



Avaya Solution & Interoperability Test Lab

Application Notes for Geomant OnCall IVR with Avaya Aura[®] Session Manager 7.0.1 and Avaya Aura[®] Communication Manager 7.0.1 - Issue 1.0

Abstract

These Application Notes describe the configuration steps for Geomant OnCall IVR to interoperate with Avaya Aura[®] Session Manager 7.0.1 and Avaya Aura[®] Communication Manager 7.0.1. IVR allows customer to be routed using script based self-service functionality via Avaya Aura[®] Communication Manager vectors. The IVR server connects via a SIP Trunk.

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 Geomant OnCall IVR to interoperate with Avaya Aura® Session Manager 7.0.1 and Avaya Aura® Communication Manager 7.0.1. The IVR uses scripted prompts to route calls to services via SIP.

2. General Test Approach and Test Results

The general test approach was to configure an IVR server to communicate with the Communication Manager via a SIP trunk configured on the Session Manager. The OnCall IVR was deployed in the Devconnect lab. Testing was performed by calling inbound to a VDN and using Vectors to allow the calling party to connect to the OnCall IVR. The call is processed using key presses based on the IVR options provided.

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.

2.1. Interoperability Compliance Testing

The interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on the OnCall IVR receiving calls in different call scenarios. The tests included:

- Call connected to an Available Agents.
- Call queued when No Available Agents.
- Call disconnected on request.
- Failover/Service – Tests the behaviour of OnCall IVR Server during certain failed conditions.

2.2. Test Results

All Test cases were completed successfully with the following observations.

- Options are turned off by default meaning that although the connection to Session manager is working correctly, a 405 message is returned.

2.3. Support

Technical Support can be obtained for Geomant products from the following.

Web: www.geomant.com

Email: support@geomant.com

Telephone: +44 (0)207 022 4874

3. Reference Configuration

The configuration shown in **Figure 1** was used during the compliance test of Geomant OnCall IVR with Session Manager and Communication Manager. The OnCall IVR utilizes a SIP connection through Session Manager and place calls to Communication Manager.

