



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Zeacom Communications Center with Avaya Aura® Communication Manager using Avaya Aura® Application Enablement Services 6.3 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for Zeacom Communications Center to interoperate with Avaya Aura® Communication Manager using Avaya Aura® Application Enablement Services 6.3. Zeacom 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.

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 Zeacom Communications Center to interoperate with Avaya Aura® Communication Manager using Avaya Aura® Application Enablement Services 6.3. Zeacom 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 (TSAPI) and Device, Media, and Call Control (DMCC) interface.

The TSAPI interface is used by Zeacom Communications Center to query and monitor devices such as call answering station user extensions on Avaya Aura® Communication Manager. Incoming calls are routed by Zeacom Communications Center using the TSAPI adjunct routing capability.

The call answering station users (referred to as agents) have desktop computers running the Zeacom Executive Desktop application. Call related actions such as answering of incoming calls can be initiated via the agent telephone, or via the agent desktop by using the TSAPI call control capabilities. The Zeacom Communications Center server populates the answering agent's desktop screen with call related information, by using the received TSAPI event reports for the monitored devices.

The DMCC interface is used by Zeacom Communications Center to support the voicemail application via virtual IP softphones. Calls to the Voicemail VDN are routed by Zeacom Communications Center over an available virtual IP softphone. The TSAPI set value capability is used to support enable/disable of call forwarding and message waiting lamps.

## 2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the Communications Center application, the application automatically uses TSAPI to query device name, requests device monitoring, and registers for VDN routing. The application also automatically uses DMCC to register the virtual IP softphones.

For the manual part of the testing, incoming calls were made to the general routing VDNs. The Communications Center server used the query results and event reports to track agent states, and specified calls to be routed to available agents. Manual call controls from both the agent telephones and the agent desktop computers were exercised to verify call control features such as answering and transferring of calls.

Voicemail was tested by not answering the calls at the agents, and have the calls cover to the Zeacom Voicemail application with proper activation of the agent message waiting lamps. Manual calls were then made from the agents to the Voicemail VDN to retrieve the voice messages and verify proper deactivation of the message waiting lamps.

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

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 Communications Center 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.

## 2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Communications Center:

- Use of TSAPI query service to query device names.
- Use of TSAPI event report service to monitor agent and virtual IP softphone extensions.
- Use of TSAPI routing service to route incoming calls.
- Use of TSAPI set value service to activate/deactivate call forwarding and message waiting indicator.
- Use of TSAPI call control service to support manual call control actions initiated from the agent desktop and to automatically handle inbound calls to the virtual IP softphones.
- Use of DMCC registration service to register and un-register the virtual IP softphones.
- Proper handling of call scenarios involving inbound, outbound, ACD, non-ACD, drop, hold/reconnect, voicemail, transfer, conference, call forwarding, and supervisor monitor.

The serviceability testing focused on verifying the ability of Communications Center to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection to Communications Center.

## 2.2. Test Results

All test cases were executed and verified. The one observation from the compliance testing is Communications Center creates one DMCC session per virtual IP softphone.

## 2.3. Support

Technical support on Communications Center can be obtained through the following:

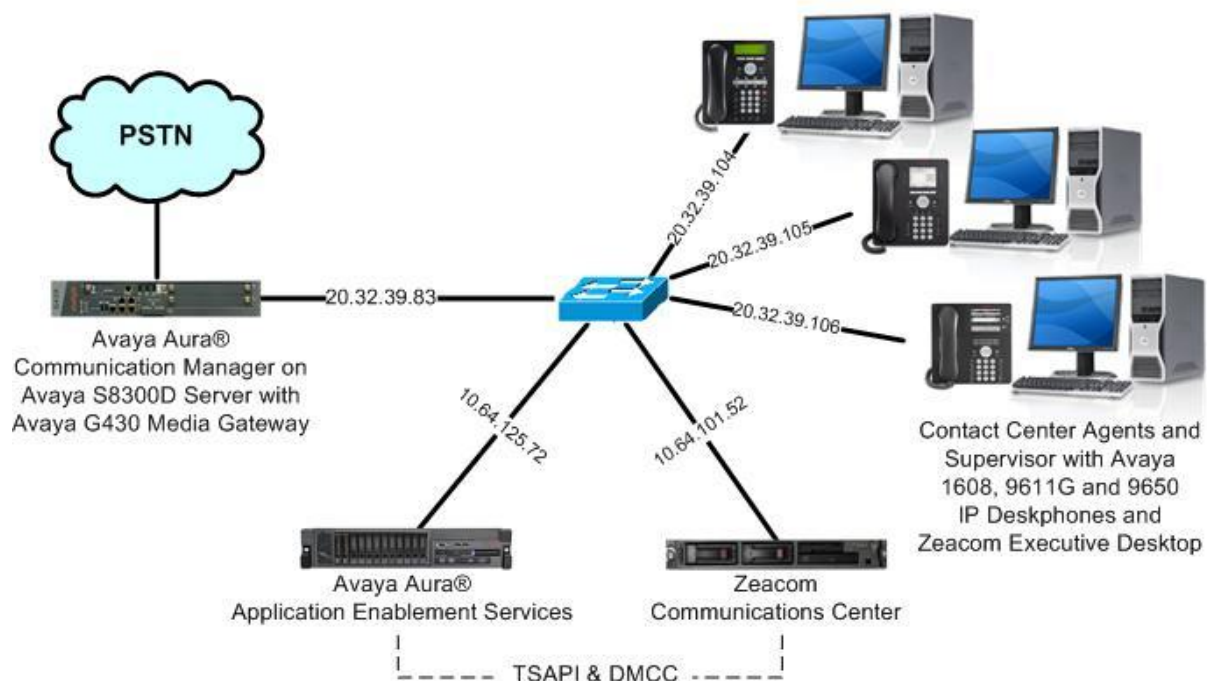
- **Phone:** (800) 513-9002
- **Web:** [www.zeacom.com](http://www.zeacom.com)
- **Email:** [usasupport@zeacom.com](mailto:usasupport@zeacom.com)

### 3. Reference Configuration

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 contact center devices used in the compliance testing are shown in the table below. In the compliance testing, Communications Center monitored two agents and one supervisor station extensions shown below.

Device Type	Device Number/Extension
VDNs	45901-45908
Vectors	900-905, 908
Agent stations	45001-45002
Supervisor & Failure covering station	45000



**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 on Avaya S8300D Server with Avaya G430 Media Gateway	6.3.2 (R016x.03.0.124.0-21053)
Avaya Aura® Application Enablement Services	6.3.1 (6.3.1.0.19-0)
Avaya 1608 IP Deskphone (H.323)	1.340B
Avaya 9611G IP Deskphone (H.323)	6.3037
Avaya 9650 IP Deskphone (H.323)	3.210A
Zeacom Communications Center on Windows Server 2008 R2 Enterprise <ul style="list-style-type: none"><li>• AnnouncePort.exe</li><li>• Avaya TSAPI Windows Client</li><li>• Avaya DMCC XML</li></ul>	7.0.0.1288 SP1 7.0.0.1400 6.3.1.502 6.2
Zeacom Executive Desktop	7.0.0.1288

## 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 3**. 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	3 of	11
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	<b>Computer Telephony Adjunct Links?</b>	<b>y</b>	
ARS/AAR Partitioning?	y	Cvg Of Calls Redirected Off-net?	y	
ARS/AAR Dialing without FAC?	y	DCS (Basic)?	y	
ASAI Link Core Capabilities?	n	DCS Call Coverage?	y	
ASAI Link Plus Capabilities?	n	DCS with Rerouting?	y	

Navigate to **Page 6**, and verify that the **Vectoring (Basic)** customer option is set to “y”.

display system-parameters customer-options		Page	6 of	11
CALL CENTER OPTIONAL FEATURES				
Call Center Release: 6.0				
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	<b>Vectoring (Basic)?</b>	<b>y</b>	
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: 40001	
Type: ADJ-IP	
Name: AES CTI Link	COR: 1

## 5.3. Administer Vectors and VDNs

Administer a set of vectors and VDNs per Communications Center 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
49101	101	Ring treatment
49102	102	Music treatment
49103	103	Busy treatment
49104	104	Failure coverage
49105	105	Voicemail routing
49106	100	General routing for the Sales application
49107	100	General routing for the Support application
49108	108	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 Communications Center installation document [3].

```
change vector 104                                     Page 1 of 6
                                                    CALL VECTOR
Number: 104      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 45000      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 49104                                     Page 1 of 3
                                                    VECTOR DIRECTORY NUMBER
Extension: 49104
Name*: SC Fail
Destination: Vector Number      104
```

### 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 100                                     Page 1 of 6
                                                    CALL VECTOR
Number: 100                                           Name: Zeacom 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 49104      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 “Zeacom User Q” vector number from above.

```
add vdn 49106                                     Page 1 of 2
                                                    VECTOR DIRECTORY NUMBER
Extension: 49106
Name: Zeacom Sales
Destination: Vector Number      100
```

```
add vdn 49107                                     Page 1 of 2
                                                    VECTOR DIRECTORY NUMBER
Extension: 49107
Name: Zeacom Support
Destination: Vector Number      100
```

### 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 101		Page 1 of 6	
CALL VECTOR			
<b>Number: 101</b>		<b>Name: SC Ring</b>	
Multimedia? n	Attendant Vectoring? n	Meet-me Conf? n	Lock? n
Basic? y	EAS? y	G3V4 Enhanced? y	ANI/II-Digits? y
Prompting? y	LAI? y	G3V4 Adv Route? y	ASAI Routing? y
Variables? y	3.0 Enhanced? y	CINFO? y	BSR? y
01 adjunct	routing link 1	Holidays? y	
02 wait-time	60 secs hearing ringback		
03 route-to	number 49104	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 49101		Page 1 of 2	
VECTOR DIRECTORY NUMBER			
Extension: 49101			
Name: SC Ring			
Destination: Vector Number		101	

### 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 102		Page 1 of 6	
CALL VECTOR			
<b>Number: 102</b>		<b>Name: SC Music</b>	
Multimedia? n	Attendant Vectoring? n	Meet-me Conf? n	Lock? n
Basic? y	EAS? y	G3V4 Enhanced? y	ANI/II-Digits? y
Prompting? y	LAI? y	G3V4 Adv Route? y	CINFO? y
Variables? y	3.0 Enhanced? y	BSR? y	Holidays? y
01 adjunct	routing link 1		
02 wait-time	60 secs hearing music		
03 route-to	number 49104 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 49102		Page 1 of 2	
VECTOR DIRECTORY NUMBER			
Extension: 49102			
Name: SC Music			
Destination: Vector Number		102	

