisco Unified Service Monitor to perform long-term analysis and reporting. 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:

- 1. 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 Unified Operations Manager and Cisco Unified Service Monitor.
- 2. Service Statistics Manager agent: Sends data to the Service Statistics Manager server for data mining. Required to be running in all Cisco Unified Operations Manager and Cisco Unified Service Monitor servers.
- 3. **SSM web user interface:** Primary user interface for viewing reports, graphs, and SLAs and for administering the dial plan, call quality, and so on.
- 4. 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

Table 1 lists the system requirements for standalone deployments of Cisco Unified Service Statistics Manager.Table 2 lists the requirements for coresident deployments.

Description	Specification				
Server Requirements					
System parameters	Up to 10,000 phones	Up to 45,000 phones			
Processor	Single or dual-core Pentium 4 or Xeon, greater than 3.0 GHz	Dual-core Pentium 4 or Xeon, greater than 3.0 GHz			
Memory	4 GB RAM	4 GB RAM			
Swap file	6 GB	9 GB			
Disk space	60 GB hard drive	72 GB hard drive			
Hardware	Server platform	Server platform			
Software	Windows 2003 Server with Service Pack 2	Windows 2003 Server with Service Pack 2			
Client Requirements					
Processor	Pentium 4 processor equal to or greater than 1 GHz				
Memory	1 GB RAM				
Swap file	2 GB				
Hardware	Any PC/server platform				
Software	Microsoft Internet Explorer 6.0, Macromedia Flash Player 8. 2003 Server	0, Windows XP Home, Windows XP Professional, Windows			

 Table 1.
 System Requirements for Standalone Cisco Unified Service Statistics Manager Deployments

The requirements in Table 1 outline the minimum hardware configuration needed to operate Cisco Unified Service Statistics Manager at different scalability levels. The client requirements dictate the platform from which the (Internet browser-based) user interfaces are invoked.

Hardware requirements for installing Service Statistics Manager on a system with Operations Manager and Service Monitor are provided in the <u>Coresident Guidelines</u> section in Installation Guide for Cisco Unified Operations Manager 2.3 (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 Cisco Unified Service Statistics Manager Quick Start Guide provides a checklist (Table 10, Configuration Checklist) of installation procedures at

### http://www.cisco.com/en/US/docs/net\_mgmt/cisco\_unified\_service\_statistics\_manager/1.0/quick/guide/SrvStqsg.htm I#wp58065.

Make sure that the installer has checked all the items on the checklist (for example, things to do in Cisco Unified Operations Manager and Cisco Unified Service Monitor-make sure Cisco Voice Transmission Quality is turned on, make sure that Cisco 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 <u>http://<hostname>:48101</u>, where hostname is the name of the machine running SSM. See Figure 3.

cisco	
JavaScript:	localhost:48101
Enabled	User ID:
Cookies: Enabled	Password:
<b>Browser:</b> Supported ∀ersion	Login Help
Cisc	o Unified Service Statistics Manager
Copyright(c) 20 reserved.	007 - 2010 Cisco Systems, Inc. All rights 🔺

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

cisco	Cisco Unified S A product from the Cisco Uni Views Reports Custo	ervice Statis fied Communication m Graphs SLA A	istics Manager tions Management Suite Administration
	Password	****	Edit
Dashboard	View		
	Show Dashboard View	None	<b>v</b>
		Apply	
Home View	v		
	Select Home View	Default	•
		Apply	
Advanced			
	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			
Package Name	File(s)	Description	

abab	Cisco Unifie	🖉 Operations Manager /Service	Monitor Details			Loqout   Help   Al
cisco	A product from the Cisc Views Reports	Discover		•		
peration	s Manager/Service Mor	Operations Manager IP Address/Hostname:	192.168.137.102			0
Date last D	iscovery has been Invoked: 16-Mar- Manager Information	Enter Username (Web Console): Password: Discover Cancel				
perations Man m-demo4.cisc	ager Name .o.com				SSM Agent Status	Edit
ervice Mo	nitor Information					
						Edit Delete
Select	Service Monitor Name	Service Monitor	IP Address		SSM Agent Status	
		192 168 137 10	>		-62-	

