Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Aura Alliance Client for Skype for Business Deskphone Mode with Avaya Engagement Call Control Snap-in installed on Avaya Breeze™ – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Aura Alliance Client for Skype for Business application to interoperate with Avaya Engagement Call Control Snap-in installed on Avaya Breeze™.

In the compliance testing, Aura Alliance Client for Skype for Business application used HTTPS protocol to connect to Avaya Engagement Call Control service to get events and monitor a deskphone on Avaya Aura® Communication Manager.

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.

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1. Introduction

These Application Notes describe the configuration steps required for Aura Alliance Client for Skype for Business application to interoperate with Avaya Engagement Call Control Snap-in installed on Avaya Breeze™.

In the compliance testing, the Aura Alliance Client for Skype for Business is a windows-based application that received call events from Engagement Call Control service to monitor and control a deskphone on Avaya Aura® Communication Manager.

2. General Test Approach and Test Results

The feature test cases were performed manually.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to the workstation which Aura Alliance Client application was installed on and restarting the Engagement Call Control service.

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.

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2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying the following on Aura Alliance Client for Skype for Business:

- Monitor and receive call events such as answer incoming call, place outgoing call, put call on hold...etc.

The serviceability testing focused on verifying the ability of Aura Alliance Client for Skype for Business to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection from the workstation and restarting the AES server.

2.2. Test Results

All test cases were executed and passed successfully with the following observation.

- For an outbound call via PRI T1 trunk from the agent's deskphone to an external number, the Engagement Call Control snap-in does not get an **EstablishedEvent** from the AES when the external user answers the call. As a result, it was not able to pass this event to Aura Alliance Client for Skype for Business which led to the application not being able to control and monitor the call properly. This issue is being investigated by the Avaya development team.

2.3. Support

Support from Avaya is available by visiting the website http://support.avaya.com and a list of product documentation can be found in **Section 9** of these Application Notes. Technical support for the Aura Alliance Client product can be obtained as follows:

Aura Alliance Limited
Tel: +44 (0)20 3127 7761
http://www.auraalliance.com/global-support/

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3. Reference Configuration

Figure 1 illustrates a sample configuration consisting of System Manager, Session Manager, Communication Manager, and Avaya Media Server running on Virtualized Environment. The Avaya G450 Media Gateway registers to Communication Manager and has PRI/T1 trunk to PSTN. The Aura Alliance Client for Skype for Business is running on a Windows 10 PC.

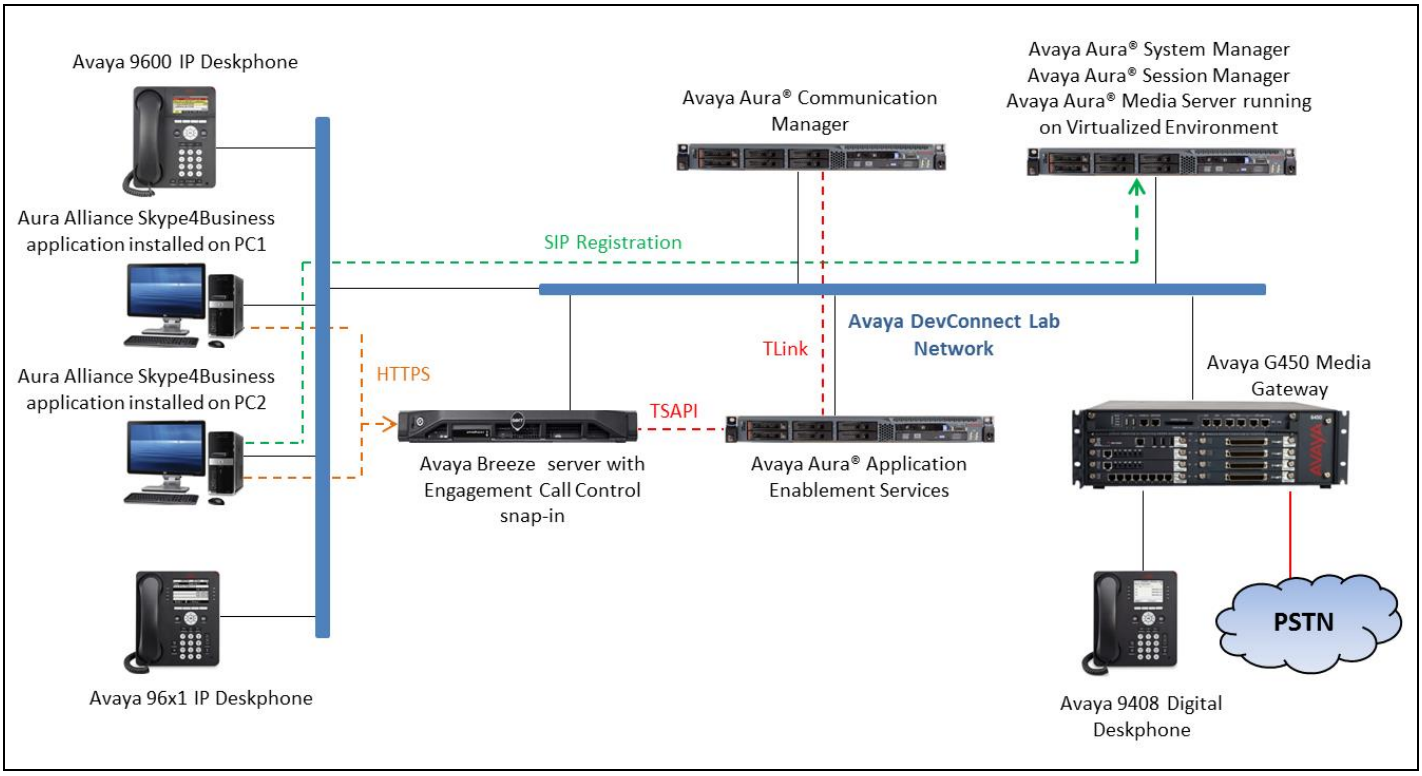

Figure 1: Compliance Testing Configuration

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4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Virtual Environment	R017x.00.0.441.0 7.0.1.1.0-FP1SP3
Avaya G450 Media Gateway	37.39.0
Avaya Aura® Media Server running on Virtual Environment	7.7.539
Avaya Aura® Application Enablement Services on Virtual Environment	7.0.1.0.3.15
Avaya Aura® System Manager running on Virtualized Environment	7.0.1.2
Avaya Aura® Session Manager running on Virtualized Environment	7.0.1.2
Avaya Breeze™ running on Virtualized Environment • Engagement Call Control Snap-in	3.2.0 3.2.0.1.320119
Avaya 9611G IP Deskphone (SIP)	Avaya one-X® Deskphone Release 7.0.1.2
Avaya 9641G IP Deskphone (H.323)	Avaya one-X® Deskphone Release 6.6.4
Aura Alliance Client for Skype for Business	3.2.51.1

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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 System Parameters Features
- Administer AE Services

5.1. Verify License

Log in to the System Access Terminal to verify that the Communication Manager license has appropriate 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 an appropriate license file.

```
display system-parameters customer-options                    Page   4 of  12
                                OPTIONAL FEATURES

    Abbreviated Dialing Enhanced List? y          Audible Message Waiting? y
        Access Security Gateway (ASG)? n              Authorization Codes? y
        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
                                  ARS? y  Computer Telephony Adjunct Links? y
                ARS/AAR Partitioning? y   Cvg Of Calls Redirected Off-net? y
          ARS/AAR Dialing without FAC? n                      DCS (Basic)? y
          ASAI Link Core Capabilities? n                DCS Call Coverage? y
          ASAI Link Plus Capabilities? n                DCS with Rerouting? y
```

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                                                Page   1 of   3
                                   CTI LINK
 CTI Link: 1
Extension: 3332
     Type: ADJ-IP
                                                                    COR: 1
     Name: AES70
```


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5.3. Administer System Parameters Features

Use the "change system-parameters features" command to enable **Create Universal Call ID (UCID)**, which is located on **Page 5**. For **UCID Network Node ID**, enter an available node ID.

