

Avaya Solution & Interoperability Test Lab

Application Notes for Algotech AlgoCC 4.7.4 with Avaya Aura® Communication Manager 8.1.3 using Avaya Aura® Application Enablement Services 8.1.3 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Algotech AlgoCC 4.7.4 to interoperate with Avaya Aura® Communication Manager 8.1.3 and Avaya Aura® Application Enablement Services 8.1.3.

The compliance testing focused on the voice integration of Algotech AlgoCC with Avaya Aura® Communication Manager via the Avaya Aura® Application Enablement Services Telephony Service Application Programming Interface.

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

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for Algotech AlgoCC 4.7.4 to interoperate with Avaya Aura® Communication Manager 8.1.3 and Avaya Aura® Application Enablement Services 8.1.3

The compliance testing focused on the voice integration of Algotech AlgoCC 4.7.4 with Communication Manager via the Application Enablement Services Telephony Service Application Programming Interface (TSAPI).

Algotech AlgoCC provides complete function set for customer interaction, multimedia communication channels (voice, e-mail, SMS, webchat, Callback, IMChat), application interface for agents, reporting and quality monitoring. AlgoCC uses the TSAPI interface to monitor agent and supervisor station extensions, provide screen pops and call control from agent desktops in an Avaya call center environment.

AlgoCC uses a client/server architecture. Main server components are the AlgoCC application server, Web Server, and the Database server. AlgoCC supports both on-premise and cloud deployments, and the compliance testing used the cloud deployments method with the AlgoCC Server in the Algotech Cloud and it connected to Avaya Application Enablement Services via TSAPI in the DevConnect Lab through VPN Tunneling.

2. General Test Approach and Test Results

The general test approach was to validate successful handling of inbound ACD calls using AlgoCC clients. This was performed by calling inbound to a VDN and/or outbound using AlgoCC clients. Where applicable, agent call controls were performed using the AlgoCC client.

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

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

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

For the testing associated with this Application Note, the interface between Avaya systems and Algotech AlgoCC did not include use of any specific encryption features as requested by Algotech.

2.1. Interoperability Compliance Testing

The testing focuses on the following areas:

- Change Agent state Login, Ready, Not Ready, After Call Work using AlgoCC client.
- **Inbound Calls** Answer calls using AlgoCC client.
- Outbound Calls Make calls using Avaya Phones and control using AlgoCC client.
- Hold/Transfer—Place callers on hold and transfer using AlgoCC client.
- **Failover Testing** Verify the ability of AlgoCC server/client to recover from disconnection and reconnection to the Avaya solution.

2.2. Test Results

All test cases were executed. The following were observations on AlgoCC client from the compliance testing.

• AlgoCC client does not support initiate Conference.

2.3. Support

Technical support can be obtained for the AlgoCC solution as follows:

E-mail: helpdesk@algotech.cz

Internet: https://helpdesk.algotech.cz

Tel: +420 225 006 444

3. Reference Configuration

The configuration used for the compliance testing is shown in **Figure 1**. The detailed administration of basic connectivity between Communication Manager and Application Enablement Services is not the focus of these Application Notes and will not be described.

