



Avaya Solution & Interoperability Test Lab

Application Notes for Empirix OneSight Health Monitor with Avaya Aura[™] Communication Manager 5.2.1 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Empirix OneSight Health Monitor to interoperate with Avaya Aura[™] Communication Manager 5.2.1. Empirix OneSight Health Monitor is a monitoring and management solution that can monitor and report on a variety of e-business components. In the compliance testing, Empirix OneSight Health Monitor used the SNMP interface from Avaya Aura[™] Communication Manager to provide system health monitoring.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for Empirix OneSight Health Monitor to interoperate with Avaya AuraTM Communication Manager 5.2.1. Empirix OneSight Health Monitor is a monitoring and management solution that can monitor and report on a variety of e-business components.

In the compliance testing, Empirix OneSight Health Monitor used the SNMP interface from Avaya AuraTM Communication Manager to provide system health monitoring data, such as number of alarms and busy hour call statistics.

The integration used SNMP version 2c.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the proper reporting of SNMP data by Empirix OneSight Health Monitor, including busy hour call, system occupancy, and number of alarms.

The serviceability testing focused on verifying the ability of Empirix OneSight Health Monitor to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to Empirix OneSight Health Monitor, and restarting the SNMP agent on Avaya AuraTM Communication Manager.

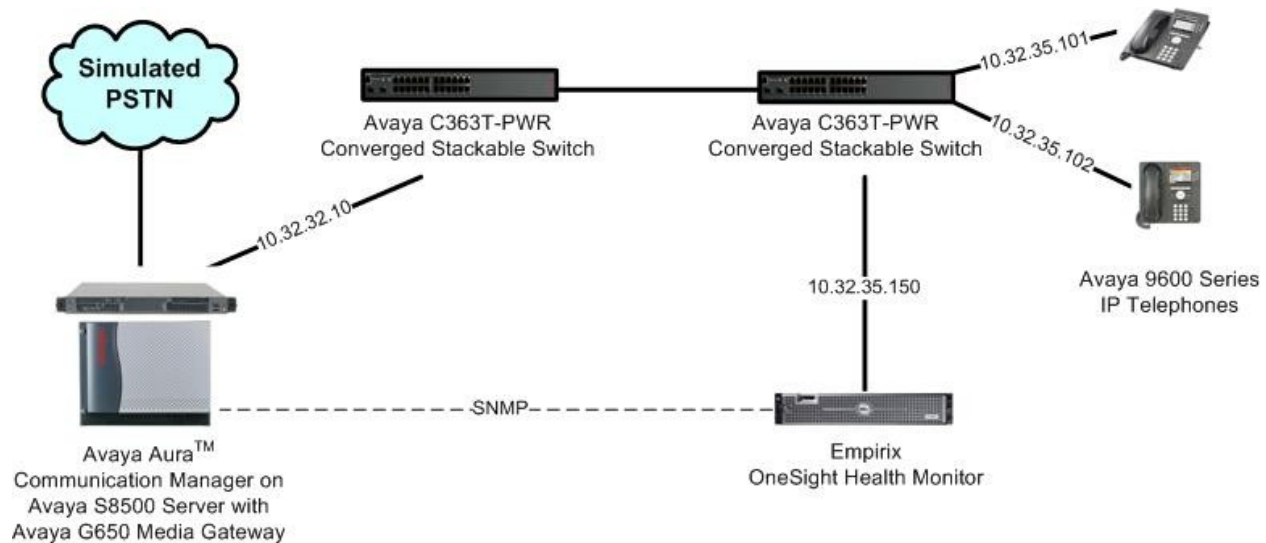
1.2. Support

Technical support on Empirix OneSight Health Monitor can be obtained through the following:

- **Phone:** (866) 367-4749
- **Email:** support@empirix.com
- **Web:** <http://esupport.empirix.com>

2. Reference Configuration

The configuration used for the compliance testing is shown below.



3. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya Aura™ Communication Manager on Avaya S8500 Server	5.2.1 (R015x.02.1.016.4-18433)
Avaya G650 Media Gateway <ul style="list-style-type: none">TN799DP C-LAN Circuit Pack	HW01 FW038
Avaya 9600 Series IP Telephones (H.323)	3.1
Empirix OneSight on Windows 2003 Server with Service Pack 2 <ul style="list-style-type: none">Database ServerAvaya S8xx0 Server SNMP MIB	7.3 SR1 Build Number 2135 Microsoft SQL Server 2005 5.2.1.0

4. Configure Avaya Aura™ Communication Manager

This section provides the procedures for configuring Avaya Aura™ Communication Manager. The procedures include the following areas:

- Launch maintenance web interface
- Administer firewall
- Administer SNMP agent
- Restart SNMP agent

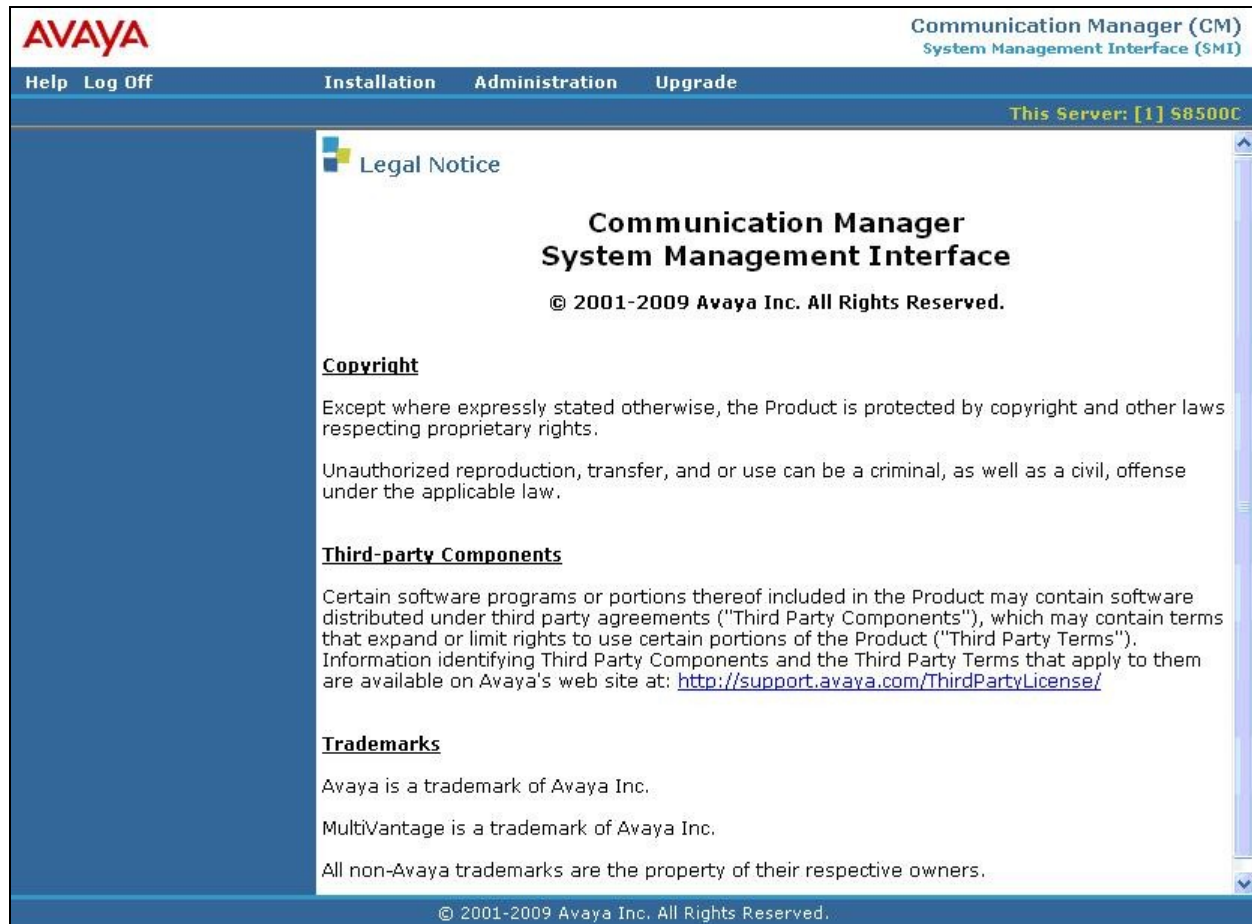
4.1. Launch Maintenance Web Interface

Access the Communication Manager web interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of Communication Manager. Log in using the appropriate credentials.

