

Avaya Solution & Interoperability Test Lab

Application Notes for Virsae Service Management with Avaya Aura® Session Manager - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Virsae Service Management R174 to interoperate with Avaya Aura® Session Manager R10.1.

Virsae Service Management provides real-time monitoring and management solutions for IP telephony networks. Virsae Service Management provides visibility of Avaya and other vendor's IP Telephony solutions from a single console and enables a reduction in complexity when managing complex IP telephony environments.

Virsae Service Management uses Simple Network Management Protocol (SNMP) and Secure shell (SSH) to query Session Manager for information and status. At the same time, Virsae Service Management processes Real-time Transport Control Protocol (RTCP) from Avaya SIP endpoints and collects Call Detail Recording (CDR) information from each Session Manager.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 compliance tested configuration used to validate Virsae Service Management (herein after referred to as VSM) with Avaya Aura® Session Manager (herein after referred to as Session Manager). VSM is a cloud-based service management platform that brings visibility, service transparency and cost savings to Unified Communications environments over the short, medium and long term.

The Virsae product uses four integration methods to monitor Session Manager.

- Linux shell (SSH) Virsae uses SSH to collect configuration and status information from Session Manager.
- Real Time Transport Control Protocol (RTCP) collection Virsae collects RTCP information sent by Avaya SIP Deskphones.
- Call Detail Recording (CDR) collection Virsae collects CDR information via SFTP connection to Session Manager.
- SNMP collection VSM uses SNMP to capture the alarms.

VSM web user interface (dashboard) displays the configurations of Session Manager such as the memory and CPU utilizations, disk usage and status from data collected via SSH. For the collection of RTCP and CDR information, historical reporting is used. SNMP is used to receive information of alarms.

2. General Test Approach and Test Results

The general test approach was to place calls between Avaya SIP endpoints with other endpoints including internal extensions and PSTN. VSM dashboard and historical reporting was used to display the configuration, alarms, RTCP and CDR information collected.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and VSM utilized enabled encrypted capabilities of SFTP, SSH and non-encrypted SNMP as requested by Virsae.

This test was conducted in a lab environment simulating a basic customer enterprise network environment. The testing focused on the standards-based interface between the Avaya solution and the third-party solution. The results of testing are therefore considered to be applicable to either a premise-based deployment or to a hosted or cloud deployment where some elements of the third-party solution may reside beyond the boundaries of the enterprise network, or at a different physical location from the Avaya components.

Readers should be aware that network behaviors (e.g., jitter, packet loss, delay, speed, etc.) can vary significantly from one location to another and may affect the reliability or performance of the overall solution. Different network elements (e.g., session border controllers, soft switches, firewalls, NAT appliances, etc.) can also affect how the solution performs.

If a customer is considering implementation of this solution in a cloud environment, the customer should evaluate and discuss the network characteristics with their cloud service provider and network organizations and evaluate if the solution is viable to be deployed in the cloud.

The network characteristics required to support this solution are outside the scope of these Application Notes. Readers should consult the appropriate Avaya and third-party documentation for the product network requirements. Avaya makes no guarantee that this solution will work in all potential deployment configurations.

2.1. Interoperability Compliance Testing

For feature testing, VSM dashboard was used to view the configurations of Session Manager such as the memory and CPU utilizations, disk usage and status from data collected via SSH. For the collection of RTCP and CDR information, only SIP endpoints are included. The types of calls made included intra-switch calls, inbound and outbound trunk calls. Information on alarms were collected using SNMP.

For serviceability testing, reboots were applied to the VSM to simulate system unavailability. Loss of network connectivity to VSM was also performed during testing.

2.2. Test Results

All test cases passed successfully with the following observation.

• SIP Tracer Syslog was not sent by Session Manager. This is fixed on Session Manager 10.1.0.2.

2.3. Support

For technical support on Virsae Service Management, contact the Virsae Support Team at:

- Tel: +1 800 248 7080 (Americas) +44 0808 234 2729 (UK and Europe) +64 9 477 0696 (Asia Pacific)
- Email: support@virsae.com

3. Reference Configuration

Figure 1 illustrates the test configuration used to verify VSM interoperability with Communication Manager. The configuration consists of a Communication Manager system with an Avaya G430 Media Gateway. The system has H.323/SIP Deskphones and softphones configured for making and receiving calls. Avaya Aura® System Manager and Avaya Aura® Session Manager provided SIP support to the Avaya SIP endpoints. VSM was installed on a server running Microsoft Windows Server 2016. Architecturally the VSM Service relies on an appliance being placed on a corporate LAN and being configured to connect to a Unified Communication platform as well as the Microsoft Azure cloud via the internet. The VSM appliance contains Probe Service use to collect service management data. The VSM appliance acts as a collector and compresses, encrypts then forwards data from all sources to the Virsae cloud computing service. A PC/Laptop is used to access the Virsae portal to manage VSM services, add additional users and view reporting data on the equipment being managed.

