



Twilio integration with Avaya Aura Contact Center (AACC)

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1 Audience

This document is intended for technical staff and Value Added Resellers (VAR) with installation and operational responsibilities. This configuration guide provides steps for integrating **Twilio Studio**, a tool to build IVRs and chatbots, with **Avaya Aura Contact Centre** in a Contact Center environment

2 Introduction

2.1 tekVizion Labs

tekVizion Labs[™] is an independent testing and Verification facility offered by tekVizion PVS, Inc. ("tekVizion"). tekVizion Labs offers several types of testing services including:

- Remote Testing provides secure, remote access to certain products in tekVizion Labs for pre-Verification and ad hoc testing
- Verification Testing Verification of interoperability performed on-site at tekVizion Labs between two products or in a multi-vendor configuration
- Product Assessment independent assessment and verification of product functionality, interface usability, assessment of differentiating features as well as suggestions for added functionality, stress and performance testing, etc.

tekVizion is a systems integrator specifically dedicated to the telecommunications industry. Our core services include consulting/solution design, interoperability/Verification testing, integration, custom software development and solution support services. Our services helps service providers achieve a smooth transition to packet-voice networks, speeding delivery of integrated services. While we have expertise covering a wide range of technologies, we have extensive experience surrounding our practice areas which include: SIP Trunking, Packet Voice, Service Delivery, and Integrated Services.

The tekVizion team brings together experience from the leading service providers and vendors in telecom. Our unique expertise includes legacy switching services and platforms, and unparalleled product knowledge, interoperability and integration experience on a vast array of VoIP and other next-generation products. We rely on this combined experience to do what we do best: help our clients advance the rollout of services that excite customers and result in new revenues for the bottom line. tekVizion leverages this real-world, multi-vendor integration and test experience and proven processes to offer services to vendors, network operators, enhanced service providers, large enterprises and other professional services firms. tekVizion's headquarters, along with a state-of-the-art test lab and Executive Briefing Center, is located in Plano, Texas.

For more information on tekVizion and its practice areas, please visit tekVizion Labs website at <u>www.tekVizion.com</u>





2.2 Use Case

This Configuration Guide "blueprint," while modeled after a specific customer use case, is generic enough that it can represent almost any attempt to front-end a customer's Avaya Aura Contact Center with a customer-built customized/bespoke modern, cloud-based IVR (Interactive Voice Response) from Twilio, where the sending of entered or queried data to Avaya is needed.

The Twilio IVR in this scenario can be a basic, DTMF-based IVR, a speech rec-enabled-IVR, or a fully conversational IVR built with an AI-based virtual agent (such as Google's DialogFlow CX) on Twilio, as the customer may prefer to build – and its job done (as successfully validated by this blueprint) is to replace the existing IVR built into a customer's Avaya system, while still providing the necessary context for calls being redirected to the Avaya Aura Contact Center, so that an agent can process the remaining incoming calls still being escalated, same as before, if the call cannot be dealt with via new self-service modalities as enabled by the customer's more modern Twilio IVR, versus all calls needing to be routed to an agent, just because some of those calls required assistance by a live human being.

In this particular case (see Figure 1, below), we've modeled our scenario on that of a typical customer who contacted Twilio for help, because they had an IT department with agents providing phone technical support, from agent stations hung off their Avaya Aura Contact Center platform, and who were getting flooded with password reset calls (a very common and persistent support need in many corporate IT environments, but calls that are nevertheless sometimes tricky to handle in an automated manner). While most password reset calls would usually addressable via stepping callers through some new, more interactive info-gathering and self-service directions provided via a newly built custom Twilio IVR flow, one that could include two-factor authentication and other enterprise data dipping measures for added security (or personalization), a calls few would still need some "handholding" or trouble-shooting by agents – but not so many that if most calls could be handled self-service, agents would not then have a lot more time to process more complicated calls, or do other tasks.

In the case of this typical customer, their existing Avaya IVR system also had several limitations leaving it unable to address this use case by itself – such as the inability to also send text messages (with helpful self-service or TFA - Two Factor Authentication - links), an inability (at least not without expensive upgrades) to add speech rec or conversational IVR capabilities, the practical inability for the IVR to be shared across multiple sites / Aura on-premises installations from the cloud, difficulty in making changes and be centrally managed from the cloud -- all leading this customer to want to front-end their Avaya Contact Center system with something more modern, which they could customize as needed, and build for themselves in the cloud, on Twilio, servicing all of their locations and enabling the IT department of this customer to provide higher degree of self-service to their end-users.









When we therefore began constructing our Configuration Guide with this use case in mind, we were seeking to specifically address a typical call flow similar to that faced by a caller into this company's IT department needing help resetting their password, as follows:

- The caller would first call into a Twilio IVR (same phone number, owned by or ported to Twilio, of the company's IT department) similar to the one created here, and enter various data, such as giving their username or email and credentials to the Twilio IVR for a lookup.
- Then the caller would be directed to some self-service directions, delivered via played prompts and/or text messages sent, for resetting their password from the IVR, if that was their issue, (including steps such as being sent a TFA verification message or link to their mobile device on record in the company's database for that user, as an added layer of security) from the IVR, and,
- If that solved the caller's problem, in a self-service/automated manner, then... success (as in most cases)!
- Else... in cases where the verification link, lookup or new password failed, if the caller still needed support, then the caller could elect to have their call sent (queued) at that point to a live IT Support Agent and most importantly, along with their call, have all of the context input into the Twilio platform and IVR up to that point sent also, such as keypresses and whatever number the caller had called from, language preference, what login credentials they had provided, what number the TFA message was sent to and link sent, success/fail result of reset attempt, etc. so that the the IT support agent on the Avaya Contact Center eventually picking up the call would have all of that context already in front of them upon answering in their Avaya Agent desktop application, without the need for the caller to repeat or to the agent re-gather this information

While not every literal step in the above flow is covered here in this Configuration Guide (it would be too long), the rest can predominantly be found among Twilio's Quickstart guides





online. The link for Twilio's Quickstart guides online is <u>https://www.twilio.com/docs/voice</u>. However, the basic framework and steps for how to collect and successfully pass entered call context from a customer-built Twilio app to an Avaya on-premise Aura Contact Center system are layed out here, step by step.

The main tools used to build this validated call flow include Twilio Studio, and the Twilio Console interface to other Twilio services and tools, as well as the Avaya Aura Contact Center's various admin interfaces, as described below.

One interesting key wrinkle solved in validating this Configuration Guide was that the Avaya Aura Contact Center, as is typical for an on-premises contact center system, naturally assumes the existence of an on-premise database from which info like call context would be assembled to be sent on to agents (instead of all the info arriving with the call itself from off-board) – logical enough in the "old days" of single-vendor vertically integrated on-premise systems, but limiting the Avaya system's usefulness and extensibility today – whereas more modern, multi-party cloud-based bespoke and/or customer-built solutions typically use data sources also centralized in the cloud for sending data with arriving calls as they are passed around. Read on below to see how ancillary Twilio tools like Twilio Sync have enabled the key "cloud database-to-premises system connectivity" aspect necessary to get this configuration working for Avaya customers.

2.3 Twilio Studio

Twilio Studio is a visual, drag-and-drop editor for creating applications. It helps to build an IVR system that gathers key presses from callers and connects their calls to an agent at a Contact Center. When using Twilio Studio, customers will also often use Twilio Functions, Assets, Sync, and other aspects of Twilio's platform in building their applications.

The Twilio product mentions should have links as follows:

- Twilio Studio: https://www.twilio.com/en-us/serverless/studio
- Twilio Functions: <u>https://www.twilio.com/en-us/serverless/functions</u>
- Assets: https://www.twilio.com/docs/serverless/functions-assets/assets
- Sync: https://www.twilio.com/docs/sync/api

Additionally, Twilio Studio comes with many "one-click" built-in widgets that make adding in partner capabilities, such as linking to Google DialogFlow CX AI-based Virtual Agents for Conversational IVRs, much easier.

https://twilio.postclickmarketing.com/on-demand-level-up-with-twilio-voice-google-dialogflowcx-building-conversational-ai-experiences

2.4 Avaya Aura Contact Center

Avaya Aura Contact Center (AACC) is a solution that delivers intelligent call routing, network-to-desktop Computer Telephony Integration (CTI), and multichannel contact management to contact center agents over an IP network – including Avaya AES, Avaya Aura MM, Avaya Aura CM, Avaya Aura SM, Avaya Aura Media Server, and Avaya Aura Contact Center modules, Avaya SBC, and Avaya Aura Agent Desktop application, as detailed below.





3 Topology

The network topology is illustrated below and is representative of Twilio with Avaya Aura Contact Center



Figure 2 Network Topology





3.1 Hardware Components

- Avaya one-X Communicator
- Avaya Aura Agent Desktop

The following components are hosted in VMWare ESXi version 6.5

- Avaya Aura Contact Center (AACC)
- Avaya Aura Media Server (AAMS)

The following components are hosted in UCS-C240 VMWare server ESXi 6.0

- Avaya Aura Communication Manager (CM)
- Avaya Aura Session Manager (SM)
- Avaya Session Border Controller for Enterprise (SBCE)

3.2 Software Requirements

- Avaya One-X Communicator 6.2.4.06-FP4
- Avaya Aura Agent Desktop 7.1
- Avaya Aura Contact Center 7.1.2. Avaya Aura Contact Center is upgraded with Feature Pack 2 Service Pack 1 GA patches
- Avaya SBCE 10.1.0.0-32-21432

Avaya Aura

- Communication Manager 10.1
- Session Manager 10.1
- System Manager 10.1





4 Pre-requisites

4.1 Twilio

- Twilio account
- Twilio phone number
- Twilio Studio to build IVR flow

4.2 Avaya Aura Contact Center

- Avaya SBCE to accept calls from Twilio and to route calls to Avaya SM
- Avaya Aura SM setup with all the mandatory elements to handle the inbound Twilio calls to the Avaya Aura Contact Center
- Avaya Aura Orchestration Designer to create an application script containing a call flow for routing calls to a queue and agents.





5 Avaya Aura Contact Center Call Flow

Avaya Aura Contact Center Call Flow



Figure 3 Call Flow

- 1. Avaya SBCE constructs a SIP User-to-User header from the X-parentCall header value received from Twilio and sends the header to Avaya SM
- Avaya Aura SM constructs a SIP User-Agent header using the adaptation rules from the SIP User-to-User header received and sends it to Avaya Aura Contact Center (AACC)
- 3. AACC receives the call with the SIP User-Agent header. The call is sent to a skillset group defined in an AACC application script and then to Avaya Aura Media Server. Music is played to the PSTN user when the user waits in the queue.
- 4. AACC sends the call to Avaya Aura SM to route the call to an agent assigned to the skillset group.
- 5. Avaya Aura SM sends the call to Avaya Aura CM.
- 6. Avaya Aura CM sends the call to Avaya agent desk phone.
- 7. Avaya Aura CM sends the agent ringing information to Avaya Aura SM.
- 8. Avaya Aura SM forwards that to AACC.
- 9. AACC delivers the call to Avaya Aura Agent Desktop (AAAD) and the agent answers the call.
- 10. AACC sends offhook information to Avaya Aura Application Enablement Services (AES).
- 11. Avaya Aura Application Enablement Services (AES) notifies Avaya Aura CM to offhook Avaya agent desk phone.
- 12. Avaya agent desk phone goes offhook.





6 Configuration

As described above, this configuration assumes the customer already has a Twilio account set up, and phone number purchased. For more information on how to do that, see the Twilio Programmable Voice Quickstart Guide. The link for Twilio's programmable Voice Quickstart Guide is <u>https://www.twilio.com/docs/voice</u>.

6.1 Twilio Configuration

6.1.1 SIP domains

- Navigate to Voice > Manage > SIP domains
- Under Configure,
 - FRIENDLY NAME: AvayaPV
 - SIP URI: avaya
- Under Voice Authentication,
 - IP ACCESS CONTROL LISTS: Select the IP access control lists to authenticate inbound calls to Twilio (Refer Section 6.1.2)
 - CREDENTIAL LISTS: Select the appropriate Credential list for authentication (Refer Section 6.1.3)





Develop Monitor	SIP domains /			
> Port & Host ^	avaya.sip.twilio.com			
Regulatory Compliance	Configure Registered SIP Endpoints			
🗸 🗞 Voice	Properties			
Overview Try it out	Configure a Friendly Name to easily indentify your domain. Configure a SIP Domain Name to uniquely identify your SIP URI for the domain. This JRI may be used to direct SIP traffic towards Twilio Programmable Voice.			
✓ Manage	FRIENDLY NAME Avaya PV			
TwiML apps	SIP URI avaya .sip.twilio.com			
SIP domains	SIP DOMAIN SID 507418			
BYOC trunks				
Docs and Support :	Routing 🚯 Regional) United States (US1) Region SIP Domain routing is: Active			
Develop Monitor	SIP domains /			
> Port & Host	Voice Authentication			
Regulatory	The following IP ACLs and Credential Lists will be used to authenticate the INVITE for inbound SIP calls to Twilio.			
Compliance	IP ACCESS CONTROL LISTS ACLS × ACLS × X +			
🗸 🌭 Voice	CREDENTIAL LISTS Auth Credentials SIP ×			
Overview	×			
Try it out				
✓ Manage	Call Control Configuration			
TwiML apps	Please specify a Webhook URL that points to your web application, or the Bring your own Carrier Trunk that you want Twilio to invoke upon			
SIP domains	receipt of a SIP INVITE into this SIP Domain.			
BYOC trunks	CONFIGURE WITH Webhooks, TwiML Bins, Functions, Studio, Proxy 🗸			
Docs and Support	A CALL COMES IN Studio V avaya_ivr_1 V			
*	PRIMARY HANDLER Webhook V HTTP POST V			

Figure 4 SIP domains

- Under SIP Registration,
 - Allow SIP Endpoints to register: ENABLED
- Under SIP Registration Authentication,
 - CREDENTIAL LISTS: Select the appropriate Credential list for authentication of SIP Endpoint (Refer Section 6.1.3)
- Click Save





Develop Monitor	SIP domains /
> Port & Host	CALL STATUS CHANGES HTTP POST V
 Regulatory Compliance 	Secure Media
 Voice Overview Try it out Manage 	Secure your communications delivered over the public by encrypting signaling with Transport Layer Security (TLS) and by encrypting media with Secure Real-time Transport Protocol (SRTP). DISABLED When Secure Media is disabled, RTP must be used for media packets. SIP messages may be sent unencrypted or encrypted using TLS. Any SRTP encrypted calls will be rejected. SIP Registration
TwiML apps	
BYOC trunks	Allow SIP Endpoints to register with this SIP Domain. When you configure your SIP endpoint, you must specify the localized SIP Domain that you want to register, for example: {domain-name}.sip.us1.twilio.com for North America Virginia (US1). Credential Lists must always be specified. Learn more a
Docs and Support	Endpoints CAN register with this Domain SIP Registration Authentication
Develop Monitor	SIP domains / SIP Registration Authentication
> Port & Host	The following Credential Lists will be used to authenticate SIP Endpoints during registration to allow them to receive outbound SIP calls from
 Regulatory Compliance 	Twilio. The username in the Credential List corresponds to the username that you configure in the SIP Endpoint.
🗸 🌭 Voice	CREDENTIAL LISTS Auth Credentials SIP × ×
Overview	
Try it out	
✓ Manage	Emergency Calling
TwiML apps	Emergency addresses are registered on a per Phone Number basis from the Numbers Page. To make an emergency call, you must use the
SIP domains	the appropriate Public Safety Answering Point (PSAP). Learn more about Emergency Calling A.
BYOC trunks	DISABLED Phone Numbers associated with SIP Domain will NOT be allowed to call Emergency Services
Docs and Support	
*	Save Cancel Delete this SIP Domain

Figure 5 SIP domains Continuation





IP access control lists 6.1.2

- Navigate to Voice > Manage > IP access control lists •
- Click Create new IP Address Range
- Friendly Name: ACLs
- IP Address Range: Enter the Avaya SBCE WAN interface IP Range
- Friendly Name: IP

192.65. -192.65.

Develop Monitor	IP access control lists /	
🗸 📎 Voice	Tekvizion ACLs	+ Create new IP Address Range
Overview Try it out	Properties	
✓ Manage TwiML apps	Friendly Name ACLs	
SIP domains	IP/ACL SID	
IP access control lists	Associated SIP Trunks	
Origination connection policy	Associated SIP Domains	
IP Address Rang	es	IP Access Control Lists may have up to 100 IP addresses
IP Address Range	Friendly Name	
192.65. / 32 192.65192.65.	IP	

Figure 6 IP access control lists





6.1.3 Credential lists

- Navigate to Voice > Manage > Credential lists
- Username: Enter the Username
- Password: Enter the **Password**

Develop Monitor	Credential lists /		
	Associated SIP Trunks		
	None		
✓ Manage	Associated SIP Domains		
I wiML apps			
SIP domains			
BYOC trunks	Credentials		
IP access control lists	CREDENTIAL USERNAME		
Origination connection policy			
Credential lists			
Networking info			
Stream connectors 💌	+1970	Change Password	Delete

Figure 7 Credential lists





6.1.4 Twilio Studio IVR Flow

Twilio IVR Studio flow is created to play IVR, collect a digit from the PSTN user, store it in a repository, transfer the call to Avaya Aura agent and send the digit or queue information (queue number 1 for Sales and 2 for Support) to the Avaya Aura agent as a SIP intrinsic

- Navigate to Studio > Flows
- Click Create new Flow
- FIOW NAME: Dual Language IVR Test
- Click Next
- Choose a template to get going: Enterprise IVR/Phone Tree
- Click Next

New Flow				
Name your flow, and start building with FLOW NAME Dual Language IVR T	n Studio.			
<	Cancel Next			
Choose a template to get going, or sta	art from scratch with a blank canvas.			
Start from scratch.	Appointment Reminders			
Start building from scratch.	Reduce no-shows by sending confirmation messages.			
	Step-by-Step Tutorial 🛛			
Call Forwarding	Customer Support Menu			
Divert incoming calls to your personal or business number with call forwarding.	Start supporting your customers through messaging channels like WhatsApp.			
Step-by-Step Tutorial 🖊	Step-by-Step Tutorial 🛛			
Import from JSON	Enterprise IVR / Phone Tree			
Create a new flow from a JSON Flow Definition	A bilingual Interactive Voice Response (IVR) system with error handling that routes calls based on phone or voice input.			
Step-by-Step Tutorial 🕇	×			
<back< td=""><td>Cancel Next</td></back<>	Cancel Next			

Figure 8 Twilio IVR Studio Flow - Create New Flow





This creates an IVR template as shown below.









End to End Twilio IVR Studio flow built from the template for this interoperability testing is shown below.



Figure 10 Twilio IVR Studio Flow – End to End Flow





The End to End IVR Flow (Figure 10) interacts with the PSTN user, through the following questions

E.g. Flow number IVR navigation 1

- 1. PSTN user calls Twilio IVR DID
- 2. PSTN user hears "Thank you calling Acme" followed by the announcement in Spanish "Gracias por llamar"
- 3. PSTN does not provide any input
- 4. PSTN user hears "Hello, how can we direct your call? Press 1 for sales, or say sales. To reach support, press 2 or say support."
- 5. PSTN user presses 1
- 6. PSTN user is redirected to Avaya Aura agent for further interaction
- E.g. Flow number IVR navigation 2
 - 1. PSTN user calls Twilio IVR DID
 - 2. PSTN user hears "Thank you calling Acme" followed by the announcement in Spanish "Gracias por llamar"
 - 3. PSTN does not provide any input
 - 4. PSTN user hears "Hello, how can we direct your call? Press 1 for sales, or say sales. To reach support, press 2 or say support."
 - 5. PSTN user presses 2
 - 6. PSTN user is redirected to Avaya Aura agent for further interaction.





Detailed view of Twilio IVR Studio flow

Widget: set_lang_eng

- Create a widget **Set Variables** named **set_lang_eng** and this is the entry point when the incoming call is arrived to the Twilio IVR DID
- WIDGET LIBRARY can be used to create different kinds of widget. e.g. To set variables, the Set Variables Widget can be used
- Drag and Drop a link from the **Incoming Call** to **set_lang_eng** to create a link between them
- Expand the side panel << to configure the variables for a widget
- This widget sets the variable language with value english
- The configuration needs to be Published using **Publish** once the end to end flow configuration is completed



Figure 11 Twilio IVR Studio Flow – set_lang_eng





Incoming Message 0	Trigger @ O Incoming Conversation @ O REST API @ O Subflow	or o ← Set Va	riables (i) Hide
	[« Config	Transitions
(Set Variables)		WIDGET NAME * set_lang_eng	
L Next		Variables	<u>Delete</u>
		language	
		english	
		<u>Cancel</u>	<u>Save</u>
		Save	Ē Ū

Figure 12 Twilio IVR Studio Flow – set_lang_eng Continuation





Widget: set_company_name

- Next option from set_lang_eng is connected to widget Say/Play named say_company_name and this plays the message "Thank you for calling Acme"
- The other values configured for this widget are highlighted below.

Next	~	Say/Play	i) Hide
● ∂ say_company_na ⊗	Config	3	Transitions
Say: Thank you for calling Acme.	WIDGET NAME	*	
Audio Complete	say_compar	ny_name	
	SAY OR PLAY I	MESSAGE OR I	DIGITS
	Say a Messa	age	\sim
	TEXT TO SAY		
	Thank you f	or calling Acn	ne.
	LANGUAGE		
	English (US))	~
	MESSAGE VOI	CE	
	[Polly] Salli	Neural	~
	Save		6

Figure 13 Twilio IVR Studio Flow – say_company_name





Widget: prompt_language_es

- Audio Complete option from say_company_name is connected to widget Gather Input On Call named prompt_language_es and this plays the Spanish message "Gracias por llamar"
- The other values configured for this widget are highlighted below.