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

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

Service Monitor software associated with the 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

Administration				0
User ID and Passwo	ord			
	User ID	admin		
	Pacoword		Edt	
Dashboard View				
	Show Dashboard View	None		
		Name of Street o		
		Apply		
Home View				
	Select Home View	Default		
		Treased .		
Advanced				
	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	Edt	Configure phone-based groups.	
	Cal Quality	Edit	Configure call quality ranges.	
	Operations Manager/Service Monitor Details	Show	Display Operations Manager/Service Monitor details	
Downloads				
Package Name	File(1)	Description		
SSM Agent Software	Agent.exe	Setup program for installing SS	M Agent Software on Windows machines.	
SSM Admin Software	Admin.exe	Setup program for installing SSI	M 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
-----------	------------	----------	-----------------	------

CIS	Cisco Unified Service Statistics A product from the Cisco Unified Communications Ma Views Reports Custom Graphs SLA Adminis	Manager nagement Suite tration			<u>Loqout</u>	<u>Help</u>
	Top N Gateways - T1 & E1 PRI Utilization	Top N Performers	Daily	General	No Filter	admin
	Top N Gateways by Utilization - Monthly	Top N Performers	Monthly	General	No Filter	admin
	Top N Service Availability Across Clusters by Time - Monthly	Top N Performers	Monthly	General	No Filter	admin
	Top N Trunks - Monthly	Top N Performers	Daily	General	No Filter	admin
	Top N Trunks by Utilization - Monthly	Top N Performers	Monthly	General	No Filter	admin
	Top N Users	Top N Users	Weekly	General	No Filter	admin
	Total Duration Across Clusters - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
	Total Traffic Across Clusters - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
	Traffic Summary - Day of Month	Traffic Summary	Weekly	General	No Filter	admin
	Traffic Summary - Day of week	Traffic Summary	Weekly	General	No Filter	admin
	Traffic Summary - Hour of Day	Traffic Summary	Daily	General	No Filter	admin
	Trunk Traffic Over Time	Time Aggregation	Daily	General	No Filter	admin
	Trunk Utilization - Daily	Time Aggregation	Daily	General	No Filter	admin
	Trunk Utilization - Monthly	Time Aggregation	Monthly	General	No Filter	admin
	Trunk Utilization - Weekly	Time Aggregation	Weekly	General	No Filter	admin
	Voicemail Port Utilization - Daily	Instance Aggregation	Daily	General	No Filter	admin
	Voicemail Port Utilization - Monthly	Instance Aggregation	Monthly	General	No Filter	admin
	Voicemail Port Utilization - Weekly	Instance Aggregation	Weekly	General	No Filter	admin
	Voicemail Port Utilization Over Time - Daily	Time Aggregation	Daily	General	No Filter	admin
	Voicemail Port Utilization Over Time - Monthly	Time Aggregation	Monthly	General	No Filter	admin
	Voicemail Port Utilization Over Time - Weekly	Time Aggregation	Weekly	General	No Filter	admin

5. Click Add to View after selecting the reports.

cisco	Cisco A product fro Views	Unified Ser om the Cisco Unifie Reports Custom (	vice Statistics Man d Communications Managemer Graphs SLA Administration	ager nt Suite
View Type: Report	based	Date Created:	Monday 08/20/2007 05:56 PM	
Layout Type: 4	<b>v</b> column(s)	Date Last Accessed	: Thursday 04/10/2008 11:07 AM	
Reports in View	N			
Delete Selected	Add Reports	Order		
Delete Report T	ïtle			
Top N Ga	teways - T1 & E1 PR	Utilization		
Top N Ga	teways - CPU Utiliza	tion		
Call Volur	ne Over Time Across	s Clusters - Weekly		
Capacity	Trends - Trunks			
Voicemail	Port Utilization Over	Time - Daily		
Trunk Utili	zation - Daily			
Traffic Su	immary - Day of wee	ek -		
Total Traf	fic Across Clusters	- Monthly		
Gateway	Utilization - Daily			
Call Volur	ne and Duration Acro	oss Clusters - Monthly		
Select All				
Finish Cancel	)			

