



QUICK START GUIDE



Cisco Unified Service Statistics Manager, 9.0

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1 Cisco Unified Service Statistics Manager Overview

Cisco Unified Service Statistics Manager (Service Statistics Manager) is a product from the Cisco Unified Communications Management Suite that collects and stores short-term operational data to perform longer-term analysis of IP telephony service quality, service availability, call volume, service trends, and resource utilization. Service Statistics Manager does the following:

- Extracts data collected by Cisco Unified Operations Manager (Operations Manager) and Cisco Unified Service Monitor (Service Monitor) and stores this short-term data in the Service Statistics Manager database. Operations Manager and Service Monitor collect Cisco Unified Communications statistics from various Cisco devices and systems.
- Analyzes the stored data and generates out-of-the box reports designed for users in executive, operations, capacity planning, and network administration roles.

Depending on your license level, Service Statistics Manager can also enable you to define Service Level Agreements (SLAs) as well as measure and verify them based on collected statistics.

Service Statistics Manager Components

When you install Service Statistics Manager, the following components are installed:

- **Service Statistics Manager**—Includes:
 - The application server with the database and the backend processes that analyze data and create the reports.
 - The web server through which you can access the user interface and view reports.
- **SSM Agent**—Obtains data for Service Statistics Manager on the Operations Manager or Service Monitor system where it is installed.
- **SSM Administration Console**—Manage groups, users, and roles. Only a user with admin privilege in Service Statistics Manager can log into this console.

After you install Service Statistics Manager, you can install SSM Agent and SSM Administration Console from the Service Statistics Manager user interface onto additional systems as needed:

- **SSM Agent**—You must have an SSM Agent installed on a single Operations Manager system and on the system for each instance of Service Monitor that has been added to Operations Manager.
- **SSM Administration Console**—A remotely installed SSM Administration Console communicates with the server where Service Statistics Manager is installed and updates the database on the server. SSM Administration Console is not accessible through a browser. You must launch it while logged into the system—locally or using VNC—where it is installed.

Licensing

Service Statistics Manager features software-based product registration and license key activation technologies.



Note You do not need to perform this procedure if you are installing Service Statistics Manager for evaluation only.

You must perform the procedures in this section when you do any of the following:

- Initially install a purchased version of Service Statistics Manager.
- Upgrade from an evaluation license to a purchased license for Service Statistics Manager.
- Add support for additional phones with an incremental license for Service Statistics Manager.



Note If you are upgrading from an earlier version of Service Statistics Manager, you do not need to perform this procedure. A license is not required for upgrading.

To license your product:

1. Obtain a product authorization key (PAK) and a license file before you perform an installation or an upgrade. See [Obtaining a PAK, page 3](#) and [Obtaining a License File, page 3](#).
2. Install the license file or files after you install or upgrade the product. See [Installing a License File, page 3](#).

Obtaining a PAK

The PAK is located on the software claim certificate. You can obtain the claim certificate through the eDelivery system; for information on eDelivery, see <http://www.cisco.com/web/partners/tools/edelivery.html>.

Obtaining a License File



-
- Note**
- Licensing uses node-locking technology. The license file can be used only with the MAC address that you supply.
 - To obtain a license and to run a licensed copy of Service Statistics Manager on VMware, configure a static MAC address for the virtual machine. (You must supply a static MAC address when you register the product.) For more information, see [VMware Guidelines, page 3](#).
-

To obtain a license file, you must register the Service Statistics Manager product with Cisco.com using the PAK and the MAC address of the server on which Service Statistics Manager will reside. Get your license file from:

<http://www.cisco.com/go/license>



-
- Note** You will be asked to log in. You must be a registered user of Cisco.com to log in.
-

Logging in allows your Cisco user profile information to autopopulate many of the product registration fields. Login is case sensitive.

If you purchased an incremental license to support additional phones, use each PAK that you received to obtain a license file.

Installing a License File

-
- Step 1** Copy all license files—the product license file and incremental license files, if any—to the Service Statistics Manager server, into this directory: *Installation Directory*\pw\licenses\cisco\etc\licenses.
- Step 2** Restart the server by selecting **Start > Programs > Cisco Unified Service Statistics Manager > Start Server**.



-
- Note** You do not need to first select Stop Server, because Start Server restarts the server.
-

VMware Guidelines

Service Statistics Manager supports VMware ESX 3.5 and ESXi 4.x. Service Statistics Manager must have the same system resources available to it inside the virtualization environment that it has for a standard (nonvirtual) installation. When determining the performance of Service Statistics Manager in your virtual setup, you must take into account that the VMware instance will use some system resources that would normally be available to Service Statistics Manager in a standard installation. Additional requirements for running Service Statistics Manager in a virtualization environment might vary with your environment and system load. For more information, see *Best Practices for Cisco Unified Communications Management Suite on Virtualization* at:

http://www.cisco.com/en/US/products/ps6535/prod_white_papers_list.html

The following configurations are supported for Service Statistics Manager in a virtual environment:

- One instance of Service Statistics Manager supporting up to 60,000 phones
- Each of these products installed on a separate virtual machine:
 - Operations Manager
 - Service Monitor
 - Service Statistics Manager
 - Provisioning Manager
- Each product installed on the same virtual machine, supporting up to 10,000 phones and 1,000 IP devices



Note For more information, see *Best Practices for Cisco Unified Communications Management Suite on Virtualization* at http://www.cisco.com/en/US/products/ps6535/prod_white_papers_list.html.

When setting up Service Statistics Manager in a VMware environment, keep in mind the following guidelines:

- Resources must be reserved at 100% of requirements for the virtual machine.
- To use a licensed Service Statistics Manager in a VMware environment, you must configure your virtual machine with a static MAC address.



Note You can run Service Statistics Manager in Evaluation mode with a dynamic MAC address. However, before you can run a licensed copy of Service Statistics Manager, you must configure a static MAC address.

To set up a static MAC address, do the following:

-
- Step 1** Power down the virtual machine.
 - Step 2** In the Inventory panel, select the virtual machine.
 - Step 3** Click the **Summary** tab and then click **Edit Settings**.
 - Step 4** From the Hardware list, select **Network Adapter**.
 - Step 5** For MAC address, select **Manual**.
 - Step 6** Change the current MAC address of the virtual machine to a static MAC address in the range 00:50:56:00:00:00 to 00:50:56:3F:FF:FF.

When assigning a static MAC address, we recommend choosing a complex address. An example of a complex MAC address is 00:50:56:01:3B:9F. A less complex MAC address is 00:50:56:11:11:11, because of the repeating ones (1).



Note Choosing a complex address makes it less likely that you will choose an address being used by another customer. This can prevent accidental licensing overlap between different customers.

- Step 7** Click **OK**.
-

2 Server and Client System Requirements

For Service Statistics Manager requirements, see:

- [Table 1](#)—Lists minimum server requirements for installing Service Statistics Manager alone.





Note Service Statistics Manager supports VMware for virtualization. For more information, see [VMware Guidelines, page 3](#).

- Hardware requirements for installing Service Statistics Manager on a system with Operations Manager and Service Monitor are provided in the [Coresident Guidelines](#) section in *Installation Guide for Cisco Prime Unified Operations Manager 9.0 (Includes Service Monitor)*.

- [Table 2](#)—Lists minimum client requirements.
- [Table 3](#)—Lists browser requirements.

Server requirements for SSM Administration Console and SSM Agent are included in [Table 4](#) and [Table 5](#), respectively.

Table 1 Minimum Service Statistics Manager Server Requirements

Component	Minimum Requirement
Hardware	<ul style="list-style-type: none"> • Server platform with one of the following processors: <ul style="list-style-type: none"> – Single or dual-core Pentium 4 greater than 2.0 GHz—Small deployments (up to 1,000 phones) – Single or dual-core Pentium 4 or Xeon, greater than 3.0 GHz—Medium deployments (up to 10,000 phones) – Dual-core Pentium 4 or Xeon, greater than 3.0 GHz—Large deployments (up to 60,000 phones) • One NIC only configured with static ip address and hostname • Color monitor with video card capable of 256 colors or more • CD-ROM drive
Software	<p>One of these:</p> <ul style="list-style-type: none"> • Windows Server 2003 Service Pack 2, Standard and Enterprise editions (32 bit) • Windows Server 2003 R2 Service Pack 2, Standard or Enterprise editions (32 bit) • Windows Server 2008 Enterprise Edition with Service Pack 2 (32 bit and 64 bit for R1 edition). • Windows Server 2008 64 Bit R2 (Enterprise or Standard Edition with Service Pack 1) <p> Tip It is recommended to move to Windows 2008 64bit R2 for a deployment greater than 10,000 phones.</p> <p> Note</p> <ul style="list-style-type: none"> • Windows Terminal Services is not supported. • Only US-English is supported for System locale and Regional and Language settings. • Perl installation on this system is not recommended. • Necessary security precautions are listed in Preparing the Server Before You Install or Upgrade, page 7.
Memory (RAM)	<ul style="list-style-type: none"> • Deployments of 10000 phones or lesser—4GB. • Deployments greater than 10,000 but less than 60,000 phones—8GB.
Available virtual memory	<ul style="list-style-type: none"> • 4 GB (up to 10,000 phones) • 8 GB (10,001 to 60,000 phones)
Available disk space	<ul style="list-style-type: none"> • 100 GB for 60k phones • 60 GB for up to 45k phones <p>NTFS file system¹</p>

1. Do not install Service Statistics Manager on a FAT file system. To verify the file system, open My Computer on the Windows desktop, right-click the drive and select **Properties** from the popup menu. The file system field appears in the General tab of the Properties dialog box.

