Avaya Solution & Interoperability Test Lab

Application Notes for Enghouse Interactive Communications Center 10.0 with Avaya Aura® Communication Manager 7.1 using Avaya Aura® Application Enablement Services 7.1 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Enghouse Interactive Communications Center 10.0 to interoperate with Avaya Aura® Communication Manager 7.1 using Avaya Aura® Application Enablement Services 7.1. Enghouse Interactive Communications Center is a multi-channel and multi-contact solution that can handle voice, fax, web, and email contacts.

The compliance testing focused on the voice integration with Avaya Aura® Communication Manager via the Avaya Aura® Application Enablement Services Telephony Services Application Programming Interface and Device, Media, and Call Control 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 Enghouse Interactive Communications Center (EICC) 10.0 to interoperate with Avaya Aura® Communication Manager 7.1 using Avaya Aura® Application Enablement Services 7.1. EICC is a multi-channel and multi-contact solution that can handle voice, fax, web, and email contacts.

The compliance testing focused on the voice integration with Communication Manager via the Application Enablement Services Telephony Services Application Programming Interface (TSAPI) and Device, Media, and Call Control (DMCC) interface.

In the compliance testing, agents and supervisors were configured as station users on Communication Manager, and have desktop computers running the Enghouse Interactive TouchPoint client application. The ACD functionality such as log in/out, work modes, queuing, and announcements were provided by EICC.

The TSAPI interface was used by EICC to monitor agent and supervisor station extensions, provide screen pops and call control from agent desktops, route incoming calls using adjunct routing capability, and support enable/disable of call forwarding and message waiting lamp using set value capability. In addition, TSAPI single step conference was used to support the supervisor monitor feature, which can be activated from the supervisor desktop running the TouchPoint application.

The DMCC interface was used by EICC to support voicemail, announcement, and basic call recording features via virtual IP softphones. The virtual IP softphones were registered by EICC with Communication Manager. Voicemail and announcement calls were redirected to available virtual IP softphones to terminate to EICC, and recording was accomplished by intruding a virtual IP softphone via TSAPI single step conference onto the active call to pick up media for recording.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the EICC application, the application automatically used TSAPI to query device name, requested device monitoring, and registered for VDN routing. The application also automatically used DMCC to register the virtual IP softphones.

For the manual part of the testing, incoming calls were made to the general routing VDNs. The EICC server used query results and event reports to track agent states, and specified calls to be routed to available agents or to call treatment VDNs. Manual call controls from the TouchPoint client application were exercised to verify call control features such as answering and transferring of calls.

Voicemail was tested by not answering call at the agent, and have the call covered to EICC with proper leaving of voice message and activation of agent message waiting lamp. Manual call was then made from the agent to the voicemail VDN to retrieve voice message and verify proper deactivation of message waiting lamp.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to the EICC server and clients.

The verification of tests included human checking of proper states at the telephones, and of capturing and analyzing the TSAPI and DMCC message traces from the EICC server.

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

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

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

For the testing associated with these Application Notes, the interface between Application Enablement Services and EICC did not include use of any specific encryption features as requested by Enghouse Interactive.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on EICC:

- Use of TSAPI query service to query device names.
- Use of TSAPI event report service to monitor agents, supervisor, and virtual IP softphones.
- Use of TSAPI routing service to route incoming calls.
- Use of TSAPI set value service to activate/deactivate call forwarding and message waiting lamp.
- Use of TSAPI call control service to support manual call control actions initiated from TouchPoint, call control for virtual IP softphones, and adding virtual IP softphones to existing calls for media capture.
- Use of DMCC registration service to register and un-register the virtual IP softphones.
- Proper handling of call scenarios involving screen pop, inbound, outbound, ACD, non-ACD, drop, hold/reconnect, voicemail, message waiting lamp, blind/attended transfer, attended conference, call forwarding, supervisor monitor, multiple agents, multiple calls, queuing, send DTMF, long duration, and recording of basic calls.

The serviceability testing focused on verifying the ability of EICC to recover from adverse conditions, such as disconnecting/reconnecting Ethernet connection to EICC server and clients.

2.2. Test Results

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

- EICC created one DMCC version per virtual IP softphone by design.
- For the attended conference scenario, after the PSTN drops, one of the remaining agent's Phone Calls section reflected his/her name instead of name of the other agent.

2.3. Support

Technical support on EICC can be obtained through the following:

- **Phone:** (800) 513-2810
- **Web:** www.enghouseinteractive.com
- **Email:** usa.support@enghouse.com

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.

The devices used in the compliance testing are shown in the table below. In the compliance testing, the agent and supervisor station extensions were monitored by EICC.

Device Type	Device Number/Extension
Agent stations	65001, 65002
Supervisor & failure covering station	65000

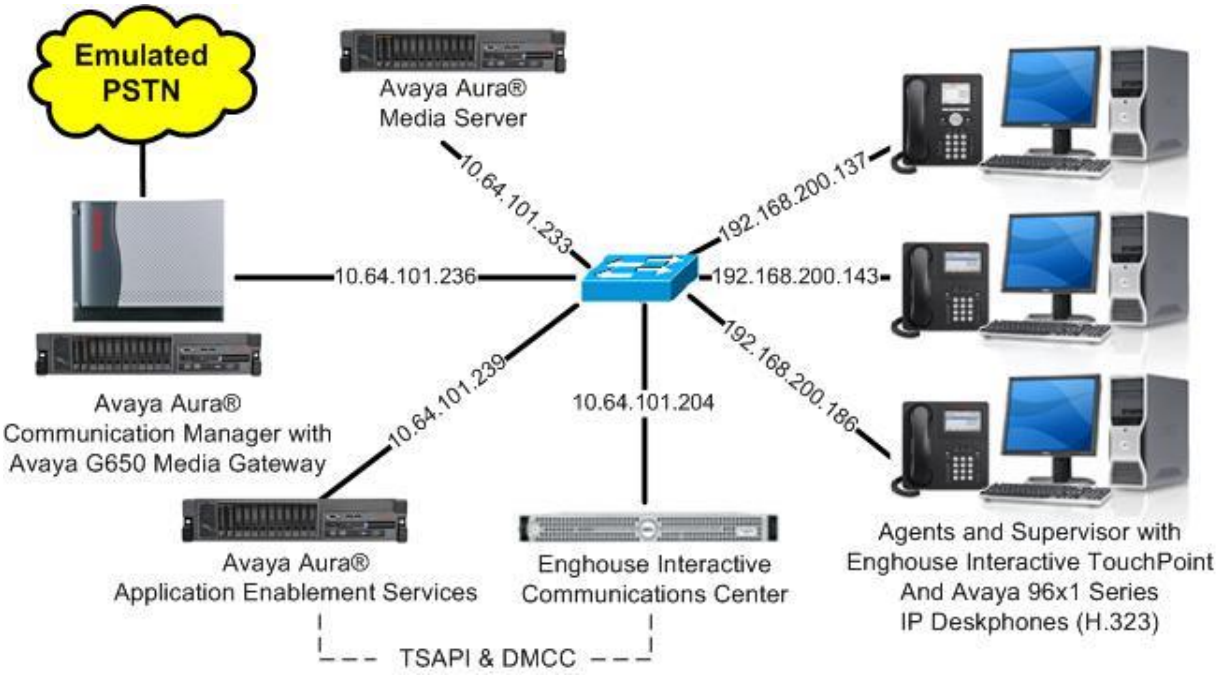


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager in Virtual Environment	7.1.1 (7.1.1.0.0.532.23985)
Avaya G650 Media Gateway	NA
Avaya Aura® Media Server in Virtual Environment	7.8.0.333
Avaya Aura® Application Enablement Services in Virtual Environment	7.1.1 (7.1.1.0.0.5-0)
Avaya 9608G & 9641G IP Deskphone (H.323)	6.6506
Enghouse Interactive Communications Center on Windows Server 2012 R2 • Avaya TSAPI Windows Client (csta32.dll) • Avaya DMCC XML	10.0.0.14152 Standard 7.1.1.36 4.2
Enghouse Interactive TouchPoint on Windows 10 Pro	10.0.0.14152

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 vectors and VDNs
- Administer voicemail coverage path
- Administer agents and supervisors
- Administer virtual IP softphones

5.1. Verify License

Log in to 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                    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? y                       DCS (Basic)? y
          ASAI Link Core Capabilities? y                 DCS Call Coverage? y
          ASAI Link Plus Capabilities? y                DCS with Rerouting? y
```

Navigate to **Page 7**, and verify that the **Vectoring (Basic)** customer option is set to "y".

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

                           Call Center Release: 7.0

                                ACD? y                          Reason Codes? y
                      BCMS (Basic)? y              Service Level Maximizer? n
        BCMS/VuStats Service Level? y             Service Observing (Basic)? y
  BSR Local Treatment for IP & ISDN? y     Service Observing (Remote/By FAC)? y
                  Business Advocate? n              Service Observing (VDNs)? y
                    Call Work Codes? y                          Timed ACW? y
      DTMF Feedback Signals For VRU? y                  Vectoring (Basic)? y
                  Dynamic Advocate? n                Vectoring (Prompting)? y
       Expert Agent Selection (EAS)? y             Vectoring (G3V4 Enhanced)? y
                             EAS-PHD? y              Vectoring (3.0 Enhanced)? y
```

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: 60111
     Type: ADJ-IP
                                                                    COR: 1
     Name: AES CTI Link
```

5.3. Administer Vectors and VDNs

Administer a set of vectors and VDNs per EICC installation document [3]. These vectors and VDNs provide general routing and different call treatments to incoming calls. The vectors and VDNs that were used for the compliance testing are shown below.

VDN	Vector	Purpose
67701	701	Ring treatment
67702	702	Music treatment
67703	703	Busy treatment
67704	704	Failure coverage
67705	705	Voicemail routing
67706	700	General routing for the Sales application
67707	700	General routing for the Support application
67708	708	Hold treatment

5.3.1. Failure Coverage

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide failure coverage and routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** and **route-to number** may vary, and that the **route-to number** is used as the covering point in case of failure from the adjunct routing step.

In the compliance testing, the supervisor extension from **Section 3** was used as the covering point. As shown below, use "SC Fail" as the vector **Name**, with the wait treatment and remaining vector steps as specified in the EICC installation document [3].

```
change vector 704                                          Page   1 of   6
                                  CALL VECTOR

    Number: 704              Name: SC Fail
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 adjunct      routing link 1
02 wait-time    5   secs hearing silence
03 route-to     number 65000            with cov n if unconditionally
04 stop
05
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- **Name:** "SC Fail"
- **Destination:** "Vector Number"
- **Vector Number:** The "SC Fail" vector number from above.

```
add vdn 67704                                              Page   1 of   3
                           VECTOR DIRECTORY NUMBER

                             Extension: 67704
                                 Name*: SC Fail
                           Destination: Vector Number        704
```

5.3.2. General Routing

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide general routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** and **route-to number** may vary, and that the **route-to number** is used as the covering point in case of failure from the adjunct routing step, and set to the failure coverage VDN from **Section 5.3.1**.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 700                                          Page   1 of   6
                                CALL VECTOR

    Number: 700              Name: EICC User Q
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 adjunct      routing link 1
02 wait-time    2   secs hearing silence
03 route-to     number 67704            with cov y if unconditionally
04 stop
05
```

For each incoming call application, add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above. For the compliance testing, two VDNs were added, as shown below.

- **Name:** A descriptive name.
- **Destination:** "Vector Number"
- **Vector Number:** The "EICC User Q" vector number from above.

```
add vdn 67706                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67706
                                 Name: EICC Sales
                          Destination: Vector Number        700
```

```
add vdn 67707                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67707
                                 Name: EICC Support
                          Destination: Vector Number        700
```

5.3.3. Ring Treatment

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide ring treatment and routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** and **route-to number** may vary, and that the **route-to number** is used as the covering point in case of failure from the adjunct routing step, and set to the failure coverage VDN from **Section 5.3.1**.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 701                                          Page   1 of   6
                                  CALL VECTOR

    Number: 701              Name: SC Ring
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 adjunct      routing link 1
02 wait-time    60  secs hearing ringback
03 route-to     number 67704            with cov n if unconditionally
04 stop
05
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- **Name:** "SC Ring"
- **Destination:** "Vector Number"
- **Vector Number:** The "SC Ring" vector number from above.

```
add vdn 67701                                          Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67701
                                 Name: SC Ring
                          Destination: Vector Number        701
```

5.3.4. Music Treatment

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide music treatment and routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** and **route-to number** may vary, and that the **route-to number** is used as the covering point in case of failure from the adjunct routing step, and set to the failure coverage VDN from **Section 5.3.1**.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 702                                          Page   1 of   6
                                 CALL VECTOR

    Number: 702              Name: SC Music
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 adjunct      routing link 1
02 wait-time    60  secs hearing music
03 route-to     number 67704            with cov n if unconditionally
04 stop
05
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- **Name:** "SC Music"
- **Destination:** "Vector Number"
- **Vector Number:** The "SC Music" vector number from above.

```
add vdn 67702                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67702
                                 Name: SC Music
                          Destination: Vector Number        702
```

5.3.5. Busy Treatment

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide busy treatment and routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** may vary.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 703                                          Page   1 of   6
                                CALL VECTOR

    Number: 703              Name: SC Busy
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 adjunct      routing link 1
02 busy
03
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- **Name:** "SC Busy"
- **Destination:** "Vector Number"
- **Vector Number:** The "SC Busy" vector number from above.