Figure 8. Click Finish to Add the Reports

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





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.

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

💐 uom-demo4 - Remote Desktop			
VNC Viewer 4 SSM_start			
seedfile-late			
ACFGZAyeb			
СПОМ20060			
Windows Catalog Windows Update			
📻 Programs 🔸	Cisco Unified Service Statistics Manager	Zisco Unified Service Statistics Manager     Zisco Unified Service Statistics Manager Admin	
5 Documents		2 Start Server	
💆 📴 Settings 🔹 🕨		Via Stop Server	
🖉 🔎 Sear <u>c</u> h 🔸			
8 🕐 Help and Support			
🖉 🖅 <u>R</u> un			
g Log Off administrator			
Down			
🏄 Start 🛛 😥 🥭 🔽			~





55M Administration Console	×
	alialia cisco
Host	uom.demo4
User	admin
Password	
	Log in Cancel

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

Page 13 of 30

Figure 12. Click Add Group

🐱 SSM Administration Console (uom-demo4)	
	Help
Root	[
<u></u>	

3. Enter the group name (Figure 13).

Figure 13. Add the Group Name
-------------------------------

🚵 Add Group				×
Group Name* San Jose Trunks				
Group Description				
Group made by selecting each Managed Object				
O Group made by grouping existing groups				
	Close	Next>	Finish	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

earch for Devices		Group	Members	
Go	Туре		Path Name	
II Monitored Resources	Trunk Utilization		uom-demo4.cisco.com	n/192.168.140.38;T1
	Trunk Utilization		uom-demo4.cisco.com	n/cmecue-3845-2.cis
cisco.com;E1-CAS-IOS;BLR-TI				
cisco.com;E1-CAS-IOS;CHENI				
cisco.com;E1-CAS-IOS;SJ-TRU				
cisco.com;E1-PRI-IOS;BLR-TF				
cisco.com;E1-PRI-IOS;CHENN				
sisco.com;E1-PRI-IOS;SJ-TRU				
sisco.com;T1-CAS-IOS;BLR-TF				
cisco.com;T1-CAS-IOS;CHENI				
cisco.com;T1-CAS-IOS;SJ-TRU				
cisco.com;T1-PRI-IOS;BLR-TR				
cisco.com;T1-PRI-IOS;CHENN				
cisco.com;T1-PRI-IOS;SJ-TRU				
ince 👻				
	uto-Create Reports	Add Search	Remove	

#### 5. Click Finish.

Figure 15. Creating a Trunk Capacity Trend Report

🐱 SSM Administration Console (uom-demo4)	
	<u>H</u> elp
C Root	
Group	
Bank-LAX-HQ-Trunks	
Bank-ORL-HQ-Trunks	
Bank-SJC-HQ-Trunks	
— 🗋 Customer Support Department	
— 🗋 Engineering Building Gateways	
- Houston	
— 🗋 Los Angeles	
— 🗋 Marketing Department	
San Jose	
🔄 🗋 San Jose Trunks	
🔰 🗋 Vodafone Trunks	
🔄 🗋 Worldcom Trunks	
€- 🗂 User	
🗄 🗂 Advanced Options	

Creating a Trunk Capacity Trend Report

The San Jose Trunks group created will be used in the capacity trend report.