### 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 103	Page 1 of 6
CALL VECTOR	
<b>Number: 103</b> <b>Name: SC Busy</b>	
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 49103	Page 1 of 2
VECTOR DIRECTORY NUMBER	
Extension: 49103	
<b>Name: SC Busy</b>	
<b>Destination: Vector Number</b>	<b>103</b>

### 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 105	CALL VECTOR	Page 1 of 6
<b>Number: 105</b>	<b>Name: Voicemail</b>	
Multimedia? n	Attendant Vectoring? n	Meet-me Conf? n
Basic? y	EAS? y	G3V4 Enhanced? y
Prompting? y	LAI? y	G3V4 Adv Route? y
Variables? y	3.0 Enhanced? y	CINFO? y
01 adjunct	routing link 1	BSR? y
02 wait-time	120 secs hearing ringback	Holidays? y
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:** “Voicemail”
- **Destination:** “Vector Number”
- **Vector Number:** The “Voicemail” vector number from above.

add vdn 49105	VECTOR DIRECTORY NUMBER	Page 1 of 2
	Extension: 49105	
	<b>Name: Voicemail</b>	
	<b>Destination: Vector Number</b>	<b>105</b>

### 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 108	CALL VECTOR	Page 1 of 6
<b>Number: 108</b> <b>Name: SC Hold</b>		
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 49104	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 49108	VECTOR DIRECTORY NUMBER	Page 1 of 2
Extension: 49108		
Name: SC Hold		
Destination: Vector Number		108

## 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 “v49105” to designate as the first coverage point, where “49105” 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: v49105	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 45001
```

Page 1 of 5

STATION		
Extension: 45001	Lock Messages? n	BCC: 0
Type: 1608	Security Code: *	TN: 1
Port: S00000	<b>Coverage Path 1: 7</b>	COR: 1
Name: G430 Station 1	Coverage Path 2:	COS: 1
	Hunt-to Station:	Tests? y

STATION OPTIONS

Loss Group: 19	Time of Day Lock Table:
Speakerphone: 2-way	Personalized Ringing Pattern: 1
Display Language: english	Message Lamp Ext: 45001
Survivable GK Node Name:	Mute Button Enabled? y
Survivable COR: internal	Button Modules: 0
Survivable Trunk Dest? y	Media Complex Ext:
	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 45000 count 3
```

STATIONS									
Ext/ Hunt-to	Port/ Type	Name/ Surv GK NN	Move	Room/ Data Ext	Cv1/ Cv2	COR/ COS	Cable/ TN	Jack	
<b>45000</b>	<b>S00033</b>	<b>G430 Station 0</b>			<b>7</b>	<b>1</b>			
	<b>9650</b>		<b>no</b>			<b>1</b>	<b>1</b>		
<b>45001</b>	<b>S00000</b>	<b>G430 Station 1</b>			<b>7</b>	<b>1</b>			
	<b>1608</b>		<b>no</b>			<b>1</b>	<b>1</b>		
<b>45002</b>	<b>S00008</b>	<b>G430 Station 2</b>			<b>7</b>	<b>1</b>			
	<b>9611</b>		<b>no</b>			<b>1</b>	<b>1</b>		

## 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 45991
                                     Page 1 of 6
                                     STATION
Extension: 45991                    Lock Messages? n                    BCC: 0
  Type: 4624                        Security Code: 123456                TN: 1
  Port: S00036                     Coverage Path 1:                COR: 1
  Name: Zeacom Virtual #1          Coverage Path 2:                COS: 1
                                     Hunt-to Station:                Tests? y
STATION OPTIONS
                                     Time of Day Lock Table:
      Loss Group: 19                Personalized Ringing Pattern: 1
                                     Message Lamp Ext: 45991
      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 45991 count 2
                                     STATIONS
Ext/      Port/   Name/      Room/      Cv1/  COR/   Cable/
 Hunt-to   Type     Surv GK NN  Data Ext   Cv2   COS   TN Jack
45991      S00036  Zeacom Virtual #1          1
         4624              no              1   1
45992      S00039  Zeacom 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
- Disable security database
- Administer TCP Settings
- Restart services
- Obtain Tlink name
- Administer Zeacom user
- Enable ports

### 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 screenshot shows the Avaya Application Enablement Services Management Console login interface. At the top left is the Avaya logo. To its right, the text "Application Enablement Services" is displayed in a large, bold font, with "Management Console" in a smaller font below it. A red horizontal bar spans the width of the page, with the word "Help" in white text on the right side. In the center of the page is a light gray rectangular box containing the login form. The form has the text "Please login here:" followed by two input fields: "Username" and "Password". Below these fields are two buttons: "Login" and "Reset". At the bottom of the page, a red horizontal bar is present, and below it, the copyright notice "Copyright © 2009-2013 Avaya Inc. All Rights Reserved." is displayed.

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

The screenshot shows the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title 'Application Enablement Services Management Console', and a user welcome message with login details. A red navigation bar contains 'Home', 'Help', and 'Logout' links. On the left, a sidebar lists various management areas: AE Services, Communication Manager Interface, High Availability, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. The main content area is titled 'Welcome to OAM' and provides an overview of the OAM web interface, listing the administrative domains it manages: AE Services, Communication Manager Interface, High Availability, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. It also notes that these domains can be managed by a single administrator or separate administrators.

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

Home | Help | Logout

Home

AE Services  
Communication Manager Interface  
High Availability  
Licensing  
Maintenance  
Networking  
Security  
Status  
User Management  
Utilities  
Help

### Welcome to OAM

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 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 routine maintenance tasks.
- Networking - 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 infomations.
- User Management - Use User Management to manage AE Services users and AE Services user-related 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.

## 6.2. Verify License

Select **Licensing** → **WebLM Server Access** in the left pane, to display the **Web License Manager** pop-up screen (not shown), and log in using the appropriate credentials.

The screenshot shows the Avaya Application Enablement Services Management Console with the 'Licensing' section selected. The top header and navigation bar are identical to the previous screenshot. The sidebar now highlights 'Licensing' and shows sub-options: 'WebLM Server Address', 'WebLM Server Access' (highlighted in blue), and 'Reserved Licenses'. The main content area is titled 'Licensing' and provides instructions on how to set up and maintain the WebLM, listing the required information: WebLM Server Address, WebLM Server Access, and Reserved Licenses.

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

Home | Help | Logout

Licensing

AE Services  
Communication Manager Interface  
High Availability  
Licensing  
WebLM Server Address  
WebLM Server Access  
Reserved Licenses  
Maintenance  
Networking

### Licensing

If you are setting up and maintaining the WebLM, you need to use the following:

- WebLM Server Address

If you are importing, setting up and maintaining the license, you need to use the following:

- WebLM Server Access

If you want to administer TSAPI Reserved Licenses or DMCC Reserved Licenses, you need to use the following:

- Reserved Licenses

The **Web License Manager** screen below is displayed. 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. Note that 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 SMALL SWITCH** for the S8300D Server.

Web License Manager (WebLM v6.3)

[Help](#) | [About](#) | [Change Password](#)

WebLM Home

Install license

Licensed products

APPL\_ENAB

▼ Application\_Enablement

View license capacity

View peak usage

Uninstall license

Server properties

Manage users

Shortcuts

Help for Installed Product

Application Enablement (CTI) - Release: 6 - SID: 10503000

Standard License file

You are here: Licensed Products > Application\_Enablement > View License Capacity

License installed on: May 11, 2012 7:07:47 PM -04:00

License File Host IDs: 00-16-3E-48-ED-82

Licensed Features

10 Items Show ALL

Feature (License Keyword)	Expiration date	Licensed capacity
CVLAN ASAI VALUE_AES_CVLAN_ASAI	permanent	16
Unified CC API Desktop Edition VALUE_AES_AEC_UNIFIED_CC_DESKTOP	permanent	10000
AES ADVANCED SMALL SWITCH VALUE_AES_AEC_SMALL_ADVANCED	permanent	16
CVLAN Proprietary Links VALUE_AES_PROPRIETARY_LINKS	permanent	16
Product Notes VALUE_NOTES	permanent	SmallServerTypes: s8300c;s8300d;icc;premio;tn8400;laptop;CtiS MediumServerTypes: ibmx306;ibmx306m;dell1950;xen;hs20;hs20_01 LargeServerTypes: isp2100;ibmx305;dl380g3;dl385g1;dl385g2;u TrustedApplications: IPS_001, BasicUnrestrict DMCUnrestricted; IXP_001, BasicUnrestricted DMCUnrestricted; IXM_001, BasicUnrestricted DMCUnrestricted; PC_001, BasicUnrestricted, DMCUnrestricted; CIE_001, BasicUnrestricted DMCUnrestricted; OSPC_001, BasicUnrestricted DMCUnrestricted; VP_001, BasicUnrestricted, DMCUnrestricted; SAMETIME_001, VALUE_AEC_UNIFIED_CC_DESKTOP,,; CCE (AdvancedUnrestricted, DMCUnrestricted; CSI AdvancedUnrestricted, DMCUnrestricted; CSI AdvancedUnrestricted, DMCUnrestricted; AVA BasicUnrestricted, AdvancedUnrestricted, DMCUnrestricted; CCT_ELITE_CALL_CTRL_001, BasicUnrestricted, AgentEvents;
AES ADVANCED LARGE SWITCH VALUE_AES_AEC_LARGE_ADVANCED	permanent	16
TSAPI Simultaneous Users VALUE_AES_TSAPI_USERS	permanent	10000
DLG VALUE_AES_DLG	permanent	16
Device Media and Call Control VALUE_AES_DMCC_DMC	permanent	10000
AES ADVANCED MEDIUM SWITCH VALUE_AES_AEC_MEDIUM_ADVANCED	permanent	16

### 6.3. Administer TSAPI Link

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

The screenshot shows the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for the user. The left navigation pane shows "AE Services" expanded, with "TSAPI" selected, and "TSAPI Links" highlighted. The main content area displays the "TSAPI Links" table with one link configured. Below the table are buttons for "Add Link", "Edit Link", and "Delete Link".

Link	Switch Connection	Switch CTI Link #	ASAI Link Version	Security
1	S8800	2	6	Both

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 "S8300D" is selected. For **Switch CTI Link Number**, select the CTI link number from **Section 5.2**. Retain the default values in the remaining fields.

