

Avaya Solution & Interoperability Test Lab

# Application Notes for Ascom Myco 3 v3.4.3 with Avaya Aura® Communication Manager R10.1 and Avaya Aura® Session Manager R10.1 - Issue 1.0

## Abstract

These Application Notes describe the configuration steps for provisioning Ascom's Myco 3 smartphone (v3.4.3) to interoperate with Avaya Aura® Communication Manager 10.1 and Avaya Aura® Session Manager 10.1.

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 configuration steps for provisioning Ascom's Myco 3 v3.4.3, including the Ascom Experience app package v3.4.3, to interoperate with Avaya Aura® Communication Manager R10.1 and Avaya Aura® Session Manager R10.1. Ascom Myco 3 is a smartphone built for the on-the-job usability, especially suited for nurses and clinicians, as well as the demanding environment of healthcare. It provides reliable communication and access to information at the point of care.

**Note:** Ascom Myco 3 may be referred to as Myco 3, Myco 3 handset or Myco 3 smartphone throughout this document. These names all refer to the same product, a smartphone that is connected to Avaya Aura® Communication Manager by registering with Avaya Aura® Session Manager as a third-party SIP extension.

Ascom Myco 3 is configured as a 9620 SIP endpoint on Avaya Aura® Communication Manager which will then register as a SIP endpoint with Avaya Aura® Session Manager. Myco 3 then behaves as a third-party SIP extension on Avaya Aura® Communication Manager able to make/receive internal and PSTN/external calls and utilise telephony facilities available on Avaya Aura® Communication Manager.

# 2. General Test Approach and Test Results

The interoperability compliance testing evaluates the ability of Ascom Myco 3 smartphone to make and receive calls to and from Avaya H.323, SIP and Digital Deskphones as well as external calls over a simulated SIP PSTN. Avaya Messaging was used to demonstrate DTMF. Message waiting is currently not supported but this is planned to be in future releases of Myco 3.

**Note:** The cellular version of the Ascom Myco 3 smartphone can be set up to use Wi-Fi, GSM/3G/LTE or both. For compliance testing the Wi-Fi version was used and an Ascom approved wireless access point set up to provide a network connection. This wireless router was considered a part of Ascom's overall solution.

**Note**: Ascom Myco 3 handsets are 3<sup>rd</sup> party SIP handsets and as such 3<sup>rd</sup> party SIP telephone features, beyond basic call handling via Communication Manager, will vary between SIP devices.

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 Ascom Myco 3 did not include use of any specific encryption features as requested by Ascom.

Avaya's formal testing and Declaration of Conformity is provided only on the headsets/Smartphones that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/smartphone to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/Smartphones for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability, or any regulation requirements. As a result, Avaya makes no representations whether a particular non-Avaya headset will work with Avaya's telephones or with a different generation of the same Avaya telephone.

Since there is no industry standard for handset interfaces, different manufacturers utilize different handset/headset interfaces with their telephones. Therefore, any claim made by a headset vendor that its product is compatible with Avaya telephones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

**Note:** Compliance testing was carried out using TCP as the transport for signaling, a selection of basic calls and transfer calls were carried out using UDP.

# 2.1. Interoperability Compliance Testing

The compliance testing included the test scenarios shown below. Note that when applicable, all tests were performed with Avaya SIP deskphones, Avaya H.323 deskphones, Avaya Digital deskphones, Ascom Myco 3 handsets and simulated PSTN endpoints.

- Registration/Invalid Registration
- Basic Calls/PSTN calls
- Session Refresh Timer
- Long Duration Call
- Hold, Retrieve and Brokering (Toggle)
- Feature Access Code dialing
- Attended and Blind Transfer
- Third Party Conference using Myco 3 to host the conference
- Call Forwarding Unconditional, No Reply and Busy (PBX controlled and Locally Controlled)
- Call Waiting

- Call Park/Pickup
- EC500, where Avaya deskphone is the primary phone and Myco 3 handset being the EC500 destination.
- Multi-Device Access (MDA)
- Calling Line Name/Identification
- Codec Support (G.722, G.711, G.729)
- DTMF Support
- Message Waiting Indication and Voicemail
- Serviceability

**Note1**: Compliance testing does not include redundancy testing as standard. Where some LAN failures were simulated, and the results observed, there were no redundancy or failover tests performed.

**Note2**: For 9-1-1 emergency call handling in the USA, Ascom is recommending setting Ascom Settings  $\rightarrow$  Ascom VoIP  $\rightarrow$  "Emergency call location method" to "Register with SIP instance-ID" (RFC5626). **This was not covered in the testing.** 

### 2.2. Test Results

The tests were all functional in nature and performance testing and redundancy testing were not included. All test cases passed successfully with all issues and observations listed below.

The following limitations were noted during compliance testing.

• When Myco 3 is the A party of a transfer or initiates a call to another phone that is forwarded, then the name in the call list of that Myco 3 (A party caller) is not correct after the call is complete. The information in the call list of that Myco 3 (A party caller) shows the correct number but it displays the name of the C party instead of the B party as one would expect.

The following observations were also noted.

- During compliance testing, Bluetooth had to be turned off on all Myco 3 handsets to combat call quality issues encountered when using 2.4GHz Wi-Fi. There are two places that Bluetooth must be turned off, Android settings → Connected devices → Connection preferences Bluetooth should be set to off, and Android settings → Location → Wi-Fi and Bluetooth scanning Ensure that both are off.
- Ascom Myco 3 does not support <u>local</u> call diversion like Call Forward Busy and Call Forward No Answer. It does support Call Forward All.
- When using the EC500 (concurrent call) feature, if an Myco 3 handset or an Avaya endpoint answers the call before two rings, the call is dropped. This is due to the "Cellular Voice Mail Detection" field default value seen in "off-pbx-telephone configuration-set" form of Communication Manager. The default value for this field is "timed (seconds): 4" which means that if Communication Manager receives an answer within 4 seconds, then it will be considered as the cellular voicemail picking up the call,

and so call will be dropped and proceed to do Communication Manager coverage processing instead. The workaround is to answer the call after 2 rings or change the "Cellular Voice Mail Detection" field value to "none" or decrease "timed" value. Note that changing the "off-pbx-telephone configuration-set" affects all users in the same set, so if cellular users are grouped with Myco 3 handset users, calls may be answered by a cellular user's voicemail instead of following the coverage criteria in Communication Manager.

- All compliance testing was done using TCP (preferred) and UDP as the transport protocol.
- Session Manager has a minimum Registration Timer of 600 seconds. If the Myco 3 Registration Timer is set lower than 600 seconds this will be negotiated to 600 seconds. This appears to be changed from a default value of 120 seconds with previous releases of Session Manager (see **Appendix C**).
- Negotiation of G.722 between endpoints, such as the Ascom Myco 3, requires support for the codec to be configured on Communication Manager.
- In order to allow coverage to voicemail the Myco 3 should be configured to send a "486 Busy" rather than a "603 Rejected" (see Section 7.2).
- When multiple voice messages are left for an Myco 3 handset, the handset shows the total number of messages as only "1" in the display even though there are multiple messages. This is because there is no counter information sent in the NOTIFY from Avaya Messaging.
- For Multi-Device Access (MDA), Myco 3 needs to be configured using and registering through Endpoint ID. Refer to **Section 7.3** for details.
- Per design, Myco 3 handsets do not have a redial button. User needs to use "Call List" and redial the numbers.
- PSTN calls were simulated using a SIP trunk routing via an Avaya Session Border Controller for Enterprise. In order to correctly simulate incoming calls from a typical SIP service provider, the Session Border Controller for Enterprise must be setup to present the SIP calls correctly to the Ascom phones. Using Topology Hiding under Configuration Profiles will ensure that the calls are presented to Ascom in the correct format. Please see **Appendix B** for the setup that was used during compliance testing.