1. Select the Reports tab and click Create (see Figures 16 and 17). Creating a Capacity Trends Report

cisco	Cisco Unified Ser A product from the Cisco Unifie	vice Stat d Communica Graphs ] [SLA ] [	istics Manager tions Management Suite Administration
Create Report	: (Step 1 of 3) - Enter Rep	ort Details	
Name:	Capacity Trend - SJ Trunks	Select >	
Cancel Next >		General > SLA >	Call Failure Analysis Call Quality Summary Calls To/From Specified Number Capacity Trends Custom Granh
			Group Aggregation Instance Aggregation Time Aggregation Top N Calls Top N Dialed Numbers Top N Performers Top N Users Traffic Summary

- 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 "Show Instance that will violate in the next:" and "Use data of the last:"
- 8. Click Next (see Figure 18).

CISCO CISCO Unified A product from the Cisco Views Reports C	Service Statistics Manager Unified Communications Management Suite ustom Graphs [SLA] [Administration]	Logout   Help   About
Group Selection		<u></u>
O No Filter		1
Search for:		
Available Groups	Selected Groups	
Bank-SJC-HO-Trunks Customer Support Department Engineering Building Gateways Houston Los Angeles Marketing Department New York San Jose Vodafone Trunks Worldcom Trunks W	Sen Jose Trunks	
<ul> <li>Single Attribute: Trunk Utilization</li> <li>Utilization</li> </ul>	<u> </u>	
O Attribute Set: Trunk Utilization	V New Edit	
Capacity Threshold  Above  Below  4		
Report Options		
Hide Attribute Name Column  Show Instance that Will Violate in the Next: Use Data for the Last:  Maximum Number of Bars in Graph:  Cancel < Back Next >   The value for Use Data for the Last × Days fit  Only certain types of attributes are suitable for  Only certain types of attributes are suitable for	Image: Second State State         Image: Second State	ys field.
		~

Figure 16. Choosing Report Options

- 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.

CISCO Cisco Un A product from th Views Repu	ified Service Statistics Manager © Cisco Unified Communications Management Suite rts   Custom Graphs   SLA   Administration	<u>Loqout   Help   About</u>
Edit Report: Capacity Trend	- SJ Trunks (Step 3 of 3) - Enter Report Details	0
Report Display Options		
Graph Type: Number of Rows per Page (applicable for ta	◯ 2D Bar ⊙ 3D Bar bles): 20	
Show Device name with Monitor Info		
Show Report Details at:	Top of the Page      Rottom of the Page	
Show Comments at:	Top of the Page Bottom of the Page	
Global Comments:		
Press the Enter key to start a new line Use spaces for indentation. To link the report to a URL, specify a Font size applies to the entire global E-Mail Options	ie. fully qualified URL between <urb (for="" <="" <urb="" and="" example,="" http:="" urb.="" urb.)<br="" www.cisco.com<="">comments section.</urb>	
Enter E-Mail Address:	HTML 💌 (Add)	
Schedule Options		
Report Frequency:  Daily  Weekly Sharing: Share This Report Generate This Report Immediately After	○ Monthly with Everybody ○ Share This Report with My User Group ④ Do Not Share This Report Adding to the Schedule	
Cancel < Back Finish		V

#### Figure 17. Enter Report Details

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

apacif	ty Trend - SJ Trunks		📥 09/24/2007 💌	📴 🕅 🔞 🛣 🔜 📀
oort Typ oort Per e Gene oup Filte	De : Capacity Trends riod : Mon 27-Aug-2007 00:00 PDT - Mor rated : Mon 24-Sep-2007 13:49 PDT er : San Jose Trunks	1 24-Sep-2007 13:49 PDT	Owner       : admin         Contact       : -         Report Frequency       : Daily         Schedule       : -	
1		Constant of the work 24-Sep2		7
Index	Monitor Information	Attribute	Threshold Condition	Days to Violation 🔺
4	uom-demo4.cisco.com	Trunk Utilization	> 6%	7 Days