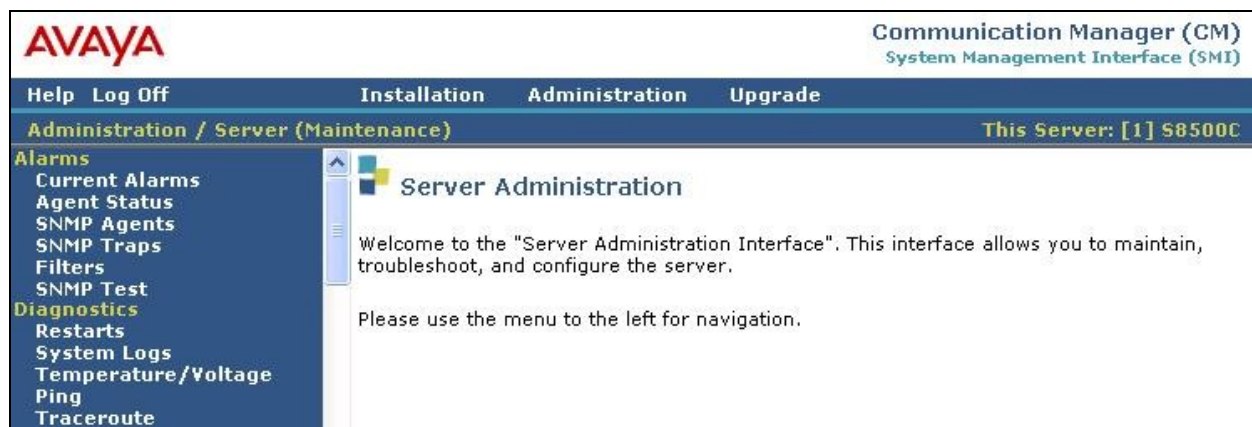


The screenshot displays the Avaya Communication Manager (CM) System Management Interface (SMI) login page. At the top left is the Avaya logo, and at the top right is the text "Communication Manager (CM) System Management Interface (SMI)". Below the logo is a "Help Exit" link. The main content area features a blue login box with the title "Logon". Inside the box, there are two input fields: "Logon ID:" and "Password:". A "Logon" button is located at the bottom right of the blue box. To the left of the login box is a small Avaya logo. At the bottom of the page, a footer bar contains the text "© 2001-2009 Avaya Inc. All Rights Reserved."

In the subsequent screen, select **Administration > Server (Maintenance)** from the top menu.



The **Server Administration** screen is displayed.



4.2. Administer Firewall

Select **Security > Firewall** from the left pane. The **Firewall** screen is displayed. Check the **Input to Server** and **Output from Server** fields for **snmp** and **snmptrap**, as shown below.

AVAYA Communication Manager (CM)
System Management Interface (SMI)

Help Log Off Installation Administration Upgrade

Administration / Server (Maintenance) This Server: [1] S8500C

Server Configuration
Display Configuration
Restore Defaults
Eject CD/DVD

Server Upgrades
Make Upgrade Permanent
Boot Partition
Manage Updates
BIOS Upgrade

IPSI Firmware Upgrades
IPSI Version
Download IPSI Firmware
Download Status
Activate IPSI Upgrade
Activation Status

Data Backup/Restore
Backup Now
Backup History
Schedule Backup
Backup Logs
View/Restore Data
Restore History
Format CompactFlash

Security
Administrator Accounts
Login Account Policy
Login Reports
Modem
Server Access
Syslog Server
License File
Authentication File
Firewall
Tripwire
Tripwire Commands
Install Root Certificate
SSH Keys
Web Access Mask

Media Gateways
Configuration

Miscellaneous
File Synchronization
IP Phones

Firewall

The Firewall Web page lets you enable network services on the corporate LAN interface to the Avaya server. Unselected services are automatically disabled.

WARNING: Some network services are required for proper operation of or access to the server. For additional details, click **Help**.

Please wait...

Input to Server	Output from Server	Service	Port/Protocol
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ftp	21/tcp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ssh	22/tcp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	telnet	23/tcp
<input type="checkbox"/>	<input checked="" type="checkbox"/>	domain	53/udp
<input type="checkbox"/>	<input type="checkbox"/>	bootps	67/udp
<input type="checkbox"/>	<input type="checkbox"/>	bootpc	68/udp
<input checked="" type="checkbox"/>	<input type="checkbox"/>	tftp	69/udp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	http	80/tcp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ntp	123/udp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	snmp	161/udp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	snmptrap	162/udp
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	https	443/tcp

4.3. Administer SNMP Agent

Select **Alarms > SNMP Agents** from the left pane, to display the **SNMP Agents** screen.