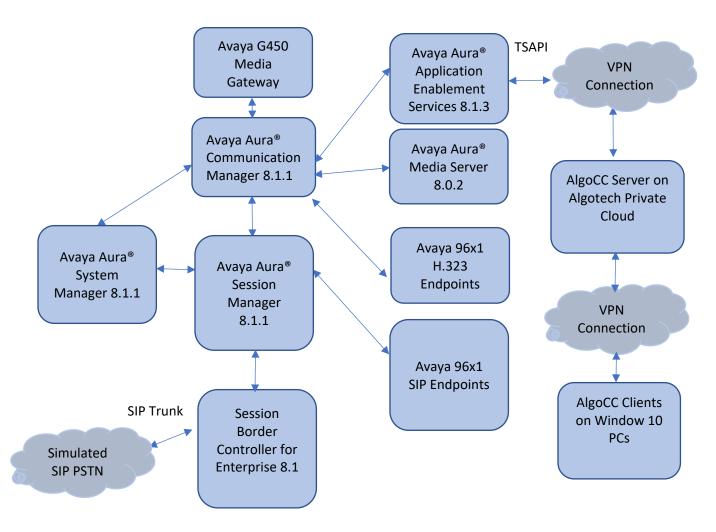


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version			
Avaya Aura® System Manager in Virtual Environment	8.1.3			
Avaya Aura® Session Manager in Virtual Environment	8.1.3			
Avaya Aura® Communication Manager in Virtual Environment	8.1.3			
Avaya G450 Media Gateway	41.34.1			
Avaya Aura® Media Server in Virtual Environment	8.0 SP2			
Avaya Aura® Application Enablement Services in Virtual Environment	8.1.3			
Avaya Session Border Controller for Enterprise	8.1.1			
Avaya 9621G & 9641G IP Desk phone (SIP)	7.1.8			
Avaya 9608G & 9641G IP Desk phone (H.323)	6.8.3			
AlgoCC AlgoCC Server AlgoCC Client	4.7.4 4.7.4			

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Verify license
- Administer CTI link
- Administer hunt group and agent

5.1. Verify License

Log into the System Access Terminal to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the "display system-parameters customer-options" command to verify that the **Computer Telephony Adjunct Links** customer option is set to "y" on **Page 4**. If this option is not set to "y", then contact the Avaya sales team or business partner for a proper license file.

```
display system-parameters customer-options
                                                                       4 of 12
                               OPTIONAL FEATURES
    Abbreviated Dialing Enhanced List? y
                                                 Audible Message Waiting? y
                                                 Authorization Codes? y
        Access Security Gateway (ASG)? n
        Analog Trunk Incoming Call ID? y
                                                              CAS Branch? n
 A/D Grp/Sys List Dialing Start at 01? y
                                                                 CAS Main? n
Answer Supervision by Call Classifier? y
                                                        Change COR by FAC? n
                                          Computer Telephony Adjunct Links? y
                                  ARS? y
                 ARS/AAR Partitioning? y
                                          Cvg Of Calls Redirected Off-net? y
          ARS/AAR Dialing without FAC? y
                                                            DCS (Basic)? y
          ASAI Link Core Capabilities? y
                                                       DCS Call Coverage? y
          ASAI Link Plus Capabilities? y
                                                       DCS with Rerouting? y
       Async. Transfer Mode (ATM) PNC? n
  Async. Transfer Mode (ATM) Trunking? n Digital Loss Plan Modification? y
              ATM WAN Spare Processor? n
ATMS? y
                                                                  DS1 MSP? y
                                                   DS1 Echo Cancellation? y
                  Attendant Vectoring? y
            (NOTE: You must logoff & login to effect the permission changes.)
```

5.2. Administer CTI Link

Add a CTI link using the **add cti-link n** command, where **n** is an available CTI link number. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter **ADJ-IP** in the **Type** field, and a descriptive name in the **Name** field. Default values may be used in the remaining fields.

```
add cti-link 1

CTI Link: 1

Extension: 79999

Type: ADJ-IP

COR: 1

Name: aes95
```

5.3. Administer Hunt Group and Agent

This section shows the steps required to add a new service or skill on Communication Manager. Services are accessed by calling a Vector Directory Number (VDN), which points to a vector. The vector then points to a hunt group associated with an agent. The following sections give step by step instructions on how to add the following:

- Hunt Group
- Agent

5.3.1. Add Hunt Group

To add a new skillset or hunt group type, **add hunt-group x**, where **x** is the new hunt group number. For example, hunt group **1** is added for the **Voice Service** queue. Ensure that **ACD**, **Queue** and **Vector** are all set to **y**. Also, that **Group Type** is set to **ucd-mia**.

```
add hunt-group 1
                                                            Page
                                                                   1 of
                                                                           4
                                 HUNT GROUP
           Group Number: 1
                                                           ACD? y
            Group Name: Voice Service
                                                         Queue? y
        Group Extension: 87000
                                                        Vector? y
             Group Type: ucd-mia
                     TN: 1
                    COR: 1
                                               MM Early Answer? n
          Security Code:
                                       Local Agent Preference? n
ISDN/SIP Caller Display:
           Oueue Limit: unlimited
Calls Warning Threshold:
 Time Warning Threshold:
                              Port:
```

