



## Avaya Solution & Interoperability Test Lab

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# Application Notes for OpenText Qfiniti Observe (Media Streaming) with Avaya Aura® Application Enablement Services R7.0.1 and Avaya Aura® Communication Manager R7.0.1 using DMCC – Issue 1.0

## Abstract

These Application Notes contain instructions for configuring OpenText Qfiniti Observe (Media Streaming) to interoperate with Avaya Aura® Application Enablement Services and Avaya Aura® Communication Manager.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the 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 contain instructions for configuring OpenText Qfiniti Observe (Qfiniti Observe) to interoperate with Avaya Aura® Application Enablement Services (AES) and Avaya Aura® Communication Manager (Communication Manager).

Qfiniti Observe is a call recording solution which utilizes the Device, Media and Call Control (DMCC) and TSAPI services on AES to record calls for Quality Monitoring and Compliance purposes.

Qfiniti Observe registers as a stand-alone recording device for each extension that needs to be monitored. Qfiniti Observe (Media Streaming) uses the DMCC Multiple Registration method provided by AES for recording calls.

## 2. General Test Approach and Test Results

The compliance test focused on the ability for calls to be recorded. Calls were manually placed from the public switched telephone network (PSTN) directly to and from recorded devices, and to Automatic Call Distributor (ACD) queues.

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 compliance test validated the ability of Qfiniti Observe to successfully record various types of calls routed to and from Analog, Digital, IP (H323 and SIP) endpoints. The feature testing included the following:

- Handling of real-time agent states and call events from Qfiniti Observe.
- Use of AES DMCC registration services to register and un-register the virtual IP Softphone, monitor services and media control events to obtain the media from the virtual IP Softphones.
- Proper recording, logging, and playback of calls for scenarios involving inbound, outbound, agent drop, customer drop, hold, reconnect, transfer and conference.

Additionally, testing confirmed the ability for Qfiniti Observe to recover from common outages such as network outages and server reboots.

## **2.2. Test Results**

All planned test cases were executed and passed.

## **2.3. Support**

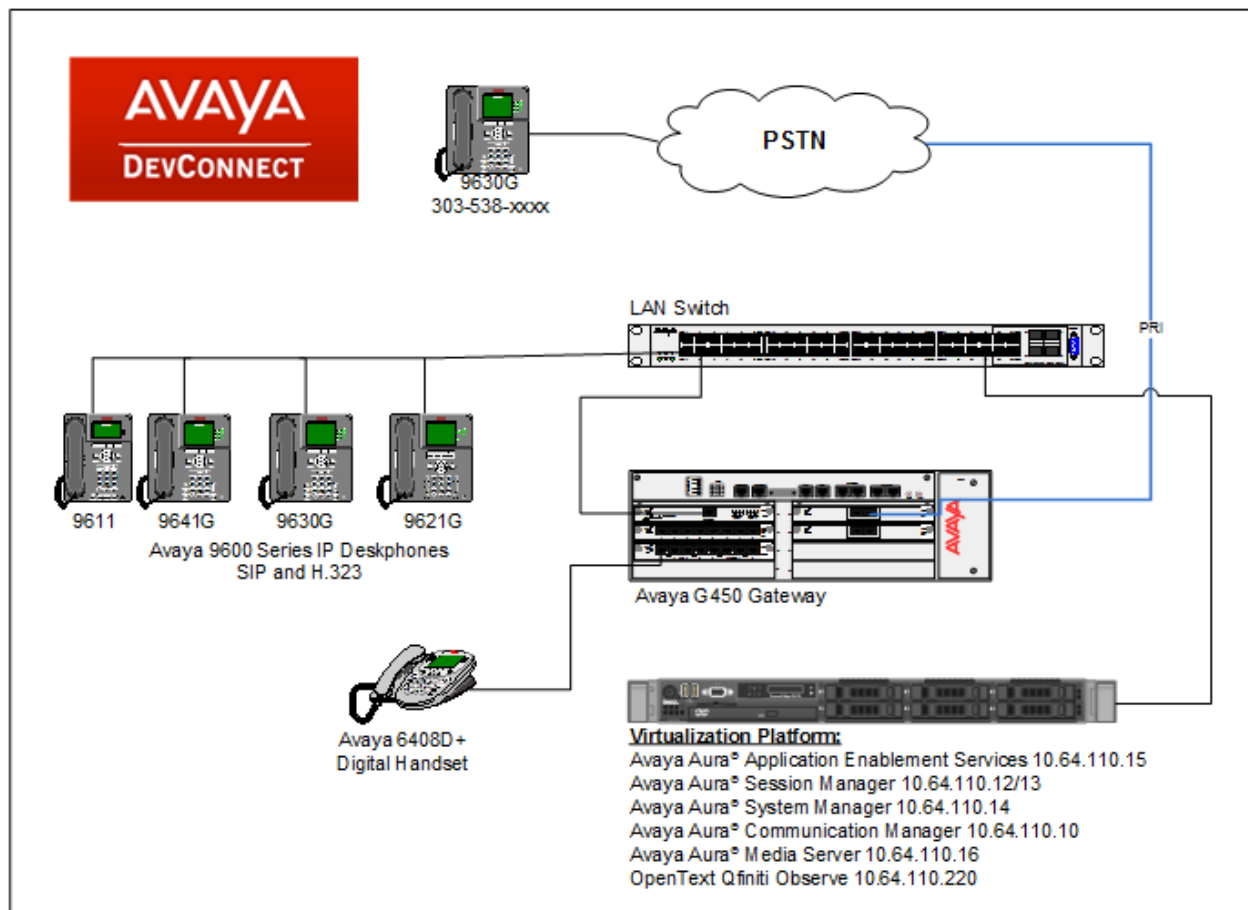
Technical support for OpenText Qfiniti Observe can be obtained via the following means.

**Web:** <http://engage.opentext.com/products/qfiniti>

**Phone:** +1 (800) 540-7292

### 3. Reference Configuration

**Figure 1** illustrates a sample configuration that consists of Avaya Products and OpenText Qfiniti Observe.



**Figure 1:** Test Configuration for OpenText Qfiniti Observe

## 4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura <sup>®</sup> Communication Manager running on a virtual platform	7.0.1.2.0-FP1SP2
Avaya Aura <sup>®</sup> Session Manager running on a virtual platform	7.0.1.1.701114
Avaya Aura <sup>®</sup> System Manager running on a virtual platform	7.0.1.1.065378
Avaya G450 Media Gateway	37.19.0
Avaya Aura <sup>®</sup> Media Server running on a virtual platform	7.7.0.359
Avaya Aura <sup>®</sup> Application Enablement Services running on a virtual platform	7.0.1.0.0.15-0
Avaya 96x1 Series IP Deskphones	96x1 SIP – 7.0.1.4 96x1 H.323 – 6.6.4
Avaya 9600 Series IP Deskphone	96x0 H.323 – 3.2.7
Avaya TSAPI Client	7.0.1
Qfiniti Observe running on Windows Server 2012	Qfiniti 10.6

## 5. Configure Avaya Aura® Communication Manager

This section contains steps necessary to configure Qfiniti Observe successfully with Communication Manager.

All configurations in Communication Manager were performed via SAT terminal.

### 5.1. Verify Feature and License

Enter the **display system-parameters customer-options** command and ensure that the following features are enabled.

One **Page 4**, verify **Computer Telephony Adjunct Links** is set to **y**.

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	<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?	n	DCS (Basic)?	y
ASAI Link Core Capabilities?	y	DCS Call Coverage?	y
ASAI Link Plus Capabilities?	y	DCS with Rerouting?	y
Async. Transfer Mode (ATM) PNC?	n	Digital Loss Plan Modification?	y
Async. Transfer Mode (ATM) Trunking?	n	DS1 MSP?	y
ATM WAN Spare Processor?	n	DS1 Echo Cancellation?	y
ATMS?	y		
Attendant Vectoring?	y		

## 5.2. Configure Stations

Use **add station *n*** command to add a station, where *n* is an available station extension. This station is used by call centers agents to log in and will also be monitored by Qfiniti Observe to receive TSAPI events and receive call recordings via DMCC. Configure the station as follows, on **Page 1**:

- In **Name** field, enter a descriptive name.
- Set **Type** to the type of the telephones.
- Enter a **Security Code**.
- Set **IP SoftPhone** to **y**.

add station 11001		Page 1 of 5
STATION		
Extension: 11001	Lock Messages? n	BCC: 0
<b>Type: 9650</b>	<b>Security Code: 123456</b>	TN: 1
Port: S00168	Coverage Path 1:	COR: 1
<b>Name: IP Station 1</b>	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: 11001	
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	<b>IP SoftPhone? y</b>	
	IP Video Softphone? n	
	Short/Prefixed Registration Allowed: default	
	Customizable Labels? y	

During the compliance testing, the following stations, H.323, SIP and Digital, were created for call center agents.

list station							Page 1
STATIONS							
Ext/ Hunt-to	Port/ Type	Name/ Surv GK NN	Move	Room/ Data Ext	Cv1/ Cv2	COR/ COS	Cable/ TN Jack
11001	S00168	IP Station 1				1	
11002	S00171	IP Station 2				1	
11003	S00004	IP Station 3				1	
11004	S00005	IP Station 4				1	
11005	S00008	IP Station 5				1	
11101	S00100	SIP, User 1				1	
11102	S00180	SIP, User 2				1	
11251	001V301	Digital Station 1				1	

Administration for SIP Stations is performed via System Manager (not shown). Refer to documentation in **Section 10**.