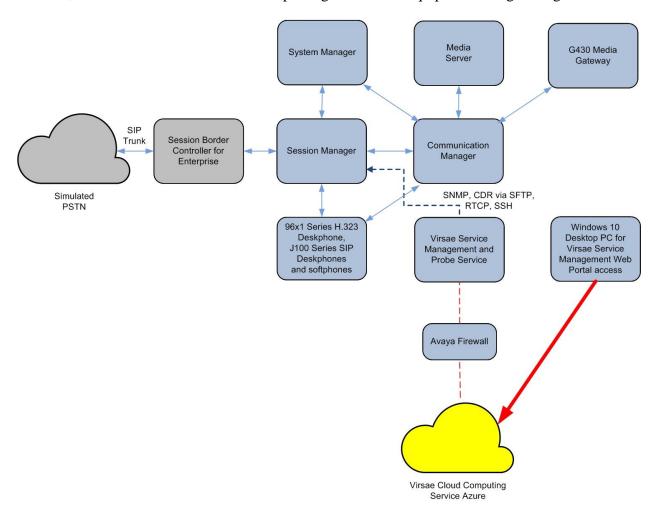


Figure 1: Test Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager	10.1
running on Virtual Server	(10.1.0.0.0.974.27293)
Avaya G430 Media Gateway	42.4.0
Avaya Aura® Media Server running on	10.1.0.77
Virtual Server	
Avaya Aura® Session Manager running on	10.1
Virtual Server	(10.1.0.0.1010019)
	10.1
Avaya Aura® System Manager running on	Build No 10.1.0.0.537353
Virtual Server	Software Update Revision
	No: 10.1.0.0.0614119
Avaya 96x1 Series (H.323)	6.8523
Avaya J100 Series (SIP)	4.0.11.0
Avaya Workplace Client for Windows (SIP)	3.27
Avaya Agent for Desktop (H.323)	2.0.6.22.3003
Virsae Service Management and Probe	174.1.2.268
Service running on Windows 2016	

5. Configure Avaya Aura® Session Manager

This section describes the steps needed to configure Session Manager to interoperate with VSM. This includes creating a login account for VSM to access Session Manager and enabling SNMP, RTCP and CDR.

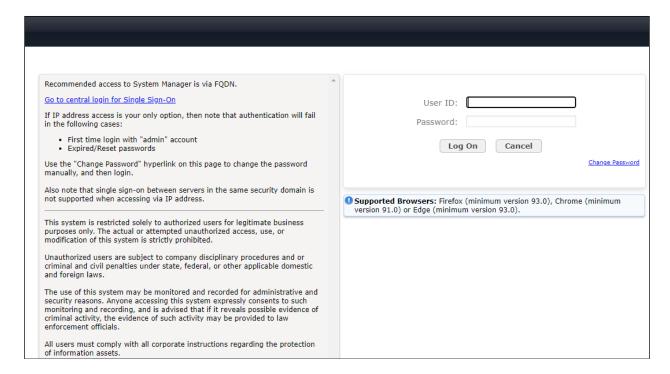
5.1. Configure Login Group

During compliance testing the default administrator account created during installation of Session Manager was used. This is because any account created after installation of Session Manager is not updated in the sudo users file system and therefore will not have administrative rights.

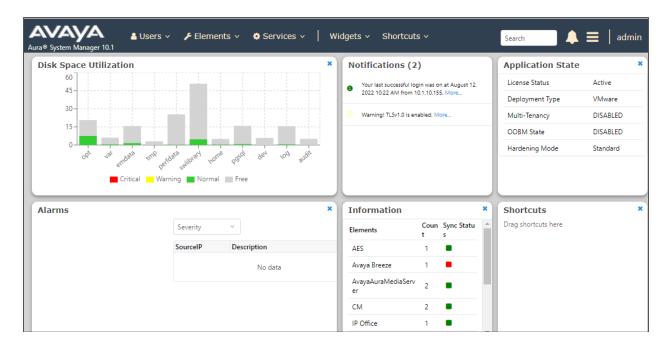
5.2. Configure SNMP

SNMP is used to capture alarms raised by Session Manager. All configurations to Session Manager are done via Avaya Aura® System Manager (System Manager).

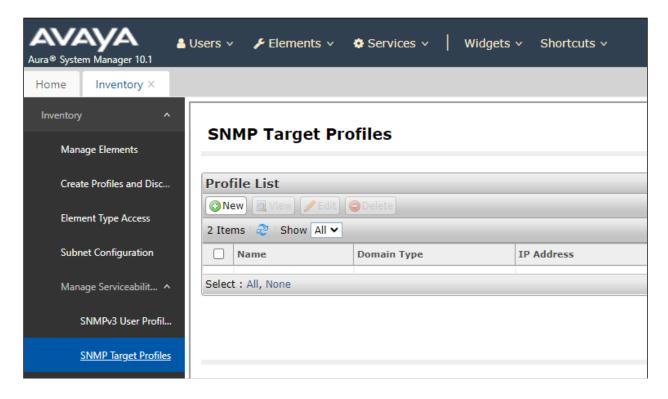
Using a web browser, enter https://<IP address of System Manager> to connect to the System Manager server and log in using appropriate credentials as shown below.