Table 2 Minimum Client Hardware and Software Requirements


Component	Minimum Requirement
Hardware/software	<ul style="list-style-type: none"> • Any PC or server platform with a Pentium 4 processor, 1 GHz or greater, running one of the following: <ul style="list-style-type: none"> – Windows 2000 SP3 – Windows XP Professional SP2 – Windows Server 2003, Standard and Enterprise editions (32 bit) – Windows Server 2003 R2, Standard and Enterprise editions (32 bit) – Windows Server 2008 Enterprise Edition with Service Pack 2 (32 bit and 64 bit for R1 edition). – Windows Server 2008 64 Bit R2 (Enterprise or Standard Edition with Service Pack 1) Without Windows Terminal Services. • Color monitor with video card set to 256 colors
	 <p>Note If you are using a VGA monitor, be sure to install and use the manufacturer's display adapter driver. SSM Administration Console is not compatible and will not display with the Windows NT/2000 generic driver (named VGA Compatible Display Adapter).</p>
Available virtual memory	2 GB virtual memory
Available memory (RAM)	1 GB minimum We recommend that you set virtual memory to twice the size of RAM.

Table 3 Client Browser Requirements

Browser	Version
Browser requirements	One of the following: <ul style="list-style-type: none"> • Internet Explorer 8.0 and 9.0 • Mozilla Fire Fox 10.0.5 ESR, 13.X


 **Note** When using Service Statistics Manager, disable any software on your desktop that you use to prevent popup windows from displaying. Service Statistics Manager must be able to open multiple windows to display information.

Table 4 lists minimum requirements for installing an additional, standalone instance of SSM Administration Console.

Table 4 Minimum Server Requirements for SSM Administration Console Installed Standalone


Component	Minimum Requirement
Hardware	<ul style="list-style-type: none"> Any PC or server platform with a Pentium 4 processor, 1.0 GHz or greater CD-ROM drive Color monitor with video card capable of 256 colors or more
	 <p>Note If you are using a VGA monitor, be sure to install and use the manufacturer's display adapter driver. SSM Administration Console is not compatible and will not display with the Windows NT/2000 generic driver (the VGA Compatible Display Adapter).</p>
Software for Windows	<ul style="list-style-type: none"> Windows Server 2003 Service Pack 2, Standard and Enterprise editions without Windows Terminal Services Windows Server 2008 Enterprise Edition with Service Pack 2 (32 bit and 64 bit for R1 edition). Windows Server 2008 64 Bit R2 (Enterprise or Standard Edition with Service Pack 1)
Available memory (RAM)	256 MB
Available disk space	150 MB

Table 5 lists additional requirements for installing SSM Remote Agent on a system with Operations Manager or Service Monitor.

Table 5 Minimum Server Requirements for SSM Remote Agent

Component	Minimum Requirement
Available Memory	1024MB
Available disk space	300 MB
Swap space	1024 MB
TCP control port	12124

Preparing the Server Before You Install or Upgrade

Before you install or upgrade, make sure that you have completed the following tasks:

- [Ensuring the Security of Your Windows 2003 Server, page 8](#)
- [Installing Win32 OpenSSL on the Server System, page 8](#)
- If you are installing Service Statistics Manager on a system with Operations Manager or Service Monitor, verify that the full 4 GB of RAM is enabled (see [Enabling the Full 4 GB of RAM, page 8](#)).
- Disable the virus scan software on your system. After the installation is complete, we recommend you exclude the “pw” directory from virus scanning. Problems can arise when Unified Service Statistics Manager files are locked because of virus scanning.



Note SSM has been successfully installed in servers with McAfee as the anti-virus. You must ensure that all the ports required by SSM should not get blocked by the anti-virus rules and policies.

Ensuring the Security of Your Windows 2003 Server

The system that you use for your Service Statistics Manager server should meet all the security guidelines that Microsoft recommends for Windows 2003 Server. See the NSA website for security guidance:

(http://www.nsa.gov/ia/guidance/security_configuration_guides/operating_systems.shtml#microsoft)

Specifically, the TCP/IP stack should be hardened to avoid denial-of-service attacks. Refer to the section “Security Consideration for Network Attacks” in the The Windows Server 2003 - Security Guide, v2.1, which can be downloaded from the NSA website.

Installing Win32 OpenSSL on the Server System

Perform these steps on the system where you will install or upgrade the Service Statistics Manager server.

Step 1 Download and install the Microsoft Visual C++ 2010 Redistributable Package (x86) from this URL:
<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=a7b7a05e-6de6-4d3a-a423-37bf0912db84>

Step 2 Download Win32 OpenSSL as follows:

- Log in to Cisco.com.
- Go to the Cisco Unified Service Statistics Manager product support page:
http://www.cisco.com/en/US/products/ps7285/tsd_products_support_series_home.html
- Click the **Download Software** link and select **Cisco Unified Service Statistics Manager 1.3**.
- Download the OpenSSL-0.9.8n-Win32-CSCtd05778.zip file.



Note The download includes only the latest version of Win32 OpenSSL that was tested with Service Statistics Manager 9.0.

Step 3 Extract the contents of the OpenSSL-0.9.8n-Win32-CSCtd05778.zip file into a directory that you have created on the server. If prompted to overwrite existing files, answer Yes. The following files are extracted:

bin/openssl.exe
bin/libeay32.dll
bin/ssleay32.dll
conf/openssl.cnf



Note Additional steps are required to enable SSL on the Service Statistics Manager server. The steps are provided in the installation and upgrade procedures.

Enabling the Full 4 GB of RAM

If you are installing Service Statistics Manager on a system with Operations Manager or Service Monitor, you should make sure that all 4 GB of RAM is enabled. There is a known issue with Windows 2003 when working with certain hardware: even though 4 GB of memory is installed on the system, Windows 2003 reports that less than 4 GB of memory is installed. For more details, see <http://msdn2.microsoft.com/en-us/library/ms791485.aspx>.

To Enable All 4 GB of RAM on a Windows 2003 Server

Step 1 On the Service Statistics Manager system, in Windows, right-click **My Computer**.

Step 2 Select **Properties**.

Step 3 Select the **Advanced** tab.


Step 4 Under **Startup and Recovery**, click **Settings**.

- Step 5** Click **Edit**. The boot.ini file opens.
- Step 6** In the file, add `"/PAE"` inline starting with `"multi(0)disk(0)rdisk(0)partition(1)\WINDOWS=..."`
- Step 7** Restart the system.

To Enable All 4 GB of RAM on a Windows 2008 Server

- Step 1** On the Service Statistics Manager system, select **Start > All Programs > Accessories**.
- Step 2** Right-click **Command Prompt** and select **Run as Administrator**.
- Step 3** In the command prompt, enter the following command:

```
Bcdedit /set PAE forceenable
```
- Step 4** Restart the system.

 **Note** In Windows 2008 64 bit R1 or R2 server the installation will fail if it is installed in `C:\Program Files (x86)\` directory

Cisco Unified Service Statistics Manager Port Usage

Table 6 lists TCP ports that Service Statistics Manager uses; the ports must be free, or Service Statistics Manager installation will not proceed. To check whether a port is in use, from a command line enter this command:

```
netstat -anb | findstr portnumber
```

If there is no output from the command, the port is free.

Table 6 Service Statistics Manager Port Usage



Port Number	Service Name
8007	Apache JServ
8008	Tunnel Proxy
8009	Tomcat
48093	JMS Server
9149	JServer Event
48099	Remote Method Invocation
	 Note To configure Service Statistics Manager to use a port other than 48099, see Reconfiguring Selected Ports and Properties for Service Statistics Manager, page 28 .
48100	JBOSS
	 Note To configure Service Statistics Manager to use a port other than 48100, see Reconfiguring Selected Ports and Properties for Service Statistics Manager, page 28 .
48101	HTTP—Web server
48102	Database
12123	Agent Controller Listener
12124	Used by SSM Agent to listen to messages from the SSM server

Table 6 Service Statistics Manager Port Usage (continued)

Port Number	Service Name
12125	Database access port that interacts between the agent controller and the database
12126	Agent controller callback—This port is used by remote SSM agents to send data back to the Service Statistics Manager server
12130	Checkpoint monitor (for receiving log messages)
12140	CLServer
12141	Log Server
18000	Rate
40402	Licensing
45000	Message server
48443	HTTPS—Secure web server

3 Installation and Upgrade Paths

See the following sections:

- [Supported Installation Paths, page 10](#)
- [Supported Upgrade Paths, page 11](#)

Supported Installation Paths

Table 7 lists the supported installation paths for Service Statistics Manager.