Select the radio button for **Following IP addresses**, and enter the IP address of Empirix OneSight Health Monitor in an available **IP address** line, as shown below.

Check **Enable SNMP Version 2c**, and enter a desired string in the corresponding **Community Name (read-only)** field.

The screenshot displays the Avaya Communication Manager (CM) System Management Interface (SMI). The top navigation bar includes 'Help', 'Log Off', 'Installation', 'Administration', and 'Upgrade'. The 'Administration' tab is selected, and the left sidebar shows a tree view with 'Alarms' > 'SNMP Agents' highlighted. The main content area is titled 'SNMP Agents' and contains the following information:

- Description:** The SNMP Agents Web page allows modification of SNMP properties. SNMP allows the active server to monitor the SNMP port for incoming requests and commands (gets and sets).
- Note:** Prior to making any configuration changes the Master Agent should be put in a Down state. The Master Agent Status is shown below for your convenience. Once the configuration has been completed, then the Master Agent should be placed in an Up state. Changes to both the configuration on the SNMP Agents and/or SNMP Traps pages should be completed before Starting the Master Agent. Please use the Agent Status page to Start or Stop the Master Agent.
- View G3-AVAYA-MIB Data** (link)
- Master Agent status:** Up
- IP Addresses for SNMP Access:**
 - ☐ No Access
 - ☐ Any IP address
 - ☒ Following IP addresses:
 - IP address1 : 10.32.35.150
 - IP address2 :
 - IP address3 :
 - IP address4 :
 - IP address5 :
- SNMP Users / Communities:**
 - ☐ **Enable SNMP Version 1**
 - Community Name (read-only) :
 - Community Name (read-write) :
 - ☒ **Enable SNMP Version 2c**
 - Community Name (read-only) : public
 - Community Name (read-write) :

4.4. Restart SNMP Agent

Select **Alarms > Agent Status** from the left pane, to display the **Agent Status** screen.

Check the **Master Agent status**. If the status is “Down”, then select **Start Agent**. If the status is “Up” (not shown), then select **Stop Agent**, followed by **Start Agent** in the subsequent screen to restart the SNMP agent.

The screenshot displays the Avaya Communication Manager (CM) System Management Interface (SMI). The top navigation bar includes 'Help', 'Log Off', 'Installation', 'Administration', and 'Upgrade'. The main header shows 'Administration / Server (Maintenance)' and 'This Server: [1] S8500C'. The left sidebar lists various system management options under categories like Alarms, Diagnostics, Server, and Server Configuration. The main content area is titled 'Agent Status' and provides information about the Master Agent and Sub Agents. The Master Agent status is 'Down', and a 'Start Agent' button is available. The Sub Agent Status section lists four agents (FP Agent, MVSubAgent, Load Agent, MIB2Agent) all with a status of 'UP'. A message states 'Sub Agents are NOT connected to the Master Agent.' and a 'Help' button is at the bottom.

Sub Agent Status	
FP Agent:	UP
MVSubAgent:	UP
Load Agent:	UP
MIB2Agent:	UP

5. Configure Empirix OneSight Health Monitor

This section provides the procedures for configuring Empirix OneSight Health Monitor. The procedures include the following areas:

- Launch web interface
- Administer monitor group
- Administer monitor

5.1. Launch Web Interface

Access the OneSight web interface by using the URL “http://ip-address:8080” in an Internet browser window, where “ip-address” is the IP address of the OneSight server. Log in using the appropriate credentials.