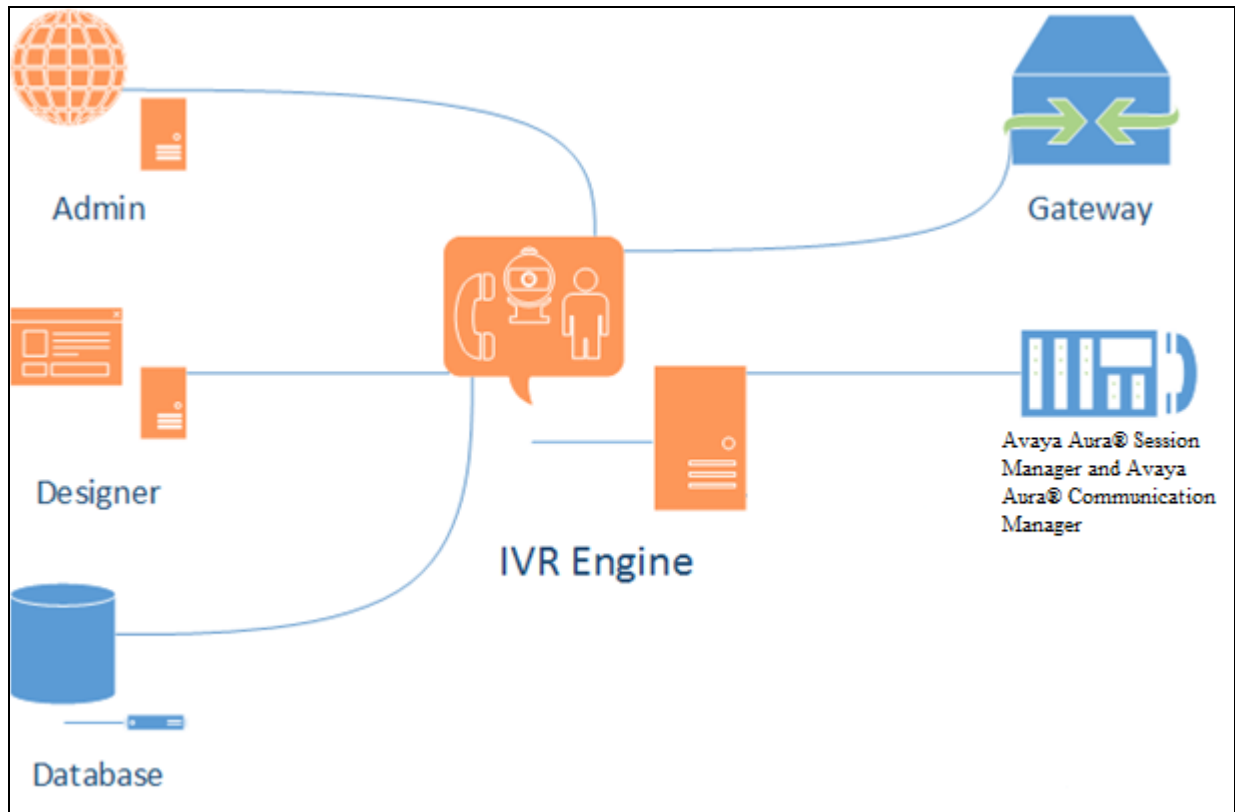


Figure 1: OnCall IVR with Avaya Aura® Session Manager and Communication Manager

4. Equipment and Software Validated

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

Avaya Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on VMware	R7.0 Build R017x.00.0.441.0 S/W update 7.0.1.1.0.441.23169 Platform update PLAT-rhel6.5-0010
Avaya Aura® Session Manager running on VMware	R7.0.1.1.70114
Avaya Aura® System Manager running on VMware	R7.0.1.2 Build No. 7.0.0.0.0.16266 S/W update 7.0.1.2.075662 Service Pack 2
Avaya 96xx IP phones 9611G (H.323)	6.6029
Avaya G430 Media Gateway <ul style="list-style-type: none">• MGP Firmware	Version 37.38.0
Geomant Equipment/Software	
OnCall IVR Server	Version 2.0.9.

5. Configure Avaya Aura® Communication Manager

Configuration and verification operations on Communication Manager illustrated in this section were all performed using Avaya Site Administrator Emulation Mode. The information provided in this section describes the configuration of Communication Manager for this solution. It is implied a working system is already in place, including SIP trunks to Session Manager. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 10**. The configuration described in this section can be summarized as follows:

- Verify System Capacity (SIP)
- Verify System Options (EAS-PHD)
- Define VDN's
- Define Vectors

5.1. Verify System Capacity

The license file installed on the system controls these attributes. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative. Use the **display system-parameters customer-options** command to determine these values. On **Page 2** of the System-Parameters Customer-Options form, verify that the number of **Maximum Administered SIP Trunks** supported by the system is sufficient.

```
display system-parameters customer-options                               Page 2 of 10
                                OPTIONAL FEATURES

IP PORT CAPACITIES                                                    USED
    Maximum Administered H.323 Trunks: 12000 16
    Maximum Concurrently Registered IP Stations: 18000 2
    Maximum Administered Remote Office Trunks: 12000 0
Maximum Concurrently Registered Remote Office Stations: 18000 0
    Maximum Concurrently Registered IP eCons: 414 0
    Max Concur Registered Unauthenticated H.323 Stations: 100 0
    Maximum Video Capable Stations: 41000 1
    Maximum Video Capable IP Softphones: 18000 4
    Maximum Administered SIP Trunks: 24000 180
Maximum Administered Ad-hoc Video Conferencing Ports: 24000 0
    Maximum Number of DS1 Boards with Echo Cancellation: 522 0
    Maximum TN2501 VAL Boards: 128 0
    Maximum Media Gateway VAL Sources: 250 0
    Maximum TN2602 Boards with 80 VoIP Channels: 128 0
    Maximum TN2602 Boards with 320 VoIP Channels: 128 0
    Maximum Number of Expanded Meet-me Conference Ports: 300 0

(NOTE: You must logoff & login to effect the permission changes.)
```

On Page 7 On Page 2 of the System-Parameters Customer-Options form, verify that EAS-PHD and the **Vectoring** options are set to **y**.

```

display system-parameters customer-options                               Page 7 of 12
                                CALL CENTER OPTIONAL FEATURES

                                Call Center Release: 7.0

                                ACD? y                                Reason Codes? y
                                BCMS (Basic)? y                        Service Level Maximizer? n
                                BCMS/VuStats Service Level? y        Service Observing (Basic)? y
                                BSR Local Treatment for IP & ISDN? y   Service Observing (Remote/By FAC)? y
                                Business Advocate? y                  Service Observing (VDNs)? y
                                Call Work Codes? y                    Timed ACW? y
                                DTMF Feedback Signals For VRU? y      Vectoring (Basic)? y
                                Dynamic Advocate? n                   Vectoring (Prompting)? y
                                Expert Agent Selection (EAS)? y       Vectoring (G3V4 Enhanced)? y
                                EAS-PHD? y                            Vectoring (3.0 Enhanced)? y
                                Forced ACD Calls? n                  Vectoring (ANI/II-Digits Routing)? y
                                Lookahead Interflow (LAI)? y          Vectoring (G3V4 Advanced Routing)? y
                                Multiple Call Handling (On Request)? y Vectoring (CINFO)? y
                                Multiple Call Handling (Forced)? y    Vectoring (Best Service Routing)? y
                                PASTE (Display PBX Data on Phone)? y  Vectoring (Holidays)? y
                                (NOTE: You must logoff & login to effect the permission changes.)
                                Vectoring (Variables)? y