#### Figure 18. 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).

Cisco Unified Servic A product from the Cisco Unified Co Views Reports Custom Graph	e Statistics Manager mmunications Management Suite s] 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		
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		

Figure 19. Edit the Attribute Sets

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

Figure 20. The Attribute Set Administration Dialog Box

Attrib	ute Set Adminis	tratio	n
Attribute	e Set Type: No filter	*	
Sele	ct All	dd De	elete
Select	Name≜	Туре	Edit
	Call Quality	Global	Edit
	Gateway Utilization	Global	Edit
	IP SLA	Global	Edit
	System Utilization	Global	Edit
	Trunk Utilization	Global	Edit
	Unified CM Performance	e Global	Edit
Sele	ct All		

Figure 21.	The Edit	Attribute	Set	Dialog	Box
------------	----------	-----------	-----	--------	-----

Edit Attribute Set
Attribute Set Name: Trunk Utilization
Add Attributes Delete
Select All
Select Monitor Type Attributes
Trunk Utilization Utilization (%)
Select All
Cancel

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



Edit Attribute Set	
Attribute Set Type: Global	
1. Monitor Type (Select all that apply)	2. Attributes (Select attributes to be added to the attribute set)
Search for: Call Quality Call Volume Gateway Utilization IPSLA Data Jitter IPSLA Data Jitter IPSLA Ping Echo IPSLA Ping Path Echo IPSLA UPF Echo IPSLA UPF Echo System Utilization For Gateway System Utilization For Outried CM System Utilization For Unitied CM System Utilization For Unity Trunk Utilization Unitied CM Performance Unity Performance Unity Performance	Trunk Utilization         Search for:         Cell Count         Utilization

	Figure 23.	Select the Call Count Attribute
--	------------	---------------------------------

Edit Attribute Set
Attribute Set Name: Trunk Utilization
Add Attributes Delete
Select All
Select Monitor Type▲ Attributes
Trunk Utilization Utilization (%), Call Count (#)
Select All
Cancel Finish

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 24. Entering the SLA Details

Create SLA: (S	Step 1 of 3) - Enter the SLA Details
Name:	Trunk Utilization
Owner:	admin
Contact Information:	Ming Chiou
SLA Contents:	○ SLAs ⊙ Instances
SLA Type:	Call Quality 🛛 New Edit
Schedule:	Call Quality Gateway Utilization IP SLA System Utilization Edit
	Unified CM Performance
SLA Compliance	
Objective: 75	%
Cancel Next >	

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

Cisco Unified Service Statistics Manager A product from the Cisco Unified Communications Management Suite Views Reports Custom Graphs SLA Administration						
Create SLA: Trunk Utilization (Trunk Utilization) (Step 2 of 3) - Select Elements						
1. Group Filter	2. Monitor Type (Select all that apply)					
Search for:	Search for:					
No Filter Bank-LAX-HQ-Trunks Bank-ORL-HQ-Trunks Bank-SJC-HQ-Trunks Customer Support Department Engineering Building Gateways Houston Los Angeles	Use Shift or Ctrl to select multiple monitor types					
3. Monitor Elements (Select elements to be add	led to the SLA)					
Trunk Utilization						
Search for:						
uom-demo4.cisco.com/cmecue-3845-2.cisco.com/T1-CAS-IO3 uom-demo4.cisco.com/cmecue-3845-2.cisco.com/T1-CAS-IO3 uom-demo4.cisco.com/cmecue-3845-2.cisco.com/T1-PRI-IO3 uom-demo4.cisco.com/cmecue-3845-2.cisco.com/T1-PRI-IO3 uom-demo4.cisco.com/cmecue-3845-2.cisco.com/T1-PRI-IO3	S;CHENNAI-TRUNK S;SJ-TRUNK BLR-TRUNK CHENNAI-TRUNK					
C	ancel < Back Next >					