# 2.3. Support

Technical support for the Ascom Myco 3 handsets can be obtained through a local Ascom supplier or Ascom global technical support:

- Email: <a href="mailto:support@ascom.com">support@ascom.com</a>
- Help desk: +46 31 559450

# 3. Reference Configuration

**Figure 1** shows the network topology during compliance testing. Ascom Myco 3 handsets register with Session Manager to make/receive calls with the Avaya Digital, H.323, and SIP endpoints on Communication Manager and with a simulated PSTN.

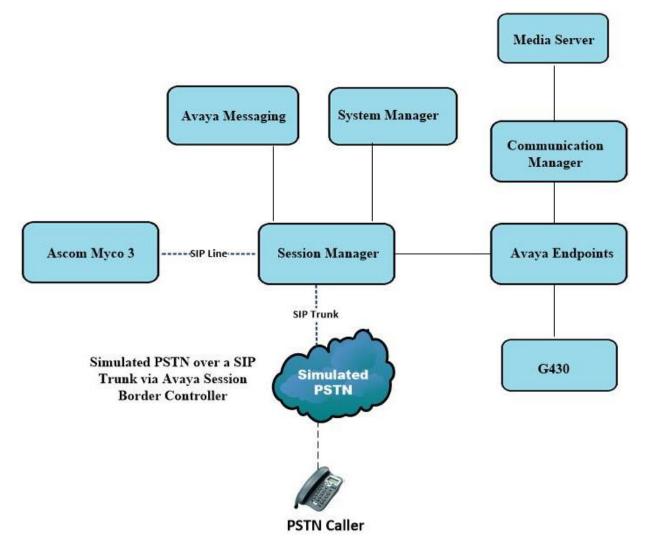


Figure 1: Network Solution of Ascom Myco 3 smartphone with Avaya Aura® Communication Manager R10.1 and Avaya Aura® Session Manager R10.1

# 4. Equipment and Software Validated

The following equipment and software were used for the compliance test.

Avaya Equipment	Software / Firmware Version
Avaya Aura® System Manager	System Manager 10.1.0.2 Build No. – 10.1.0.0.537353 Software Update Revision No: 10.1.0.2.0715160 Service Pack 2
Avaya Aura® Session Manager	Session Manager R10.1 Build No. – 10.1.0.2.1010219
Avaya Aura® Communication Manager	R10.1.0.2.0 – SP2 R020x.01.0.974.0 Update ID 01.0.974.0-27607
Avaya Messaging	11.0 SP2 Build 11.0.0.324
Avaya Aura® Media Server	10.1.0.101
Avaya Media Gateway G430	42.7.0 /2
Avaya 9404 Digital	17.0
Avaya J100 Series SIP	7.1.2.0.14
Avaya J100 Series H323	7.0.14.0.7
Avaya Session Border Controller for Enterprise (to facilitate simulated PSTN)	8.1.3.0-31-21052
Ascom Equipment	Software / Firmware Version
Ascom Myco 3	3.4.3
Ascom Experience (AE)	3.4.3
Ascom approved Wi-Fi Access Point	Ascom approved software version

Note: All Avaya equipment is running on VMware virtual servers

\*Ascom Experience is an application package installed "on top" of Android. It is typically relevant for ascertaining the version of the SIP application used on Ascom Myco 3.

# 5. Configure Avaya Aura® Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing with SIP trunks in place to Session Manager. For further information on the configuration of Communication Manager please see **Section 10** of these Application Notes.

**Note:** A printout of the Signalling and Trunk groups that were used during compliance testing can be found in the **Appendix A** of these Application Notes.

The following sections go through the following.

- System Parameters
- Dial Plan Analysis
- Feature Access Codes
- Network Region
- IP Codec
- Coverage Path/Hunt Group

## 5.1. Configure System Parameters

Ensure that the SIP endpoints license is valid as shown below by using the command **display** system-parameters customer-options.

```
display system-parameters customer-options
                                                              Page
                                                                     1 of 12
                               OPTIONAL FEATURES
    G3 Version: V20
                                                 Software Package: Enterprise
      Location: 2
                                                  System ID (SID): 1
      Platform: 28
                                                 Module ID (MID): 1
                                                              USED
                                Platform Maximum Ports: 48000 168
                                     Maximum Stations: 36000 44
                             Maximum XMOBILE Stations: 36000 0
                   Maximum Off-PBX Telephones - EC500: 41000 2
                   Maximum Off-PBX Telephones - OPS: 41000 20
                   Maximum Off-PBX Telephones - PBFMC: 41000 0
                   Maximum Off-PBX Telephones - PVFMC: 41000 0
                    Maximum Off-PBX Telephones - SCCAN: 0
                                                              0
                        Maximum Survivable Processors: 313
                                                              1
```

### 5.2. Configure Dial Plan Analysis

Use the **change dialplan analysis** command to configure the dial plan using the parameters shown below. Extension numbers (**ext**) are those beginning with **3**. Feature Access Codes (**fac**) use digits **8** and **9** and use characters \* or #.

change dial	lan analysis		Page 1 of 12
		DIAL PLAN ANALYSIS TABLE	
		Location: all	Percent Full: 5
Dialed	Total Call	Dialed Total Call	Dialed Total Call
String	Length Type	String Length Type	String Length Type
1	4 udp		
2	4 udp		
3	4 ext		
4	4 ext		
5	4 udp		
6	4 ext		
8	1 fac		
9	1 fac		
*8	4 dac		
*	3 fac		
#	3 fac		

Under **aar analysis**, **31** was set to go out over the SIP trunk 11 on **Route Pattern 11**, as shown below. This is used for SIP phones to allow the connection between Session Manager and Communication Manager and would have been setup as part of the initial installation and configuration of the Aura® platform. The configuration of the Signaling and Trunk Group 11 is shown in **Appendix A**.

change aar analysis 3	7	דם מגי			T TP	Page	1 of	2
	AAR DIGIT ANALYSIS TABLE Location: all				Percent	Full:	1	
Dialed	Tot	al	Route	Call	Node	ANI		
String	Min	Max	Pattern	Туре	Num	Reqd		
31	4	4	11	lev0		n		
4	7	7	999	aar		n		
5	7	7	999	aar		n		
666	4	4	66	aar		n		
7	7	7	999	aar		n		
8	7	7	999	aar		n		
9	7	7	999	aar		n		
						n		
						n		

## 5.3. Configure Feature Access Codes

Use the **change feature-access-codes** command to configure access codes which can be entered from Myco 3 handsets to initiate Communication Manager Call features. These access codes must be compatible with the dial plan described in **Section 5.2**. Some of the access codes configured during compliance testing are shown below.

