

### Avaya Solution & Interoperability Test Lab

Application Notes for iNEMSOFT CLASSONE® iCAS Dispatch Console with Avaya Aura® Session Manager, Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services – Issue 1.0

#### **Abstract**

These Application Notes describe the procedures for configuring iNEMSOFT CLASSONE® iCAS Dispatch Console which were compliance tested with Avaya Aura® Session Manager, Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services.

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 contain instructions for iNEMSOFT CLASSONE® iCAS (iCAS) Dispatch Console with Avaya Aura® Session Manager (Session Manager), Avaya Aura® Communication Manager (Communication Manager) and Avaya Aura® Application Enablement Services (AES) to successfully interoperate.

The iCAS is a system-of-systems, enabling operators to take control of their communications network and manage multiple transactions from many types of devices.

iCAS solution enables operators to handle inbound calls, connect with radio dispatch, bridge various radio talk groups and frequencies with each other and with back office voice systems, collaborate and manage field operations regardless of the type of voice-enabled device, while maintaining the highest level of business continuity and interoperability. iCAS as a solution, integrates with several interfaces provided by Avaya products. However, this document only contains instructions for iCAS Dispatch Console with Session Manager. iCAS Dispatch Console registers to Session Manager as a SIP Endpoint and uses 3<sup>rd</sup> Party Call Control using TSAPI via AES. Application notes related to other interfaces may be obtained via Avaya Support site.

- Application Notes for iNEMSOFT CLASSONE® iCAS with Avaya Meeting Exchange
- Application Notes for iNEMSOFT CLASSONE® iCAS IP Radio Gateway with Avaya Aura® Session Manager
- Application Notes for iNEMSOFT CLASSONE® Endpoint Manager with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services

These Application Notes assume that Communication Manager, Session Manager and AES are already installed and basic configuration steps have been performed. Only steps relevant to this compliance test will be described in this document. For further details on configuration steps not covered in this document, consult references [1], [2], and [3].

## 2. General Test Approach and Test Results

The general test approach was to place calls to and from iCAS Dispatch Console and exercise basic telephone operations. The main objectives were to verify the following:

- Registration
- Codecs (G.711MU)
- Inbound calls
- Outbound calls
- Hold/Resume
- Call termination (origination/destination)
- DTMF tone generation and detection
- VDN call handling
- Three party conference (origination/destination)
- Blind and Consultative transfers
- Agent work states
- Serviceability

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 this DevConnect Application Note 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 iNEMSOFT did not utilize encryption capabilities.

## 2.1. Interoperability Compliance Testing

The interoperability compliance test included features and serviceability. The focus of the interoperability compliance testing was primarily on verifying call establishment on iCAS Dispatch Console. iCAS Dispatch Console operations such as inbound calls, outbound calls, hold/resume and iCAS Dispatch Console interactions with Session Manager, Communication Manager, AES, and Avaya SIP, H.323, and digital telephones were verified. The

serviceability testing introduced failure scenarios to see if iCAS Dispatch Console can recover from failures.

### 2.2. Test Results

The test objectives were verified. For serviceability testing, iCAS Dispatch Console operated properly after recovering from failures such as cable disconnects, and resets of iCAS Dispatch Console and Session Manager. iCAS Dispatch Console successfully negotiated the codec that was used. The features tested worked as expected.

### 2.3. Support

iNEMSOFT CLASSONE® iCAS support can be obtained via following means:

**Phone:** 214-423-2815

**Web:** www.inemsoft.com

Email: rtisupport@inemsoft.com

## 3. Reference Configuration

**Figure 1** illustrates a sample configuration that consists of Avaya Products and iNEMSOFT CLASSONE® iCAS Dispatch Console.

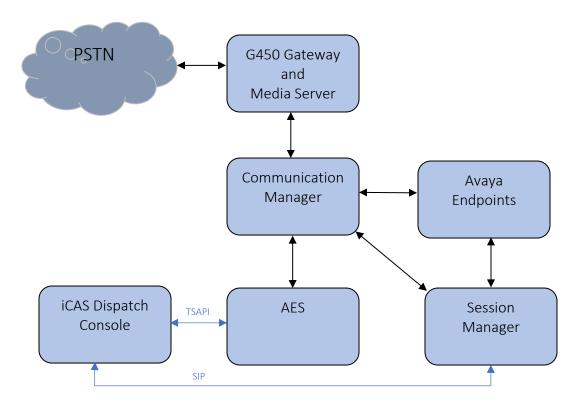


Figure 1: Test Configuration of CLASSONE® iCAS Dispatch Console by iNEMSOFT

## 4. Equipment and Software Validated

The following equipment and software were used for the test configuration. With the exception of Avaya G450 Gateway, all other Avaya products were deployed on a Virtualization Environment.