- 5. Select all or individual trunks, enter the condition parameters, and click Apply and Finish (Figure 27).
- Figure 26. Enter the Service-Level Objective Values

Edit S	SLA: Trun	k Utilization	(Trunk Utilization	n) (Step	3 of 3) - Enter	Service Lev	rel Object	ive Valu	es for S	che
✓ Sele	ect All	_	_		Service Level	Objective	Minimum		Financial In	nnoot
Jpdate	Monitor Type	Device Name	Element	Attribute	Condition	Value	Duration	Weighting	(per hr	)
✓	Trunk Utilization	uom- demo4.cisco.com	192.168.140.38;T1-PRI- IOS;SJ-TRUNK	Utilization	Less than or equal	<mark>&gt;</mark> 75 %	30 mir	1	45	\$
✓	Trunk Utilization	uom- demo4.cisco.com	cmecue-3845- 2.cisco.com;T1-PRI- IOS;SJ-TRUNK	Utilization	Less than or equal	75 %	, 30 mir	1	45	\$
Sele	ct All									
pdat	e the Rows	Selected Abov	ve Using the Followi	ng Value	s:					
onditio	n: Less than	orequal 💌	Value: 75 Dura	ition: 30	VVeighting: 1	Finar	cial Impact: 45		Apply	
Cancel	< Back	Finish								
), Valu	es are conside	ered within SLA if t	he specified Service Level	Objective c	ondition is true.					

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

Figure 25. Select the Elements to Monitor

Figure 27.	Click Compliance Matrix to View the Trunk Utilization SLA
------------	---

Cisco Unified Service Statistics Manager  A product from the Cisco Unified Communications Management Suite  Views)  Reports Compliance Matrix • SLA Administration										
Complianc	e Matrix									<b>()</b>
SLA	Туре	Details	Current Status	History	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
<u>Call Quality</u>	Call Quality	1	٠	1	50.00%	-	-	-	-	-
Gateway - SLA	Sateway Utilization	ø	٠		75.00%	٠	•		•	•
Trunk Utilization	Trunk Utilization	19	٠	1	75.00%	-	-		-	-

Figure 28. Details for the Trunk Utilization SLA



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

Comp lement Det: ement Informa	Diance Matrix • SLA Adm ails for uom-demo4 ation Jemo4 cisco.com/cmecue- 845-2 cisco.com/T1-PRI-	.cisco.co	m/cme	ecue-3845-2.cisco.com;T1-PRI-IOS;SJ-TF	RUNK (2)
ement Informa	ails for uom-demo4 ation Jemo4.cisco.com/cmecue- 845-2.cisco.com/T1-PR1-	.cisco.co	m/cme	ecue-3845-2.cisco.com;T1-PRI-IOS;SJ-TF	RUNK ⑦
lement Informa u lement	ation Jom- Jemo4.cisco.com/cmecue- 3845-2.cisco.com;T1-PRI-			Last 24 hrs	
lement d	iom- lemo4.cisco.com/cmecue- 3845-2.cisco.com;T1-PRI-				
3 K	OS;SJ-TRUNK	Schedule	24×7	20	
iervice Level T Objective 9	Frunk Utilization Utilization Less % for 30 min.	than or equal	to 75.0		
Current Xatus	•	SLA 24- Hour Status	-		AAA A H
.ast Time /iolated		Financial Impact	45.0 \$/hr		- /// -/ -
Jervice Level Objective 3 Duration	30 min	Weighting	1	50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9 51-19 58-19 1,19 1,5 <sup>10</sup> 1,5 <sup>10</sup>
LA Name I	Frunk Utilization			1:Utilization(%)	
Comments	Edit			Custom Graph Generator	
lations (From P	Mon 24-Sep-2007 15:00 PDT	to Tue 25-Se	p-2007 1	- 5:00 PDT)	
me▼	Status	D	uration	Financial Impact	Violated Points
				No entries	