Figure 14 Twilio IVR Studio Flow – prompt_language_es





Widget: language_check

- User Pressed Keys (in the widget prompt_language_es) option is connected to widget Split Based On named language_check. This splits the language English/Spanish based on the digit which is pressed.
- The other values configured for this widget are highlighted below.

User Pressed Keys	Expand sidepanel Split Based On (i) Hide
(split Based On) {{widgets.prompt_language_es.Digits}}	Config Transitions
No Condition Matches 1 2 NEW	language_check
	VARIABLE TO TEST * widgets.prompt_language_es.Digits
	Save 🗋 🔟

Figure 15 Twilio IVR Studio Flow – language_check





Widget: gather_input_english

- **Digit 1** option (in the widget **language_check**) is connected to widget **Gather input On Call** named **gather_input_english**. This plays the IVR "Hello, how can we direct your call".
- The other values configured for this widget are highlighted below.

● gather_input_eng (Gather Input On Call)	← Gather Input on Call (i) ►
Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach	Config Transitions
User Pressed Keys User Sald Something No Input	WIDGET NAME *
	gather_input_english
	SAY OR PLAY MESSAGE
	Say a Message 📃 🔨
	TEXT TO SAY
	Hello, how can we direct your call? Press 1 for sales, or say sales. To reach support, press 2 or say support
	LANGUAGE
	English (US)
	MESSAGE VOICE

Figure 16 Twilio IVR Studio Flow – language_check





ather input ong	← Gather Input on Call () Hide				
(Gather Input On Call)	Config Transitions				
Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach	MESSAGE VOICE				
	[Polly] Salli-Neural 🗸 🗸				
	NUMBER OF LOOPS				
	1				
	STOP GATHERING AFTER				
	5 SECONDS				
	STOP GATHERING ON KEYPRESS?				
	NO				
	STOP GATHERING AFTER				
	DIGITS				
	Save 🗋 🗇				
	← Gather Input on Call (i) Hide				
🔍 🔍 gather_input_eng 🛞 🔄					
Gather_input_eng (Gather Input On Call)	Config Transitions				
Gather_input_eng (Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach	Config Transitions SPEECH RECOGNITION LANGUAGE				
Gather_Input_eng (Gather Input On Call) (Gather Input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Said Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States)				
Gather_input_eng (Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Seld Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS				
Gather_input_eng (Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Seld Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS Sales, support PROFANITY FILTER				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	 Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True 				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True ADVANCED SPEECH SETTINGS				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True ADVANCED SPEECH SETTINGS				
Gather_input_eng ((Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Sald Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True ADVANCED SPEECH SETTINGS				
Gather_input_eng (Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Said Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True ADVANCED SPEECH SETTINGS				
gather_input_eng (Gather input On Call) Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach User Pressed Keys User Said Something No Input	Config Transitions SPEECH RECOGNITION LANGUAGE English (United States) SPEECH RECOGNITION HINTS sales, support PROFANITY FILTER True ADVANCED SPEECH SETTINGS				

Figure 17 Twilio IVR Studio Flow – language_check Continuation

Widget: no_input_handler





- No Condition Matches option (in the widget language_check) is connected to widget Run Subflow named no_input_handler_1.
- The parameter flow.variables.language (i.e. english) is invoked by the Widget named Split_1 (Figure 19)
- The other values configured for this widget are highlighted below.

	← Run Subflow	(i) Hide
Pano_input_handler (Run Subflow)	Config Trans	sitions
Flow SID: FWbcdd3ee6 Flow Revision: LatestPublished Completed Falled	WIDGET NAME *	
•	SELECT A FLOW *	CREATE
	Dual Language IVR Test SELECT A REVISION *	~ ©
	Latest Published Revision	~
	Subflow Parameters	<u>Delete</u>
	language {{flow.variables.language}}	-
,	Save	Ē

Figure 18 Twilio IVR Studio Flow – no_input_handler_1





Widget: split_1

- Widget no_input_handler_1 (Figure 18) invokes the Subflow Widget Split Based On...named split_1
- flow.variables.language (i.e. english) is referenced at runtime inside the Subflow via the trigger object trigger.parent.parameters.language

• haming Massage • haming Call •	Trigger	Q [°] C Suthar	← Split Ba	ased On (i) Hide
	(trigger,p	(Spit Based On) arent.parameters.language}) equal to englist f value equal to sportsh	Config WIDGET NAME * split_1 VARIABLE TO TEST trigger.parent.pa	Transitions
ror_msg			Save	Ē Ē

Figure 19 Twilio IVR Studio Flow - split_1





Widget: english_error_msg

- Widget split_1 (No Condition Matches, If value equal_to_english) invokes Say/Play Widget named english_error_msg
- This widget plays "Please provide a selection".
- The other configured values are highlighted below.

		← Say/Play (i) Hide
● 译 split_1 (Split Based On)	~~	Config Transitions
{{trigger.parent.parameters.language}}		widget NAME * english_error_msg
		SAY OR PLAY MESSAGE OR DIGITS Say a Message
Say: Please provide a selection.		TEXT TO SAY Please provide a selection.
Audio Complete		LANGUAGE
►	_	English (US)
		[Polly] Salli
		Save 🗋 🔟

Figure 20 Twilio IVR Studio Flow – english_error_msg




Widget: prompt_for_english

- Run Subflow Widget named no_input_handler_1 invokes Say/Play Widget prompt_for_english
- This widget plays "Please press 1 to continue in English".
- The other configured values are highlighted below.



Figure 21 Twilio IVR Studio Flow – prompt_for_english





Widget: prompt_language_es

- Say/Play Widget named **prompt_for_english** invokes Gather Input on Call Widget named **prompt_language**
- The other configured values are highlighted below.

● ∂ prompt_for_english		← Gather Input	on Call 🥡 Hid
(Say/Play) Say: Please press 1 to continue in English.	~~	Config	Transitions
Audio Complete		WIDGET NAME *	
Ļ		prompt_language_es	S
		SAY OR PLAY MESSAGE	
(Gather Input On Call)		Say a Message	\sim
Say: Gracias por llamar a nuestra empresa. Por favor oprima numero dos para español.		TEXT TO SAY	
		Gracias por llamar a Por favor oprima nur español.	nuestra empresa. nero dos para
		LANGUAGE	
		Spanish (Mexico)	\sim
		MESSAGE VOICE	
		Save	6 6

Figure 22 Twilio IVR Studio Flow – prompt_language





Widget: split_key_press_en

- User Pressed Keys option from the Widget gather_input_english is linked to Widget Split Based On... named split_key_press_en
- This Widget gathers input digits 1 or 2.
- The other configured values are highlighted below.

User Pressed Keys User Said Something No Input	← Split Based On (i) Hide
Split_key_press_en (Split Based On)	Config Transitions
{{widgets.gather_input_english.Digits}}	WIDGET NAME * split_key_press_en
	widgets.gather_input_english.Digits

Figure 23 Twilio IVR Studio Flow – split_key_press_en





Widget: add_queue_to_sync

- The digits which are pressed (1 or 2) from the Widget **split_key_press_en** is linked to Widget Run Function named **add_queue_to_sync**
- This Widget calls the Function **add-to-sync** to store the user entered digit in the Twilio database.
- FUNCTION URL: https://ivr-reporting-5700.twil.io/add-to-sync

		~	Run Functio	on (i) Hide
	~	Co	onfig	Transitions
Split_key_press_en (Split Based On) (/widgets gather input explicit Digits))		WIDGET N	AME *	
No Condition Matches		add_qu	eue_to_sync	
		SERVICE *		CREATE 😧
		ivr-repo	rting	\checkmark
(Run Function)		ENVIRONM	IENT *	0
https://ivr-reporting-5700.twil.io/add-to- sync		ui		\sim
		FUNCTION	•	0
		/add-to	-sync	\checkmark
		FUNCTION	IURL	Ē
ish.		ivr-repo	rtingtw	il.io/add-to-sync
		Updates d	on save	
		Save		Ē

Figure 24 Twilio IVR Studio Flow – add_queue_to_sync





- callSid: {{trigger.call.CallSid}}. This value is set to Twilio CallSid for each call
- *queue*: {{widgets.gather_input_english.Digits}}. This value is set to queue number 1 or 2 entered by the PSTN user.
- *callSid* and *queue* are the parameters which are passed to the function **add-to-sync**.

		←	Run	Function	(i) Hide
Split_key_press_en (Split Based On) {(widgets.gather_input_english.Digits)}	~	Upda	Config ates on save	Tran	sitions
No Condition Matchas 1 2 NEW		Func	tion Paramet	ers	Add
		KEY		VALUE	
• \Rightarrow add_gueue_to_sv \otimes		call	Sid	{{trigger.cal.	<u>Edit</u>
(Run Function) https://ivr-reporting-5700.twil.io/add-to-		que	ue	{{widgets.g.	. <u>Edit</u>
SUICESS Fat					
		Si	ave		6

Figure 25 Twilio IVR Studio Flow – add_queue_to_sync Continuation





Widget: connect_call_to_sales

- Success or Fail option from the Widget add_queue_to_sync is linked to Widget Connect Call To named Connect_call_to_sales
- SIP ENDPOINT: sip:+134XXXXXX@192.65.XX.XX:5060?XparentCall={{trigger.call.CallSid}}
- This Widget sends the call/INVITE towards Avaya SBCE with the header XparentCall = Twilio CallSid value. The X-parentCall ID is used by Avaya Aura contact center to retrieve the queue information from Twilio.

		~	Connect	Call To	(i) Hide
7	~		Config	Trar	sitions
● Add_queue_to_sy				-	
https://ivr-reporting-5700.twil.io/add-to-		WIDGET	T NAME *		
Success Fall		conn	ect_call_to_sa	les	
		CONNE	CT CALL TO *		
		SIP E	Endpoint		~
Connect_call_to 🛇		SIP END	DPOINT *		
Connect caller to ip:+1346 @192.65.: 1:50		sip:+	134(@192.65	. :5
Connected Call Ended		USERN	AME		
•		admi	n		
		PASSW	ORD		
		Pass	word		
		Sav	e		

Figure 26 Twilio IVR Studio Flow – connect_call_to_sales





		← Connect Call To	i Hide
	~	Config Trai	nsitions
<pre></pre>		CALLER ID • {{contact.channel.address}} RECORD CALL OFF	
Connect call_to Connect call To Connect caller to sip:+134 @192.65. :50		TIMEOUT 30 SECONDS TIME LIMIT @	
		3600 Save	Ē Ū

Figure 27 Twilio IVR Studio Flow – connect_call_to_sales Continuation





Widget: no_input_handler_3

- No Condition Matches option from the Widget split_key_press_en is linked to Widget Run Subflow named no_input_handler_3
- no_input_handler_3 runs the Subflow (Same as Figure 19) and linked to Widget gather_input_english

	← Run Subflow (i) Hide
Split_key_press_en (Split Based On) ({widgets.gather_input_english.Digits})	Config Transit	tions
No Condition Matches 1 2 NEW	IF COMPLETED gather_input_english Disconnect	⊘ ∽
Image: Substant S	IF FAILED Search or Select a Widget	~
	Save	Ē Ū

Figure 28 Twilio IVR Studio Flow – no_input_handler_3





Widget: gather_input_english

- **Completed** option from the Widget **no_input_handler_3** is linked to Widget Gather Input On Call named **gather_input_english**
- gather_input_english follows the same flow as Figure 16

Flow Revision: LatestPublishe	d	~~	Config	Transitions
			WIDGET NAME *	-
			gather_input_englis	sh
•	⊘ gather_input_eng ⊗ (Gather input On Call)		SAY OR PLAY MESSAG	E
Say Pre	y: Hello, how can we direct your call? ess 1 for sales, or say sales. To reach		Say a Message	\sim
	er Mission Kays - User said sometring - No input		TEXT TO SAY	
			Hello, how can we o Press 1 for sales, o reach support, pres	direct your call? r say sales. To ss 2 or say support.
			LANGUAGE	
			English (US)	\sim
			MESSAGE VOICE	

Figure 29 Twilio IVR Studio Flow – gather_input_english





Widget: no_input_handler_1

- User Said Something option from the Widget prompt_language is linked to Widget Run Subflow named no_input_handler_1
- no_input_handler_1 follows the same flow as Figure 18



Figure 30 Twilio IVR Studio Flow – no_input_handler_1





Widget: prompt_language

• **No Input** option from the Widget **prompt_language** is linked to Widget Gather Input On Call named **gather_input_english**

● 🖉 prompt_language ⊗
(Gather Input On Call)
Say: Gracias por llamar a nuestra empresa. Por favor oprima numero dos para español.
User Pressed Keys User Said Something No Input
● 🥒 gather_input_eng
(Gather Input On Call)
Say: Hello, how can we direct your call? Press 1 for sales, or say sales. To reach
User Pressed Keys User Said Something No Input

Figure 31 Twilio IVR Studio Flow – prompt_language





Widget: gather_input_english

- User Said Something option from the Widget gather_input_english is linked to Widget Split_Based_On... named split_speech_result_en
- VARIABLE TO TEST: widgets.gather_input_english.SpeechResult

Ø gather_input_eng.	🛛
(Gather Input On Call)	
Say: Hello, how can we direct your c Press 1 for sales, or say sales. To rea	all? ach
User Pressed Keys User Said Something No I	Input
User Pressed Keys User Said Something No Input	
	← Split Based On (i) Hide
«	Config Transitions
● 🖻 split_speech_res ⊗	
(Split Based On)	WIDGET NAME *
{{widgets.gather_input_english.Speechke	split_speech_result_en
No condition Matches sales support	VARIABLE TO TEST *
	widgets.gather_input_english.SpeechR
	Save 🗋 🔟

Figure 32 Twilio IVR Studio Flow – split_speech_result_en





Widget: add_queue_speech_to_sync

- Sales, Support options from the Widget split_speech_result_en is linked to Widget Run Function named add_queue_speech_to_sync
- add_queue_speech_to_sync Widget configuration is same as add_queue_to_sync (Refer Figure 24)

Split_speech_res (Split Based On) {{widgets.gather_input_english.Speech	nRe	
No Condition Matches - sales - support	NEW	
Add_queue_spee (Run Function) https://ivr-reporting-5700.twil.io/add sync		
Success Fall Image: Success	← Run Function	(i) Hide
Success Fal	WIDGET NAME *	
	SERVICE *	CREATE 🚱
	Save	Ē

Figure 33 Twilio IVR Studio Flow – add_queue_speech_to_sync





Widget: connect_call_to_support

- Success, Fail options from the Widget add_queue_speech_to_sync is linked to Widget Connect Call To named connect_call_to_support
- connect_call_to_support Widget configuration is same as connect_call_to_sales (Refer Figure 26)

Connect_call_to (Connect Call To)	← Connect Call To (i) Hide ≪ Config Transitions WIDGET NAME *	
sip:+1970 @192.65. :50 Connected Call Ended NEW	connect_call_to_support CONNECT CALL TO * SIP Endpoint	
	Save 🗋 🗇	
Connect_call_to (Connect call to) Connect caller to sip:+1970 @192.65. 50 Connecting Call Ended	Config Transitions	
	sip:+1970: @192.65 :5 USERNAME admin	
	Save	

Figure 34 Twilio IVR Studio Flow – connect_call_to_support





Widget: no_input_handler_4

- No Condition Matches option from the Widget split_speech_result_en is linked to Widget Run Subflow named no_input_handler_4
- no_input_handler_4 Widget configuration is same as no_input_handler_1 (Refer Figure 18)



Figure 35 Twilio IVR Studio Flow – no_input_handler_4





6.1.5 Phone Numbers

- Navigate to Phone Numbers > Manage > Active numbers
- Under Configure,
 - Configure with: Webhook, TwiMLBin, Function, Studio Flow, Proxy Service
 - A call comes in: Studio Flow
 - Flow: Dual Language IVR Test (an IVR flow created in the Section 6.1.4)

Console	Q Jump to	count 🗸 Billing 🗸
Develop Monitor	(970) Properties Configure Calls Log Messages Log Events Log Regulatory Information	
> ∰ Studio > ∅ Sync > (∞) Live	A2P 10DLC registration required for US messaging. To send SMS/MMS messages to the US with this U required. <u>Initiate A2P 10DLC registration or check registration status</u> [2]	S local number, a registration process is
✓ # Phone Numbers	A Please add an emergency address to this phone number or you may incure a \$75.00 charge per emergence	cy call. Add emergency address
Active numbers	Voice Configuration	
Buy a number Verified Caller IDs	Routing (Regional) United States (US1) Region call routing is: Active Go to other configurations	
	Q Jump to	count 🗸 Billing 🖌
Develop Monitor	Configure with Webhook, TwiML Bin, Function, Studio Flow, Proxy Service	•
> 🛱 Studio	A call comes in Flow Studio Flow Ual Language IVR Test	•
 (٠) Live 	Primary handler fails URL	HTTP HTTP POST
 # Phone Numbers 	Call status changes HTTP Caller No https://webhooks.twilio.com/v1/Accour ① HTTP POST ✓	ame Lookup ed v (j
Manage Active numbers Released numbers	Emergency Calling ①	Add Emergency Address
Ruy a number		

Figure 36 Phone Numbers





• Click Save configuration

Develop Monitor					
› 扂 Studio	United States (US1) Region mess	sage routing is	: Active		
▶ 😥 Sync					
> (0) Live	Messaging Service				
Phone	Select a Messaging Service				~
V # Numbers	Configure with				
✓ Manage	Webhook, TwiML Bin, Function, S	Studio Flow, P	roxy Service		~
Active numbers	A message comes in		URL	нттр	
Released numbers	Webhook	~	https://demo.twilio.com/welcome/sms/reply	HTTP POST	*
Buy a number	Primary handler fails		URL	НТТР	
Verified Caller IDs	Webhook	~		HTTP POST	~
Docs and Support					

Figure 37 Phone Number Continuation





6.1.6 Functions

- Navigate to Functions and Assets > Services
- Click Create Service
- Service Name: ivr_reporting
- Click Next

Develop Monitor	Servi	ces
	Each project	Name your Service X
✓ Functions and Assets	deployments	Service Name
Overview	Prefer the co	ivr_reporting
Services	Create Ser	This URL-friendly unique name will form the first part of your Serverless domain and cannot be updated.
✓ Functions (Classic)	_	URL: ivr_reporting-[auto-generated numbers].twil.io
List	Unique N	
Configure	test	Cancel
Assets (Classic)	nv-refer	

Figure 38 Functions – Configure Service

- Click Create your function
- Functions: Type the function name e.g. add_to_sync
- Click Add+ to create more functions

Develop Monitor	Add +	
	▼ Functions (i)	\Box
Functions and Assets	/add_to_synd	B
Overview	▼ Assets ①	Twilio Functions is a serverless environment which empowers developers to quickly and easily create production-grade, event-driven Twilio applications
Services	You have not yet added any Assets.	that scale with their businesses.
✓ Functions (Classic)		Create your function
List	▼ Settings & More	
Configuro	Environment Variables	For help, please visit:
Configure	l Dependencies	Twilio Docs [2] for guides and reference

Figure 39 Functions – Create function





- add_to_sync function is made as protected using the Protected with Lock icon
- Javascript for the add_to_sync function is shown in the right pane

Develop Monitor	Add +	add-to-sync 🗙
	▼ Functions (i)	<pre>1 2 // This is your new function. To start, set the name and path on the left.</pre>
✓ ₽ Functions and Assets	● / read-from 💮 : ▲	<pre>5 4 exports.handler = async function(context, event, callback) { 5 6</pre>
Overview	▼ Assets (i)	<pre>7 const client = context.getTwilioClient(); 8</pre>
Services	You have not yet added any Assets.	9 await client.sync.v1.services(context.SYNC_SERVICE) 10 .syncMaps(context.SYNC_MAP) 11
✓ Functions (Classic)		11 .syncmapitems 12 .create({key: event.callSid, itemTtl: 3600, data: {
List	▼ Settings & More	13 queue: event.queue 14 }})
Configure	Environment Variables Dependencies	Save Cancel Latest version is deployed Copy URL javascript
	Figure	40 Functions – add_to_sync

- Full screen view of the entire code is shown below.
- The below code stores the **Twilio CallSid** and the **queue number** (1 or 2) for each inbound call to Twilio IVR DID in the Maps database The function parameters CallSid and queue number for add_to_sync is passed from the Twilio Studio IVR Flow (**Section 6.1.4 Figure 24**)
- Below is the javascript for add_to_Sync:

// This is your new function. To start, set the name and path on the left.

exports.handler = async function(context, event, callback) {
 const client = context.getTwilioClient();
 await client.sync.v1.services(context.SYNC_SERVICE)
 .syncMaps(context.SYNC_MAP)
 .syncMapItems
 .create({key: event.callSid, itemTtl: 3600, data: {
 queue: event.queue
 }})
 .then(sync_map_item => {
 console.log(sync_map_item.key)
 return callback(null, sync_map_item.key);
 })

.catch(error => {

```
console.log(error);
```





return callback(error, null);

});

};

- Click on the three dots and Click Copy URL to copy the URL of add_to_sync function
- The URL for add_to_sync function is <u>https://ivr-reporting-XXXX.twil.io/add-to-sync</u>
- The above URL is given as input to the Twilio IVR studio flow (**Refer Section 6.1.4** Figure 24)