The main System Manager dashboard page is shown below.



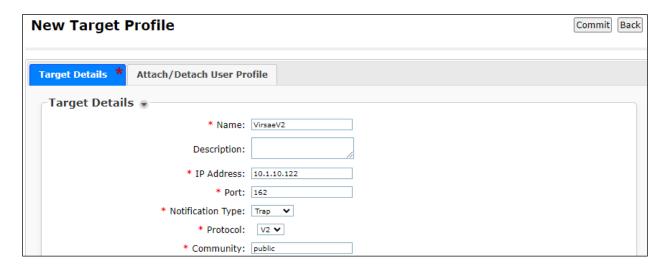
Navigate to Services \rightarrow Inventory \rightarrow Manage Servicability Agents \rightarrow SNMP Target Profiles as shown in the screen below. Click on New.



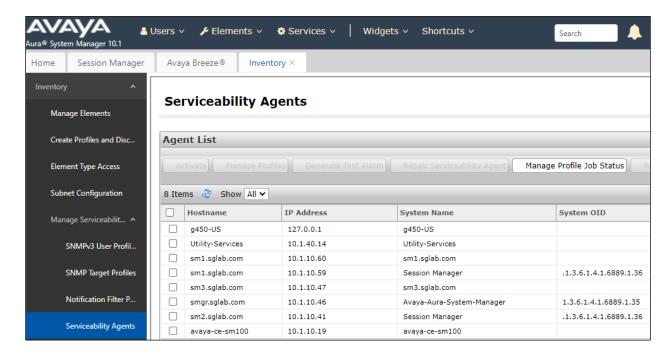
From the New Target Profile window, under the Target Details tab, configure the following.

- Name: A descriptive name.
- **IP Address:** The VSM IP address.
- **Notification Type:** Select **Trap** from the drop-down menu.
- **Protocol:** Select **V2** from the drop-down menu.

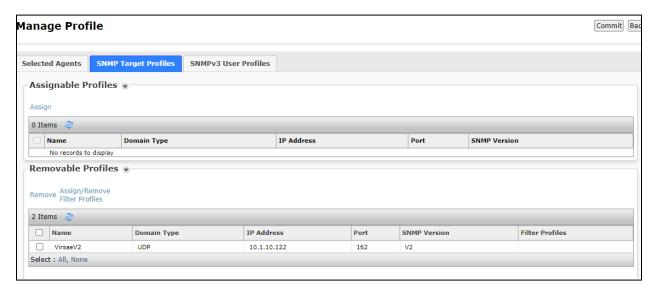
Retain default values for all other fields and click on the **Commit** button.



Then navigate to **Manage Servicability Agents** → **Servicability Agents** as shown in the screen below. Select a Session Manager agent as shown below from the **Agent List** window and click on the **Manage Profiles** button.



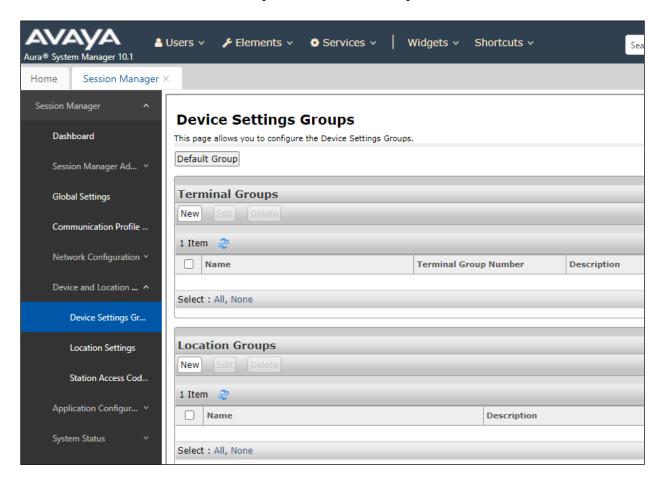
From the **Manage Profile** window, under the **SNMP Target Profiles** tab, select the **VirsaeV2** profile, click on **Assign** and the profile is moved to the **Removable Profiles** as shown in the following screenshot. Click the **Commit** button to save it.



5.3. Configure RTCP Monitoring

To allow VSM to monitor the voice quality of SIP endpoint calls, configure Session Manager to send RTCP data to VSM.