#### Figure 29. 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 30. Branch SLAs

	<u>Compliance Matrix</u>	<ul> <li><u>SLA Administratio</u></li> </ul>	n				
LA /	Administration						0
Sele	ct All				Add D	elete	
Select	SLA Name≜	SLA Type	Content Type	Compliance	Schedule	Edit	
	Call Quality	Call Quality	Instances	50.00%	24×7	Edit	
	Chennai-E1 Utilization	Trunk Utilization	Instances	60.00%	Business Hours	Edit	
	Gateway - SLA	Gateway Utilization	Instances	75.00%	24×7	Edit	
	Jitter 57-17HQ	IP SLA	Instances	70.00%	Business Hours	Edit	
	Jitter 81-17HQ	IP SLA	Instances	60.00%	Business Hours	Edit	Branch SLAs
	Jitter 98-17HQ	IP SLA	Instances	45.00%	Business Hours	Edit	
	Ming-IP SLA	IP SLA	Instances	45.00%	Business Hours	Edit	
	SJ-Chennai Trunk Util	-	SLAs	60.00%	-	Edit	
	SJ-T1 Utilization	Trunk Utilization	Instances	60.00%	Business Hours	Edit	
	Trunk Utilization	Trunk Utilization	Instances	75.00%	Business Hours	Edit	

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

Figure 31.	Enter the SLA Details
------------	-----------------------

cisco	Logout Cisco Unified Service Statistics Manager A product from the Cisco Unified Communications Management Suite Views Reports Custom Graphs SLA Administration	Help   Abou
Create SLA: S	J_litter (Step 1 of 3) - Enter the SLA Details	0
510400 015 11 0		•
Name:	SJ-Jitter	
Owner:	admin	
Contact Information:		
SLA Contents:	SLAS O Instances	
	Use this SLA for grouping only, and not to calculate Aggregate Compliance values.	
SLA Compliance Objective: 60 Cancel Next >	%	

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

CISCO CISCO CISCO Compliance Matrix + SLA Adminis	Service Statistics Man Unified Communications Managemen Istom Graphs SLA Administration	Loaout   Help   £ ager nt Suite
Create SLA: SJ-Jitter (Step 2 of 3) Search for	- Select SLAs	0
Available SLAs Chennai-E1 Utilization (Trunk Utilization) Trunk Utilization (Trunk Utilization) SJ-Chennai Trunk Utili Ming-IP SLA (IP SLA) Call Quality (Call Quality) SJ-T1 Utilization (Trunk Utilization) Gateway - SLA (Gateway Utilization) Cancel < Back Next >	Selected SLAs	

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

Figure 32. Select the SLAs

CISCO CISCO CISCO CISCO Cisco Unified Service Statistics Manage A product from the Cisco Unified Communications Management Suit Views Reports Custom Graphs SLA Administration Compliance Matrix + SLA Administration	Lo r te
Create SLA: SJ-Jitter (Step 3 of 3) - Enter weightage for selected SLAs	: ?
SLA Name SLA Type Weight	
Jitter 98-17HQ Instances 1	
Jitter 57-17HQ Instances 1	
Jitter 81-17HQ Instances 1	
Cancel < Back Finish	
·	
	>



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

Figure 34.	The SLA	Administration	Table
------------	---------	----------------	-------

ompliance M	latrix									<b>F</b> ?
SLA <b>A</b>	Туре	Details	Current Status	History	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
II Quality	Call Quality	<b>19</b>	٠	1	50.00%	-	-	-	-	-
teway - SLA	Gateway Utilization	1	٠	1	75.00%	• ‡	٠	•	•	٠
iq-IP SLA	IP SLA	19	•		45.00%	•	•	•	•	•
Chennai Trunk Util	-	1	٠	1	60.00%	• •	٠	٠	•	٠
Jitter	-	1	٠	1	60.00%	-	-	-		-
ink Utilization	Trunk Utilization	1	٠	1	75.00%	٠	٠	•	•	