Develop Monitor	Add +	_	a	dd-to-sync X
			1	
	• Functions 🛈		2	// This is your new function. To start, set the name and path on the left.
Functions and	/read-from	🐨 : ^	3	<pre>exports.handler = async function(context, event, callback) {</pre>
Assets	/add-to-sy	A 🖸 🗸	5	
Quantian	Edit		7	<pre>const client = context.getTwilioClient();</pre>
Overview			8	
	Copy URL	·	9	<pre>await client.sync.v1.services(context.SYNC_SERVICE)</pre>
Services			10	.syncMaps(context.SYNC_MAP)
	Delete		11	.syncMapItems
 Functions (Classic) 	-		12	.create({key: event.callSid, itemTtl: 3600, data: {
	Rename		13	queue: event.queue
List			14	})

Figure 41 Functions – add_to_sync Continuation

- Click Add+ to create a function read_from_sync
- The URL for read_from_sync function is https://ivr-reporting-XXXX.twil.io/read-from-sync
- read_from_sync function is made as Publicly accessible using the Globe icon
- This function retrieves the Queue data and the digits pressed from the MAPS database for each Twilio callSid
- Below is the javascript for read_from_sync

// This is your new function. To start, set the name and path on the left.

exports.handler = async function(context, event, callback) {

const client = context.getTwilioClient();

await client.sync.v1.services(context.SYNC_SERVICE)

.syncMaps(context.SYNC_MAP)

.syncMapItems(event.callSid)

.fetch()

.then(sync_map_item => {





```
console.log(sync_map_item.key + ": "+ sync_map_item.data);
```

return callback(null, sync_map_item.data);

})

```
.catch(error => {
```

console.log(error);

return callback(error, null);

});

};





- Navigate to Settings & More > Environment Variables
- Key: SYNC_SERVICE
- Value: Enter the Service SID value of AvayaCallContext Sync Service (Refer Section 6.1.7)
- Click Add
- Key: SYNC_MAP
- Value: Enter the Maps SID value of AvayaCallContext Sync Service (Refer Section 6.1.7)
- Click Add



Figure 42 Functions – Environment Variables





- Navigate to Settings & More > Dependencies
- Node Version: Node.js v16
- Below are the **Modules** and the corresponding **Versions** which are added as dependencies

Develop Monitor	Add +	ſ	Env.variab	oles X Deper	ndencies X		
	 Functions 	i	Dependencies				
> 🖻 TwiML Bins	• /read-fro	om 🐵 : ^	Select a Node.js ru	intime for your Func	tions & Assets.		
	/add-to-	sy 👌 : 🗸	Node Version				
✓ F Functions and ▲ Assets (i)			Node.is v16				~
Overview	You have not yet added any Assets.						
Overview		-					
Services	▼ Settings &	More	Import npm modu	les into your applica	tion.		
 Functions (Classic) 	② Environn	nent Variables	• Module		Version		
List	② Depende	encies				Add	
Configure	→ Service [Details	Date and time		Message	C	Live logs off Clear logs
Add +	_	Env.var:	iables 🗙	Dependenci	es X		
▼ Functions ③		Import npm mo	odules into your	r application.			
/read-from	💮 : 🗅	• Module		Vers	ion		
● /add-to-sy	A : ↓						Add
▼ Assets (i)							
You have not yet added any a	Assets. ^	Module		Versior	1		
▼ Settings & More	•	lodash		4.17.11		Edit	Delete
🕸 Environment Varial	bles	twilio		3.29.2		Edit	Delete
Add +		Env.variab	les X De	pendencies 🕽	;		
▼ Functions (i)		Module		Version			
•/read-from 🥳	Ð: ^	lodash		4 17 11		Edit	Delete
• /add-to-sy	£ : 📮	louasti		4.17.11		Ealt	Delete
▼ Assets (i)		twilio		3.29.2		Edit	Delete
You have not yet added any As	ssets.	xmldom		0.1.27		Edit	Delete
▼ Settings & More		@twilio/runtime	e-handler	1.2.1		Edit	Delete
Environment Variable	les	util		0.11.0		Edit	Delete
② Dependencies							

Figure 43 Functions – Dependencies





• Click Deploy All to validate and deploy the code

Develop Monitor	Add +	Env.variables X Dependencies X read-from-sync X
>	Functions ① /read-from	<pre>4 exports.handler = async function(context, event, callback) { 5 6 6</pre>
	•/add-to-sy of	<pre>/ const client = context.get!wilio(lient();</pre>
✓ ₽ Functions and Assets	▼ Assets (i)	<pre>10 .syncMaps(context.SYNC_MAP) 11 .syncMapItems(event.callSid)</pre>
Overview	You have not yet added any Assets.	<pre>12 .fetch() 13 .then(sync_map_item => { 14</pre>
Services	▼ Settings & More	<pre>15 return callback(null, sync_map_item.data); 16 })</pre>
 Functions (Classic) List 	② Environment Variables	17 .catch(error => { Save Cancel Latest version is deployed Copy URL javascript Ln 13 Col 31
Configure	→ Service Details	Date and time Message Live logs off Clear logs
Docs and Support	ivr-reporting-5700.twil.io	
«	Deploy All	

Figure 44 Functions – Deploy All





6.1.7 Services

- Navigate to Sync > Services
- Click Create new Sync Service
- Sync Service named AvayaCallContext is shown below
 Click Save

Develop Monite	or Serv	ices				Create new Sync Service
 Studio Sync Overview Services Debugger setting 	A Servi A Sync Cre Scc Col	ce is the top-level scope of Services allows you to: ate multiple environments ope access to resources thro nfigure behavior of those re	all other Sync resources (Maps, Li (dev, stage, prod) under the same bugh the REST API esources in the scope of a Service	sts, Documents). It contain Twilio account with segre	s all the objects in a Sync app gated data	lication. <u>Learn more</u> [2
> ((+) Live					10 per page	•
> # ^{Phone} Numbers	Name		SID		Date Created	Date Updated
Voice Docs and Support	: <u>AvavaCi</u> onitor Se	allContext	ISTe uration		2023-03-06T19:31:56Z	2023-03-06T19:31:56Z
Sync (US1) Configure Documents Lists Maps Streams	ntext Syn We <i>h</i> i The man	c Service friendly na vayaCallContext bhook Url ttps://demo.twilio.coi URL we should call wh nipulated. ACL enabled Whether token identii to Sync objects by usi	me m/welcome/sync/repl_ hen Sync objects are ties in the Service must be g ng the Permissions resource	ranted access	Service SID IS7e Date created 2023-03-07 1:01:56 Date updated 2023-03-07 1:01:56	
Docs and Support	: □	Reachability enabled Whether the service in client endpoints conne Save Cancel	nstance should call webhoo ect to Sync. Reset this service	k_url when		

Figure 45 Sync Service





- Navigate to AvayaCallContext > Maps
- Click Create new Sync Map
- Sync Map named MP21XXX is shown below
- Click Map Name MP21XXX
 KEY value i.e. Twilio callSid and the Map Item Data is added in to the database as shown below

Develop Monitor	Sync Maps				Create new Sy	vnc Map
Sync (US1) ← AvayaCallContext	A Sync Map 🖸 stores unord items. A few notes about Sy	lered JSON objects access nc Maps:	ible via a developer-defi	ned key. It is an unordered c	ollection of individua	al Map
Configure	Full map modification his	story persists with every c	hange that triggers a new	w revision.		
Documents	 Strict ordering of map m 	utation events is guarante	ed, but the map item or	der is not defined.		
Lists Maps	 By default, data persists parameter. 	permanently, but maps w	ill expire and be deleted	automatically if eviction is c	onfigured via the TT	Ľ
Sueams					10 per p	age 🗸
Docs and Support	NAME	SID		DATE CREATED	DATE_UPDATED	DATE EXPIRES
~	MP21	. MP21		2023-03- 09	2023-05-31 19:40:13	-
Develop Monitor	Maps / Items Permissions					
Sync (US1)				10 per page	e 🗸 Create	new Map Item
Configure	KEY		DATE CREATED	DATE UPDATED	DATE EXPIRES	ACTIONS
Lists Maps	▼ CA7		2023-03-09 19:48:03	2023-03-09 19:48:03	-	Edit Delete
Streams	Map Item Data					
Docs and Support	{ "queue": "2" } *					

Figure 46 Sync Maps





6.2 Avaya SBCE Configuration

1.1.1 Avaya SBCE Login

- Log into Avaya Session Border Controller for Enterprise (SBCE) web interface by typing "https://X.X.X.X/sbc"
- Enter the Username and Password
- Click Log In

A) /A) /A	Log In				
μνμγμ	Username: usec Password: Log In				
Session Border Controller for Enterprise	WELCOME TO AVAYA SBC Unauthorized access to this machine is prohibited. This system is for the use authorized users only. Usage of this system may be monitored and recorded by system personnel.				
	Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence from such monitoring to law enforcement officials.				
	© 2011 - 2019 Avaya Inc. All rights reserved.				

Figure 47 Avaya SBCE Login

• Under **Device**, select **ASBCE10** from drop down to expand the configuration for Avaya SBCE

Device: ASBCE10 - Alarms	1 Incidents Status 🛩 Log	gs ❤ Diagnostics Users		s	Settings 🗸	Help 🗸	Log Out
Session Border	Controller for l	Enterprise				A۷	ΆYA
EMS Dashboard	Dashboard						A
Software Management Device Management	Application DEBUG level log mes- degradation.	sages are currently enabled on one or mo	re subsystems. I	eaving this log level enabled for extended periods of time r	may cause sev	vere performa	ince
Backup/Restore	Information			Installed Devices			-
 System Parameters Configuration Profiles 	System Time	02:15:01 AM CST	Refresh	EMS			
 Services 	Version	10.1.0.0-32-21432		ASBCE10			1
Domain Policies	GUI Version	10.1.0.0-21910					_
TLS Management	Build Date	Thu May 12 08:11:45 UTC 2022					- 1
Network & Flows	License State	Ø OK					- 1
 DMZ Services Monitorina & Logging 	Aggregate Licensing Overages	0					- 1
	Peak Licensing Overage Count	0					- 1
	Last Logged in at	12/14/2022 03:32:46 CST					- 1
	Failed Login Attempts	0					- 1
	Active Alarms (past 24 hours)			Incidents (past 24 hours)			-
	None found.			None found.			

Figure 48 Selection of Avaya SBCE Device





1.1.2 Server Interworking

Server Interworking for Avaya SM

- Navigate to Configuration Profiles > Server Interworking
- Select the predefined Interworking Profile avaya-ru, click Clone
- Set Clone Name: AASM.10.1
- Click Finish

ENS Dashboard Software Management Device Managem	AV
Backup Restore Interworking Profiles Close Profile X System Parameters Profile Name avgra-ru Profile Name avgra-ru	Cione
Doman DoS Clone Name Clone Name Server Intercenting Finish Finish	

Figure 49 Server Interworking Profile for Avaya SM

Interworking Profiles:	AASM.10.1				
Add					Rename Clone Delete
Interworking Profiles			Click here to add a	description.	
	General Timers Privacy	URI Manipulation	Header Manipulation	Advanced	
	General				^ ·
AA SM 10.1	Hold Support		None		
AA 3M. 10.1	180 Handling		None		
	181 Handling		None		
	182 Handling		None		
	183 Handling		None		
	Refer Handling		No		
	URI Group		None		
	Send Hold		No		
	Delayed Offer		Yes		
	3xx Handling		No		
	Diversion Header Support		No		
	Delayed SDP Handling		No		•

Figure 50 Server Interworking Profile for Avaya SM Continuation





Interworking Profiles: AASM.10.1

Add					
Interworking Profiles			Click here to add a	description.	
	General Timers Privacy	URI Manipulation	Header Manipulation	Advanced	
	Delayed Offer	Yes			
	3xx Handling		No		
AASM.10.1	Diversion Header Support		No		
	Delayed SDP Handling	No			
	Re-Invite Handling	No			
	Prack Handling		No		
	Allow 18X SDP		No		
	T.38 Support		No		
	URI Scheme		SIP		
	Via Header Format	RFC3261			
	SIPS Required		No		
	Mediasec		No		
			Edit		

Interworking Profiles: AASM.10.1

Add

	Click here to add a description.
General Timers Privacy URI Manipulation	Header Manipulation Advanced
Record Routes	Both Sides
Include End Point IP for Context Lookup	No
Extensions	Avaya
Diversion Manipulation	No
Has Remote SBC	Yes
Route Response on Via Port	No
Relay INVITE Replace for SIPREC	No
MOBX Re-INVITE Handling	No
NATing for 301/302 Redirection	Yes
DTMF	
DTMF Support	RFC 2833 Relay & SIP NOTIFY
	Edit

Figure 51 Server Interworking Profile for Avaya SM Continuation





1.1.3 SIP Servers

SIP Server for Avaya SM

- Navigate to Services > SIP Servers
- Click Add
- Set Profile Name: Avaya
- Click Next
- Set Server Type: Select Trunk Server from the drop down
- Set IP Address/FQDN: Enter the Avaya Aura Session Manager SIP IP Address
- Set Port: **5060**
- Set Transport: UDP
- Click Finish

		_	1					
EMS Dashboard	SIP Servers: Avaya							
Software Management		Add						
Device Management	Caravas Darafilara		Edit	SIP Server Profile -	General		x	
Backup/Restore	Server Prollies		Lun		Gomoral		~	12
System Parameters			Server Type can not be changed whi	ile this SIP Server Pr	ofile is associate	ed to a Server F	low.	k Se
 Configuration Profiles 	Avaya							
Domain DoS			Server Type	Trunk Server	~			
Server Interworking			SIP Domain	[
Media Forking			DND Owner Tree	NONEMA				
Routing			DNS Query Type	NONE/A 🗸				
Topology Hiding			TLS Client Profile	None	\sim			
Signaling Manipulation								
URI Groups							Add	
SNMP Traps			IP Address / FQDN / CIDR Range	Port	Transport			
Time of Day Rules			10.70.4.207	5060	UDP	~	Delete	
FGDN Groups								
Reverse Proxy Policy				Finish				
URN Profile								
Recording Profile								
H248 Profile								
IP/URI Blocklist Profile								
Services								
SIP Servers								
H248 Servers								
LDAP								

Figure 52 SIP Server for Avaya SM





SIP Servers: Avaya		
Server Profiles	General Authentication Heartbeat R	Registration Ping Advanced
Avava	Enable Heartbeat	
	Method	OPTIONS
	Frequency	50 seconds
Twilio	From URI	1234@10.70.4.216
	To URI	1234@10.70.4.207
		Edit
SIP Servers: Avaya		
Server Profiles	General Authentication Heartbeat	Registration Ping Advanced
Avaya	Enable Ping	
	Ping Interval	60 seconds
	Response Timeout	30 seconds
		Edit

Figure 53 SIP Server for Avaya SM Continuation





- Navigate to Advanced tab
- Set Enable Grooming: Checked
- Set Interworking Profile: Select AASM.10.1 (created in section 6.2.2)

SIP Servers: Avaya		
Server Profiles	General Authentication Heartbeat Registration	Ping Advanced
Avaya	Enable Grooming Interworking Profile	AASM.10.1
	Signaling Manipulation Script	AvayaSM
	Securable	
	Enable FGDN	0
	Tolerant	
	URI Group	None
	NG911 Support	
		Edit

Figure 54 SIP Server for Avaya SM Continuation





SIP Server for Twilio

- Navigate to Services > SIP Servers
- Click Add
- Set Profile Name: Twilio
- Click Next
- Set Server Type: Select Trunk Server from the drop down
- Set IP Address/FQDN: Enter the Twilio Host Name
- Set Port: **5060**
- Set Transport: UDP
- Click Finish

Session Border Controller for Enterprise

Manipulation URI Groups SNMP Traps Time of Day Rules	SIP Servers: Twilio Add Server Profiles	General Authentication Heartbea	t Registration Ping Advanced	Ē
FGDN Groups		0 T	T 10	
Reverse Proxy		Server Type	Trunk Server	
Policy		DNS Query Type	NONE/A	
URN Profile				
Recording Profile		IP Address / FQDN	Port	Iransport
H248 Profile	Twilio	.twilio.com	5060	UDP
IP/URI Blocklist			Edit	
Frome				
Services				
SIP Servers				
H248 Servers				

Figure 55 SIP Server for Twilio

- Navigate to Authentication tab
- Enable Authentication: Enabled
- User Name: Enter the User Name provided by Twilio
- Password: Enter the Password provided by Twilio

SIP Servers: Twilio

Add		
Server Profiles	General Authentication Heartbeat	Registration Ping Advanced
	Enable Authentication	
	User Name	4433
	Realm	
Twilio		Edit

Figure 56 SIP Server for Twilio Continuation





- Navigate to Hearbeat tab
- Enable Heartbeat. Enabled
- Method: OPTIONS
- Frequency: 60 Seconds
- From URI:1234@192.65.x.x
- To URI: 1234@xxxx.twilio.com

SIP Servers: Twilio

Add			
Server Profiles	General Authentication Hear	tbeat Registration Ping Advanced	
	Enable Heartbeat	 ✓	
Method		OPTIONS	
	Frequency	60 seconds	
Twilio	From URI	1234@192.65	
	To URI	1234@	twilio.com
		Edit	

Figure 57 SIP Server for Twilio Continuation

- Navigate to Ping tab
- Enable Ping: Enabled
- Ping Interval: 60 seconds
- Response Timeout: **30 Seconds**

SIP Servers: Twilio

Add		
Server Profiles	General Authentication Heartbeat	Registration Ping Advanced
	Enable Ping	
	Ping Interval	60 seconds
	Response Timeout	30 seconds
Twilio		Edit

Figure 58 SIP Server for Twilio Continuation





• Navigate to Advanced tab

SIP Servers: Twilio

Add						
Server Profiles	General	Authentication	Heartbeat	Registration	Ping	Advanced
	Enable DoS Protection					
	Enable Grooming					
	Interworking Profile					
Twilio	Signaling Manipulation Script					
	Securable					
	Enable F	GDN				
	Tolerant					
	URI Group				None	
	NG911 Support					
						Edit

Figure 59 SIP Server for Twilio Continuation





1.1.4 Topology Hiding

Topology Hiding profile for Twilio

- Set Header: Request-Line, To are selected
- Set Replace Action: Overwrite
- Set Overwrite Value: Enter Twilio Host name

System Parameters		Topology Hiding Profiles: Twilio					
Configuration Profiles		Add				Re	name Clone Delete
Server Interworking		Topology Hiding Profiles	Click here to add a description,				
Media Forking			Topology Hiding				
Routing				0.4	Darlage Ast's	0	
Topology Hiding			Header	Criteria	Replace Action	Overwrite Vi	alue
Signaling			From	IP/Domain	Auto		
Manipulation			То	IP/Domain	Overwrite		.twilio.com
URI Groups			Refer-To	IP/Domain	Auto		
SNMP Traps							
Time of Day Rules		Tudlia	Via	IP/Domain	Auto		
FGDN Groups		TWING	SDP	IP/Domain	Auto		
Reverse Proxy			Request-Line	IP/Domain	Overwrite		.twilio.com
Policy			Record-Route	IP/Domain	Auto		
URN Profile			Referred By	IP/Domain	Auto		
Recording Profile			Trefeffed-by	ii /Domain	Auto		
H248 Profile					Edit		
IP/URI Blocklist			L				

Figure 60 Topology Hiding Profile for Twilio




1.1.5 Routing

Routing for Avaya SM

- Navigate to Configuration Profiles > Routing
- Create Routing Profile named Avaya_SM
- At Routing Profile Window, Click Add
- Set SIP Server Profile: Avaya (configured in section 6.2.3)
- The Server IP, Port and Transport Protocol populates automatically

Session Border Controller for Enterprise

EMS Dashboard Software Management Device Management Backup/Restore System Parameters Configuration Profiles Domain DoS Server Interworking Media Forking Routing Topology Hiding Signaling Manipulation	Routing Profiles: AVAYA_SM Add Routing Profiles AVAYA_SM	Profile Update Priority Priority URI Group 1 •	up Time of Day default	La Pi	oad Balancing riority	Click here to add a Next Hop A 10.70.4.20	description. Address 17:5060
		Profile : AVAYA_SI	M - Edit Rule				x
URI Group	* •		Time of Day		default 🗸		
Load Balancing	Priority 🗸		NAPTR				
Transport	None 🗸		LDAP Routing				
LDAP Server Profile	None 🗸		LDAP Base DN (S	earch)	None 🛩		
Matched Attribute Priority			Alternate Routing				
Next Hop Priority			Next Hop In-Dialog	9			
Ignore Route Header							
ENUM			ENUM Suffix				
							Add
Priority / LDAP Search / Attribute	LDAP Search Regex Pattern	LDAP Sear Regex Res	ch ult	SIP Server Profile	Next Hop Address	Transport	
1				Avaya 🗸	10.70.4.207:50 🗸	None 🗸	Delete
		Finish	1				

Figure 61 Routing for Avaya SM





Routing for Twilio

- Set SIP Server Profile: Twilio (configured in section 6.2.3)
 The Server IP, Port and Transport Protocol populates automatically

	Julus · Loya · Diaynosiics	Profile : Twilio - Edit Rule	X
URI Group	*	Time of Day	default 🗸
Load Balancing	Priority 🗸	NAPTR	
Transport	None 🗸	LDAP Routing	
LDAP Server Profile	None 🗸	LDAP Base DN (Search)	None 🗸
Matched Attribute Priority		Alternate Routing	
Next Hop Priority		Next Hop In-Dialog	
Ignore Route Header			
ENUM		ENUM Suffix	
			Add
Priority / LDAP Search / Attribute	LDAP Search Regex Pattern	LDAP Search SIP Server Regex Result Profile	Next Hop Address Transport
1		Twilio V	ya ✔ None ✔ Delete
		Finish	