On **Page 2** ensure that **Skill** is set to **y** as shown below.

```
add hunt-group 1

Base 2 of 4
HUNT GROUP

Skill? y

AAS? n

Measured: none
Supervisor Extension:

Controlling Adjunct:

Multiple Call Handling: none

Timed ACW Interval (sec):

After Xfer or Held Call Drops? n
```

5.3.2. Add Agent

In the compliance testing, the agents 80000 and 80001 were created.

To add a new agent, type **add agent-loginID** \mathbf{x} , where \mathbf{x} is the login id for the new agent.

```
add agent-loginID 80000
                                                          Page 1 of
                               AGENT LOGINID
        Login ID: 80000
                                                             AAS? n
            Name: Voice Agent
                                                           AUDIX? n
                              Check skill TNs to match agent TN? n
             TN: 1
   Coverage Path:
                                                   LWC Reception: spe
                                          LWC Log External Calls? n
   Security Code:
                                         AUDIX Name for Messaging:
                                    LoginID for ISDN/SIP Display? n
                                                        Password:
                                           Password (enter again):
                                                    Auto Answer: station
                                              MIA Across Skills: system
                                       ACW Agent Considered Idle: system
                                       Aux Work Reason Code Type: system
                                         Logout Reason Code Type: system
                   Maximum time agent in ACW before logout (sec): system
                                         Forced Agent Logout Time: :
  WARNING: Agent must log in again before changes take effect
```

On **Page 2**, add the required skills. Note that the skill **1** is added to this agent so when a call for **Voice Service** is initiated, the call is routed correctly to this agent.

add ager	nt-loginID 800	000				Page 2	2 of	3	
			AGENT	r LOGINID					
D	irect Agent S	kill:			Service Objective? n				
Call Har	dling Prefere	ence: ski	ll-level		Local Call Preference? n				
CNI	DI GI	CNI	DI GI	CM	DI GI	CNI	DI GI		
SN	RL SL	SN	RL SL	SN	RL SL	SN	RL SL		
1:1	1	16:		31:		46:			
2:		17:		32:		47:			
3:		18:		33:		48:			
4:		19:		34:		49:			
5 :		20:		35 :		50:			
6:		21:		36:		51:			
7:		22:		37:		52:			
8:		23:		38:		53:			
9:		24:		39:		54:			
10:		25:		40:		55:			

Repeat this section to add another agent 80001.

5.4.Administer Vectors and VDNs

Add a vector using the **change vector n** command, where \mathbf{n} is a vector number. Note that the vector steps may vary, and below is a sample vector used in the compliance testing.

```
change vector 1
                                                                                                 Page
                                                                                                            1 of
                                                                                                                       6
                                                    CALL VECTOR
      Number: 1
                                            Name: VoiceService
Number: I Name: VoiceService
Multimedia? n Attendant Vectoring? n Meet-me Conf? n
                                                                                                            Lock? n
Basic? y EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y Prompting? y LAI? y G3V4 Adv Route? y CINFO? y BSR? y Holidays? y Variables? y 3.0 Enhanced? y 01 wait-time 2 secs hearing silence 02 queue-to skill 1 pri t
03 wait-time 2 secs hearing silence
04 stop
05
06
07
08
09
10
11
12
                                   Press 'Esc f 6' for Vector Editing
```