Equipment/Software	Release/Version
Avaya Aura® Communication Manager	8.1.0.1.1.890.25517
Avaya G450 Media Gateway	FW 40.19.1
Avaya Aura® Media Server	8.0.1.121
Avaya Aura® Session Manager	8.1.0.0.810007
Avaya Aura® System Manager	8.1.0.0.733078
Avaya Aura® Application Enablement Services	8.1.0.0.0.9-1
Avaya 9600 Series IP Deskphones	6.8.2 (H.323) 7.1.6.1 (SIP)
Avaya J100 Series IP Phones	6.8.2 (H.323) 4.0.2.1 (SIP)
iNEMSOFT CLASSONE® iCAS Dispatch Console	4.19

## 5. Configure Avaya Aura® Communication Manager

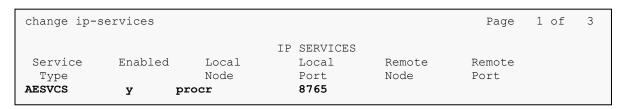
This section contains steps necessary to configure iCAS Dispatch Console to successfully interoperate with Avaya Aura® Communication Manager.

All configurations in Communication Manager were performed via SAT terminal.

### 5.1. Configure AES connection

Use **change ip-services** command to add an entry for AES. On Page 1,

- In the **Service Type** field, type **AESVCS**.
- In the **Enabled** field, type **y**.
- In the **Local Node** field, type the Node name **procr** for the Processor Ethernet Interface.
- In the **Local Port** field, use the default of **8765**.



On Page 4 of the IP Services form, enter the following values:

- In the **AE Services Server** field, type the name obtained from the Application Enablement Services server.
- In the **Password** field, type a password to be administered on the Application Enablement Services server.
- In the **Enabled** field, type y.



## 5.2. Configure CTI Link

Use add cti-link n command, where n is an available CTI link number.

- In the **Extension** field, type **<station extension>**, where **<station extension>** is a valid station extension.
- In the **Type** field, type **ADJ-IP**.
- In the **Name** field, type a descriptive name.

add cti-link 1 Page 1 of 3

CTI LINK

CTI Link: 1
Extension: 77777
Type: ADJ-IP

 $\label{eq:cor:loss} \mbox{COR: 1} \\ \mbox{Name: CTI Link 1} \\ \mbox{}$ 

Unicode Name? n

## 6. Configure Avaya Aura® Application Enablement Services

Configuration of Avaya Aura® Application Enablement Services requires a user account to be configured for iCAS Dispatch Console.

### 6.1. Configure User

All administration is performed by web browser, <a href="https://caes-ip-address">https://caes-ip-address</a>/ (not shown).

A user needs to be created for iCAS Dispatch Console to communicate with AES. Navigate to User Management → User Admin → Add User.

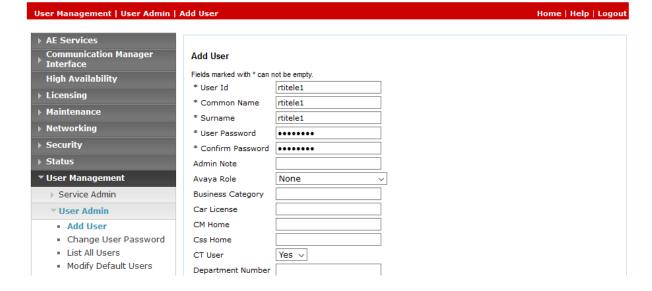
Fill in User Id, Common Name, Surname, User Password and Confirm Password. Set the CT User to Yes, and Apply.