Figure 62 Routing for Twilio





1.1.6 Media Rules

Media Rule for Twilio

- Navigate to Domain Policies > Media Rules
- Create Media Rules named Twilio

Session Border Controller for Enterprise

RADIUS Domain Policies	Media Rules: Twilio Add		
Application Rules	Media Rules		Click here to add a description.
Border Rules		Encruption Codes Drightingtion	dument Oct
Security Rules		Encryption Codec Phonitzation A	uvanceu Q03
Signaling Rules		Audio Encryption	
Charging Rules		Preferred Formats	RTP
End Point Policy Groups		Interworking	
Session Policies		Symmetric Context Reset	
TLS Management		Key Change in New Offer	
A Network & Flows			
Network		Video Encryption	
Management	Twilio	Preferred Formats	RTP
Media Interface		Interworking	
Signaling Interface		interneting	
End Point Flows		Symmetric Context Reset	
Session Flows		Key Change in New Offer	
Advanced Options			
Session Flows		Miscellaneous	
Advanced Options		Capability Negotiation	
DMZ Services			Edit
N Monitoring & Logging			Luit

Figure 63 Media Rules for Twilio





Media Rules: Twilio		
Add		
Media Rules		Click here to add a description.
	Encryption Codec Prioritization Advanced QoS	
	Silancing	
	Silencing Enabled	v
	Timeout	60 second(s)
	Binary Floor Control Protocol	
	DECE Enabled	
Twilio	Far End Camera Control	
	FECC Enabled	
	Real Time Text	_
	RTT Enabled	
	ΔΝΑΤ	
	ANAT Enabled	Π
Madia Dulaat Tutilia		
Media Rules		Click boro to add a description
		Click here to add a description.
	Encryption Codec Prioritization Advanced Qo	<u>s</u>
	ANAT	
	ANAT Enabled	
	Media Line Compliance	
	Media Line Compliance Enabled	
	Interactive Connectivity Establishment	
Twilio	ICE Gateway Support	Π
	Port Change on New Offer	
	Audio Port Change on New Offer Enabled	
	Video Port Change on New Offer Enabled	
		Edit

Figure 64 Media Rules for Twilio Continuation





Media Rules: Twilio

A	dd				F
Media Rules			Click here to	add a description.	
	Encryption Codec Price	oritization Advanced	QoS		
	Media QoS Marking				
	Enabled		✓		
	QoS Type		TOS		
	Audio QoS		_		
	Audio Precedence	Routine		Audio ToS	Minimize Delay
	Video QoS				_
Twilio	Video Precedence	Routine		Video ToS	Minimize Delay
				Edit	

Figure 65 Media Rules for Twilio Continuation

Media Rule for Avaya SM

Media Rule for Avaya SM is same as Twilio. It is named as **AvayaSM.** (No screenshot of AvayaSM Media rule is shown)





AVAYA

1.1.7 Signaling Rules

Signaling Rules for Avaya SM

- Navigate to Domain Policies > Signaling Rules
- Create Signaling Rules named Avaya SM

Session Border Controller for Enterprise

 Services Domain Policies 	•	Signaling Rules: Ava	ya SM							
Application Rules Border Rules		Signaling Rules					Click here	e to add a desc	ription.	
Media Rules			General	Requests	Responses	Request Headers	Respo	nse Headers	Signaling QoS	UCID
Security Rules	11		Inbound							
Signaling Rules Charging Rules	L	Avaya SM	Requests				Allow			
End Point Policy			Non-2XX	Final Respor	ISES		Allow			
Groups			Optional F	Request Head	ders		Allow			
Session Policies			Optional F	Response He	aders		Allow			
TLS Management										
 Network & Flows 			Outbound							
Network Management			Requests				Allow			
Media Interface			Non-2XX	Final Respor	ISES		Allow			
Signaling Interface			Optional F	Request Head	ders		Allow			
End Point Flows			Optional F	Response He	aders		Allow			
Session Flows										
Media Interface			Content-Type	e Policy	_	_		_	_	
Signaling Interface			Enable Cont	ent-Type Cheo	cks			<		
End Point Flows			Action		Allow			Multipart Action	Allow	
Session Flows			Execution Li					Evention List		
Advanced Options			Exception Lis	sı				Exception List		
 Diviz Services Monitoring & Logging 							Edit			
wonitoring & Logging	*	L								

Session Border Controller for Enterprise



Figure 66 Signaling Rules for Avaya SM





Signaling Rules: Avaya SM

Signaling Rul

Avaya SM

Add							Rename	Clone	Delete
			Click here to	add a description.					
Gener	al Requests Responses	Request Head	ers Response	Headers Sign	aling QoS UCIE)			
					Add In Hea	der Control	Add Out H	leader	Control
Row	Header Name	Response Code	Method Name	Header Criteria	Action	Proprietary	Direction		
1	AV-Global-Session-ID	1XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
2	AV-Global-Session-ID	2XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
3	Endpoint-View	1XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
4	Endpoint-View	2XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
5	P-AV-Message-Id	1XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
6	P-AV-Message-Id	2XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
7	P-Location	1XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete
8	P-Location	2XX	ALL	Forbidden	Remove Header	Yes	IN	Edit	Delete

Signaling Rules: Avaya SM



Signaling Rules: Avaya SM

A	٨dd							
Signaling Rules					(Click here to add a descr	ription.	
		General	Requests	Responses	Request Headers	Response Headers	Signaling QoS	UCID
Avaya SM	1	UCID						
	Π.	Node	e ID			1		
		Proto	col Discrimina	ator		0×00		
						Edit		

Figure 67 Signaling Rules for Avaya SM Continuation





1.1.8 End Point Policy Groups

End Point Policy Group for Twilio

- Create End Point Policy Groups named Twilio
- Set Media Rule: Twilio (Created in Section 6.2.6)

Session Border Controller for Enterprise

AVAYA

AVAYA

 Services Domain Policies Application Pulos 	*	Policy Groups: Twilio								Rename	Clone	Delete
Application Rules		Policy Groups				Click	k here to add a descri	ption.				
Media Rules						Hover ov	ver a row to see its de	scription.				
Security Rules			Policy Group	1								
Signaling Rules			Folicy Group									
Charging Rules											Sumr	mary
End Point Policy			Order	Application	Border	Media	Security	Signaling	Charging	RTCP M	lon Gen	
Groups				default	default	Twilio	default-low	default	None	Off		Edit
Session Policies				dordult	default	TWING	default-low	deladir	None	011		Luit
TLS Management												
 Network & Flows 												
Network Management												
Media Interface												
Signaling Interface												
End Point Flows												
Session Flows												
Advanced Options												
DMZ Services		Twilio										

Figure 68 End Point Policy Group for Twilio

End Point Policy Group for Avaya SM

- Create End Point Policy Groups named Avaya SM
- Set *Media Rule*: AvayaSM (Created in Section 6.2.6)
- Set Signaling Rule: Avaya SM (Created in Section 6.2.7)

Session Border Controller for Enterprise









1.1.9 Network Management

Network Interface for Avaya SM

- Navigate to Network & Flows > Network Management
- Create Network Interface for Avaya SM named LAN
- Set Default Gateway: Default Gateway of Avaya SM IP address
- Set Network Prefix or Subnet Mask: Enter the Subnet Mask
- Interface: Select A1
- IP Address: Enter IP address of Avaya SM

Session Border	Controller for	Enterprise	÷	
RADIUS * Domain Policies Application Rules Border Rules Media Rules	Network Managemen Modifications to the interfaces a If changes are made, sessions	t Edit Network Ind IP addresses are servic using this network will be di	e impacting and take effect ir opped.	X nmediately.
Security Rules Signaling Rules Charging Rules End Point Policy Groups Session Policies	Name Default Gateway Network Prefix or Subnet Mask Interface	LAN 10.70.4.1 255.255.255.0		
 TLS Management Network & Flows Network Management Media Interface Signaling Interface End Point Flows Session Flows Advanced Options 	IP Address I 	Public IP Use IP Address Use IP Address Finish	Gateway Override Use Default Use Default	Add Delete Delete

Figure 70 Network Interface for Avaya SM





Network Interface for Twilio

- Create Network Interface for Twilio named WAN
- Set Default Gateway: Default Gateway for Twilio interface
- Set Network Prefix or Subnet Mask: Enter the Subnet Mask
- Interface: Select B1
- *IP Address*: Enter interface IP address for **Twilio**

	Edit Network		Х
Modifications to the interfaces and If changes are made, sessions us	d IP addresses are service ing this network will be dro	impacting and take effect immorped.	ediately.
Name	WAN		
Default Gateway	192.65.		
Network Prefix or Subnet Mask	255.255.255.128		
Interface	B1 🗸		
			Add
IP Address Pu	ıblic IP	Gateway Override	
192.65.	se IP Address	Use Default	Delete
	Finish		

Figure 71 Network Interface for Twilio





1.1.10 Media Interface

Media Interface facing Twilio

- Navigate to Network & Flows > Media Interface
- Create Media Interface named MI_WAN
- Set *IP Address*: Select **WAN (B1, VLAN 0)** from the drop down and the **IP address** populates automatically. The IP address for Interface facing Twilio is 192.65.X.X

Media Interface	9	
Media Interface		
	Edit Media Interface	x
Name	MI_WAN	
IP Address	WAN (B1, VLAN 0)	
Port Range	48796 - 48883	
	Finish	

Figure 72 Media Interface for Twilio





Media Interface facing Avaya SM

- Create Media Interface named MI_LAN
- Set *IP Address*: Select LAN (A1, VLAN 0) from the drop down and the **IP address** populates automatically. The IP address for Interface facing Avaya SM is 10.70.4.216

	Edit Media Interface	X
Name	MI_LAN	
IP Address	LAN (A1, VLAN 0)	
Port Range	35000 - 40000	
	Finish	

Figure 73 Media Interface for Avaya SM





1.1.11 Signaling Interface

Signaling Interface for Avaya SM

- Navigate to: Network & Flows > Signaling Interface
- Set Name: SI_LAN is given for the interface facing Avaya Aura SM
- Set IP Address: Select LAN (A1, VLAN 0)
- Set UDP Port: 5060

Session Border Controller for Enterprise							
EMS Dashboard Software Management Device Management	Signaling Interface	Edit Signaling Interface	x				
Backup/Restore	Name	SI_LAN					
 System Parameters Configuration Profiles Services 	IP Address	LAN (A1, VLAN 0)	IP Port TL				
 Domain Policies 	TCP Port Leave blank to disable		60				
 TLS Management Network & Flows 	UDP Port Leave blank to disable	5060	50				
Network Management	TLS Port Leave blank to disable						
Media Interface Signaling Interface	TLS Profile	None 🗸					
End Point Flows	Enable Shared Control						
Session Flows Advanced Options	Shared Control Port						
DMZ ServicesMonitoring & Logging		Finish	_				

Figure 74 Signaling Interface for Avaya SM





Signaling Interface for Twilio

- Navigate to: Network & Flows > Signaling Interface
- Set Name: SI_WAN is given for the interface facing Avaya SM
- Set IP Address: Select WAN (B1, VLAN 0)
- Set UDP Port: 5060

Reverse Proxy Policy	 Signaling Interface 		
URN Profile	_	Edit Signaling Interface	2
Recording Profile H248 Profile	Name	SI_WAN	
IP/URI Blocklist Profile	IP Address	WAN (B1, VLAN 0)	
 Services SIP Servers 	TCP Port Leave blank to disable		
H248 Servers LDAP	UDP Port Leave blank to disable	5060	
RADIUS	TLS Port Leave blank to disable		
 Domain Policies Application Rules 	TLS Profile	None 🗸	
Border Rules	Enable Shared Control		
Media Rules Security Rules	Shared Control Port		
Signaling Rules Charging Rules		Finish	
End Point Policy Groups			
Session Policies			
TLS Management			
A Network & Flows			
Network Management			
Media Interface			
Signaling Interface End Point Flows			

Figure 75 Signaling Interface for Twilio





1.1.12 End Point Flows

- Navigate to Network & Flows > End Point Flows > Server Flows
- Below are the Server Flows created for Avaya SM and Twilio

Session Border Controller for Enterprise

AVAYA

EMS Dashboard	End Point Flows									
Software Management										
Device Management										
Backup/Restore	Subscriber Flows Server Flows									
System Parameters										Add
Configuration Profiles	Madifianting made to a Comunification									
Services	Modifications made to a Server Flow	vill only take effe	ct on new sessions.							
Domain Policies			Hover	over a row to see its de	escription.					
TLS Management	SIP Server: Avaya									
Network & Flows	Priority Flow Name	URI Group	Received Interface	Signaling Interface	End Point Policy Group	Routing Profile				
Network Management	1 AvavaSM	×	SI WAN	SI LAN	Twilio	Twilio	View	Clone	Edit	Delete
Media Interface			-	-						
Signaling Interface	SIP Server: Twilio									
End Point Flows	Priority Flow Name	URI Group	Received Interface	Signaling Interface	End Point Policy Group	Routing Profile				
Session Flows	1 Twilio	*	SLIAN	SI WAN	Avava SM	AVAYA SM	View	Clone	Edit	Delete
Advanced Options					,			2.5/10		

Figure 76 End Point Flows – Server Flows





Server Flow for Avaya SM

	Edit Flow: Twilio
Flow Name	Twilio
SIP Server Profile	Twilio 🗸
URI Group	* 🗸
Transport	* •
Remote Subnet	*
Received Interface	SI_LAN ¥
Signaling Interface	SI_WAN ¥
Media Interface	MI_LAN V
Secondary Media Interface	None 🗸
End Point Policy Group	Avaya SM 🗸
Routing Profile	AVAYA_SM 🗸
Topology Hiding Profile	Twilio 🗸
Signaling Manipulation Script	None 🗸
Remote Branch Office	Any 🗸
Link Monitoring from Peer	
FQDN Support	
FQDN	
	Finish

Figure 77 End Point Flow for Avaya SM





Server Flow for Twilio

	Edit Flow: Avaya SM X
Flow Name	AvayaSM
SIP Server Profile	Avaya 🗸
URI Group	* •
Transport	* •
Remote Subnet	*
Received Interface	SI_WAN V
Signaling Interface	SI_LAN ¥
Media Interface	MI_LAN ¥
Secondary Media Interface	None 🗸
End Point Policy Group	Twilio 🗸
Routing Profile	Twilio 🗸
Topology Hiding Profile	default 🗸
Signaling Manipulation Script	None 🗸
Remote Branch Office	Any 🗸
Link Monitoring from Peer	
FQDN Support	
FQDN	
	Finish

Figure 78 End Point Flow for Twilio





1.1.13 Signaling Manipulation

Signaling Manipulation script **AvayaSM** is created towards Avaya SM. This script assigns the X-parentCall value to User-to-User header and sent towards Avaya SM

Navigate to Configuration Profiles > Signaling Manipulation

Session Border Controller for Enterprise



Figure 79 Sigma script towards Avaya SM





1.2 Avaya Aura Session Manager Configuration

1.2.1 Avaya Aura SM Login

- Avaya Aura SM Configuration is accomplished through the Avaya Aura System Manager.
- Access Avaya Aura System Manager Web login screen via https://<IP Address/FQDN>
- Use admin as User ID and associated Password
- Click Log On

C A Not secure https://10.70.4.203/network-login/		
Recommended access to System Manager is via FQDN.	^	
Go to central login for Single Sign-On		User ID: admin
If IP address access is your only option, then note that authentication will fail in the following cases:		Password:
 First time login with "admin" account Expired/Reset passwords 		Log On Cancel
Use the "Change Password" hyperlink on this page to change the password manually, and then login.		Change Passivo
Also note that single sign-on between servers in the same security domain is not supported when accessing via $\rm IP$ address.		Supported Browsers: Firefox (minimum version 93.0), Chrome (minimum version 93.0), Chrome (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.		ceases study of cage (minimum version solo).

Figure 80 Avaya SM Login





1.2.2 Domain

• Navigate to Elements > Routing

← → C ▲ Not secure https://1	0.70.4.203/SMGR/	rvices	· ·	Widgets v	Shortcuts	; v			
Aura® System Manager 10.1 Disk Space Utilization	Avaya Breeze®		<u> </u>						×
60 45-	Communication Manager								
30	Communication Server 100	0							
15	Device Adapter						:		
op Jai enda	Device Services		wiibrary	home	pgsal	984	109	audit	
	IP Office		Norr	mal 📰 Free					
Alarms	Media Server								×
	Meeting Exchange			cription					
	Presence		Des	cription	No data				
	Routing								
	Session Manager								
	Web Gateway	>							

Figure 81 Routing

- Navigate to Routing > Domains
- Click New

$\leftarrow \ \rightarrow $	C 🔺	Not secur	re https://10.70.4.203/SMGR/#	
Aura® Syste	ay/ em Manage	er 10.1	Users 🗸 🎤 Elements 🗸 🌣 Services 🗸 Widgets 🗸 Shortcuts 🗸	
Home	Routir	ng ×		
Routing		^	Domain Management	
Dom	nains		New Edit Delete Duplicate More Actions -	
Loca	tions		2 Items 🛛 🍣	
Cond	ditions		Name	

Figure 82 Add Domain





- Set Name: Enter the domain name of Avaya Aura SM, xxxx.com
- Set Type: sip

← → C ▲ Not sec	ure https://10.70.4.203/SMGR/#		12 ☆							
Avaya Aura® System Manager 10.1	🛓 Users 🗸 🗲 Elements 🗸 🌣 Services 🗸 Widgets 🗸 S	Shortcuts v	Search							
Home Routing ×	Home Routing ×									
Routing Domain Management Commit Cancel										
Locations	1 Item - 🥲									
Conditions	Name	Type Notes								
Adaptations 🗸	* Lcom	sip 🗸								

Figure 83 Domain

1.2.3 Locations

- Navigate to Routing > Locations
- Select New

Routing ^	Location
Domains	New Edit Delete Duplicate More Actions
Locations	1 Item 🛛 🥲

Figure 84 Locations

• Set Name: Plano



Figure 85 Locations Continuation





- Under *Location Pattern*, select **Add** to add **IP Address** Patterns for different networks that communicates within the location
- Set IP Address Pattern: 10.80.33.x
- Leave all other fields to default values
- Click Commit

Loca	Location Pattern										
Add	Add Remove										
10 It	10 Items 🤣										
	IP Address Pattern	*	Notes								
	* 10.89.26.*										
	* 10.89.33.*										
Select	Select : All, None										

Commit Cancel

Figure 86 Locations continuation





1.2.4 Adaptations

Adaptation for Avaya Aura Contact Center

- Navigate to Routing > Adaptations. Click New
- Set Adaptation Name: Adaptation for AvayaCC
- Set Module Name: DigitConversionAdapter
- Set *Module Parameter Type*: Name-Value Parameter is selected from the drop down, Click Add
- Set Name/Value: fromto/true
- Set Name/Value: osrcd/10.70.4.207 (Avaya Aura SM IP is entered)
- Set Name/Value: odstd/xxxx.com (Avaya Aura Contact Center Domain name is entered)
- Under **Digit Conversion for Outgoing Calls from SM**, add an entry to delete the incoming number pattern and send/insert CDN number (Pilot number e.g. 7500) of the Avaya Aura Contact Center in the destination address
- Click Commit

Home	Routing \times															
Routing			Ada	nta	tion Details					Con	nmit Cancel					
Doma	ains		Aua	ιρια	cion Decails					Cui	Cancer					
			Gene	eral		Г										
Locati	lions							* Adaptat	ion Name:	Adap	tation for AvayaCC					
Condi	litions								Notes:							
Adapt	tations							* Mod	ule Name:	Digit	ConversionAdapter 🗸					
									Type:	digit	-4 -+4					
A	Adaptations							Modulo Daram	State:	Name	eu Value Parameter M					
R	Regular Expressi	ion						Ploquie Paralli	eter type.	Name	-value Parameter +					
C	Device Mapping	5								Add	Remove					
											Name	*	Value			
SIP Er	ntities										fromto		true			
Entity	/ Links										odrcd		10.70.4.20	7		
Time	Ranges										odstd			.com		1.
										Select : All, None						
Koutir	ng Policies							Egress URI Pa	rameters:							
D	Device Mappi	ngs	D	igit	Conversion for O	utgoing	g Calls fro	om SM								
			[Add	Remove											
SIP En	ntities		2	2 Item	ıs 🛛 🥲											Filter: Enable
Entity	Links				Matching Pattern	Min	Мах	Phone Context	Delete Digits	I	nsert Digits	Address to modify	Adaptation Data	а	Notes	
Time	Ranges				* +1346	* 5	* 36		* 12		7500	destination \checkmark				
					* +1970	* 5	* 36		* 12		7500	destination \checkmark				
Routir	ng Policies		4)

Figure 87 Adaptation for Avaya Aura Contact Center





Regular Expression for Avaya Aura Contact Center

This regular expression towards Avaya Aura Contact Center (CC) copies the User-to-User header value (i.e. X-parentCall value) received from Avaya SBCE and assigns it to User-Agent header in the Avaya Aura SM

Avaya Aura SM sends User-Agent header with X-parentCall value towards Avaya Aura CC

- Navigate to Routing > Adaptations > Regular Expression. Click New
- Set Name: test



Figure 88 Regular Expression for Avaya Aura Contact Center





- Navigate to Outgoing Adaptation Rules. Click Add
- Create Rule Name: removeuseragent