```
change system-parameters features                              Page   5 of  19
                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS
  Endpoint:               Lines Per Page: 60

SYSTEM-WIDE PARAMETERS
                                    Switch Name:
           Emergency Extension Forwarding (min): 10
          Enable Inter-Gateway Alternate Routing? n
Enable Dial Plan Transparency in Survivable Mode? n
                              COR to Use for DPT: station
                EC500 Routing in Survivable Mode: dpt-then-ec500
MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:
      Delay Sending RELease (seconds): 0
SEND ALL CALLS OPTIONS
     Send All Calls Applies to: station    Auto Inspect on Send All Calls? n
              Preserve previous AUX Work button states after deactivation? n
UNIVERSAL CALL ID
     Create Universal Call ID (UCID)? y    UCID Network Node ID: 01
     Copy UCID for Station Conference/Transfer? y
```

Navigate to **Page 13**, and enable **Send UCID to ASAI**. This parameter allows for the universal call ID to be sent to ASAI and it will be used by the Engagement Call Control application.

```
change system-parameters features                              Page  13 of  20
                        FEATURE-RELATED SYSTEM PARAMETERS
 CALL CENTER MISCELLANEOUS
           Callr-info Display Timer (sec): 10
                       Clear Callr-info: next-call
        Allow Ringer-off with Auto-Answer? n

    Reporting for PC Non-Predictive Calls? n

            Agent/Caller Disconnect Tones? n
          Interruptible Aux Notification Timer (sec): 3
             Zip Tone Burst for Callmaster Endpoints: double

  ASAI
                    Copy ASAI UUI During Conference/Transfer? y
               Call Classification After Answer Supervision? y
                                         Send UCID to ASAI? y
                 For ASAI Send DTMF Tone to Call Originator? y
         Send Connect Event to ASAI For Announcement Answer? n
  Prefer H.323 Over SIP For Dual-Reg Station 3PCC Make Call? n
```


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5.4. Administer AE Services

To administer the transport link to AES, use the command "**change ip-services**". On Page 1, add an entry with the following values. Service Type should be selected as **AESVCS**, enter "y" under **Enabled**, "procr" for the **Local Node** and "8765" as the **Local Port**.

```
change ip-services                                          Page   1 of   4

                                    IP SERVICES
 Service      Enabled      Local        Local       Remote       Remote
  Type                     Node         Port        Node         Port
AESVCS         y       procr            8765
```

Go to **Page 4.** The password entered for the **Password** field must match the password on the AES server in the Switch Connection as specified in **Section 6.3**. The **AE Services Server** should match with the host name of the AES server. To obtain the host name of AES server, use the command "**uname –n**" in the Linux command prompt.

```
change ip-services                                          Page   4 of   4
                           AE Services Administration