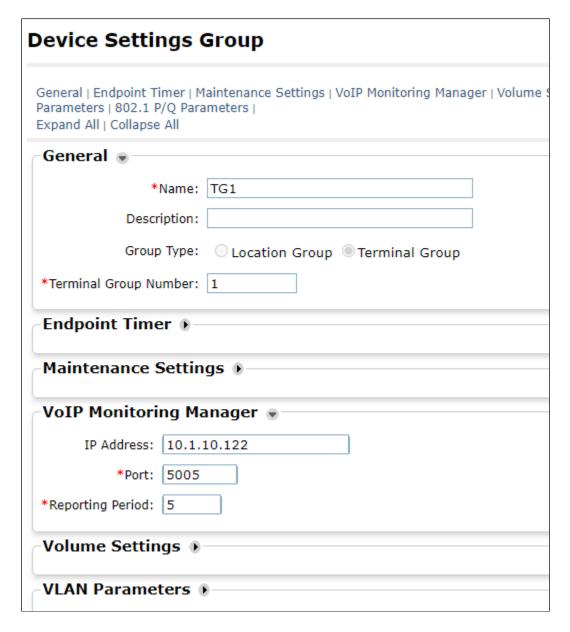
From the System Manager homepage, navigate to **Elements** → **Session Manager**. Navigate to **Device and Location Configuration** → **Device Settings Groups** as shown in the screen below. Click on **New** to add a Terminal Group and a Location Group.



In the **Device Settings Group** window, under **General** configure the following.

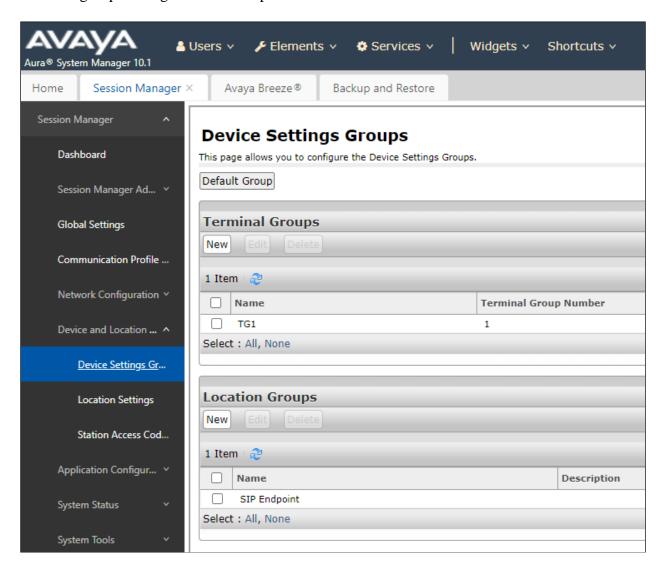
- Name: A descriptive name.
- **Terminal Group Number:** Any valid number.

Under the **VoIP Monitoring Manager**, configure the **IP Address** of VSM. Retain default values for all other fields and click on the **Save** button.



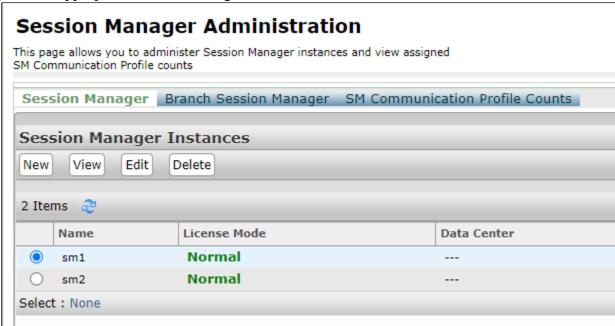
The example above is for Terminal group and the same process is repeated for the **Location Groups**.

The **Device Settings Group** window shown below once the above-mentioned Terminal and Location groups configuration is completed.



5.4. Configure CDR User Account for Avaya Aura® Session Manager

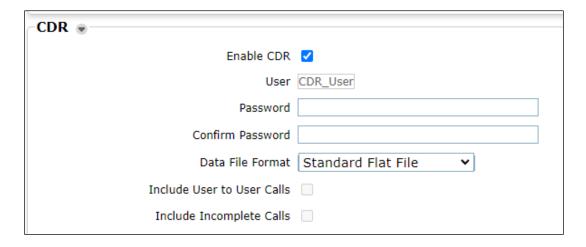
From the System Manager home page, navigate to **Elements** \rightarrow **Session Manager** (not shown). Select **Session Manager Administration** (not shown). From the **Session Manager Administration** window shown below, select the **Session Manager Instances** tab, select the pertinent appropriate Session Manager and click on **Edit**.



Scroll down to the **CDR** section and configure the following.

- Check the **Enable CDR** box.
- Configure a valid **Password** and confirm the same.
- **Data file Format:** During compliance testing **Standard Flat File** was selected from the drop-down menu.

Click on the **Commit** (not shown) button to complete the configuration.



6. Configure Virsae Service Management

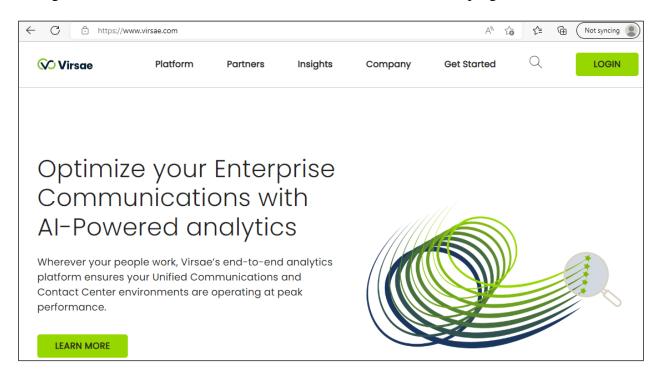
This section describes the configuration of VSM required to interoperate with Session Manager.