Table 7 Supported Configurations and Installation Paths

Supported Configuration	Required Order of Installation	for	For Hardware Requirements, see...
Cisco Unified Communications Management Suite products installed on one dedicated server	<ol style="list-style-type: none"> 1. Operations Manager (includes Service Monitor) must be installed before Service Statistics Manager. 2. Service Statistics Manager. 3. Provisioning Manager (installed in advance mode to resolve port conflicts with already installed applications). <p>Note It is permissible to install Provisioning Manager before either Operations Manager or Service Statistics Manager.</p>	10,000	Coresident Guidelines in <i>Installation Guide for Cisco Prime Unified Operations Manager 9.0</i> (Includes Service Monitor).
Service Statistics Manager only installed on a dedicated server	<ol style="list-style-type: none"> 1. Operations Manager (includes Service Monitor) must be installed elsewhere in your network. 2. Service Monitor (if installed on a server separate from the one where Operations Manager is installed). 3. Service Statistics Manager. 4. SSM Agent—Install on any server where Service Monitor is installed alone and on the server where Operations Manager (includes Service Monitor) is installed. 	Greater than 10,000 upto 60,000	Table 1 on page 5

For supported installation in a virtualization environment, see [VMware Guidelines, page 3](#).



Note If you have more than 10,000 phones in a SSM standalone scenario (co-existence) you must move to a 64 bit platform with 8 GB RAM before upgrading to SSM 9.0.

Supported Upgrade Paths

The following upgrade paths are supported:

1. SSM 8.5 to SSM 9.0
2. SSM 8.6 to 9.0
3. SSM 8.7 to 9.0

A direct upgrade from SSM 1.x to SSM 9.0 is not supported. You will have to first upgrade to SSM 8.x before you upgrade to SSM 9.0.

4 Installing Cisco Unified Service Statistics Manager

This section includes the following topics:

- [Before You Install Service Statistics Manager, page 11](#)
- [Installing Service Statistics Manager, page 12](#)
- [Installing SSM Agent, page 13](#)
- [Installing SSM Administration Console, page 14](#)

Before You Install Service Statistics Manager

Do the following to prepare for installing Service Statistics Manager 9.0:

1. Complete the tasks in [Preparing the Server Before You Install or Upgrade, page 7](#).
2. Install Operations Manager 9.0 and Service Monitor 9.0 on a system in your network.
3. Find out which port Operations Manager uses for SSL; if Operations Manager uses a port other than the default (443), you will need to reconfigure Service Statistics Manager before you can log in.
4. Make sure that you are not installing Service Statistics Manager on a system on which the SSM Agent or SSM Administration Console is installed.



Note To uninstall SSM Agent or SSM Administration Console, use Add/Remove Programs from the Windows Control Panel and uninstall Service Statistics Manager Agent or Service Statistics Manager Admin.

5. Disable the virus scan software on your system. You can restart it after installation is complete.
6. If Cisco Security Agent runs on your system, disable it before starting the installation, re-enable it after you complete the installation, and run discovery to completion.
7. Make sure your system meets the prerequisites:
 - Required (or desired) operating system upgrades have been performed.
 - Required Windows service packs are installed.
 - Required minimum amount (or more) of RAM is available.
 - Ports that Service Statistics Manager uses are free; see [Table 6](#).
 - No existing file or directory is named **Prog** where SSM is being installed or upgraded.

8. Be prepared to supply contact information during installation. You will need to provide a name, email address, and SMTP server for a system administrator to be notified if a problem occurs during the weekly server restart on Sunday or if disk space usage reaches 80% on the system.
9. Be prepared to enter a password for admin, the default user account. The admin user can perform all Service Statistics Manager tasks and all SSM Administration Console tasks. You must log in to the SSM Administration Console as admin to configure additional users.



Note Take note of the password that you enter for admin so that you can log in to Service Statistics Manager after you complete the installation.

Installing Service Statistics Manager

- Step 1** As the local administrator, log in to the machine on which you will install the Service Statistics Manager software.
- Step 2** Double-click **Setup.exe**. The Cisco Unified Service Statistics Manager 9.0 Setup window opens, displaying a Welcome message.
- Step 3** Click **Next**. If SSM Agent or SSM Administration Console is installed, an error message is displayed. Click **OK**; the installation stops.
Otherwise, the Software License Agreement is displayed.
- Step 4** Click **Accept**. The minimum required system configuration is displayed.
- Step 5** Click **Next**. A preinstallation check runs to verify that the required configuration is present. When the check completes, the results are displayed.
If mandatory requirements are not met, the installation stops. Read the log file, ProactivePreInstall.log, on the desktop and correct errors before trying to install the Service Statistics Manager server again.
- Step 6** Click **Next**. An Admin Information page is displayed.
- Step 7** Enter (and confirm) a password for the user *admin*.



Note Take careful note of the password. You must enter it when you log in to Service Statistics Manager.

- Step 8** Click **Next**. The Administrator Information page is displayed.
- Step 9** Enter contact information for the system administrator who is responsible for this server:
 - Administrator E-Mail ID—Enter the complete e-mail address for the system administrator (*username@domain*). If disk space is less than 80% or if a problem occurs with the weekly (Sunday) system restart, Service Statistics Manager sends e-mail to this address.
 - From E-Mail ID—Enter the e-mail address from which Service Statistics Manager should send scheduled reports.
 - Name or IP Address of SMTP Server—Enter an IP address or DNS name for an SMTP server.
- Step 10** Click **Next**. The Choose Destination Location page appears, displaying a default destination location.



Note Do not install Service Statistics Manager on a shared drive. Doing so can create a conflict in registry entries.

If you do not want to use the default destination location, click **Browse** and select another location.

- Step 11** Click **Next**. The installation begins; status is displayed during this process. The Installation Completed Successfully page is displayed.
- Step 12** Click **Finish**.
- Step 13** Complete these tasks:



Note To put the changes made in steps b, c, and d into effect, you must restart the Service Statistics Manager server (as directed in step e).

- a. Stop the Service Statistics Manager server by selecting **All Programs > Cisco Unified Service Statistics Manager > Stop Server**.
- b. Copy the Service Statistics Manager license file to the server, into this directory: *Installation Directory\pw\licenses\cisco\etc\licenses*. (If you are evaluating Service Statistics Manager, you can skip this step.)
- c. Enable SSL:
 - Make sure that you have completed the steps in *Installing Win32 OpenSSL on the Server System*, page 8.
 - Copy the *ssleay32.dll*, *libeay32.dll*, and *openssl.exe* files (located in the *OpenSSL Win32 Installation Directory\bin* folder) to the *Service Statistics Manager Installation Directory\pw\ApacheGroup\Apache\bin* folder.
 - Copy the *openssl.cnf* file (located in the *OpenSSL Win32 Installation Directory\conf* folder) to the *Service Statistics Manager Installation Directory\pw\ApacheGroup\Apache\conf* folder.
- d. If Operations Manager uses an SSL port other than 443, perform these steps on the Service Statistics Manager server:
 - Navigate to this directory: *Installation Directory\pw\pronto\conf*.
 - In the *pronet.conf* file, find this line: *pronet.ssm.om.port.https=443*.
 - Replace 443 with the SSL port that Operations Manager uses.
- e. Restart the Service Statistics Manager server by selecting **All Programs > Cisco Unified Service Statistics Manager > Start Server**.

Step 14 Log in to Service Statistics Manager to verify that it was installed correctly. See [Logging In to Cisco Unified Service Statistics Manager, page 20](#).

Step 15 Perform the post-installation steps listed in [Post-Installation Configuration Summary, page 28](#).

Installing SSM Agent

Before you install SSM Agent, make sure that:

- Service Statistics Manager is already installed in your network.
- Operations Manager or Service Monitor is already installed on the system where you will install SSM Agent.
- The system meets the prerequisites in [Table 5](#).

Step 1 From a browser on the Operations Manager or Service Monitor system where you will install SSM Agent, log in to Service Statistics Manager as an admin user. See [Logging In to Cisco Unified Service Statistics Manager, page 20](#).

Step 2 Download the image and start the installation:

- a. Select the **Administration** tab.



Note For more detailed installation instructions than those presented in this procedure, click **Help** in the upper-right corner of the Service Statistics Manager window.

- b. Under Downloads, click **Agent.exe**. A File Download window appears.
- c. Do one of the following:
 - Click **Save** and save **Agent.exe** to the desktop; then double-click **Agent.exe** to start the installation.
 - Click **Open**. Some time might elapse while **Agent.exe** downloads.

An InstallShield window appears with a Welcome message.