   Server ID    AE Services       Password          Enabled    Status
                   Server
      1:       aes70             *                    y        in use
```


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6. Configure Avaya Aura® Application Enablement Services

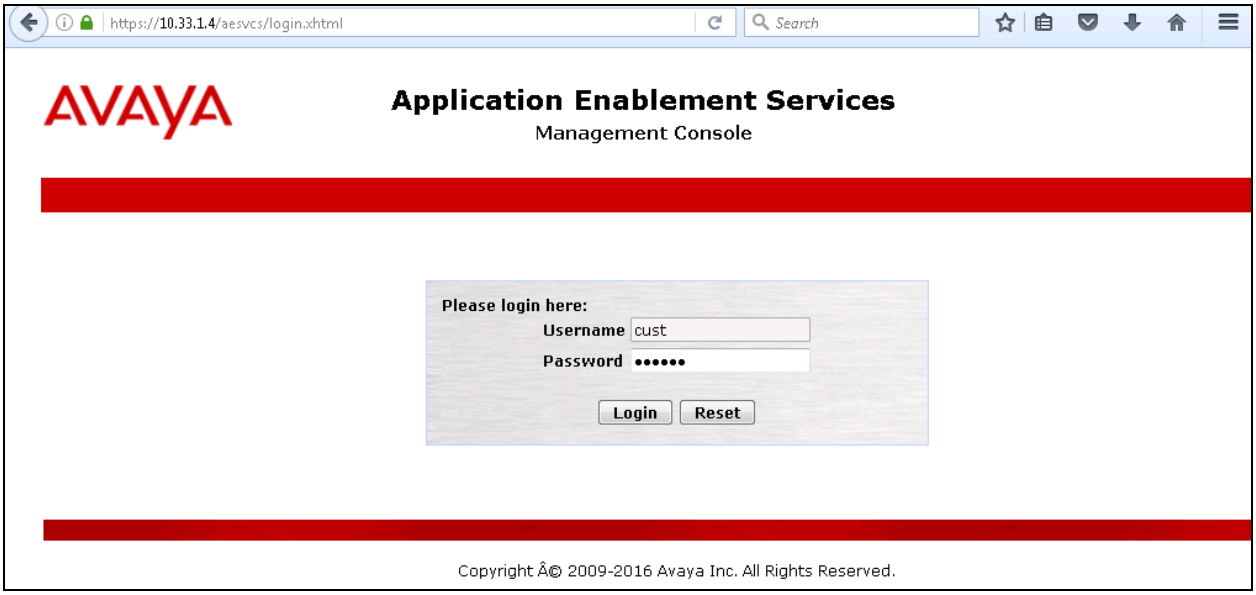
This section provides the procedures for configuring Application Enablement Services. The procedures include the following areas:

- Launch OAM interface
- Verify license
- Administer Switch Connection
- Administer TSAPI Link
- Administer CTI User
- Configure Security Database
- Administer Ports
- Restart Services

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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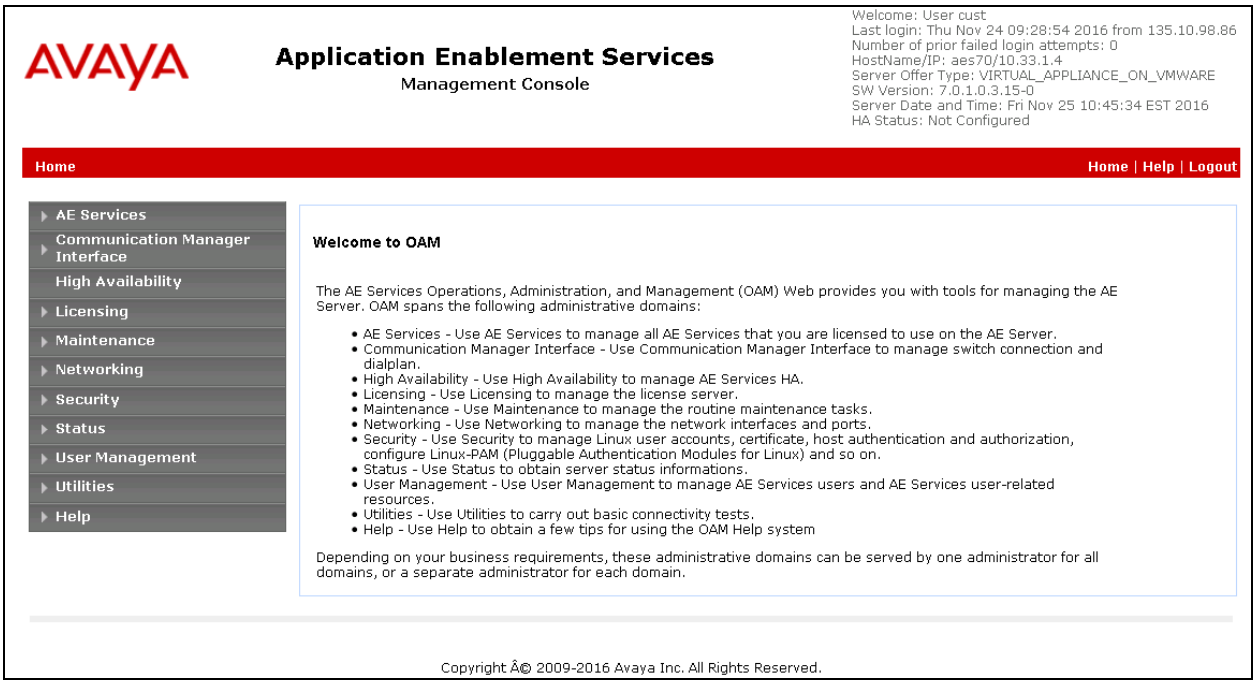
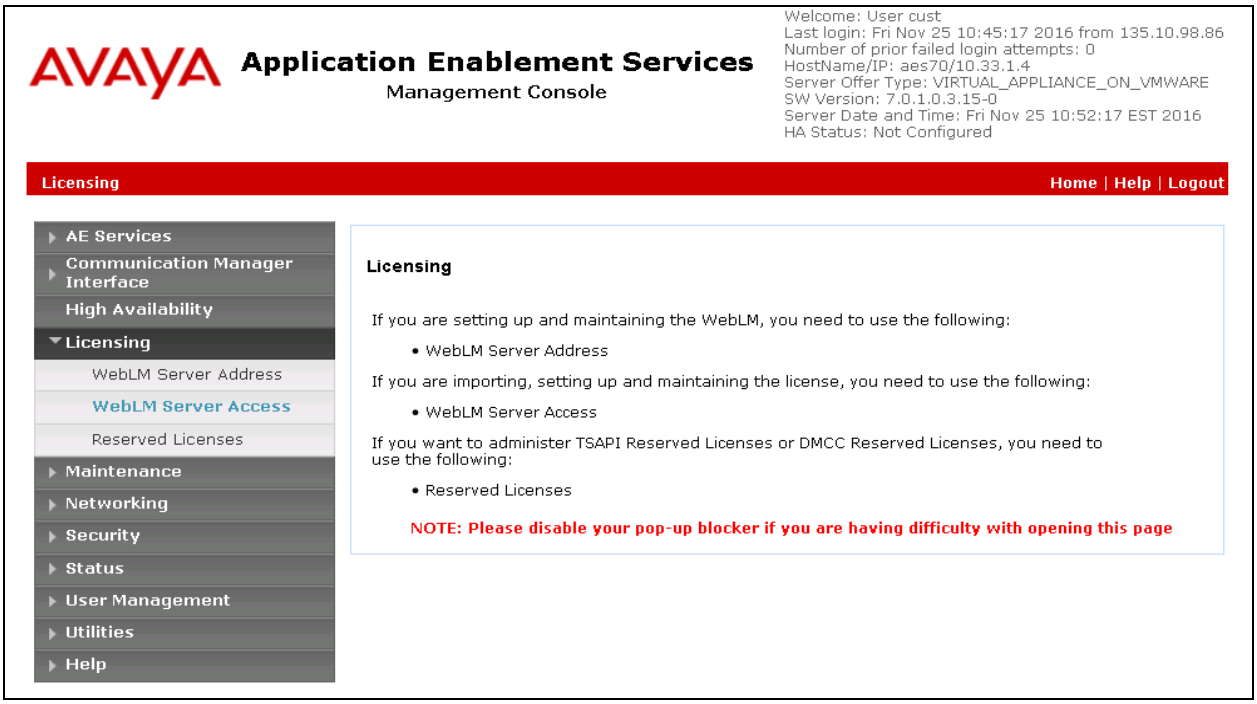
The **Welcome to OAM** screen is displayed next.



6.2. Verify License

Select **Licensing → WebLM Server Access** in the left pane to display the applicable WebLM server login screen (not shown). Log in using the appropriate credentials and navigate to display installed licenses (not shown).



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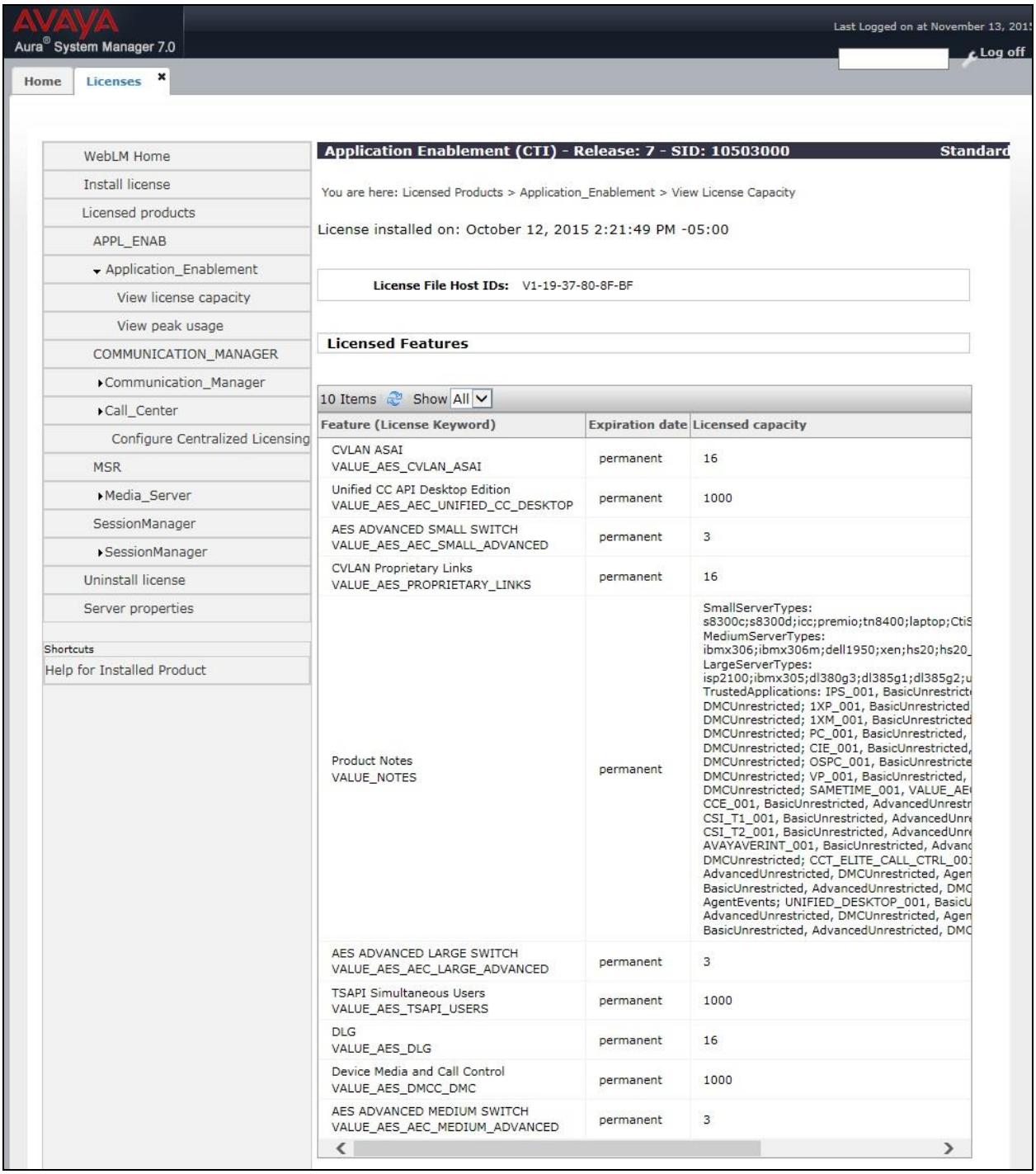
Select **Licensed products → APPL_ENAB → Application_Enablement** in the left pane to display the **Application Enablement (CTI)** screen in the right pane.

Verify that there are sufficient licenses for **TSAPI Simultaneous Users**, as shown below.



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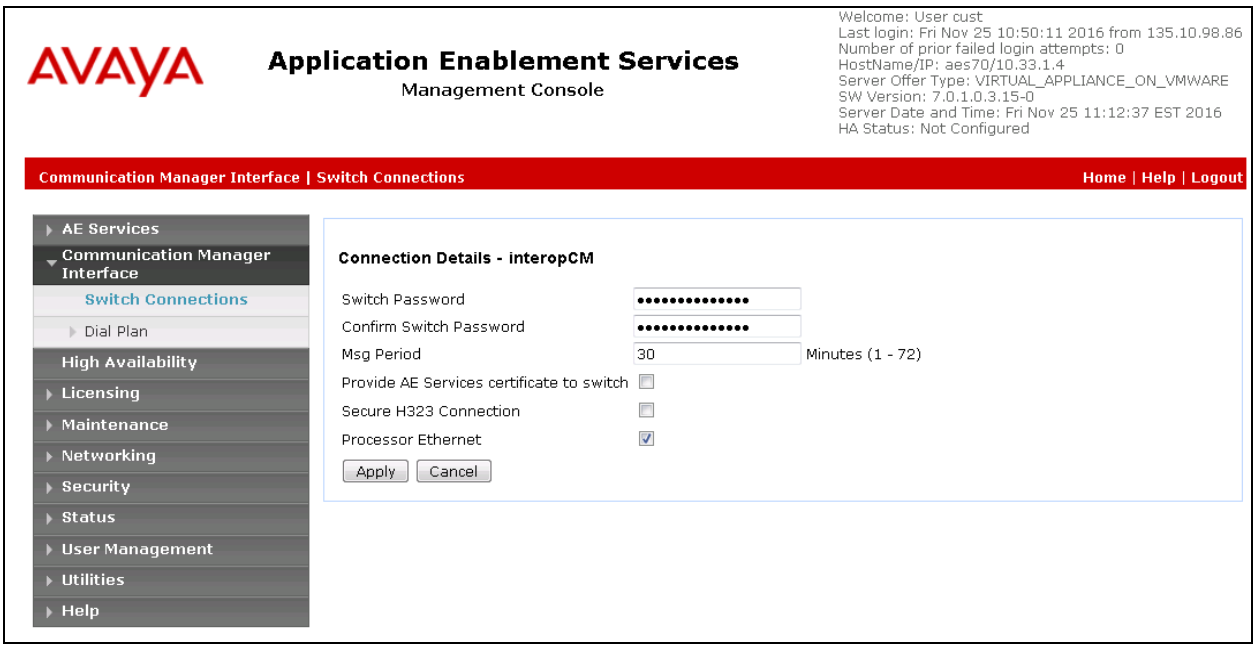