This section provides a "snapshot" of VSM configuration used during compliance testing. Virsae creates the business partner portal in the cloud environment and is beyond the scope of this Application Notes. The screen shots and partial configuration shown below, are provided only for reference. These represent only an example of the configuration GUI of VSM, available through the web Portal. Contact Virsae for details on how to configure VSM. The configuration operations described in this section can be summarized as follows:

- Login to the Web Portal
- Configuring Avaya Aura® Session Manager
- Configure Dashboard

6.1. Login to the Web Portal

A portal for the business partner will be created by Virsae on the cloud and can be accessed by the business partner by typing the URL www.virsae.com in a web browser. During compliance testing the same URL was used. Click on the **LOGIN** shown on the top right below.



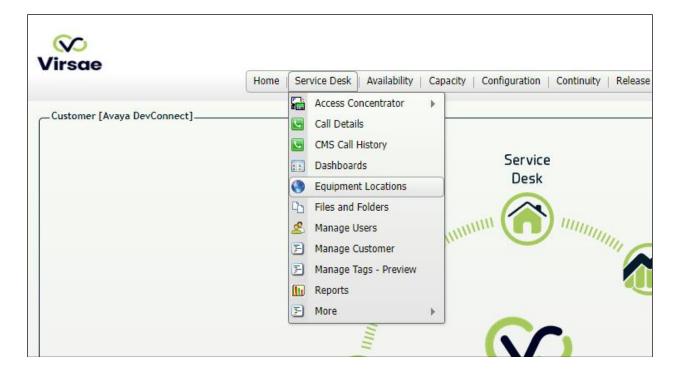
Enter the $\bf Email$ and $\bf Password$ and click on the $\bf Log~In$ button.



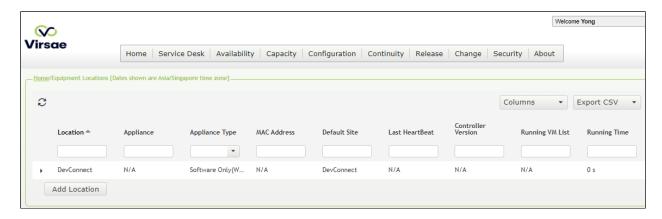
The customer screen is shown. During compliance testing the customer created by Virsae can be seen near the top right corner. Note the version running is shown at the bottom i.e., 174.1.2.268.



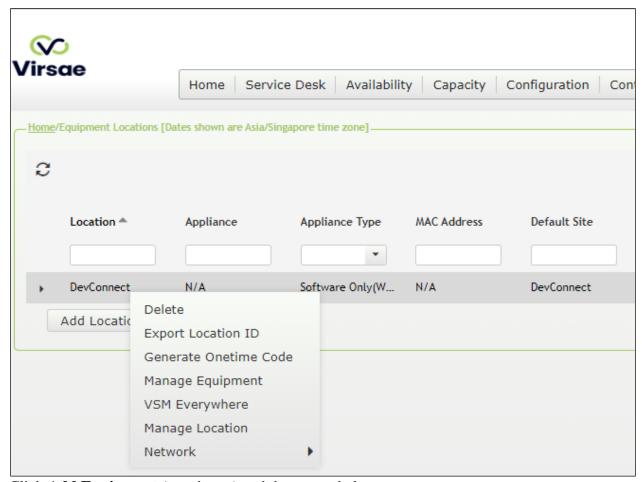
Navigate to **Service Desk** → **Equipment Locations** as shown below.



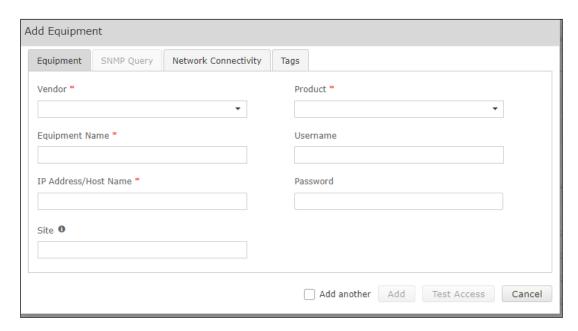
A **Location** called **DevConnect** is already configured as shown below.



Right click on the **DevConnect** and select **Manage Equipment**.



Click **Add Equipment** (not shown) and the screen below pops up:



6.2. Configuring Avaya Aura® Session Manager

From the **Add Equipment** window, add a Session Manager to the Location. Select **Avaya** from the **Vendor** list. Select **Session Manager** from the **Product** list. Configure the following values.

• Equipment Name: A descriptive name.

• **Username**: The username mentioned in **Section 5.1**.