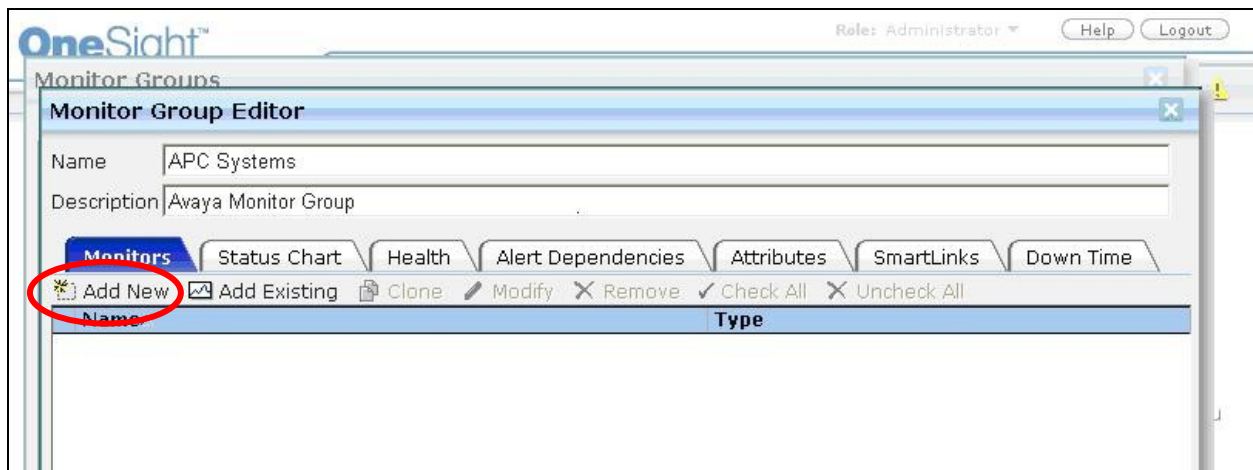
In the subsequent screen, select **I want to set up a monitor group now.**

5.2. Administer Monitor Group

The **Monitor Groups** screen is displayed. Click **Add** to create a new monitor group.

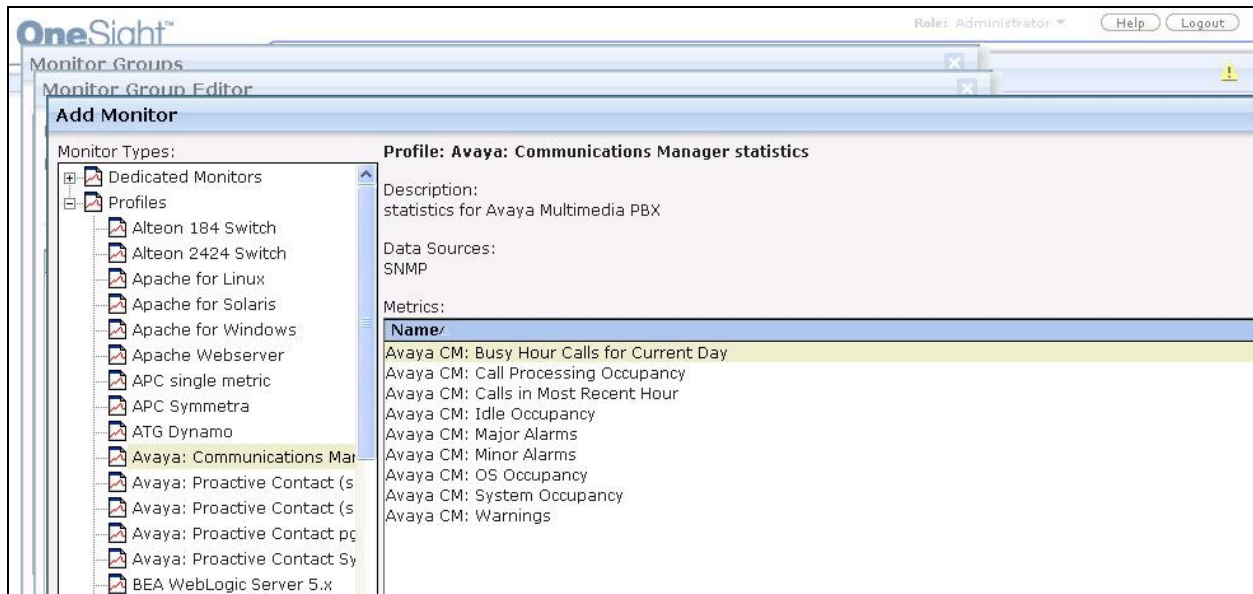


The **Monitor Group Editor** screen is displayed next. Enter desired **Name** and **Description**, and click **Add New**.