change feature-access-codes	Page 1 of 12
FEATURE ACCESS CO	-
Abbreviated Dialing List1 Access Code:	
Abbreviated Dialing List2 Access Code:	
Abbreviated Dialing List3 Access Code:	
Abbreviated Dial - Prgm Group List Access Code:	
Announcement Access Code:	
Answer Back Access Code:	#02
Attendant Access Code:	
Auto Alternate Routing (AAR) Access Code:	8
Auto Route Selection (ARS) - Access Code 1:	9 Access Code 2:
Automatic Callback Activation:	<b>*05</b> Deactivation: #05
Call Forwarding Activation Busy/DA: *03 All:	*04 Deactivation: #04
Call Forwarding Enhanced Status: *73 Act:	*74 Deactivation: #74
Call Park Access Code:	
Call Pickup Access Code:	
CAS Remote Hold/Answer Hold-Unhold Access Code:	
CDR Account Code Access Code:	*1/
	··· 14
Change COR Access Code:	
Change Coverage Access Code:	
Conditional Call Extend Activation:	Deactivation:
Contact Closure Open Code:	Close Code:

## 5.4. Configure Network Region

Use the **change ip-network-region x** (where x is the network region to be configured) command to assign an appropriate domain name to be used by Communication Manager, in the example below **greaneyp.sil6.avaya.com** is used. Note this domain is also configured in **Section 6.1.1**.

```
change ip-network-region 1
                                                                 1 of
                                                                       20
                                                           Page
                              IP NETWORK REGION
  Region: 1
Location: 1
            Authoritative Domain: greaneyp.sil6.avaya.com
   Name: default NR
MEDIA PARAMETERS
                              Intra-region IP-IP Direct Audio: yes
     Codec Set: 1
                             Inter-region IP-IP Direct Audio: yes
  UDP Port Min: 2048
                                         IP Audio Hairpinning? y
  UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
 Call Control PHB Value: 46
       Audio PHB Value: 46
       Video PHB Value: 26
802.1P/Q PARAMETERS
Call Control 802.1p Priority: 6
       Audio 802.1p Priority: 6
       Video 802.1p Priority: 5
                                  AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS
                                                       RSVP Enabled? n
 H.323 Link Bounce Recovery? y
 Idle Traffic Interval (sec): 20
  Keep-Alive Interval (sec): 5
           Keep-Alive Count: 5
```

# 5.5. Configure IP-Codec

Use the **change ip-codec-set x** (where x is the ip-codec set used) command to designate a codec set compatible with the Myco 3 handsets. During compliance testing the codecs shown below were offered to the Myco 3 handsets.

```
change ip-codec-set 1
                                                       Page
                                                             1 of
                                                                   2
                       IP MEDIA PARAMETERS
   Codec Set: 1
   AudioSilenceFramesPacketCodecSuppressionPer PktSize(ms)
1: OPUS-SWB24K
                           1
                  n
                                     20
2: G.722-64K
                                    20
                            1
3: G.722.2
                            2
                                    20
4: G.711A
                  n
                            2
                                    20
                  n
n
5: G.711MU
                            2
                                    20
                            2
6: G.729
                                     20
                   n
7:
    Media Encryption
                                    Encrypted SRTCP: best-effort
1: 1-srtp-aescm128-hmac80
2: none
3:
```

### 5.6. Configuration of Coverage Path and Hunt Group for voicemail

The coverage path setup used for compliance testing is illustrated below. Note the following: **Don't Answer** is set to **y**: The coverage path will be used in the event the phone set is not answered.

Number of Rings is set to 3: Point 1 is set to h68 The coverage path will be used after 3 rings. Hunt Group 68 is utilised by this coverage path.

```
display coverage path 3
                                COVERAGE PATH
                   Coverage Path Number: 3
                                               Hunt after Coverage? n
Linkage
     Cvg Enabled for VDN Route-To Party? n
                      Next Path Number:
COVERAGE CRITERIA
    Station/Group Status Inside Call Outside Call
      Active? n
Busy? y
Don't Answer? y
All? n
AC/Goto Cover? y
iday Coverage? n
                                              n
                                              У
                                              У
                                                        Number of Rings: 3
                                              n
DND/SAC/Goto Cover?
                                               У
  Holiday Coverage?
                                               n
COVERAGE POINTS
   Terminate to Coverage Pts. with Bridged Appearances? n
 Point1: h68 Rng: 3 Point2:
                                Point4:
 Point3:
  Point5:
                                Point6:
```

The hunt group used for compliance testing is shown below. Note that on **Page 1** the **Group Extension** is **6668**, which is used to dial for messaging and **Group Type** is set to **ucd-mia**.

display hunt-group 68		Pag	ge	1 of	60
	HU	NT GROUP			
Group Number: Group Name: Group Extension: Group Type: TN: COR: Security Code: ISDN/SIP Caller Display:	Messaging <b>6668 ucd-mia</b> 1	ACD? Queue? Vector? Coverage Path: Night Service Destination: MM Early Answer? Local Agent Preference?	n n 1 n		
SIP URI::					

#### On Page 2 Message Center is set to sip-adjunct.

HUNT GROUP		Page	<b>2</b> of 60
e Center: sip-adjunc	t		
Voice Mail Handle			
6668	(e.g., A	AK/AK5 ACC	ess code)
	<b>Center: sip-adjunc</b> Voice Mail Handle	<b>• Center: sip-adjunct</b> Voice Mail Handle Ra (e.g., Al	HUNT GROUP • Center: sip-adjunct Voice Mail Handle Routing Dig (e.g., AAR/ARS Acc

# 6. Configure Avaya Aura® Session Manager

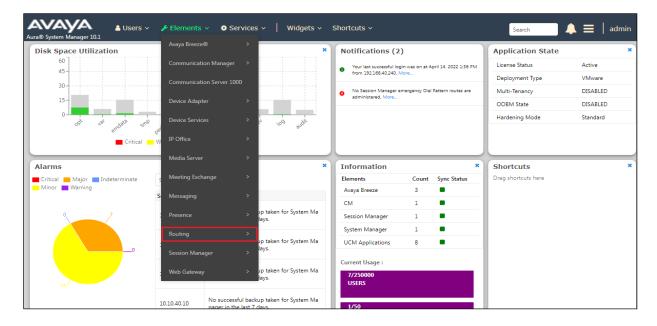
The Ascom Myco 3 handsets are added to Session Manager as SIP users. The procedures include the following areas:

- Domains and Locations
- Adding Ascom SIP Users

To make changes on Session Manager a web session is established to System Manager. Log into System Manager by navigating to https://<System Manager FQDN>/SMGR. Enter the appropriate credentials for the User ID and Password and click on Log On.