### 5.3. Configure Hunt Group

Use **add hunt-group *n*** command to add a station, where *n* is an available hunt group number. Call center agents will log into this hunt group. Configure the hunt group as follows, on **Page 1**:

- In **Group Name** field, enter a descriptive name.
- In the **Group Extension** field, type in an available extension.
- Set **ACD**, **Queue**, and **Vector** fields to **y**.

add hunt-group 1	HUNT GROUP	Page 1 of 4
Group Number: 1	ACD? y	
Group Name: Hunt Group 1	Queue? y	
Group Extension: 12001	Vector? y	
Group Type: ucd-mia		
TN: 1		
COR: 1	MM Early Answer? n	
Security Code:	Local Agent Preference? n	
ISDN/SIP Caller Display:		
Queue Limit: unlimited		
Calls Warning Threshold: Port:		
Time Warning Threshold: Port:		

On page 2, set **Skill** to **y**.

add hunt-group 1	HUNT GROUP	Page 2 of 4
Skill? y	Expected Call Handling Time (sec): 180	
AAS? n	Service Level Target (% in sec): 80 in 20	
Measured: both		
Supervisor Extension:		
Controlling Adjunct: none		
VuStats Objective:		
Multiple Call Handling: none		
Timed ACW Interval (sec): 1	After Xfer or Held Call Drops? n	



## 5.4. Configure Agents

Use **add agent-loginID *n*** command to add a station, where *n* is an available agent extension. This agent is used by call center agents. Configure the agent as follows, on **Page 1**:

- In **Name** field, enter a descriptive name.
- In the **Password** and **Password (enter again)** fields, type in a password.

add agent-loginID 1101		Page 1 of 2
AGENT LOGINID		
Login ID: 1101	AAS? n	
<b>Name: IP Agent 1</b>	AUDIX? n	
TN: 1	Check skill TNs to match agent TN? n	
COR: 1		
Coverage Path: 1	LWC Reception: spe	
Security Code:	LWC Log External Calls? n	
Attribute:	AUDIX Name for Messaging:	
LoginID for ISDN/SIP Display? n		
<b>Password: 123456</b>		
<b>Password (enter again): 123456</b>		
Auto Answer: none		
MIA Across Skills: system		
AUX Agent Considered Idle (MIA)? n	ACW Agent Considered Idle: system	
	Aux Work Reason Code Type: system	
	Logout Reason Code Type: system	
Maximum time agent in ACW before logout (sec): system		
Forced Agent Logout Time: :		

On **Page 2**, set **SN** to the hunt group configured in previous section and set **SL** to **1**.

change agent-loginID 1101		Page 2 of 2
AGENT LOGINID		
Direct Agent Skill:	Service Objective? n	
Call Handling Preference: skill-level	Local Call Preference? n	
<b>SN</b> <b>RL</b> <b>SL</b>	<b>SN</b>	<b>RL</b> <b>SL</b>
1: <b>1</b>		16:

During compliance testing, following agents were added. The table below also displays the corresponding extensions that were used for logging in the agents.

list agent-loginID										Page 1
AGENT LOGINID										
Login ID	Name	Extension	Dir	Agt	AAS/AUD	COR	Ag	Pr	SO	
	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	
1101	IP Agent 1	11001				1		lv1		
1102	IP Agent 2	11002				1		lv1		
1103	IP Agent 3	11003				1		lv1		
1104	IP Agent 4	11004				1		lv1		
1105	IP Agent 5	11005				1		lv1		
1111	SIP Agent 1	11101				1		lv1		
1112	SIP Agent 2	11102				1		lv1		
1121	Digital Agent	111251				1		lv1		

## 5.5. Configure IP Services

Add an IP-Services entry, using the **change ip-services** command, for AES. On **Page 1**:

- In the **Service Type** field, type AESVCS.
- In the **Enabled** field, type y.
- In the **Local Node** field, type the Node name **procr** for the Processor Ethernet Interface.
- In the **Local Port** field, use the default of **8765**.

change ip-services					Page	1 of	4
IP SERVICES							
Service	Enabled	Local	Local	Remote	Remote		
Type		Node	Port	Node	Port		
AESVCS	y	procr	8765				

On **Page 4** of the IP Services form, enter the following values:

- In the **AE Services Server** field, type the host name of AES.
- In the **Password** field, type the same password to be administered on AES in **Section 6.1**.
- In the **Enabled** field, type y.

change ip-services				Page	4 of 4
AE Services Administration					
Server ID	AE Services Server	Password	Enabled	Status	
1:	aes	*	y	in use	

## 5.6. Configure CTI Link

Enter the **add cti-link <link number>** command, where **<link number>** is an available CTI link number.

- In the **Extension** field, type a valid station extension.
- In the **Type** field, type **ADJ-IP**.
- In the **Name** field, type a descriptive name.

cti-link 3			Page 1 of 3		
CTI LINK					
CTI Link: 3					
Extension: 19995					
Type: ADJ-IP					
			COR: 1		
Name: TSAPI					

## 6. Configure Avaya Aura® Application Enablement Services

Configuration of AES requires a user account be configured for Qfiniti Observe and CTI/TSAPI configuration for Communication Manager.

All administration is performed by web browser, <https://<aes-ip-address>/>. Log in using appropriate credentials.

### 6.1. Configure Communication Manager Switch Connections

To add links to Communication Manager, navigate to the **Communication Manager Interface** → **Switch Connections** page and enter a name for the new switch connection (e.g. **acm**) and click the **Add Connection** button (not shown). The **Connection Details** screen is shown. Enter the **Switch Password** configured in **Section 5.5** and check the **Processor Ethernet** box if using the **procr** interface. Click **Apply**.

The screenshot shows the Avaya Application Enablement Services Management Console. The left sidebar contains a navigation menu with options: AE Services, Communication Manager Interface (selected), Switch Connections (selected), Dial Plan, High Availability, Licensing, Maintenance, Networking, Security, and Status. The main content area is titled 'Connection Details - acm' and contains the following fields and checkboxes:

- Switch Password: [password field]
- Confirm Switch Password: [password field]
- Msg Period: 30 Minutes (1 - 72)
- Provide AE Services certificate to switch: ☒
- Secure H323 Connection: ☐
- Processor Ethernet: ☒

At the bottom of the form are 'Apply' and 'Cancel' buttons. The top right of the console displays system information: Welcome: User cust, Last login: Tue Jan 24 14:33:24 2017 from 10.64.10.47, Number of prior failed login attempts: 0, HostName/IP: aes/10.64.110.15, Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE, SW Version: 7.0.1.0.0.15-0, Server Date and Time: Fri Jan 27 12:40:57 MST 2017, HA Status: Not Configured.


The display returns to the **Switch Connections** screen which shows that the **CM3010** switch connection has been added.

The screenshot shows the 'Switch Connections' screen. At the top, there is a text input field and an 'Add Connection' button. Below this is a table with the following columns: Connection Name, Processor Ethernet, Msg Period, and Number of Active Connections.

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input checked="" type="radio"/> acm	Yes	30	1
<input type="radio"/> cmpub	Yes	30	1

At the bottom of the screen are five buttons: 'Edit Connection', 'Edit PE/CLAN IPs', 'Edit H.323 Gatekeeper', 'Delete Connection', and 'Survivability Hierarchy'.

Click the **Edit PE/CLAN IPs** button on the **Switch Connections** screen to configure the **procr** or **CLAN** IP Address(es). The **Edit Processor Ethernet IP** screen is displayed. Enter the IP address of the **procr** interface and click the **Add/Edit Name or IP** button.



**Application Enablement Services**  
Management Console

Welcome: User cust  
Last login: Tue Jan 24 14:33:24 2017 from 10.64.10.47  
Number of prior failed login attempts: 0  
HostName/IP: aes/10.64.110.15  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE  
SW Version: 7.0.1.0.0.15-0  
Server Date and Time: Fri Jan 27 12:40:37 MST 2017  
HA Status: Not Configured


Communication Manager Interface | Switch Connections
Home | Help | Logout

▶ AE Services  
▼ Communication Manager Interface  
Switch Connections  
▶ Dial Plan  
High Availability  
▶ Licensing  
▶ Maintenance

Edit Processor Ethernet IP - acm

Name or IP Address	Status
10.64.110.10	In Use

Click the **Edit H.323 Gatekeeper** button on the **Switch Connections** screen to configure the **procr** or **CLAN** IP Address(es) for DMCC registrations. The **Edit H.323 Gatekeeper** screen is displayed. Enter the IP address of the **procr** interface and click the **Add Name or IP** button.



**Application Enablement Services**  
Management Console

Welcome: User cust  
Last login: Tue Jan 24 14:33:24 2017 from 10.64.10.47  
Number of prior failed login attempts: 0  
HostName/IP: aes/10.64.110.15  
Server Offer Type: VIRTUAL\_APPLIANCE\_ON\_VMWARE  
SW Version: 7.0.1.0.0.15-0  
Server Date and Time: Fri Jan 27 12:41:50 MST 2017  
HA Status: Not Configured

Communication Manager Interface | Switch Connections
Home | Help | Logout

▶ AE Services  
▼ Communication Manager Interface  
Switch Connections  
▶ Dial Plan  
High Availability  
▶ Licensing  
▶ Maintenance

Edit H.323 Gatekeeper - acm

Name or IP Address

☒ 10.64.110.10

## 6.2. Add TSAPI Link

Navigate to the **AE Services** → **TSAPI** → **TSAPI Links** page to add a TSAPI CTI Link. Click **Add Link** (not shown).

Select a **Switch Connection** using the drop down menu. Select the **Switch CTI Link Number** using the drop down menu. The **Switch CTI Link Number** must match the number configured in the **cti-link** form in **Section 5.6**. Select **Both** in the **Security** field.

Click **Apply Changes**.

The screenshot shows the Avaya Application Enablement Services Management Console. The top navigation bar includes the Avaya logo, the title 'Application Enablement Services Management Console', and a user status area on the right with details like 'Welcome: User cust', 'Last login: Tue Jan 24 14:33:24 2017 from 10.64.10.47', and 'HA Status: Not Configured'. Below the navigation bar, there's a red header with 'AE Services | TSAPI | TSAPI Links' and links for 'Home | Help | Logout'. The left sidebar shows a tree view with 'AE Services' expanded, containing 'CVLAN', 'DLG', 'DMCC', 'SMS', 'TSAPI' (expanded), 'TSAPI Links' (selected), 'TSAPI Properties', and 'TWS'. The main content area is titled 'Edit TSAPI Links' and contains a form with the following fields: 'Link' (value: 1), 'Switch Connection' (dropdown: acm), 'Switch CTI Link Number' (dropdown: 3), 'ASAI Link Version' (dropdown: 7), and 'Security' (dropdown: Both). At the bottom of the form are three buttons: 'Apply Changes', 'Cancel Changes', and 'Advanced Settings'.

It returns to the **TSAPI Links** screen which shows that the **acm** link has been added.