Step 3 Follow the online prompts to complete the installation. For more information, see the online help.

Installing SSM Administration Console

SSM Administration Console is already installed on the system with Service Statistics Manager. Optionally, you can install SSM Administration Console on another system. Before you install SSM Administration Console, make sure that:

- Service Statistics Manager is already installed in your network.
- The system meets the prerequisites in [Table 4](#).

Step 1 From a browser on the Operations Manager or Service Monitor system where you will install SSM Administration Console, log in to Service Statistics Manager as an admin user. See [Logging In to Cisco Unified Service Statistics Manager](#), page 20.

Step 2 Download the image and start the installation:

- a. Select the **Administration** tab.



Note For more detailed installation instructions than those presented in this procedure, click the **Help** link in the upper-right corner of the Service Statistics Manager window.

- b. Under Downloads, click Admin.exe. A File Download window appears.
- c. Do one of the following:
 - Click **Save**, and save **Admin.exe** to the desktop; then double-click **Admin.exe** to start the installation.
 - Click **Open**. Some time might elapse while Admin.exe downloads.

An InstallShield window appears with a welcome message.

Step 3 Follow the prompts on the windows to complete the installation. (For more information, see the online help.)

5 Upgrading to Cisco Unified Service Statistics Manager 9.0

This section includes the following topics:

- [Before You Upgrade to Service Statistics Manager 9.0](#), page 14
- [Upgrading to Service Statistics Manager 9.0](#), page 17
- [Upgrading the SSM Agent](#), page 19
- [Upgrading the SSM Administration Console](#), page 19
- [Logging In to Cisco Unified Service Statistics Manager](#), page 20

Before You Upgrade to Service Statistics Manager 9.0

Before you start your upgrade, be sure to do the following:

1. Complete the tasks in [Preparing the Server Before You Install or Upgrade](#), page 7.
2. We strongly recommend that you back up the database before starting the upgrade. See [Performing a System Backup](#), page 15. (The upgrade procedure does not perform a backup.)
3. Complete the upgrades to Operations Manager 9.0 and Service Monitor 9.0 on the systems where they are installed. (Before you upgrade any system where Service Monitor is running, shut down Service Statistics Manager.) For more information, see *Installation Guide for Cisco Unified Operations Manager 9.0 (Includes Service Monitor)* and, if Service Monitor is installed as a standalone, see *Installation Guide for Cisco Unified Service Monitor 9.0*.
4. Complete call classification configuration in Service Monitor 9.0.

5. Perform these steps on the Service Statistics Manager server:
 - If Service Statistics Manager is installed under the Program Files directory, verify that there are no files or folders with the word Programs in the path.
 - If Cisco Security Agent runs on your system, you must disable it before starting the upgrade and re-enable it after the upgrade completes and you have run discovery.
 - Disable the virus scan software on your system. You can restart it after the upgrade is complete.
 - Make sure your system meets the prerequisites:
Minimum system requirements are met; see Table 1.
Ports that Service Statistics Manager uses are free; see Table 6.
6. Remember to generate the reports for the call quality monitor till date, if you are upgrading from SSM 8.5 to SSM 9.0. After the upgrade, call quality monitor does not exist, instead call quality by Cluster can be used.
7. If there is a property change before upgrade, make sure the changes are reflected in \custom\conf\pronet.conf file. After the upgrade, make sure the changes are updated to the same file.
8. Before upgrading from SSM 8.5 to SSM 9.0, you must make a note of all the reports and views created by selecting Call Quality monitor
For example. if you have created a report named Report-1 by selecting the Call Quality monitor, after upgrading to SSM 9.0 is completed and a first time discovery is done , you must create the report by selecting the call quality by cluster monitor.
9. Before upgrading from SSM 8.7 to SSM 9.0, you must make note of all the reports and views which are created by selecting specific elements of the Gateway Utilization or Channel based Trunk Usage monitor types.
For example if you have created a report named Report-1 by selecting the gateway gateway@cisco.com, after upgrade to SSM 9.0 is completed and a first time discovery is done , you must create the report by selecting the same gateway.

With the previous list of tasks completed, you can start your upgrade. See [Upgrading to Service Statistics Manager 9.0, page 17](#).

Performing a System Backup

To perform a backup, do the following:

Step 1 Select **Start > Programs > Cisco Unified Service Statistics Manager Server > Stop Server**.

Step 2 Copy the *Installation Directory*\pw folder and all subfolders to another location.

The IP address or hostname of the machine where the pw directory is to be restored should be the same as the original machine



Note Restoring of Service Statistics Manager is possible only on the same machine and for the same version.

Migrating the server from SSM 8.x to SSM 9.0

This upgrade can be done using the following methods:

- [Migrating the OS version along with the upgrade of SSM 8.x to SSM 9.0](#)
- [Installing a new Operating System along with and upgrade from SSM 8.x to SSM 9.0](#)



Note It is recommended to [migrate the OS version along with upgrade from SSM 8.x to SSM 9.0](#). A direct upgrade from SSM 1.3 to SSM 9.0 is not available. SSM 1.3 users have to upgrade to SSM 8x before upgrading to SSM 9.0.

Migrating the OS version along with the upgrade of SSM 8.x to SSM 9.0



Note You can migrating the OS version along with the upgrade of SSM 8.x to SSM 9.0 only for SSM Standalone Installations.

- Step 1** As the local administrator, log in to the machine on which you will upgrade the Service Statistics Manager software.
- Step 2** Stop the SSM 8.x remote agents and uninstall them.
- Step 3** Copy the *Installation Directory\pw* folder and all subfolders to another location.
- Step 4** Upgrade to SSM 9.0.



Note Make sure that you have completed the necessary steps in [Before You Upgrade to Service Statistics Manager 9.0, page 14](#)

- Step 5** Stop the SSM server.
- Step 6** Upgrade the windows OS
- Step 7** Install SSM agents in the OM and SM servers.
- Step 8** Start the SSM server.
- Step 9** Login to the admin console from SSM server machine and select **Advanced Option > SSM Agent**.
All the agents must be connected. To reconnect disconnected agents, right click the agent and select **Connect Agent**



Note All connected agents are green. Disconnected agents appear in red. Also the IP Address or hostname of the OM, SM and SSM Servers should remain unchanged.

Installing a new Operating System along with and upgrade from SSM 8.x to SSM 9.0

- Step 1** As the local administrator, log in to the machine on which you will upgrade the Service Statistics Manager software.
- Step 2** Stop the SSM 8.x remote agents and uninstall them.
- Step 3** Copy the *Installation Directory\pw* folder and all subfolders to another location.
- Step 4** Upgrade SSM 8.x to SSM 9.0.



Note Make sure that you have completed the necessary steps in [Before You Upgrade to Service Statistics Manager 9.0, page 14](#).

- Step 5** Stop the SSM server.
- Step 6** Copy the *Installation Directory\pw* folder and all subfolders to another location.
- Step 7** Install Windows Operating System.
- Step 8** Install SSM 9.0 in the new windows server.



Note Make sure that you have completed the necessary steps in [Before You Upgrade to Service Statistics Manager 9.0, page 14](#).

- Step 9** Stop SSM server.
- Step 10** Restore the *Installation Directory\pw* folder copied in Step 6.
- Step 11** Install SSM agents in the OM and SM servers.
- Step 12** Start the SSM server.

- Step 13** Login to the admin console from SSM server machine and select **Advanced Option > SSM Agent**.
All the agents must be connected. To reconnect disconnected agents, right click the agent and select **Connect Agent**.



Note All connected agents are green. Disconnected agents appear in red. Also the IP Address or hostname of the OM, SM and SSM Servers should remain unchanged.

Upgrading the server from SSM 8.7 SP1 to SSM 9.0

- Step 1** Login to the SSM server.
- Step 2** Go to `CUSSM root\pw\pronto\conf\pronet.conf` and locate the following:
- `pronet.ssm.omagent.1.port`
 - `pronet.ssm.omagent.2.port`
- The agents running on these ports numbers have to be uninstalled.
- Step 3** Login to the OM server and select the install/uninstall wizard.
- Step 4** Select and delete the SSM agents containing the above ports in text.
The following error message appears while deleting the SSM agents if the dll files are not available in the Program Files folder.
- ```
Could not find file [PATH]\Ctor.dll
```
- When this error message appears, select the the SSM agent from the Agent.exe setup to delete it.
- Step 5** Stop all the SSM remote agents and uninstall the SSM remote agent in OM machine where Gateway Monitor type is running.
- Step 6** Uninstall the SSM remote agent in OM machine where the Channel based Trunk Usage monitor type is running.
- Step 7** Login to SM server and stop the SSM remote agent.
- Step 8** Login to SSM server and upgrade to SSM 9.0.
- Step 9** After the upgrade is over, upgrade the single SSM agent in OM and the single SSM agent in SM server to 9.0 by running the agent setup in upgrade mode.
- 

## Upgrading to Service Statistics Manager 9.0

This procedure upgrades the Service Statistics Manager server, the SSM Administration Console, and the SSM Agent on a single server. After you complete this procedure, if SSM Administration Console and SSM Agent are installed on additional servers, you must upgrade them using these procedures:

- [Upgrading the SSM Administration Console, page 19](#)
- [Upgrading the SSM Agent, page 19](#).