Recommended access to System Manager is via FQDN.	A
Go to central login for Single Sign-On	User ID:
If IP address access is your only option, then note that authentication will fail in the following cases:	Password:
<ul> <li>First time login with "admin" account</li> <li>Expired/Reset passwords</li> </ul>	Log On Cancel
Use the "Change Password" hyperlink on this page to change the password manually, and then login.	Change Password
Also note that single sign-on between servers in the same security domain is not supported when accessing via IP address.	Supported Browsers: Firefox (minimum version 93.0), Chrome (minimum version 91.0) or Edge (minimum version 93.0).
This system is restricted solely to authorized users for legitimate business purposes only. The actual or attempted unauthorized access, use, or modification of this system is strictly prohibited.	
Unauthorized users are subject to company disciplinary procedures and or criminal and civil penalties under state, federal, or other applicable domestic and foreign laws.	
The use of this system may be monitored and recorded for administrative and security reasons. Anyone accessing this system expressly consents to such monitoring and recording, and is advised that if it reveals possible evidence of criminal activity, the evidence of such activity may be provided to law enforcement officials.	
All users must comply with all corporate instructions regarding the protection of information assets.	
	·

Once logged in navigate to **Elements** and click on **Routing**. This area is where the domain, location and SIP Entities are added.



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### 6.1. Domains and Locations

**Note:** It is assumed that a domain and a location have already been configured, therefore a quick overview of the domain and location that was used in compliance testing is provided here.

### 6.1.1. Display the Domain

Select **Domains** from the left window. This will display the domain configured on Session Manager. For compliance testing this domain was **greaneyp.sil6.avaya.com** as shown below. If a domain is not already in place, click on **New**. This will open a new window (not shown) where the domain can be added.

Avra® System Manager 10.1	Lusers ∨ ✓ Elements ∨ ♦ Services ∨  Widgets ∨ Sho	rtcuts ~	Search	🕽 🗮   admin
Home Routing ×				
Routing ^	Domain Management			Help ?
<u>Domains</u>	New Edit Delete Duplicate More Actions -			
Locations	1 Item 🧔			Filter: Enable
Conditions	Name	Туре	Notes	
Adaptations 🗸	greaneyp.sil6.avaya.com Select : All, None	sip	New Aura 10 domain (Avaya Compliant)	
SIP Entities				

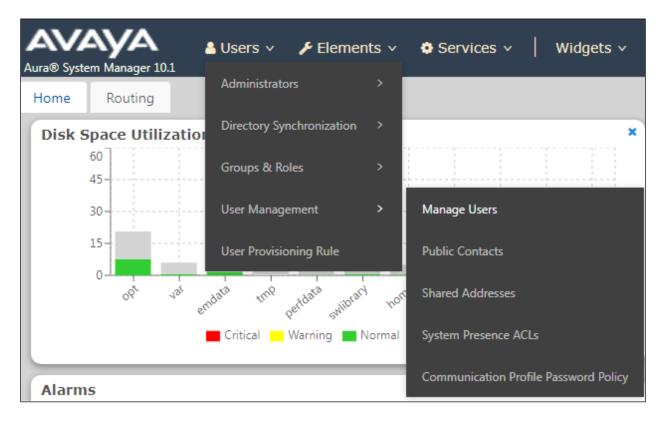
#### 6.1.2. Display the Location

Select **Locations** from the left window and this will display the location setup. The example below shows the location **DevConnectGalway** which was used for compliance testing. If a location is not already in place, then one must be added to include the IP address range of the Avaya solution. Click on **New** to add a new location.

AVAYA Aura® System Manager 10.1	Lusers ∨ 🖌 Elements ∨ 🌣 Services ∨   Wid	gets v Shortcuts v	Search	🔶 🗮   admin
Home Routing ×				
Routing ^	Location			Help ?
Domains	New Edit Delete Duplicate More Actions -			
Locations	1 Item 🖓			Filter: Enable
Conditions	Name	Correlation	Notes	
Adaptations 🗸 🗸	DevConnectGalway Select : All, None	Ē	DevConnect Lab Galway	
SIP Entities				

### 6.2. Adding Ascom SIP Users

From the home page click on **User Management** → **Manager Users** shown below.



From Manager Users section, click on New to add a new SIP user.

iser Management ^ Ho	me@ / Users	옷 / Manage Users				
Manage Users	Search		Q			
Public Contacts	© ∨iew	🖉 Edit 🛛 🕂 New	춲 Duplicate 🗴 🔟 Delete	More Actions V		Options
Shared Addresses		First Name 🖨 🍸	Surname 🖨 🍸	Display Name 🖨 🍸	Login Name 🖨 🍸	SIP Handle 🛛
		admin	admin	Default Administrator	admin	
System Presence ACLs		J179	Н323	H323, J179	3001@greaneyp.sil6.ava ya.com	
Communication Profile		Paul	Greaney	Paul Greaney	paul@greaneyp.sil6.avay a.com	
		J189	SIP	SIP, J189	3101@greaneyp.sil6.ava ya.com	3101
	Select All	~				

Under the **Identity** tab fill in the user's **Last Name** and **First Name** as shown below. Enter the **Login Name**, following the format of "user id@domain". The remaining fields can be left as default.

User Profile   Edit   318	1@greaneyp.sil6.avaya	a.com	Commit & Continue	Commit 🛛 🛞 Cancel
Identity Communication F	Profile Membership C	Contacts		
Basic Info	User Provisioning	~ ``		
Address	Rule:			
LocalizedName	* Last Name :	3181	Last Name (in Latin alphabet characters):	3181
	* First Name :	Ascom	First Name (in Latin alphabet characters) :	Ascom
	∗ Login Name∶	3181@greaneyp.sil6.ava	Middle Name :	Middle Name Of User
	Description :	Ascom Myco	Email Address :	Email Address Of User
	Password :		User Type :	Basic ~
	Confirm Password :		Localized Display Name :	3181, Ascom
	Endpoint Display Name :	3181, Ascom	Title Of User :	Title Of User
	Language Preference :	English (United Stat >	Time Zone :	(0:0)GMT : Dublin, V
	Employee ID :	Employee Id Of User	Department :	Department Of User

Under the **Communication Profile** tab enter **Communication Profile Password** and **Re-enter Comm-Profile Password**, note that his password is required when configuring the Myco 3 handset in **Section 7.2**.

Identity Communication P	rofile Membership Contacts	
Communication Profile Password	Comm-Profile Password	×
PROFILE SET : Primary V	Comm-Profile Password :	oma
Communication Address		ean
PROFILES	* Re-enter Comm-Profile Password :	
Session Manager Profile		
Avaya Breeze® Profile	Generate Comm-Profile Password	
CM Endpoint Profile	Cancel	

Solution & Interoperability Test Lab Application Notes ©2023 Avaya Inc. All Rights Reserved. Staying on the **Communication Profile** tab, click on **New** to add a new **Communication Address**.

Identity Communication Profile Membership Contacts				
Communication Profile Password	🖉 Edit	+ New 🖻 Delete		
PROFILE SET: Primary V		Туре	Handle 🖨 🛛	Domain 🗘 🍸
Communication Address	Select All 🗸			
PROFILES				Total : 1 1 10 / page 🗸
Session Manager Profile				
CM Endpoint Profile				

Enter the extension number and the domain for the **Fully Qualified Address** and click on **OK** once finished.