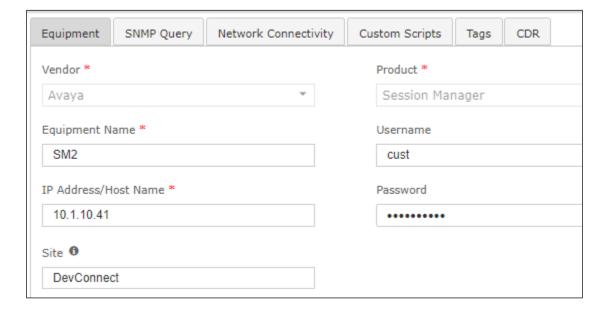
• **Password:** The password for the above-mentioned user.

• IP Address/Host Name: Management IP address of Session

Manager.

• **Site:** A descriptive site name.

Below are the configured values of a Session Manager.



In the **SNMP Query** tab, configure the following values.

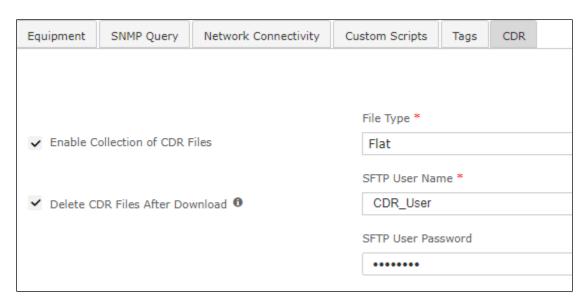
- **SNMP Version:** Select **V2** from the drop-down menu.
- **SNMP Community String**: Enter the value configured in **Section 5.2**.



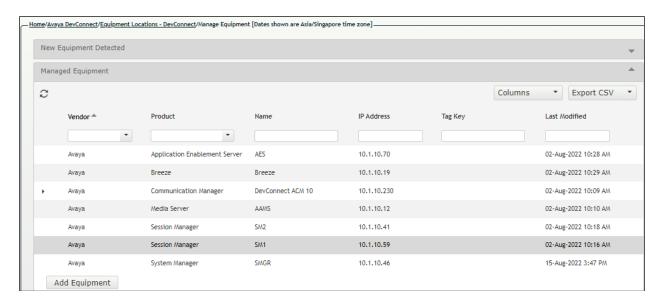
In the **CDR** tab, configure the following values.

- Check the box for **Enable Collection of CDR Files**.
- Check the box for **Delete CDR Files After Download**.
- **File Type:** Select **Flat** from the drop-down menu.
- SFTP User Name: CDR_User is populated by default which is the default user in Session Manager as seen in Section 5.4.
- **SFTP Password:** Enter the password configured in **Section 5.4**.

Click on the **Save** button to complete the configuration.



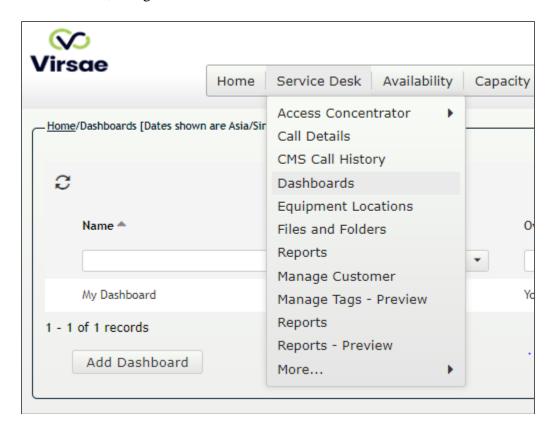
The screen below shows the added Session Manager equipment.



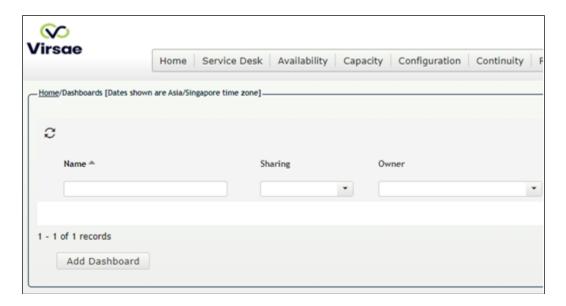
6.3. Configure Dashboard

This section shows the steps to configure Session Manager on the dashboard.

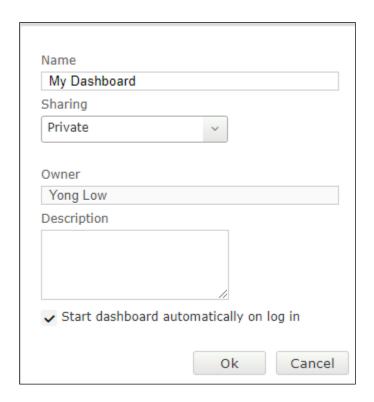
From the home screen, navigate to **Service Desk** → **Dashboards** as shown below.



From the Available Dashboards window, click on the Add Dashboard button.