## Application Enablement Services

**Management Console** 

Welcome: User cust
Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47
Number of prior failed login attempts: 0
HostName/IP: aes81/10.64.110.215
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE
SW Version: 8.1.0.0.0.9-1
Server Date and Time: Fri Nov 15 12:04:32 MST 2019
HA Status: Not Configured



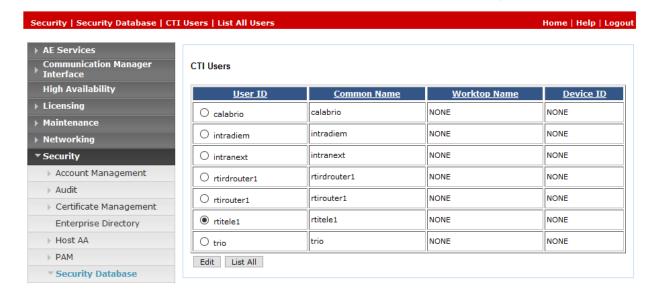
#### Navigate to Security → Security Database → CTI Users → List All Users.



## Application Enablement Services

**Management Console** 

Welcome: User cust Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47 Number of prior failed login attempts: 0 HostName/IP: aes81/10.64.110.215 Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE SW Version: 8.1.0.0.0.9-1 Server Date and Time: Fri Nov 15 12:05:38 MST 2019 HA Status: Not Configured



Select the recently added user and click **Edit**. Check the box for **Unrestricted Access** and click **Apply Changes**.



## Application Enablement Services Management Console

Welcome: User cust Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47 Number of prior failed login attempts: 0 HostName/IP: aes81/10.64.110.215 Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE SW Version: 8.1.0.0.0.9-1 Server Date and Time: Fri Nov 15 12:06:04 MST 2019 HA Status: Not Configured

Security   Security Database   C	TI Users   List All Users		Home   Help	Logou
▶ AE Services				
Communication Manager Interface	Edit CTI User			
High Availability	User Profile:	User ID	rtitele1	
▶ Licensing		Common Name	rtitele1	
► Maintenance		Worktop Name	NONE V	
		Unrestricted Access		
Networking		Call Calainatian (Tananian tian and		
▼ Security	Call and Device Control:	Call Origination/Termination and Device Status	None V	
Account Management				
▶ Audit	Call and Device Monitoring:	Device Monitoring	None V	
Certificate Management		Calls On A Device Monitoring	None ~	
Enterprise Directory		Call Monitoring		
→ Host AA				
► HOSE AA	Routing Control:	Allow Routing on Listed Devices	None V	
▶ PAM	Apply Changes Cancel C	Changes		
<b>▼Security Database</b>				
<ul><li>Control</li></ul>				

KJA; Reviewed: SPOC 1/15/2020

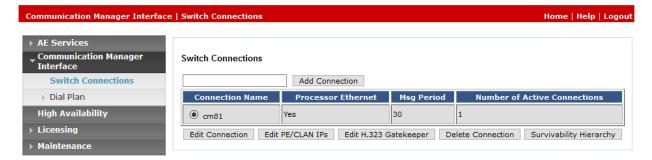
### 6.2. Configure Communication Manager Switch Connections

To add links to the Communication Manager, navigate to the Communication Manager Interface → Switch Connections page and enter a name for the new switch connection and click the Add Connection button. This was previously configured as cm81 for this test environment:



## Application Enablement Services Management Console

Welcome: User cust Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47 Number of prior failed login attempts: 0 HostName/IP: aes81/10.64.110.215 Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE SW Version: 8.1.0.0.0.9-1 Server Date and Time: Fri Nov 15 12:06:42 MST 2019 HA Status: Not Configured



Use the **Edit Connection** button shown above to configure the connection. Enter the **Switch Password** and check the **Processor Ethernet** box if using the **procr** interface, as shown below. This must match the password configured when adding AESVCS connection in Communication Manager.



## Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47
Number of prior failed login attempts: 0
HostName/IP: aes81/10.64.110.215
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE
SW Version: 8.1.0.0.0.9-1
Server Date and Time: Fri Nov 15 12:07:11 MST 2019
HA Status: Not Configured

Communication Manager Interface	Home   Help   Logout			
▶ AE Services	Connection Details - cm81			
Switch Connections	Switch Password	•••••		
▶ Dial Plan	Confirm Switch Password	•••••		
High Availability	Msg Period	30	Minutes (1 - 72)	
▶ Licensing	Provide AE Services certificate to switch			
▶ Maintenance	Secure H323 Connection			
Networking	Processor Ethernet			
→ Security	Apply Cancel			

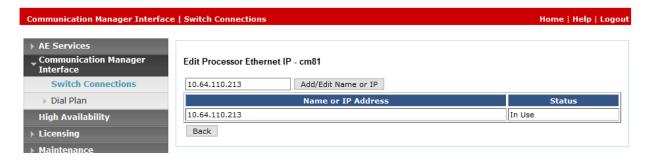
Use the **Edit PE/CLAN IPs** button (shown in this section's first screen shot above) to configure the **procr** or **CLAN** IP Address (es) for TSAPI message traffic.