Identity Communication	Profile Membership Contact	s	
Communication Profile Password	Edit → New 🖾 D	Pelete	Options
PROFILE SET : Primary	<b>У</b> Туре	Handle 🔷 🍸	Domain 🖨 💎
Communication Address	Communication Address Add/Edit		× greaneyp.sil6.avaya.com
PROFILES Session Manager Profile	* Type: Avaya SIP *Fully Qualified Address: 3181	@ greaneyp.sil6.avaya	✓ 10 / page ∨ Goto
CM Endpoint Profile		Cancel	ок

Ensure Session Manager Profile is checked and enter the Primary Session Manager details, enter the Origination Sequence and the Termination Sequence. Scroll down to complete the profile. Enter the Home Location, this should be the location configured in Section 6.1.2. Click on Commit at the top of the page (not shown).

**Note:** Max. Simultaneous Devices will need to be set here when configuring Multi-Device Access in Section Error! Reference source not found.. This will only be set on the SIP user that all devices will be registering as, for compliance testing this SIP user was 3101. So, this will be set on SIP user 3101 to however many devices will be registering as 3101.

Identity Communication Pro	ofile Membership Conta	icts	
Communication Profile Password PROFILE SET : Primary V	SIP Registration		
Communication Address	* Primary Session Manager:	sm101x	۹
PROFILES			
Session Manager Profile	Secondary Session Manager:	Start typing	٩
Avaya Breeze® Profile			
CM Endpoint Profile	Survivability Server:	Start typing	٩
	Max. Simultaneous Devices :	1	~
	Block New Registration When Maximum Registrations		
	Application Sequences		
	Origination Sequence:	CM-APP-SEQ	~
	Termination Sequence :	CM-APP-SEQ	~
	Emergency Calling Appl	lication Sequences	
	Emergency Calling	Select	~ ]
	Origination Sequence:		
	Emergency Calling	Select	~
	Termination Sequence:		
	Call Routing Settings		
	* Home Location :	DevConnectGalway	۵
	Conference Factory Set:	Select	

Solution & Interoperability Test Lab Application Notes ©2023 Avaya Inc. All Rights Reserved. Click on the **CM Endpoint Profile** in the left window. Select the Communication Manager that is configured for the **System** and choose the **9620SIP\_DEFAULT\_CM\_10\_1** as the **Template**. Enter the appropriate **Voice Mail Number** and **Sip Trunk** should be set to **aar**, providing that the routing is setup correctly on Communication Manager. The **Profile Type** should be set to **Endpoint** and the **Extension** is the number assigned to the Myco 3 handset. Click on **Endpoint Editor** to configure the buttons and features for that handset on Communication Manager.

User Profile   Edit   3181@greaneyp.sil6.ava					
Identity Communic	cation Profile	Membership	Contacts		
Communication Profile Pas	sword				
PROFILE SET : Primary	~	<b>∗</b> System∶	cm101x v	Image: Profile Type :	Endpoint v
Communication Address		Use Existing		* Extension :	3181 🖵 💆
PROFILES		Endpoints :			
Session Manager Profile		Template :	Start typing Q	<b>∗</b> Set Type∶	9620SIP
Avaya Breeze® Profile		Security Code :	Enter Security Code	Port :	S000005 Q
CM Endpoint Profile		Voice Mail	6668	Preferred	Select v
		Number :		Handle :	
		Calculate Route Pattern :		Sip Trunk :	aar
		SIP URI :	Select v	Enhanced Callr- Info Display for 1-	
		Delete on	_	Override Endpoint	
		Unassign from		Name and	
		lleer or on Nelete		Localized Name :	

Under the **General Options** tab ensure that **Coverage Path 1** is set to that configured in **Section 5.6**. Also ensure that **Message Lamp Ext.** is showing the correct extension number. The **Class of Restriction** and **Class of Service** should be set to the appropriate values for the Myco handset. This may vary depending on what level of access/permissions the handset has been given.

r						
System	cm1	cm101x			Extension	3181
Template	Sele	Select		~	Set Type	9620SIP
Port	S00	0005			Security Code	
Name	318	1, Ascom				
General Options (G) 常	Feature	e Options (F)	Site Dat	t <b>a</b> (S)	Abbreviated Call Dialing (A)	Enhanced Call Fwd
Button Assignment (B)	Group	Membership (	(M)			
* Class of Restriction (	COR)	1			* Class Of Service (COS)	1
* Emergency Location I	Ext	3181			* Message Lamp Ext.	3181
* Tenant Number		1				
* SIP Trunk		Q aar			Type of 3PCC Enabled	Avaya 🗸
Coverage Path 1		3			Coverage Path 2	
Lock Message					Localized Display Name	3181, Ascom
Multibyte Language		Not Applicable	$\checkmark$		Enable Reachability for Station Domain Control	system 🗸
SIP URI						
Primary Session Man	ager—					
IPv4:		10.10.40.12			IPv6:	
Secondary Session M	lanager					
IPv4:					ΙΡν6:	

Call Forwarding can be set from the **Enhanced Call Fwd** tab, as shown below. Other tabs can be checked, but for compliance testing the values were left as default, such as default value of three call appearance buttons that were used, this can be changed under the **Button Assignment** tab. Click on **Done** (not shown) to complete.

eneral Options (G) \star	Feature Options (F)	Site Data (S) At	obreviated Call I	Dialing (A)	Enhanced Call Fwd (E
utton Assignment (B)	Group Membership (M	)			
		Forwarded Des	stination	Active	
Unconditional For Inte	rnal Calls To				
External Calls To					
Busy For Internal Calls	5 To				
External Calls To					
No Reply For Internal	Calls To				
External Calls To					
equired					

Once the **CM Endpoint Profile** is completed correctly, click on **Commit** to save the new user.

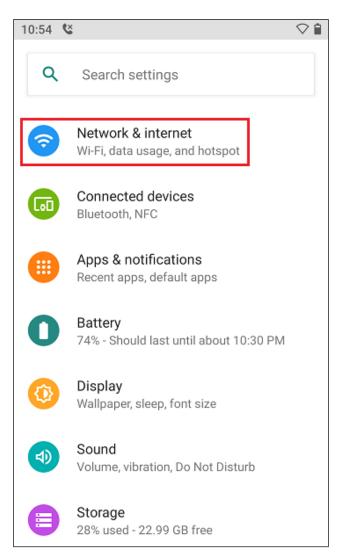
# 7. Configure Ascom Myco 3 Smartphone

This section describes how to configure the Myco 3 smartphone. It is implied that the Wi-Fi network has been configured and operational.

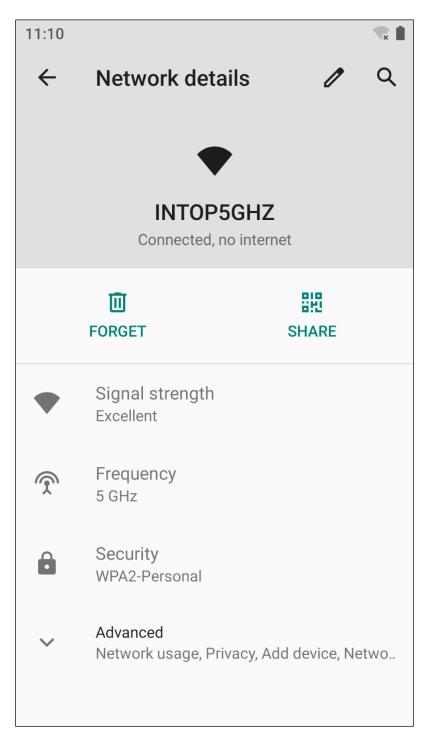
Note: The wireless router configuration is outside the scope of these Application Notes.