```
add vdn 67703                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67703
                                 Name: SC Busy
                          Destination: Vector Number        703
```

5.3.6. Voicemail Routing

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide voicemail routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** may vary.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 705                                          Page   1 of   6
                                CALL VECTOR

    Number: 705              Name: SC Voicemail
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 adjunct      routing link 1
02 wait-time    120 secs hearing ringback
03 stop
04
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- **Name:** "SC Voicemail"
- **Destination:** "Vector Number"
- **Vector Number:** The "SC Voicemail" vector number from above.

```
add vdn 67705                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67705
                                 Name: SC Voicemail
                          Destination: Vector Number        705
```

5.3.7. Hold Treatment

Modify a vector using the "change vector n" command, where "n" is an available vector number. This vector will provide hold treatment and routing to the CTI link defined in **Section 5.2**. Note that the vector **Number** and **route-to number** may vary, and that the **route-to number** is used as the covering point in case of failure from the adjunct routing step, and set to the failure coverage VDN from **Section 5.3.1**.

Enter a descriptive name for the vector **Name** field, and configure the remaining vector steps as specified in [3].

```
change vector 708                                          Page   1 of   6
                                  CALL VECTOR

    Number: 708              Name: SC Hold
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 adjunct      routing link 1
02 wait-time    60  secs hearing music
03 route-to     number 67704            with cov n if unconditionally
04 stop
05
```

Add a VDN using the "add vdn n" command, where "n" is an available extension. Associate this VDN with the newly added vector from above.

- Name: "SC Hold"
- Destination: "Vector Number"
- Vector Number: The "SC Hold" vector number from above.

```
add vdn 67708                                              Page   1 of   2
                          VECTOR DIRECTORY NUMBER

                            Extension: 67708
                                 Name: SC Hold
                          Destination: Vector Number        708
```

5.4. Administer Voicemail Coverage Path

Add a coverage path using the "add coverage path n" command, where "n" is an available coverage path number.

For the **Point1** field, enter "v67705" to designate as the first coverage point, where "67705" is the voicemail VDN extension from **Section 5.3.6**.

```
add coverage path 7                                          Page   1 of   1
                                COVERAGE PATH

                  Coverage Path Number: 7
     Cvg Enabled for VDN Route-To Party? n        Hunt after Coverage? n
                       Next Path Number:          Linkage

COVERAGE CRITERIA
    Station/Group Status    Inside Call     Outside Call
              Active?             n              n
                Busy?             y              y
       Don't Answer?              y              y         Number of Rings: 2
                 All?             n              n
 DND/SAC/Goto Cover?              y              y
   Holiday Coverage?              n              n


COVERAGE POINTS
    Terminate to Coverage Pts. with Bridged Appearances? n
  Point1: v67705          Rng:    Point2:
  Point3:                         Point4:
  Point5:                         Point6:
```

5.5. Administer Agents and Supervisors

Use the "change station n" command, where "n" is first existing agent station extension from **Section 3**. In the **Coverage Path 1** field, enter the voicemail coverage path number from **Section 5.4**.

```
change station 65001                                          Page   1 of   5
                                    STATION

Extension: 65001                        Lock Messages? n               BCC: 0
     Type: 9611                         Security Code: *                TN: 1
     Port: S00102                     Coverage Path 1: 7               COR: 1
     Name: CM7 Station 1              Coverage Path 2:                 COS: 1
                                      Hunt-to Station:               Tests? y
STATION OPTIONS
                Location: 1               Time of Day Lock Table:
             Loss Group: 19         Personalized Ringing Pattern: 1
                                              Message Lamp Ext: 65001
           Speakerphone: 2-way             Mute Button Enabled? y
        Display Language: english                Button Modules: 0
 Survivable GK Node Name:
          Survivable COR: internal             Media Complex Ext:
   Survivable Trunk Dest? y                         IP SoftPhone? n

                                           IP Video Softphone? n
                             Short/Prefixed Registration Allowed: default
```

Repeat this section for all agents and supervisors. In the compliance testing, two agents and one supervisor were configured as shown below.

```
list station 65000 count 3

                                  STATIONS

Ext/          Port/   Name/                        Room/        Cv1/ COR/   Cable/
 Hunt-to       Type      Surv GK NN        Move     Data Ext     Cv2  COS TN Jack

65000         S00002  CM Supervisor                            7    1
               9641                        no                       1   1
65001         S00102  CM Station 1                             7    1
               9611                        no                       1   1
65002         S00118  CM Station 2                             7    1
               9641                        no                       1   1
```

5.6. Administer Virtual IP Softphones

Add a virtual softphone using the "add station n" command, where "n" is an available extension number. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Type:** "4624"
- **Name:** A descriptive name.
- **Security Code:** A desired value.
- **IP SoftPhone:** "y"

```
add station 67791                                          Page   1 of   6
                                    STATION

Extension: 67791                        Lock Messages? n               BCC: 0
     Type: 4624                         Security Code: 123456           TN: 1
     Port: IP                         Coverage Path 1:                 COR: 1
     Name: EICC Virtual #1            Coverage Path 2:                 COS: 1
                                      Hunt-to Station:               Tests? y
STATION OPTIONS
               Location:                    Time of Day Lock Table:
            Loss Group: 19          Personalized Ringing Pattern: 1
                                              Message Lamp Ext: 67791
          Speakerphone: 2-way               Mute Button Enabled? y
       Display Language: english
 Survivable GK Node Name:
         Survivable COR: internal              Media Complex Ext:
   Survivable Trunk Dest? y                         IP SoftPhone? y

                                           IP Video Softphone? n
                             Short/Prefixed Registration Allowed: default
```

Repeat this section to administer the desired number of virtual IP softphones using sequential extension numbers and same security code value. In the compliance testing, two virtual IP softphones were administered as shown below.

```
list station 67791 count 2

                                  STATIONS

Ext/          Port/   Name/                        Room/        Cv1/ COR/   Cable/
 Hunt-to       Type      Surv GK NN        Move     Data Ext     Cv2  COS TN Jack