**Note**

- Make sure that you have completed the necessary steps in [Before You Upgrade to Service Statistics Manager 9.0, page 14](#).
- During the upgrade, some messages might be displayed that refer to a reinstallation even though you are actually performing an upgrade.

---

- Step 1** As the local administrator, log in to the machine on which you will upgrade the Service Statistics Manager software.

**Note**

---

If you are upgrading a Service Statistics Manager that exists in a coresident environment (installed on the same system as Operations Manager), you must stop the Operations Manager daemon manager (**net stop crmdmgtd**) before upgrading. After upgrading, restart the Operations Manager daemon manager (**net start crmdmgtd**).

---

**Step 2** Click **Setup.exe**. The Cisco Unified Service Statistics Manager 9.0 Setup window opens, displaying a Welcome message and these radio buttons:

- Reinstall/Upgrade
- Remove

**Step 3** Select Reinstall/Upgrade and click **Next**. A message appears, asking whether you are sure that you want to upgrade and letting you know that Service Statistics Manager will shut down during the installation.

**Step 4** If you are installing Service Statistics Manager on a system where either Operations Manager or Service Monitor are already installed, the following message appears:

If CUOM/CUSM are running on this Setup, Stop the CUOM/CUSM service before upgrading the CUSSM Server. Do you want to proceed?

Click **OK** and take the appropriate actions.

**Step 5** Click **OK**. The License Agreement page appears.

**Step 6** Click **Accept**. An Information window appears, displaying the minimum system requirements.

**Step 7** Click **Next**. A preinstallation check runs to verify that the required configuration is present. When the check completes, the results are displayed.

If mandatory requirements are not met, the upgrade stops. Read the log file, *ProactivePreInstall.log*, on the desktop and correct errors before trying to upgrade the Service Statistics Manager server again.

**Step 8** Click **Next**. The following appear:

- Setup status.
- A message explaining that the upgrade can take a long time.
- Completion status.

**Step 9** Click **Finish**.

**Step 10** Complete these tasks:

**Note**

---

To put the changes made in steps b, c, and d into effect, you must restart the Service Statistics Manager server (as directed in step e).

---

- Stop the Service Statistics Manager server by selecting **All Programs > Cisco Unified Service Statistics Manager > Stop Server**.
- Copy the Service Statistics Manager upgrade license file to the server, into this directory:  
*Installation Directory*\pw\licenses\cisco\etc\licenses.
- Enable SSL:
  - Make sure that you have completed the steps in [Installing Win32 OpenSSL on the Server System, page 8](#).
  - Copy the *ssleay32.dll*, *libeay32.dll*, and *openssl.exe* files (located in the *OpenSSL Win32 Installation Directory*\bin folder) to the *Service Statistics Manager Installation Directory*\pw\ApacheGroup\Apache\bin folder.
  - Copy the *openssl.cnf* file (located in the *OpenSSL Win32 Installation Directory*\conf folder) to the *Service Statistics Manager Installation Directory*\pw\ApacheGroup\Apache\conf folder.
- If Operations Manager uses an SSL port other than 443, perform these steps on the Service Statistics Manager server:
  - Navigate to this directory: *Installation Directory*\pw\reports\cache.
  - In the *pronet.conf* file, find this line: *pronet.ssm.om.port.https=443*.
  - Replace 443 with the SSL port that Operations Manager uses.

- e. Restart the Service Statistics Manager server by selecting **All Programs > Cisco Unified Service Statistics Manager > Start Server**.
- f. Close any existing browser sessions.

**Step 11** Before you continue, wait for 30 minutes when both of the following are true:

- You performed the upgrade on a server where Operations Manager is also installed.
- You restarted the Windows server.

Waiting enables Operations Manager processes to come up fully and ensures a proper response during your initial post-upgrade login to Service Statistics Manager. (If you are unable to log in, restart the Service Statistics Manager server.)

**Step 12** Log in to Service Statistics Manager to verify that it was upgraded correctly. See [Logging In to Cisco Unified Service Statistics Manager, page 20](#).

**Step 13** Upgrade the SSM Agent on any other systems where it is installed. See [Upgrading the SSM Agent, page 19](#).

**Step 14** Wait 15 minutes after the upgrade, then run discovery. (See [Running Discovery, page 27](#).)

---

## Upgrading the SSM Agent

The SSM Agent is already upgraded on the system where you upgraded the Service Statistics Manager server. (See [Upgrading to Service Statistics Manager 9.0, page 17](#).) However, you need to upgrade each additional server where the SSM Agent is installed. (The server where Operations Manager runs and each server where Service Monitor runs must have an SSM Agent installed on it.)

**Step 1** From a browser on the Operations Manager or Service Monitor system where you will upgrade the SSM Agent, log in to Service Statistics Manager as an admin user. See [Logging In to Cisco Unified Service Statistics Manager, page 20](#).

**Step 2** Download the SSM Agent image and start the installation:

- a. Select the **Administration** tab.



**Note** If you want more detailed installation instructions than those presented in this procedure, click **Help** from the Administration tab.

---

- b. Under Downloads, click **Agent.exe**. A File Download window appears.
- c. Do one of the following:
  - Click **Save** and save Agent.exe to the desktop; then double-click the **Agent.exe** file to start the installation.
  - Click **Open**. Some time might elapse while the Agent.exe file downloads.

An InstallShield window appears with a welcome message.

**Step 3** Follow the online prompts to complete the installation. For more information, see the online help.

---

## Upgrading the SSM Administration Console

The SSM Administration Console is already upgraded on the server where you upgraded the Service Statistics Manager server. (See [Upgrading to Service Statistics Manager 9.0, page 17](#).) However, if SSM Administration Console is installed on another server, you must upgrade it.

**Step 1** From a browser on the system where you will upgrade SSM Administration Console, log in to Service Statistics Manager as an admin user. See [Logging In to Cisco Unified Service Statistics Manager, page 20](#).

**Step 2** Download the SSM Administrator Console image and start the installation:

- a. Select the **Administration** tab.



---

**Note** If you want more detailed installation instructions than those presented in this procedure, click **Help** from the Administration tab.

---

- b. Under Downloads, click **Admin.exe**. A File Download window appears.
- c. Do one of the following:
  - Click **Save** and save Admin.exe to the desktop; then double-click **Admin.exe** to start the installation.
  - Click **Open**. Some time might elapse while Admin.exe downloads.

An InstallShield window appears with a welcome message.

**Step 3** Follow the prompts on the windows to complete the installation. (For more information, see the online help.)

---

## 6 Logging In to Cisco Unified Service Statistics Manager

---

**Step 1** In your browser, type one of the following addresses:

`http://servername:48101`

`https://servername:48443`

where

- `servername` is the IP address or DNS name of the server where Service Statistics Manager resides
- 48101 is the HTTP Web Server port
- 48443 is the secure HTTP Web Server port



---

**Note** Verify that OpenSSL Win32 is enabled, by logging in using this address: `https://https://servername:48443`.

---

A login page is displayed.

**Step 2** Enter the username and password for the default administrative user:

- User ID: `admin`
- Password: *as entered during installation*

The Service Statistics Manager home page appears. (If you installed Service Statistics Manager for evaluation, a message window displays the number of days left in the evaluation period; click **OK**. For information about your license, click the **About** link at the top of the window.)



---

**Note** The default admin user has access to all licensed features of Service Statistics Manager and SSM Administration Console. To change the password for the default admin user, select the **Administration** tab and click the **Edit** link in the User ID and Password pane. (To create additional users, log into SSM Administration Console.)

---

## Starting SSM Administration Console

---

**Step 1** Log into the system where SSM Administration Console is installed.

**Step 2** Make whichever of these selections is available:

- Start > Programs > Cisco Unified Service Statistics Manager > Cisco Unified Service Statistics Manager Admin
- Start > Programs > Cisco Unified Service Statistics Manager Admin 9.0 > Cisco Unified Service Statistics Manager Admin

The SSM Administration Console login page appears.



**Note** If you installed Service Statistics Manager for evaluation, a message indicating the number of days left in the evaluation period is displayed; click **OK**.

**Step 3** Enter the username and password for the default administrative user:

- User ID: admin
- Password: *as entered during installation*

The SSM Administration Console home page appears.

To add a user, right-click the **Users** folder and select **Add**. For more information, click **Help**.



**Note** If you encounter problems, see [Administration Console Troubleshooting Tips, page 21](#).

## Administration Console Troubleshooting Tips

Use the information in [Table 8](#) to troubleshoot problems encountered when displaying or using the SSM Administration Console.