```

5.2. Add Customer Call and Queuing VDN's

Use the command **add vdn #** where # is a valid extension in the Communication Manager dial plan. Give the VDN a descriptive **Name***. enter the **Destination** as the Vector Number used and enter the first skill as the skill given to the agents assigned to answer the customer calls. Vector **60** was used in testing. This step is repeated for the queuing VDN with the Destination being the Vector used to route the customer call.

```

add vdn 8274100                                                       Page 1 of 3
                                VECTOR DIRECTORY NUMBER

                                Extension: 827-4100
                                Name*: GeomantOutbound
                                Destination: Vector Number 60
                                Attendant Vectoring? n
                                Meet-me Conferencing? n
                                Allow VDN Override? n
                                COR: 1
                                TN*: 1
                                Measured: both Report Adjunct Calls as ACD*? n
                                Acceptable Service Level (sec): 20

                                VDN of Origin Annc. Extension*:
                                1st Skill*: 1
                                2nd Skill*:
                                3rd Skill*:

```

5.3. Add Customer Call and Queuing Vector's

The vector examples below are examples of what was used in testing. Use the **change vector #** command where # is the Destination vector added in **Section 5.2**.

5.3.1. Customer Call Vector GeomantIVR

The Vector simply transfers the call to the Geomant OnCall IVR, where a self-service IVR script plays an announcement indicating the customer to enter a digit to request a transfer to an agent. If the digit is pressed the call is queued to an agent and if not the call is disconnected.

```
change vector 60                                     Page 1 of 6
                                                    CALL VECTOR
Number: 60                                         Name: GeomantIVR
Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n
  Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y
  Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y
  Variables? y      3.0 Enhanced? y
01 wait-time      2      secs hearing ringback
02 route-to      number 8200001      with cov n if digit      = 1
03 stop
```

5.3.2. Queuing Vector

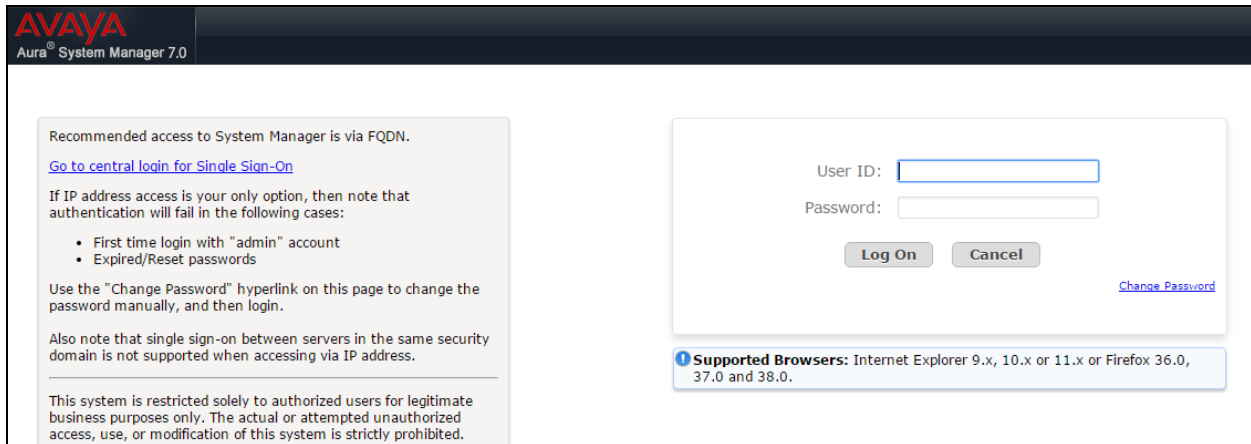
The Vector queues the customer call to a pre-defined skill and waits in the queue until an agent becomes available.

```
change vector 61                                     Page 1 of 6
                                                    CALL VECTOR
Number: 61                                         Name: GeomantINB
Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n
  Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y
  Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y
  Variables? y      3.0 Enhanced? y
01 wait-time      2      secs hearing ringback
02 queue-to      skill 1st pri m
03 wait-time      10      secs hearing ringback
04 goto step      3      if unconditionally
05 stop
```

6. Configure Avaya Aura® Session Manager

The section describes the steps required to allow OnCall IVR to communicate with Session Manager. All configuration was done using the Avaya Aura® System Manager web interface and it is assumed that a working Session Manager has been previously installed and configured; making this out with the scope of this document.