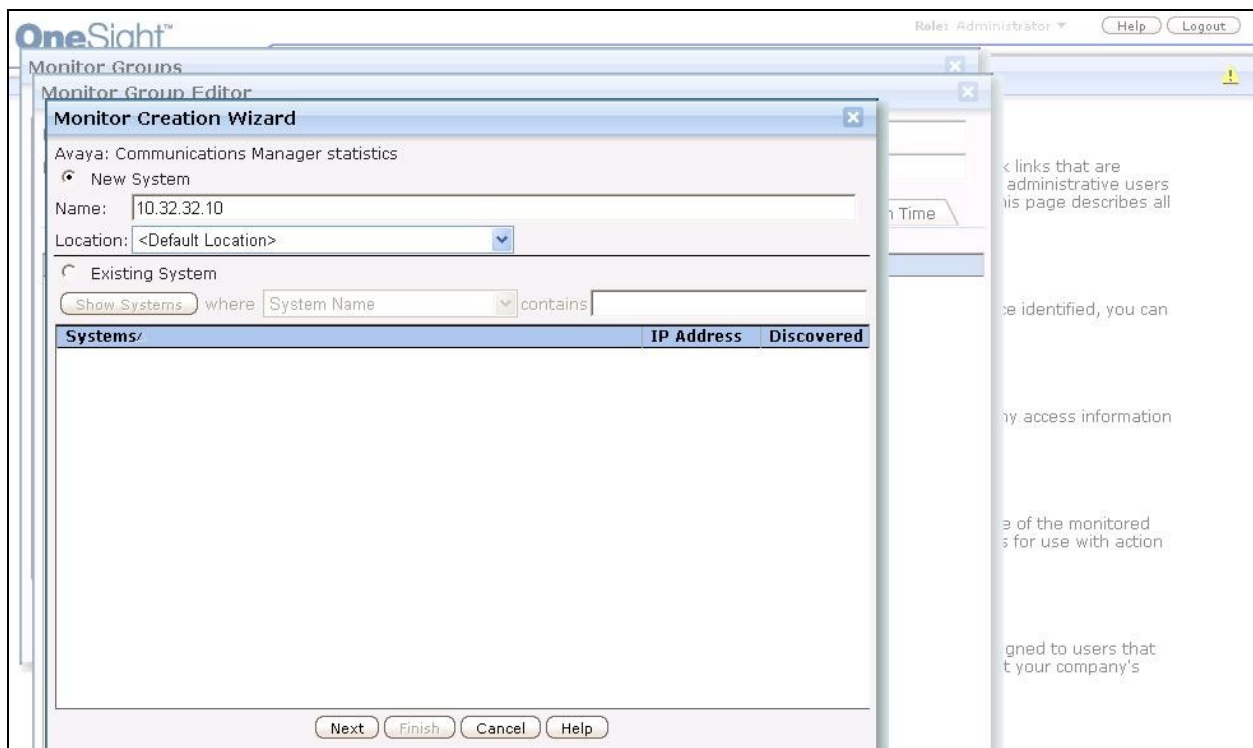


5.3. Administer Monitor

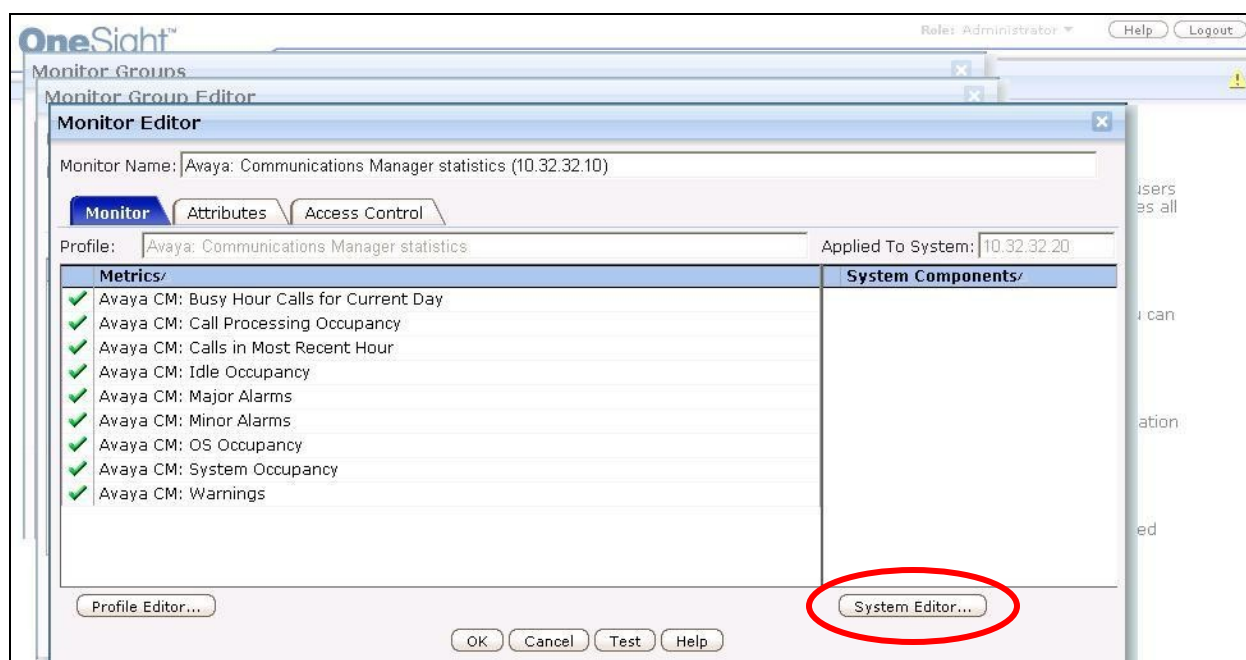
The **Add Monitor** screen is displayed. Select **Profiles > Avaya: Communication Manager statistics** from the left pane.