## 7.1. Configure Wi-Fi network on Myco 3

Access to the Myco 3 smartphone is from the smartphone device in question. From the smartphone navigate to Android Settings  $\rightarrow$  Network & Internet  $\rightarrow$  Wi-Fi.

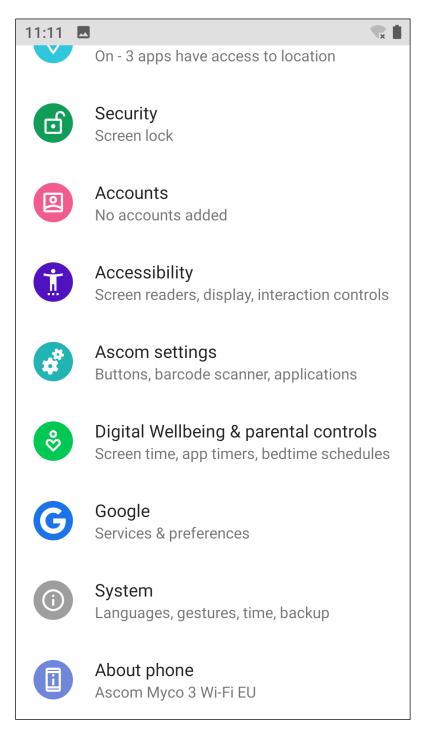


The following screen displays information on the network such as the wireless network that it is connected to.



# 7.2. Configure SIP settings

From the Myco 3 smartphone navigate to Android Settings  $\rightarrow$  Ascom settings.



Click on Ascom VoIP.

12:37	🖬 👓 👗 🔹 💎 🗎	
÷	Ascom settings	
	Wi-Fi	
	Ascom VoIP	
	Button configuration	
	Barcode scanning	
	Location services	
	Display setup	
	Man-down & No-movement	
	Advanced settings	
	Troubleshooting	
	System update	
	About	

Configure the following values.

- SIP Transport
- Primary SIP Proxy
- Listening port
- **SIP Register expiration 120** (this will be negotiated with the PBX).

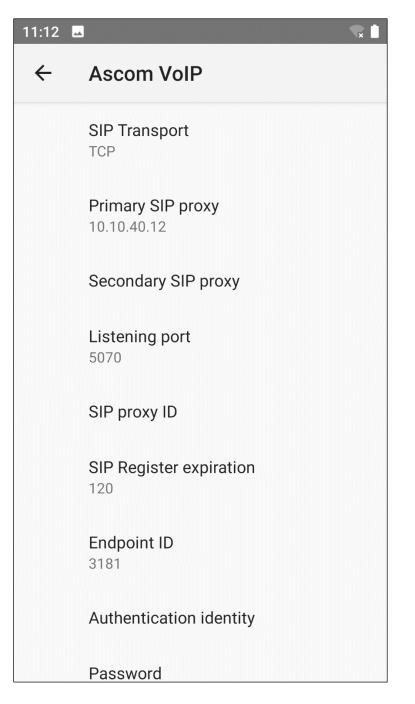
**5070**.

- Endpoint ID
- Password

This is the extension number. Password assigned to the endpoint in **Section 6.2**.

IP address of Session Manager.

For compliance testing **TCP** was selected as shown below.



Scroll down to display and set the following.

- **Preferred codec** This setting will depend on the country, **G.722** was chosen for compliance testing.
- **DTMF type RFC 2833** is chosen, again for this testing.
- Hold type Was left as **inactive** for compliance testing.
- Call waiting behavior This can be set to Use call waiting (preferable) or Reject call.

11:13 🗖	
÷	Ascom VoIP
	Authentication identity
	Password
	Preferred codec G.722
	Disabled codecs No options selected
	DTMF type RFC 2833
	Hold type inactive
	Call waiting behavior Use call waiting
	Replace Call Rejected with User Busy Turn on to send "User busy"

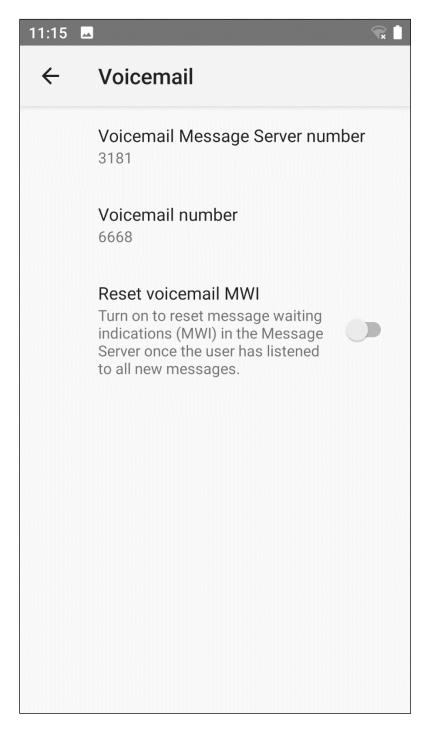
Scroll down to display and set the following.

- Replace Call Rejected with
   User Busy
   Turn to on for compliance testing, to allow Coverage
   Path to work for diversion to voicemail.
- **Dialing tone patterns** Left as **Other**.

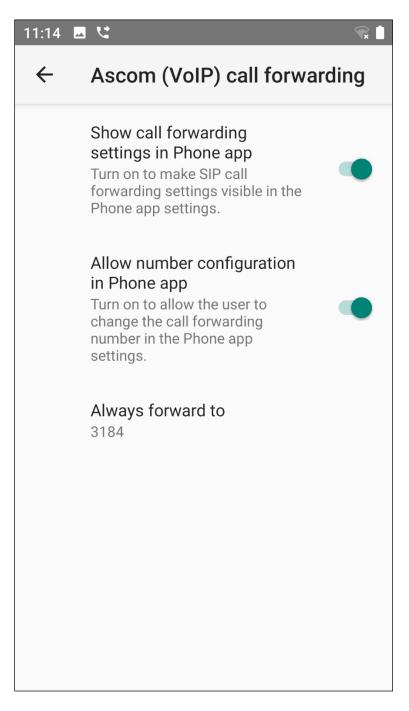
Click on **Voicemail** to enter the details to subscribe for message waiting updates.

11:14	]	€
÷	Ascom VoIP	
	Hold type inactive	
	Call waiting behavior Use call waiting	
	Replace Call Rejected with User Busy Turn on to send "User busy" instead of "Call rejected" cause code if an incoming call is rejected.	•
	Dialing tone patterns Other	
	Ascom (VoIP) call forwarding	
	Voicemail	
	Secure audio negotiation RTP only	
	Secure RTP mode	

Enter the extension number for the **Voicemail Message Server number** and enter the voicemail number to call to voicemail for the **Voicemail number**. The **Reset voicemail MWI** was left as shown below.



Local Call Forwarding for "call forward all calls" is now available with Myco 3 and this can be accessed by switching on the **Show call forwarding settings in Phone app**, as shown below.