Browse to **https://System Manager IP/Hostname/SMGR** to access the web interface of the System Manager. Login with authorized credentials.



AVAYA
Aura® System Manager 7.0

Recommended access to System Manager is via FQDN.
[Go to central login for Single Sign-On](#)

If IP address access is your only option, then note that authentication will fail in the following cases:

- First time login with "admin" account
- Expired/Reset passwords

Use the "Change Password" hyperlink on this page to change the password manually, and then login.

Also note that single sign-on between servers in the same security domain is not supported when accessing via IP address.

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.

User ID:

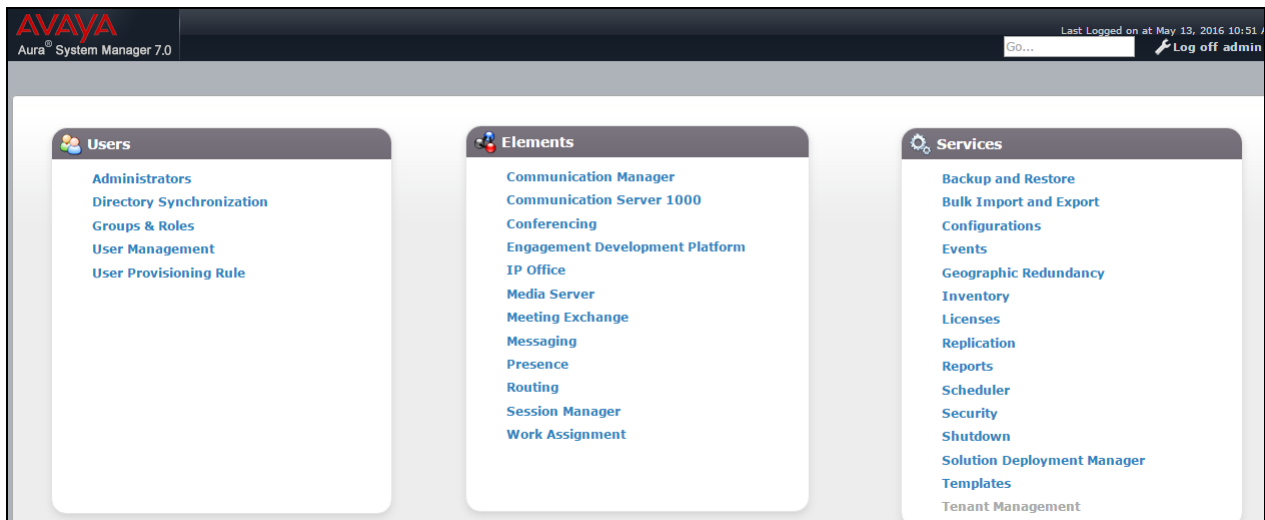
Password:

Log On Cancel

[Change Password](#)

Supported Browsers: Internet Explorer 9.x, 10.x or 11.x or Firefox 36.0, 37.0 and 38.0.

The dashboard will be loaded and from this select **Routing** from the **Elements** section.



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Last Logged on at May 13, 2016 10:51 / Log off admin

Users

- Administrators
- Directory Synchronization
- Groups & Roles
- User Management
- User Provisioning Rule