Add a VDN using the **add vdn n** command, where **n** is an available extension number. Enter a descriptive Name and the vector number from above for Destination. Retain the default values for all remaining fields.

```
change vdn 88000
                                                              Page 1 of
                           VECTOR DIRECTORY NUMBER
                            Extension: 88000
                                                               Unicode Name? n
                               Name*: Voice VDN
                          Destination: Vector Number
                  Attendant Vectoring? n
                 Meet-me Conferencing? n
                   Allow VDN Override? n
                                  COR: 1
                                  TN*: 1
                             Measured: none
                                              Report Adjunct Calls as ACD*? n
       VDN of Origin Annc. Extension*:
                           1st Skill*:
                           2nd Skill*:
                           3rd Skill*:
SIP URI:
 Follows VDN Override Rules
```

6. Configure Avaya Aura® Application Enablement Services

This section provides the procedures for configuring Application Enablement Services. The procedures include the following areas:

- Launch OAM interface
- Verify license
- Administer TSAPI link
- Administer Avaya user
- Administer security database
- Restart services
- Obtain Tlink name

6.1. Launch OAM Interface

Access the OAM web-based interface by using the URL "https://ip-address" in an Internet browser window, where **ip-address** is the IP address of the Application Enablement Services server.

The **Please login here** screen is displayed. Log in using the appropriate credentials.



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The Welcome to OAM screen is displayed next.



Application Enablement Services Management Console

Welcome: User cust Last login: Thu Feb 18 14:36:40 2021 from 10.128.224.59 Number of prior failed login attempts: 0 HostName/IP: aes95/10.30.5.95 Server Offer Type: VIRTUAL_APPLIANCE_ON_VMWARE SW Version: 8.1.3.0.0.25-0 Server Date and Time: Mon Feb 22 17:38:46 ICT 2021 HA Status: Not Configured

Home | Help | Logout **AE Services** Communication Manager Interface Welcome to OAM **High Availability** The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains AE Services - Use AE Services to manage all AE Services that you are licensed to use on the AE Server.
 Communication Manager Interface - Use Communication Manager Interface to manage switch connection **▶ Maintenance** ▶ Networking and dialplan. High Availability - Use High Availability to manage AE Services HA.
 Licensing - Use Licensing to manage the license server. Maintenance - Use Maintenance to manage the network interfaces and ports.

 Meintenance - Use Networking to manage the network interfaces and ports.

 Security - Use Security to manage Linux user accounts, certificate, host authentication and authorization, configure Linux-PAM (Pluggable Authentication Modules for Linux) and so on.

 Status - Use Status to obtain server status informations.

 User Management - Use User Management to manage AE Services users and AE Services user-related User Management ▶ Utilities resources. Utilities - Use Utilities to carry out basic connectivity tests.
 Help - Use Help to obtain a few tips for using the OAM Help system Depending on your business requirements, these administrative domains can be served by one administrator for all domains, or a separate administrator for each domain.

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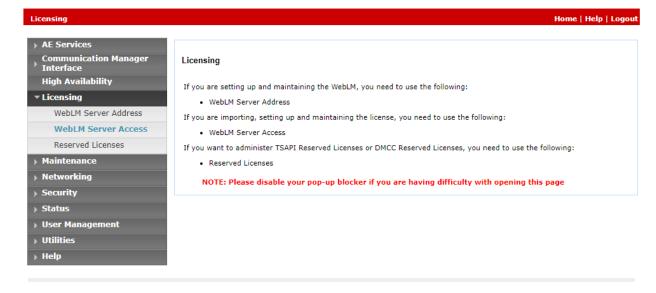
6.2. Verify License