5. 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 35. The Compliance Matrix

AA     Type     Details     Current Status     History     Objective     Previous Day     Week to Date     Month to Date     Quarter to Date     Year to Date       I Quality     Call Quality     C     I     50.00%     -     -     -     -     -       I Quality     Call Quality     C     I     50.00%     -     -     -     -     -       I Quality     Call Quality     C     I     10.00%     -     -     -     -     -       I Quality     Call Quality     C     I     45.00%     I     -     I     -     -     -       I Ling     60.00%     I     60.00%     I     -     -     -     -	ompliance M	atrix									<b>F</b> 🤊
Il Quality Cal Quality ♀ 1 1 50.00%	LA▲	Туре	Details	Current Status	History	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
teway - SLA         Gateway Utilization         Image: Channel Trunk Util         Operating and the state of t	ll Quality	Call Quality	9	٠	1	50.00%	-	-	-	-	-
a_P_SLA         P_SLA         P_SLA         II_a         45.00%         ● <td>eway - SLA</td> <td>Gateway Utilization</td> <td>1</td> <td>•</td> <td>i li</td> <td>75.00%</td> <td>• ‡</td> <td>٠</td> <td>•</td> <td>٠</td> <td>•</td>	eway - SLA	Gateway Utilization	1	•	i li	75.00%	• ‡	٠	•	٠	•
<u>Chennel Trunk Ltit</u> - ♥ ● ┃ <u>1</u> 60.00% ● - ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	g-IP SLA	IP SLA	1	•	1	45.00%	•	•	•	•	
utter · 🎾 • 🛄 60.00%	Chennai Trunk Util	-	1	٠	i L	60.00%	• •	٠	٠	٠	•
	Jitter_	-	9	٠	1	60.00%			-	-	-
<u>ink Utilization</u> Trunk Utilization 🎾 🌒 👖 75.00% 🌒 🔍 🌒 🔍	ink Utilization	Trunk Utilization	1	•	ii.	75.00%	٠	٠	•	٠	•

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

Figure 36. The Branch SLAs

cisco	5	Cisc A produ View	t from the	fied \$ CiscoU rts Cus	Servic nified Co tom Grapt	e Stat ommunica hs SLA	istics Ma tions Manage Administration	anager ment Suite		Lo	<u>aout   Help   Ab</u>
Compliar	nce Ma	atrix - S	J-Jitter		<u>uon</u>						<b>e</b> 🤊
SLA▲	Туре	Details	Current Status	History	Weight	Objective	Previous Day	Week to Date	Month to Date	Quarter to Date	Year to Date
tter 57-17HQ	IP SLA	1	٠	1	1	70.00%	-	-	-		-
tter 81-17HQ	IP SLA	ø	٠		1	60.00%	-	-	-	-	-
tter 98-17HQ	IP SLA	ø			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).





#### Troubleshooting

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

Service Statistics Manager could run separately on its own server (stand alone mode), or it could run on 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 Operations Manager and Service Monitor servers. Service Statistics Manager Agent is installed automatically if deployed in co resident 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 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 3 are in use by Service Statistics Manager and must be available and exempted from firewall inspections.

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

 Table 2.
 TCP Ports Used by Service Statistics Manager

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

#### Logon Failure

- Check whether Cisco Unified Operations Manager is reachable from Cisco Unified Service Statistics Manager. Try launching the Operations Manager web interface from 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\ConfigureSSMToSSLOM <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 <u>http://www.cisco.com/en/US/partner/docs/net\_mgmt/cisco\_unified\_operations\_manager/2.3/user/guide/cfgPT\_html#wp1546763</u>.
- 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. Standard and Premium licenses are available. The only difference is that Premium includes the SLA features; these are unavailable with the Standard license and are activated when the Premium license is entered.

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



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