Elements

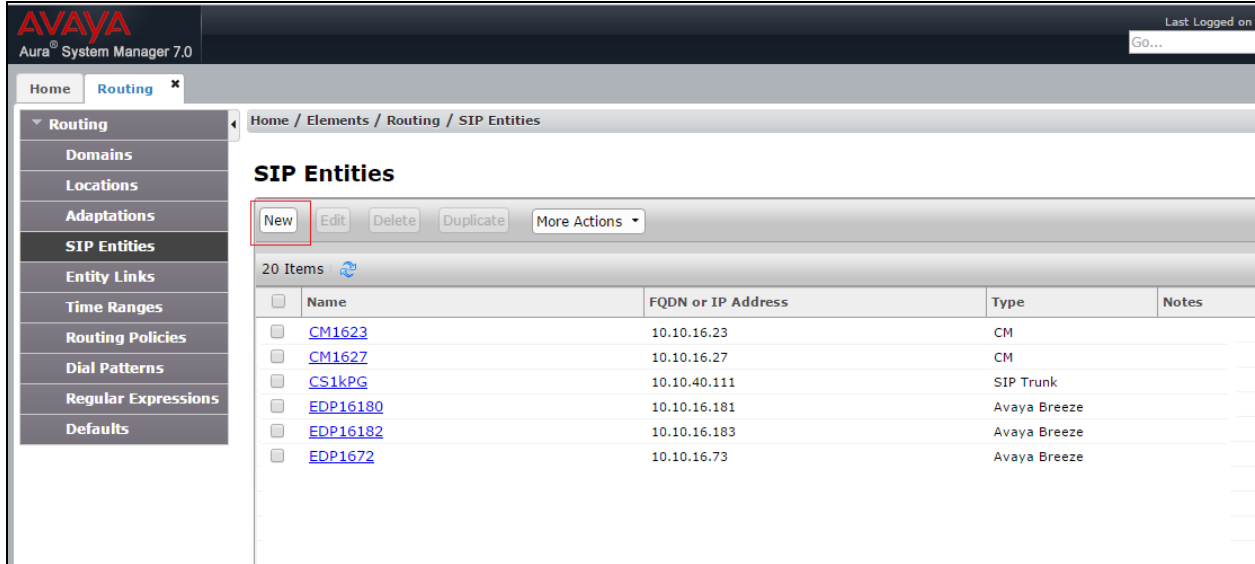
- Communication Manager
- Communication Server 1000
- Conferencing
- Engagement Development Platform
- IP Office
- Media Server
- Meeting Exchange
- Messaging
- Presence
- Routing
- Session Manager
- Work Assignment

Services

- Backup and Restore
- Bulk Import and Export
- Configurations
- Events
- Geographic Redundancy
- Inventory
- Licenses
- Replication
- Reports
- Scheduler
- Security
- Shutdown
- Solution Deployment Manager
- Templates
- Tenant Management

6.1. Add IVR Entity

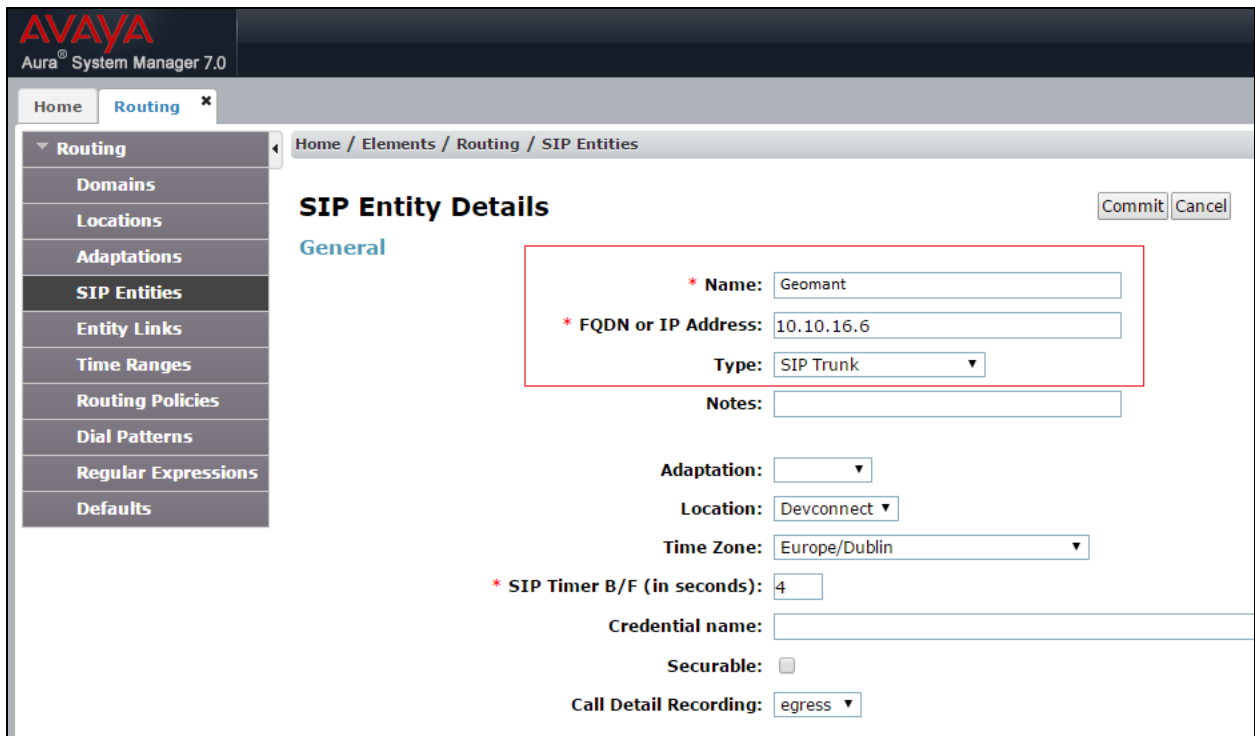
The OnCall IVR server must be added as a trusted entity on System Manager. On the **Routing** tab select **SIP Entities** from the left hand menu and click on **New**