67791         S00027  EICC Virtual #1                              1
               4624                        no                     1   1
67792         S00030  EICC Virtual #2                              1
               4624                        no                     1   1
```

6. Configure Avaya Aura® Application Enablement Services

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

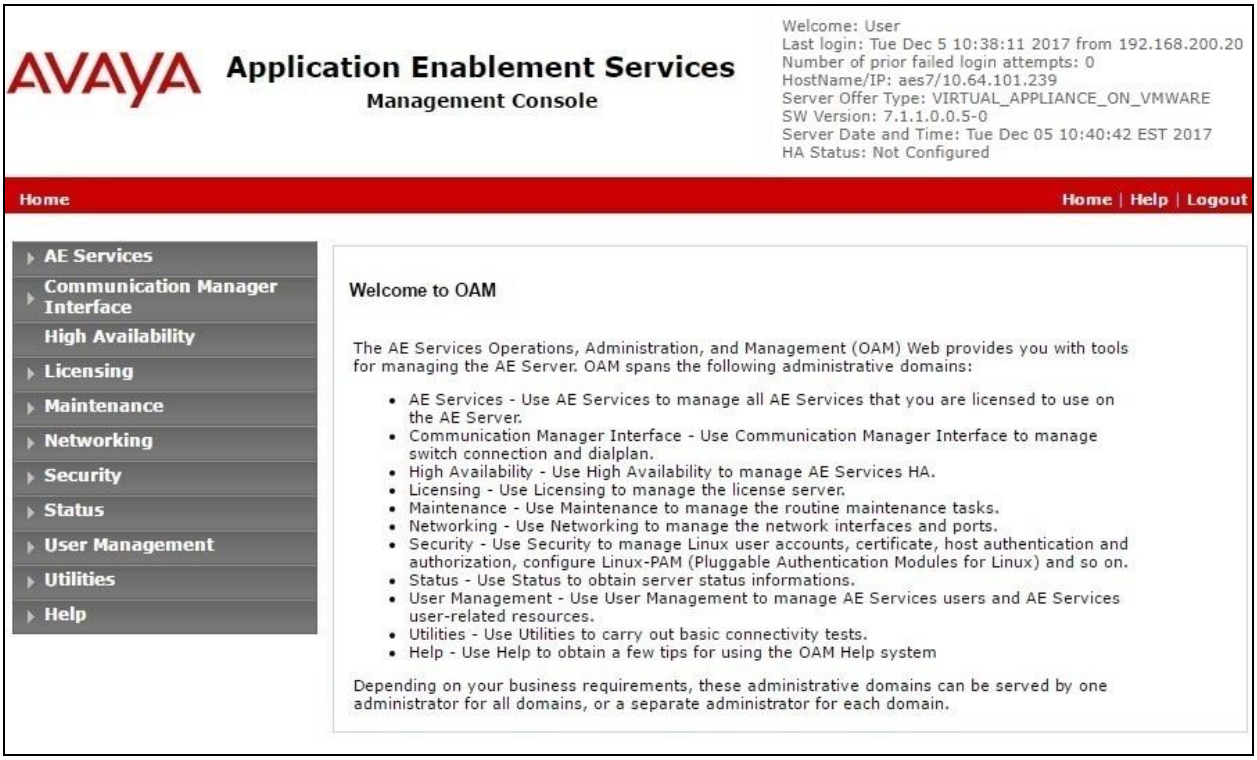
- Launch OAM interface
- Verify license
- Administer TSAPI link
- Administer H.323 gatekeeper
- Administer EICC user
- Administer security database
- Administer ports
- Administer TCP settings
- Restart services
- Obtain Tlink name

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.

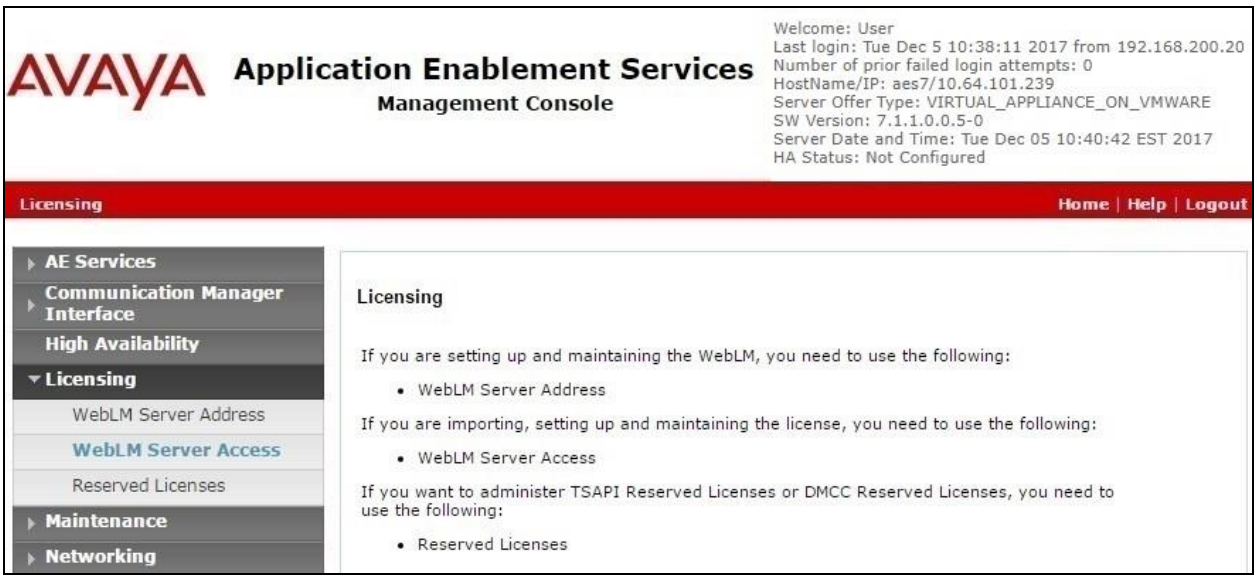
The **Please login here** screen is displayed. Log in using the appropriate credentials.

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



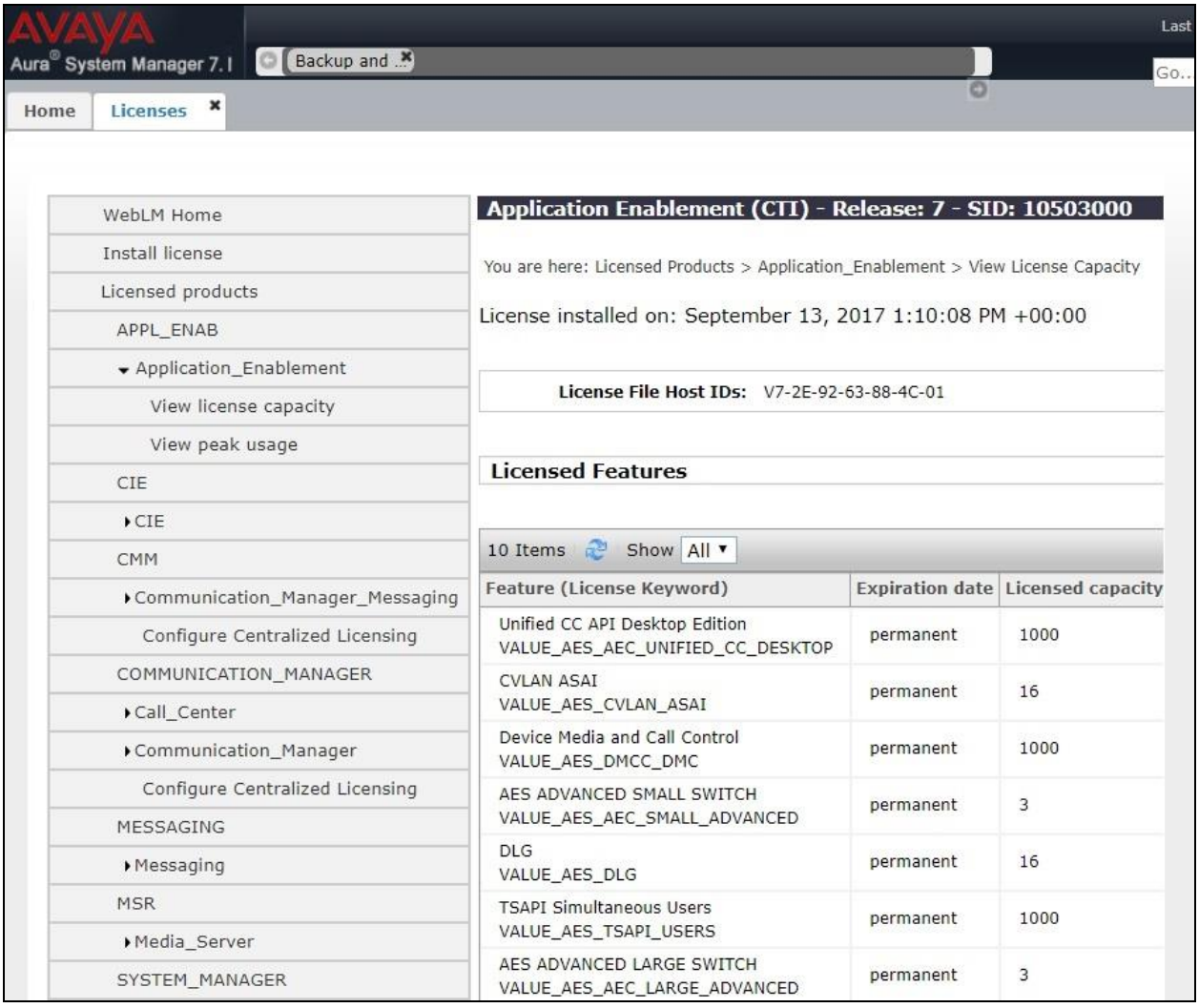
6.2. Verify License

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



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** and **Device Media and Call Control**, as shown below. The TSAPI license is used for device monitoring and the DMCC license is used for the virtual IP softphones. Also verify that there is an applicable advanced switch license, in this case **AES ADVANCED LARGE SWITCH**, which is needed for adjunct routing.



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 "cm7" 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 H.323 Gatekeeper

Select **Communication Manager Interface → Switch Connections** from the left pane. The **Switch Connections** screen shows a listing of the existing switch connections.

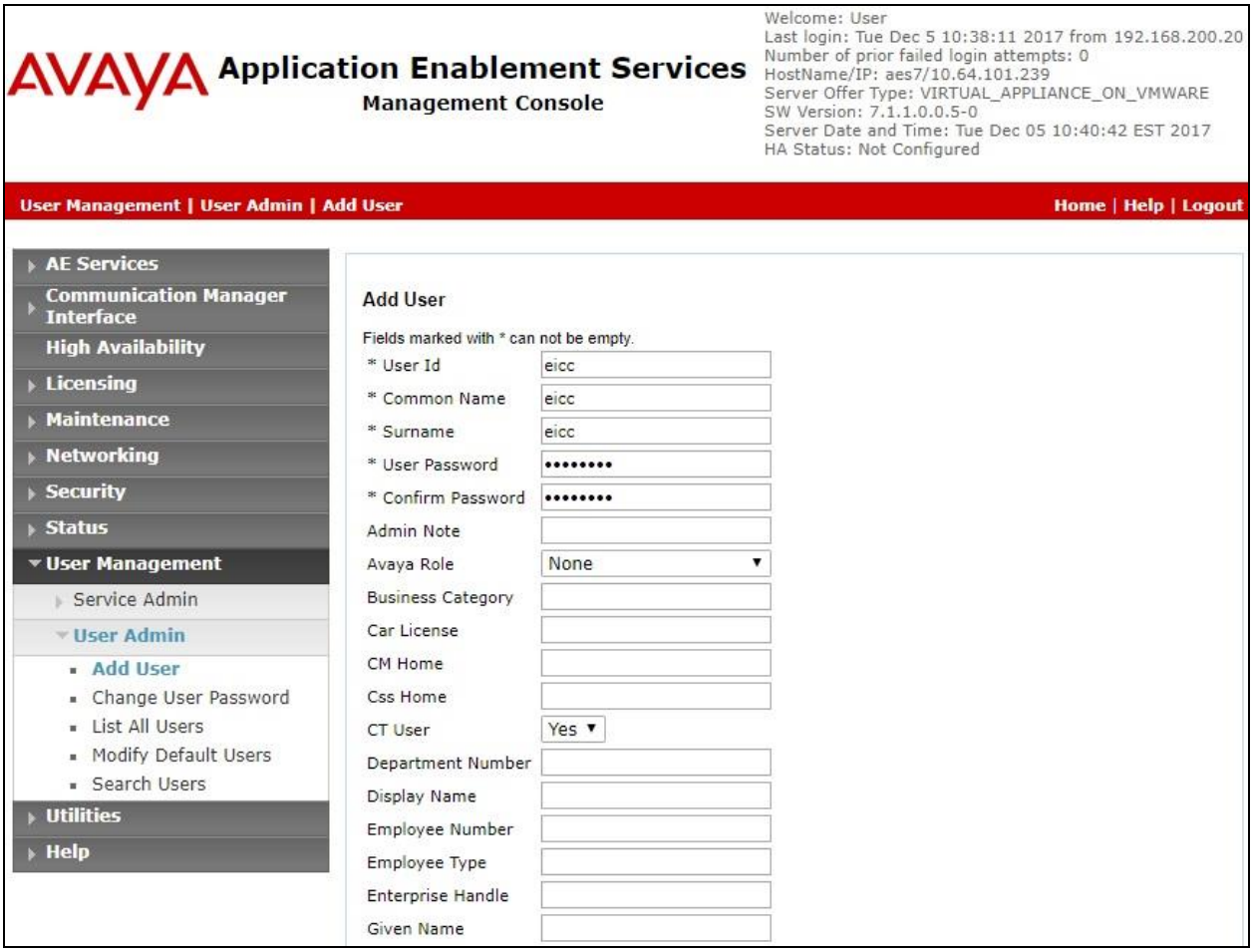
Locate the connection name associated with the relevant Communication Manager, in this case "cm7", and select the corresponding radio button. Click **Edit H.323 Gatekeeper**.

The **Edit H.323 Gatekeeper** screen is displayed next. Enter the IP address of a C-LAN circuit pack or the Processor C-LAN on Communication Manager to use as the H.323 gatekeeper, in this case "10.64.101.236" as shown below. Click **Add Name or IP**.

6.5. Administer EICC User

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

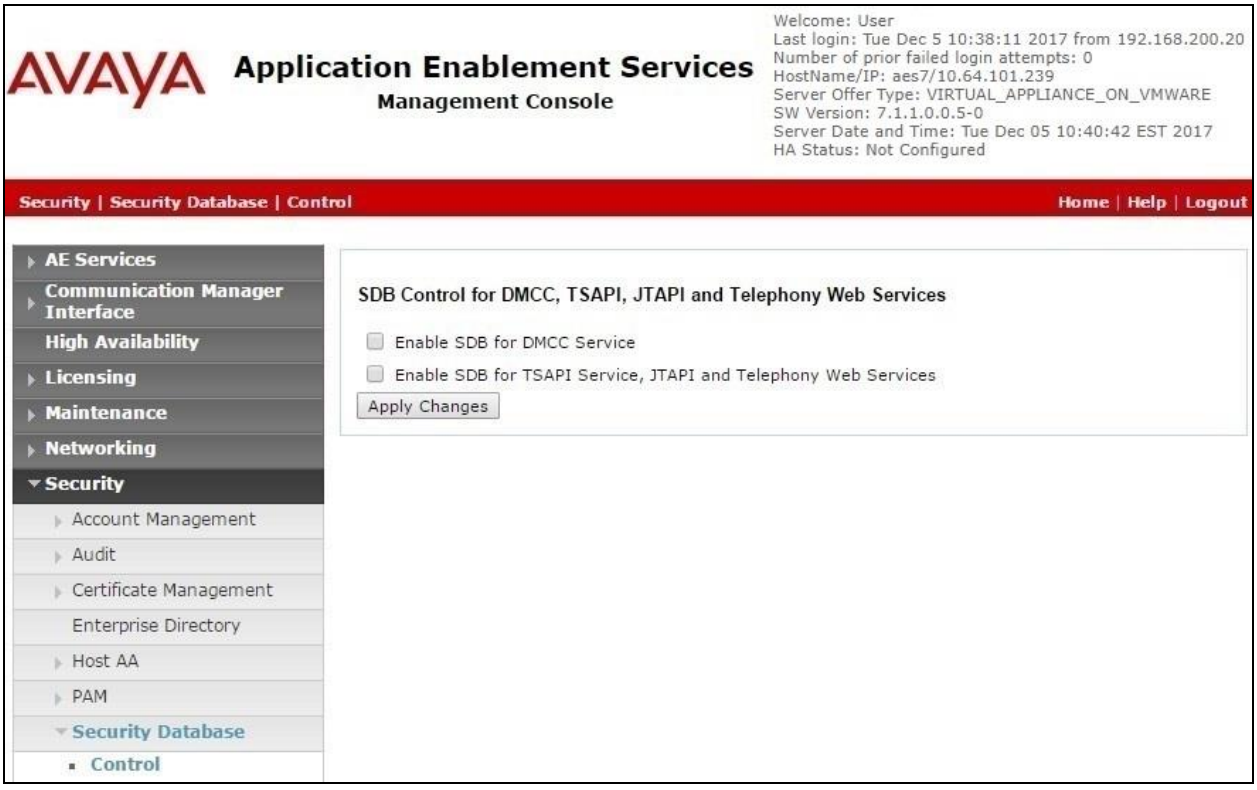
Enter desired values for **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password**. For **CT User**, select "Yes" from the drop-down list. Retain the default value in the remaining fields.



6.6. 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.

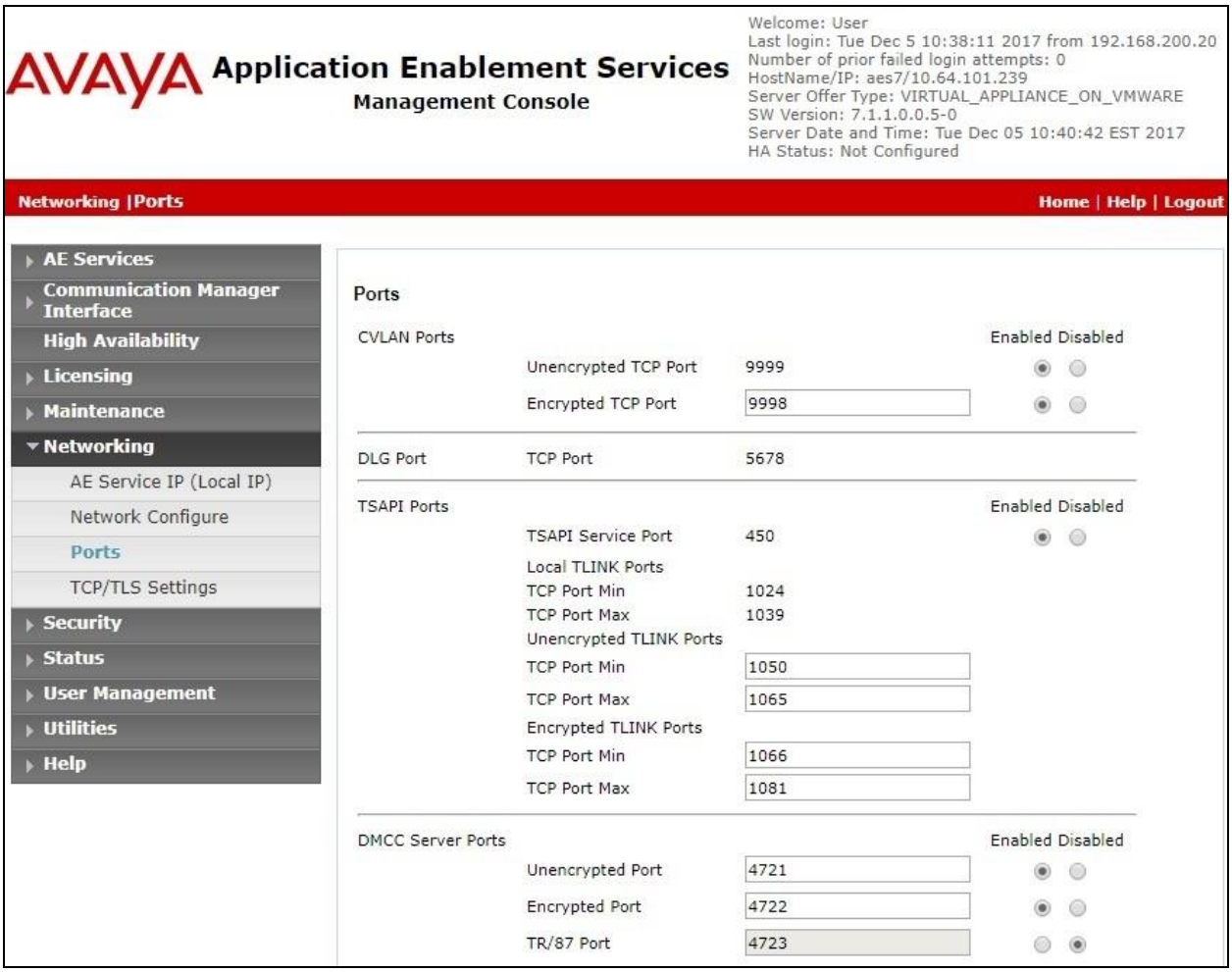
In the event that the security database is used by the customer with parameters already enabled, then follow reference [2] to configure access privileges for the EICC user from **Section 6.5**.