TSAPI Links				
Link	Switch Connection	Switch CTI Link #	ASAI Link Version	Security
<input checked="" type="radio"/> 1	acm	3	7	Both
<input type="radio"/> 2	cmpub	1	7	Both
<div>Add Link Edit Link Delete Link</div>				

## 6.3. Configure User

A user needs to be created for Qfiniti Observe to communicate with AES. Navigate to **User Management** → **User Admin** → **Add User**.

Fill in **User Id**, **Common Name**, **Surname**, **User Password** and **Confirm Password**. Set the **CT User** to **Yes**, and **Apply**.

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 'User cust' along with system details like last login, failed login attempts, and server information. A red navigation bar contains links for 'User Management', 'User Admin', 'Add User', 'Home', 'Help', and 'Logout'. On the left, a sidebar menu lists various services, with 'User Management' expanded to show 'User Admin' and 'Add User' selected. The main content area is titled 'Add User' and contains a form with the following fields: '\* User Id' (text input with 'qfiniti'), '\* Common Name' (text input with 'qfiniti'), '\* Surname' (text input with 'qfiniti'), '\* User Password' (password input with dots), '\* Confirm Password' (password input with dots), 'Admin Note' (text area), 'Avaya Role' (dropdown menu set to 'None'), 'Business Category' (text input), 'Car License' (text input), 'CM Home' (text input), 'Css Home' (text input), and 'CT User' (checkbox set to 'Yes'). A note at the top of the form states 'Fields marked with \* can not be empty.'

Navigate to **Security** → **Security Database** → **CTI Users** → **List All Users**.

**CTI Users**

<u>User ID</u>	<u>Common Name</u>	<u>Worktop Name</u>	<u>Device ID</u>
<input type="radio"/> afiniti	afiniti	NONE	NONE
<input type="radio"/> interop	interop	NONE	NONE
<input type="radio"/> interop1	interop1	NONE	NONE
<input type="radio"/> interop2	interop2	NONE	NONE
<input type="radio"/> interop3	interop3	NONE	NONE
<input checked="" type="radio"/> qfiniti	qfiniti	NONE	NONE
<input type="radio"/> synergem	synergem	NONE	NONE

Select the recently added user and click **Edit**. Check the box for **Unrestricted Access** and click **Apply Changes**.

**Edit CTI User**

User Profile:

User ID	qfiniti
Common Name	qfiniti
Worktop Name	NONE ▾
Unrestricted Access	<input checked="" type="checkbox"/>

---

Call and Device Control:

Call Origination/Termination and Device Status	None ▾
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---

Call and Device Monitoring:

Device Monitoring	None ▾
Calls On A Device Monitoring	None ▾
Call Monitoring	<input type="checkbox"/>

---

Routing Control:

Allow Routing on Listed Devices	None ▾
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## 6.4. Configure Ports

To ensure that necessary TSAPI and DMCC ports are enabled, navigate to **Networking** → **Ports**.

**Ports**

CVLAN Ports

			Enabled	Disabled
Unencrypted TCP Port	9999		<input checked="" type="radio"/>	<input type="radio"/>
Encrypted TCP Port	<input type="text" value="9998"/>		<input checked="" type="radio"/>	<input type="radio"/>

---

DLG Port

TCP Port	5678			
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TSAPI Ports

		Enabled	Disabled	
TSAPI Service Port	450	<input checked="" type="radio"/>	<input type="radio"/>	
Local TLINK Ports				
TCP Port Min	1024			
TCP Port Max	1039			
Unencrypted TLINK Ports				
TCP Port Min	<input type="text" value="1050"/>			
TCP Port Max	<input type="text" value="1065"/>			
Encrypted TLINK Ports				
TCP Port Min	<input type="text" value="1066"/>			
TCP Port Max	<input type="text" value="1081"/>			

---

DMCC Server Ports

		Enabled	Disabled
Unencrypted Port	<input type="text" value="4721"/>	<input checked="" type="radio"/>	<input type="radio"/>
Encrypted Port	<input type="text" value="4722"/>	<input checked="" type="radio"/>	<input type="radio"/>
TR/87 Port	<input type="text" value="4723"/>	<input type="radio"/>	<input checked="" type="radio"/>



## 7. Configure OpenText Qfiniti Observe

The Qfiniti product line consists of various applications. Three recording modes were tested: Service Observe, Service Observe – No Talk and Media Streaming (Multiple Registrations). However, these Application Notes contain instructions for Media Streaming only, i.e., Multiple Registration method of recording calls. The configurations of these modes are very similar; their differences are noted below.

### Service Observe

- **Switch definition:** Set Service Observe Button field to 268 and keep Observe String field blank.
- **Logger Voice Recording Manager:** Set PCM Acquisition field to “Service Observe”.

### Service Observe – No Talk

- **Switch definition:** Set Observe String field to the Feature Access Code of the SO – No Talk feature (e.g., “\*46”).
- **Logger Voice Recording Manager:** Set PCM Acquisition field to “SO – No Talk”.

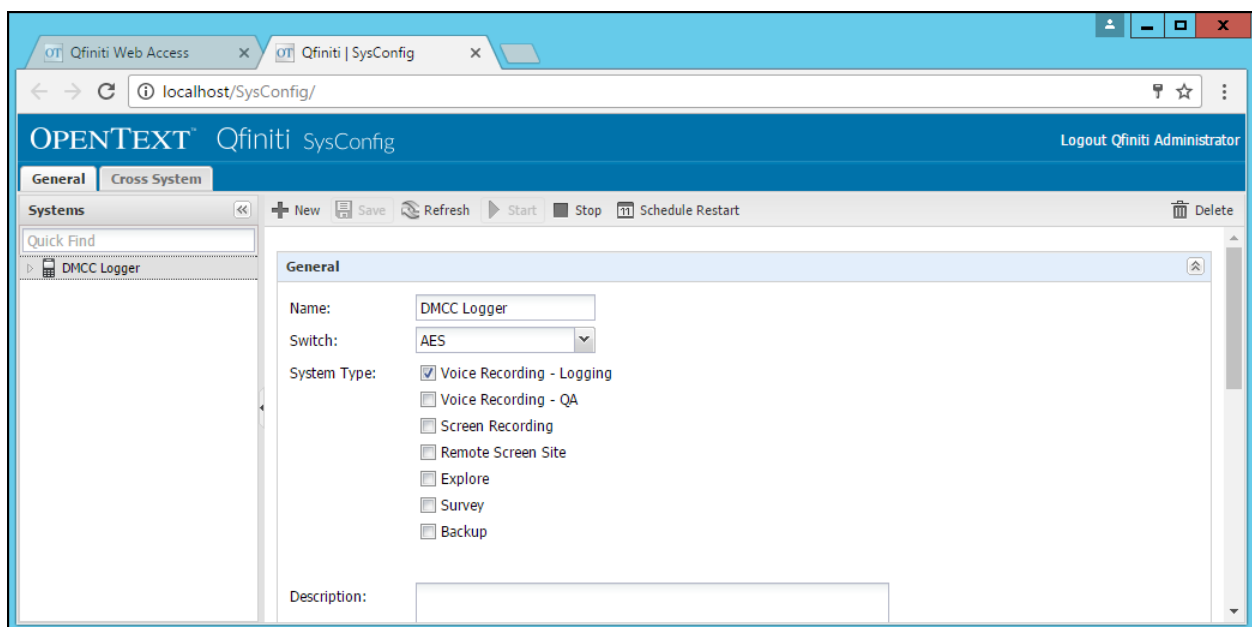
### Media Streaming

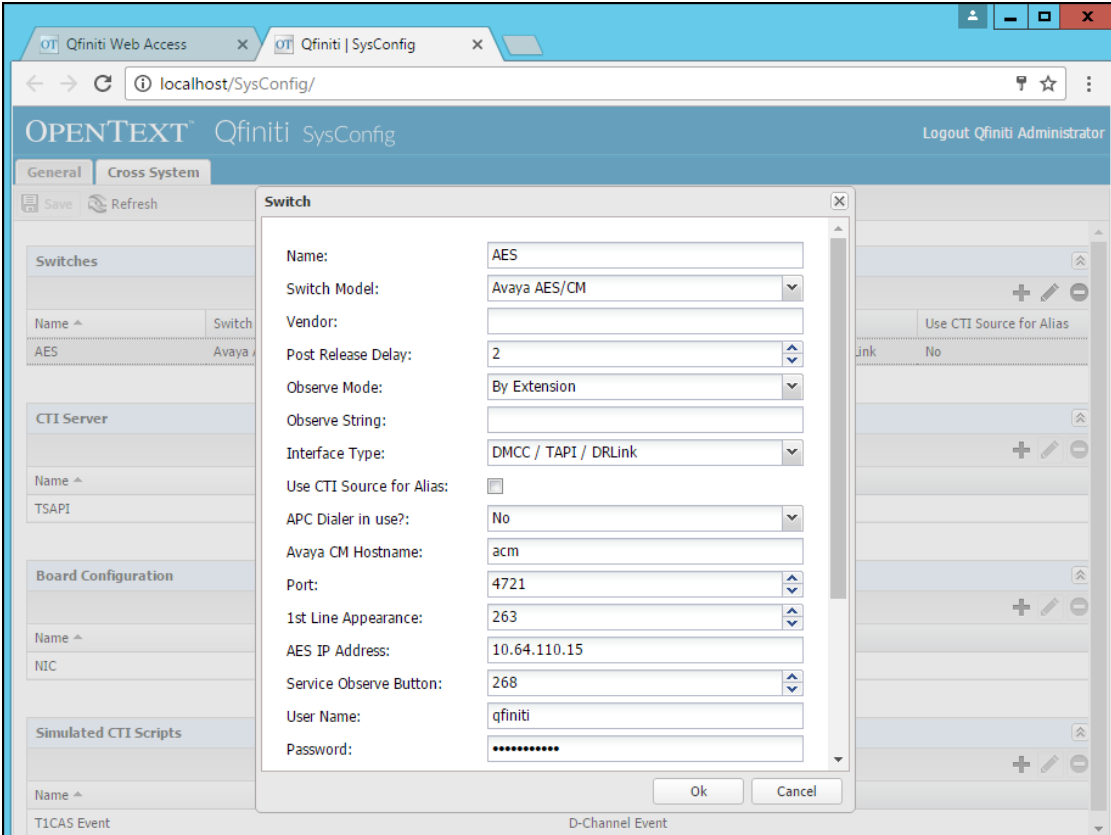
- **Logger Voice Recording Manager:** Set PCM Acquisition field to “Media Streaming”.