6.3. Administer Switch Connection

Select **Communication Manager Interface → Switch Connections** from the left pane of the **Management Console**, enter a name in **Switch Connection** box and click **Add** button (not shown). Enter the password as configured in **Section 5.4** in the **Switch Password** and **Confirm Switch Password** fields and select the **Processor Ethernet** checkbox if the Processor Ethernet is used in Communication Manager. Click **Apply** button to save the configuration.



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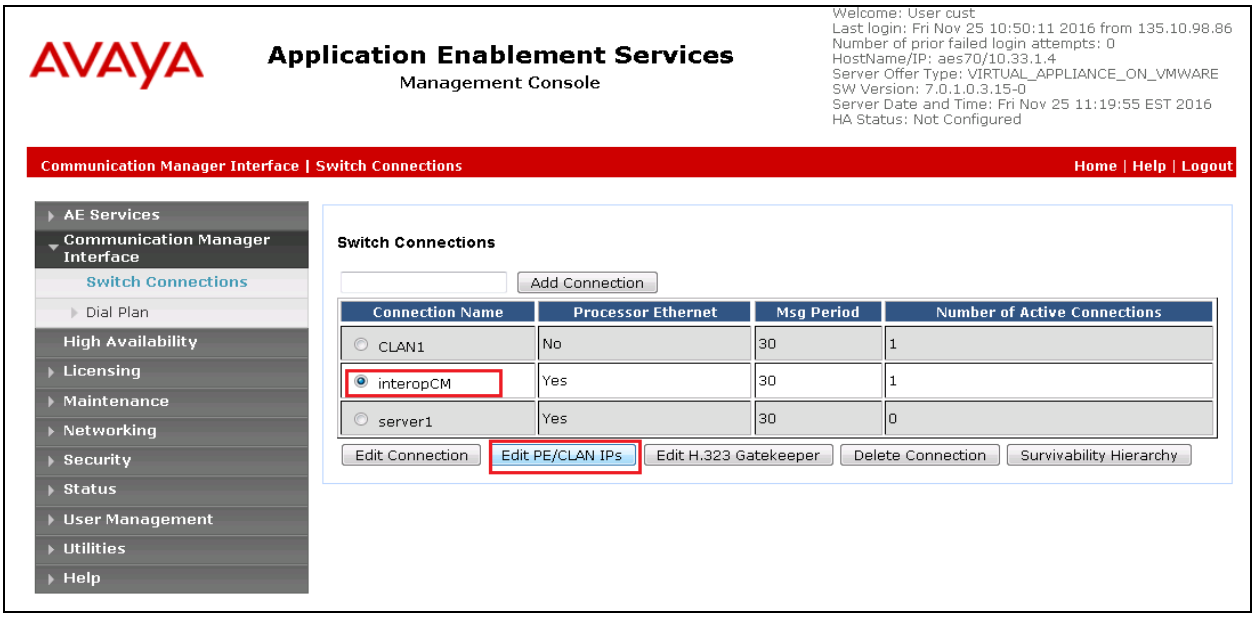
Select the **interopCM** switch connection that was added above, select **Edit PE/CLAN IPs** to add the IP address for the switch connection.



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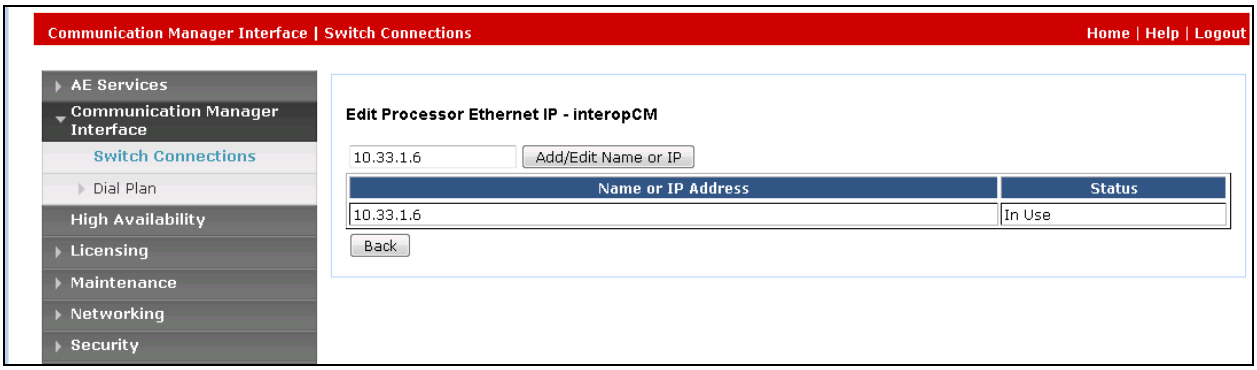
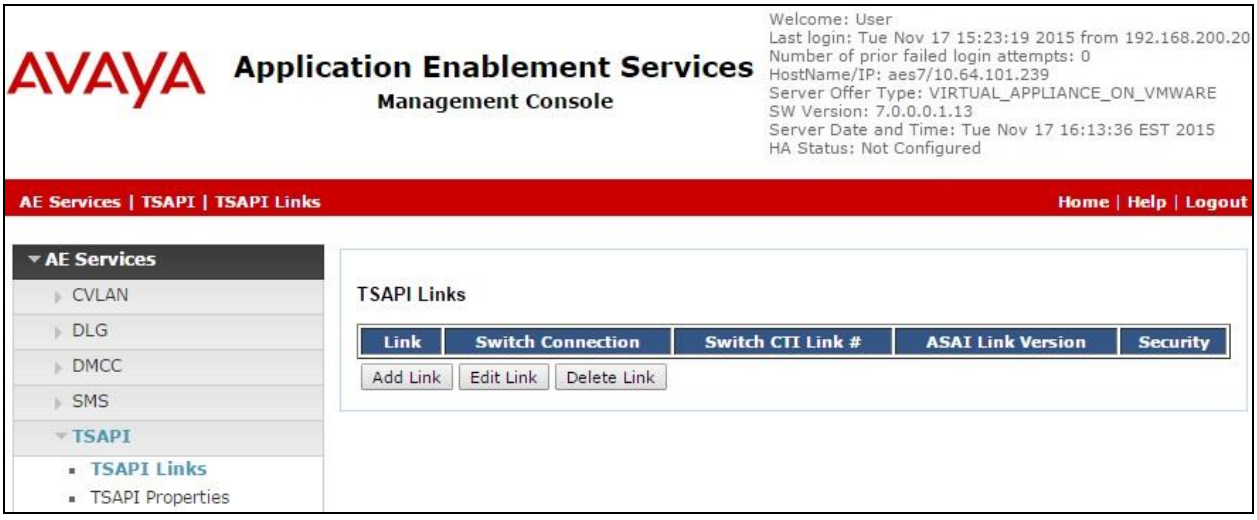
Enter the IP address of the Processor Ethernet of Communication Manager in the box and click the **Add/Edit Name of IP** button to add the IP.



Select **Edit H.323 Gatekeeper** button to add an IP address of the gatekeeper, the Gatekeeper IP address in this case is also the Processor Ethernet.

6.4. 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**.



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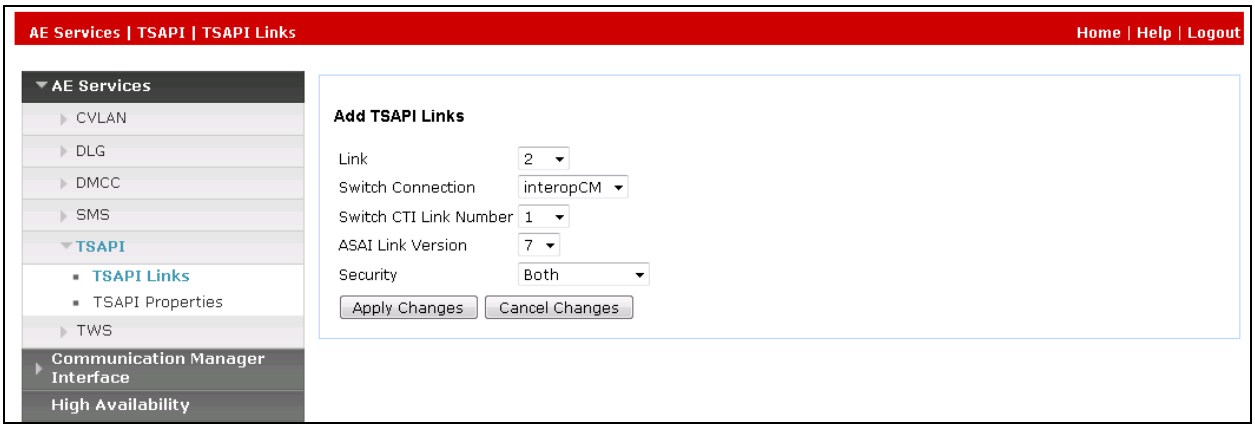
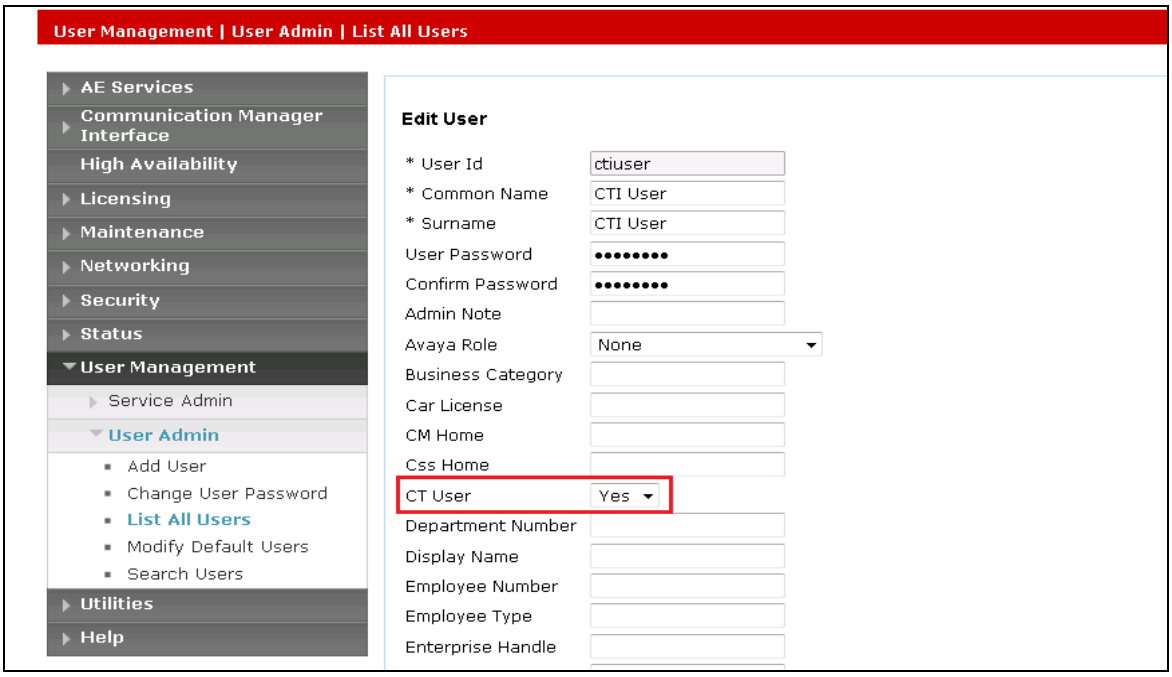