### 7.3. Configure Multi Device Access

Multi Device Access is used to allow the same user register on multiple devices, this may be all Myco 3 smartphones or a mixture of Avaya endpoints and Myco 3 phones.

The configuration of Multi Device Access for Myco 3 is to change the **Endpoint ID** and **Password** on the bottom of the screen below to that of the user that is to be used on each Myco 3 device. The example below shows this handset being changed to use the **3101** user. Note that the setting for **Max. Simultaneous Devices** will need to be configured accordingly as explained in **Section 6.2**.

11:16 🗖	S 🕄
÷	Ascom VoIP
	SIP Transport TCP
	Primary SIP proxy 10.10.40.12
	Secondary SIP proxy
	Listening port 5070
	SIP proxy ID
	SIP Register expiration
	Endpoint ID 3101
	Authentication identity
	Password

The **Voicemail Message Server number** must also be changed to match that of the primary registration device, in this case **3101**.

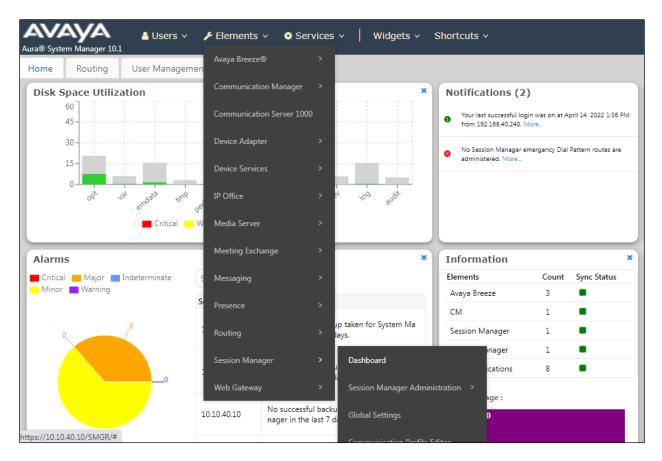
11:17	
~	Voicemail
	Voicemail Message Server number 3101
	Voicemail number 6668
	Reset voicemail MWI Turn on to reset message waiting indications (MWI) in the Message Server once the user has listened to all new messages.

# 8. Verification Steps

The following steps can be taken to ensure that connections between Myco 3 and Session Manager and Communication Manager are up.

## 8.1. Session Manager Registration

Log into System Manager as done previously in Section 6, under Elements  $\rightarrow$  Session Manager  $\rightarrow$  Dashboard.



Under **System Status** in the left window, select **User Registrations** to display all the SIP users that are currently registered with Session Manager.

Home Session Manager		
Session Manager 🔷	System S	status
Dashboard	Sub Pages	
Session Manager Ad	Action	Description
Global Settings	SIP Entity Monitoring	View Session Manager SIP Entity Link monitoring status.
Communication Prof		
Network Configur 🗡	Managed Bandwidth Usage	Displays system-wide bandwidth usage information for locations where usage is managed. The details expansion shows the breakdown of usage among Session Manager Instances.
Device and Locati Y	Security Module Status	View Security Module status and perform actions on Security Modules for Core and Branch Session Manager instances.
	SIP Firewall Status	View SIP Firewall rule execution status from Security Modules
System Status ^	Registration Summary	View per-Session Manager registration status and send notifications to AST devices.
Managed Band	User Registrations	View detailed user registration status and send notifications to AST devices.
Security Module SIP Firewall Status	Session Counts	View per-Session Manager and system wide session counts.
Registration Su		
User Registratio	User Data Storage	View status, backup and restore Session Manager User Data Storage
Session Counts		

The Ascom Myco 3 user should show as being registered as highlighted. It has an IP Address associated with it and there is a tick in the **Registered Prim** box.

									С	ustomiz	e
View •	Default Export Force	e Unregister	AST Devi Notificati	Report	Reload • F	ailback	As of 2	2:36 PM		Advan Search	
14 Items	😂 🛛 Show 🛛 All 🗸								Filt	er: Enal	ble
Details	Address	First Name Last Name	Lact Namo	Actual Location	IP Address 💌	Policy	Shared Control	Simult. Devices	AST Device	Registere	
			Last Name							Prim	S
►Show	3194@greaneyp.sil6.avaya.com	Ascom	3194		10.10.40.219	fixed		1/1		✓	
►Show	3193@greaneyp.sil6.avaya.com	Ascom	3193		10.10.40.216	fixed		1/1		~	
Show	3115@greaneyp.sil6.avaya.com	Vantage01	K175	DevConnectGalway	10.10.40.210	fixed		1/1	✓	(AC)	
Show	3192@greaneyp.sil6.avaya.com	Ascom	3192		10.10.40.205	fixed		1/1		•	
►Show	3181@greaneyp.sil6.avaya.com	Ascom	3181		10.10.40.201	fixed		1/1		~	1
►Show	3101@greaneyp.sil6.avaya.com	Agent One	Workspaces	DevConnectGalway	10.10.40.186	fixed		1/3	✓	(AC)	
Show		AAfD - one	SIP			fixed		0/1			
Show		AAfD - two	SIP			fixed		0/1			
►Show		Workplace	Windows			fixed		0/1			

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## 8.2. Ascom Myco 3 Registration

The Ascom Myco 3 handset connection to Session Manager can be verified by an absence of an error message on the handset display, as shown in the following illustration, (this is an example from Ascom's lab with 5034 as Endpoint ID).



# 9. Conclusion

These Application Notes describe the configuration steps required for Ascom Myco 3 v3.4.3 to successfully interoperate with Avaya Aura® Communication Manager R10.1 and Avaya Aura® Session Manager R10.1 by registering Myco 3 with Avaya Aura® Session Manager as a third-party SIP phone. Please refer to **Section 2.2** for test results and observations.

# 10. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at <u>http://support.avaya.com</u> where the following documents can be obtained.

- 1. Avaya Aura® Communication Manager Feature Description and Implementation, Release 10.1
- 2. Administering Avaya Aura® Session Manager, Release 10.1

Documentation for Ascom products can be obtained from an Ascom supplier or may be accessed on the support pages at

<u>https://www.ascom-ws.com/AscomPartnerWeb/Templates/WebLogin.aspx</u> (login account for the Ascom Partner Extranet required).