Home	Routing \times					
Routing		^	Regular Expression Adaptation Details	Commit Cancel		
Doma	ains					
Locat	ions		General * Name:	teet		
			Notes:	co		
Condi	itions		State:	enabled ¥		
Adapt	tations	^		chubica		
A	Adaptations		Incoming Adaptation Rules			
R	Regular Expressio	on	Add Edit Duplicate Remove			
			0 Items 🥲			
C	Device Mappings	s	Order Rule Name		Condition	
SIP Er	ntities		Outgoing Adaptation Rules			
Entity	Links		Add Edit Duplicate Remove			
Time	Ranges		1 Item			
			Order Rule Name			
Routi	ng Policies		removeuseragent			
Dial P	atterns	~	Select : All, None			
Regul	lar Expressions			Commit Cancel		

Figure 89 Regular Expression for Avaya Aura Contact Center Continuation





- Under Regular Expression Adaptation Rule Details,
 - Rule Name: removeuseragent
 - Direction: Outgoing
- Navigate to Rule Variables. Click Add
 - Set Variable Name: AvayaSM
 - Set Source Type: Header
 - Set Source: User-to-User
 - Set Instance: top
 - Set Match Expression: .*
- Navigate to Rule Actions. Click Add
 - Set Source Type: Header
 - Set Source: User-Agent
 - Set Instance: any
 - Set Operation: modify
 - Set Match Expression: .*
 - Set Replace/Add Expression: \${AvayaSM}

Routing ^	Regular Expression Adaptation Rule Details Done Cancel
Domains	
Locations	General * Rule Name: removeuseragent
Conditions	Condition: 💌
Adaptations ^	* Direction: Outgoing ∨ * Order: 1 ∨
Adaptations	Notes:
Regular Expression	Rule Variables
Device Mappings	Add Remove
SIP Entities	1 Rem 💿
Entity Links	Variable Name A Source Type Source Instance Match Expression Notes AvayaSM Header Quber-to-User Qtop Image: *
Time Ranges	Select : All, None
Routing Policies	Rule Actions
Dial Patterns 🗸 🗸	Add Remove
Regular Expressions	116m at 10 Andre Source Tone Source Instance Operation Natch Evenession Replace / Add Evenession Nature
Defaults	Image: Solution of the soluti

Figure 90 Regular Expression for Avaya Aura Contact Center Continuation





Adaptation for Avaya Aura Communication Manager (CM)

This adaptation changes the host part of FROM and TO header with Avaya Aura CM domain name

- Set Adaptation Name: Adaptation_ For_cm
- Set Module Name: DigitConversionAdapter
- Set *Module Parameter Type*: Name-Value Parameter is selected from the drop down, Click Add
- Set Name/Value: fromto/true.
- Set Name/Value: odstd/xxxx.com (Avaya Aura CM Domain name is entered)
- Set Name/Value: osrcd/xxxx.com (Avaya Aura CM Domain name is entered)

Routing ^	Adaptation Details	;			Commi	tCancel	
Domains	General						
Locations		* Adaptation Name:	Adap	tation_For_cm			
Conditions		Notes:					
Adaptations ^		* Module Name:	Digit	ConversionAdapter 🗸			
		Type:	digit				
Adaptations		Module Parameter Type:	Name	e-Value Parameter 🗸			
Regular Expressi							
Device Mappings				Name	<u> </u>	Value	
SIP Entities				fromto		true	
Entity Links				odstd		.com	
Time Ranges				osrcd		.com	
Pourting Policies			Selec	t:All, None			
Routing Policies		Egress URI Parameters:					

Figure 91 Adaptation for Avaya Aura CM





1.2.5 SIP Entities and Entity Links

SIP Entity for Avaya Aura Session Manager

- Navigate to: **Routing > SIP Entities**
- Click New
- Set Name: Enter name of the host, AASM10
- Set FQDN or IP Address: Enter the SIP address of the Session Manager
- Set Type: Session Manager is selected from the drop down
- Set *Location*: Select the **location** (Created in Section 6.3.3)
- Under Listen Ports
 - Set TCP/TLS Failover Port: 5060/5061
- Click **Add** to assign Domain **xxxxx.com** (Default Domain name)for the following Ports and Protocols
- Port 5060/5062 and Protocol TCP/UDP
- Click Commit

AVAYA	Lusers ∨ → Elements ∨ ♦ Services ∨ Widgets ∨ Shortcuts ∨	
Home Routing ×		
Routing	SIP Entity Details	
Domains	General	
Locations	* Name: AASM10	
	* IP Address: 10.70.4.207	
Conditions	SIP FQDN:	
Adaptations	▼ Type: Session Manager ▼	
SIP Entities	Notes:	
Entity Links		
Time Ranges	Time Zone: America/Chicago	
Routing Policies	Minimum TLS Version: Use Global Setting 🗸	
	Credential name:	
Dial Patterns	Monitoring	
Regular Expressions	SIP Link Monitoring: Link Monitoring Enabled	
Defaults	* Proactive Monitoring Interval (in seconds): 900	
	* Reactive Monitoring Interval (in seconds): 120	
	* Number of Tries: 1	
	* Number of Successes: 1	
	CRLF Keep Alive Monitoring: Use Session Manager Configuration 🗸	
Domains	Failover Ports	
bomany	TCP Failover port: 5060	
Locations	TLS Failover port: 5061	
Conditions	Listen Ports	
	Add Remove	
Adaptations ^	4 Items 🖓	
Adaptations	Listen Ports Protocol Default Domain Endpoint Notes	
	.com V	
Regular Expressi	.com ▼ □	
Device Mappings		
	Select : All, None	
SIP Entities		

Figure 92 SIP Entity for Avaya SM





SIP Entity and Entity Links for Avaya Aura Communication Manager

- Set Name: AACM10
- Set FQDN or IP Address: Enter the IP address of Avaya Aura Communication Manager
- Set Type: CM
- Set Location: Select the location (Created in Section 6.3.3)

AVAYA Aura® System Manager 10.1	users ∨ → Elements × ♦ Services v Wid	gets v Shortcuts v	
Home Routing ×			
Routing ^	SIP Entity Details	[Commit
Domains	General		
Locations		* Name:	AACM10
		* FQDN or IP Address:	10.70.4.204
Conditions		Туре:	CM 🗸
Adaptations 🗸 🗸		Notes:	
SIP Entities		Location:	plano 🗸
Entity Links		Time Zone:	America/Chicago 🗸
		* SIP Timer B/F (in seconds):	4
Time Ranges		Minimum TLS Version:	Use Global Setting 🗸
Routing Policies		Credential name:	
		Securable:	
Dial Patterns 🗸 🗸		Call Detail Recording:	both 🗸

Figure 93 SIP Entity and Entity Link for Avaya CM





- Set *Adaptation*: Select the **Adaptation** for Avaya Aura CM configured in Section 6.3.4
- Under Entity Links, Click Add
 - Set Name: SM10_CM_SIP Trunk
 - Set SIP Entity 1: Select the SIP entity AASM10
 - Set SIP Entity 2: AACM10
 - Set Protocol: TCP
 - Set Port: 5060
 - Set Connection Policy: trusted

Adaptations					
Add Remove					
Order Name		Module Name		State	Туре
🗌 🛎 💌 1 🛛 Adaptation	_For_cm 💙	DigitConversionAdapter		enabled	digit
Select : All, None					
Loop Detection					
		Loop Detection Mo	ode: On 🗸		
		Loop Count Thresh	old: 5		
	ı	oop Detection Interval (in ms	ec): 200		
Monitoring		SIP Link Monitor	ing: Link Monitoring Enabled	4 v	
	* Proactive	Monitoring Interval (in secon	ts): 900		
	* Reactive	Monitoring Interval (in second	ds): 120		
	Reactive	* Number of Tr	ior: 1		
		* Number of Succes	ses: 1		
		CRLF Keep Alive Monitor	ing: Use Session Manager C	onfiguration 🗸	
		Supports Call Admission Cont	rol:		
		Shared Bandwidth Manag	jer:		
	Primary Session	n Manager Bandwidth Associat	ion: 🗸		
	Backup Sessior	n Manager Bandwidth Associat	ion: 🗸		
Entity Links					
	Override Port & Transport with	DNS SRV:			
Add Remove					
1 Item 🤯	SIP Entity 1	Protocol Port	SIP Entity 2	Port Co	nnection Policy Deny New Se
SM10_CM_SIP Trunk	RAASM10	TCP ¥ \$ 5060	RAACM10	* 5060	trusted V
Select All None					

Figure 94 SIP Entity and Entity Link for Avaya CM Continuation





SIP Entity and Entity Links for Twilio

- Set Name: Twilio
- Set FQDN or IP Address: Enter the IP address of Avaya SBCE LAN IP
- Set Type: SIP Trunk
- Set Location: Select the location (Created in Section 6.3.3)

Home	Routing ×						
Routing		^	SIP Entity Deta	ails		Commit Cancel	
Dom	ains		General				
Loca	tions			* Name:	Twilio		
				* FQDN or IP Address:	10.70.4.216		
Conc	ditions			Туре:	SIP Trunk 🗸		
Adap	otations	~		Notes:			
SIP E	ntities			Location:	plano 🗸		
Entit	y Links			Time Zone:	America/Fortaleza	~	
				* SIP Timer B/F (in seconds):	4		
Time	Ranges			Minimum TLS Version:	Use Global Setting 🗸		
Rout	ing Policies			Credential name:			
5.1				Securable:			
Dial	Patterns	Ŭ.		Call Detail Recording:	egress 🗸		

Figure 95 SIP Entity and Entity Link for Twilio

• Under Entity Links, Click Add

- Set Name: SMtoTwilio
- Set SIP Entity 1: Select the SIP entity AASM10
- Set SIP Entity 2: Twilio
- Set Protocol: UDP
- Set Port: **5060**
- Set Connection Policy: trusted

Routing	^	Loop Detection	
Domains		Loop Detection Mode	: On V
		Loop Count Threshold	: 5
Locations		Loop Detection Interval (in msec	: 200
Conditions		Monitoring	
Adaptations	~	SIP Link Monitoring	: Link Monitoring Disabled
	-	CRLF Keep Alive Monitoring	CRLF Monitoring Disabled
SIP Entities		Supports Call Admission Contro	: 🗆
Entity Links		Shared Bandwidth Manage	
		Primary Session Manager Bandwidth Association	
Time Ranges		Backup Session Manager Bandwidth Association	
Routing Policies		Entity Links	
Dial Patterns	~	Override Port & Transport with DNS SRV	
		Add Remove	
Regular Expression:	,	1 Item	Filter: Enable
Defaults		Name SIP Entity 1	Protocol Port SIP Entity 2 Port Connection Policy Deny New Service
	-	smtoaTwilio RAASM10	UDP 💙 * 5060 R Twilio * 5060 trusted 🗸 🗌

Figure 96 SIP Entity and Entity Link for Twilio Continuation





SIP Entity and Entity Links for Avaya Aura CC

- Set Name: Avaya CC Manager Server
- Set FQDN or IP Address: Enter the IP address of Avaya Aura Contact Center IP
- Set Type: Other
- Set Location: Select the location (Created in Section 6.3.3)
- Adaptations: Select the Adaptation and the Regular Expression for Avaya Aura CC configured in Section 6.3.4
- Under Entity Links, Click Add
 - Set Name: SMtoAvayaCCMS
 - Set SIP Entity 1: Select the SIP entity AASM10
 - Set Port: 5062
 - Set SIP Entity 2: Avaya CC Manager Server
 - Set Protocol: TCP
 - Set Port: 5060
 - Set Connection Policy: trusted

Home Routing ×									
Routing	^	CTD Entity	Detaile			Commit Concol			
Domains		SIF EILLLY	Details			Commit		1	
		General			* Name:	Avava CC Manager Serve	-		
Locations				* FODN	or TP Address:	10 90 22 21			
Conditions				- Qui	Type:	Other ¥			
A					Notes:	ould ·			
Adaptations	Ť				in the second se				
SIP Entities					Location:	plano 🗸			
Entity Links					Time Zone:	America/Fortaleza	~		
				* SIP Timer B/	F (in seconds):	4			
Time Kanges				Minimu	Im TLS Version:	Use Global Setting 🗸			
Routing Policies				Cr	redential name:				
Dial Patterns	~				Securable:				
				Call De	etail Recording:	none 🗸			
Regular Expressions				CommProfile Ty	ype Preference:	~			
Defaults		Adaptations	2						
		Add Remove							
		Order	Name	Module Name			State	Туре	Notes
			Adaptation for AvayaCC V	DigitConversion	Adapter		enabled	digit	
		Select : All, Non	e e	RegexpAdapter			enabled	regexp	cc
	Loop	Detection							
Conditions									
				Loop Detection Mode:	Off 🗸				
Adaptations 🗸	Mon	itoring		Loop Detection Mode: 🛛	Off V				
Adaptations ~ SIP Entities	Mon	itoring		Loop Detection Mode:	Off Vise Session Manager	Configuration V			
Adaptations × SIP Entities Entity Links	Mon	itoring	CRI Support	Loop Detection Mode: SIP Link Monitoring: .F Keep Alive Monitoring: s Call Admission Control:	Off Use Session Manager Use Session Manager	Configuration 🗸			
Adaptations × SIP Entities Entity Links	Mon	itoring	CR Support Sht	Loop Detection Mode: [SIP Link Monitoring:] LF Keep Alive Monitoring:] s Call Admission Control: (ıred Bandwidth Manager: (Off Use Session Manager Use Session Manager	Configuration V Configuration V			
Adaptations × SIP Entities Entity Links Time Ranges	Mon	itoring	CR Support Shu Primary Session Manage	Loop Detection Mode: [SIP Link Monitoring:] LF Keep Alive Monitoring:] s Call Admission Control: (red Bandwidth Manager: (r Bandwidth Association: [Off Use Session Manager Use Session Manager	Configuration V			
Adaptations × SIP Entities Entity Links Time Ranges Routing Policies	Mon	itoring	CR Support Shr Primary Session Manage Backup Session Manage	Loop Detection Mode: [SIP Link Monitoring:] LF Keep Alive Monitoring:] 's Call Admission Control: (Ired Bandwidth Manager: (r Bandwidth Association: [r Bandwidth Association: [Off Use Session Manager Use Session Manager	Configuration V Configuration V			
Adaptations · · · · · · · · · · · · · · · · · · ·	Mon	itoring ty Links	CR Support Shr Primary Session Manage Backup Session Manage	Loop Detection Mode: SIP Link Monitoring: LF Keep Alive Monitoring: s Call Admission Control: red Bandwidth Manager: r Bandwidth Association: r Bandwidth Association:	Off Use Session Manager Use Session Manager	Configuration V Configuration V			
Adaptations v SIP Enthes v Entity Links v Time Ranges v Routing Policies v Dial Patterns v Regular Expressions	Mon	itoring ty Links	CR Support Shr Primary Session Manage Backup Session Manage Override Port &	Loop Detection Mode: SIP Link Monitoring: LF Keep Alive Monitoring: is Call Admission Control: red Bandwidth Manager: r Bandwidth Association: r Bandwidth Association: Transport with DNS SRV: (Off Vise Session Manager Use Session Manager	Configuration V Configuration V			
Adaptations SIP Enthes Entity Links Time Ranges Routing Policies Dial Patterns Regular Expressions Defaults	Mon	ty Links Remove	CRI Support Shu Primary Session Manage Backup Session Manage Override Port &	Loop Detection Mode: SIP Link Monitoring: LF Keep Alive Monitoring: is Call Admission Control: red Bandwidth Manager: r Bandwidth Association: r Bandwidth Association: Transport with DNS SRV: (Off Use Session Manager Use Session Manaper	Configuration V Configuration V			
Adaptations SIP Enthes Entity Links Time Ranges Routing Policies Dial Patterns Regular Expressions Defaults	Mon Entit	ty Links Remove m \approx	CR Support Shu Primary Session Manage Backup Session Manage Override Port &	Loop Detection Mode: SIP Link Monitoring: LF Keep Alive Monitoring: is Call Admission Control: red Bandwidth Manager: r Bandwidth Association: r Bandwidth Association: Transport with DNS SRV: Earlier: 1	Off Use Session Manager Use Session Manager	Configuration V Configuration V		ant C	Policy
Adaptations v SIP Enthes v Entity Links v Time Ranges v Routing Policies v Dial Patterns v Regular Expressions v Defaults v	Mon Entit	ty Links Remove m * Mame *	CR Support Shu Primary Session Manage Backup Session Manage Override Port & SIP	Loop Detection Mode: SIP Link Monitoring: LF Keep Alive Monitoring: s call Admission Control: red Bandwidth Manager: r Bandwidth Association: Transport with DNS SRV: Entity 1 AASM10	Off Vise Session Manager Use Session Manager Vise	Configuration V Configuration V SIP Entity 2	r Manager Server	Port Connection	n Policy trusted V

Figure 97 SIP Entity and Entity Link for Avaya Aura CC





1.2.6 Routing Policies

Routing policy to Avaya Aura CM

- Navigate to: Routing > Routing Policies
- Click New
- Set Name: SM to CM
- Click Select under SIP Entity as Destination and the SIP Entities window is displayed
- Check the radio button beside **AACM10** as destination SIP Entity (Configured in Section 6.3.5)
- Click Select and return back to Routing Policy Details page
- Click Commit

Home R	Routing ×	_		
Routing		Routing Policy Details	Commit Cancel	
Domains				
Locations	s	General	• Name: SM to CM	
Condition	ins		Disabled:	
Adaptatio			* Retries: 0 Notes:	
SIP Entitie	ies	SIP Entity as Destination		
Entity Lin	nks	Select		
Time Ran	nges	Name	FQDN or IP Address	Туре
		AACM10	10.70.4.204	СМ
Routing F	Policies	Time of Day		

Figure 98 Routing Policy for Avaya Aura CM

Routing policy to Avaya Aura Contact Center (CC)

- Set Name: AvayaCCMS
- Click Select under SIP Entity as Destination and the SIP Entities window is displayed
- Check the radio button beside **Avaya CC Manager Server** as destination SIP Entity (Configured in Section 6.3.5)
- Click Select and return back to Routing Policy Details page
- Click Commit

Home	Routing \times			
Routing		Routing Policy Details	Commit Cancel	
Dom	ains	General		
Loca	tions	General	* Name: AvayaCCMS	
Con	ditions		Disabled:	
Ada	otations ~		* Retries: 0 Notes:	
SIP I	ntities	SIP Entity as Destination		
Entit	y Links	Select		
Time	Ranges	Name Avava CC Manager Server	FQDN or IP Address 10.89.33.31	Type Other
Rout	ing Policies	Time of Day		

Figure 99 Routing Policy for Avaya Aura CC





1.2.7 Dial Patterns

Dial Pattern for Avaya Aura CM

- Navigate to: Routing > Dial Patterns
- Click New
- Set Pattern: **3001**
- Set *Min*: **4**
- Set Max: 4
- SIP *Domain*: **xxxx.com** (Domain name of Avaya Aura SM)
- Under Originating Locations and Routing Policies, Click Add, at the new window
 - Originating Location: Select **Plano** (Created in Section 6.3.3)
 - Routing Policies: Select SM to CM under Routing Policies
 - Click Select to return to Dial Pattern Details page
 - Click Commit

	^	Î	Dial Pattern Details	Γ	Commit Cancel							
Domains			Concerned	L								
Locations			General	* Pattern:	3001]					
Conditions				* Min:	4							
Adaptations				* Max:	4							
Adaptations				Emergency Call:								
Adaptatio	ins			SIP Domain:	.com 🗸							
Regular E	xpressi			Notes:]					
			Originating Locations and Routing Policies									
Device Ma	appings		Add Remove									
SIP Entities			1 Rem 💩									
Entity Links			Originating Location Name Originating	Location Notes	Routing Policy Name	Rank	Routing Policy Disab	ed Routing Poli	cy Destination			
		plano 5M to CM 0 AACM10										
Time Ranges			Select : All, None									
Routing Policie	es		Denied Originating Locations									
Dial Patternr	•		Add Remove									
Dial Patterns			0 Items 🛛									
Dial Patter	ms		Originating Location						Notes			

Figure 100 Dial Pattern for Avaya Aura CM





Dial Pattern for Avaya Aura CC

- Navigate to: Routing > Dial Patterns
- Click New
- Set Pattern: 7500
- Set *Min*: **4**
- Set Max: 36
- SIP Domain: xxxx.com (Domain name of Avaya Aura SM)
- Under Originating Locations and Routing Policies, Click Add, at the new window
 - Originating Location: Select Plano (Created in Section 6.3.3)
 - Routing Policies: Select AvayaCCMS under Routing Policies
 - Click Select to return to Dial Pattern Details page
 - Click Commit

Home Routing ×									
Routing ^	Dial Pattern Details		Commit Cancel						
Domains		l							
Locations	General	* Pattern:	7500						
Conditions		* Min:	4						
Adaptations 🗸 🗸		* Max:	36						
SIP Entities		SIP Domain:	.com 🗸						
Entity Links		Notes:							
- Time Ranges	Originating Locations and Routing Policies								
Routing Policier	Add Remove								
notating rolicies									
Dial Patterns	Originating Location Name	Originating Location Notes	Routing Policy Name	Rank	Routing Policy Disabled	Routing Policy Destination			
	plano		AvayaCCMS	0		Avaya CC Manager Server			
Dial Patterns	Select : All, None								

Figure 101 Dial Pattern for Avaya Aura CC





Х

1.3 Avaya Aura Communication Manager Configuration

This section with screen shots taken from Avaya Aura CM gives a general overview of the Avaya Aura CM configuration.