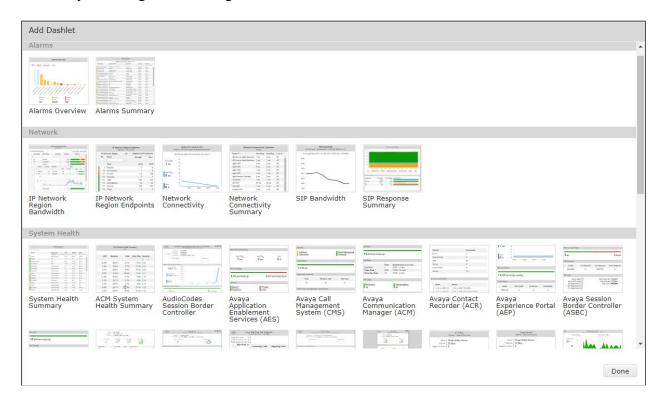
In the **Add Dashboard** window, type a descriptive name for **Name** field as shown below. Retain default values for all other fields. Check on **Start dashboard automatically on log in** box and then click on **Ok** to submit.



In the dashboard window bottom shown below, click on "+" sign at the bottom.



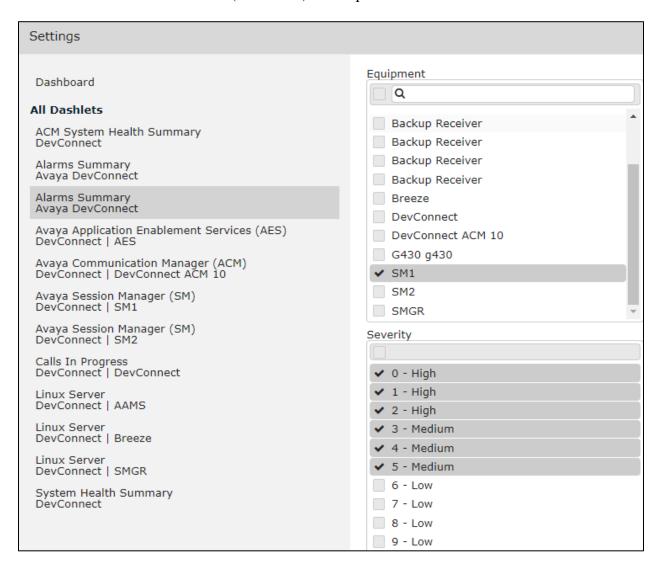
In the **Add Dashlet** window that pops up, select the **Alarms Summary** from the available dashlet by hovering the "+" image over it and click **Done**.



From the Alarms Summary window, select the setup cog on the top right corner of the box.



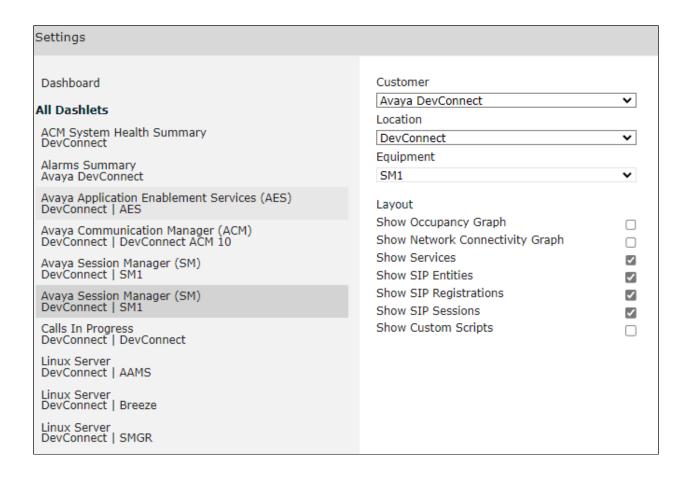
Select the appropriate **Equipment** e.g., **SM1** for Session Manager and the Severity of alarms desired to be shown. Click **Done** (not shown) to complete.



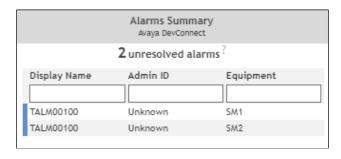
LYM; Reviewed: SPOC 10/6/2022

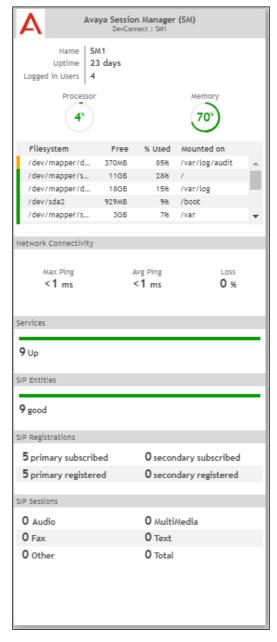
Repeat the same for the **Avaya Session Manager** (SM) dashlet for say SM1 and in addition select the desired **Layout**.





The two dashboards are displayed below. The above steps can be repeated to configure other equipment or/and dashboard parameters.