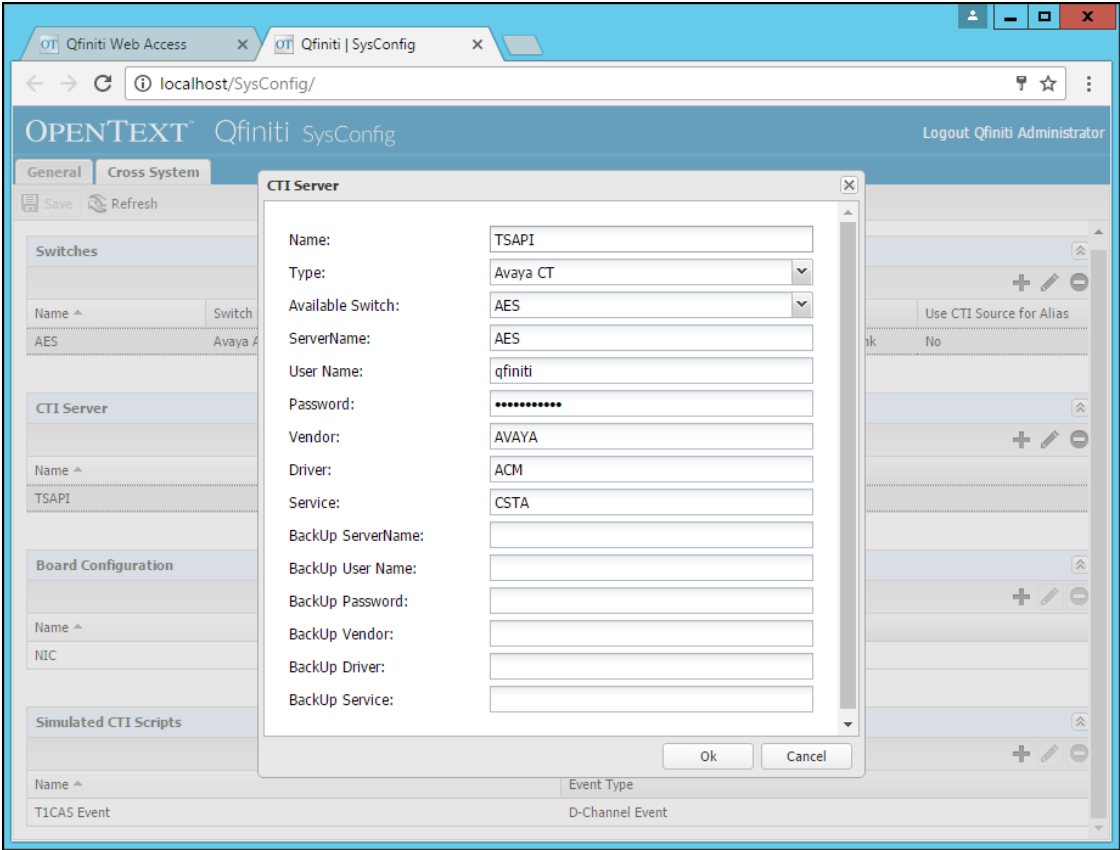
This document is specific to Media Streaming and that configuration is described below.

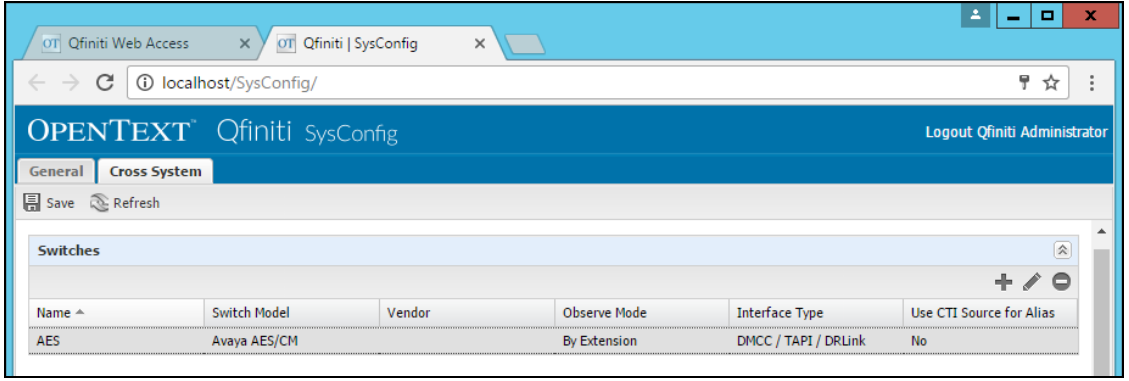
## 7.1. Qfiniti Configuration – Cross System

Launch the **Qfiniti SysConfig** interface via a web browser using the following URL: <http://localhost/SysConfig>. After logging in as user “administrator”, a webpage will appear that has two tabs – **General** and **Cross System**. Select the latter to define a switch, CTI server and board configuration. Perform the steps given on the following pages.



Step	Description
1	<p data-bbox="302 184 662 220"><b>Create a Switch Definition</b></p> <p data-bbox="302 243 1398 405">In the <b>Switches</b> section of the <b>Cross System</b> tab, click on the <b>New Item</b> icon (plus sign). In the dialog box that pops up, specify the <b>Name</b> of an AES Switch definition, then specify or select the given values of the following fields. Keep default values for any fields not given below.</p> <ul data-bbox="350 428 1219 852" style="list-style-type: none"> <li>• <b>Switch Model</b> – <i>Avaya AES/CM</i></li> <li>• <b>Post Release Delay</b> – 2 (seconds) or greater</li> <li>• <b>Observe Mode</b> – <i>By Extension</i></li> <li>• <b>Interface Type</b> – <i>DMCC/TAPI/DRLink</i></li> <li>• <b>Avaya CM Hostname</b> – Hostname of Communication Manager</li> <li>• <b>Port</b> – 4721</li> <li>• <b>1<sup>st</sup> Line Appearance</b> – 263</li> <li>• <b>AES IP Address</b> – IP address of AES</li> <li>• <b>Service Observe Button</b> – 268 (corresponds to Button 6)</li> <li>• <b>User Name</b> – User ID specified in <b>Section 6.3</b></li> <li>• <b>Password</b> – Password specified in <b>Section 6.3</b></li> </ul> <p data-bbox="302 871 1398 947">When done, click on the <b>Ok</b> button to close the window. The new entry will appear in the list of Switch definitions.</p> 

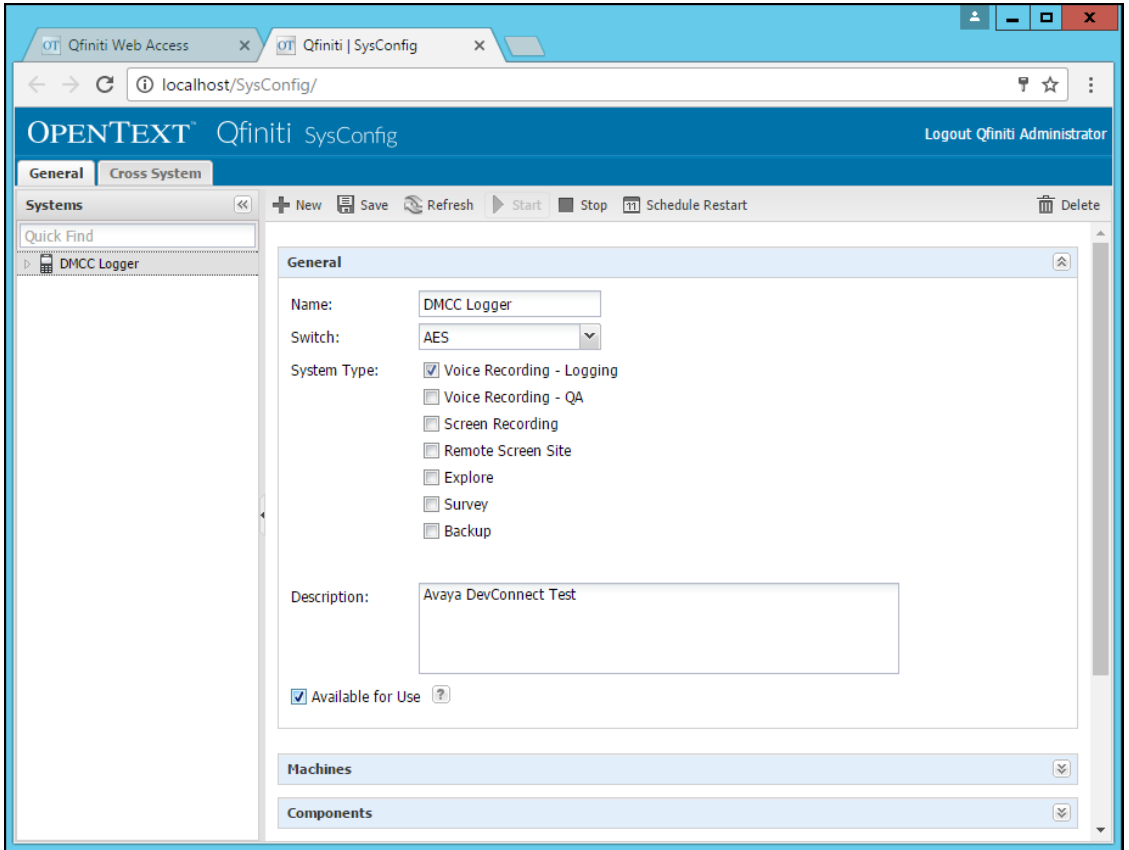
Step	Description
2	<p data-bbox="302 184 557 220"><b>Create CTI Server</b></p> <p data-bbox="302 243 1382 363">In the <b>CTI Server</b> section, click on the <b>New Item</b> icon (plus sign). In the dialog box that pops up, specify the <b>Name</b> of a TSAPI CTI Server, then specify or select the given values of the following fields. Any fields not given below are optional.</p> <ul data-bbox="350 390 1271 695" style="list-style-type: none"> <li>• <b>Type</b> – <i>Avaya CT</i></li> <li>• <b>Available Switch</b> – Name of the Switch defined in the previous step</li> <li>• <b>Server Name</b> – Hostname or IP address of AES</li> <li>• <b>User Name</b> – User ID specified in <b>Section 6.3</b></li> <li>• <b>Password</b> – Password specified in <b>Section 6.3</b></li> <li>• <b>Vendor</b> – <i>Avaya</i></li> <li>• <b>Driver</b> – Hostname of the TSAPI Link (see <b>Section 6.2</b>)</li> <li>• <b>Service</b> – <i>CSTA</i></li> </ul> <p data-bbox="302 714 1398 833">When done, click on the <b>Ok</b> button to close the window. The new entry will appear in the list of CTI Server definitions. Below is a screenshot showing a CTI Server named “TSAPI”.</p> 