The **Add TSAPI Links** screen is displayed on the right side. The **Link** field is only local to the Application Enablement Services server, and may be set to any available number. For **Switch Connection**, select the relevant switch connection from the drop-down list. In this case, the existing switch connection "**interopCM**" ,which was added in the step above, is selected. For **Switch CTI Link Number**, select the CTI link number from **Section 5.2**. Select **Both** in the **Security** dropdown menu to support both unencrypted and encrypted TSAPI links. Retain the default values in the remaining fields.



6.5. Administer CTI User

Select **User Management → User Admin → Add User** from the left pane, to display the **Add User** screen in the right pane (the below screen displays the **Edit User** screen for an existing user). Enter the 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.



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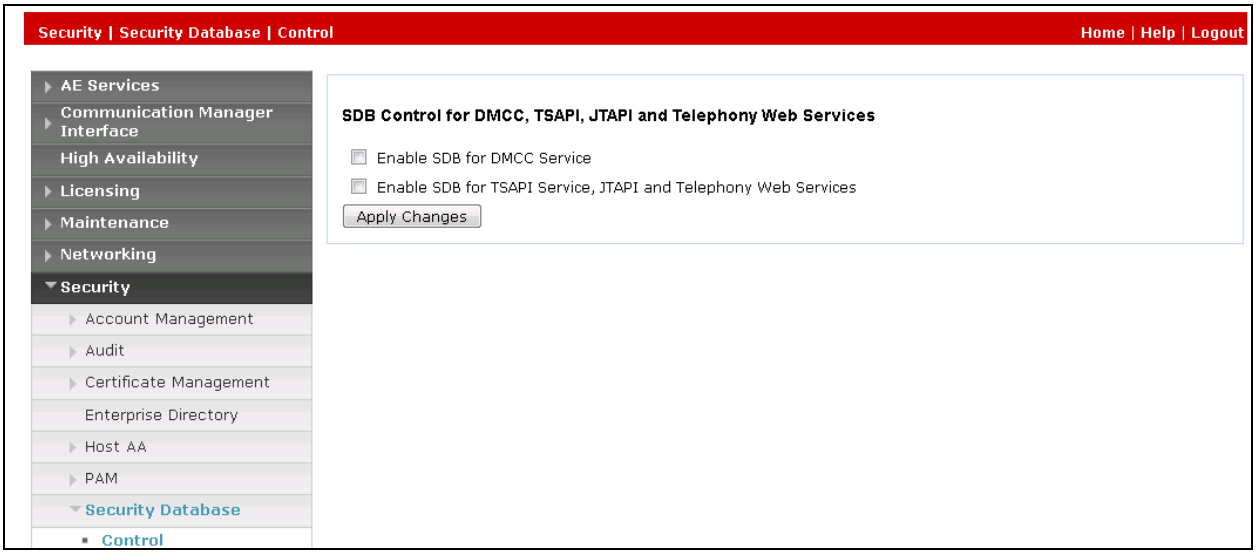
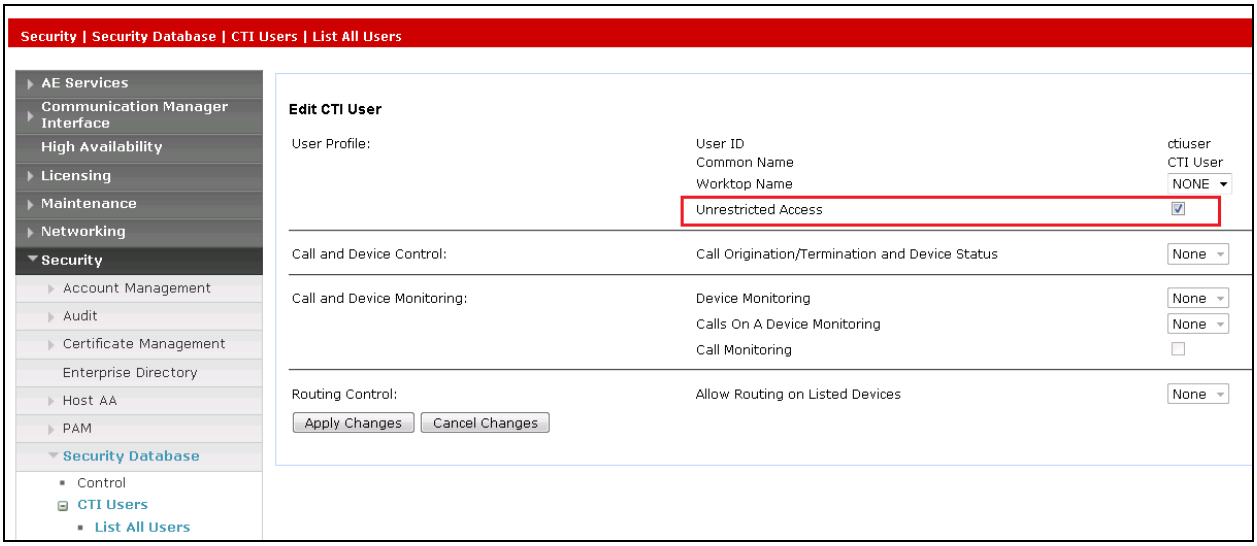
6.6. Configure Security Database

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.



Select **Security → Security Database → CTI Users → List All Users** and select the CTI user which is created in **Section 6.5** i.e., "ctiuser" and select the Edit button (not shown). In the **Edit CTI User** screen, select the check box **Unrestricted Access** and click **Apply Changes** to save the configuration.



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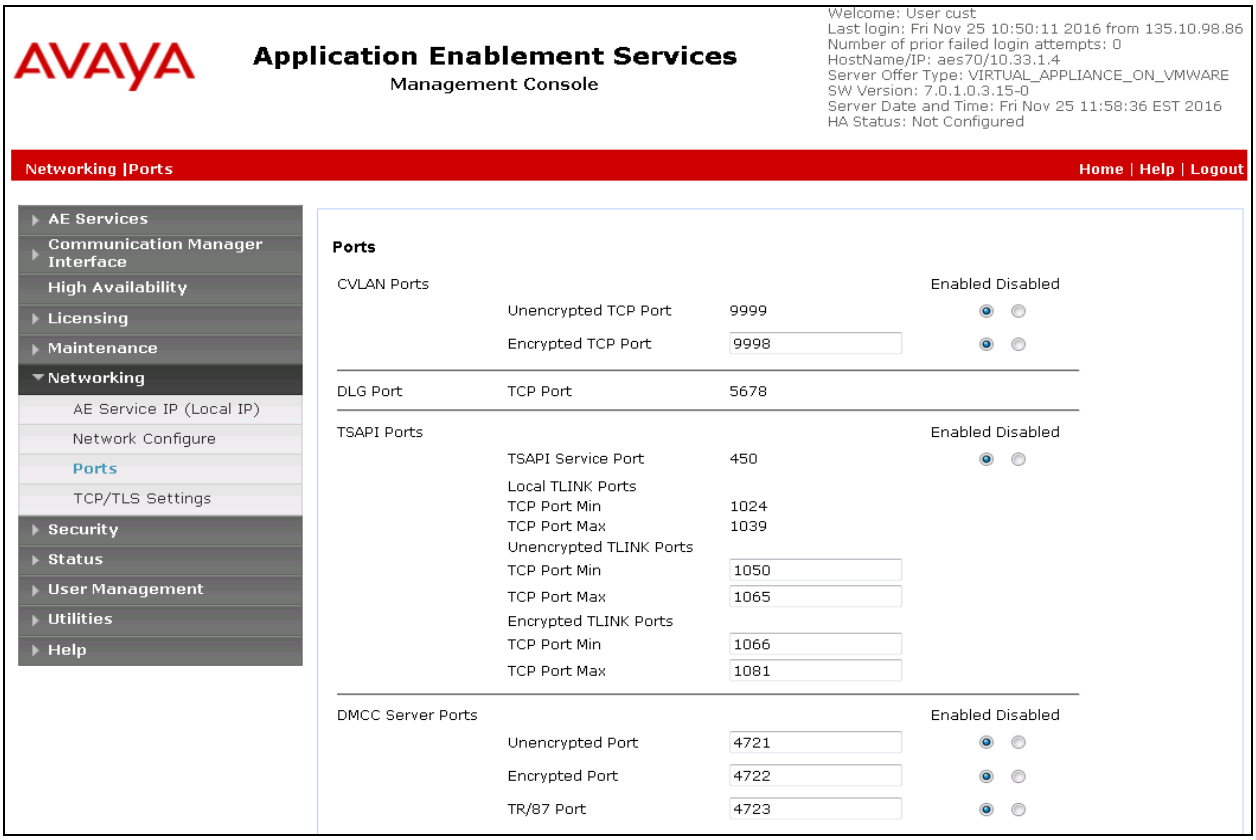
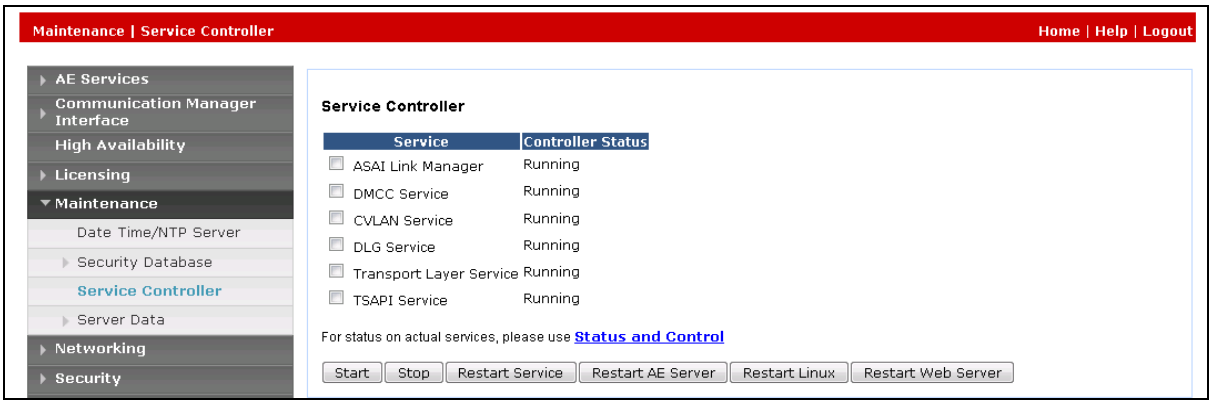
6.7. Administer Ports