## Application Enablement Services

Management Console

Welcome: User cust Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47 Number of prior failed login attempts: 0 HostName/IP: aes81/10.64.110.215 Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE SW Version: 8.1.0.0.0.9-1 Server Date and Time: Fri Nov 15 12:07:39 MST 2019 HA Status: Not Configured

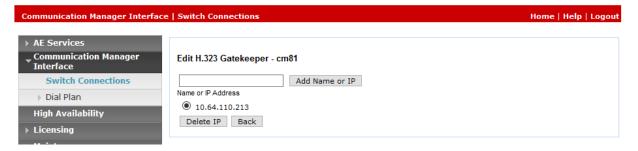


Use the **Edit H.323 Gatekeeper** button (shown in this section's first screen capture above) to configure the **procr** or **CLAN** IP Address(es).



## Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47
Number of prior failed login attempts: 0
HostName/IP: aes81/10.64.110.215
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE
SW Version: 8.1.0.0.0.9-1
Server Date and Time: Fri Nov 15 12:08:04 MST 2019
HA Status: Not Configured



### 6.3. Configure TSAPI Link

Navigate to the **AE Services** → **TSAPI** → **TSAPI Links** page to add the TSAPI CTI Link. Click **Add Link**.



## Application Enablement Services Management Console

Welcome: User cust Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47 Number of prior failed login attempts: 0 HostName/IP: aes81/10.64.110.215 Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE SW Version: 8.1.0.0.0.9-1 Server Date and Time: Fri Nov 15 12:08:49 MST 2019 HA Status: Not Configured



Select a **Switch Connection** using the drop down menu. Select the **Switch CTI Link Number** using the drop down menu. The **Switch CTI Link Number** must match the number configured in the **cti-link** form for Communication Manager.

If the application will use Encrypted Links, select **Encrypted** in the **Security** selection box.

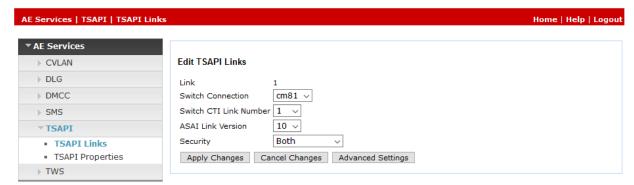
### Click Apply Changes.

The configuration shown below was previously configured.



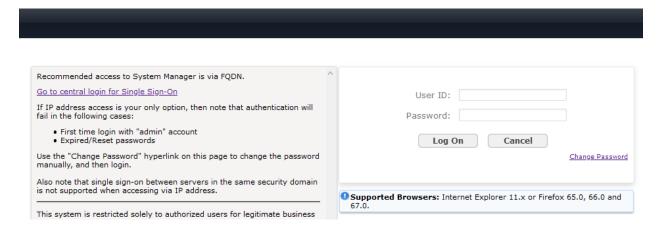
## Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Nov 14 17:05:31 2019 from 10.64.10.47
Number of prior failed login attempts: 0
HostName/IP: aes81/10.64.110.215
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE
SW Version: 8.1.0.0.0.9-1
Server Date and Time: Fri Nov 15 12:09:35 MST 2019
HA Status: Not Configured

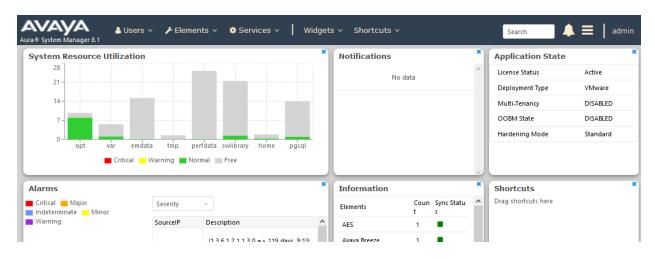


## 7. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Session Manager as provisioned in the reference configuration. Session Manager is comprised of two functional components: the Session Manager server and the System Manager server. All SIP call provisioning for Session Manager is performed through the System Manager web console and is then downloaded into Session Manager. Log on to System Manager via a web browser.