The screenshot shows the "Add TSAPI Links" screen in the Avaya Application Enablement Services Management Console. The left navigation pane is the same as the previous screenshot. The main content area contains a form with the following fields: "Link" (set to 2), "Switch Connection" (set to S8300D), "Switch CTI Link Number" (set to 1), "ASAI Link Version" (set to 6), and "Security" (set to Unencrypted). There are "Apply Changes" and "Cancel Changes" buttons at the bottom.



## 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 “S8300D”, and select the corresponding radio button. Click **Edit H.323 Gatekeeper**.

The screenshot shows the Avaya Application Enablement Services Management Console. The left navigation pane has 'Communication Manager Interface' expanded, with 'Switch Connections' selected. The main area displays a table of switch connections. The table has columns: Connection Name, Processor Ethernet, Msg Period, and Number of Active Connections. Two connections are listed: S8300D (selected with a radio button) and S8800. Below the table are buttons for 'Edit Connection', 'Edit PE/CLAN IPs', 'Edit H.323 Gatekeeper', 'Delete Connection', and 'Survivability Hierarchy'. The top right shows user information and login details.

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input checked="" type="radio"/> S8300D	No	30	1
<input type="radio"/> S8800	No	30	1

The **Edit H.323 Gatekeeper** screen is displayed. Enter the IP address of a C-LAN circuit pack or the Processor C-LAN on Communication Manager to be used as the H.323 gatekeeper, in this case “10.32.39.83” as shown below. Click **Add Name or IP**.

The screenshot shows the 'Edit H.323 Gatekeeper - S8300D' screen. The left navigation pane is the same as the previous screenshot. The main area has a text input field containing '10.32.39.83' and an 'Add Name or IP' button. Below the input field are 'Delete IP' and 'Back' buttons. The top right shows user information and login details.

## 6.5. Disable 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.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for the user. The main navigation bar shows "Security | Security Database | Control" as the active path, with links for "Home | Help | Logout". The left sidebar contains a tree view of the console's sections, with "Security" expanded and "Control" selected under "Security Database". The main content area is titled "SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services" and contains two unchecked checkboxes: "Enable SDB for DMCC Service" and "Enable SDB for TSAPI Service, JTAPI and Telephony Web Services". An "Apply Changes" button is located below the checkboxes.

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

**AVAYA** Application Enablement Services Management Console

Security | Security Database | Control Home | Help | Logout

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ High Availability
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▼ Security
  - ▶ Account Management
  - ▶ Audit
  - ▶ Certificate Management
  - Enterprise Directory
  - ▶ Host AA
  - ▶ PAM
  - ▼ Security Database
    - Control

SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services

☐ Enable SDB for DMCC Service

☐ Enable SDB for TSAPI Service, JTAPI and Telephony Web Services

Apply Changes



## 6.6. Administer TCP Settings

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

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for the user. The left navigation pane shows a tree structure with "Networking" expanded, and "TCP Settings" selected. The main content area shows the "TCP Settings" configuration page. It includes a "TCP Retransmission Count" section with two radio button options: "Standard Configuration (15)" and "TSAPI Routing Application Configuration (6)". The "TSAPI Routing Application Configuration (6)" option is selected. Below the options are "Apply Changes" and "Cancel Changes" buttons. A note explains that a smaller TCP Retransmission Count reduces the time the server waits for a TCP acknowledgement. A warning states that this setting applies to all TCP and TLS sockets on the AE Server and should be used with caution.

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

**Networking | TCP Settings** [Home](#) | [Help](#) | [Logout](#)

**AE Services**  
**Communication Manager Interface**  
**High Availability**  
**Licensing**  
**Maintenance**  
**Networking**  
AE Service IP (Local IP)  
Network Configure  
Ports  
**TCP Settings**  
**Security**

**TCP Settings**

TCP Retransmission Count

☐ Standard Configuration (15)  
☒ TSAPI Routing Application Configuration (6)


[Apply Changes](#) [Cancel Changes](#)

Note: A smaller TCP Retransmission Count reduces the amount of time that the server waits for a TCP acknowledgement before closing the socket. Select the Standard Configuration setting unless this AE Services server is used by TSAPI routing applications.

**Warning:** This setting applies to all TCP and TLS sockets on the AE Server and so it should be used with caution.

## 6.7. 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**.



**Application Enablement Services**  
Management Console

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

Maintenance | Service ControllerHome | Help | Logout

▶ AE Services

▶ Communication Manager Interface

▶ High Availability

▶ Licensing

▼ Maintenance

▶ Date Time/NTP Server

▶ Security Database

▶ Service Controller

▶ Server Data

▶ Networking

▶ Security

▶ Status

▶ User Management

Service Controller

Service	Controller Status
<input type="checkbox"/> ASAI Link Manager	Running
<input checked="" type="checkbox"/> DMCC Service	Running
<input type="checkbox"/> CVLAN Service	Running
<input type="checkbox"/> DLG Service	Running
<input type="checkbox"/> Transport Layer Service	Running
<input checked="" type="checkbox"/> TSAPI Service	Running

For status on actual services, please use [Status and Control](#)

Start

Stop

Restart Service

Restart AE Server

Restart Linux

Restart Web Server

## 6.8. 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 Communications Center.

In this case, the associated Tlink name is “AVAYA#S8300D#CSTA#AES\_125\_72”. Note the use of the switch connection “S8300D” from **Section 6.3** as part of the Tlink name.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for the user. The main navigation pane on the left lists various services, with "Security" expanded to show "Security Database" and "Tlinks" selected. The main content area shows a list of Tlinks with the first one, "AVAYA#S8300D#CSTA#AES\_125\_72", selected. A "Delete Tlink" button is visible below the list.

AVAYA Application Enablement Services Management Console

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

Security | Security Database | Tlinks Home | Help | Logout

AE Services  
Communication Manager Interface  
High Availability  
Licensing  
Maintenance  
Networking  
Security  
Account Management  
Audit  
Certificate Management  
Enterprise Directory  
Host AA  
PAM  
Security Database  
Control  
CTI Users  
Devices  
Device Groups  
Tlinks

Tlinks

Tlink Name

- ☒ AVAYA#S8300D#CSTA#AES\_125\_72
- ☐ AVAYA#S8800#CSTA#AES\_125\_72
- ☐ AVAYA#S8800#CSTA-S#AES\_125\_72

Delete Tlink

## 6.9. Administer Zeacom 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.

**AVAYA** **Application Enablement Services**  
Management Console

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

User Management | User Admin | Add UserHome | Help | Logout

▶ AE Services

▶ Communication Manager Interface

▶ High Availability

▶ Licensing

▶ Maintenance

▶ Networking

▶ Security

▶ Status

▼ User Management

▶ Service Admin

▼ User Admin

▪ Add User

▪ Change User Password

▪ List All Users

▪ Modify Default Users

▪ Search Users

▶ Utilities

▶ Help

Add User

Fields marked with \* can not be empty.

\* User Idzeacom

\* Common Namezeacom

\* Surnamezeacom

\* User Password••••••••

\* Confirm Password••••••••

Admin Note

Avaya RoleNone

Business Category

Car License

CM Home

Css Home

CT UserYes

Department Number

Display Name

Employee Number

Employee Type

Enterprise Handle

## 6.10. Enable 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.

**AVAYA**

**Application Enablement Services**  
Management Console

Welcome: User  
Last login: Tue Nov 12 07:51:42 2013 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Tue Nov 12 07:51:53 MST 2013  
HA Status: Not Configured

Networking | Ports

Home | Help | Logout

▶ AE Services

▶ Communication Manager Interface

▶ High Availability

▶ Licensing

▶ Maintenance

▼ Networking

▶ AE Service IP (Local IP)

▶ Network Configure

▶ Ports

▶ TCP Settings

▶ Security

▶ Status

▶ User Management

▶ Utilities

▶ Help

Ports

CVLAN Ports

Unencrypted TCP Port9999

Enabled Disabled

Encrypted TCP Port9998

Enabled Disabled

DLG Port

TCP Port5678

TSAPI Ports

TSAPI Service Port450

Enabled Disabled

Local TLINK Ports

TCP Port Min1024

TCP Port Max1039

Unencrypted TLINK Ports

TCP Port Min1050

TCP Port Max1065

Encrypted TLINK Ports

TCP Port Min1066

TCP Port Max1081

DMCC Server Ports

Unencrypted Port4721

Enabled Disabled

Encrypted Port4722

Enabled Disabled

TR/87 Port4723

Enabled Disabled

## 7. Configure Zeacom Communications Center

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

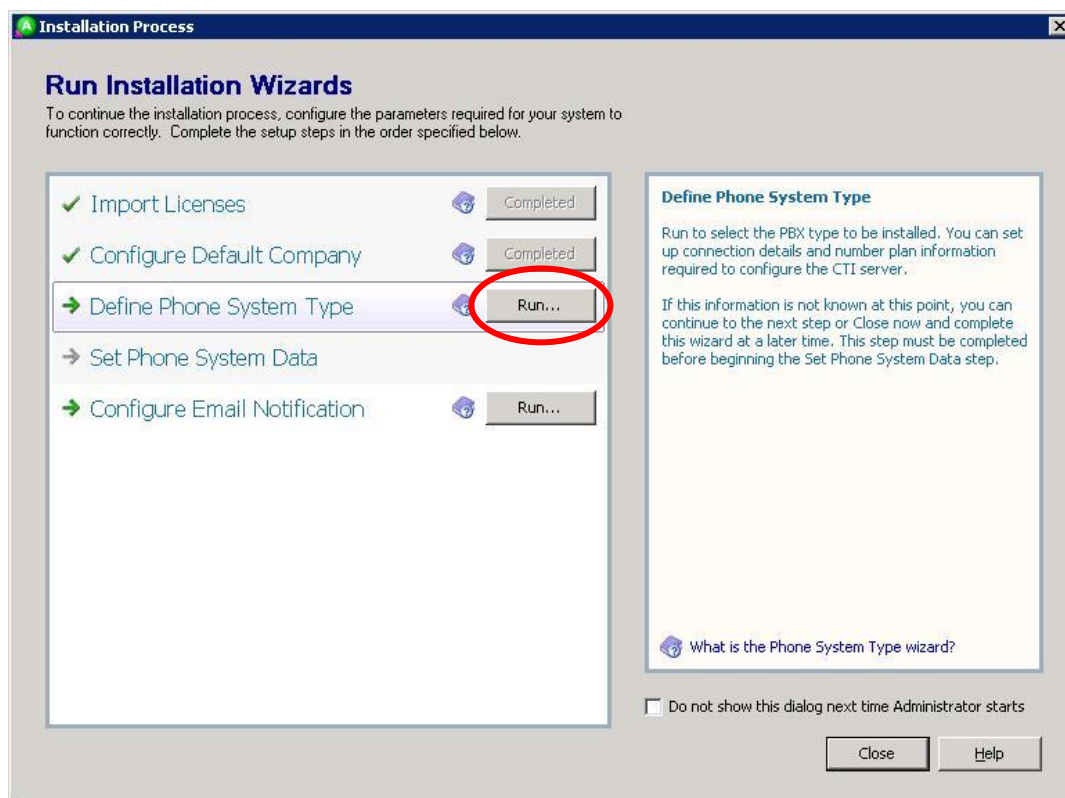
- Administer phone system type
- Administer phone system data
- Administer queues
- Administer agents and supervisors
- Administer mailboxes