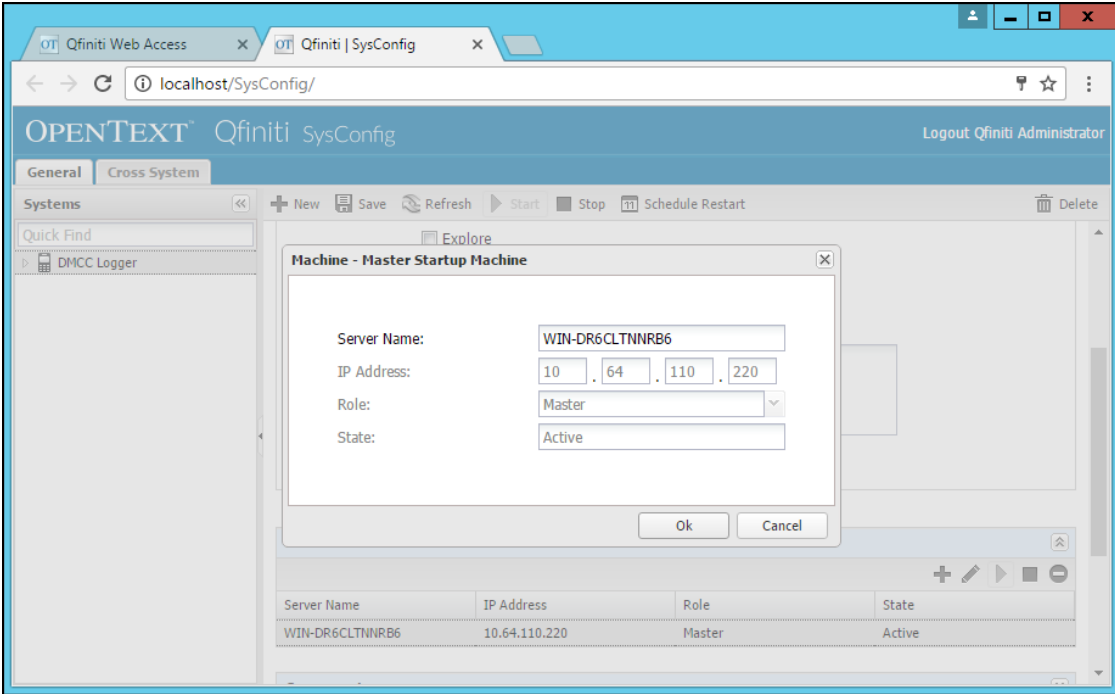
Step	Description
3	<p><b>Define a Board Configuration (not shown)</b></p> <p>Although Qfiniti uses DMCC to record a call, a board configuration is still required. In the Board Configuration section, click on the <b>New Item</b> icon (plus sign). In the dialog box that pops up, specify the <b>Name</b> for a default board and select <i>Network Interface Card (NIC)</i> as the <b>Model</b>. Keep default values for the other fields. When done, click on the <b>Ok</b> button to close the window.</p>
4	<p><b>IMPORTANT!</b> Press the <b>Save</b> button near the top of the page (below the tabs) in order to save all changes. If you change tabs without doing this, you will be prompted to save changes first.</p> 

## 7.2. Qfiniti Configuration – Voice Logger

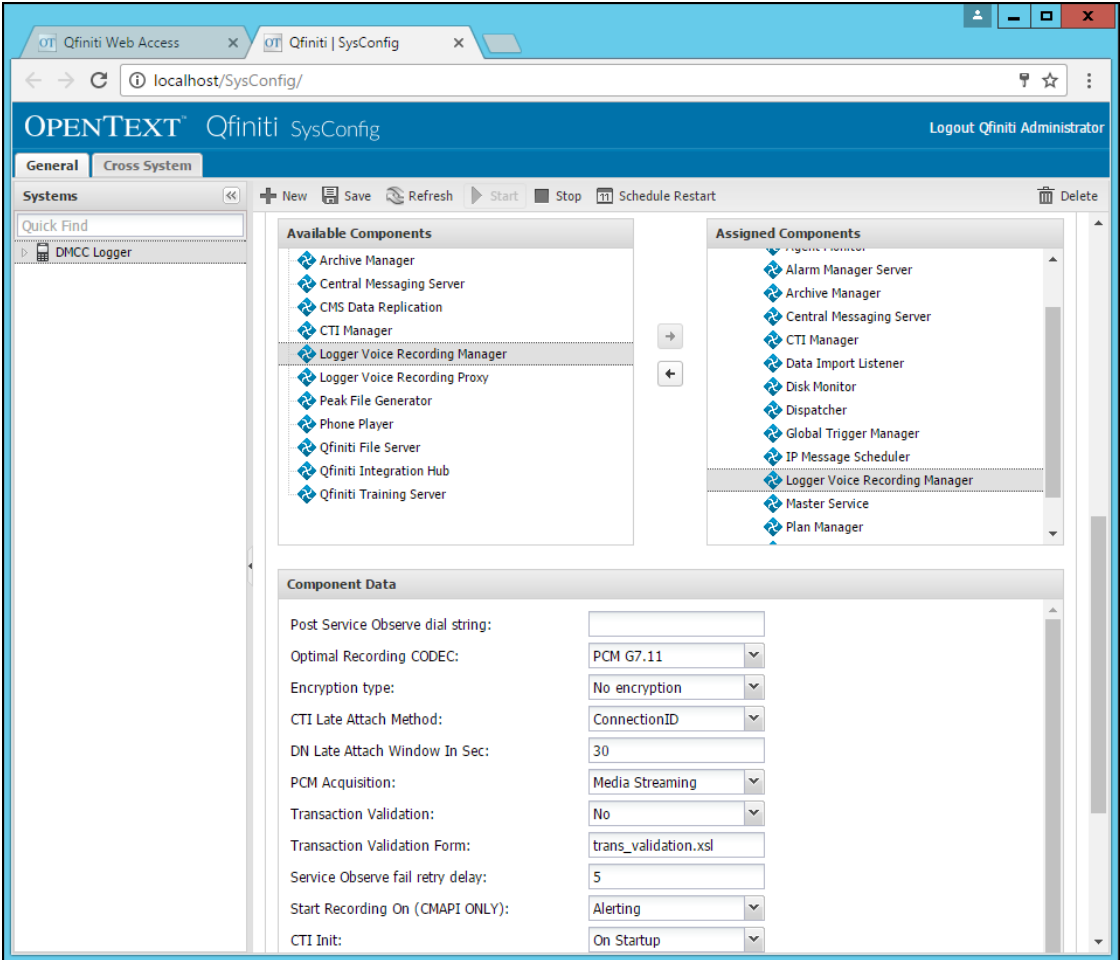
After configuring Cross-System items, click on the **General** tab in order to define a DMCC Voice Logger system. Perform the steps given below.

**IMPORTANT:** All steps must be completed before the data can be saved (via the **Save** button).

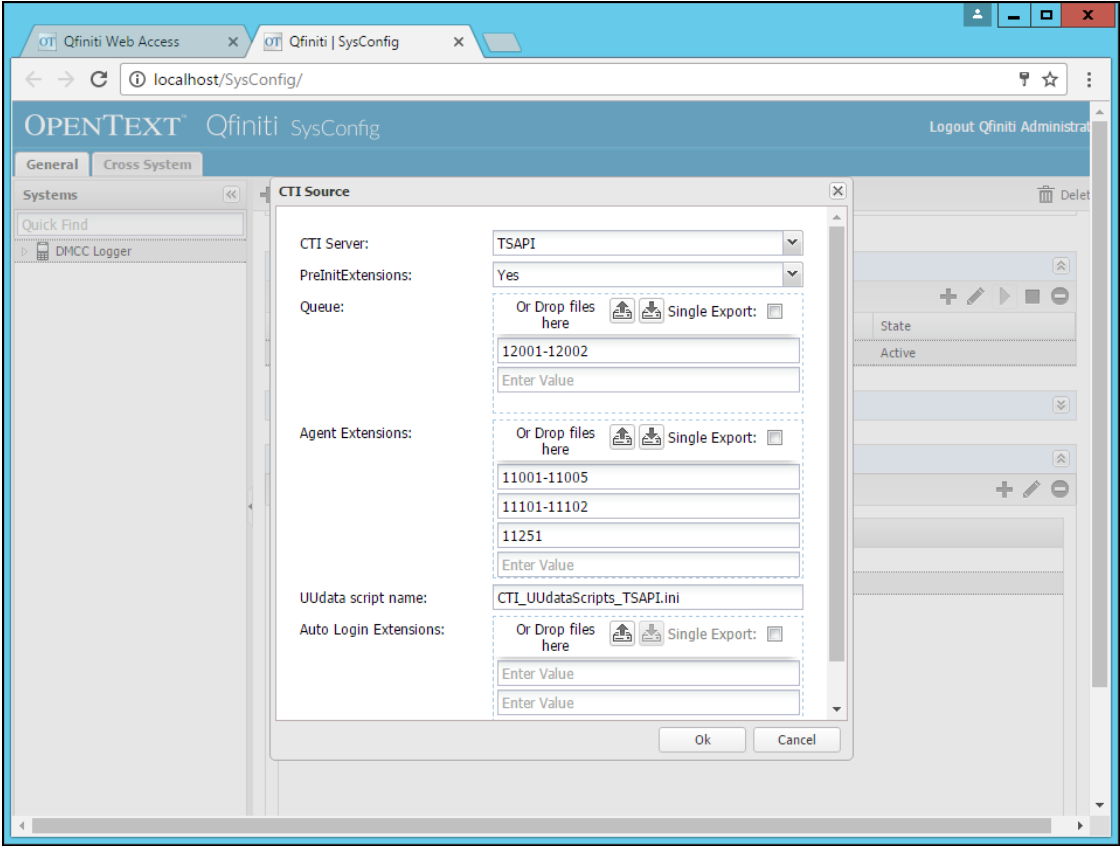
Step	Description
5	<p><b>Create a Voice Logger System</b></p> <p>Under the <b>General</b> tab, click the <b>New</b> icon to create a Voice Logger. Provide a descriptive <b>Name</b>, select the <b>Switch</b> definition that was created in <i>Step 1</i>, and select <b>Voice Recording – Logging</b> as the <b>System Type</b>. A <b>Description</b> is optional. Check the <b>Available for Use</b> checkbox to make the system active.</p> 