Select **Networking → Ports** from the left pane, to display the **Ports** screen in the right pane. In the **TSAPI Ports** section select the **Enabled** radio button for **TSAPI Service Port 450** and in the **DMCC Server Ports** section select the **Enabled** radio button for **Unencrypted Port 4721** as shown below. Retain the default values in the remaining fields.



6.8. Restart Services

Select **Maintenance → Service Controller** from the left pane to display the **Service Controller** screen in the right pane. Click **Restart AE Server**.



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7. Configure Avaya Breeze™ and Engagement Call Control Service

This document assumes Avaya Breeze and Engagement Call Control snap-in are already in place and configured. The procedure for how to install and configure the Avaya Engagement Call Control snap-in on Avaya Breeze is referenced in **Section 11[2]**.

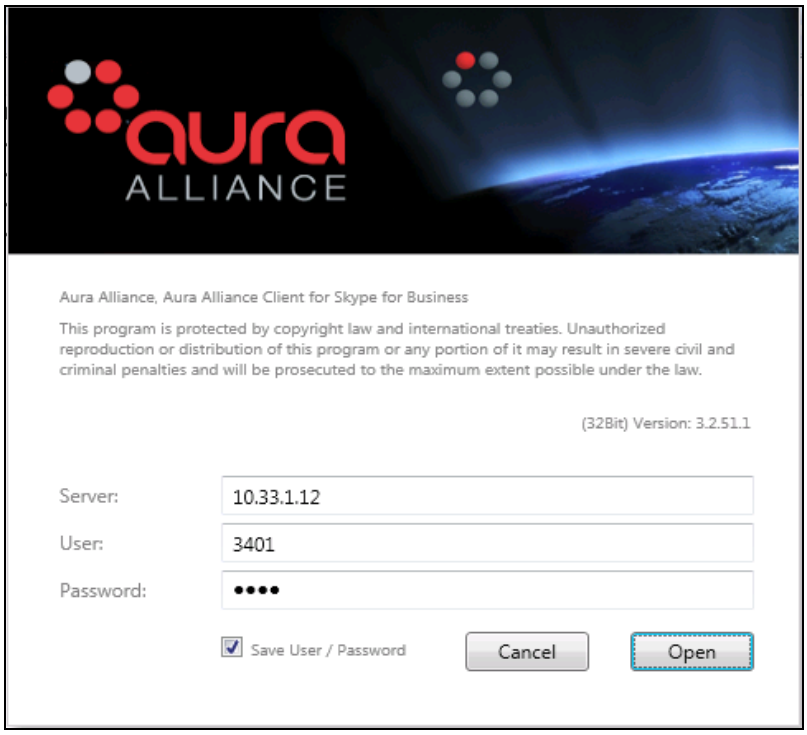
8. Configure Aura Alliance Client for Skype for Business

This section provides steps to configure the Aura Alliance Client application. During the compliance test, the installation and configuration of Aura Alliance Client application was performed by an Aura Alliance engineer. This section describes the initial and basic configuration of the Aura Alliance Client application.

From the PC where Aura Alliance Client for Skype for Business application is installed, run the application from the Start menu. Enter the signalling IP address of Session Manager in the **Server** field, the SIP user extension in the **User** field and the password if the SIP user extension in the **Password** field.