6.7. Administer Ports

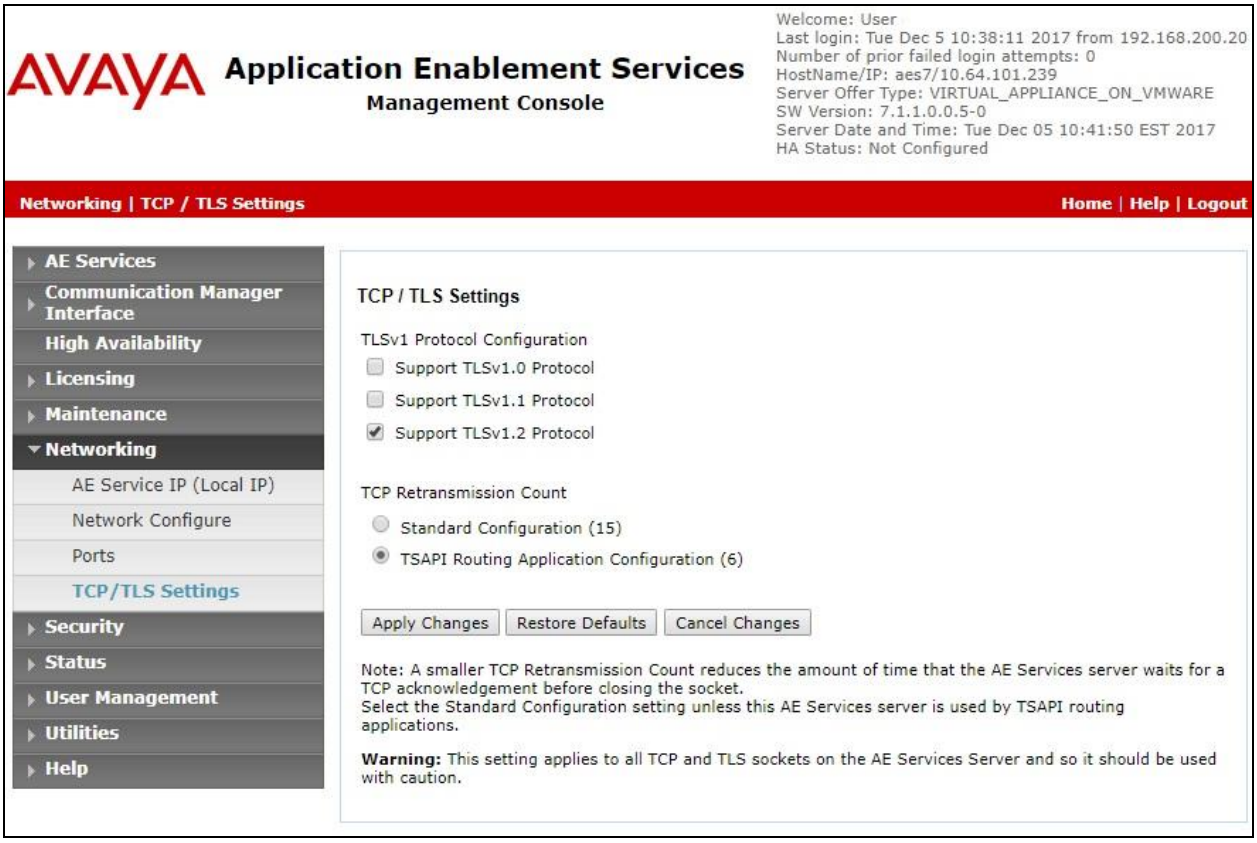
Select **Networking → Ports** from the left pane, to display the **Ports** screen in the right pane.

In the **DMCC Server Ports** section, select the radio button for **Unencrypted Port** under the **Enabled** column, as shown below. Retain the default values in the remaining fields.



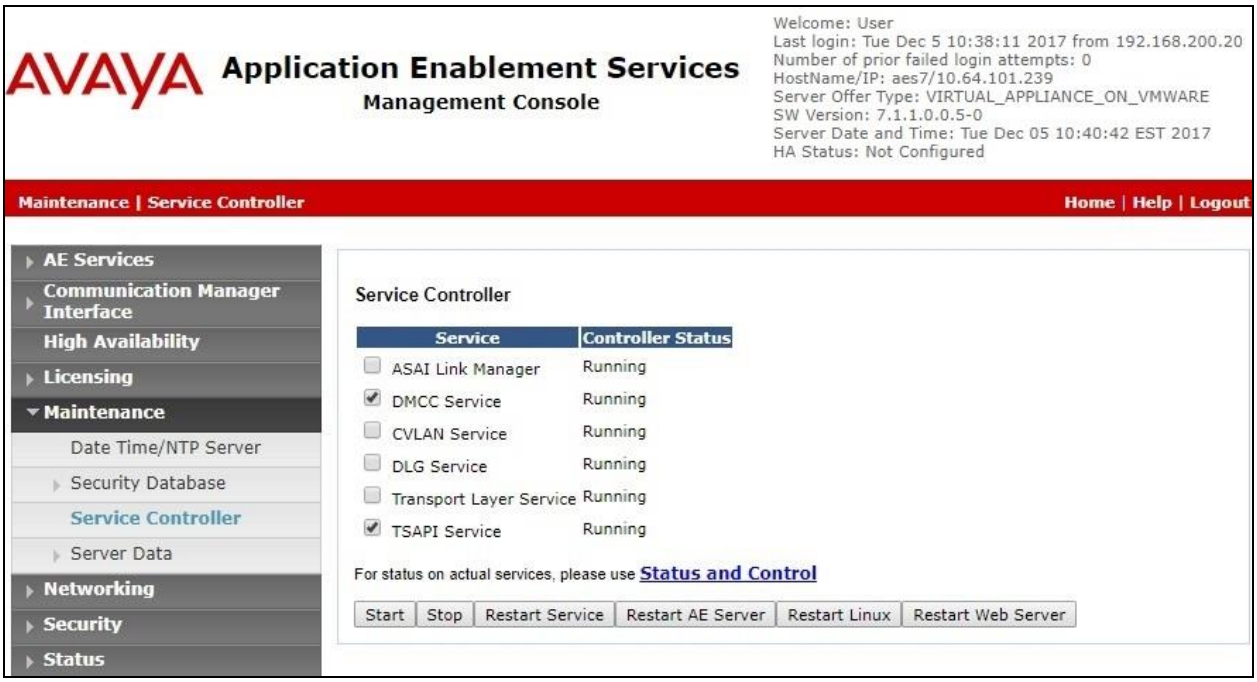
6.8. Administer TCP Settings

Select **Networking → TCP/TLS Settings** from the left pane, to display the **TCP/TLS Settings** screen in the right pane. For **TCP Retransmission Count**, select **TSAPI Routing Application Configuration (6)**, as shown below.



6.9. Restart Services

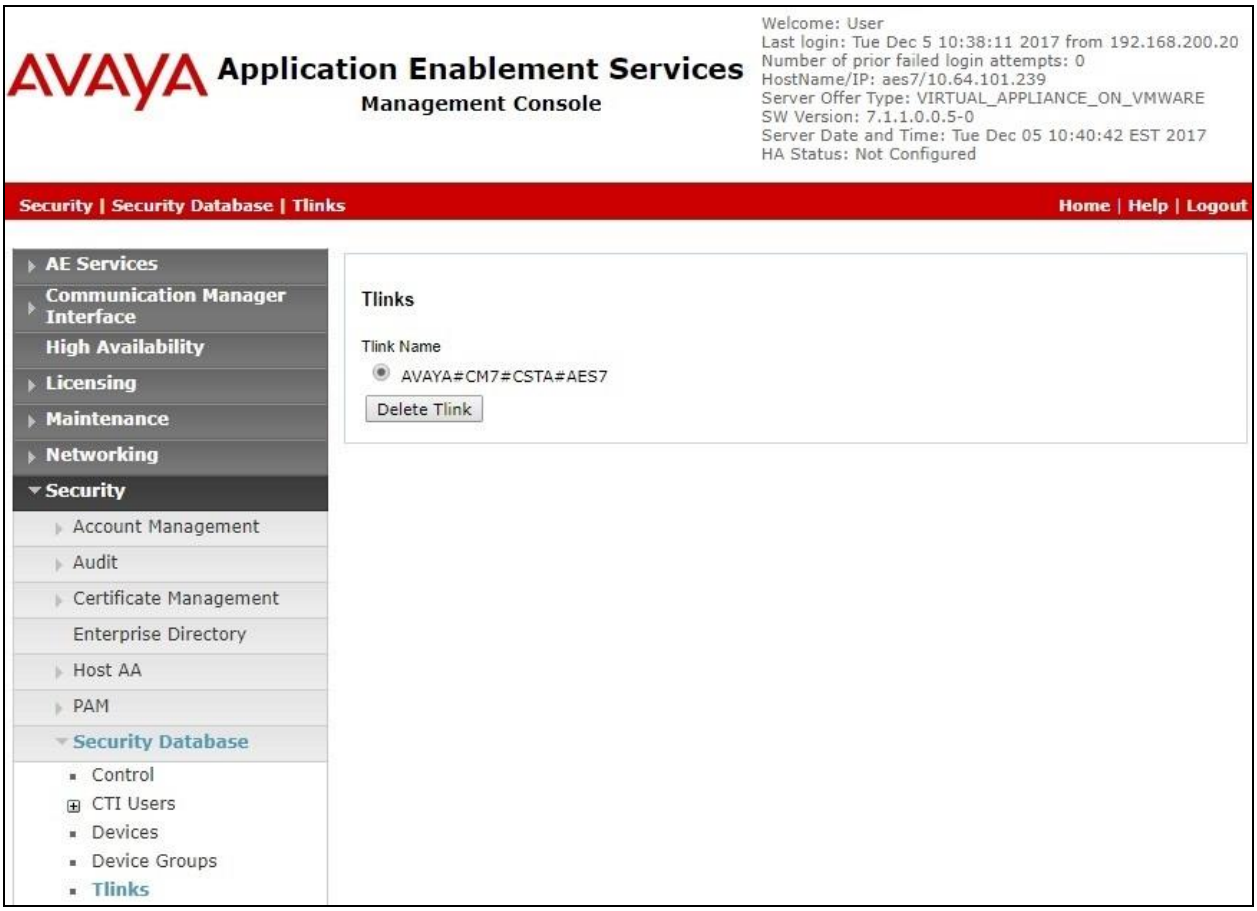
Select **Maintenance → Service Controller** from the left pane, to display the **Service Controller** screen in the right pane. Check **DMCC Service** and **TSAPI Service**, and click **Restart Service**.



6.10. 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 EICC.

In this case, the associated Tlink name is "AVAYA#**CM7**#CSTA#**AES7**". Note the use of the switch connection "CM7" from **Section 6.3** as part of the Tlink name.



7. Configure Enghouse Interactive Communications Center

This section provides the procedures for configuring the EICC server. The procedures include the following areas:

- Administer phone system type
- Administer phone system data
- Administer queues
- Administer agent login class
- Administer agents and supervisors
- Administer mailboxes
- Administer lines

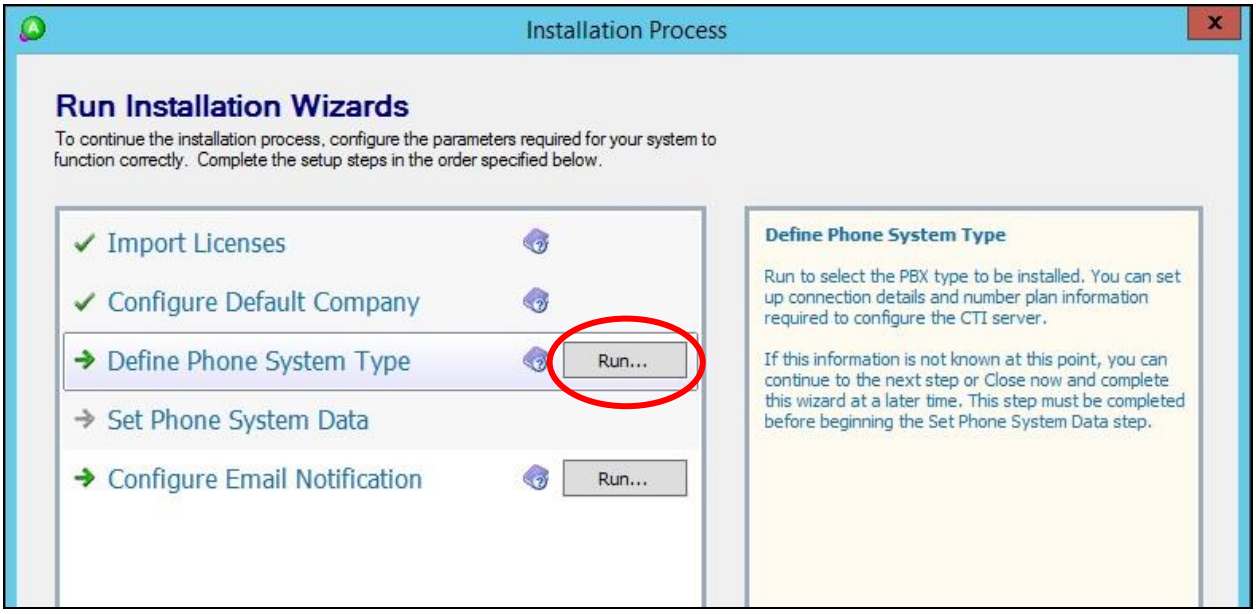
The configuration of EICC is typically performed by Enghouse Interactive installation technicians or third party resellers. The procedural steps are presented in these Application Notes for informational purposes.

Prior to configuration, the relevant Avaya TSAPI client is assumed to be installed on the EICC server, and that the TSAPI client has been configured with the IP address of the Application Enablement Services server as part of installation.

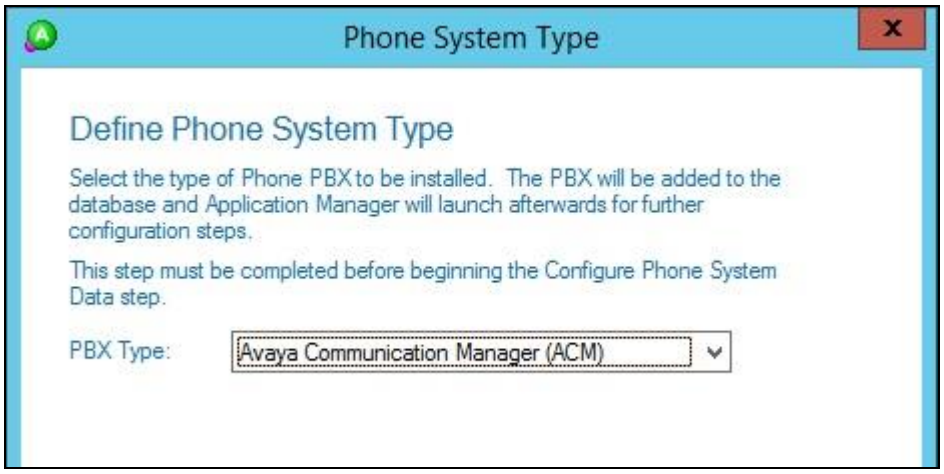
7.1. Administer Phone System Type

At the conclusion of installation, the **Installation Process** screen will be displayed by the Installation Wizard. Follow [3] to import licenses and configure the default company.

The **Installation Process** screen shown below is displayed next. Click the **Run** icon associated with **Define Phone System Type**.

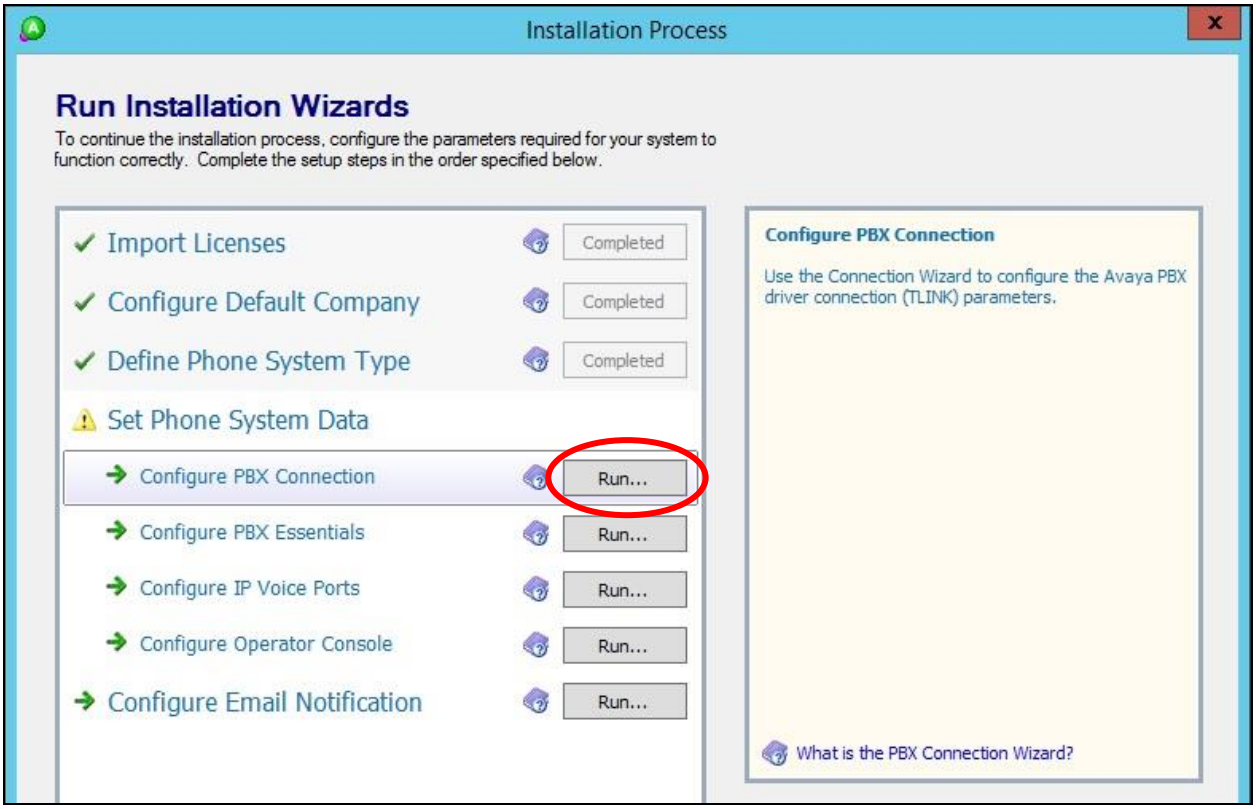


The **Phone System Type** screen is displayed. For **PBX Type**, select "Avaya Communication Manager (ACM)".

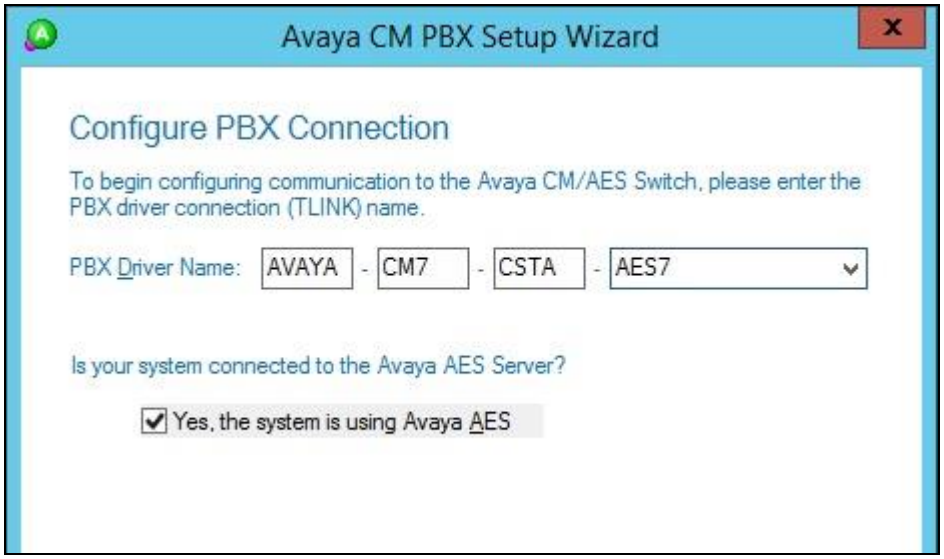


7.2. Administer Phone System Data