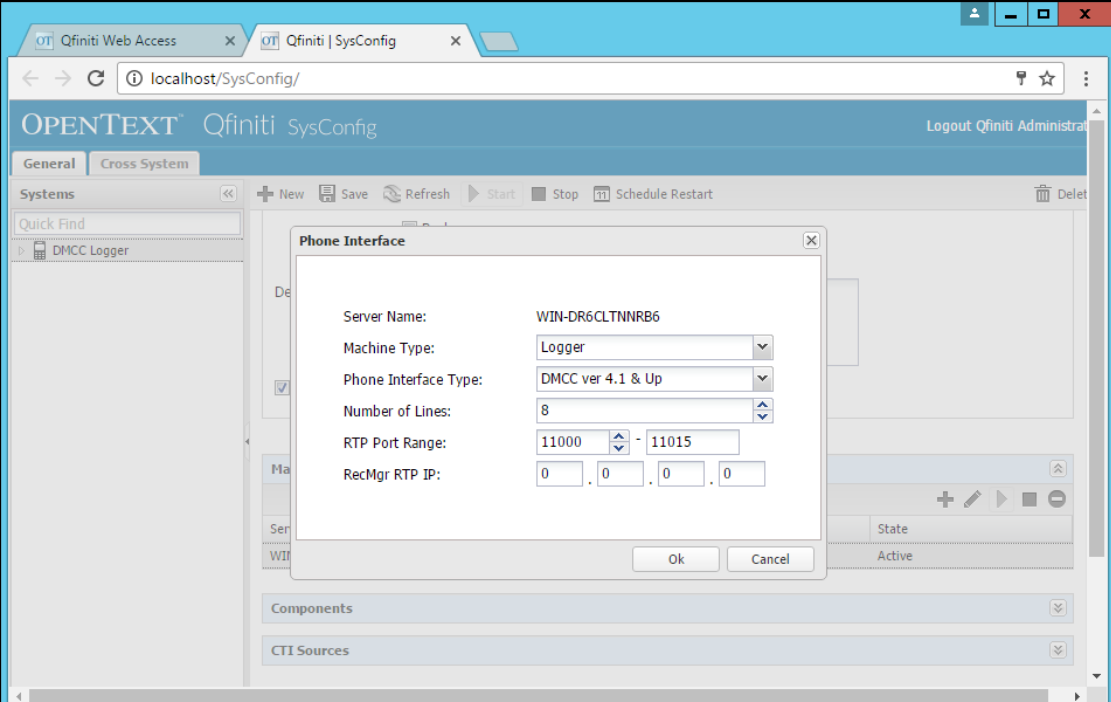
Step	Description
6	<p>In the <b>Machines</b> section, press the <b>New Item</b> icon (plus sign), provide the <b>Name</b> and <b>IP Address</b> of the server that will be running Qfiniti. Specify the <b>Server Role</b> to be “Master”. (The <b>State</b> cannot be set.)</p> <p>Below is a screenshot of a system named “DMCC Logger” on a server named “WIN-DR6CLTNRB6” while the system was running.</p> 

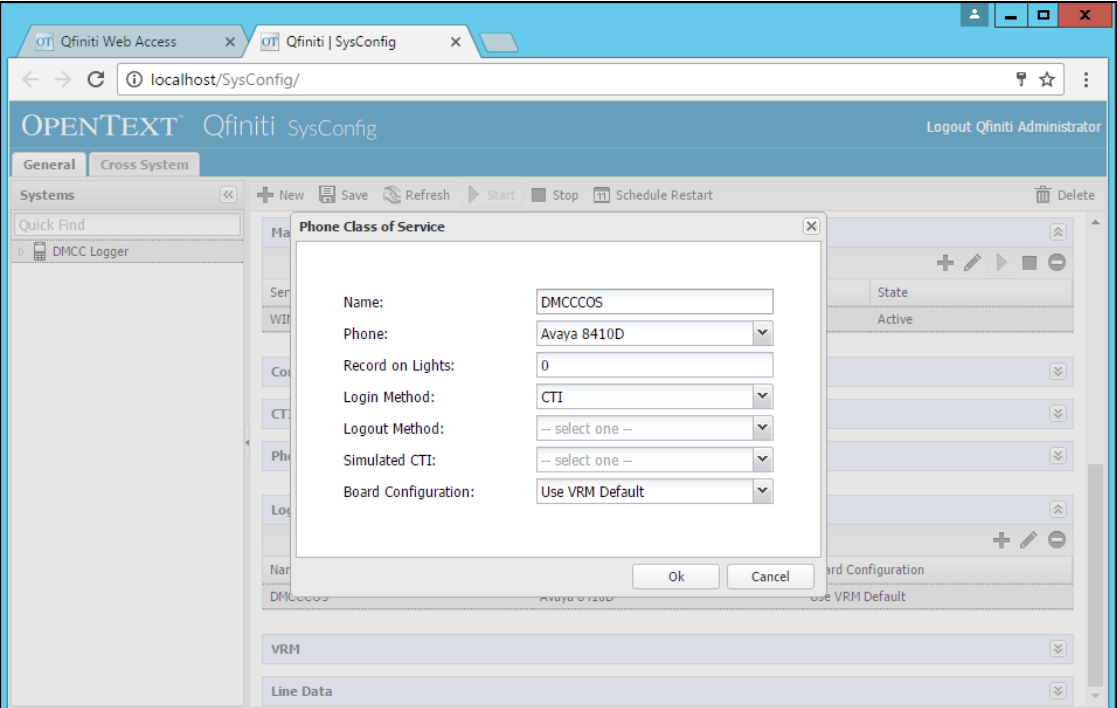
Step	Description
7	<p>In the <b>Components</b> section, assign the required Qfiniti components to the selected machine name. <b>Note:</b> This step is not shown in detail; it will be performed by OpenText personnel and is covered in product documentation. The minimum set of components required for use with the Avaya AES is:</p> <ul style="list-style-type: none"> <li>• Agent Monitor</li> <li>• Alarm Manager Server</li> <li>• Archive Manager (requires additional configuration)</li> <li>• Central Messaging Server</li> <li>• CTI Manager</li> <li>• Data Import Listener</li> <li>• Disk Monitor</li> <li>• Dispatcher</li> <li>• Global Trigger Manager</li> <li>• IP Message Scheduler</li> <li>• Logger Voice Recording Manager (requires additional configuration; see <i>Step 8</i>)</li> <li>• Master Service</li> <li>• Peak File Generator</li> <li>• Plan Manager</li> <li>• Qfiniti File Server (requires additional configuration)</li> <li>• Session Manager</li> </ul>

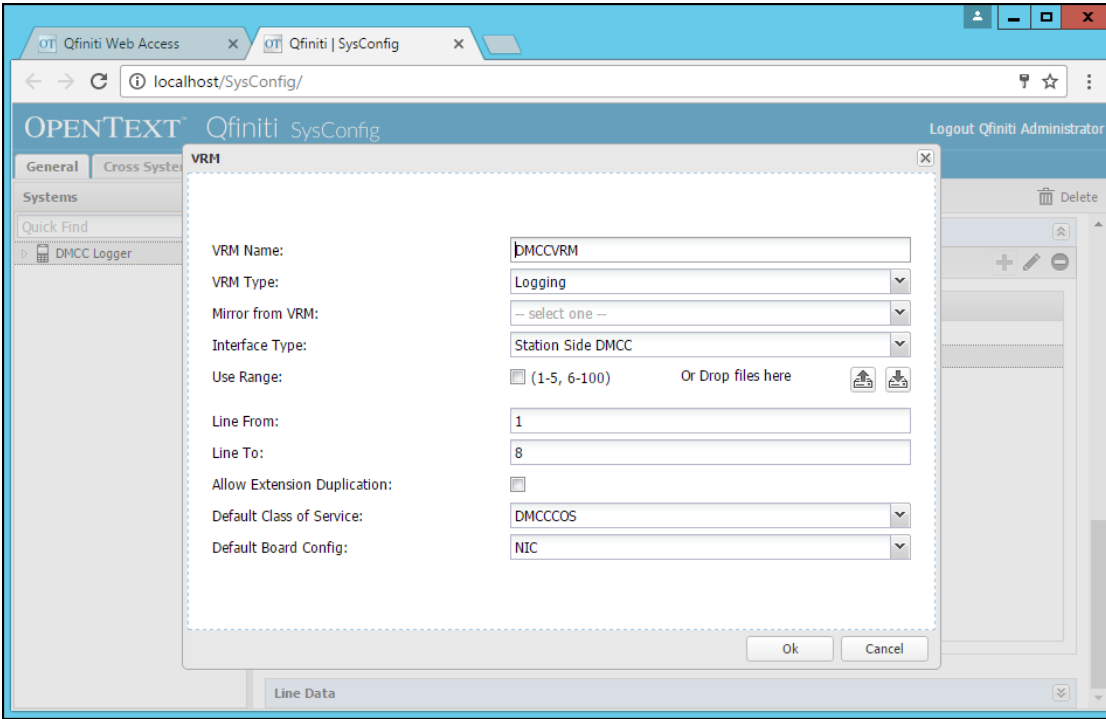
Step	Description
8	<p data-bbox="302 184 911 220"><b>Configure Logger Voice Recording Manager</b></p> <p data-bbox="302 243 1414 405">In the list of assigned components, select <b>Logger Voice Recording Manager</b> (LRecMan). The configuration parameters for this component will be displayed in the <b>Component Data</b> section. Select the given values of the following fields. Keep default values for any fields not given below.</p> <ul data-bbox="350 428 967 541" style="list-style-type: none"> <li>• <b>Optimal Recording CODEC</b> – <i>PCM G7.11</i></li> <li>• <b>PCM Acquisition</b> – <i>Media Streaming</i></li> <li>• <b>Start Recording On</b> – <i>Alerting</i></li> </ul> <p data-bbox="302 560 1382 636"><b>Note:</b> This configuration assumes that the Communication Manager has been set up for G.711 codec.</p>  <p>The screenshot displays the Qfiniti SysConfig web application. The 'General' tab is selected, and the 'Systems' section on the left shows 'DMCC Logger' as the active system. In the 'Available Components' list, 'Logger Voice Recording Manager' is highlighted. The 'Assigned Components' list on the right includes several services, with 'Logger Voice Recording Manager' also highlighted. Below these lists, the 'Component Data' section contains various configuration fields with their respective values: 'Post Service Observe dial string' (empty), 'Optimal Recording CODEC' (PCM G7.11), 'Encryption type' (No encryption), 'CTI Late Attach Method' (ConnectionID), 'DN Late Attach Window In Sec' (30), 'PCM Acquisition' (Media Streaming), 'Transaction Validation' (No), 'Transaction Validation Form' (trans_validation.xml), 'Service Observe fail retry delay' (5), 'Start Recording On (CMAPI ONLY)' (Alerting), and 'CTI Init' (On Startup).</p>