**Table 8** *SSM Administration Console Troubleshooting*

| Symptom                                                                                                          | Cause                                                                                                                                        | Resolution                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The message Invalid Login/Password is displayed although a valid login name and password were entered correctly. | Multiple logins to the same account, or other activities at Service Statistics Manager Server.                                               | Close Service Statistics Manager server windows and terminals; log out of the account if already logged in elsewhere. If still unsuccessful, verify that Service Statistics Manager servers are running. |
| Logon screen does not appear.                                                                                    | Service Statistics Manager server processes are not running.                                                                                 | Verify that all Service Statistics Manager server processes are running.                                                                                                                                 |
|                                                                                                                  | Network connection does not allow access.                                                                                                    | Check network operation between the Web browser system and the Service Statistics Manager server.                                                                                                        |
| Cannot refresh the SSM Administration Console to show changes (new folders).                                     | Accessing the SSM Administration Console from a remote Windows machine using a remote control application which might not refresh correctly. | Minimize the remote control application and then display again. This refreshes the screen.                                                                                                               |

## 7 Post-Installation Configuration

Before you configure Service Statistics Manager, configure Operations Manager and Service Monitor to ensure that data is available for Service Statistics Manager reports. If you have already configured Operations Manager and Service Monitor, verify the configuration. Use these procedures:

- [Configuring Operations Manager, page 22](#)
- [Configuring Service Monitor, page 24](#)

After you verify the Operations Manager and Service Monitor configurations, configure Service Statistics Manager; see [Configuring Service Statistics Manager, page 26](#).

# Configuring Operations Manager



---

**Note** If you have already configured Operations Manager, verify the configuration starting with [Step 6](#) of the following procedure.

---

For complete instructions, see the online help for Operations Manager.

---

**Step 1** Add these types of devices to Operations Manager and allow inventory collection to complete:

- H323 gateways
- MGCP gateways
- Cisco Unified Communications Manager



---

**Note** Include the Unified Communications Managers that will be managed by each Service Monitor.

---

- Cisco Unified Communications Manager Express
- Cisco Unity
- Cisco Unity Express
- Cisco Unity Connection



---

**Note** For devices that Operations Manager supports, see *Supported Devices Table for Cisco Unified Operations Manager* at this URL:  
[http://www.cisco.com/en/US/products/ps6535/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/ps6535/products_device_support_tables_list.html).

---

**Step 2** To verify that inventory collection is complete, select **Devices > Device Management**. There should be no devices in the Inventory Collection in Progress state on the Device Management: Summary page.

**Step 3** Enable performance polling. Repeat these steps for each type of device that you added:

- From the Service Level View, select and right-click one of these types of devices:
  - Unified Communications Manager
  - Unified Communications Manager Express
  - H323 gateway
  - MGCP gateway
  - Cisco Unity
  - Cisco Unity Express
  - Cisco Unity Connection
- Select **Polling Parameters**. An Edit Polling Parameters window appears, displaying the highest priority device group to which the device belongs.



---

**Note** When you edit polling parameters, you edit settings that are associated with a device group, not with an individual device.

---

- Select the **Voice Utilization Settings** parameter type and select the **Polling Enabled** check box in the column heading.
- To save your changes, click **Save**.
- If you need to enable polling for additional device types, close the Edit Polling Parameters window by clicking **Cancel**, and return to the start of [Step 3](#). Otherwise, click **Apply** to apply all saved changes to the system.




---

**Note** Applying changes is a CPU-intensive event that might take between one and five minutes to complete.

---

Operations Manager starts performance polling after the configuration is applied.

**Step 4** Configure any node-to-node tests that you would like.

**Step 5** Add Service Monitor to Operations Manager.




---

**Note** Even when Service Monitor is installed on the same system, you must still add it to Operations Manager.

---

**Step 6** Verify that each Service Monitor that interests you has been added to Operations Manager; to do so, select **UC Management Suite > Service Monitor**.

**Step 7** Confirm that performance polling data is available by viewing performance graphs. Repeat these steps for each type of device that you added to Operations Manager:

- a. From the Service Level View, select and right-click one of these types of devices:
  - Unified Communications Manager
  - Unified Communications Manager Express
  - H323 gateway
  - MGCP gateway
  - Cisco Unity
  - Cisco Unity Express
  - Cisco Unity Connection




---

**Note** To find a device in which you are interested, search for the device by name or locate it in the tree view or the map view.

---

- b. Select **Performance**; one of the following occurs:
  - A message is displayed stating that performance polling is not enabled for the device. In this case, go to [Step 3](#).
  - The **Select Metrics** dialog box appears; in this case, continue to [Step 7c](#).
- c. Select some representative metrics (see the table below) and click **View Graph**. The presence of data in the graph confirms that performance polling data is available.

| Device Type                            | Suggested Performance Metrics to Select                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Unified Communications Manager         | Active Calls (Number)<br>Total CPU Usage (Percentage)<br>T1 CAS Channel Utilization (Percentage)                        |
| Unified Communications Manager Express | CPU 1 last 1 minute Usage (Percentage)<br>Processor memory Usage (Percentage)<br>I/O memory Usage (Percentage)          |
| H323 gateways                          | FXS Port Utilization (Percentage)<br>E1 CAS Channel Utilization (Percentage)<br>Processor memory Usage (Percentage)     |
| MGCP gateways                          | FXS Port Utilization (Percentage)<br>T1 PRI Channel Utilization (Percentage)<br>E1 PRI Channel Utilization (Percentage) |

| Device Type            | Suggested Performance Metrics to Select                   |
|------------------------|-----------------------------------------------------------|
| Cisco Unity            | Total CPU Usage (Percentage)<br>Memory Usage (Percentage) |
| Cisco Unity Express    | CPU 1 last 1 minute Usage (Percentage)                    |
| Cisco Unity Connection | Total CPU Usage (Percentage)<br>Memory Usage (Percentage) |

- Step 8** To confirm that node-to-node test data is available, view performance graphs from Operations Manager:
- a. Select **Diagnostics > Node-to-Node Tests**.
  - b. Select a test and click **Trend**. The presence of data in the graph confirms that data is available for the selected node-to-node test.

## Configuring Service Monitor

Service Statistics Manager uses the data that Service Monitor collects from Unified Communications Managers and from sensors (1040s and NAMs). See these topics:

- [Configuring Service Monitor to Collect Data from Unified Communications Manager, page 24](#)
- [Configuring Service Monitor to Categorize Call Data from Unified Communications Manager, page 25](#)
- [Configuring Service Monitor to Collect Sensor-Based Data, page 26](#)
- [Configuring Call Quality Grading on Service Monitor, page 26](#)

### Configuring Service Monitor to Collect Data from Unified Communications Manager

For supported versions of Unified Communications Manager and for required Cisco Unified IP phone models—those that support the Cisco Voice Transmission Quality (CVTQ) algorithm—see *Cisco Prime Unified Service Monitor 9.0 Compatibility Matrix* at this URL: [http://www.cisco.com/en/US/products/ps6536/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/ps6536/products_device_support_tables_list.html).

For complete instructions, see the online help for Service Monitor.



**Note** If you have already configured Service Monitor to collect data from Unified Communications Manager, verify the configuration starting with [Step 5](#) of the following procedure.

**Step 1** Confirm that the Unified Communications Managers exist in Operations Manager device inventory.

**Step 2** Make sure that up-to-date patches have been applied to the Unified Communications Managers:

- Check <http://www.cisco.com> for the most recent patches.
- See *Release Notes for Cisco Prime Unified Service Monitor 9.0* for a list of recommended patches and workarounds for Unified Communications Manager.

**Step 3** Configure Unified Communications Managers for use with Service Monitor.



**Note** Required configuration steps vary depending on the Unified Communications Manager software version. For more information, see Unified Communications Manager Configuration in *User Guide for Cisco Prime Unified Service Monitor 9.0*.

**Step 4** Add credentials for each Unified Communications Manager publisher server to Service Monitor.



- Step 5** Verify that the configuration is successful in Service Monitor:
- From the Unified Communications Manager Credentials page, confirm that the status for each Unified Communications Manager is Success. If not, take steps to establish contact, including correcting the credentials and verifying that Unified Communications Manager is correctly configured for use with Service Monitor.
  - Run a CVTQ report, including all Unified Communications Managers in the report filter. If the report contains expected data, the configuration is successful.
- Step 6** Configure Service Monitor to categorize calls for the cluster. See [Configuring Service Monitor to Categorize Call Data from Unified Communications Manager, page 25](#).
- 



**Note** To add NAMs and Cisco 1040s to Service Monitor, see [Configuring Service Monitor to Collect Data from NAMs, page 26](#) and [Configuring Service Monitor to Collect Data from Cisco 1040s, page 26](#).