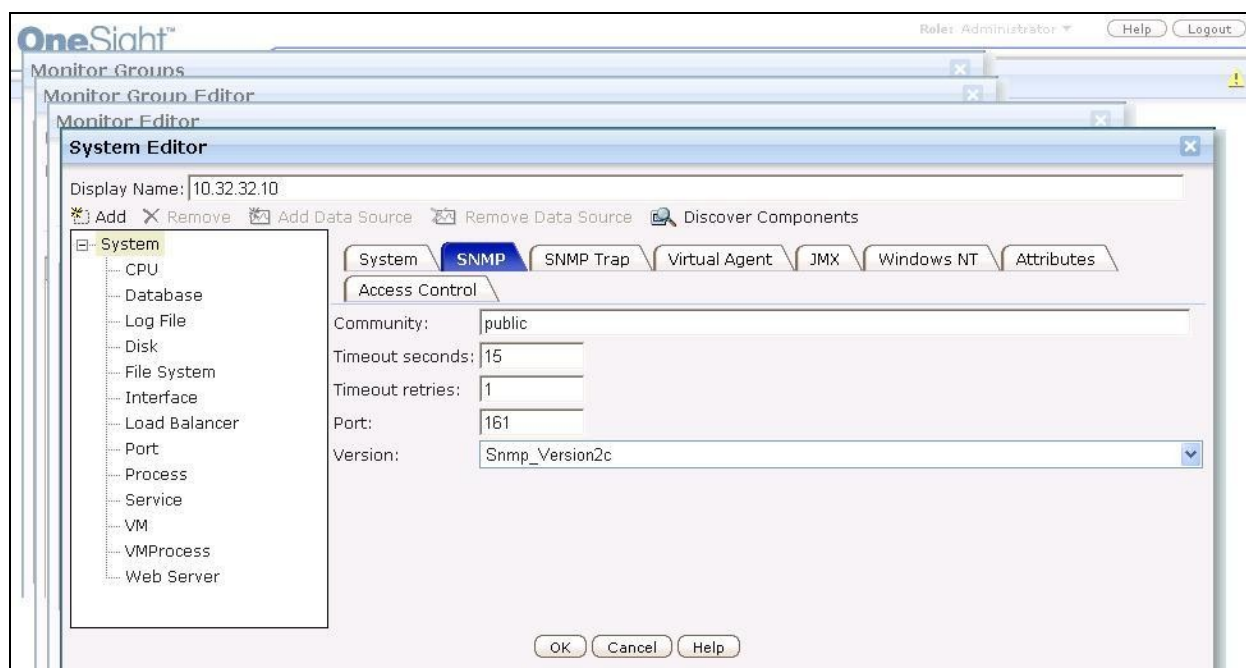
The **Monitor Creation Wizard** screen is displayed. For **Name**, enter the IP address of Communication Manager. Retain the default values in the remaining fields.



The **Monitor Editor** screen is displayed next. Click **System Editor**.