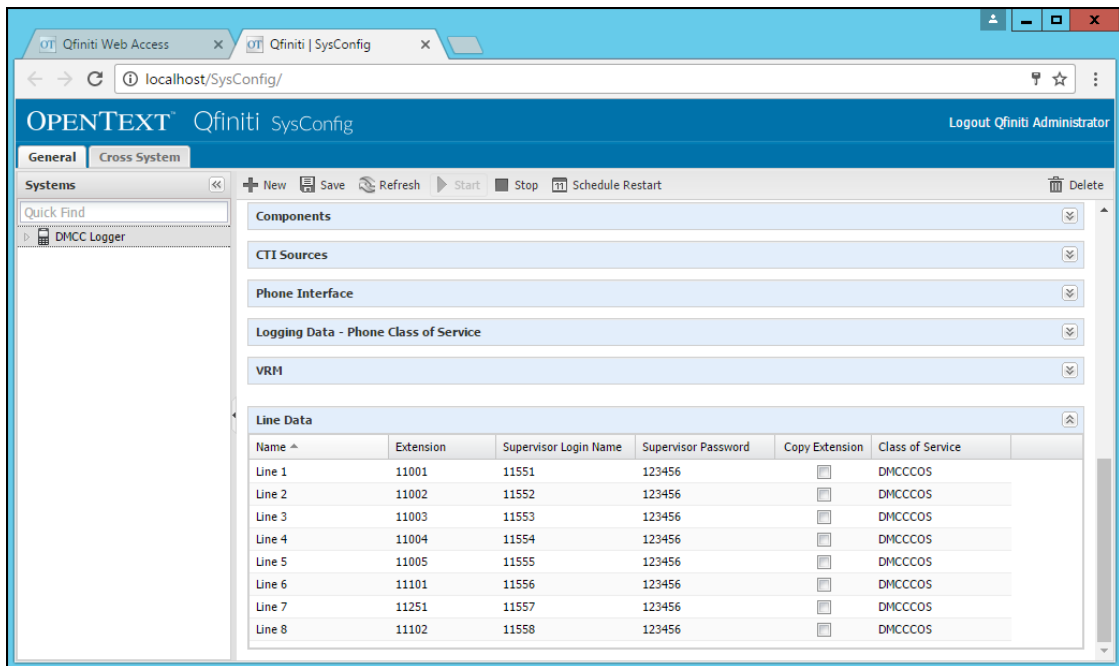


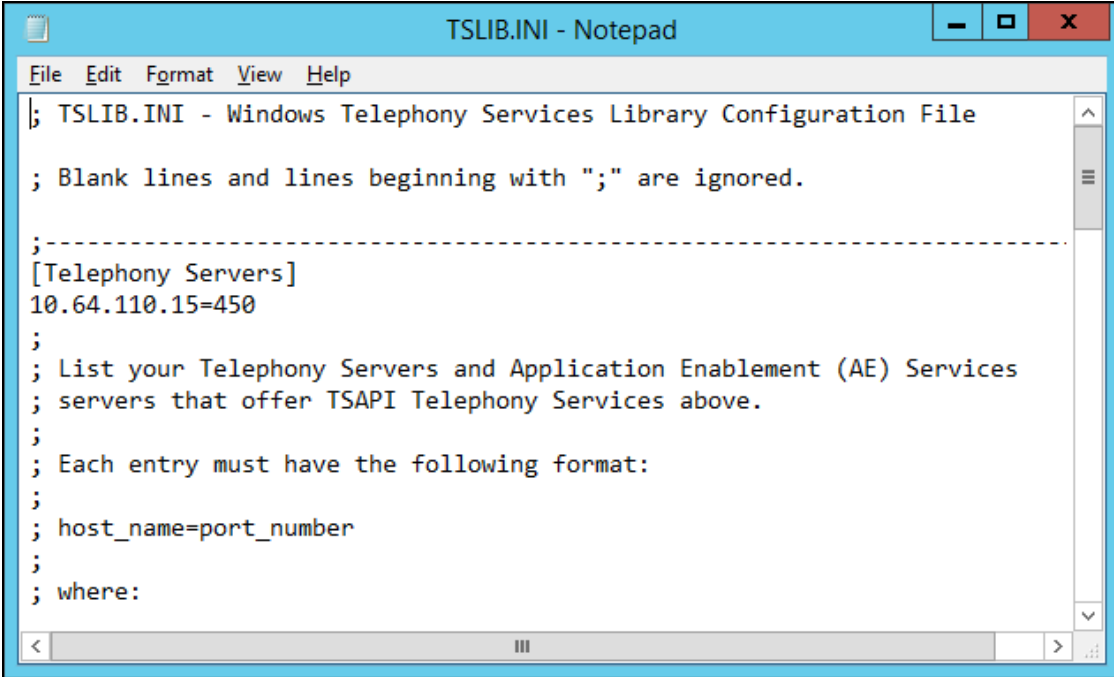
Step	Description
9	<p><b>Identify the CTI Source</b></p> <p>In the <b>CTI Sources</b> section, select the machine name, click on the <b>Add CTI Source</b> icon (plus sign). In the dialog box that pops up, select the name of the CTI Server that was defined in <i>Step 2</i>. Specify the range(s) of <b>Agent Extensions</b> (or individual extensions) from <b>Section 5.2</b> that will be used for the tests. A <b>Queue</b> is defined from <b>Section 5.3</b>. Keep default values for the other fields. When done, click on the <b>Ok</b> button to close the window.</p> 

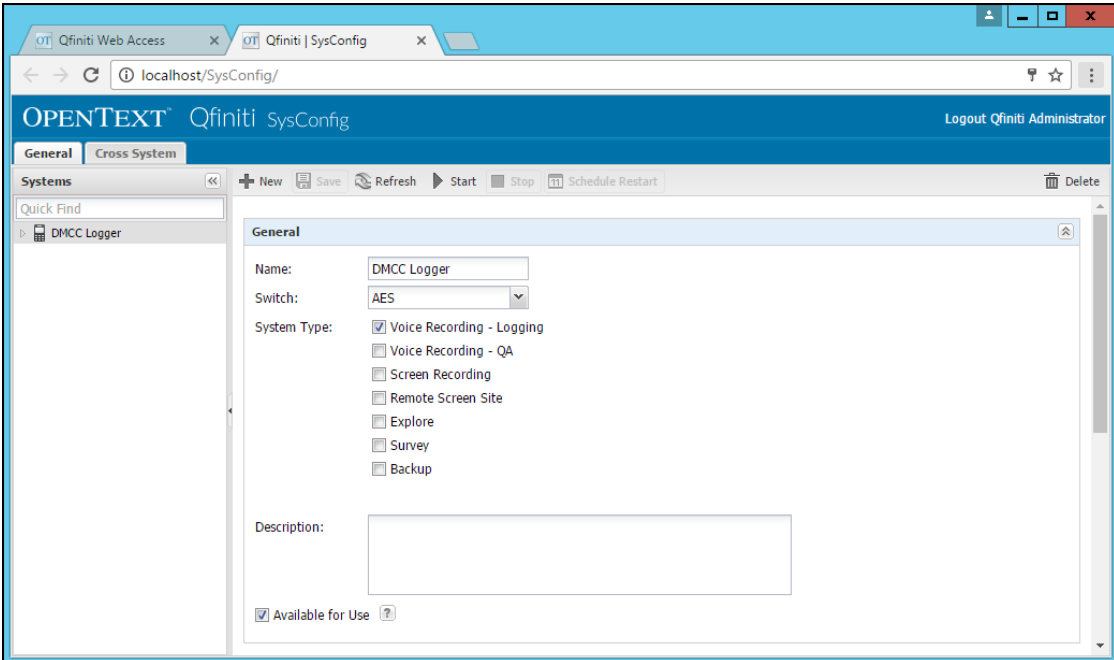
Step	Description
10	<p><b>Define a Phone Interface</b></p> <p>In the <b>Phone Interface</b> section, select the server name, click on the <b>Edit Item</b> icon (pencil) to define the phone interface for the logger. In the dialog box that pops up, specify or select the given values of the following fields.</p> <ul style="list-style-type: none"> <li>• <b>Machine Type</b> – <i>Logger</i></li> <li>• <b>Phone Interface Type</b> – <i>DMCC ver 4.1 &amp; Up</i></li> <li>• <b>Number of Lines</b> – quantity of stations set up in <b>Section 5.2</b></li> </ul> <p>When done, click on the <b>Ok</b> button to close the window.</p> <p><b>Note:</b> The <b>RTP Port Range</b> will be set automatically based upon the line quantity. The <b>RecMgr RTP IP</b> field should remain set as “0.0.0.0” so that the Qfiniti Observe server receives the RTP data.</p> 