1.3.1 Avaya Aura CM Login

🗬 10.70.4.204 - PuTTY

te, 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 protectio n of information assets. 🛃 End of banner message from server 🛃 Keyboard-interactive authentication prompts from server: Password: 🚰 End of keyboard-interactive prompts from server Last login: Tue Jan 3 03:17:03 MST 2023 from 10.70.4.203 on pts/1 Last failed login: Tue Jan 3 16:41:32 MST 2023 from 172.16.31.156 on ssh:notty There was 1 failed login attempt since the last successful login. Enter your terminal type (i.e., xterm, vt100, etc.) [vt100]=> 1856612: old priority 0, new priority 0 admin@AACM10>






1.3.2 IP Node Name

Use the **list node-names ip** command to verify that node names are defined for Avaya Aura CM (procr), Session Manager **(AASM10).** The node names are needed for configuring the Signaling Group

₽ 10.70.4	4.204 - PuTTY		_	×
list noo	de-names all			^
		NODE NAMES		
Туре	Name	IP Address		
IP	AASM10	10.70.4.207		
IP	AvayaAES	10.70.4.211		
IP	default	0.0.0.0		
IP	procr	10.70.4.204		
IP	procr6	::		
Command	successfully	completed		
Command				~

Figure 103 IP Node Name





1.3.3 IP Codec Set

Use **change ip-codec-set 1** to define list of codecs for calls between Avaya Aura CM and SM.

P	10.70.4.204 - PuTTY					-	-		×	
chai	nge ip-codec-s	set l				Page	1	of	2	^
	Codec Set: 1	IP	MEDIA PAR	AMETERS						
1: 2: 3: 4: 5: 6: 7:	Audio Codec G.711A G.729	Silence Suppression <u>n</u> - - - - -	Frames Per Pkt 2 2 	Packet Size(ms) 20 20						
1: 2: 3: 4: 5:	Media Encry none	ption		Encrypted 	SRTCP:	<u>best-effort</u>				
										~

Figure 104 IP Codec Set





1.3.4 IP Network Region

- Use change ip-network-region 1 to define the network region
- Authoritative Domain: Domain name xxxxx.com
- Codec Set: Enter codec set 1 created in Section 6.4.3
- Intra-region IP-IP Direct Audio: yes
- Intra-region IP-IP Direct Audio: yes

🗬 10.70.4.204 - PuTTY					—		×	
change ip-network-re	egion l				Page	l of	20	^
	1	IP NETWOR	RK REGION					
Region: 1 N	R Group: 1	-						
Location: At	uthoritative	Domain:		.com				
Name:		Stub Net	twork Region	n: n				
MEDIA PARAMETERS		Intra-re	egion IP-IP	Direct Audio	: yes			
Codec Set: 1		Inter-re	egion IP-IP	Direct Audio	: yes			
UDP Port Min: 204	48		IP Audi	o Hairpinning	? n			
UDP Port Max: 332	29							
DIFFSERV/TOS PARAMET	TERS							
Call Control PHB Va	alue: 46							
Audio PHB Va	alue: 46							
Video PHB Va	alue: 26							
802.1P/Q PARAMETERS								
Call Control 802.1	p Priority: 6	5						
Audio 802.1	p Priority: 🤅	5						
Video 802.1	p Priority: 5	5 AU	JDIO RESOUR	CE RESERVATIO	N PARAM	IETERS		
H.323 IP ENDPOINTS	_	-		RSVP E	nabled	? n		
H.323 Link Bounce	Recovery? y					—		
Idle Traffic Interv	val (sec): 20)						
Keep-Alive Interv	val (sec): 5							
Keep-Al:	ive Count: 5							
								¥







1.3.5 Signaling Group

- Command **add signaling group 1** is used to create Signaling Group. Use **change signaling group 1** to modify existing signaling group.
- Set Group Type: sip
- Set Transport Method: tcp
- Set Near-end Node Name: procr
- Set Near-end Listen Port. 5060
- Set Far-end Node Name: AASM10
- Set Far-end Listen Port. 5060
- Set Far-end Network Region: 1
- Set Far-end Domain: xxxxx.com (Avaya Aura SM Domain name)

P 10.70.4.204 - PuTTY		_) >	×
change signaling-group l		Page	1 o	f 2	^
SIGNALING GROUP					
Group Number: 1 Group Type: sip IMS Enabled? n Transport Method: tcp					
Q-SIP? <u>n</u> IP Video? <u>n</u> Peer Detection Enabled? y Peer Server: SM	orce SIPS	URI fo Clu	or SR uster	TP? <u>n</u> ed? n	
Prepend '+' to Outgoing Calling/Alerting/Diverting/Com	nnected Pu	ablic N	Numbe	rs? y	
Alert Incoming SIP Crisis Calls? n Near-end Node Name: procr Far-end N Near-end Listen Port: 5060 Far-end Lister	ode Name: ten Port:	AASM10))		
Far-end Domain: .com	k Region:	<u> </u>			
Bypass If Incoming Dialog Loopbacks: <u>eliminate</u> DTMF over IP: <u>rtp-payload</u> Session Establishment Timer(min): <u>3</u> Enable Layer 3 Test? <u>y</u> H.323 Station Outgoing Direct Media? <u>y</u> Alte	IP Thresh RFC 3389 (P-IP Audic IP Audic ial IP-IP rnate Rout	nold Ex Comfort Conne Hairy Direct te Time	kceed t Noi ectio pinni t Med er(se	ed? <u>n</u> se? <u>n</u> ns? <u>y</u> ng? <u>n</u> ia? <u>n</u> c): 6	
					~

Figure 106 Signaling Group





1.3.6 Trunk Group

- Trunk group **1** is used for trunk to Avaya SM. Command **add trunk group 1** is used to create Trunk Group. Use **change trunk group 1** to modify existing trunk group.
- Set Group Type: sip
- Set Group Name: SIP Trunk
- Set TAC: **#001**
- Set Direction: two-way
- Set Service Type: tie
- Set Member Assignment Method: auto
- Set Signaling Group: 1 (created in Section 6.4.5)
- Set Number of Members: **10**

뤨 10.70.4.204 - PuTTY			- 1		×
change trunk-group l		Page	e 1	of 4	1 ^
	TRUNK GROUP				
Group Number: 1	Group Type: <mark>s</mark> ip	CDR Rep	ports:	Y	
Group Name: SIP Trunk	COR: 1	TN: 1	TAC:	#001	
Direction: two-way C	utgoing Display? n				
Dial Access? n	Ni	ght Service:			
Oueue Length: 0	-				
Service Type: <u>tie</u>	Auth Code? n				
	Member	Assignment Meth	nod: <u>a</u>	uto	
		Signaling Gro	oup: <u>1</u>		
		Number of Membe	ers: <u>1</u>	0	
					- U

Figure 107 Trunk Group





Putty 10.70.4.204 - Putty × Page 4 ^ change trunk-group l 2 of Group Type: sip TRUNK PARAMETERS Unicode Name: auto Redirect On OPTIM Failure: 5000 SCCAN? n Digital Loss Group: 18 Preferred Minimum Session Refresh Interval(sec): 900 Disconnect Supervision - In? y Out? y XOIP Treatment: auto Delay Call Setup When Accessed Via IGAR? n Caller ID for Service Link Call to H.323 1xC: station-extension v PuTTY 10.70.4.204 - PuTTY × 4 change trunk-group 1 Page 3 of ~ TRUNK FEATURES ACA Assignment? n Measured: none Maintenance Tests? y Suppress # Outpulsing? n Numbering Format: private UUI Treatment: service-provider Replace Restricted Numbers? n Replace Unavailable Numbers? n

Modify Tandem Calling Number: no

Show ANSWERED BY on Display? <u>y</u>

Figure 108 Trunk Group Continuation





🗬 10.70.4.204 - PuTTY

₽ 10.70.4.204 - PuTTY	-		×
change trunk-group l	Page	4 of	4 ^
PROTOCOL VARIATIONS			
Mark Users as Phone? Prepend '+' to Calling/Alerting/Diverting/Connected Number? Send Transferring Party Information? Network Call Redirection?	<u>n</u> Y <u>n</u>		
Send Diversion Header? Support Request History? Telephone Event Payload Type:	<u>n</u> <u>y</u> 101		
Convert 180 to 183 for Early Media? Always Use re-INVITE for Display Updates? Resend Display UPDATE Once on Receipt of 481 Response? Identity for Calling Party Display:	n n n From		
Block Sending Calling Party Location in INVITE? Accept Redirect to Blank User Destination? Enable Q-SIP? n	<u>n</u> <u>n</u>		
Interworking of ISDN Clearing with In-Band Tones: Request URI Contents: <u>may-ha</u>	<u>keep-chan</u> ave-extra-(nel-act digits	Ive

Figure 109 Trunk Group Continuation





1.3.7 Station

- The command **add station 3001** is used to add an extension
- *Type*: **9620**
- Name: Avaya Deskphone
- Security Code: Enter a Password
- IP Softphone: y

🛃 10.70.4.204 - PuTTY	_		\times	
change station 3001	Page	l of	5	^
STATION				
Extension: 3001 Lock Messages? n Type: 9620 Security Code: * Port: S000011 Coverage Path 1: Name: Avaya Deskrohope Coverage Path 2:	_	BCC: TN: COR:	0 <u>1</u> 1	
Unicode Name? y Hunt-to Station: STATION OPTIONS Time of Day Lock Tab	le:	Tests?	<u>v</u>	
Loss Group: <u>19</u> Personalized Ringing Patter Message Lamp Ext:	rn: <u>1</u> 3001			
Speakerphone: 2-way Mute Button Enable Display Language: english Survivable GK Node Name:	ed? <u>y</u>			
Survivable COR: internal Media Complex Explored Survivable Trunk Dest? y IP SoftPhoned	xt: ne? <u>y</u>			
IP Video Softphor Short/Prefixed Registration Allow Customizable Labe	ne? <u>n</u> ed: <u>de</u> 1s? <u>y</u>	fault		

Figure 110 Add Station





1.3.8 Application Enablement Services (AES) Configuration

List Node Names

Type list node-names all and verify if AES server IP is configured

🛃 10.70.	4.204 - PuTTY			_	\times	
list no	de-names all					^
		NODE NAMES				
Type IP IP IP IP IP	Name AASM10 AvayaAES default procr procr6	IP Address 10.70.4.207 10.70.4.211 0.0.0.0 10.70.4.204 ::				
Command	successfully	completed				
Command	:					¥

Figure 111 List Node Names - AES IP Address





Configuration of IP services for AES transport link

- The Command change ip-services is used to configure IP services
- Set Type: AESVCS
- Set Enabled: Y
- Set Local Node: procr
- Set Local Port. 8765

🛃 10.70.4.204	- PuTTY				_		\times
change ip-s	ervices				Page	l of	4 /
Service	Enabled	Local	IP SERVICE Local	S Remote	Remote	TLS	
Type		Node	Port	Node	Port	Encrypti	lon
AESVCS	Σ	procr	8765				
							~

Figure 112 AES IP Services





- AE Services Server: aaaes10 (host name of AES server)
- Set Password: Enter a password (This must matches the name and password of the AES server)
- Set Enabled: Y

🛃 10.70.4.204 - P	uΠY			_		×
change ip-ser	vices			Page	4 of	4 ^
	Al	E Services Adminis	stration			
Server ID	AE Services	Password	Enabled	Status		
	Server					
1:	aaaes10	*	<u>Y</u>	in use		
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						
16:						
						~

Figure 113 AES IP Services Continuation





Configuration of CTI Link for AES

- The Command add cti-link is used to configure CTI link to AES server
- Set Extension: An available Extension number
- Set Type: ADJ-IP
- Set Name: CTI to AES

🛃 10.70.4.204 - PuTTY		_]	×
change cti-link l		Page	1 0	f 3	^
CT	I LINK				
CTI Link: 1					
Extension: 2000					
Type: ADJ-IP					
			COR	1: 1	
Name: <mark>C</mark> TI to AES					
Unicode Name? n					
					- ×

Figure 114 AES CTI Link





1.4 Application Enablement Services (AES) Configuration

Avaya Aura Application Enablement Services (AES) is a set of enhanced telephony APIs, protocols, and Web services. These applications support access to the call processing, media, and administrative features available in Communication Manager

1.4.1 AES Login

- Access AES Web login screen via https://<AES IP Address>
- Use *cust* as **User ID** and associated **Password**
- Click Login

← → C ▲ Not secure | https://10.70.4.211/aesvcs/login.xhtml?cid=74



Application Enablement Services Management Console

oscinanc	cust
Password	•••••

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Figure 115 AES Login





1.4.2 Communication Manager Switch Connections

- Navigate to Communication Manager Interface > Switch Connections
- Under Switch Connections, type the host name of Avaya Aura CM (e.g. AACM10)
- Click Add Connection

Αναγα	Application Er Manage	ablement Services ement Console		Last login: Wed Nov 2 06:01:15 2022 from 172.16.31.18 Number of prior failed login attempts: 0 HostName/IP: aaaes10/10.70.4.211 Server Offer Type: VIRTUAL_APPLIANCE_ON_VMWARE SW Version: 10.1.0.1.0.7-0 Server Date and Time: Wed Jan 04 01:14:11 EST 2023 HA Status: Not Configured
Communication Manager Interface	Switch Connections			Home Help Logou
 AE Services Communication Manager Interface Switch Connections 	Switch Connections	nection		
▶ Dial Plan	Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
High Availability	AACM10	Yes	30	1
▶ Licensing	Edit Connection Edit PE/CLAN IPs	Edit Signaling Details Delete Connection	Survivability Hierarchy	
> Maintenance				

Figure 116 AES Avaya CM Switch Connections

- *Switch Password*: Type the Avaya CM **AES IP Service password** (This password must match the password entered when configuring IP Services (Section 6.4.8)
- Confirm Switch Password: Type the above password again
- Processor Ethernet: Enabled
- Click Apply



Application Enablement Services

Management Console

Communication Manager Interface	Switch Connections		
AE Services			
Communication Manager	Connection Details - AACM10		
Switch Connections	Switch Password		
▶ Dial Plan	Confirm Switch Password		
High Availability	Msg Period	30	Minutes (1 - 72)
Licensing	Provide AE Services certificate to swit	tch 🗌	
Maintenance	Secure H323 Connection		
Networking	Processor Ethernet	<	
Security	Enable TLS Certificate Validation		
Status	Apply Cancel		
▶ User Management			
) Utilities			
> Help			

Figure 117 AES Avaya CM Switch Connections Continuation





1.4.3 Communication Manager Switch Connections CLAN IP

- Navigate to Communication Manager Interface > Switch Connections
- Under Switch Connections, Select the Connection Name AACM10
- Click Edit PE/CLAN IPs

Communication Manager Interface Switch Connections						
AE Services Communication Manager Interface Switch Connections	Switch Connections	ection				
Dial Plan	Connection Name	Processor Ethernet	Msg Period			
High Availability	AACM10	Yes	30	1		
→ Licensing	Edit Connection Edit PE/CLAN IPs E	dit Signaling Details Delete Connection	Survivability Hierarchy			
Maintenance						

Figure 118 AES Avaya CM Switch Connections CLAN IP

- Under *Edit Processor Ethernet IP*, type the **IP address of Avaya Aura CM** (e.g. 10.70.4.204)
- Click Add/Edit Name or IP

Αναγα	Application Enablement Services Management Console	Welcome: User cust Last login: Wed Nov 2 06:01:15 2022 frc Number of prior failed login attempts: 0 HostName/IP: aaaes10/10.70/4.211 Server Offer Type: VIRTUAL_APPLIANCE_ SW Version: 10.1.0.10.7-0 Server Date and Time: Wed Jan 04 01:11 HA Status: Not Configured
Communication Manager Interface	Switch Connections	Home
AE Services		
Communication Manager	Edit Processor Ethernet IP - AACM10	
Switch Connections	10.70.4.204 Add/Edit Name or IP	
Dial Plan	Name or IP Address	Status
High Availability	10.70.4.204	In Use
▶ Licensing	Back	

Figure 119 AES Avaya CM Switch Connections CLAN IP Continuation





1.4.4 CTI link to Communication Manager

- Navigate to AE Services > TSAPI > TSAPI Links
- Under TSAPI Links, Click Add Link
 - Link: **1**
 - Switch Connection: AACM10
 - *Switch CTI Link Number:* **1** (This is the CTI link number which is configured in Avaya CM Section 6.4.8)
- Click Apply Changes



Application Enablement Services Management Console

AE Services TSAPI TSAPI Links	
* AE Services	
▶ CVLAN	Edit TSAPI Links
> DLG	Link 1
▶ DMCC	Switch Connection AACM10 V
> SMS	Switch CTI Link Number 1 🗸
▼ TSAPI	ASAI Link Version
TSAPI Links	Security Unencrypted 🗸
 TSAPI Properties 	Apply Changes Cancel Changes Advanced Settings
▶ TWS	







1.4.5 TR87 on the AES

- Navigate to **Networking > Ports**
- Under DMCC Server Ports section, Enable the TR/87 Port

Networking Ports				
▶ AE Services				
Communication Manager Interface	Ports			
High Availability	CVLAN Ports			Enabled Disabled
▶ Licensing		Unencrypted TCP Port	9999	\odot \bigcirc
▶ Maintenance		Encrypted TCP Port	9998	\odot \bigcirc
▼ Networking	DLG Port	TCP Port	5678	
AE Service IP (Local IP)				
Network Configure	TSAPI Ports		450	Enabled Disabled
Ports		ISAPI Service Port	450	\odot \bigcirc
TCP/TLS Settings		TCP Port Min	1024	
▶ Security		TCP Port Max	1039	
		Unencrypted TLINK Ports		
		TCP Port Min	1050	
User Management		TCP Port Max	1065	
Utilities		Encrypted TLINK Ports	1055	
▶ Help		TCP Port Mill	1000	
			1001	
	DMCC Server Ports			Enabled Disabled
		Unencrypted Port	4721	\bigcirc \bigcirc
		Encrypted Port	4722	$\overline{\mathbf{O}}$
		TR/87 Port	4723	

Figure 121 Enabling TR87 Port





1.4.6 Security on the AES

- Navigate to Security > Host AA > Service Settings
- TR/87: Require Trusted Host Entry is enabled

Security Host AA Service Setting		
AF Convisor		
P AE Services		
Communication Manager Interface	Service Settings	
High Availability	Services Authenticate Client Cert with Trusted Certs	Require Trusted Host Entry
▶ Licensing	Apache	
Maintenance	CVLAN	
P Maintenance	DMCC	
▶ Networking	TR/87	
▼ Security	TSAPI	
Account Management	Apply Changes Cancel Changes	
> Audit		
Certificate Management		
Enterprise Directory		
▼ Host AA		
 Trusted Hosts 		
 Service Settings 		
▶ PAM		

Figure 122 Configuring Security





1.4.7 Certificate Authority root certificate in to AES

- Navigate to Security > Certificate Management > CA Trusted Certificates
- Click Import
- Under the Trusted Certificate Import,
 - File Path: Click Choose File and browse Root CA file (e.g. RootCA Copy.pem)
 - Certificate Alias: RootCA
- Click Apply



Application Enablement Services

Management Console

Security Certificate Management CA Trusted Certificates					
AE Services					
Communication Manager Interface	Trusted Certificate Import				
High Availability	File Path* Choose file RootCA - Copy.pem				
▶ Licensing	Certificate Alias* RootCA				
Maintenance	Apply Close				
Networking					
▼ Security					
Account Management					
> Audit					
Certificate Management					
 CA Trusted Certificates 					



• The uploaded **RootCA** is displayed under the CA Trusted Certificates with the status as "Valid'

Security Certificate Management CA Trusted Certificates Home Heln Loog					
▶ AE Services	r	-			
Communication Manager Interface	CA Trusted Certificates				
High Availability	View Import Expo	ort Del	ete		
▶ Licensing	Alias	Status	Issued To	Issued By	Expiration Date
▶ Maintenance	ServerCertDefault	valid	aaaes10417339031-labUseOnly	aaaes10417339031-labUseOnly	5/12/2023
▶ Networking		valid	Avava Product Root CA	Avava Product Root CA	8/14/2033
▼ Security	 avayaprca 	Valia			0/14/2000
Account Management	🔿 avaya_sipca	valid	SIP Product Certificate Authority	SIP Product Certificate Authority	8/17/2027
▶ Audit	O AA_SMGR10_CA	valid	System Manager CA	System Manager CA	3/5/2047
Certificate Management	O RootCA	valid			10/29/2039
CA Trusted Certificates Server Certificates Cartificate Evaluate		·			• _

Figure 124 Importing Root CA in to AES Continuation





1.4.8 AES Certificate Signing Request

- Navigate to Security > Certificate Management > Server Certificates
- Click Add
- Under the Add Server Certificate,
 - Certificate Alias: select aesservices
 - Password: Type certificate key password
 - Re-enter Password: Reenter the above password again
 - Key size: 2048
 - Distinguished Name (DN)*: cn=aaaes10,dc=xxxx,dc=com (where xxxx=domain name of AES)
 - Challenge Password: Type certificate request password
 - Re-enter Challenge Password: Type the above password again