---

## Configuring Service Monitor to Categorize Call Data from Unified Communications Manager

Service Statistics Manager reports that are based on the Call Volume monitor display calls by category. Service Monitor provides the categorized call data for such reports. By default, Service Monitor categorizes calls into default, system-defined call categories, such as voice gateway or trunk incoming (VG/Trunk-Incoming), intercluster trunk (ICT), Tandem, and so on. To enable Service Monitor to additionally categorize calls into user-definable call categories—such as Local, Long Distance, International and so on—you must define call classification. Call classification configuration includes the following:

- Gateway codes—Assign area codes to any of the gateways that are known to Service Monitor. When you define dial patterns, you can use gateway codes to differentiate between local and long-distance calls, for example.
- Dial plans—A dial plan includes a name, any toll free numbers, and dial patterns that you assign to user-definable call categories. At a minimum, configure one dial plan. Alternatively, configure multiple dial plans, designing each for a specific cluster.
- Assignment of dial plans to clusters.

Configure call classification from the Configuration tab in Service Monitor as follows.

---

- Step 1** Configure gateway codes.
- Step 2** Configure dial plans. In a dial plan:
- Optionally, configure a list of toll free numbers.
  - Configure dial patterns that enable Service Monitor to categorize calls into user-definable call category types:
    - Conference
    - International
    - Emergency
    - Local
    - Long Distance
    - Service
    - Toll Free
    - Voicemail
- Step 3** Assign an appropriately configured dial plan to each cluster in Service Monitor.
- Step 4** Verify the call classification configuration by running CDR Call Reports from the Reports tab in Service Monitor. CDR Call Reports show calls by category.
-

## Configuring Service Monitor to Collect Sensor-Based Data

Service Monitor can collect and analyze data from Cisco 1040 Sensors (Cisco 1040s) and Cisco Network Analysis Modules (NAMs).

### Configuring Service Monitor to Collect Data from NAMs

For Service Monitor to collect data from a Cisco Network Analysis Module (NAM):

- 
- Step 1** Configure an http or https server on the NAM and enable RTP stream monitoring on it.
  - Step 2** Add credentials for the NAM to Service Monitor.
- 

For more information, see *User Guide for Cisco Prime Unified Service Monitor 9.0*.

For supported versions of NAM hardware and software, see *Cisco Prime Unified Service Monitor 9.0 Compatibility Matrix*.

### Configuring Service Monitor to Collect Data from Cisco 1040s

For Cisco 1040 Sensor installation procedures and regulatory compliance and safety information, see *Quick Start Guide for Cisco 1040 Sensor*. (Be sure to configure DHCP and DNS for Cisco 1040s as directed in the quick start guide.)

To configure Service Monitor to obtain data from Cisco 1040s, you must:

- 
- Step 1** Add at least one TFTP server to Service Monitor.
  - Step 2** Edit the Cisco 1040 sensor default configuration file.
  - Step 3** Copy the binary image to the root location on the TFTP server.
  - Step 4** Verify that the configuration is successful on Service Monitor:
    - a. From the Cisco 1040 Sensor Details page, confirm that the Registered with column for each sensor contains an IP address. If not, take steps to establish contact. (For more information, see the online help.)
    - b. Run a sensor report, including all Cisco 1040s in the report filter. If the report contains expected data, the configuration is successful.
- 

For supported binary images, see *Cisco Prime Unified Service Monitor 9.0 Compatibility Matrix*.

## Configuring Call Quality Grading on Service Monitor

Call grading is based on the global threshold settings in Service Monitor. Verify that the MOS settings in the global threshold settings of Service Monitor are configured as desired (for more information, see *User Guide for Cisco Unified Service Statistics Manager 9.0*).

## Configuring Service Statistics Manager

Before you configure Service Statistics Manager:

- SSM Agent must be installed on the Operations Manager server and on the Service Monitor servers. (See [Installing SSM Agent, page 13](#).)
- Operations Manager and Service Monitor must be configured as described in [Configuring Operations Manager, page 22](#) and [Configuring Service Monitor, page 24](#).

For complete instructions, see the online help for Service Statistics Manager.

- 
- Step 1** Run discovery from Service Statistics Manager. (See [Running Discovery, page 27](#).)

- Step 2** Confirm the status of the SSM Agents that you installed on Operations Manager and each Service Monitor that has been added to Operations Manager:
- In Service Statistics Manager, select the **Administration** tab and scroll to Advanced.
  - Click the Operations Manager/Service Monitor Details **Show** link. The Operations Manager/Service Monitor Details window appears. The status for each SSM Agent—one for Operations Manager and one for each Service Monitor—should be green. Green indicates that the SSM Agent is connected to and communicating with Service Statistics Manager.
  - If an SSM Agent Status is red, a user with Administrator role should access the SSM Administration Console and perform troubleshooting; see instructions in *User Guide for Cisco Unified Service Statistics Manager 9.0*.

After each SSM Agent status is green, Service Statistics Manager is configured correctly.



---

**Note** Service Statistics Manager reports are generated once daily at 6:45 a.m. and are available the day after you complete steps 1 and 2. At that time, view daily Service Statistics Manager reports to verify that Operations Manager and Service Monitor are configured correctly to provide information to Service Statistics Manager and perform additional configuration, if necessary.

---

- Step 3** The day after you configure Service Statistics Manager, view some daily reports (weekly and monthly reports will not be available yet). View reports with data from:
- Service Monitor:
    - Call Traffic and Duration Across Clusters—Daily.
    - Call Volume Report on H.323 Gateways.
  - Operations Manager:
    - Detailed Performance—Daily. This report contains data for these device types: Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Express, Cisco Unity Connection.

---

## Running Discovery

Only one NIC is supported on your system. Before you start, make sure that only one NIC is enabled. If more than one NIC card is enabled, discovery can fail.

---

**Step 1** If Cisco Security Agent is running on your system, disable it. If the Operations Manager or the Service Monitors that are being discovered are on another server, disable Cisco Security Agent on those systems, too.

**Step 2** Start discovery and allow it to complete. This might take some time.



---

**Note** If discovery fails and more than one NIC is enabled, disable all but one NIC, go into the SSM Administration Console and delete the SSM Agent for Operations Manager, and start discovery again. (Do not delete SSMServer. It is the local SSM Agent on the Service Statistics Manager server and must always appear in the SSM Agents folder.)

---

**Step 3** If you disabled Cisco Security Agent in [Step 1](#), re-enable it on the Service Statistics Manager server and any other server on which you disabled it.



---

**Note** During initial discovery only, Service Statistics Manager collects ten records for the previous hour from Service Monitor.

---

## Reconfiguring Selected Ports and Properties for Service Statistics Manager

After installation or upgrade, you can optionally reconfigure some ports and properties.

- Step 1** Log in to the Service Statistics Manager server as a Windows administrator.
- Step 2** Edit the *Installation Directory*\pw\pronto\conf\pronet.conf file and change the value any of the following variables:
- pronet.rmi.port=48099
  - pronet.jndi.port=48100
  - java.naming.provider.url=jnp://127.0.0.1:48100
- Step 3** To change the database port, edit the *Installation Directory*\pw\custom\conf\pronet.conf file and replace 48102 in this line:
- ```
pronet.api.database.portnum=48102
```
- Step 4** To change the value of the http Web Server port (default 48101), edit the *Installation Directory*\pw\ApacheGroup\Apache\conf\httpd.conf file; replace 48101 in these lines:
- ```
Port 48101
<IfDefine SSL>
Listen 48101
Listen 444
</IfDefine>
```
- Step 5** To change the value of the secure http Web Server port (default 48443), edit the *Installation Directory*\pw\ApacheGroup\Apache\conf\httpd-ssl.conf file; replace all three occurrences of 48443.
- Step 6** Restart the server by selecting **Start > Programs > Cisco Unified Service Statistics Manager > Start Server**.



**Note** It is not necessary to first select Stop Server, because Start Server restarts the server.

## Post-Installation Configuration Summary

Table 9 summarizes how to verify that Operations Manager, Service Monitor, Unified Communications Manager, and Service Statistics Manager are configured properly. To facilitate any corrections, Table 9 provides references back to steps in these sections:

- [Configuring Operations Manager, page 22](#)
- [Configuring Service Monitor, page 24](#)
- [Configuring Service Statistics Manager, page 26](#)

**Table 9 Configuration Checklist**

| Product            | Is configured correctly if...                                                                                                                                                                                                                                                                                                                                                                                                                                    | Configuration Procedures                                                                                                                                                                                                                                                                                                           |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operations Manager | <ul style="list-style-type: none"> <li>• Devices are in inventory and inventory collection is complete.</li> <li>• Performance graphs are available for: <ul style="list-style-type: none"> <li>– H323 and MGCP gateways and supported Unified Communications Applications.</li> <li>– Node-to-node tests.</li> </ul> </li> <li>• Service Monitor 9.0 has been added to Operations Manager and you can see data on the Service Quality Alert Display.</li> </ul> | <a href="#">Configuring Operations Manager, page 22:</a> <ul style="list-style-type: none"> <li>• <a href="#">Step 1 on page 22</a></li> <li>• <a href="#">Step 2 on page 22</a></li> <li>• <a href="#">Step 3 on page 22</a></li> <li>• <a href="#">Step 4 on page 23</a></li> <li>• <a href="#">Step 5 on page 22</a></li> </ul> |