Step	Description
11	<p data-bbox="300 184 730 220"><b>Define a Phone Class of Service</b></p> <p data-bbox="300 241 1372 409">In the <b>Logging Data – Phone Class of Service</b> section, click on the <b>New Item</b> icon (plus sign). In the dialog box that pops up, specify the <b>Name</b> of a Phone Class of Service. then specify or select the given values of the following fields. Keep default values for any fields not given below.</p> <ul data-bbox="349 430 1136 577" style="list-style-type: none"> <li>• <b>Phone</b> – <i>Avaya 8410D</i> (or any other Avaya phone model)</li> <li>• <b>Record on Lights</b> – <i>0</i></li> <li>• <b>Login Method</b> – <i>CTI</i></li> <li>• <b>Board Configuration</b> – <i>Use VRM Default</i></li> </ul> <p data-bbox="300 598 1023 634">When done, click on the <b>Ok</b> button to close the window.</p> 

Step	Description
12	<p data-bbox="302 184 500 220"><b>Define a VRM</b></p> <p data-bbox="302 243 1401 405">In the <b>VRM</b> section, select the machine name, and then click on the <b>New Item</b> icon (plus sign). In the dialog box that pops up, specify the <b>Name</b> of a Virtual Recording Machine (VRM). Then specify or select the given values of the following fields. Keep default values for any fields not given below.</p> <ul data-bbox="350 430 1117 657" style="list-style-type: none"> <li>• <b>VRM Type</b> – <i>Logging</i></li> <li>• <b>Interface Type</b> – <i>Station Side DMCC</i></li> <li>• <b>Line From</b> – <i>1</i></li> <li>• <b>Line To</b> – value <math>\leq</math> number of lines specified in <i>Step 10</i></li> <li>• <b>Default Class of Service</b> – name specified in <i>Step 11</i></li> <li>• <b>Default Board Config</b> – name specified in <i>Step 3</i></li> </ul> <p data-bbox="302 678 1023 714">When done, click on the <b>Ok</b> button to close the window.</p> 

Step	Description																																																						
13	<p><b>Assign Recording Lines</b></p> <p>Select the VRM named in <i>Step 12</i> so that the <b>Line Data</b> section displays a list of line numbers. For each line, specify the <b>Extension</b> of the agent device to be recorded at that line and a <b>Supervisor Login</b> (virtual extension, although this is not applicable for Media Streaming mode) and <b>Password</b> for one of the available Device and Media Control API stations that were configured in <b>Section 5.2</b>. Also select the <b>Class of Service</b> defined in <i>Step 11</i> (which should be the default).</p>  <table><tr><th>Name</th><th>Extension</th><th>Supervisor Login Name</th><th>Supervisor Password</th><th>Copy Extension</th><th>Class of Service</th></tr><tr><td>Line 1</td><td>11001</td><td>11551</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 2</td><td>11002</td><td>11552</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 3</td><td>11003</td><td>11553</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 4</td><td>11004</td><td>11554</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 5</td><td>11005</td><td>11555</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 6</td><td>11101</td><td>11556</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 7</td><td>11251</td><td>11557</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr><tr><td>Line 8</td><td>11102</td><td>11558</td><td>123456</td><td><input type="checkbox"/></td><td>DMCCOS</td></tr></table>	Name	Extension	Supervisor Login Name	Supervisor Password	Copy Extension	Class of Service	Line 1	11001	11551	123456	<input type="checkbox"/>	DMCCOS	Line 2	11002	11552	123456	<input type="checkbox"/>	DMCCOS	Line 3	11003	11553	123456	<input type="checkbox"/>	DMCCOS	Line 4	11004	11554	123456	<input type="checkbox"/>	DMCCOS	Line 5	11005	11555	123456	<input type="checkbox"/>	DMCCOS	Line 6	11101	11556	123456	<input type="checkbox"/>	DMCCOS	Line 7	11251	11557	123456	<input type="checkbox"/>	DMCCOS	Line 8	11102	11558	123456	<input type="checkbox"/>	DMCCOS
Name	Extension	Supervisor Login Name	Supervisor Password	Copy Extension	Class of Service																																																		
Line 1	11001	11551	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 2	11002	11552	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 3	11003	11553	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 4	11004	11554	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 5	11005	11555	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 6	11101	11556	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 7	11251	11557	123456	<input type="checkbox"/>	DMCCOS																																																		
Line 8	11102	11558	123456	<input type="checkbox"/>	DMCCOS																																																		
14	<p><b>IMPORTANT!</b> Press the <b>Save</b> button near the top of the page (below the tabs) in order to save all changes. If you change tabs without doing this, you will be prompted to save changes first.</p>																																																						

Step	Description
15	<p><b>Edit the TSAPI TSLIB.INI File</b></p> <p>Open the <i>TSLIB.INI</i> file located in folder <b>C:\Program Files\Avaya\AE Services\TSAPI Client</b>. Add the following line in the <b>[Telephony Servers]</b> section of the file (if not already present):</p> <p>&lt;AES Server Client Connectivity Hostname/IP address&gt;=450</p> <p>This line specifies the IP address (or hostname) and port that Qfiniti will use to connect to the TSAPI service on the AES server. The IP address or hostname should be the value that was specified in <i>Step 2</i>.</p> <p>Copy this file to the Windows folder, too.</p> <p>To test the connection without Qfiniti, run Avaya's TSAPI Test Application, a utility program of the TSAPI Client.</p>  <pre> TSLIB.INI - Windows Telephony Services Library Configuration File  ; Blank lines and lines beginning with ";" are ignored. ;----- [Telephony Servers] 10.64.110.15=450 ; ; List your Telephony Servers and Application Enablement (AE) Services ; servers that offer TSAPI Telephony Services above. ; ; Each entry must have the following format: ; ; host_name=port_number ; ; where: </pre>

Step	Description
16	<p>Verify that the <b>Available for Use</b> checkbox in the General section has been checked and all data has been saved.</p> <p>Initially, Qfiniti must be started by going to the Windows Services Manager and starting the <b>Qfiniti Startup Service</b>. Henceforth, as long as the Startup Service is running, Qfiniti can be stopped and restarted via the <b>Start</b> and <b>Stop</b> buttons at the top of the page. The <b>Refresh</b> button may be pressed first to determine the current status of the system.</p>  <p>The screenshot shows the Qfiniti SysConfig web application in a browser window. The address bar shows 'localhost/SysConfig/'. The page has a blue header with 'OPENTEXT Qfiniti SysConfig' and a 'Logout Qfiniti Administrator' link. Below the header, there are tabs for 'General' and 'Cross System'. A toolbar contains buttons for '+ New', 'Save', 'Refresh', 'Start', 'Stop', and 'Schedule Restart'. On the left, a 'Systems' sidebar shows a tree view with 'DMCC Logger' selected. The main area displays the 'General' configuration for 'DMCC Logger'. Fields include 'Name' (DMCC Logger), 'Switch' (AES), and 'System Type' with several checkboxes: 'Voice Recording - Logging' (checked), 'Voice Recording - QA', 'Screen Recording', 'Remote Screen Site', 'Explore', 'Survey', and 'Backup'. A 'Description' text area is at the bottom. At the very bottom, the 'Available for Use' checkbox is checked.</p>

## 8. Verification Steps

To verify the status CTI Links to AES, via SAT, use the **status aesvcs cti-link**. The **Service State** of **established** indicates that the trunk is in an operational state.

```
status aesvcs cti-link
```

AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1	5	no	aes6_tr1	established	15	15
2		no		down	0	0
3	4	no	AES2146	established	15	15

To verify Qfiniti Observe is able to monitor the stations correctly, use the **list monitored-station** command. All the stations that are being monitored by Qfiniti Observe are as shown below:

```
list monitored-station
```

MONITORED STATION									
Station Ext	Association 1		Association 2		Association 3		Association 4		
-----	CTI Link	CRV	CTI Link	CRV	CTI Link	CRV	CTI Link	CRV	
25001	1	27							
25002	1	25							
25003	1	22							
25004	1	15							
25005	1	13							
25051	1	17							
25101	1	11							
25551	1	8							
25552	1	4							

On the Qfiniti Server, open the **Qfiniti System Monitor**. Verify the **Rec. Channel Status** is **idle** for all configured lines. Also, the Agent Login IDs and Extensions can be viewed here.

Machine	Channel	Rec. Channel Status	Login ID	Extension	VRM Name	VRM Type	Last updated
WIN-DR6CLTNN...	1	Idle	1101	11001	DMCCVRM	Logginq	1/26/2017 2:43:26 PM
WIN-DR6CLTNN...	2	Idle	1102	11002	DMCCVRM	Logginq	1/26/2017 2:44:30 PM
WIN-DR6CLTNN...	3	Idle	1103	11003	DMCCVRM	Logginq	1/26/2017 2:43:33 PM
WIN-DR6CLTNN...	4	Idle	1104	11004	DMCCVRM	Logginq	1/26/2017 2:43:33 PM
WIN-DR6CLTNN...	5	Idle	1105	11005	DMCCVRM	Logginq	1/26/2017 2:46:53 PM
WIN-DR6CLTNN...	6	Idle	1111	11101	DMCCVRM	Logginq	1/26/2017 2:46:53 PM
WIN-DR6CLTNN...	7	Idle	1121	11251	DMCCVRM	Logginq	1/26/2017 2:43:30 PM
WIN-DR6CLTNN...	8	Idle	1112	11102	DMCCVRM	Logginq	1/26/2017 2:44:30 PM



## 9. Conclusion

OpenText Qfiniti Observe was able to successfully interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services.

## 10. Additional References

Documentation related to Avaya can be obtained from <https://support.avaya.com>.

- [1] *Administering Avaya Aura® Communication Manager, Release 7.0.1, Issue 2.1, August 2016*
- [2] *Administering and Maintaining Avaya Aura® Application Enablement Service, Issue 2, Release 7.0.1, August 2016*
- [3] *Administering Avaya Aura® Session Manager, Release 7.0.1, Issue 2, May 2016*
- [4] *OpenText Qfiniti Configuration Guide, Version 10.6, August 2016*

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