Security Certificate Management	Server Certificates
AE Services	
Communication Manager Interface	Add Server Certificate
High Availability	Warning: the default Key Size is 1024. It is strongly recommended that you change it to 2048.
▶ Licensing	Certificate Alias* aeservices 🗸
Maintenance	Enrollment Method Manual 🗸
Networking	Certificate Key Parameters:
▼ Security	Encryption Algorithm 3DES 🗸
Account Management	Password* •••••
> Audit	Re-enter Password*
▼ Certificate Management	Key Size 2048 🗸
 CA Trusted Certificates 	Signature Algorithm sha256 🗸
Server Certificates	Certificate Request Parameters:
Default Certificates	Certificate Validity* 825
Default Settings Dending Requests	Distinguished Name (DN)* cn=aaaes10.dc=t
Certificate Expiry	(In DN use comma ',' as attributes separator. To include comma in an attribute value escape it using backslash, e.g. \.)
Notification	Challenge Password
 Revocation Configuration 	
Enterprise Directory	Re-enter Challenge Password
Host AA	x509v3_contig Subject Alternative Name (SAN)
▶ PAM	SAN IP Address
Security Database	SAN DNS Name
Session Timeouts	(Use comma ',' as attributes separator to add multiple values)

Figure 125 Generating AES CSR





- Click Apply
- A Server Certificate Manual Enrollment Request page appears
- Copy all the text in **the Certificate Request PEM** box in to a text file. This is the Certificate Signaling Request (CSR) text.
- Get the CSR signed from a Certificate Authority

 Server Certificates Default Certificates Default Settings Pending Requests Certificate Expiry Notification Revocation Configuration 	Certificate Request Parameters: Certificate Validity* 825 Distinguished Name (DN)* cn=aaaes10,dc= ,dc=com (In DN use comma ',' as attributes separator. To include comma in an attribute value escape it using backslash. e.g.) Challenge Password •••••
Enterprise Directory	Re-enter Challenge Password
Host AA PAM	x509v3_config Subject Alternative Name (SAN) SAN IP Address (Use comma ',' as attributes separator to add multiple values)
Security Database	SAN DNS Name
Session Timeouts	(Use comma ',' as attributes separator to add multiple values)
Standard Reserved Ports	Key Usage* Digital Signature
AIDE Configuration	Non-repudiation
→ Status	Data encipherment
> User Management	Key agreement
→ Utilities	CRL sign
> Help	Encipher only Decipher only
	Extended Key Usage SSL/TLS Web Server Authentication SSL/TLS Web Client Authentication Code signing E-mail Protection (S/MIME)
	SCEP Parameters:
	SCEP Server URL
	CA Certificate Alias
	CA Identifier
	Apply Cancel

Figure 126 Generating AES CSR Continuation





1.4.9 Signed Certificate in to AES

- Navigate to Security > Certificate Management > Server Certificates
- Click Import
- Under the Server Certificate Import,
 - *File Path*: Click Choose File and browse Signed Certificate file (e.g. **AESSignedwithclientandserverauth.cer**)
 - Establish Chain of Trust: Enabled
 - Certificate Alias: aesservices
- Click Apply

Security Certificate Management	Server Certificates	
AE Services		
Communication Manager Interface	Server Certificate Import	
High Availability	File Path*: Choose file AESsignedwiterverauth.cer	
Licensing	Establish Chain of Trust 🗹	
Maintenance	Certificate Alias* aeservices ✔	
Networking	Apply Close	
▼ Security		
Account Management		
▶ Audit		
Certificate Management		
 CA Trusted Certificates 		
Server Certificates		
 Default Certificates 		

Figure 127 Importing Signed Certificate in to AES

• The Server Certificate aesservices is imported with the status displayed as "valid"

AE Services Communication Manager Interface	Server Certificates				
High Availability	Add Delete Export Import	Renew View			
► Licensing	Alias	Status	Issued To	Issued By	Expiration Date
Maintenance	O aeservices	valid	aaaes10		11/1/2024
Networking				··	
▼ Security					
Account Management					
> Audit					
▼ Certificate Management					
 CA Trusted Certificates Server Certificates 					

Figure 128 Importing Signed Certificate in to AES Continuation





1.4.10 Avaya Aura Contact Server as a trusted host on AES

- Navigate to Security > Host AA > Trusted Hosts
- Click Add
- Under Add Trusted Host,
 - Certificate CN or SubAltName: Type FQDN of the Avaya Aura CC
 - Service Type: TR/87
- Click Apply Changes

Security Host AA Trusted Hosts	
 AE Services Communication Manager Interface 	Edit Trusted Host
High Availability	Certificate CN or SubAltName
▶ Licensing	Service Type* TR/87 🗸
▶ Maintenance	User Authentication Policy* Not Required V
▶ Networking	User Authorization Policy* Unrestricted Host V
▼ Security	Apply Changes Cancel Changes
Account Management	The "All" Service Type can be used to specify a user authorization policy for both the DMCC and TR/87 services. The TR/87 service cannot p
Audit	osci Automication required to seconde with a connect type of Air and will only chable asci addicinitization on the Direct Seconde.
Certificate Management	
Enterprise Directory	
▼ Host AA	
Trusted Hosts Service Settings	

Figure 129 Adding Avaya Aura CC as a trusted host

Security Host AA Trusted Hosts					Hor
AE Services					
Communication Manager Interface	Trusted Hosts*				
High Availability	Certific	ate CN or SubAltName	Service Type	User Authentication Policy	User Authorization Policy
→ Licensing		com	TR87	AUTHENTICATION_NOT_REQUIRED	UNRESTRICTED_ACCESS
Maintenance	Add Edit D	elete			
▶ Networking	t Nata: This same is a		"Demuise Trusted Heat Este	" shashhay is shashed as the "Capita Cattings" year	
▼ Security	- Note. This page is t	only enforced to be configured if the	Require Trusted Host Entry	checkbox is checked on the Service Settings page.	
Account Management					
▶ Audit					
Certificate Management					
Enterprise Directory					
▼ Host AA					
Trusted Hosts					
 Service Settings 					

Figure 130 Adding Avaya Aura CC as a Trusted host Continuation





1.4.11 Certificate Store in Avaya Aura CC

- Login to windows server where Avaya Aura CC is installed
- Search for Security Manager and Click Security Manager

10.89.33.31	×		
			Search
		Ac	Everywhere 🗸
			sec <mark>urity Manager </mark>
			Security Manager
			Local Security Policy
			Project to a second screen

Figure 131 Security Manager

• Enter in the security store password: Type the security store password

Α		Store Access		x
	Security Manager Login		_	
	Enter in the security store password	*******		
		OK Cancel		

Figure 132 Security Manager Login





Α				Security M	anager					- 🗆 X
Store Commands	Help									
You are currently	viewing the active S	tore						Securit	ty Manage	er
Security Store	Certificate Request	Add Certificate	Security Configuration	Store Maintenan	ice D	isplay Certificates	Expiration Alerts	Database Encryption	Advanced]
	(* denotes mandatory)									
	Full Computer Name (FQ	DN) *		.com		Subject Al	Iternative Name (SA	N)		
	Name of Organizational	unit	Manage		Type Value	DNS				
	Name of Organization				Value	Add SAN	Remo	ove SAN		
	City or Locality					ip:10.89.33.31				
	State or Province									
	Two Letter Country Code	e								
	Encryption Algorithm Le	vel *	SHA256	-						
	Key Size	*	2048	-						
	Security Store Passwor	d *								
	Confirm Store Passwor	d *								
	Create Store Change Password Delete Store									
Last successfu	Store Status Last successful login was on Thu Dec 01 22:55:33 CST 2022 and there were 0 failed attempts since your last login									
						Make	e Active	Log Out	He)lp

Figure 133 Security Manager – Security Store





- Navigate to Certificate Request and copy the contents of CSR text
- Get the CSR signed form Certificate Authority

Α	Security Manager
Store Commands	Help
You are current	y viewing the active Store
Security Store	Certificate Request Add Certificate Security Configuration Store Maintenance Display Certificates Expiration Alerts D
	Security Store Status : Created Signing Request Status : Signed
	File location: D:\Avaya\Contact Center\Common Components\CCKeyStore\signme.csr
	Contents Listed below, copy and sign with a Certificate Authority
	BEGIN NEW CERTIFICATE REQUEST MIIC/DCCAeQCAQAwdjELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAIRYMQ4wDAYDVQQH EwVQbGFubzESMBAGA1UEChMJVGVrdmI6aW9ubGFicy5jb20wggEiMA0GCSqGSIb3 DQEBAQUAA4IBDWawggEKAoIBAQDB8Qv1YNdVWsd9PS2TZK0YMws2H71nwaDGwyz DW/AUeSVqKTibI2PtjLtHS6v+mSCa38IFEAeNkhsHN2BImOeGAF52AF9mHxTZRzd Y/clcGNuIWGBIg7IIia9/YFAh5SJ9pz/5V18iCsvk4RW9D1ixM928+0hyw+WUqAa I8xFinb/AaZM0UKuefK5DHZhSVEM3ZpJ5Tr6JqZmanRg8f9dIjBj3IHkmF5tfhU mZkaj5CSbtx04gaJ0Rx88HyVdYMeRBjq54FiJVLZ2ebt0/XxsrfYKKPYVQdrVII NVqXeYovedSj/7UfJAOA8ZW2jiVgFR+XKWxKtrH8U7mB17xrAgMBAAGgQTA/Bgkq nkiG9w0BCQ4xMJAwMA8GA1UdEQQIMAaHBApZIR8wHQYDVR00BBVEFBj5Tb5VE46 RA664CMLLJjiwaH3MA0GCSqGSIb3DQEBCWUAA4IBAQCi9foIY9aFcbnD27f409DK nwv0RCugwHiIsM0za1MdXP22P5nFtKZgU3zmdIRrYryT15XcL1FtK21EHuTxnJSh ZhCenYLM3gn7/SPi1z30PLzBOetzq0I8ftWg7AIZTAPmupR66GLR5cqu63QCU8G DK9YaSbqrrtkW29kkp0Vdye5B3Tm5GnMxmbWAQQ2Mz1tfZW9/NIRbgdgCLIOuds ZsHB6HKugj029WAf/a/bVUyVo42LESI40W1876N2IVpUrHqDanTvXwqIN5z7aEa DHtePmsvQei/PPqr7/F401RQvnphZIYvun+h7knR/Ew2X0z8XEpLNhzw/XMyZ7 END NEW CERTIFICATE REQUEST

Figure 134 Security Manager – Certificate Request





- Navigate to Add Certificate
- Under Add Certificates Automatically (Auto detects Identity, Root, PKCs#12 and p7b certificates),
 - Select Folder: Click Browse
 - Navigate to the folder where Root CA and Server certificates are stored
 - Certificates: AvayaCCsignedwithClientandserverAuth.cer, RootCA.p7b (Root and Server Certificates)
- Click Add all Certificates

Δ		Security Manag	er
Store Commands Help			
You are currently viewing the	e active Store		
Security Store Certificate	Request Add Certificate	Security Configuration Store Maintenance	Display Certificates Expiration Alerts
	Add Certificates Auto	matically (Auto detects Identity, Root , PKCS#12 and p	97b certificates)
	Select Folder	C:\Users\Administrator\Desktop\CERT	Browse
	Certificates	AvayaCCsignedwithClientandserverAuth.cer RootCA.p7b	
		Add all Certificates	
	O Add Certificates Manı	ally (Not to be used for PKCS12 or p7b certificates)	
	Add Root Certificate		Browse
		Add CA Certificate	
	Add Identity Certificat	e	Browse
		Add Identity Certificate	

Figure 135 Security Manager – Add Certificate





Δ		Security Mana	ger			
Store Commands Help						
You are currently viewing the active Store					Securi	ty M
Security Store Certificate Request Add Certificate	Security Configuration	Store Maintenance	Display Certificates	Expiration Alerts	Database Encryption	Adv
Web Services Security Level	(OFF)	•	TLSv1 Pro	tocol Level Setting	JS	
The web services security setting is currently set to	Security On	The TLSv1 p application o	rotocol level selected wil r service is configured to	II be the minimum lev communicate over T	rel of TLS allowed when th TLS.	he
Insecure web services	Security Off port: 8081		SIP and	l CTI Signalling Lev	el	
This enables applications and services governed by this setting f minimum level of TLSv1 to be used is determined by the TLSv1 P Settings online.	to use TLS. The rotolcol Level	Cu	rrent TLS Level for SIP ar	nd CTI communicatio	n TLS v1.2 🔻	
			CCMA - Mult	timedia Web Service	e Level	
Important information when sec	urity (OFF)	Cu	rrent TLS Level for CCM	A-MM	TLS v1.2	
If this system is configured as part of a High Availability systems must the same security level. This is a manual are not automatically propagated across.	deployment then both step as security settings		Event Bro	oker Web Service Le	evel	
The following applications will now utilise unsecured HT inbound and outbound network communications	TP connections for	= Cu	rrent TLS Level for EBWS	3	TLS v1.2 🔻	
Manager Administrator Multimedia Administrator			Cach	e Database Level-		
Multimedia Services Agent Greeting Orchestration Designer		Cu	rrent TLS Level for Cach	e Database	TLS v1.2 💌	
Agent Desktop Outbound Campaign Management Tool		•				
	Apply				Apply	

Figure 136 Security Manager – Security Configuration





- Navigate to Store Maintenance
- Under **Identity and Root Certificates that reside in the store**, the root and server Certificates that are added through **Add Certificate** tab are displayed

۸			Security Manag	jer			-	D X
Store Commands Help								
You are currently viewing the	e active Store					Securit	y Manager	
Security Store Certificate	Request Add Certificate	Security Configuration	Store Maintenance	Display Certificates	Expiration Alerts	Database Encryption	Advanced	
Identity and	Root Certificates that resi	de in the store						
	Identity Certificate	Signed by		Delete Ide	ntity Cert			
	Root Certificates	cacert: Issued by						
		Export	Delete					
Export keyst	ore (PFX format)							
	Export Store			Brows	e			
				Export as	PFX			
Backup and F	Restore Security Store							
	Location			Brows	e			
		Backup	Restore					
Store Status Last successful login was on Thu Dec 01 22:55:33 CST 2022 and there were 0 failed attempts since your last login								
Last successful login was o	n Thu Dec 01 22:55:33 CST 20	J22 and there were 0 faile	a attempts since your la	st login				

Figure 137 Security Manager – Store Maintenance





Α		Security Mana	ger			_ D X		
Store Commands Help								
You are currently viewing the active St	'ou are currently viewing the active Store Security Manager							
Security Store Certificate Request	Add Certificate Security Configuration	Store Maintenance	Display Certificates	Expiration Alerts	Database Encryption	Advanced		
Select from list below	to display certificate details							
Select Certificate	cacert: Issued by Signed by							
Certificate Detail								
Store Status Last successful login was on Thu Dec 01 22:55:33 CST 2022 and there were 0 failed attempts since your last login								

Figure 138 Security Manager – Display Certificates





Sign In

1.5 Avaya Aura Media Server (AAMS) Configuration

- Access Avaya Aura MS Web login screen via https://<Avaya Aura Media Server IP>
- Use admin as User ID and associated Password
- Click Sign In

← → C ▲ Not secure | https://10.89.33.32:8443/emlogin/



Sign in lo manage Avaya Aura@ Media Server.
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 convolutes and/or commal and ovil penalises under state, toderat, 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 advity, 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.

Figure 139 Avaya Aura Media Server Login





1.5.1 Nodes and Routes

- Navigate to System Configuration > Signaling Protocols > SIP > Nodes and Routes
- Under Trusted Nodes,
 - Click Add
- Under Add SIP Trusted Node,
 - Host or Server Address: 10.89.33.31 (Avaya Aura Contact Center Server IP)



Figure 140 Avaya Aura Media Server – Add Trusted Node





1.6 Avaya Aura Contact Center Configuration

1.6.1 Avaya Aura Contact Center Login

• Login to Windows machine where Avaya Aura Contact Center is installed

Windows Security	×
Enter your credentials	
These credentials will be used to	connect to 10.89.33.31.
AACC\Administrator	
•••••	
Remember me	
More choices	
ОК	Cancel

Figure 141 Avaya Aura CC Login





1.6.2 System Control and Monitor Utility

- Navigate to Windows search and type System Control and Monitor Utility
- Click System Control and Monitor Utility
- Ensure appropriate Contact Center Services are started in System Control and Monitor Utility

â	System Control and Monitor Utility - 🗖 🗙
AVAY	Contact Center System Control and Monitor Utility
Contact Center L Start or Shut dov	M CCMS CCMA CCT CCMM wn the selected Contact Center applications Start Shut down Contact Center Shut down Contact Center act Center applications to control Start Shut down
✓ License Manager	License Manager status: Started
CCMS	CCMS status: Started
□ Security Framework	Not installed
ССМА	CCMA status: Started
🗹 ССТ	CCT status: Started
ССММ	CCMM status: Started
	Help View log Close

Figure 142 System Control and Monitor Utility





1.6.3 Server Configuration

- Navigate to Windows search and type Server Configuration
- Click Server Configuration
- Navigate to Main Menu > Local Settings
- Below are the default settings under Local Settings

î	Server Configuration	_ _ X
AVAY	Contact Cent	er Server Configuration
Main Menu Cocal Settings Cocal Settings SIP Cocal Subscriber CCT Server WS Open Interfaces SalesForce	Customer Information Customer Name Company Name CompanyName CompanyName Site Name AACC RSM IP Address Real-Time Statistics Multicast IP Address 234.5.6.10	Avaya Server Subnet Enter the CLAN Subnet IP Address IP Address 10.89.33.31
		Exit Apply All

Figure 143 Server Configuration – Local Settings





- Navigate to Main Menu > Licensing
- Below are the default settings under Licensing

î	Server Configuration	_ D X
Main Menu Cocal Settings Cocal Settings Cocal Subscriber Cocal	Contact Center Contac	e Server IP Address e Server IP 9.33.31
		Exit Apply All

Figure 144 Server Configuration – Licensing




- Navigate to Main Menu > SIP > Network Settings
- Under SIP Network Settings,
 - Voice Proxy Server. Enter the IP Address of Avaya Aura SM
 - Port: **5062**
 - Transport: **TCP**
 - CTI Proxy Server. Enter the IP address of Avaya AES server
 - Port: **4723**
 - Transport: **TLS**

Ê	Server Con	figuration
AVAYA		Contact Center Server Configuration
Main Menu	SIP Network Settings	
Licensing SIP Network Settings	Voice Proxy Server	IP Address Port Transport 10.70.4.207 5062 TCP ∨ Enforce SIPS
CCT Server WS Open Interfaces SalesForce	Backup Voice Proxy Server	TCP v
	CTI Proxy Server	10.70.4.211 4723 TLS v
	IM Proxy Server	TCP v IM Provider XMPP Domain
		Aura Presence Services \vee
		Exit Apply All

Figure 145 Server Configuration – SIP Network Settings





- Navigate to Main Menu > SIP > Local Subscriber
- Below are the default settings under Local Subscriber

1	Server Configuration	_ _ X
	Contact Center Se	rver Configuration
Main Menu Local Settings Licensing Network Settings Cocal Subscriber CCT Server WS Open Interfaces SalesForce	Local SIP Subscriber Contact Center Name AACC Domain Name Local listening ports (on the CLAN IP address) TCP/UDP Port 5060 TLS Port 5061	SIP Server Type Aura 6.x SIP Server Version 6.2 or Greater Third Line Enabled Media Services Locale en_us Web Service Ports Server Port 9100 Client Port 9120
		Exit Apply All

Figure 146 Server Configuration – SIP Local Subscriber





- Navigate to Main Menu > CCT Server
- Below are the default settings under CCT Server

10	Serve	r Configuration		– – X
AVAY	4	Contact	Center Server	Configuration
Main Menu Local Settings Licensing Network Settings Cor Server WS Open Interfaces SalesForce	CCT Server Please tick the following Use a Remote CCT Remote Server Settin CCT Host Name AACC Note: Modify the CC CCT Port A1 8098 CCT Port A2 18098	box only when using Server 1gs T Port Numbers Only Default 8098 Default 18098	Communication Control as Advised in the Install CCT Port B1 8099 CCT Port B2 18099	ation Manual. Default 8099 Default 18099
				Exit Apply All

Figure 147 Server Configuration – CCT Server





1.6.4 SGM Management Client

- Navigate to Windows search and type SGM Management Client
- Ensure Voice Outbound Proxy, CTI Proxy and Media Server(s) state displays Connected

Α		SGM Manag	ement Client		_ 🗆 X
Connection					
Transport St	atus Console				
					1
	Connecte	ed to Contact Ce	nter Server:	10.89.33.31	
		Voice Out	ound Proxy		
	IP	Port	Transport	State	
	10.70.4.207	5062	TCP	CONNECTED	
		СТІ	Proxy		
	IP	Port	Transport	State	
	10.70.4.211	4723	TLS	CONNECTED	
		Media S	Server(s)		
	IP	Port	Transport	State	
	10.89.33.32	5060	TCP	CONNECTED	
]

Figure 148 SGM Management Client





Login

1.6.5 Avaya Aura Contact Center (CC) Manager Configuration

- Access Avaya Aura CC Web login screen via http://<Avaya Aura CC IP Address>
- Use webadmin as User ID and associated Password
- Click Login

A http://10.89.33.31/CCMALogin/Home/Login		- C Search	、 、 、 、 、 、 、 、 、 、 、 、 、 、
A 10.89.33.31	× 📑		
x Google		🗸 🚼 Search 🗸 🥅 🕶 🚑 🛛 More	» Sign In 🔧 🗸
Αναγα	Contact Ce	enter - Manager	About
Contact Center - Manager			
	Login		
	User ID webadmin Password	••	