The **System Editor** screen is displayed. Select the **SNMP** tab. For **Community**, enter the community string from **Section 4.3**. For **Version**, select “Snmp_Version2c” from the drop-down list. Retain the default values in the remaining fields.



6. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Empirix OneSight Health Monitor automatically performed snmpget commands to obtain relevant SNMP data from Avaya Aura™ Communication Manager on a regular configurable interval. The reported data were compared to the data on Avaya Aura™ Communication Manager using the “list measurements” and “display alarms” commands from the System Access Terminal (SAT) interface.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cable to Empirix OneSight Health Monitor, and by restarting the SNMP agent on Avaya Aura™ Communication Manager.

All test cases were executed and passed.

7. Verification Steps

From the OneSight web interface, select **Status > General** from the top menu to display the monitors. Expand on **Avaya: Communications Manager statistics**, and verify that the reported values match to the values from the Avaya Aura™ Communication Manager SAT interface.

The screenshot displays the OneSight web interface. At the top, there is a navigation bar with 'Home', 'Status', 'Alerts', 'Reports', and 'Configure'. The 'Status' menu is expanded, showing 'Avaya: Communications Manager statistics'. Below this, there is a table of metrics for the 'Avaya: Communications Manager statistics (10.32.32.10)' monitor. The table has columns for 'Metric', 'Value', 'Last Measured', and 'Sample Every'. The 'Value' column shows various statistics such as 'Avaya CM: Busy Hour Calls for Current Day for 10.32.32.10' with a value of 8, 'Avaya CM: Call Processing Occupancy for 10.32.32.10' with a value of 0, 'Avaya CM: Calls in Most Recent Hour for 10.32.32.10' with a value of 8, 'Avaya CM: Idle Occupancy for 10.32.32.10' with a value of 96, 'Avaya CM: Major Alarms for 10.32.32.10' with a value of 2, 'Avaya CM: Minor Alarms for 10.32.32.10' with a value of 5, 'Avaya CM: OS Occupancy for 10.32.32.10' with a value of 0, 'Avaya CM: System Occupancy for 10.32.32.10' with a value of 1, and 'Avaya CM: Warnings for 10.32.32.10' with a value of 41. The 'Last Measured' column shows the time of the last measurement, and the 'Sample Every' column shows the interval between samples. The interface also includes a legend at the bottom indicating the status of the monitor: Good (green dot), Warning (yellow triangle), Critical (red diamond), Disabled (black square), Downtime (blue circle), and Unknown, no data, or waiting for first sample (grey square).

Monitor	Last Measured	Enable	Modify
Avaya: Communications Manager statistics (10.32.32.10)	2	<input checked="" type="checkbox"/>	<input type="button" value="Modify"/>
Metric	Value	Last Measured	Sample Every
Avaya CM: Busy Hour Calls for Current Day for 10.32.32.10	8	12:34:10 PM EDT	1 hr
Avaya CM: Call Processing Occupancy for 10.32.32.10	0	12:34:26 PM EDT	5 min
Avaya CM: Calls in Most Recent Hour for 10.32.32.10	8	12:34:34 PM EDT	1 hr
Avaya CM: Idle Occupancy for 10.32.32.10	96	12:31:16 PM EDT	5 min
Avaya CM: Major Alarms for 10.32.32.10	2	12:34:23 PM EDT	5 min
Avaya CM: Minor Alarms for 10.32.32.10	5	12:32:46 PM EDT	5 min
Avaya CM: OS Occupancy for 10.32.32.10	0	12:29:37 PM EDT	5 min
Avaya CM: System Occupancy for 10.32.32.10	1	12:32:33 PM EDT	5 min
Avaya CM: Warnings for 10.32.32.10	41	12:32:21 PM EDT	5 min

● Good ▲ Warning ◆ Critical ■ Disabled ● Downtime □ Unknown, no data, or waiting for first sample.

8. Conclusion

These Application Notes describe the configuration steps required Empirix OneSight Health Monitor to successfully interoperate with Avaya Aura™ Communication Manager 5.2.1. All feature and serviceability test cases were completed.

9. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administrator Guide for Avaya Aura™ Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at <http://support.avaya.com>.
2. *Empirix OneSight Administrator Guide*, Version 7.3, available upon request from Empirix technical support.
3. *Empirix OneSight Operator Guide*, Version 7.3, available upon request from Empirix technical support.

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