Application Enablement Services

Management Console

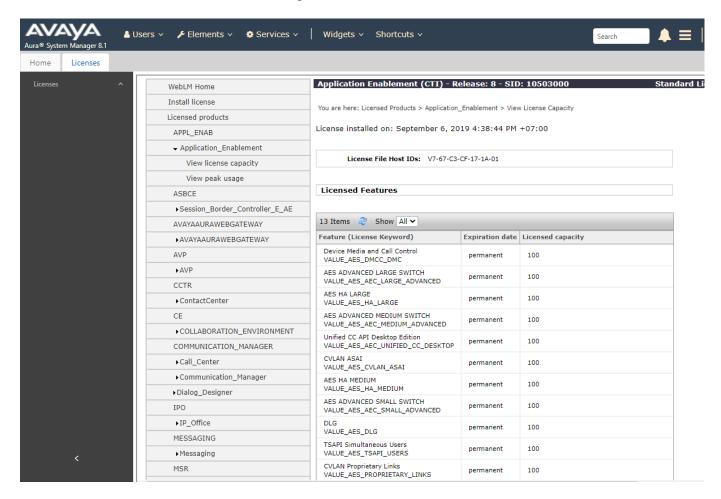
Welcome: User cust
Last login: Thu Feb 18 14:36:40 2021 from 10.128.224.59
Number of prior failed login attempts: 0
HostName/IP: aes95/10.30.5.95
Server Offer Type: VIRTUAL_APPLIANCE_ON_VMWARE
SW Version: 8.1.3.0.0.25-0
Server Date and Time: Mon Feb 22 17:39:12 ICT 2021
HA Status: Not Configured



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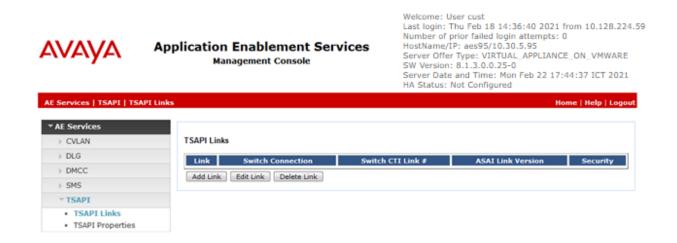
Select Licensed products \rightarrow APPL_ENAB \rightarrow Application_Enablement in the left pane, to display the Licensed Features screen in the right pane.

Verify that there are sufficient licenses for **TSAPI Simultaneous Users**, as shown below. The TSAPI license is used for device monitoring.



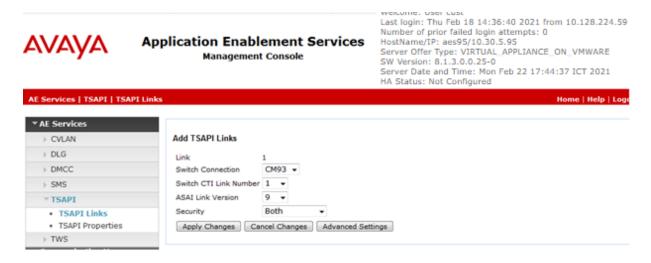
6.3. Administer TSAPI Link

Select **AE Services** → **TSAPI** → **TSAPI Links** from the left pane of the **Management Console**, to administer a TSAPI link. The **TSAPI Links** screen is displayed, as shown below. Click **Add Link**.



The **Add TSAPI Links** screen is displayed next.

The **Link** field is only local to the Application Enablement Services server, and may be set to any available number. For **Switch Connection**, select the relevant switch connection from the drop-down list. In this case, the existing switch connection **CM93** is selected. For **Switch CTI Link Number**, select the CTI link number from **Section 5.2**. Retain the default values in the remaining fields.



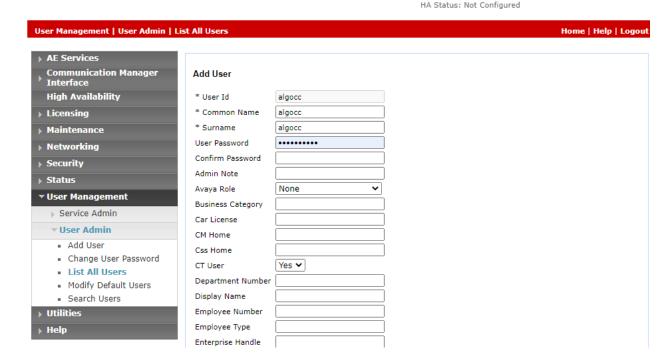
6.4. Administer algocc User

Select User Management \rightarrow User Admin \rightarrow Add User from the left pane, to display the Add User screen in the right pane.