Figure 149 Avaya Aura CC Manager Login





1.6.6 CDNs (Route Point) Configuration

• Navigate to Launchpad > Configuration

× Google		∽ 🛂 Search 🕶 🏢 र 🌻 v 🔀 🧟 Share v 🔒 🤇	Check 🕶 🍇 Translate 👻 🛃	AutoFill 🔻 🍠
AVAYA	Conta	ct Center - Manager		About
Launchpad	L auna			
	Launci	npad		
	Ô	Contact Center Management	Ô	Configuration
	0	Access and Partition Management	Ô	Scripting
	Ô	Real-Time Reporting	0	Emergency Help
	Ô	Historical Reporting	0	Outbound
	Ô	Call Recording and Quality Monitoring	Ô	Multimedia
	Ô	Prompt Management	Ô	Data Management
		Figure 150 Launchpad		

- Name: **7500**
- Number: **7500**
- URI: sip:7500@<Avaya Aura CC domain name>.com
- Call Type: Local
- Acquired: Enabled

AVA	AYA					Con	iguration				Logged in user: Adm
Server	Download	Status	Launchpad	Help							
	AACC Activity Codes Call Presentation	Classes		CDNs ((Route Points)						
	Call Recording a	nd Quality I	Monitoring	CDNs	Open Queue					Acquire A	II CDNs De-ac
	CDNs (Route Po	nts)			Name	Number	URI		Call Type	Acquired?	Status
	Contact Types				7500	7500	sip:7500@	.com	Local	×	Acquired
	DNISs Formulas Global Settings			*							

Figure 151 CDNs (Route Point) configuration





1.6.7 Media Server

- Navigate to **AACC > Media Servers**
- Name: Enter the host name of Avaya Aura Media Server (e.g. AAMS)
- IP Address: 10.89.33.32 (IP address of Avaya Aura Media Server)
- Transport: TCP
- Master Content Store: Enabled

Αναγα

Configuration

Server	Download	Status	Launchpad	Help						
	AACC									
	Activity Codes			Media S	ervers					
	Call Presentation	n Classes		-						
	Call Recording a	and Quality N	Ionitoring	i ranspor		Update Tran	isport			
	CDNs (Route Po	oints)								
·····	Contact Types				Server Name	IP	Address	Port Number	Transport	Master Content Store
	DNISs				aams	10	0.89.33.32	5060	TCP	✓
	Formulas			*						
	Global Settings									
	Historical Statist	tics								
	Media Servers Media Services	and Routes								







1.6.8 Media Server Configuration

- Navigate to AACC > Media Services and Routes
- Under Media Services and Routes,
 - Service Name: Ensure for each of the Service Names (e.g. AAC_APP_ID, CONF, MDIALOG) with Treatment address (e.g. sip_sip-conf@<domain name>.com), the media server e.g. AAMS is associated
 - Routes (Target Media Servers): Select a row from the service name (e.g. ACC_APP_ID) and move the media server e.g. AAMS from Available to Selected column
- Repeat the same step for Service Names CONF and MDIALOG
- Click Submit

AVAYA	Configuration	La
Server Download Status Launchpad AACC Activity Codes Cal Presentation Classes Cal Recording and Quality Monitoring CDNs (Route Points) Contact Types DNISs Global Settings	d Help Media Services and Routes Service Name Treatment Address ACC_APP_D sip:eb8acaa5-509d-11e4-9125-00ff70260b11@ CONF sip:_sip-conf@ MDIALOG sip:_sip-mdialog@ *	
Historical Statistics Media Servers Real-time Statistics Routes Skillsets Threshold Classes AACC aamm	Routes(Target Media Servers)-ACC_APP_ID Available Selected (1) amis C C C C Submit	

Figure 153 Media Server Configuration





1.6.9 CCT Server

• Navigate to Launchpad > Configuration



Figure 154 Add CCT Server





- Navigate to Server > Add Server
- Under Server Properties,
 - Type: CCT
 - Server Name: AACC (Host name of the Avaya Aura Contact Center Server)
 - *IP Address*: **10.89.33.31** (Avaya Aura Contact Center Server IP populates automatically)
 - Display name: **AACC**
 - Port Number: 8081
 - Associated CCMS Servers: AACC (Select the Avaya Aura Contact Center server radio button)
- Click Submit

AVAYA	Configuration	Logged in user: Administrator Web Change Password Lo
Server Download Status Launchpad	Help	
AACC Activity Codes Cal Recording and Quality Monitoring Colla Recording and Quality Monitoring Contact Types ONISs Ormulas Gobal Settings Historical Statistics Media Services and Routes Real-time Statistics Stillests Stillests Coll Administration Contact Types Coll Administration Contact Types	Server Properties Type CCT Server Name PAdces Cosplex Name Cosplex Name Cosplex Name Cosplex Name Cosplex Name Cosplex CCT The following ODBC DSN will be automatically created for this system: CCT_10.89.33.31_DSN Post Number COST Website: HTTP URL http://	Associated CCMS Servers Servers (1) AACC Clear Associations

Figure 155 Add CCT Server Continuation





1.6.10 Contact Center Agent

- Navigate to Launchpad > Contact Center Management > CCM Servers (Supervisors) > AACC > Supervisor Default > Right Click > Add Agent
- Under User Details,
 - User Type: Agent
 - First Name: seetha
 - Last Name: agent1
 - Login ID: 3001
 - Voice URI: sip:3001@<Avaya Aura CC domain name>.com
- Under Account Type,

..

• Create CCT Agent. Enabled

View/Edit Add Status Launchnad Heln	
CCM Servers (Supervisors) AACC Agent Default Agent Default First Name: seetha Last Name: agent1 Title: Department: Language: English Comment:	Luser Type: Agent Login ID: * 3001 Voice URI: sip: 3001@ com 0 IM URI: sip: 0 Account Type: CT Agent Login Details 0 User ID: seetha

Figure 156 Contact Center Agent





- Under Associate User Account
 - Search domain users: Enabled
 - Under Domain Details,
 - Server Name or IP: **10.85.0.12**
- Under **Domain Account**
 - (Domain\User ID): <Avaya Aura CC domain name>\seetha
 - Password: Enter the associated user password
- Under Search all accounts where
 - Select First Name
 - Starts with: seetha
 - Click Search
- Select the row listed with User Name as seetha

<u>Associate User Account</u> <u>Search local oper</u>	ating system 🔵 Search local securit	y server 🖲 Search doma	in users	
Server Name or I	P * 10.85.0.12	Domain Accou (Domain\User 1 Password * Base DN Port Number	D) * \	ection
Search all user acco First Name	unts where: starts with seetha an	d includes all users	✓ ist All	
User Name Seetha U The account	Last Name (1) agent1 nt specified here will be used by the S	First Name seetha Supervisor/Agent to login t	Status Available o CCMA.	Description

Figure 157 Contact Center Agent Continuation





- Under Contact Types,
 - Voice: Enabled

✓ Agent Information Primary Supervisor: [★] Supervisor Default ✓ Login Status Logged Out	Call Presentation: Threshold:	Call_Centre_Administrator V Agent_Template V
<u>Contact Types</u> <u>Contact Type</u>		
SMS		
Social_Networking		
Video		
Voice	✓	
Voice_Mail		
Web_Communications		Y



- Under Skillsets,
 - Skillset Name: Default_Skillset
- Click Submit

Skillset Name (1)	Contact Type	Priority	
Default_Skillset	Voice	e [1	~
Assian Skillsets			
Partitions			
- Induction			

Figure 159 Contact Center Agent Continuation





1.6.11 TFE REST Configurator

TFE REST Configurator is used to define the Twilio API URL with authorization credentials. The endpoint ID **1** is used by in the Application script (Section 6.7.12 - **CallTwilio_API**) to invoke the Twilio API URL

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TFE REST Configurator				Blan	k	•	¢
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	Response						
						01	_
is Loqqea our				I hreshold:	Agent Lempla	Close e Vi	







					- <u>^ </u>
TFE REST Configurator			Blank	•	¢
REST Services 🛛 🕂 🛢 🗴 👌	GET • https://sync.twilio.com/v1			Execute	
ID Endpoint 1 https://sync.twilio.com/v1/Services	Response Authorisation Pa	arameters Headers	s Body		
	O No Auth 🖲 Basic Auth O OAuth 2.0				
	Basic authentication				
	SK				
:					
				Close	9

Figure 161 TFE REST Configurator Continuation





1.6.12 Avaya Aura Orchestration Designer Application Script

Applications contains instructions that determine the sequence of steps that a contact follows after the contact arrives at Avaya Aura Contact Center

- Navigate to Launchpad > Scripting > Orchestration Designer > Launch Orchestration Designer
- Orchestration Designer tool is launched









- In the Orchestration Designer, navigate to Contact Center
- Click Connect to CCMA
- CCMA: 10.89.33.31 (IP address of Avaya Aura CC)
- Port:**80**
- User ID: webadmin
- Password: Type the appropriate password
- Click OK

C Orchestration Designer				
File Edit View Contact Center Window Help				
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Contact Center 🛛 🗖 🗖				
Not connected to a Contact Center				
	Connect	to Contact Center	×	
	Please enter	r the login details below.		
	CCMA:	10.89.33.31	~	
	Port:	80	SSL Enabled	
	User ID:	webadmin	~	
	Password:	•••••		
€ Local X □ □				
		ОК	Cancel	
	L			

Figure 163 Orchestration Designer Login

 Navigate to 10.89.33.31 > AACC > Applications [Full Control] > Right Click > New > Application

Crchestration Designer			
File Edit View Contact Cente	r Window Help		
8 ≙ 4 \> 4 € 6 \$	ĸ		
Contact Center 🛛		C Ring Back [AACCWorking] X	
 ✓ (€ 10.89.33.31 ✓ (<i>∅ AACC</i> > <i>➢ Application Manage</i> 	er Data	Treatment Options Music O Ringback O Silence	
✓ → Applications [Full C	ontroll	I Silence Previous Treatment	
Sta AACC	New	> 🍡 Application	
AACC_1	🔊 Refresh	F5 Music Route: Za CC_DefaultMus	sic
AACC_workibgl AACCWorking EM_Email_Prima FX_Fax_Primary IM_InstantMsg_ Master_Script Media_Server_So MultimediaFlow Network_Script	packup Primary election	Minimum Duration (secs):	5

Figure 164 Orchestration Designer – Create New Application





In the New Application window,

- Application Name: AACCWorking
- Application Type: Graphical Flow
- Application Template: **New_Flow**
- Click Finish

Contact Center	Application			×
New Application				
O Create in Local View	 Oreate in Contact Center 			
Select a CCMS:				
√ 🥲 10.89.33.31	<u></u>			
(®) AA				
Application Name:	AACCWorking			
Application Type:	● Graphical Flow ○ Script			
Application Template:	New_Flow			~
		 nish	Canc	el
		msn	Canc	ci

Figure 165 Orchestration Designer – Create New Application Continuation





The Graphical flow **AACCWorking** is designed to send the IVR digit entered by the PSTN user to be displayed in the Avaya Aura Agent Desktop



Figure 166 Orchestration Designer – Graphical Flow



•



Detailed description of AACCWorking Graphical flow blocks

Ringback - Plays music when the PSTN caller waits in the queue

- Double click on the Ring Back icon in the Graphical Flow (Figure 124)
 - Under Treatment Options,
 - Music: Enabled
 - *Music Route*: Click **Browse** and choose **CC_DefaultMusic**
 - Minimum Duration (secs): 5
- Click **Save** (Navigate to **File > Save**)

🐮 Orchestration Designer File Edit View Contact Center Window Help			- 0 ×
		Quick Access	
Contact Center 🛛 🗖	🗆 😼 main [AACCWorking] 🛛 🚳 Ring Back [AACCWorking] 🛛		- E
	Treatment Options Music Ringback Silence Silence Previous Treatment Music Route: CC_DefaultMusic Minimum Duration (secs): S		Browse

Figure 167 Orchestration Designer – Graphical Flow Continuation

Assign_CallID – Assigns the Twilio Call ID to a variable mysearchURL_cv. Refer Figure 130 and 131 to create a variable mySearchURL_cv



Figure 168 Orchestration Designer – Graphical Flow Continuation





Send_CallID - Sends the Twilio Call ID to the next block CallTwilio_API

Caller M			
Contact Center 🛛		Send_CallID [AACCWorking] Send_CallID [AACCWorking] Send_CallID [AACCWorking]	
▲ (10,8933.31) ▲ (2)	< =	Block Name: Send_CallD Processing Logic Description:	
AACC_1			
ACCC_OF MACC_vorkibgbackup MacC_vorkibgbackup MacCovorking MacCovorkip MacCovo	×	Assignment Expressions: externalcallid = CONTACT DATA ProviderContactID HDX_QueryNum_cv = 14 username = OpenWsUser password = 123	Edit
€ Local X	- 0	Log	
		Add log command	
		Setup Host Processing Transitions	

Figure 169 Orchestration Designer – Graphical Flow Continuation





Request Parameter **intrinsickey_cv** variable is assigned the value **Twilio_CallID**. Refer Figure 130 and 131 to create a variable **intrinsickey_cv**

1	Orchestration Designer	_ D X
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	Response Parameters: HDX_Resp_cv WSResult_cv	Add Remove Move Down Move Up
	Timer (secs): Image: Second	

Figure 170 Orchestration Designer – Graphical Flow Continuation

CallTwilio_API - Query the Twilio API URL and sends the output to the next block



Figure 171 Orchestration Designer – Graphical Flow Continuation





Send_Twilio_intrinsic - Sends the response from Twilio API URL to Avaya Agent desktop

Navigate to 10.89.33.31 > Application Variables > STRING

Create a global string variable named **intrinsicKey_gv** and assign a value IVR_Digit_entered. This is the string which is displayed in the Avaya agent desktop with the corresponding digit entered by the user.



Figure 172 Orchestration Designer – Graphical Flow Continuation





Contact Center ⊠		nain [AACCWorking] 🖄
x apptype x c_conversion_str_cv x c_play_and_collect_gv x c_play_only_gv x c_sip_digits_str_cv x c_sip_from_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x c_sip_to_add_cv x contact_queuetype_cv x contenttype x domain x externalcallid x HDX_QueryNum_cv x HDX_Resp_cv x im x im_str x interdigittimeout x intrinsicKey_gv x intrinsickey2_gv x locale	Modify Application Variable Modify STRING Variable Modify Application Variable Properties Class: Item Set Value: IVR_Digit_entered 1 to 80 character string (e.g. This is a string.)	
	< Back Next > Finish	Cancel

Figure 173 Orchestration Designer – Graphical Flow Continuation





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Figure 174 Orchestration Designer – Graphical Flow Continuation





- Right click on the application **AACCWorking**
- Click **Activate** to activate the application

Crchestration Designer		
File Edit View Contact Center Window	w Help	
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✓ → Agents [Read Only]	^	Treatment Options
👗 agent1, seetha (3001)		Music Ringback Osilence
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+∰ 7500		Silence Previous Treatment
🗁 DNISs [Full Control]		
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 Applications [Full Control] 		
AACC		Minimum Duration (secs): 5
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AACC_GF		
AACC_workibgbackup		
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PA_rax_Primary	Rename	F2
Mactor Script	Delete	Delete
(Local 🛛	Activate	
	Deactivate	
r 🗠	Export	
	Properties Alt	+Enter

Figure 175 Orchestration Designer – Activate Application





- Navigate to Application > Master_Script to map the application AACCWorking with the CDN 7500
- Under Configured Routes,
 - Navigate to Application Manager Data > CDNs > 7500
 - Click Add/Edit
 - Select the application AACCWorking from Application Chooser > Valid Applications
 - Click OK

File Edit View Contact Center Window Help		
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🕲 Contact Center 🛛 🖳 🖓 main [AACCWorking] 🖉 Ring	g Back [AACCWorking] 🛛 📓 Contact_Router 🕺	
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Figure 176 Orchestration Designer – Master Script mapping with Application





1.6.13 CCMM (Contact Center Multimedia) Administration

• Navigate to Launch Pad > Multimedia to configure the Avaya Aura Agent Desktop Settings

A http://lab133aacc/Launchpad.asp?LastSuccessfulLoginDate=1/5/20239	2:55:10%20AM&DaysRemaining=&LoginCount=		
Αναγα	Contact Center - Manager		
Launchpad	Launchpad		
	© Contact Center Management	0	Configuration
	O Access and Partition Management	0	Scripting
	Real-Time Reporting	0	Emergency Help
	Istorical Reporting	0	Outbound
	Call Recording and Quality Monitoring	0	Multimedia
	O Prompt Management	0	Data Management

Figure 177 CCMM

- Click Launch Multimedia Client
- Click **Install prerequisite software** for the necessary pre-requisite software to be installed for CCMM Administration tool installation

A http://lab133aacc/Multimedia/default.asp	P ▼ C 🛕 Contact Center - Manager×
Αναγα	Multimedia
View Status Launchpad Help	
Ei- CCMM Servers	Multimedia Administration
	Multimedia Administration URL http://lab133aacc/Admin/setup.exe
	Launch Multimedia Client
	☑ Install prerequisite software
	wore, The multimeora chem requires prerequisite soniware to be installed. Choose this option in the Multimeora application has never been run on this computer.

Figure 178 CCMM Continuation





- Navigate to Agent Desktop Configuration > Basic Screenpops > General Settings
- Below are the default settings under General Settings

Α	CCMM Administration	- 🗆 X
AVAVA	Basic Screenpop Settings	%
Agent Desktop configuration Common settings Resources Default Closed Reasons Basic Screenpops Advanced Screenpops Shortcut Keys Comms Social Networking IM Voice Mail Fax Scanned Documents Text Messaging (SMS) Workspaces Configuration	General settings General Intrinsics Basic Screenpop (Shortcuts) Basic Filters (Launch Types) General Screenpop settings Global Screenpop settings Global Screenpop settings I Allow Agents select Screenpop(s) Auto Expand AAAD on Work Item Answer I Launch Screenpop on Incoming Personal Calls I Launch Screenpop on Outgoing Personal Calls I Launch Screenpop on Consultation received I Launch Screenpop on Consultation initiating I Close Screenpop when Consult/Transfer is Completed I Display Screenpops when Observe Basic Screenpop settings I Launch Screenpop in a tab Inside AAAD I Auto Close Screenpop tab(s) on Work Item Release Launch State: Active	
Agent Desktop Configuration General Administration	Save Cance	I Help
User: webadmin Server Time: 5:5	55 PM Status:	

Figure 179 CCMM Continuation





- Navigate to Agent Desktop Configuration > Basic Screenpops > General Intrinsics
- Click Add
- Name: IVR_Digit_entered
- Friendly Name: IVR_Digit_entered
- Display: Enabled

Note:

 Avaya Aura Agent Desktop (AAAD) General Intrinsic settings maps the Screenpop Intrinsics IVR_Digit_entered with the IVR_Digit_entered intrinsic received from the Avaya Aura Orchestration Designer Application Script named AACCWorking and displays the digit entered by the PSTN user in the Avaya Aura Agent desktop

Α		CCMM Administration		_ 🗆 🗙
AVAYA	Basic Screenpop Se	nsics Basic Screenpop (Shortcuts) Basic Filters (Launch Types)		S
▲ Agent Desktop configuration Common settings Resources Default Closed Reasons Basic Screenpops Advanced Screenpops Advanced Screenpops	Name V SIP_RETURNED_DIGITS_1 SIP_RETURNED_DIGITS_2 CCAD_IVR FROMADDRESS	Friendly Name T Friendly Name SIP_RETURNED_DIGITS_1 SIP_RETURNED_DIGITS_2 CCAD_IVR FROMADDRESS	Display V V V	Screenpop Parame V
	TOADDRESS CONTACTID CampaignName DefaultNumber	TOADDRESS CONTACTID CampaignName DefaultNumber		
E-mail Web Comms Social Networking	SIP_RETURNED_DIGITS_L/ SIP_RETURNED_DIGITS_21 CALLED_PARTY SIP_LOCATION	PIN_VALIDATION_CONFIRMATION PIN_NUMBER CALLED_PARTY Location		
IM Voice Mail Fax	cmfContactID SIP_SUBJECT SIP_MAIN_CONTACT PROVIDERCONTACTID	UUID SIP_SUBJECT SIP_MAIN_CONTACT PROVIDERCONTACTID		
Scanned Documents Text Messaging (SMS) Workspaces Configuration Agent Desktop Configuration	SIP_USER_AGENT IVR_Digit_entered	SIP_USER_AGENT IVR_Digit_entered Personal Call Screenpop Intrinsics Contact Screenpop I	Intrinsics	Add Remove
General Administration User: webadmin Server Time: 8:3	8 PM Status:		Save	Cancel Help

Figure 180 CCMM Continuation





1.6.14 Avaya Aura Agent Desktop

When the Avaya Aura Agent desktop client answers the call, it displays the IVR digit entered by the user as a SIP intrinsic named **IVR_Digit_entered** as shown below

Avayaagent Avayaagent (3001) - Tel: 3001 Ready			≡*?
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2 & & MD 2- 2 H			AVAVA Agent Desktop
			7
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Details History	Ci Detalis Reviews		
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Email			
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Custom Fields		i i	
Customer C	Contact Intrinsics	T 8	
SIP_TO_ADDRESS	sip:7500@tekvizionlabs.com:5060	A	
SIP_CALLSUPER_AGENT			
AD_CDN	7500		
Location	SM;origlocname="plano";origsiglocname="plano";origmedialocn		
IVR_Digit_entered	2		
AD_DNIS	7500		
SIP_CALL_TYPE	Inbound		
History	Created 20:26:57 27/04/23;Queued 20:27/06 27/04/23;Answered	v	
Basic	Advanced		
Caller Details			
Notepad			
1			
	Previous Login:	4/26/2023 12:45 PM	



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Figure 182 Avaya Aura Agent Desktop Continuation