The screenshot shows the Avaya Aura System Manager 7.0 interface. The left-hand navigation menu is expanded to 'Routing', and 'SIP Entities' is selected. The main content area displays a table of SIP Entities. The 'New' button is highlighted with a red box.

Name	FQDN or IP Address	Type	Notes
CM1623	10.10.16.23	CM	
CM1627	10.10.16.27	CM	
CS1kPG	10.10.40.111	SIP Trunk	
EDP16180	10.10.16.181	Avaya Breeze	
EDP16182	10.10.16.183	Avaya Breeze	
EDP1672	10.10.16.73	Avaya Breeze	

Enter a descriptive **Name** and valid **FQDN or IP Address**. Select **SIP Trunk** from the **Type** drop down. All other entries can be default. Click on **Commit** to save the changes (not shown).



The screenshot shows the 'SIP Entity Details' form in the Avaya Aura System Manager 7.0 interface. The 'General' tab is active. The 'Name' and 'FQDN or IP Address' fields are highlighted with a red box. The 'Type' dropdown is set to 'SIP Trunk'. The 'Commit' button is visible in the top right corner.

SIP Entity Details [Commit] [Cancel]

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Adaptation:

Location:

Time Zone:

* SIP Timer B/F (in seconds):

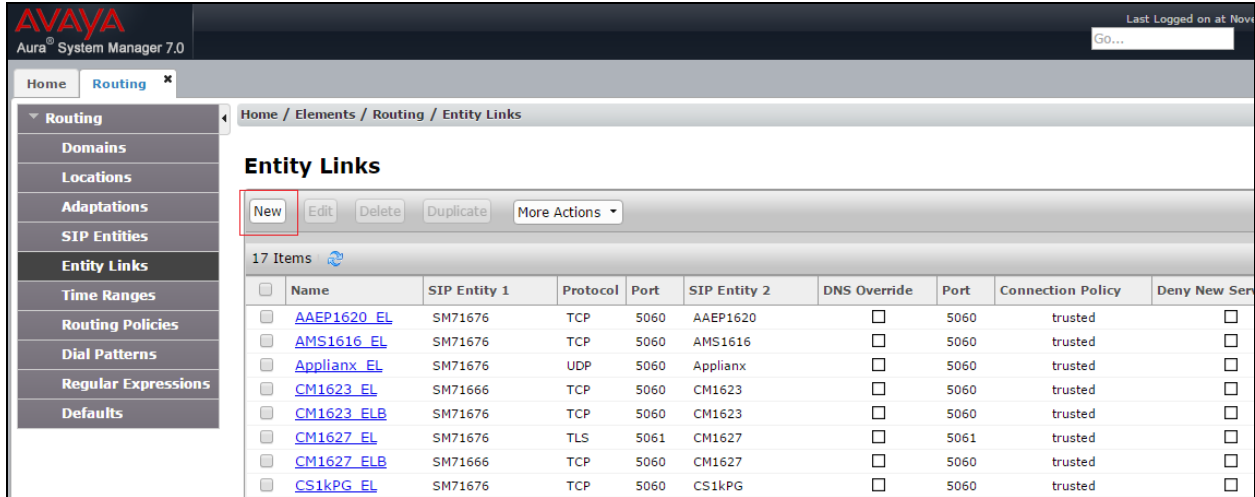
Credential name:

Securable:

Call Detail Recording:

6.2. Add IVR Entity Link

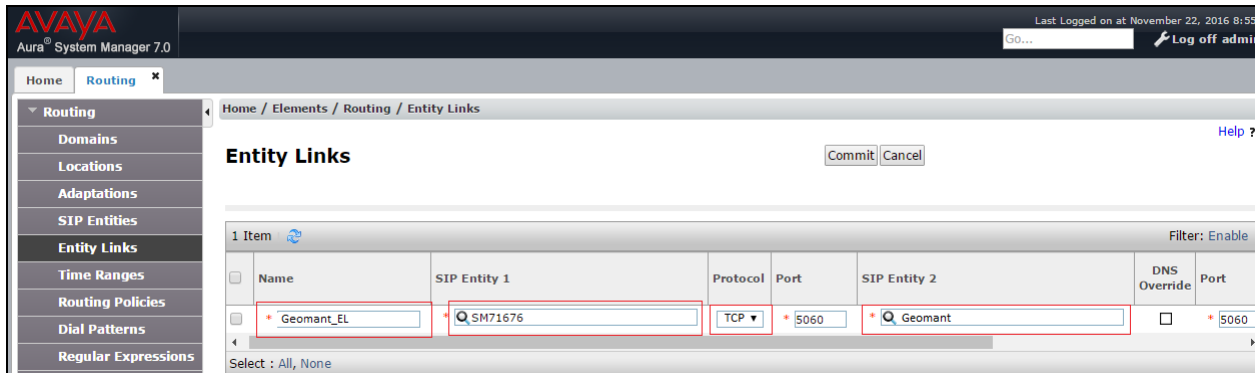
A trusted link between the Session Manager and OnCall IVR must be created to allow SIP communication to be made between the servers. On the **Routing** tab Select **Entity Links** from the left hand menu and click on **New**.



The screenshot shows the Avaya Aura System Manager 7.0 interface. The left-hand navigation menu is expanded to show the 'Routing' section, with 'Entity Links' selected. The main content area displays the 'Entity Links' configuration page. At the top, there are buttons for 'New', 'Edit', 'Delete', 'Duplicate', and 'More Actions'. Below this is a table listing 17 existing entity links. The 'New' button is highlighted with a red box.

<input type="checkbox"/>	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	DNS Override	Port	Connection Policy	Deny New Ser
<input type="checkbox"/>	AAEP1620_EL	SM71676	TCP	5060	AAEP1620	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	AMS1616_EL	SM71676	TCP	5060	AMS1616	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	Applianx_EL	SM71676	UDP	5060	Applianx	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	CM1623_EL	SM71666	TCP	5060	CM1623	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	CM1623_ELB	SM71676	TCP	5060	CM1623	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	CM1627_EL	SM71676	TLS	5061	CM1627	<input type="checkbox"/>	5061	trusted	<input type="checkbox"/>
<input type="checkbox"/>	CM1627_ELB	SM71666	TCP	5060	CM1627	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>
<input type="checkbox"/>	CS1kPG_EL	SM71676	TCP	5060	CS1kPG	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>

Enter a descriptive **Name** and Select the Session Manager entity as **SIP Entity 1** used to communicate. **SM72676** was used for testing. Enter the **OnCall IVR** entity as **SIP Entity 2** and then select the **Protocol** as **TCP**. The Port will automatically reset to 5060.



The screenshot shows the Avaya Aura System Manager 7.0 interface. The left-hand navigation menu is expanded to show the 'Routing' section, with 'Entity Links' selected. The main content area displays the 'Entity Links' configuration page. At the top, there are buttons for 'Commit' and 'Cancel'. Below this is a table with 1 item. The 'Name', 'SIP Entity 1', 'Protocol', 'Port', and 'SIP Entity 2' fields are highlighted with red boxes.

<input type="checkbox"/>	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	DNS Override	Port
<input type="checkbox"/>	* Geomant_EL	* SM71676	TCP	* 5060	* Geomant	<input type="checkbox"/>	* 5060

7. Configure Geomant OnCall IVR

Geomant OnCall IVR is installed and configured by Geomant Technicians. Support can be obtained using the contact information in **Section 2.3**. For testing the following entry was edited in the OnCall IVR configuration file to allow communication with the The Avaya Aura® Session Manager.