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

### 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**.



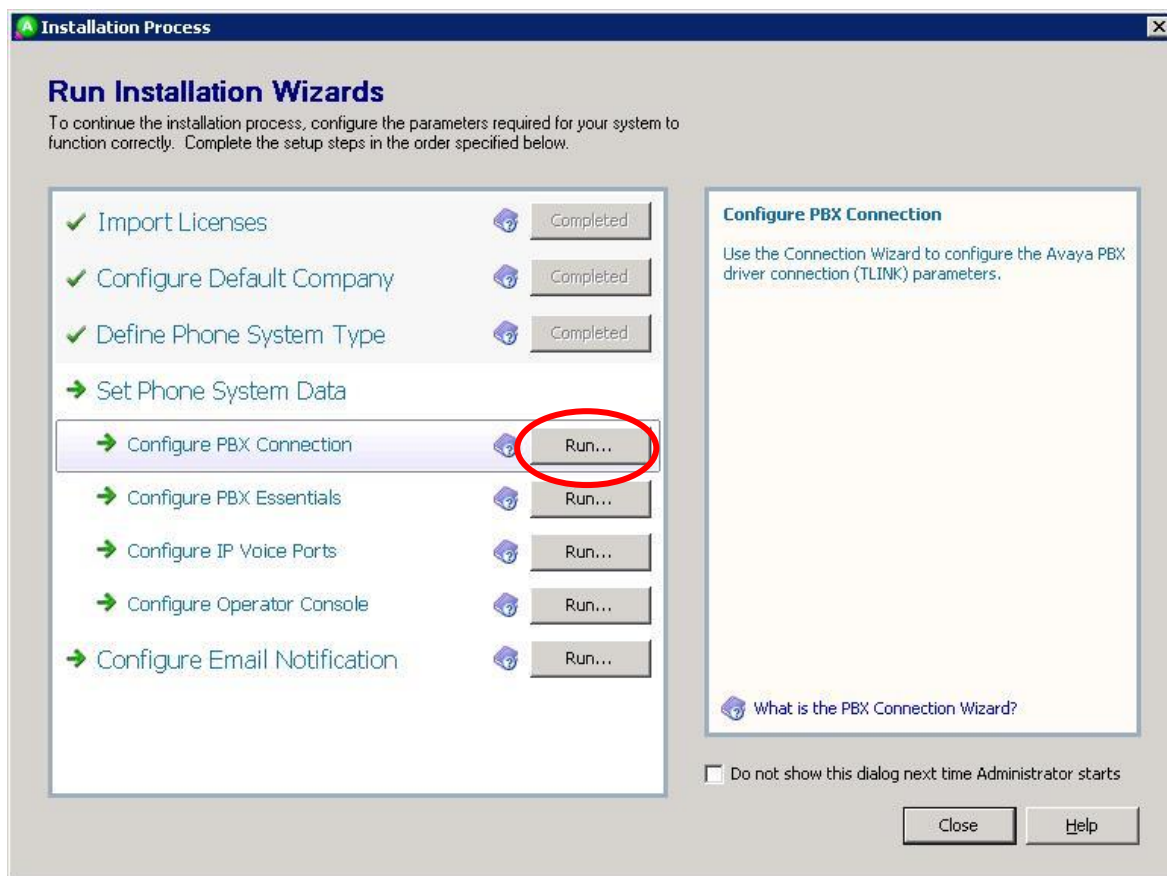


The **Phone System Type** screen is displayed. For **PBX Type**, select “Avaya Communication Manager (ACM)”.



## 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**.

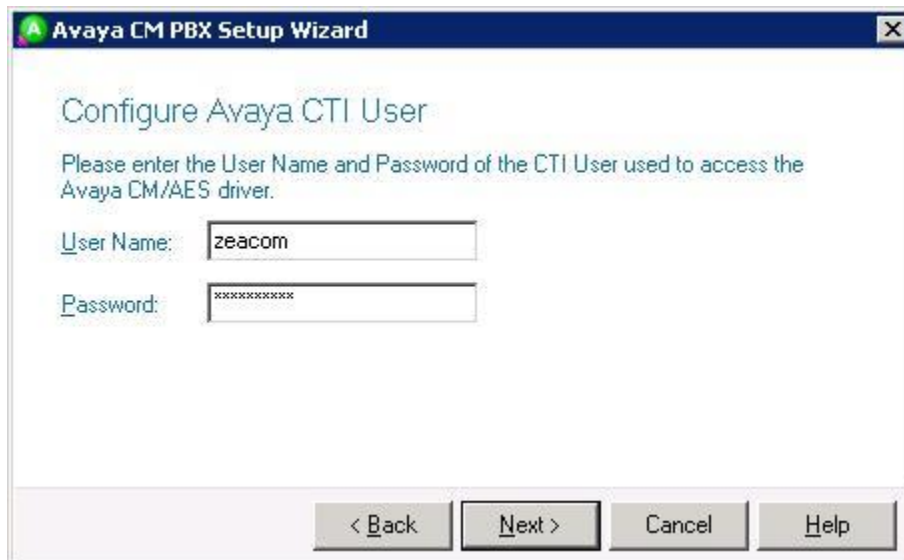


The **Avaya CM PBX Setup Wizard → Configure PBX Connection** screen is displayed. For **PBX Driver Name**, enter the Tlink name from **Section 6.3**, as shown below.



The screenshot shows the 'Configure PBX Connection' window of the Avaya CM PBX Setup Wizard. The title bar reads 'Avaya CM PBX Setup Wizard'. The main heading is 'Configure PBX Connection'. Below it, a message states: 'To begin configuring communication to the Avaya CM/AES Switch, please enter the PBX driver connection (TLINK) name.' There are four input fields for the PBX Driver Name, containing 'AVAYA', 'S8300D', 'CSTA', and 'AES\_125\_72'. Below these fields is a question: 'Is your system connected to the Avaya AES Server?'. A checkbox labeled 'Yes, the system is using Avaya AES' is checked. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

The **Avaya CM PBX Setup Wizard → Configure Avaya CTI User** screen is displayed next. Enter the Zeacom user credentials from **Section 6.9**.



The screenshot shows the 'Configure Avaya CTI User' window of the Avaya CM PBX Setup Wizard. The title bar reads 'Avaya CM PBX Setup Wizard'. The main heading is 'Configure Avaya CTI User'. Below it, a message states: 'Please enter the User Name and Password of the CTI User used to access the Avaya CM/AES driver.' There are two input fields: 'User Name' containing 'zeacom' and 'Password' containing a series of asterisks. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.



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 Zeacom user credentials from **Section 6.9**.
- **DMCC Password:** The Zeacom user credentials from **Section 6.9**.
- **Global SoftPort Password:** The security code value from **Section 5.6**.

Avaya CM PBX Setup Wizard

### Configure ACM Soft Ports

Please enter the configuration details for the ACM Soft Ports.

ACM Switch Connection Name:  (case sensitive)

ACM IP Address:

AES IP Address:

DMCC TCP Port:

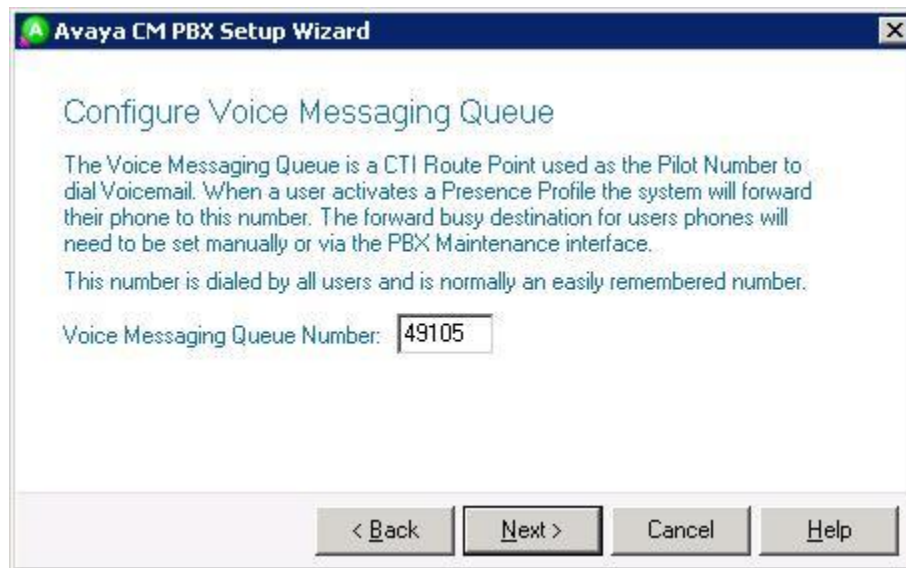
DMCC User:

DMCC Password:

Global SoftPort Password:

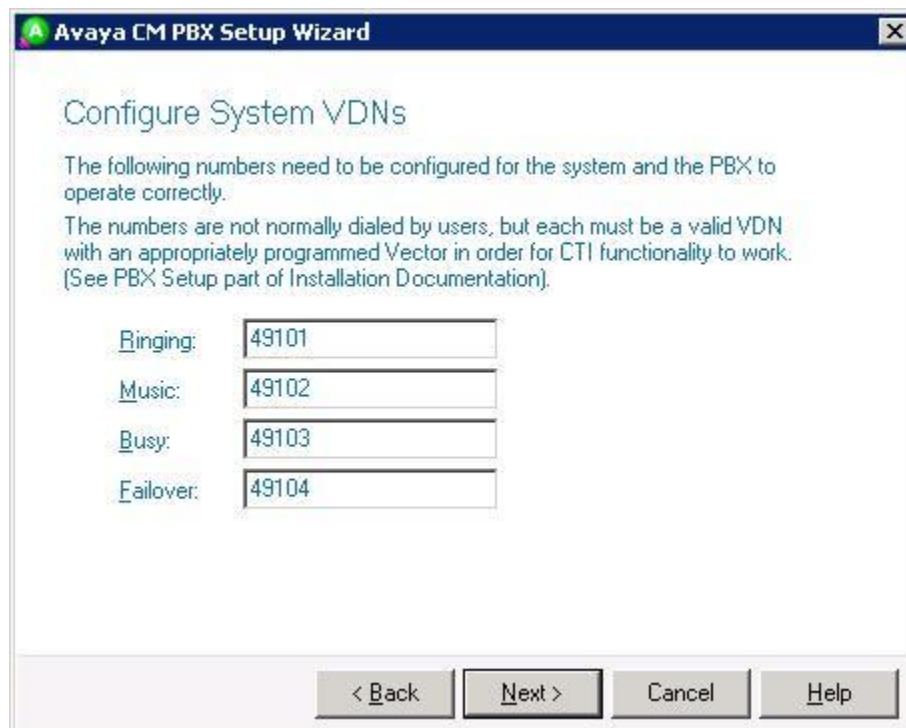
< Back   Next >   Cancel   Help

Continue with the Installation Wizard until the **Avaya CM PBX Setup Wizard → Configure Voice Messaging Queue** screen is displayed. For **Voice Messaging Queue Number**, enter the extension of the Voicemail VDN from **Section 5.3**.