Enter desired values for **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password**. For **CT User**, select **Yes** from the drop-down list. Retain the default value in the remaining fields.



Welcome: User cust
Last login: Mon Feb 22 17:38:25 2021 from 10.128.224.163
Number of prior failed login attempts: 0
HostName/IP: aes95/10.30.5.95
Server Offer Type: VIRTUAL_APPLIANCE_ON_VMWARE
SW Version: 8.1.3.0.0.25-0
Server Date and Time: Mon Feb 22 18:20:23 ICT 2021



6.5. Administer Security Database

Select Security → Security Database → Control from the left pane, to display the SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services screen in the right pane. Uncheck both fields below and click Apply Changes.

In the event that the security database is used by the customer with parameters already enabled, then follow reference [4] to configure access privileges for the Avaya user from **Section 6.4.**

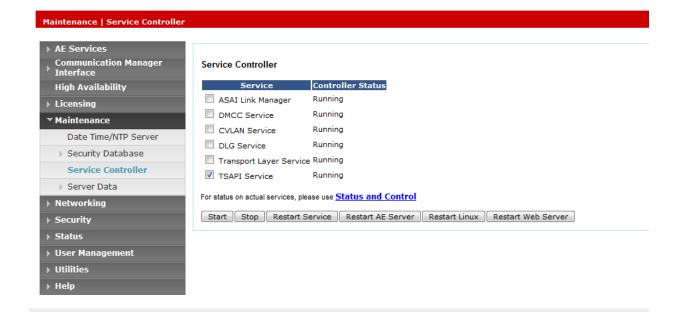


6.6. Restart Services

Select Maintenance \rightarrow Service Controller from the left pane, to display the Service Controller screen in the right pane. Check TSAPI Service, and click Restart Service.



Application Enablement Services Management Console



6.7. Obtain Tlink Name

Select Security Security Database Tlinks from the left pane. The Tlinks screen shows a listing of the Tlink names. A new Tlink name is automatically generated for the TSAPI service. Locate the Tlink name associated with the relevant switch connection, which would use the name of the switch connection as part of the Tlink name. Make a note of the associated Tlink name, to be used later for configuring AlgoCC.

In this case, the associated Tlink name is **AVAYA#CM93#CSTA#AES95**. Note the use of the switch connection **CM93** from **Section 6.3** as part of the Tlink name.



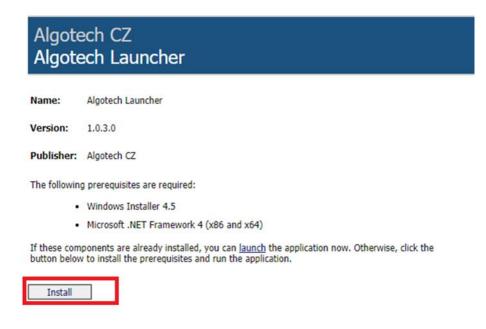
7. Configure Algotech AlgoCC Server and Client

7.1. Configure Algotech AlgoCC Server

All configuration related to Algotech AloCC Server is performed by Algotech engineers and, thus, is not documented.

7.2. Configure Algotech AlgoCC Client

Download AlgoCC Launcher at URL provided by Algotech: <a href="http://<IPAddress>/AlgoCCLauncher180/">http://<IPAddress>/AlgoCCLauncher180/



Run AlgoCC Launcher with its desktop icon:



Enter login details provided by Algotech and choose "en" language option for English:



After opening AlgoCC Launcher, choose AlgoCC application at left menu options (Avaya one-X Communicator also available here for download).

Download version 4.7.4 or newer by button **Download**, or eventually update the version by button **Update**. Then click on **Play**.



Login to voice channel. For login, move mouse cursor on tile of a voice channel and click on a green check mark symbol.