# **Appendix A**

#### **Signaling Group**

display signaling-group 11 Page 1 of 3 SIGNALING GROUP Group Number: 11 Group Type: sip Transport Method: tls Q-SIP? n IP Video? n Enforce SIPS URI for SRTP? n Peer Detection Enabled? y Peer Server: SM Clustered? n Prepend '+' to Outgoing Calling/Alerting/Diverting/Connected Public Numbers? y Remove '+' from Incoming Called/Calling/Alerting/Diverting/Connected Numbers? n Alert Incoming SIP Crisis Calls? n Near-end Node Name: procr Far-end Node Name: sm101x Near-end Listen Port: 5061 Far-end Listen Port: 5061 Far-end Network Region: 1 Far-end Domain: greaneyp.sil6.avaya.com Bypass If IP Threshold Exceeded? n Incoming Dialog Loopbacks: eliminate RFC 3389 Comfort Noise? n DTMF over IP: rtp-payload Direct IP-IP Audio Connections? y Session Establishment Timer(min): 3 IP Audio Hairpinning? n Enable Layer 3 Test? y Initial IP-IP Direct Media? n H.323 Station Outgoing Direct Media? n Alternate Route Timer(sec): 6

#### **Trunk Group Page 1**

display trunk-group 11	Page 1 of 5
	TRUNK GROUP
Group Number: 11	Group Type: sip CDR Reports: y
Group Name: SIP PHONES	COR: 1 TN: 1 TAC: *811
Direction: two-way	Outgoing Display? n
Dial Access? n	Night Service:
Queue Length: 0	
Service Type: tie	Auth Code? n
	Member Assignment Method: auto
	Signaling Group: 11
	Number of Members: 10

Page 2

display trunk-group 11 Group Type: sip	Page	2 of	5
TRUNK PARAMETERS			
Unicode Name: auto			
Redirect On OPTI	M Failure:	5000	
SCCAN? n Digital I Preferred Minimum Session Refresh Inte	loss Group: erval(sec):		
Disconnect Supervision - In? y Out? y			
XOIP Treatment: auto Delay Call Setup When A	accessed Vi	a IGAR?	n
Caller ID for Service Link Call to H.323 1xC: station-exter	ision		

#### Page 3

display trunk-group 11 3 of Page 5 TRUNK FEATURES ACA Assignment? n Measured: none Maintenance Tests? y Suppress # Outpulsing? n Numbering Format: private UUI Treatment: shared Maximum Size of UUI Contents: 128 Replace Restricted Numbers? n Replace Unavailable Numbers? n Modify Tandem Calling Number: no Send UCID? y Show ANSWERED BY on Display? y DSN Term? n

Page	4
------	---

display trunk-group 11 Page 4 of 5 SHARED UUI FEATURE PRIORITIES ASAI: 1 Universal Call ID (UCID): 2 MULTI SITE ROUTING (MSR) In-VDN Time: 3 VDN Name: 4 Collected Digits: 5 Other LAI Information: 6 Held Call UCID: 7 ECD UUI: 8

#### Page 5

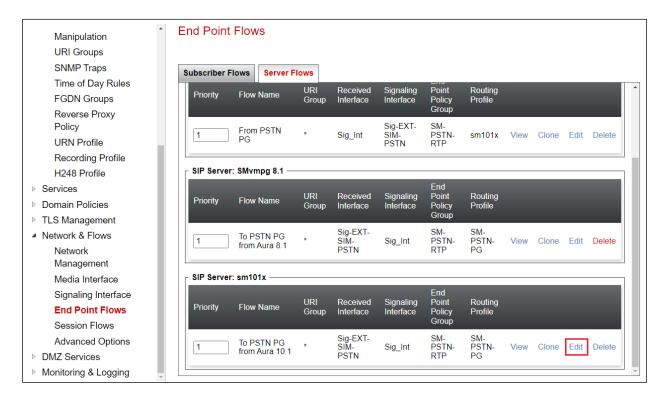
display trunk-group 11	Page	5 of	5
PROTOCOL VARIATIONS	-		
Mark Users as Phone?	У		
Prepend '+' to Calling/Alerting/Diverting/Connected Number?	n		
Send Transferring Party Information?	У		
Network Call Redirection?	У		
Build Refer-To URI of REFER From Contact For NCR?	n		
Send Diversion Header?	n		
Support Request History?	У		
Telephone Event Payload Type:	101		
Convert 180 to 183 for Early Media?	n		
Always Use re-INVITE for Display Updates?	n		
Resend Display UPDATE Once on Receipt of 481 Response?	n		
Identity for Calling Party Display:	From		
Block Sending Calling Party Location in INVITE?	n		
Accept Redirect to Blank User Destination?	n		
Enable Q-SIP? n			
Interworking of ISDN Clearing with In-Band Tones:	keep-chan	nel-act	ive
Request URI Contents: may-h	ave-extra-	digits	

# Appendix B

**Topology Hiding** under **Configuration Profiles** can be used to make changes to the SIP messages coming into the enterprise. The **To**, **From** and **Request Line** headers are all overwritten with the SIP realm or domain that was used during compliance testing. This domain was called **greaneyp.sil6.avaya.com** and it can be seen below as the overwritten value for the **IP/Domain** criteria. It is best to make a copy of the original Topology Hiding profile called **default** and rename it (**sm101x** was chosen as shown in the example below). Once this is created click on **Edit** at the bottom of the screen to make the necessary changes.



The Topology Hiding profile is then assigned to an **End Point Flow**. Chose the End Point Flow that is coming from the PSTN to the enterprise. This is called **To PSTN PG** below, click in **Edit** as shown to make changes to the Flow.



The Topology Hiding Profile created on the previous page is chosen as the **Topology Hiding Profile** for this Flow.

Edit Flow: To PSTN PG from Aura 10.1 X				
Flow Name	To PSTN PG from Aura 10.1			
SIP Server Profile	sm101x v			
URI Group	* •			
Transport	* •			
Remote Subnet	*			
Received Interface	Sig-EXT-SIM-PSTN V			
Signaling Interface	Sig_Int V			
Media Interface	Med_Int ~			
Secondary Media Interface	None			
End Point Policy Group	SM-PSTN-RTP V			
Routing Profile	SM-PSTN-PG 🗸			
Topology Hiding Profile	sm101x 🗸			
Signaling Manipulation Script	None			
Remote Branch Office	Any 🗸			
Link Monitoring from Peer				
FQDN Support				
FQDN				
	Finish			

# Appendix C

Registration timers are set under Session Manager  $\rightarrow$  Device Settings. These are the values for the Default Group. Note that the minimum setting for both Subscription Expiration Timer and Registration Expiration Timer is 600 (secs). This means that if the third-party device is set any lower than 600 secs, Session Manager will return a "session interval is too brief" and negotiate to 600 secs.

Aura® System Manager 10.1	Users 🗸 🌶 Elements 🗸 🌣 Services 🗸   Widgets 🗸 Shortcuts 🗸	Search 🔶 🗮 🛛 adm	nin
Home User Management	Session Manager		
Session Manager 🔨	Device Settings Group	Restore Cancel Save	*
Dashboard			
Session Manager	General   Server Timer   Endpoint Timer   Maintenance Settings   VoIP Monitoring Mar Parameters   802.1 P/Q Parameters   Expand All   Collapse All	nager   Volume Settings   VLAN Parameters   DIFFSERV/QOS	
Global Settings	General 👻		
Communication Prof	*Name: Default Group		
Network Configur 🗸	Description: Default Group Group Type:		l
Device and Locati 🔨	Terminal Group Number:		
Device Settings	Server Timer 🔹		
Location Settings	Maximum Minimum		
Station Access C	Subscription Expiration Timer (secs): 86400 600		
Application Config Y	Registration Expiration Timer (secs): 3600 600		
System Status 🗸 🗸 🗸 🗸 V	Endpoint Timer 🖷		
	*Line Reservation Timer (secs): 30		
System Tools 🛛 🗸 🗸 🗸 🗸 🗸 V	*Reactive Monitoring Interval (secs): 60		
Performance V	*Timer B (sec): 4		
<	Maintenance Settings 🕨		
	VoIP Monitoring Manager 🕨		-

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