The screenshot shows the 'Configure Voice Messaging Queue' window of the Avaya CM PBX Setup Wizard. The window has a title bar with the Avaya logo and the text 'Avaya CM PBX Setup Wizard'. The main content area has a title 'Configure Voice Messaging Queue' and two paragraphs of text: 'The Voice Messaging Queue is a CTI Route Point used as the Pilot Number to dial Voicemail. When a user activates a Presence Profile the system will forward their phone to this number. The forward busy destination for users phones will need to be set manually or via the PBX Maintenance interface.' and 'This number is dialed by all users and is normally an easily remembered number.' Below the text is a label 'Voice Messaging Queue Number:' followed by a text input field containing '49105'. At the bottom of the window are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

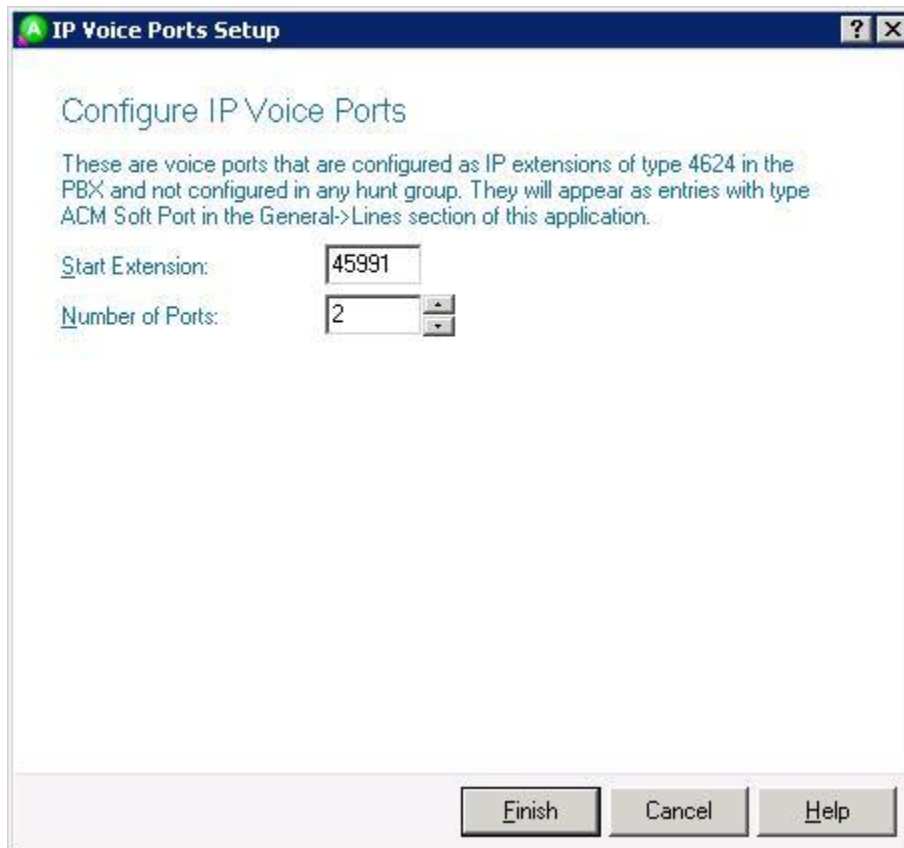
The **Avaya CM PBX Setup Wizard → Configure System VDNs** screen is displayed next. Enter the Ringing, Music, Busy, and Failure VDNs from **Section 5.3**, as shown below.



The screenshot shows the 'Configure System VDNs' window of the Avaya CM PBX Setup Wizard. The window has a title bar with the Avaya logo and the text 'Avaya CM PBX Setup Wizard'. The main content area has a title 'Configure System VDNs' and two paragraphs of text: 'The following numbers need to be configured for the system and the PBX to operate correctly.' and 'The numbers are not normally dialed by users, but each must be a valid VDN with an appropriately programmed Vector in order for CTI functionality to work. (See PBX Setup part of Installation Documentation).' Below the text are four labels with corresponding text input fields: 'Ringing:' with '49101', 'Music:' with '49102', 'Busy:' with '49103', and 'Failover:' with '49104'. At the bottom of the window are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

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**, enter the total number of virtual IP softphones from **Section 5.6**.

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



**IP Voice Ports Setup**

### Configure IP Voice Ports

These are voice ports that are configured as IP extensions of type 4624 in the PBX and not configured in any hunt group. They will appear as entries with type ACM Soft Port in the General->Lines section of this application.

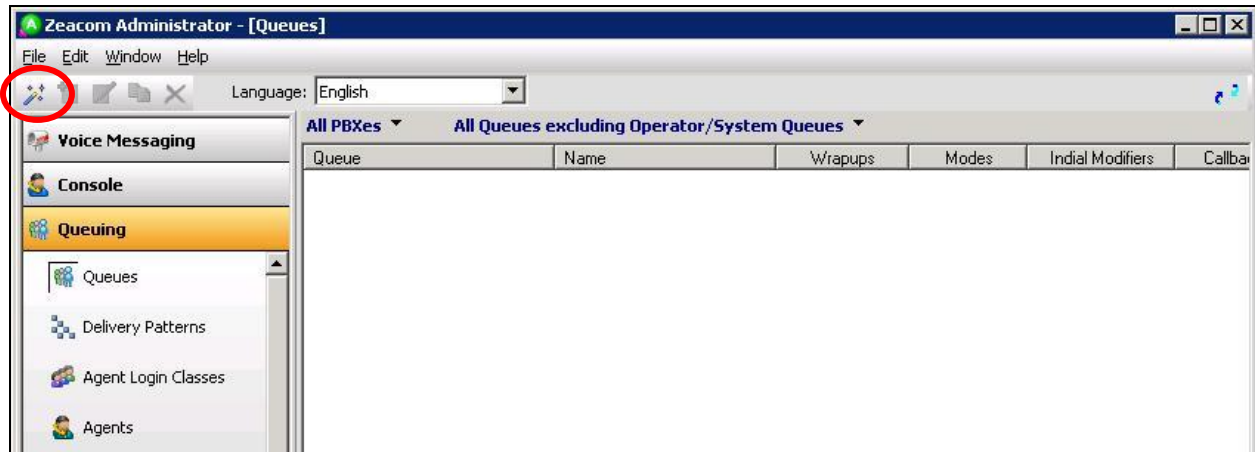
Start Extension:

Number of Ports:

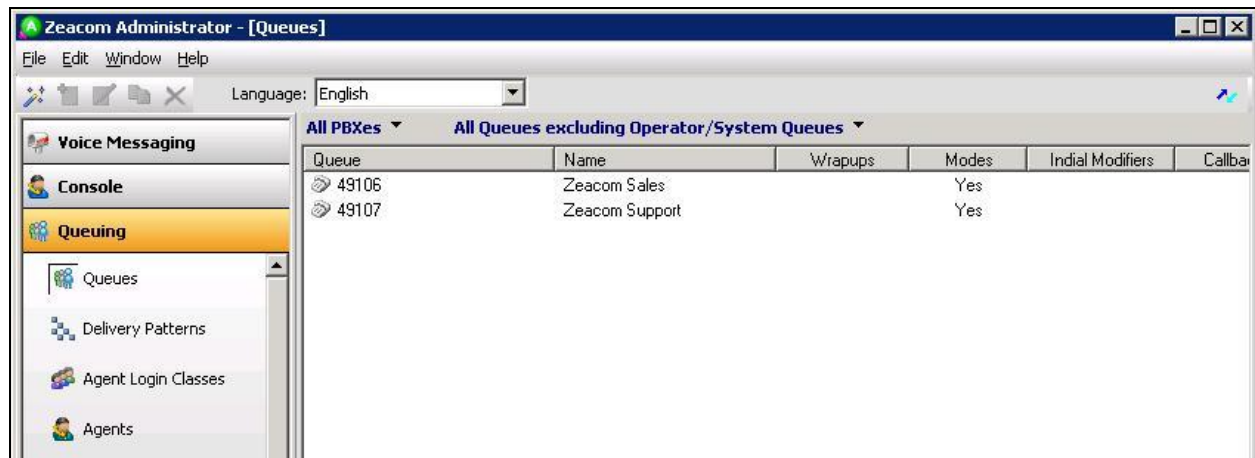
**Finish** **Cancel** **Help**

### 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.

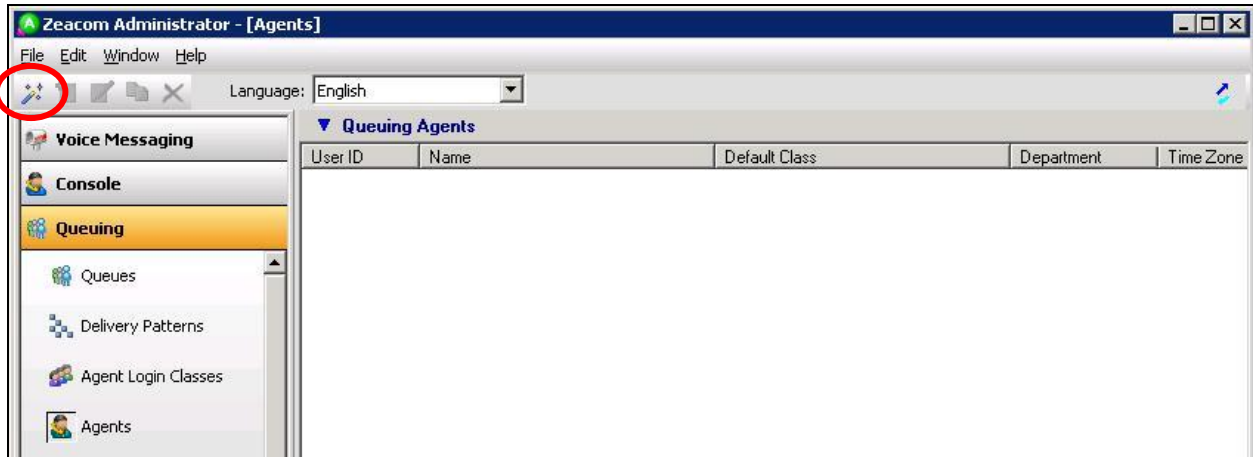


Follow the **Adding a New Queue Wizard** in the subsequent screens (not shown) to configure a new queue for each general routing VDN in **Section 5.3**. In the compliance testing, two queues were created as shown below.