In the following dialog fill in the *Device* – it is the number of the station (*Device Extension*) to which you want to log in by the agent number (*Agent ID*). You press the *Login* button.



To evaluate of correct login to voice channel, the whole bar turns yellow/orange (no tile is to be white or grey).

This is the example of a bar after correct login:



8. Verification Steps

This section provides the tests that can be performed to verify correct configuration of Avaya Aura Communication Manager, Avaya Aura Enablement Services and AlgoCC solution.

8.1. Verify Avaya Aura® Communication Manager

On Communication Manager, verify status of the administered CTI link by using the "status aesves cti-link" command. Verify that the **Service State** is "established" for the CTI link number administered in **Section 5.2**. as shown below.

```
Status aesvcs cti-link

AE SERVICES CTI LINK STATUS

CTI Version Mnt AE Services Service Msgs Msgs Link Busy Server State Sent Rcvd

1 9 no aes95 established 14 14
```

Enter the command **list agent-loginID** verify that agent **80000** and **80001** shown in **Section 5.4** is logged-in to extension **70010** and **70009**.

list agent-	loginID								
AGENT LOGINID									
Login ID	Name	Extension	n Dir A	Agt AAS/	AUD	COR	Ag Pr SO		
	Skil/Lv Ski	.l/Lv Skil/I	v Skil/Lv	Skil/Lv :	Skil/Lv	Skil/L	J Skil/Lv		
80000	Voice Agent	70010				1	lvl		
	1/01	/ /	/	/	/	/			
80001	Voice Agent1	70009				1	lvl		
	1/01		/	/	/	/			

Enter the command **status station 70010** and on **Page 7** verify that the agent is logged-in to the appropriate skill.

status station 70010								Page	9 7	o f	7		
				A	CD STATUS								
-		Grp/Mod	Grp/Mod	Grp/Mod	-	-	-						
1/AU	JX	/	/	/	/	/	/	On	ACD	Call?	no		

8.2. Verify Avaya Aura® Application Enablement Services

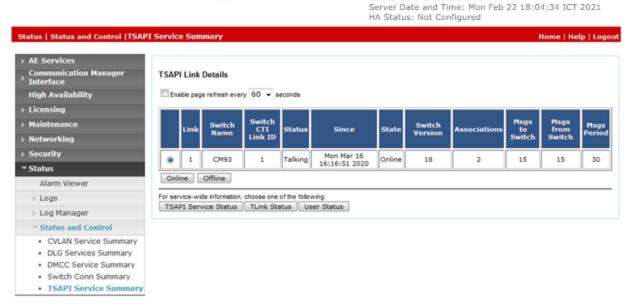
On Application Enablement Services, verify the status of the TSAPI link by selecting **Status Status and Control TSAPI Service Summary** from the left pane. The **TSAPI Link Details** screen is displayed.

Verify the **Status** is "Talking" for the TSAPI link administered in **Section 6.3**



Application Enablement Services Management Console

Welcome: User cust Last login: Thu Feb 18 14:36:40 2021 from 10.128.224.59 Number of prior failed login attempts: 0 HostName/IP: aes95/10.30.5.95 Server Offer Type: VIRTUAL_APPLIANCE_ON_VMWARE SW Version: 8.1.3.0.0.25-0



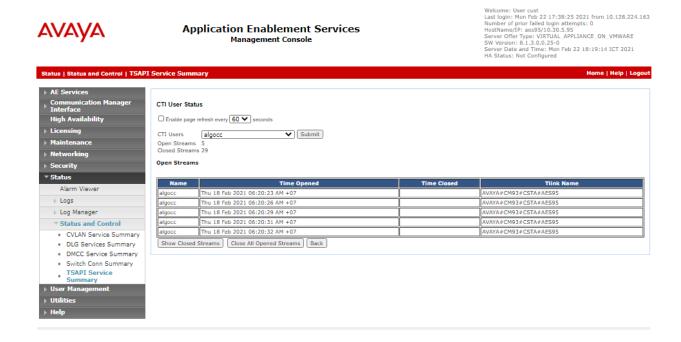
8.3. Verify Avaya Aura® Application Enablement Services TSAPI Service