Note 1: Aura Alliance Client for Skype for Business has two modes: Softphone and Deskphone, the client requires the signalling IP address of Session Manager, a SIP user and its password to log in to the Softphone mode first then the user can switch to Deskphone mode.

Note 2: In order for the Aura Alliance Client for Skype for Business to control a SIP deskphone, ensure that the SIP deskphone has **Type of 3PCC Enabled** set to **Avaya** and uses the TLS protocol to register to Session Manager.



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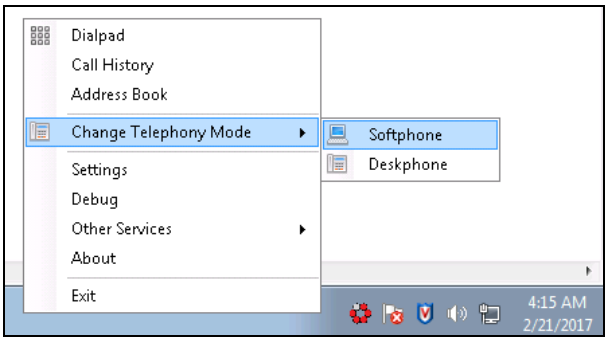
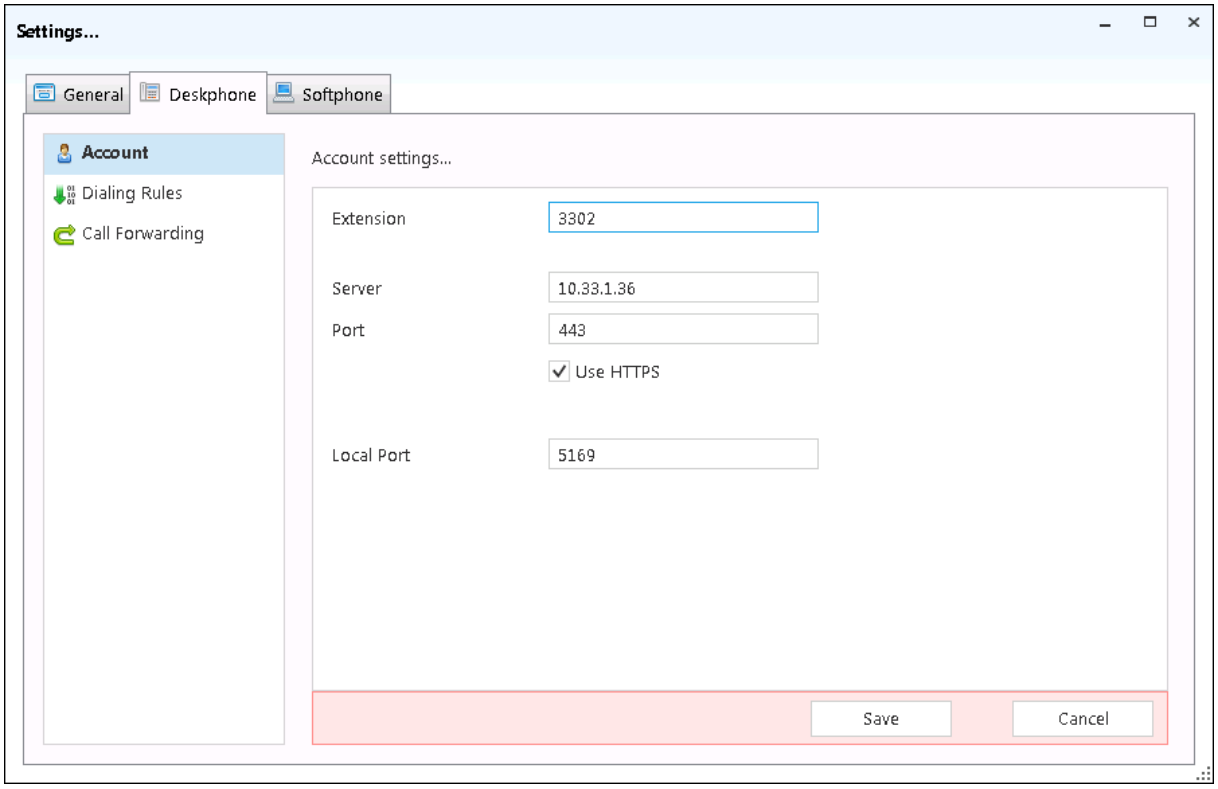
The Aura Alliance Client for Skype for Business application appears in the system tray, right click on the application and select the **Deskphone** mode.



Navigate to **Settings** from the context menu above and select the **Deskphone** tab. In the **Account settings** window enter an extension of a deskphone that the application wants to monitor and control, e.g. "3302". Enter the IP address of Engagement Call Control service in the **Server** field and keep the other fields at default. Click **Save** button to save changes.



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9. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Aura Alliance Client for Skype for Business and Avaya Engagement Call Control service on Avaya Breeze.

9.1. Verify Avaya Aura® Communication Manager

On Communication Manager, verify the status of the administered CTI link by using the "**status aesvcs 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      7        no     aes70            established    15        15
```