The **Installation Process** screen shown below is displayed next. Click the **Run** icon associated with **Set Phone System Data → Configure PBX Connection**.



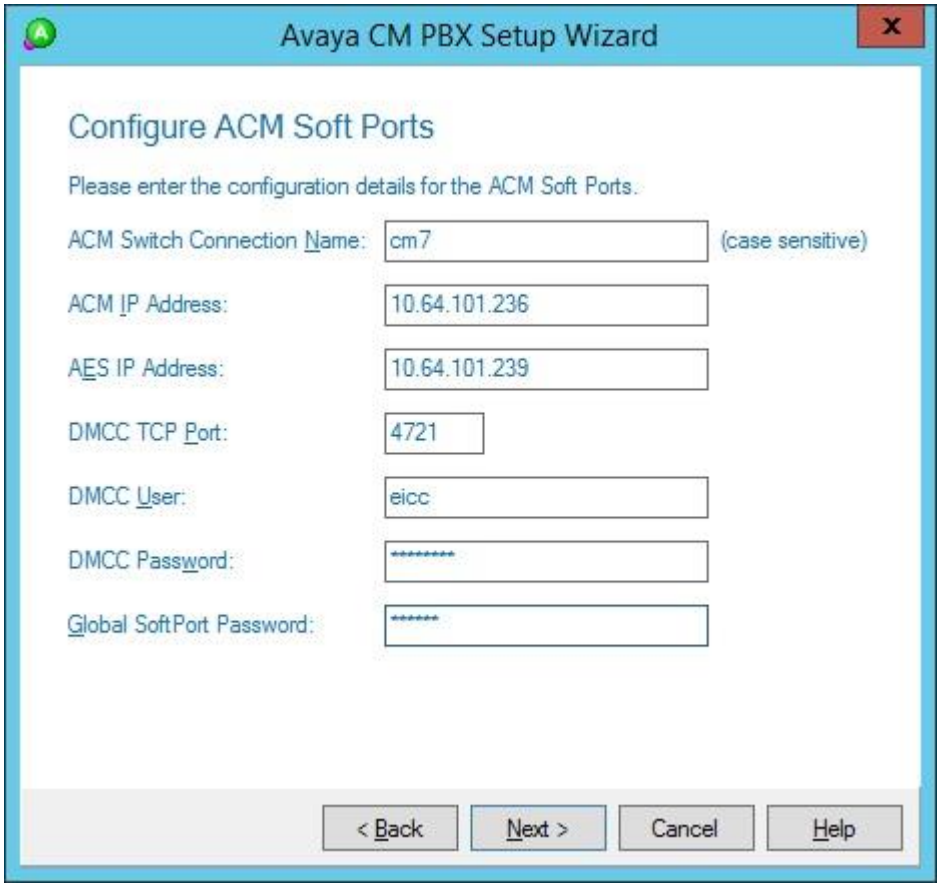
The **Avaya CM PBX Setup Wizard → Configure PBX Connection** screen is displayed. For **PBX Driver Name**, enter the Tlink name from **Section 6.10** as shown below. Retain the default value in the remaining field.



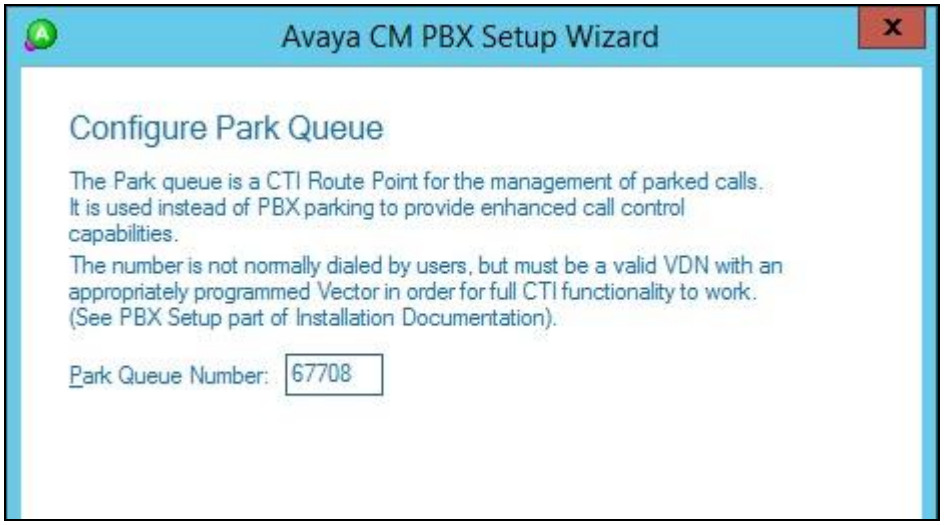
The **Avaya CM PBX Setup Wizard → Configure Avaya CTI User** screen is displayed next. Enter the EICC user credentials from **Section 6.5**.

The **Avaya CM PBX Setup Wizard → Configure ACM Soft Ports** screen is displayed. Enter the following values for the specified fields.

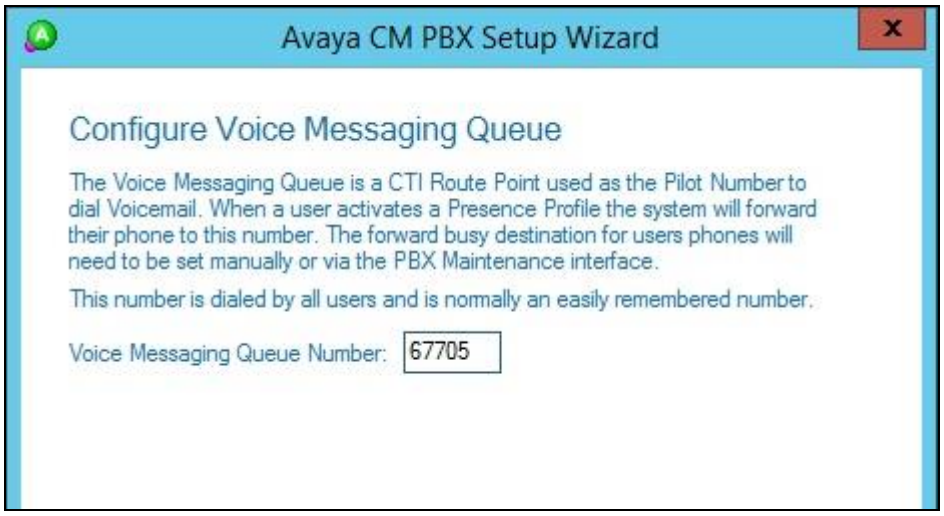
- **ACM Switch Connection Name:** The relevant switch connection name from **Section 6.3**.
- **ACM IP Address:** IP address of H.323 gatekeeper from **Section 6.4**.
- **AES IP Address:** IP address of Application Enablement Services server.
- **DMCC TCP Port:** "4721"
- **DMCC User:** The EICC user credentials from **Section 6.5**.
- **DMCC Password:** The EICC user credentials from **Section 6.5**.
- **Global SoftPort Password:** The security code value from **Section 5.6**.



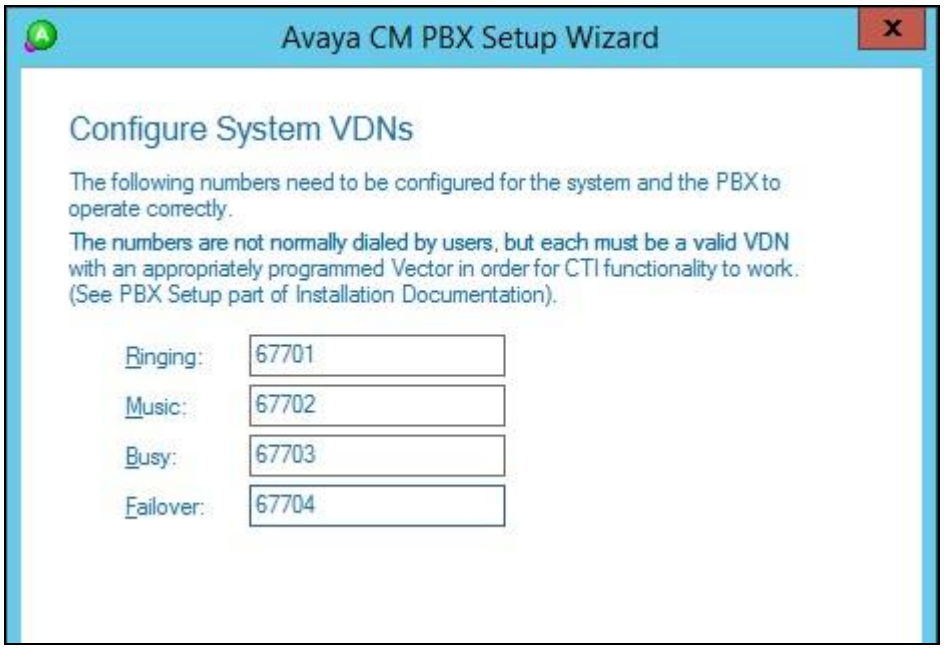
Continue with the Installation Wizard until the **Avaya CM PBX Setup Wizard → Configure Park Queue** screen is displayed. For **Park Queue Number**, enter the extension of the hold VDN from **Section 5.3.7**.



The **Avaya CM PBX Setup Wizard → Configure Voice Messaging Queue** screen is displayed next. For **Voice Messaging Queue Number**, enter the extension of the voicemail VDN from **Section 5.3.6**.

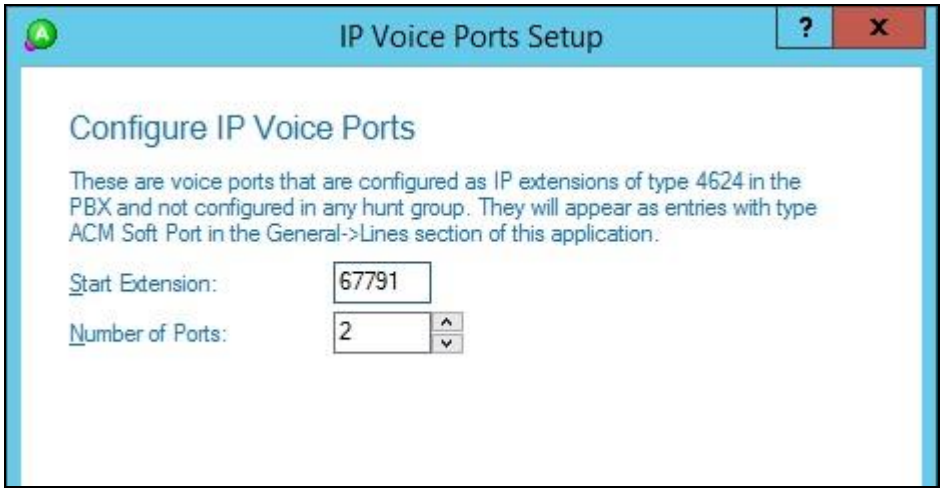


The **Avaya CM PBX Setup Wizard → Configure System VDNs** screen is displayed next. Enter the ring, music, busy, and failure VDNs from **Section 5.3** respectively, as shown below.



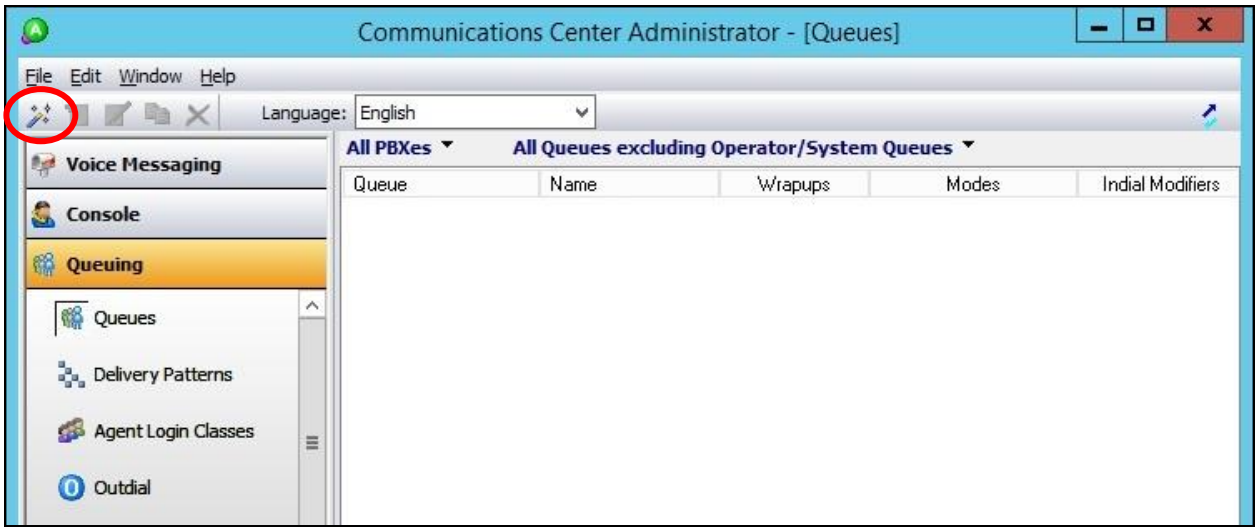
Continue with the Installation Wizard until the **IP Voice Ports Setup → Configure IP Voice Ports** screen is displayed. For **Start Extension**, enter the first virtual IP softphone extension from **Section 5.6**. For **Number of Ports**, select the total number of virtual IP softphones from **Section 5.6**, in this case "2".

Follow [3] to complete the Installation Wizard and subsequent CTI server setup via Application Manager.

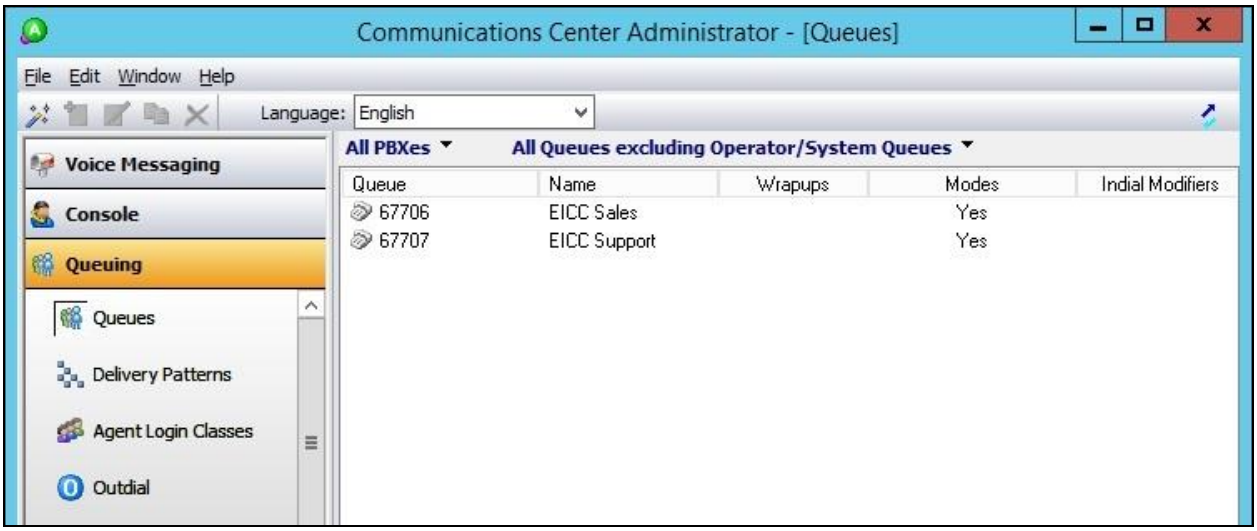


7.3. Administer Queues

The **Administrator** screen is displayed upon completion of the Installation Wizard and CTI server setup. Select **Queuing → Queues** from the left pane, followed by the **Add Wizard** icon located at the upper left of the screen.

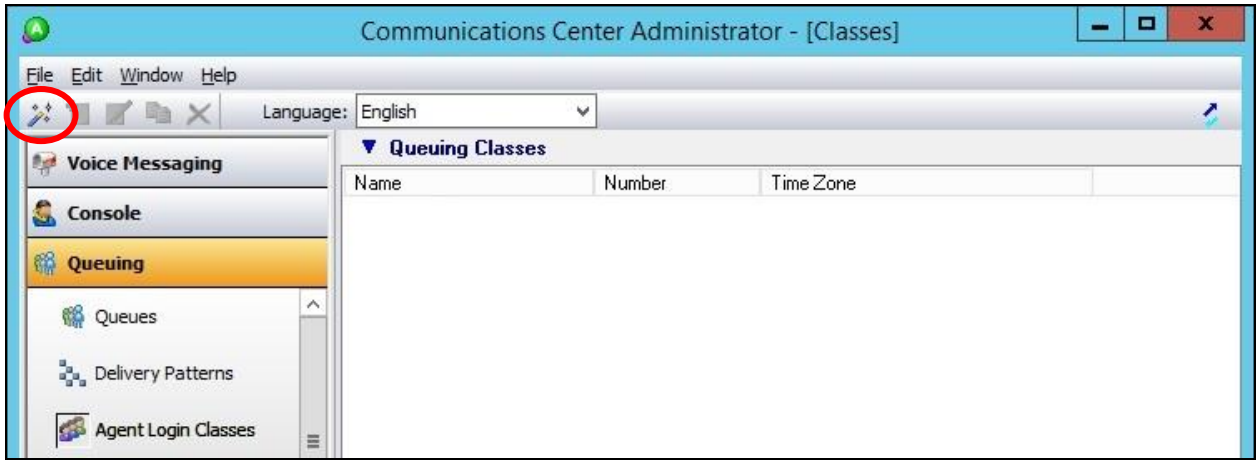