The following steps are carried out on the Application Enablement Services to ensure that the communication link between Communication Manager and the Application Enablement Services server is functioning correctly. Verify the status of the TSAPI service by selecting Status

Status and Control

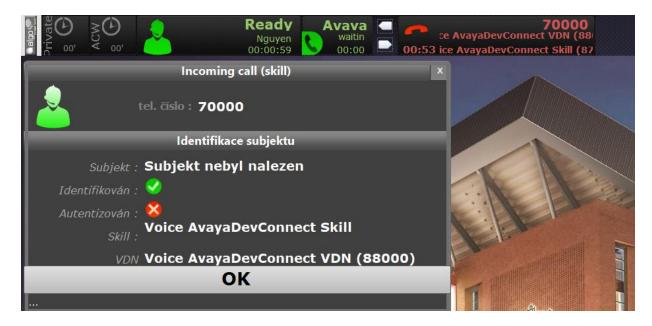
TSAPI Service Summary

User Status. The Open Streams section of this page displays open stream created by the alogce user with the Tlink.



8.4. Verify AlgoCC Client call handling and agent status

Place a call to VDN/Hunt Group. Verify that AlgoCC Client can receive incoming call:



Press **OK** to handle the call, verify the correct extension details are displayed:



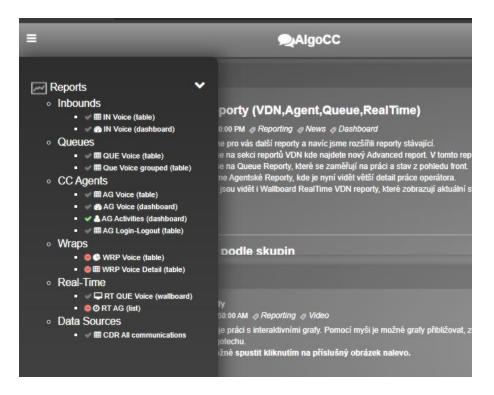
8.5.AlgoCC Reports

Admin can view report data from AlgoCC web portal. To access AlgoCC web portal, open web portal URL on browser: https://[Webportal FQDN]/AlgoCC/

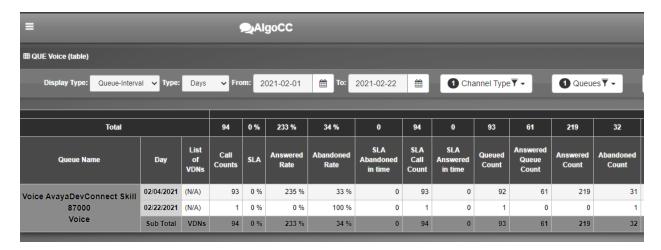
Login details provided by Algotech for report access.



To view reports, select tables, dashboards or wallboard from **Reports** menu on left. Example Select **Reports** \rightarrow **Queues** \rightarrow **QUE Voice** (table)



Select **Display Type**, **Type**, **From**, **To**, **Channel Type** and **Queues** to generate report and press **Generate** button to view report tables as show below:



9. Conclusion

These Application Notes describe the configuration steps required for the AlgoCC Solution to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services. All feature and serviceability test cases were completed with observations noted in **Section 2.2.**

10. Additional References

This section references the Avaya and Algotech product documentation that are relevant to these Application Notes.

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

- 1. Administering Avaya Aura® Communication Manager, Release 8.1.x, Issue 8, Nov 2020
- 2. Administering Avaya Aura® Session Manager, Release 8.1.x, Issue 8, Feb 2021
- 3. Administering Avaya Aura® System Manager, Release 8.1.x, Issue 9, Feb 2021
- 4. Administering Avaya Aura® Application Enablement Services, Release 8.1.x, Issue 9, Feb 2021

Product Documentation for Algotech AlgoCC can be requested from Algotech:

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