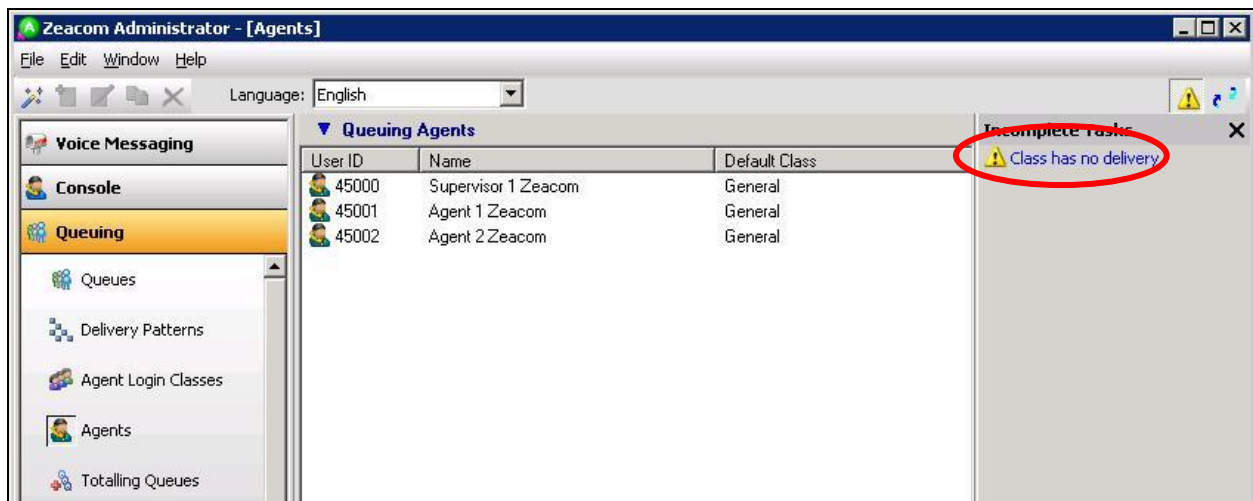
## 7.4. Administer Agents and Supervisors

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

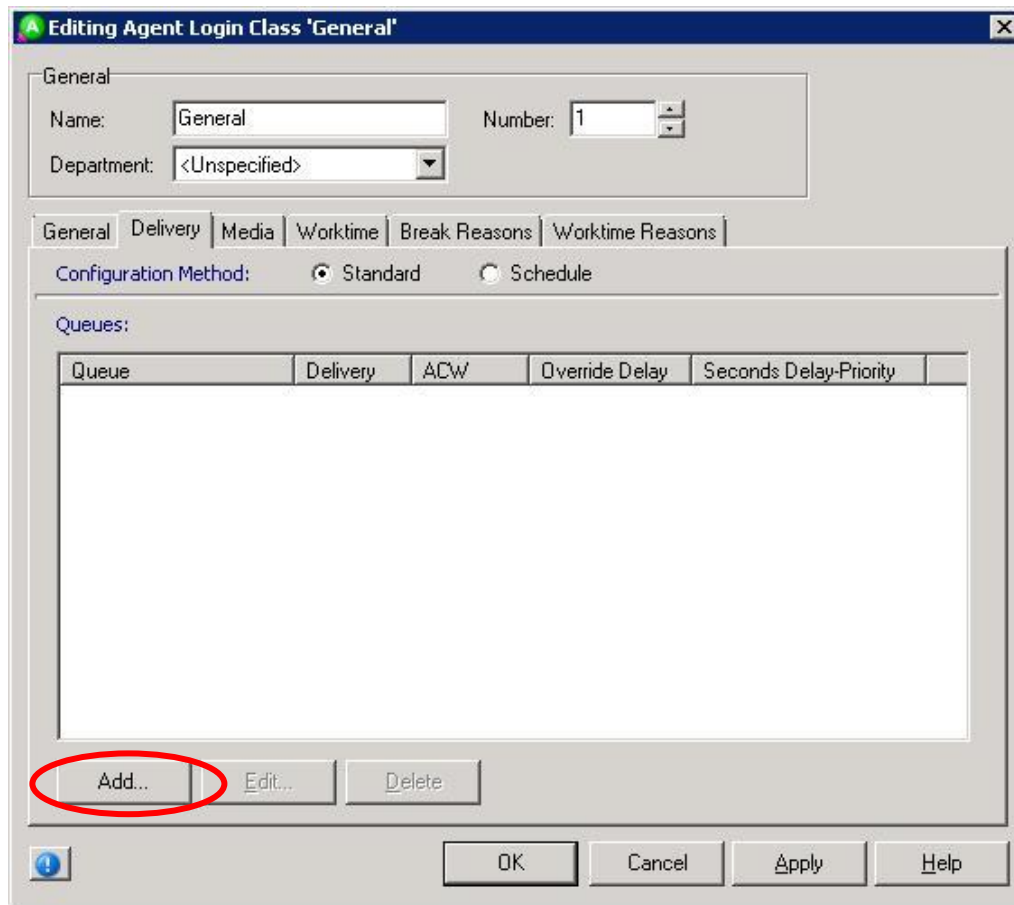


Follow the **Add Agent Wizard** in the subsequent screens (not shown) to configure a corresponding entry for each agent and supervisor in **Section 3**. In the compliance testing, two agents and one supervisor were created as shown below.

Double click on **Class has no delivery**.



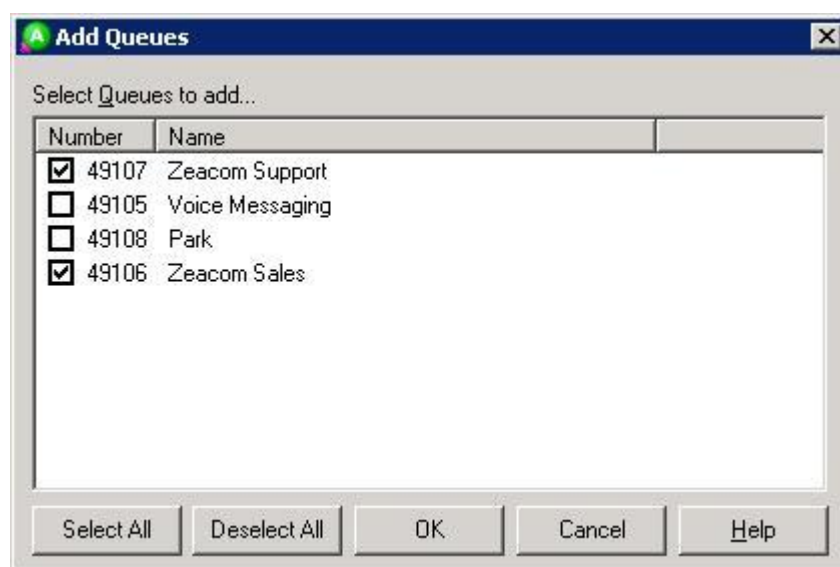
The **Editing Agent Login Class** screen is displayed. Select the **Delivery** tab, and click **Add**.



The dialog box titled "Editing Agent Login Class 'General'" has a "General" tab selected. It contains fields for "Name" (General), "Number" (1), and "Department" (<Unspecified>). Below these are tabs for "General", "Delivery", "Media", "Worktime", "Break Reasons", and "Worktime Reasons". The "Configuration Method" section has radio buttons for "Standard" (selected) and "Schedule". A "Queues:" section contains a table with columns: Queue, Delivery, ACW, Override Delay, and Seconds Delay-Priority. At the bottom, there are buttons for "Add...", "Edit...", and "Delete". The "Add..." button is circled in red.

Queue	Delivery	ACW	Override Delay	Seconds Delay-Priority
-------	----------	-----	----------------	------------------------

The **Add Queues** screen is displayed next. Check the entries corresponding to the general routing VDNs from **Section 5.3**, to enable calls to these VDNs to be delivered.

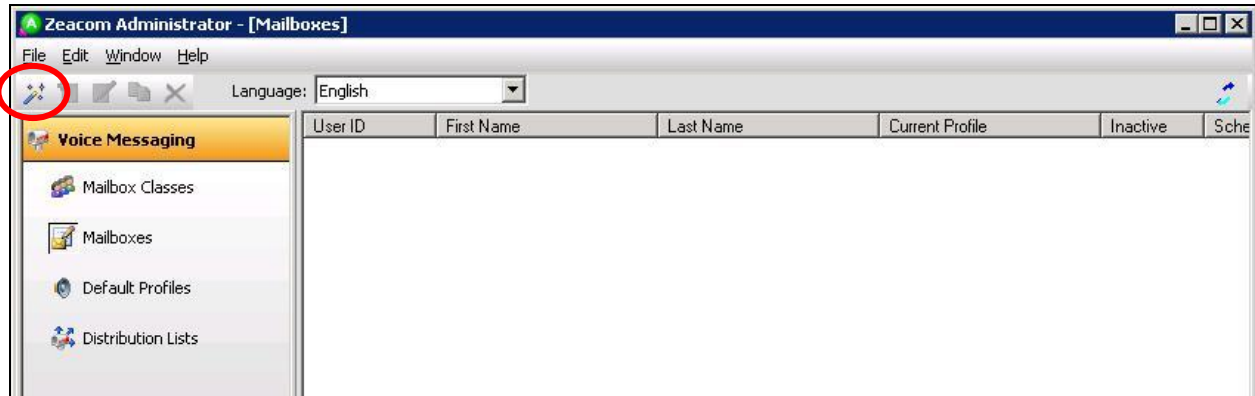


The dialog box titled "Add Queues" has a "Select Queues to add..." section. It contains a table with columns "Number" and "Name". The table lists four entries: 49107 Zeacom Support (checked), 49105 Voice Messaging (unchecked), 49108 Park (unchecked), and 49106 Zeacom Sales (checked). At the bottom, there are buttons for "Select All", "Deselect All", "OK", "Cancel", and "Help".