**Table 9 Configuration Checklist (continued)**

| Product                        | Is configured correctly if..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Configuration Procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unified Communications Manager | <ul style="list-style-type: none"> <li>• Latest patches are installed.</li> <li>• Applicable version-specific configuration is complete as detailed in <i>User Guide for Cisco Prime Unified Service Monitor 9.0</i>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      | <a href="#">Configuring Service Monitor, page 24:</a> <ul style="list-style-type: none"> <li>• <a href="#">Step 2 on page 24</a></li> <li>• <a href="#">Step 3 on page 24</a></li> </ul>                                                                                                                                                                                                                                                                                            |
| Service Monitor                | <ul style="list-style-type: none"> <li>• Credentials status for Unified Communications Manager is Success.</li> <li>• Data appears in CVTQ reports.</li> <li>• Cisco 1040s are registered with Service Monitor.</li> <li>• Data appears from Cisco 1040s and NAMs in Sensor Reports.</li> <li>• Calls are categorized correctly in CDR Call Reports.</li> <li>• Call quality grading information is collected.</li> </ul>                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• <a href="#">Configuring Service Monitor to Collect Data from Unified Communications Manager, page 24</a></li> <li>• <a href="#">Configuring Service Monitor to Categorize Call Data from Unified Communications Manager, page 25</a></li> <li>• <a href="#">Configuring Service Monitor to Collect Data from Cisco 1040s, page 26</a></li> <li>• <a href="#">Configuring Service Monitor to Collect Data from NAMs, page 26</a></li> </ul> |
| Service Statistics Manager     | <ul style="list-style-type: none"> <li>• SSL is configured for communicating with Operations Manager. (If Operations Manager uses an SSL port other than 443, follow the instructions for changing the value of <code>pronet.ssm.om.port.https</code> in the <code>pronet.conf</code> file; instructions are provided in the procedures for installing, upgrading, and reinstalling the Service Statistics Manager server.)</li> <li>• Discovery is complete.</li> <li>• SSM Agent status is green for Operations Manager and each Service Monitor.</li> <li>• Daily reports contain data.</li> </ul> | <a href="#">Configuring Service Statistics Manager, page 26:</a> <ul style="list-style-type: none"> <li>• <a href="#">Step 1 on page 26</a></li> <li>• <a href="#">Step 2 on page 27</a></li> <li>• <a href="#">Step 3 on page 27</a></li> </ul>                                                                                                                                                                                                                                    |

## 8 Uninstalling and Reinstalling Service Statistics Manager

This section contains:

- [Uninstalling Service Statistics Manager, page 29](#)
- [Reinstalling Service Statistics Manager, page 30](#)

### Uninstalling Service Statistics Manager

This procedure removes Service Statistics Manager server, SSM Administration Console, and SSM Agent from the local server.



**Caution**

You must use the recommended uninstallation procedures to remove Service Statistics Manager from your system. If you try to remove the files and programs manually, you can seriously damage your system.

**Step 1** As the local administrator, log in to the system on which Service Statistics Manager is installed.

- Step 2** To start the uninstallation process, do one of the following:
- Select **Start > Programs > Cisco Unified Service Statistics Manager > Uninstall Cisco Unified Service Statistics Manager**.
  - Select **Start > Settings > Control Panel > Add/Remove Programs > Cisco Unified Service Statistics Manager**.
- The Cisco Unified Service Statistics Manager 9.0 Setup window appears.
- Step 3** Select the **Remove** radio button and click **Next**. The uninstallation begins; the Setup Status page displays the progress. When complete, the InstallShield Wizard Complete page appears.
- Step 4** Click **Finish**.
- Step 5** Restart your Windows system. Doing so prevents ports from being blocked and ensures that the Windows registry remains clean.
- 



**Note** To uninstall remote instances of SSM Agent and SSM Administration Console, use Add/Remove Programs from the Windows Control Panel on the remote systems and uninstall Service Statistics Manager Agent or Service Statistics Manager Admin.

---

## Reinstalling Service Statistics Manager

The existing database is preserved when you reinstall Service Statistics Manager. As a precaution, back up the system prior to copying and installing new files on your system. (Recommended procedures for backing up your system are included in the online help.)

Use this procedure if you need to install Service Statistics Manager 9.0 on a system where Service Statistics Manager 9.0 is already installed.



**Note** During the reinstallation, some messages might be displayed that refer to an upgrade even though you are actually installing the same software version.

---

- Step 1** As the local administrator, log in to the system on which Service Statistics Manager is installed.
- Step 2** To reinstall on a system where Operations Manager is installed, stop the daemon manager.
- Step 3** To start the reinstallation process, do one of the following:
- Select **Start > Programs > Cisco Unified Service Statistics Manager > Uninstall Cisco Unified Service Statistics Manager**.
  - Select **Start > Settings > Control Panel > Add/Remove Programs > Cisco Unified Service Statistics Manager**.
- The Welcome window appears.
- Step 4** Select **Reinstall/Upgrade** and click **Next**.
- Step 5** Follow the online prompts until the Setup Complete window appears.
- Step 6** If you stopped the daemon manager (see [Step 2](#)), start it again. Allow 30 minutes to elapse between the time that you restart the daemon manager and you log in to Service Statistics Manager (as directed in Step 8e).
- Step 7** Click **Finish**.
- Step 8** Configure Service Statistics Manager to communicate with Operations Manager as follows:
- a. Determine whether Operations Manager uses an SSL port other than 443 (the default SSL port).
  - b. If Operations Manager uses an SSL port other than 443, perform these steps:
    - Navigate to this directory: *Installation Directory*\pw\pronto\conf.
    - In the pronet.conf file, find this line: pronet.ssm.om.port.https=443.
    - Replace 443 with the SSL port that Operations Manager uses.

- c. Restart the Service Statistics Manager server by selecting **All Programs > Cisco Unified Service Statistics Manager > Start Server**.
- d. Close any existing browser sessions.
- e. Start your browser again and log in to Service Statistics Manager.



---

**Note** You must repeat [Step 8](#) any time you reinstall or upgrade Operations Manager or Service Statistics Manager.

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## 9 Where to Go Next

After you have installed Service Statistics Manager, you are ready to configure it and start reporting on IP telephony service quality, call volume, and resource utilization. For more information, see *User Guide for Cisco Unified Service Statistics Manager 9.0*.

You can access this document:

- At [http://www.cisco.com/en/US/products/ps7285/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps7285/products_user_guide_list.html).
- From the online help integrated into the product.

## 10 Related Documentation



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**Note** The originally published printed and electronic documentation is included with your product. Any changes after original publication are reflected on Cisco.com, where you will find the most up-to-date documentation.

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For information about installing, troubleshooting, and using the applications and tools in the Cisco Unified Communications Management Suite, see the sources of information described in [Table 10](#).

# 11 Obtaining Documentation and Submitting a Service Request

**Table 10** Related Documentation

| To learn more about...               | See this document                                                                                   | In the product package? | On Cisco.com? | In the online help? |
|--------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------|---------------|---------------------|
| The known product bugs (DDTSs)       | <i>Release Notes for Cisco Unified Service Statistics Manager 9.0</i>                               | No                      | Yes           | No                  |
|                                      | <i>Release Notes for Cisco Prime Unified Operations Manager 9.0</i>                                 | No                      | Yes           | No                  |
|                                      | <i>Release Notes for Cisco Prime Unified Service Monitor 9.0</i>                                    | No                      | Yes           | No                  |
|                                      | <i>Release Notes for Cisco Prime Unified Provisioning Manager 9.0</i>                               | No                      | Yes           | No                  |
| Performing a typical installation    | <i>Installation Guide for Cisco Prime Unified Operations Manager (includes Service Monitor) 9.0</i> | No                      | Yes           | No                  |
|                                      | <i>Installation Guide for Cisco Prime Unified Service Monitor 9.0</i>                               | No                      | Yes           | No                  |
|                                      | <i>Quick Start Guide for Cisco 1040 Sensor</i>                                                      | No                      | Yes           | No                  |
|                                      | <i>Installation Guide for Cisco Prime Unified Provisioning Manager 9.0</i>                          | No                      | Yes           | No                  |
| Features, tasks, and troubleshooting | <i>User Guide for Cisco Unified Service Statistics Manager 9.0</i>                                  | No                      | Yes           | Yes                 |
|                                      | <i>User Guide for Cisco Prime Unified Service Monitor 9.0</i>                                       | No                      | Yes           | No                  |
|                                      | <i>User Guide for Cisco Prime Unified Operations Manager 9.0</i>                                    | No                      | Yes           | No                  |

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly [What's New in Cisco Product Documentation](#), which also lists all new and revised Cisco technical documentation.

Subscribe to the [What's New in Cisco Product Documentation](#) as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

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