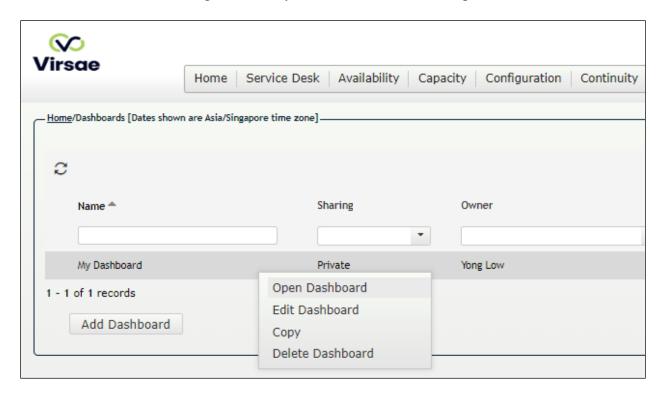




7. Verification Steps

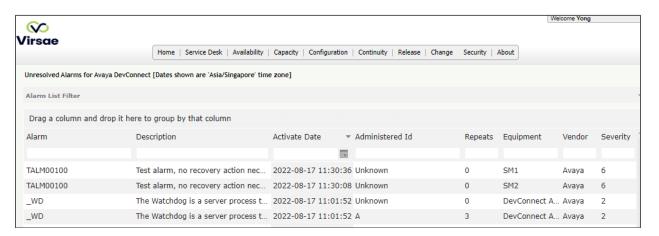
This section provides the tests that can be performed to verify proper configuration of VSM. The following steps are done by accessing the VSM web portal for the Business partner.

After login to the web portal, navigate to **Service Desk** → **Dashboards** (not shown) and the screen is shown as below. Right click "My Dashboard" and select "Open Dashboard".

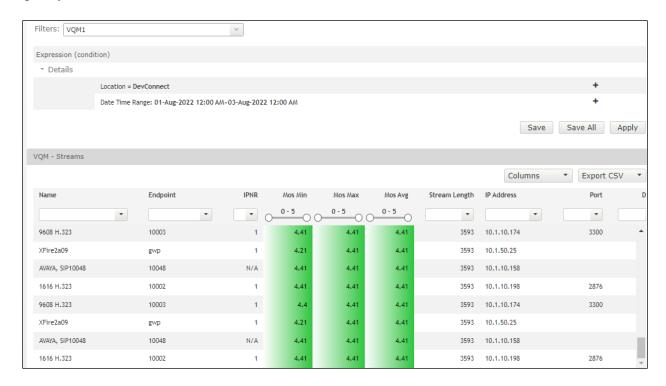


Whatever is configured during setup will be shown here. However, if the dashboard is configured to open automatically on startup in **Section 6.3**, once login, all the dashboards last configured at the end of **Section 6.3** will be populated in a new tab on the browser.

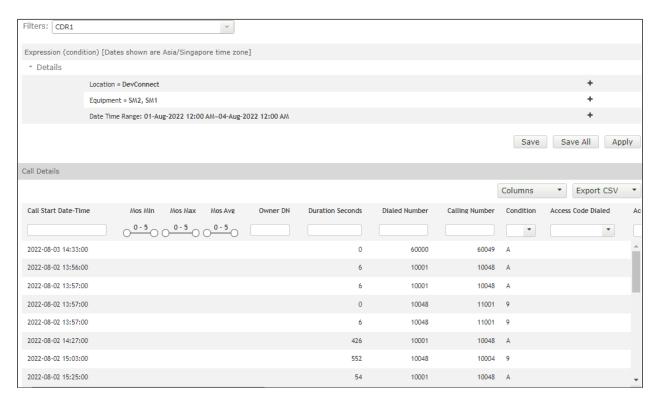
To view alarms using historical reporting, navigate to **Availability** → **Manage Alarms** (not shown). A list of all unresolved alarms for all equipment is shown. Screen below shows the alarms by filtering for Session Manager equipment.



To view voice quality using historical reporting, navigate to **Availability Voice Quality Management** (not shown). Create a rule set and apply the rule. Screen below shows a few examples of voice quality for SIP extensions registered to Session Manager. Real time voice quality can also be viewed in the dashboard.



To view CDR using historical reporting, navigate to **Service Desk** → **Call Details** (not shown). Create a rule set and apply the rule. Screen below shows a few examples of CDR collected from Session Managers.



8. Conclusion

These Application Notes describe the procedures for configuring the Virsae Service Management R174 to interoperate with Avaya Aura® Session Manager R10.1. During compliance testing, all test cases were completed successfully with observations noted in **Section 2.2**.

9. Additional References

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

Product documentation for Avaya products may be found at http://support.avaya.com.

- 1. Deploying Avaya Aura® Session Manager and Avaya Aura® Branch Session Manager in Virtualized Environment, Release 10.1., Issue 2, Mar 2022.
- 2. Administering Avaya Aura® Session Manager, Release 10.1.x, Issue 3, Apr 2022.

Product documentation for Virsae products may be found at https://documentation.virsae.com.

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