9.2. Verify Avaya Aura® Application Enablement Services

Verify the status of the **DMCC Services Summary** service by selecting **Status → Status and Control → DMCC Service Summary** from the left pane. The **DMCC Service Summary – Session Summary** screen is displayed.

Verify that the **Session ID** is associated with the CTI user "ctiuser" and the **Far-end Identifier** is being used by the Engagement Call Control service.

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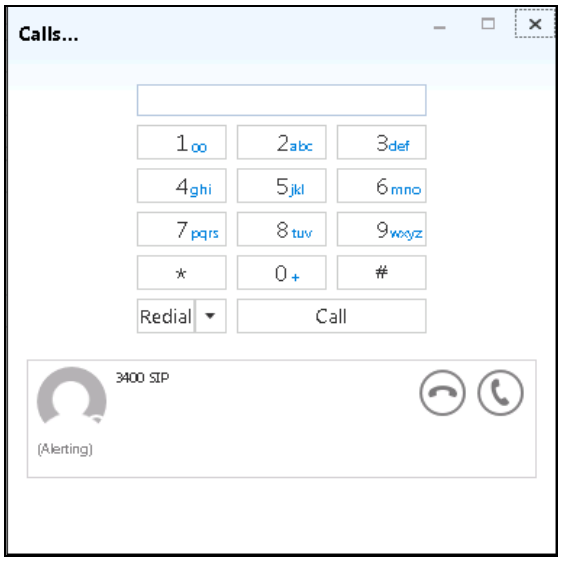
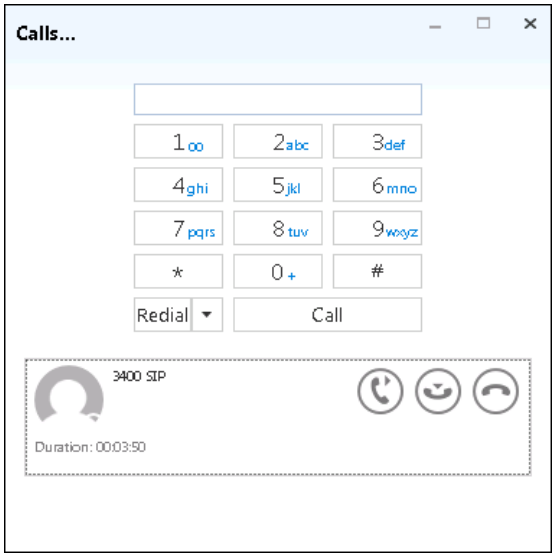
9.3. Verify Aura Alliance Client Skype for Business

Place a call to the extension of the deskphone that the Aura Alliance Client Skype for Business application monitors, e.g. 3302. The **Calls** window of the Skype for Business application will popup to alert an incoming call. Answer the incoming call on the deskphone by selecting the **Answer** button on the **Calls** window.



Verify call states on the deskphone and the **Calls** window of Skype for Business application are synchronized.



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10. Conclusion

These Application Notes describe the configuration steps required for Aura Alliance Client Skype for Business to successfully interoperate with Avaya Breeze™ via Engagement Call Control service. All feature and serviceability test cases were completed successfully with observations noted in **Section 2.2**.

11. Additional References

This section references the product documentation that is relevant to these Application Notes. Documentation for Avaya products may be obtained via http://support.avaya.com

[1] Administering Avaya Aura® Communication Manager, Release 7.0.3, Document 03-300509, Issue 10, June 2016.

[2] Avaya Engagement Call Control Snap-in Reference.

[3] Administering Avaya Breeze™, Release 3.2, Issue1, October 2016

[4] Avaya Aura® Application Enablement Services Administration and Maintenance Guide, Release 7.0, Document 02-300357, Jan 2016.

Documentation related to Aura Alliance may directly be obtained from Aura Alliance.

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