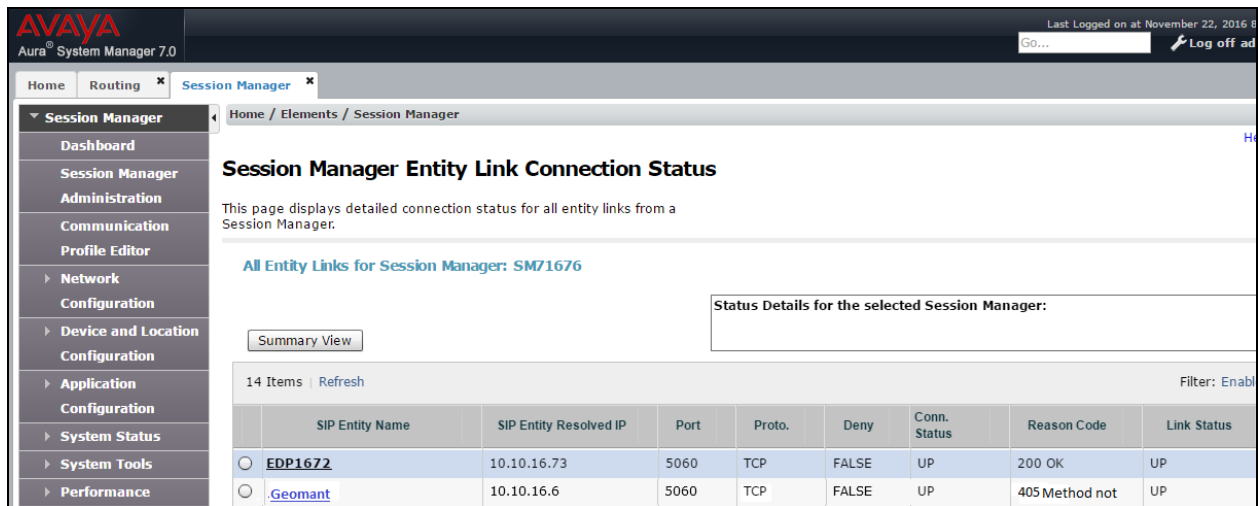
1. From the Installation Directory locate and open the **EndPoint\UCMAIVR.exe.config**
2. Check and update the configuration parameters as per your requirements – use the parameter descriptions below for guidance.
 - **Localhost:** the local host name used to build a SIPURI, e.g. Avaya Session Manager IP address
 - **Port:** the SIP network communication port of the *Endpoint Service*, the default is **5060**
 - **Standaloneserverport:** the SIP network communication port of the SIP server. The default is 5060
 - **Standaloneserveraddress:** the IP address of the telephony infrastructure server (e.g. a SIP PBX) where the SIP INVITE messages are sent in case of outbound calls and transfers). This is the Avaya Session Manager.

8. Verification Steps

This section describes the steps needed to verify the link between OnCall IVR and Session manager is established.

8.1. Session Manager

From the System Manager Dashboard (not shown), select Session Manager from the Elements Section. Select SIP Entity Monitoring (not shown) from left hand menu under **System Status**. Verify that the **Geomant** SIP Entity is set to **Deny False**, **Conn. Status** is **UP**, and **Link Status** is **UP**.



The screenshot shows the Avaya Aura System Manager 7.0 interface. The left-hand navigation menu is expanded to 'Session Manager', with sub-items like Dashboard, Session Manager Administration, Communication Profile Editor, Network Configuration, Device and Location Configuration, Application Configuration, System Status, System Tools, and Performance. The main content area is titled 'Session Manager Entity Link Connection Status'. It includes a breadcrumb trail 'Home / Elements / Session Manager' and a description: 'This page displays detailed connection status for all entity links from a Session Manager.' Below this, there is a section for 'All Entity Links for Session Manager: SM71676' with a 'Summary View' button. A table displays 14 items, with two rows visible:

	SIP Entity Name	SIP Entity Resolved IP	Port	Proto.	Deny	Conn. Status	Reason Code	Link Status
<input type="radio"/>	EDP1672	10.10.16.73	5060	TCP	FALSE	UP	200 OK	UP
<input type="radio"/>	Geomant	10.10.16.6	5060	TCP	FALSE	UP	405 Method not	UP

8.2. OnCall IVR

Check OnCall IVR server logs to show that port has been established and waiting for requests. OnCall IVR server logs can be found on the local server at `C:\<Installation Directory>\EndPoint\log`.

8.3. Communication Manager

Calls can be made to the OnCall IVR server and from the OnCall IVR to the VDN numbers to verify routing.

9. Conclusion

These Application Notes describe the compliance tested configuration of the Geomant OnCall IVR Solution with Avaya Aura® Communication Manager 7.0.1 and Avaya Aura® Session Manager 7.0.1. All tests passed with observations noted in **Section 2.2**.

10. Additional References

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

- [1] *Administering Avaya Aura® Communication Manager*, Release 7.0, August 2015, Document Number 03-300509, Issue 1.
- [2] *Avaya Aura® Communication Manager Feature Description and Implementation*, Release 7.0, August 2015, Document Number 555-245-205, Issue 1.
- [3] *Administering Avaya Aura® Session Manager*, Release 7.0, Issue 1 August 2015.
- [4] *Administering Avaya Aura® System Manager*, Release 7.0, Issue 1, August, 2015.

Product Documentation for OnCall IVR can be requested from <http://kb.geomant.com/display/kb/Geomant+IVR>

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