#### System Manager Dashboard is displayed.

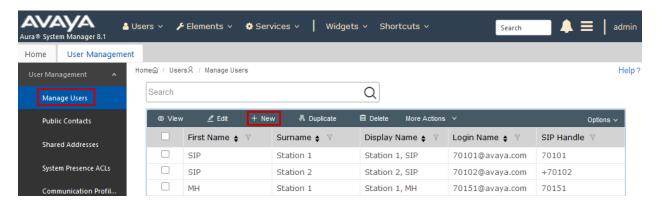


## 7.1. Configure SIP Users

During the compliance test, no special users were created for this solution. However, the steps to configure a user are included.

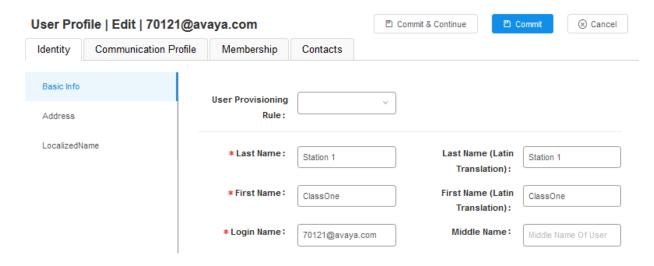
Add a new SIP user for each iCAS Dispatch Console. During compliance testing SIP Users 70121, 70122, 70123 and 70124 were created for iCAS Dispatch Console.

To add new SIP users, Navigate to Users → User Management → Manage Users. Click New.



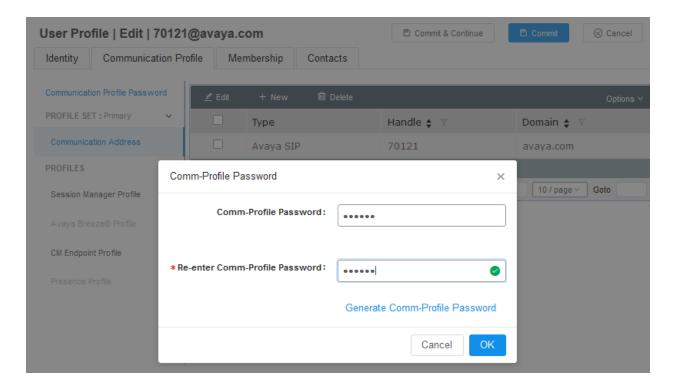
Configure the **Identity** tab as follows:

- Last Name Enter last name of user.
- **First Name** Enter first name of user.
- **Login Name** Enter extension number@sip domain name.



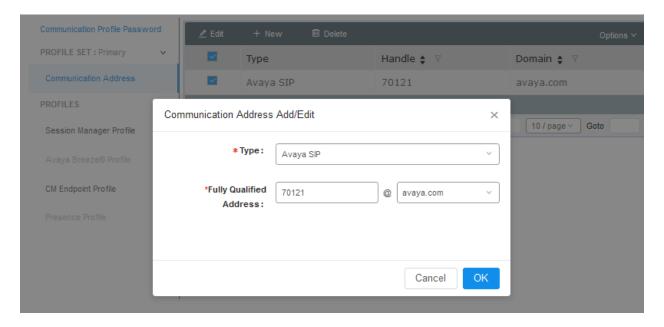
Select the **Communication Profile** tab followed by **Communication Profile Password** on the left pane and provide the following information:

- Communication Profile Password Enter a numeric password
- **Confirm Password** Repeat numeric password.



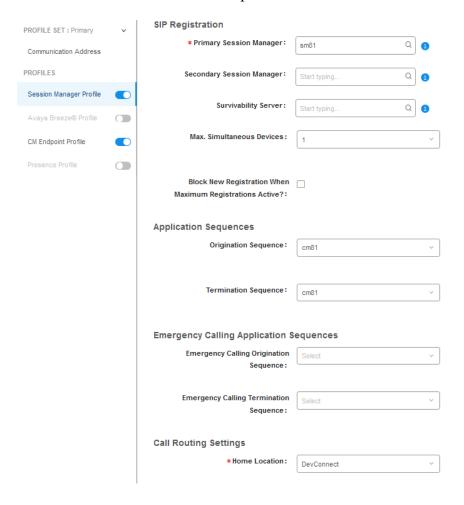
On the left pane, select **Communication Address** followed by **New** to define a **Communication Address** for the new SIP user, and provide the following information.