Follow the **Adding a New Queue Wizard** in the subsequent screens (not shown) to configure a new queue for each general routing VDN in **Section 5.3.2**. In the compliance testing, two queues were created as shown below.



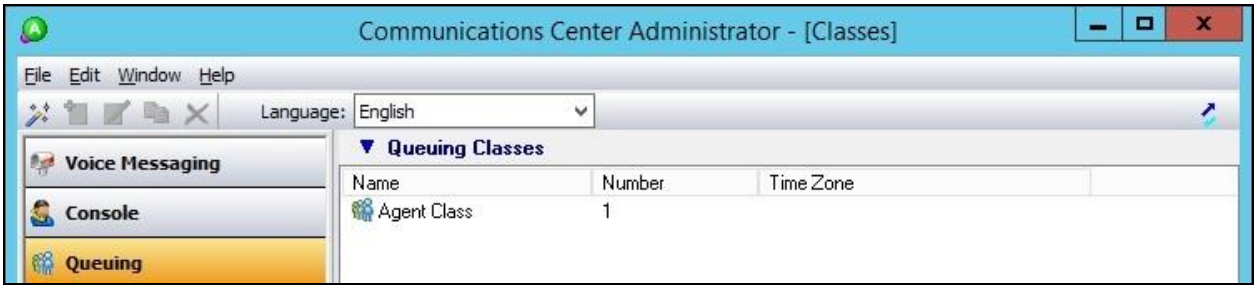
7.4. Administer Agent Login Class

Select **Queuing → Agent login Classes** from the left pane, followed by the **Add Wizard** icon located at the upper left corner of the screen.



Follow the **Adding New Agent Login Class Wizard** in the subsequent screens to configure a new agent login class. In the **Select the Queues** screen, select the queues created from **Section 7.3**, as shown below.

In the compliance testing, one agent login class was created.



7.5. Administer Agents and Supervisors

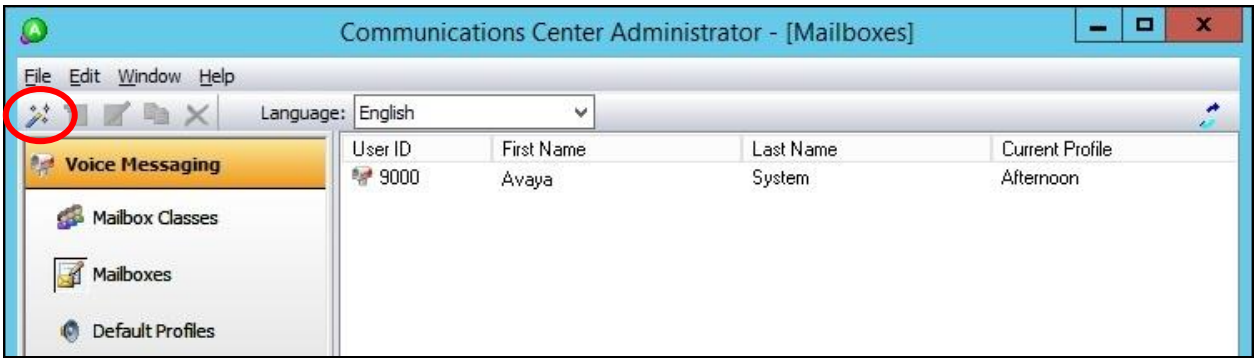
Select **Queuing → Agents** from the left pane, followed by the **Add Wizard** icon located at the upper left corner of the screen.

Follow the **Add Agent Wizard** in the subsequent screens to configure a corresponding entry for each agent and supervisor in **Section 3**. In the **Select Agent Login Class** screen, select the agent login class created from **Section 7.4**, as shown below.

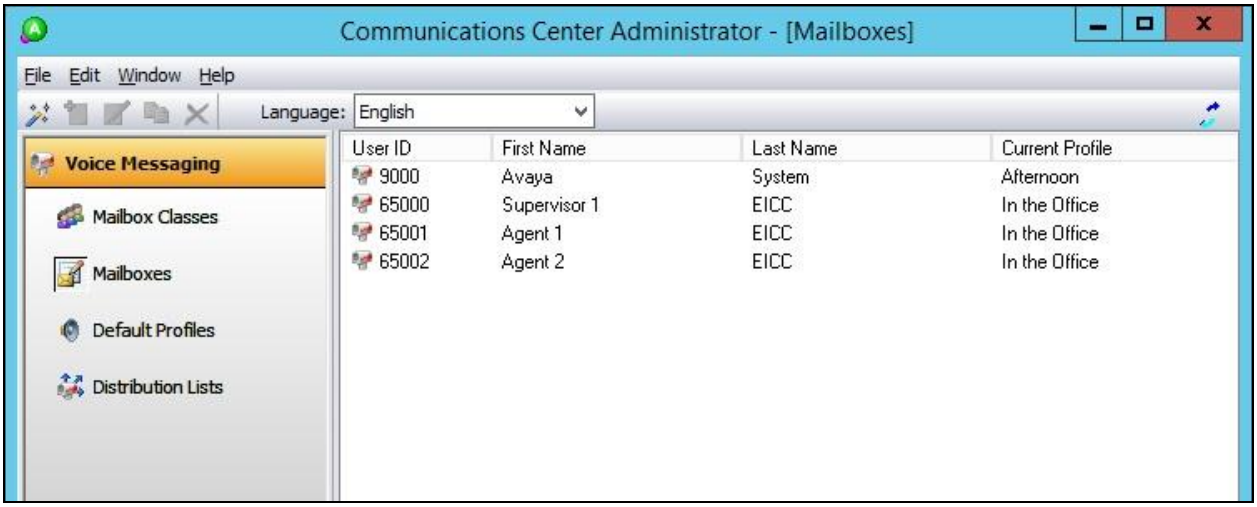
In the compliance testing, two agents and one supervisor were created.

7.6. Administer Mailboxes

Select **Voice Messaging → Mailboxes** from the left pane, followed by the **Add Wizard** icon located at the upper left corner of the screen.



Follow the **Add Mailboxes Wizard** in the subsequent screens (not shown) to configure a corresponding mailbox for each agent and supervisor from **Section 7.5**. In the compliance testing, three mailboxes were created.

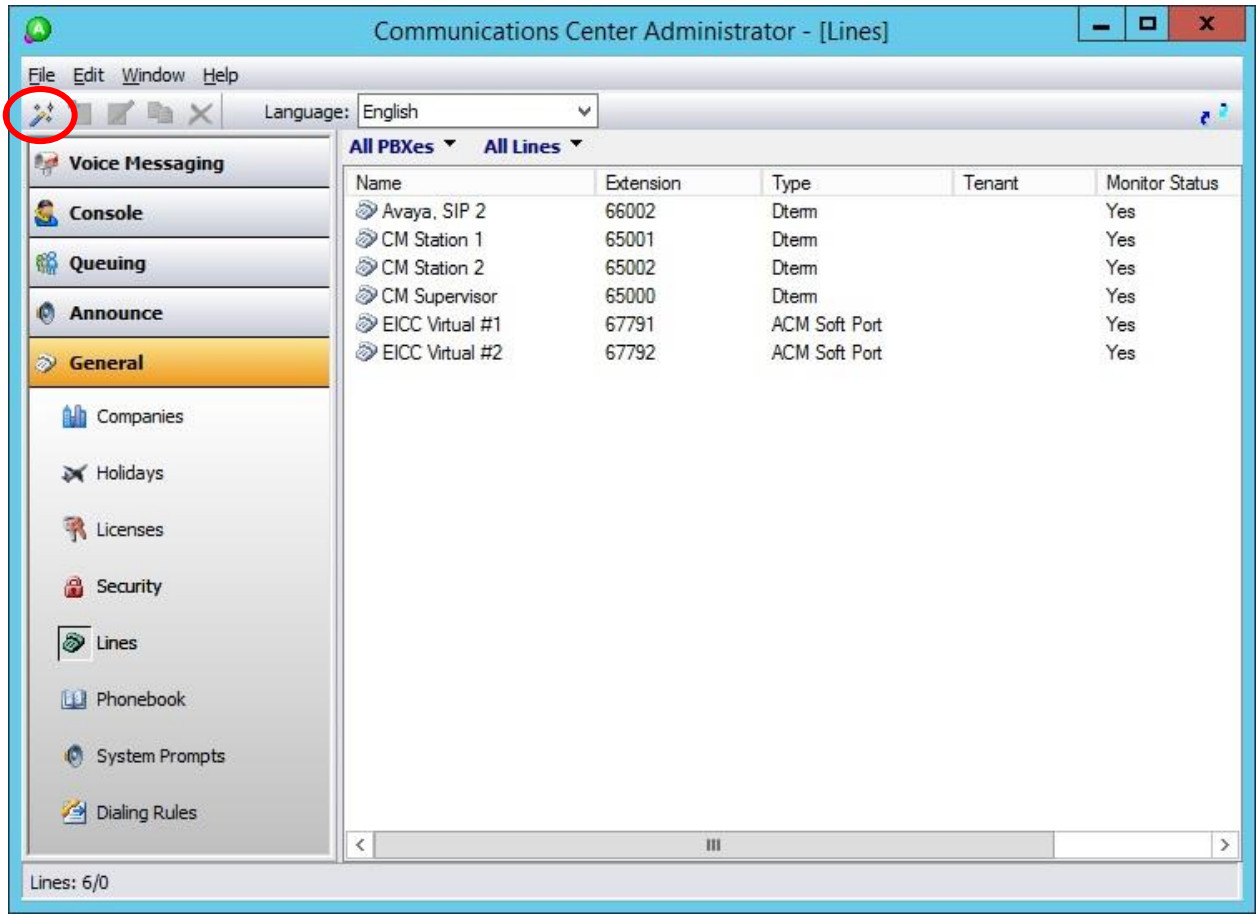


7.7. Administer Lines

Select **General → Lines** from the left pane, followed by the **Add Wizard** icon located at the upper left corner of the screen. Follow the **Adding Line Wizard** in the subsequent screens (not shown) to configure a corresponding line for each agent and supervisor from **Section 7.5**.

Note that the lines for virtual IP softphones were created automatically, and that lines for agents and supervisors can either be created manually using the wizard, or by having each agent and supervisor dial a monitored VDN for EICC to "learn" the extension and create the line automatically.

In the compliance testing, all lines were created automatically with agents and supervisor dialing the voicemail VDN for EICC to "learn" the extensions.



8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Application Enablement Services, and EICC.

8.1. Verify Avaya Aura® Communication Manager

On Communication Manager, verify 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    aes7             established   26       14
```