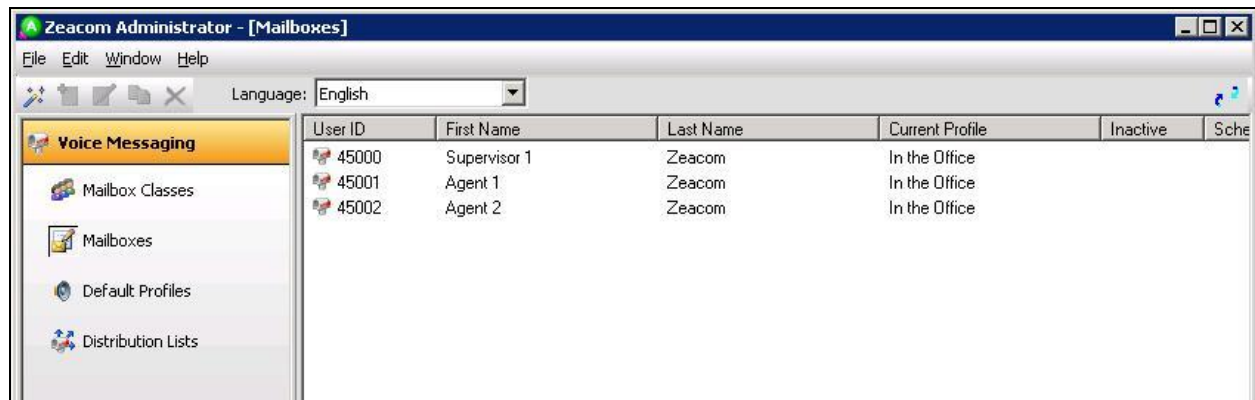
Number	Name
<input checked="" type="checkbox"/> 49107	Zeacom Support
<input type="checkbox"/> 49105	Voice Messaging
<input type="checkbox"/> 49108	Park
<input checked="" type="checkbox"/> 49106	Zeacom Sales

## 7.5. 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 7.4**. The screen below shows the mailboxes that were created.



## 8. Verification Steps

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

### 8.1. 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 Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
<b>1</b>	<b>6</b>	<b>no</b>	<b>aes_125_72</b>	<b>established</b>	<b>98</b>	<b>67</b>

Verify the registration status of the virtual IP softphones by using the “list registered-ip-stations” command. Verify that all extensions 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 or Orig Port	Set Type/ Net Rgn	Prod ID/ Release	TCP Skt	Station IP Address/ Gatekeeper IP Address	
45000	9650	IP_Phone	y	10.32.39.106	
	1	3.210A		10.32.39.83	
45001	1608	IP_Phone	y	10.32.39.104	
	1	1.340B		10.32.39.83	
45002	9611	IP_Phone	y	10.32.39.105	
	1	6.3037		10.32.39.83	
<b>45991</b>	<b>4624</b>	<b>IP_API_A</b>	<b>y</b>	<b>10.64.125.72</b>	
	1	3.2040		10.32.39.83	
<b>45992</b>	<b>4624</b>	<b>IP_API_A</b>	<b>y</b>	<b>10.64.125.72</b>	
	1	3.2040		10.32.39.83	



## 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**.



# Application Enablement Services

## Management Console

Welcome: User  
Last login: Mon Jan 20 08:34:07 2014 from 10.32.39.20  
Number of prior failed login attempts: 0  
HostName/IP: aes\_125\_72/10.64.125.72  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP  
SW Version: 6.3.1.0.19-0  
Server Date and Time: Mon Jan 20 08:34:51 MST 2014  
HA Status: Not Configured

Status | Status and Control | TSAPI Service Summary

Home | Help | Logout

▶ AE Services

▶ Communication Manager Interface

▶ High Availability

▶ Licensing

▶ Maintenance

▶ Networking

▶ Security

▼ Status

Alarm Viewer

Log Manager

▶ Logs

▼ Status and Control

▪ CVLAN Service Summary

▪ DLG Services Summary

▪ DMCC Service Summary

▪ Switch Conn Summary

▪ TSAPI Service Summary

TSAPI Link Details


☐ Enable page refresh every  seconds

	Link	Switch Name	Switch CTI Link ID	Status	Since	State	Switch Version	Associations	Msgs to Switch	Msgs from Switch	Msgs Period
○	1	S8800	2	Talking	Mon Nov 25 11:49:35 2013	Online	16	2	15	15	30
●	2	S8300D	1	Talking	Mon Jan 20 08:13:12 2014	Online	16	5	73	79	30

For service-wide information, choose one of the following:

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 Zeacom user name from **Section 6.9**, and that the total number of sessions reflects the number of virtual IP softphones from **Section 5.6**.



## Application Enablement Services

### Management Console

Welcome: User

Last login: Mon Jan 20 08:34:07 2014 from 10.32.39.20

Number of prior failed login attempts: 0

HostName/IP: aes\_125\_72/10.64.125.72

Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_SP

SW Version: 6.3.1.0.19-0

Server Date and Time: Mon Jan 20 08:35:42 MST 2014

HA Status: Not Configured

Status | Status and Control | DMCC Service Summary
Home | Help | Logout

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ High Availability
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▼ **Status**
  - Alarm Viewer
  - Log Manager
  - ▶ Logs
  - ▼ **Status and Control**
    - CVLAN Service Summary
    - DLG Services Summary
    - **DMCC Service Summary**

### DMCC Service Summary - Session Summary

☐ Enable page refresh every 60 seconds

Session Summary [Device Summary](#)

Generated on Mon Jan 20 08:35:37 MST 2014

Service Uptime: 32 days, 19 hours 22 minutes

Number of Active Sessions: 3

Number of Sessions Created Since Service Boot: 69084

Number of Existing Devices: 2

Number of Devices Created Since Service Boot: 34586

■	Session ID	User	Application	Far-end Identifier	Connection Type	# of Associated Devices
<input type="checkbox"/>	C8EF1710B1F5CA101 B60645E4E5F04AD-69082	zeacom		10.64.101.52	XML Unencrypted	1
<input type="checkbox"/>	2D7D50331A3EF714E E95E6D3E9CA8FE3-69083	zeacom		10.64.101.52	XML Unencrypted	1

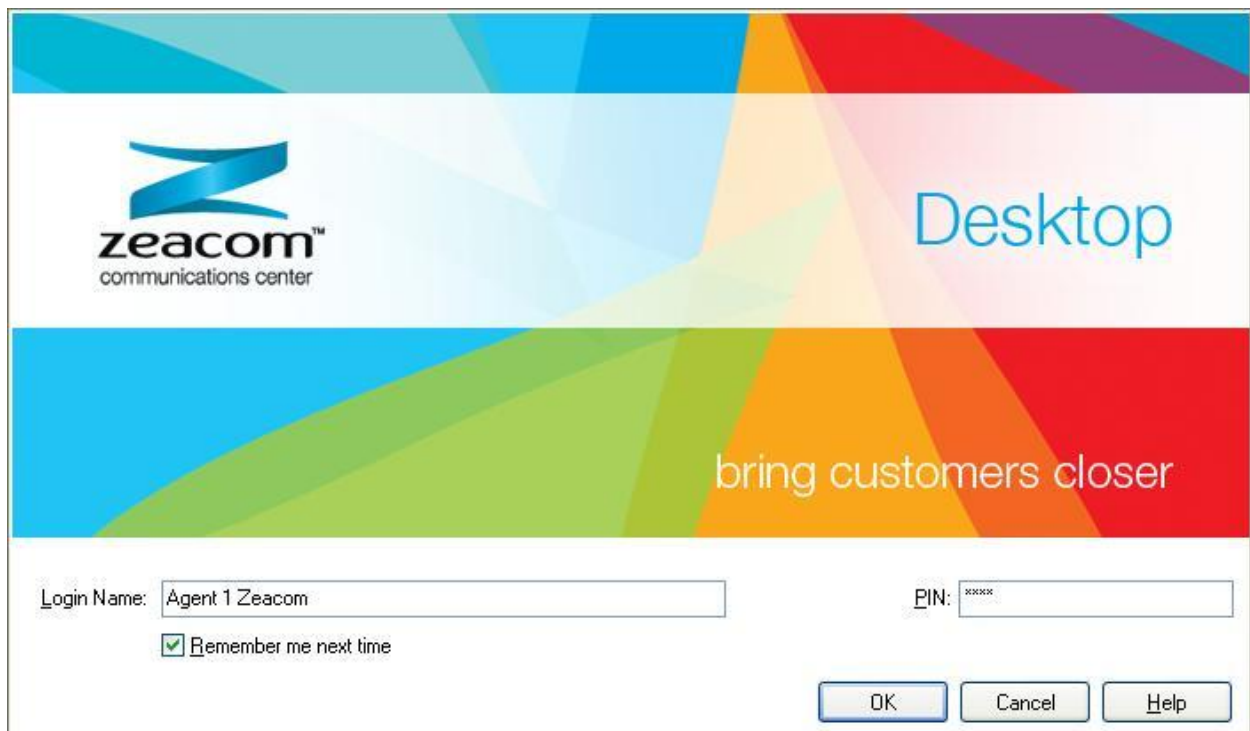
Terminate Sessions
Show Terminated Sessions