- Type Select Avaya SIP using drop-down menu.
- Fully Qualified Address Enter same extension number and domain used for Login Name, created previously.
  - Click the Add button to save the Communication Address for the new SIP user.



On the left pane, enable **Session Manager Profile** and configure as follows:

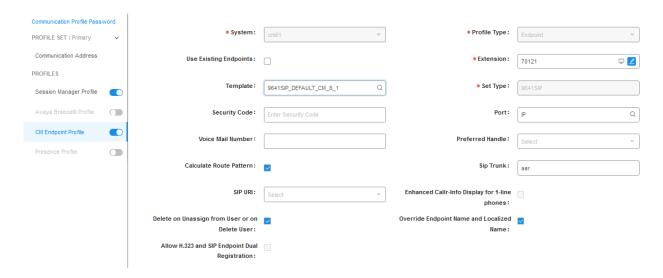
- **Primary Session Manager** Select one of the Session Managers.
- **Origination Application Sequence** Select Application Sequence defined (not shown) for Communication Manager.
- **Termination Application Sequence** Select Application Sequence defined (not shown) for Communication Manager.
- **Home Location** Select a predefined location.



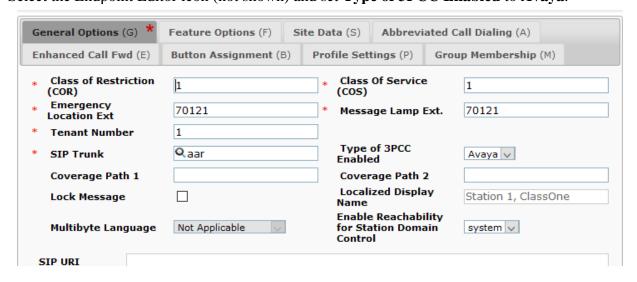
On the left pane, enable **CM Endpoint Profile** and configure as follows:

- **System** Select Managed Element defined in System Manager (not shown) for Communication Manager.
- Use Existing Endpoints Leave unchecked to automatically create a new endpoint on Communication Manager when the new user is created. Or else, check the box if endpoint is already defined in Communication Manager.
- Extension Enter same extension number used in this section.
- **Template** Select template for type of SIP phone. During the compliance test, 9641SIP\_DEFAULT\_CM\_8\_1 was selected.

#### Select Commit once done.



Select the Endpoint Editor icon (not shown) and set Type of 3PCC Enabled to Avaya.



Select **Done** followed by **Commit** to save changes.

# 8. Configure iNEMSOFT CLASSONE® iCAS Dispatch Console

Installation and configuration of iCAS Dispatch Console is done by designated iNEMSOFT engineers. Hence, no configuration is provided in this document.

## 9. Verification Steps

Select rows to send notifications to devices. Click on Details column for

User Registrations

The following steps may be used to verify the configuration:

Verify that iCAS Dispatch Console successfully registers with Session Manager server
by following the Session Manager 

System Status 

User Registrations link on the
System Manager Web Interface.

#### complete registration status AST Device Notifications: Reboot Reload • Failback As of 1:06 PM View • Default Export Force Unregister 13 Items 💸 Show All 🗸 Last Name IP Address Remote Office Shared Control Simult. Device П ▼Hide 10.64.10.47 1/1 70121@avaya.com ClassOne DevConnect Station 1 User Registration Device Simultaneous History First Name ClassOne Last Name Station 1 Login Name 70121@avaya.com Registration Address 70121@avaya.com All Addresses 70121@avaya.com Home Location DevConnect Actual Location DevConnect Primary SM sm81 Secondary SM -Survivable SM -Simultaneous Devices 1/1 ELIN Number ---ELIN Last Updated ---

• Place calls to and from iCAS Dispatch Console and verify that the calls are successfully established with two-way talk path.

## 10. Conclusion

During compliance testing, iNEMSOFT CLASSONE® Dispatch Console successfully registered with Avaya Aura® Session Manager, placed and received calls to and from Avaya endpoints.

## 11. Additional References

The following Avaya product documentation can be found at <a href="http://support.avaya.com">http://support.avaya.com</a>

- [1] Administering Avaya Aura® Communication Manager, Release 8.1.x, Issue 4, November 2019.
- [2] Administering Avaya Aura® Application Enablement Services, Release 8.1.x, Issue 3, October 2019
- [3] Administering Avaya Aura® Session Manager, Release 8.1.1, Issue 2, October 2019

Documentation related to iCAS can be directly obtained from iNEMSOFT.

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