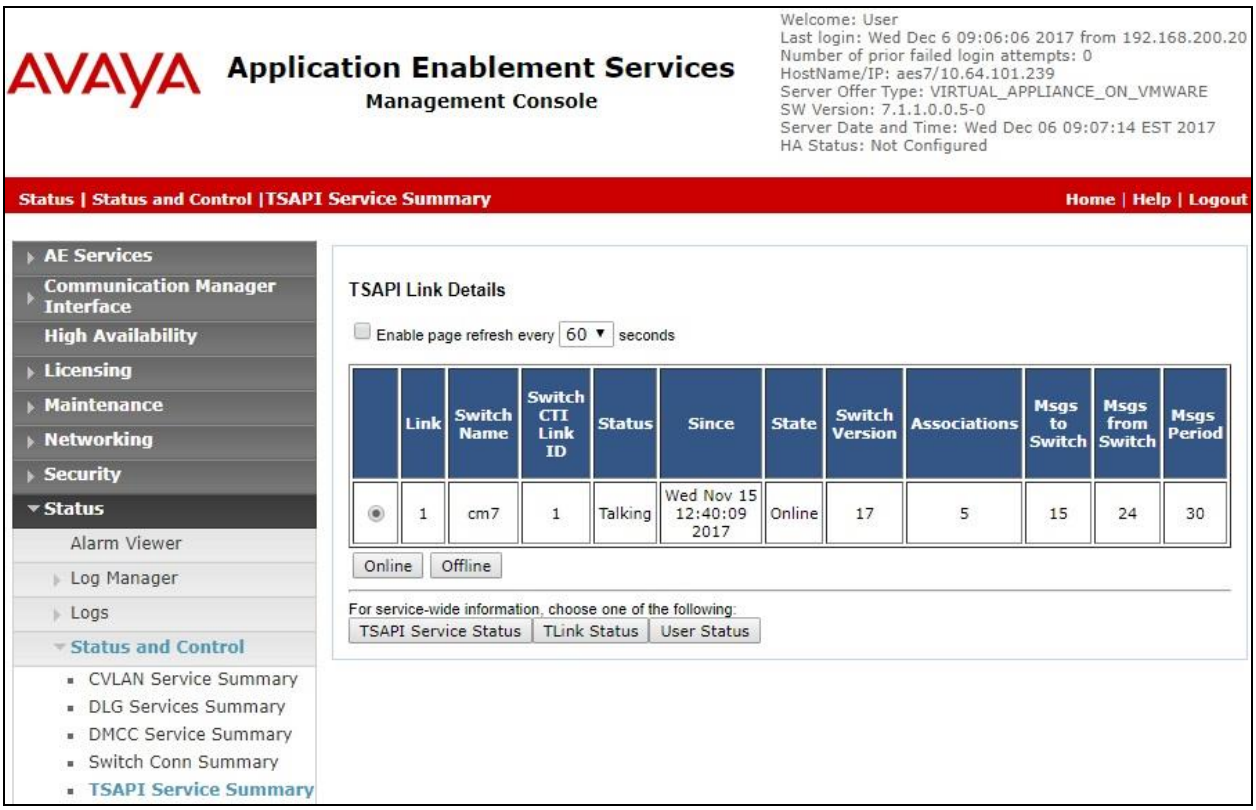
Verify the registration status of virtual IP softphones by using the "list registered-ip-stations" command. Verify that all virtual IP softphone from **Section 5.6** are displayed along with the IP address of the Application Enablement Services server, as shown below.

```
list registered-ip-stations

                            REGISTERED IP STATIONS

Station Ext   Set Type/ Prod ID/       Station IP Address/
or Orig Port  Net Rgn   Release    Skt Gatekeeper IP Address
------------- --------- ---------- --- ---------------------------------------
65000         9641      IP_Phone   tls 192.168.200.186
              1         6.6506         10.64.101.236
65001         9611      IP_Phone   tls 192.168.200.137
              1         6.6506         10.64.101.236
65002         9641      IP_Phone   tls 192.168.200.143
              1         6.6506         10.64.101.236
67791         4624      IP_API_A   tcp 10.64.101.239
              1         3.2040         10.64.101.236
67792         4624      IP_API_A   tcp 10.64.101.239
              1         3.2040         10.64.101.236
```