### 8.3. Verify Zeacom Communications Center

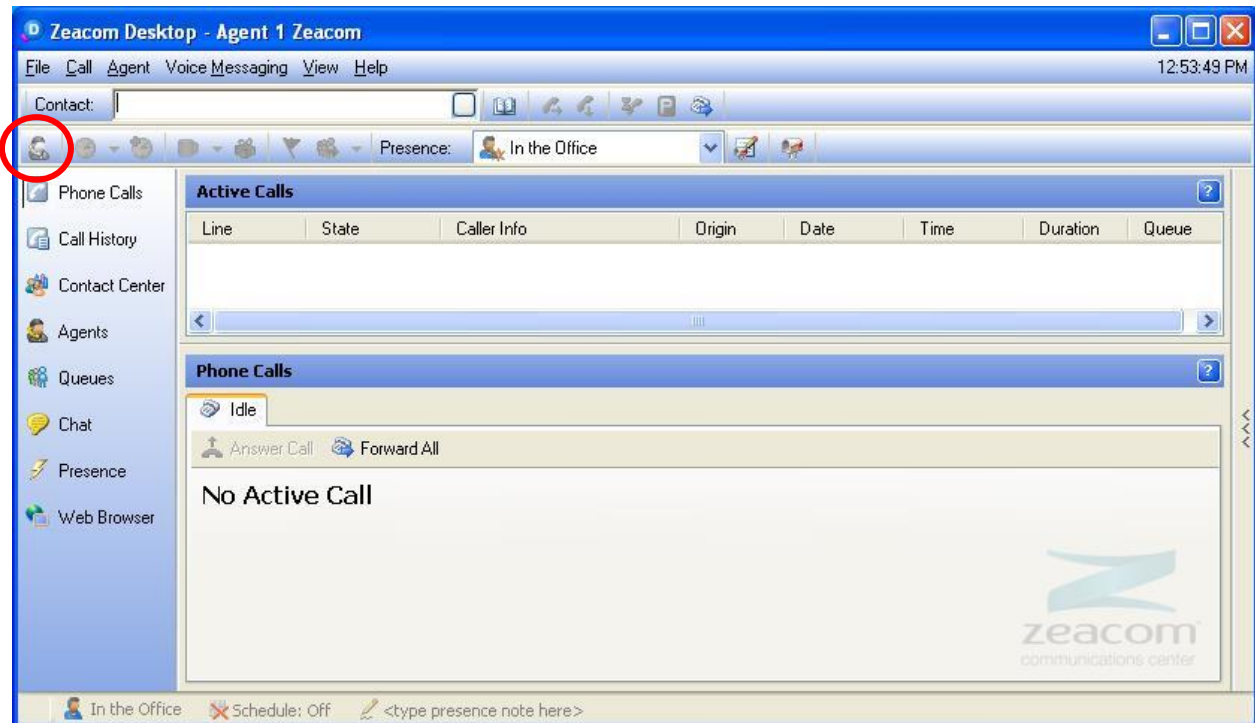
From the agent desktop running the Zeacom Executive Desktop client application, double-click on the **Desktop** icon shown below, which was created as part of installation.



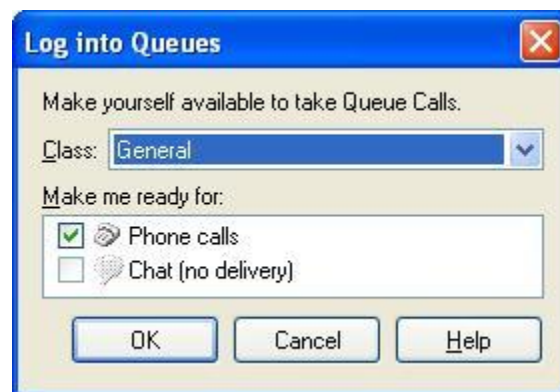
The **Desktop** login screen is displayed. Enter a valid login name from **Section 7.4**, and use the generic default PIN value from Zeacom. Retain the default value in the remaining fields.

The login screen features a colorful geometric background. On the left is the Zeacom logo with the text 'zeacom™ communications center'. On the right, the word 'Desktop' is displayed in a large blue font. Below this, the phrase 'bring customers closer' is written in a smaller, light-colored font. At the bottom, there are two input fields: 'Login Name:' containing 'Agent 1 Zeacom' and 'PIN:' containing 'XXXXXX'. A checkbox labeled 'Remember me next time' is checked. At the bottom right are three buttons: 'OK', 'Cancel', and 'Help'.

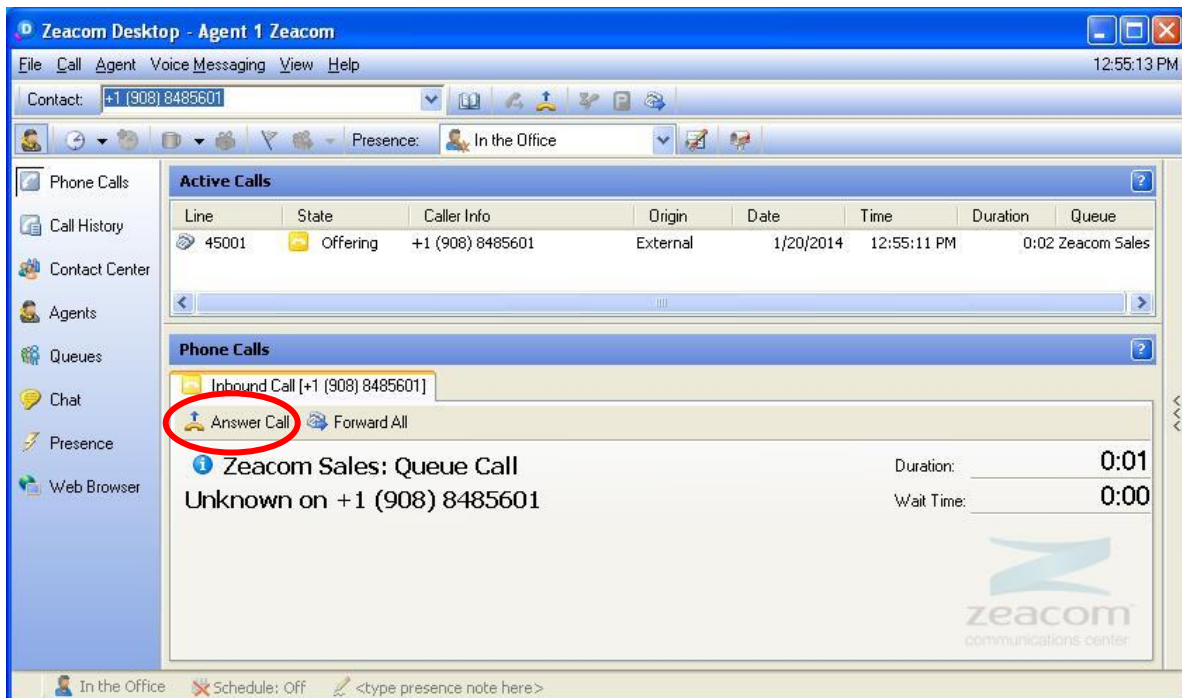
The **Zeacom Desktop** screen is displayed. Click on the **Log into Queues** icon shown below.



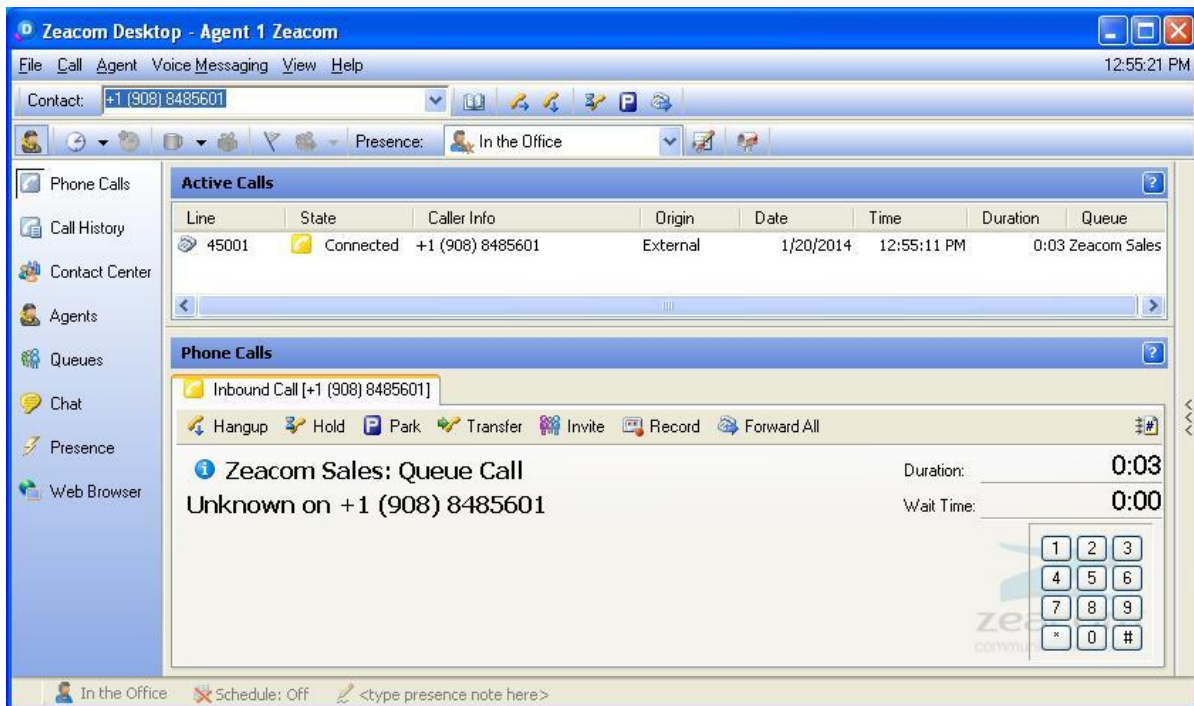
The **Log into Queues** dialog box is displayed next. Retain all default values.



Make an incoming call to the Zeacom Sales application, with available agent “45001”. Verify that the agent desktop is populated with a voice call entry, as shown below, and that the **State** is “Offering”. Click **Answer Call**.



Verify that the **State** is updated to “Connected”, and that the agent is connected to the caller with two-way talk paths.



## 9. Conclusion

These Application Notes describe the configuration steps required for Zeacom Communications Center to successfully interoperate with Avaya Aura® Communication Manager using Avaya Aura® Application Enablement Services 6.3. All feature and serviceability test cases were completed with one observation 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*, Document 03-300509, Issue 9, Release 6.3, October 2013, available at <http://support.avaya.com>.
2. *Avaya Aura® Application Enablement Services Administration and Maintenance Guide*, Release 6.3, Issue 2, October 2013, available at <http://support.avaya.com>.
3. *Communication Manager Installation Manual*, Zeacom Library Version 7.0, available via Communication Manager training course provided by Zeacom.



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