8.2. Verify Avaya Aura® Application Enablement Services

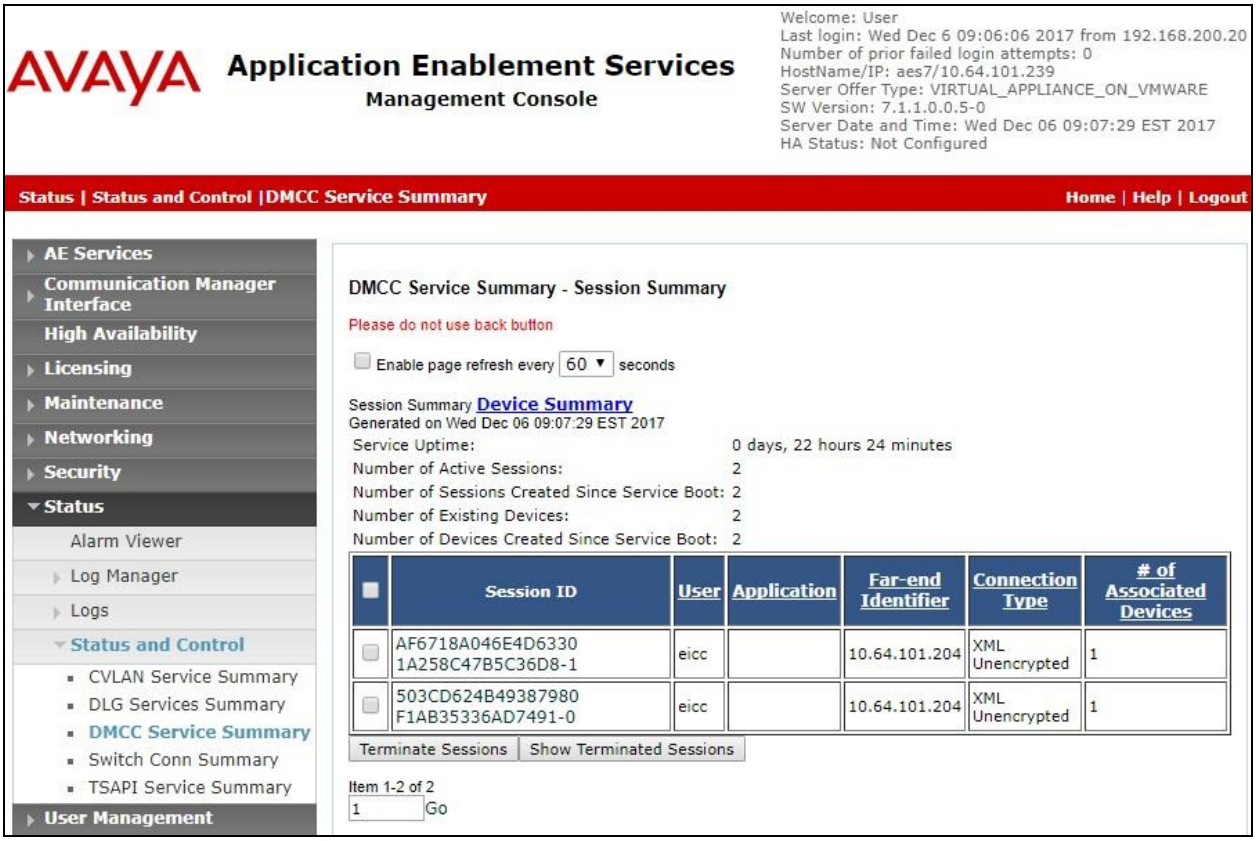
On Application Enablement Services, verify the status of the TSAPI link by selecting **Status → Status and Control → TSAPI Service Summary** from the left pane. The **TSAPI Link Details** screen is displayed.

Verify the **Status** is "Talking" for the TSAPI link administered in **Section 6.3**, and that the **Associations** column reflects the total number of agents and supervisor from **Section 3** plus the number of virtual IP softphones from **Section 5.6**, in this case "5".



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

Verify the **User** column shows action sessions with the EICC user name from **Section 6.5**, and that the total number of sessions reflects the number of virtual IP softphones from **Section 5.6**.

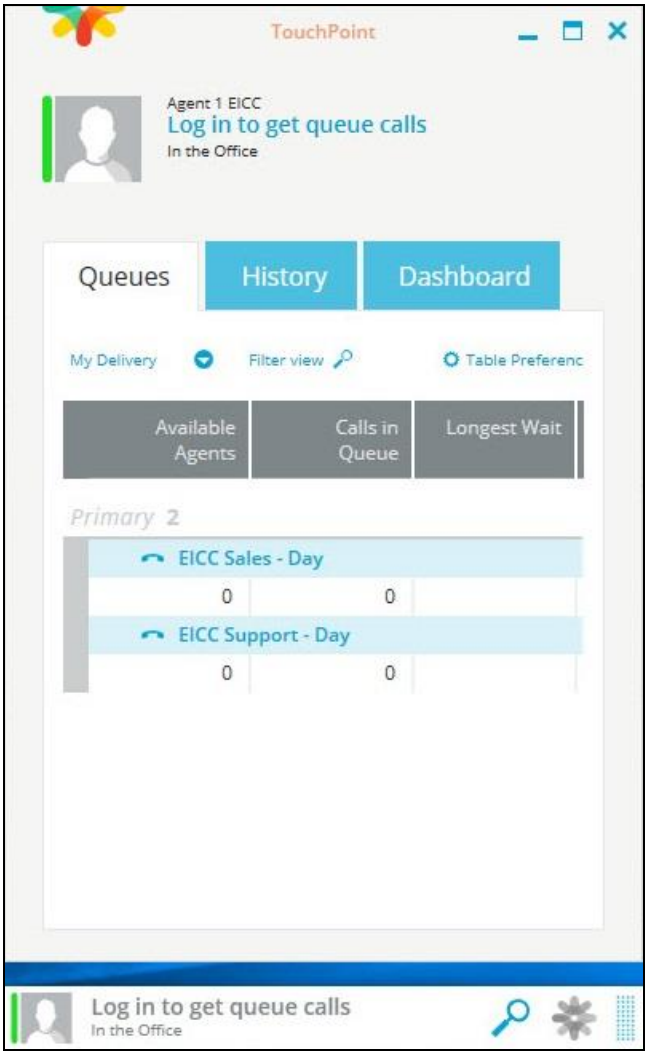


8.3. Verify Enghouse Interactive Communications Center

From the agent desktop, double-click on the **TouchPoint** shortcut icon shown below, which was created as part of TouchPoint installation.

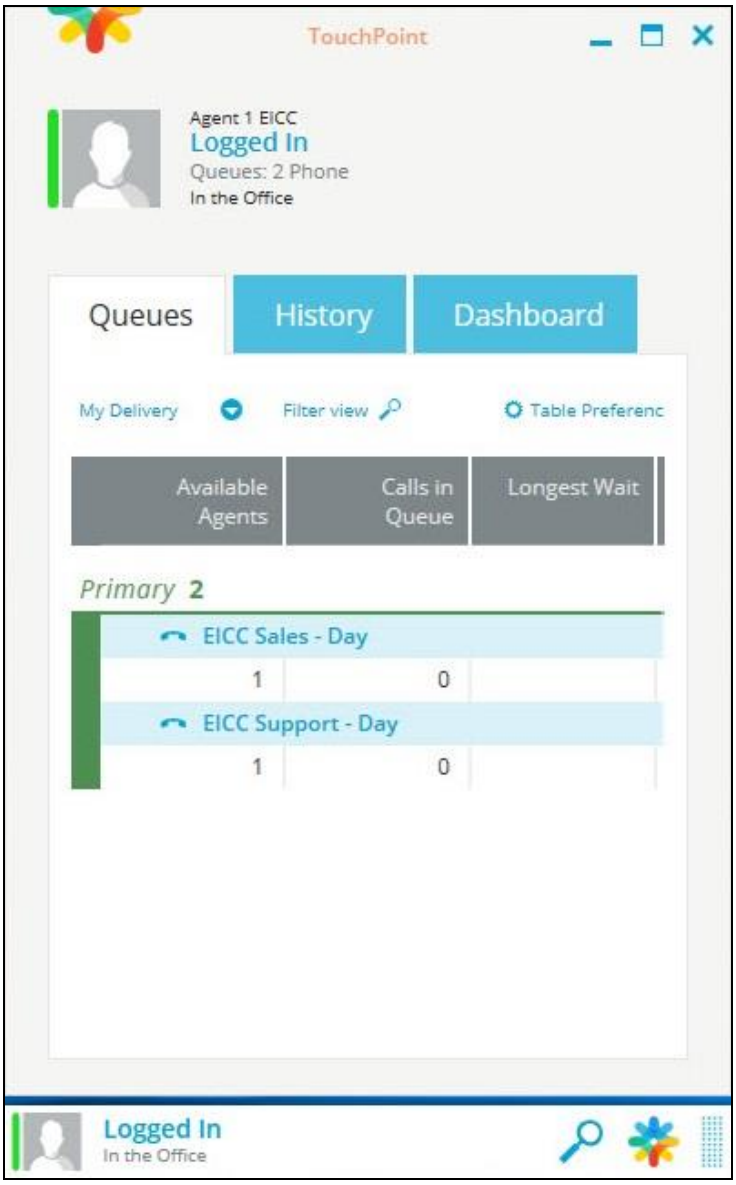
The **Enghouse Interactive TouchPoint** login screen below is displayed. Enter the login name associated with an agent from **Section 7.5**, and use the generic default PIN value from EICC. Retain the default value in the remaining field.

The main **TouchPoint** screen, also referred to as the Statistics Window is displayed, along with a Call Bar above the system tray, as shown below. From the Statistics Window, click on **Log in to get queue calls** toward the top of the screen.



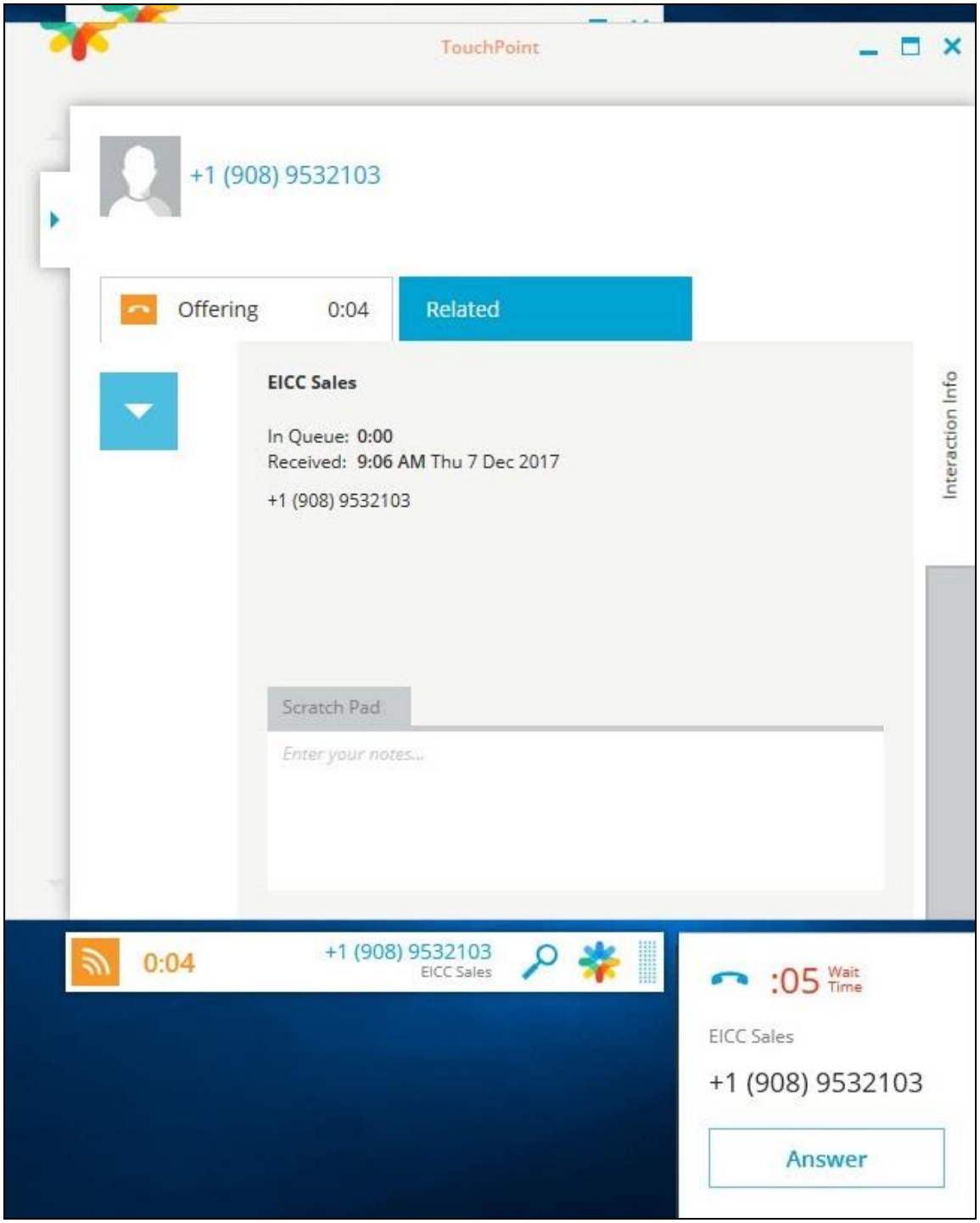
In the updated Statistics Window shown below, select **Log in to Queues**.

Verify that both the Statistics Window and Call Bar are updated to reflect **Logged In**, as shown below.



Make an incoming call from PSTN to a general routing VDN in **Section 5.3.2**. Verify that the agent desktop is populated with an **Interaction Info** screen with an **Offering** tab, along with a Pop-up Notification box, and that the Call Bar is updated to reflect the active call.

Click **Answer** in the Pop-up Notification box, and verify that the agent is connected to the PSTN caller with two-way talk paths.



9. Conclusion

These Application Notes describe the configuration steps required for Enghouse Interactive Communications Center 10.0 to successfully interoperate with Avaya Aura® Communication Manager 7.1 using Avaya Aura® Application Enablement Services 7.1. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

10. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Release 7.1.1, Issue 2, August 2017, available at http://support.avaya.com.

2. *Administering and Maintaining Aura® Application Enablement Services*, Release 7.1.1, Issue 3, September 2017, available at http://support.avaya.com.

3. *CC 10.0 First-time Installation and Server Setup – Avaya Communication Manager*, June 2017, available at https://partnerportal.enghouseinteractive.com/Sys/Document/index.

4. *CC 10.0 for PBX Programming Manual – Avaya Communication Manager*, June 2017, available at https://partnerportal.enghouseinteractive.com/Sys/Document/index.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.