



Avaya Solution & Interoperability Test Lab

Application Notes for etalk Qfiniti with Avaya Communication Manager using Communication Manager Application Programming Interface – Issue 1.0

Abstract

These Application Notes describe the procedures for configuring the etalk Qfiniti quality monitoring system to monitor and record calls placed to and from agents on an Avaya Communication Manager system. Qfiniti can trigger recordings on demand, based on customer-defined schedules, and based on telephony and/or desktop events. In the configuration discussed in these Application Notes, Qfiniti employs Communication Manager Application Programming Interface “virtual” stations as the recording ports. During compliance testing, Qfiniti successfully monitored and recorded calls placed to and from agents, as well as calls placed to a Vector Directory Number (VDN) and then queued to an agent hunt/skill group. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya Communication Manager, Avaya Computer Telephony Integration related interfaces, specifically the Telephony Services Application Programming Interface (TSAPI) and Communication Manager Application Programming Interface, and the etalk Qfiniti system. Qfiniti is a contact center quality monitoring solution that automates the monitoring and recording of agents' telephony and desktop interactions. Recordings may be made based on customer-defined schedules, telephony and/or desktop triggers, and on-demand by the supervisor or agent. The recordings may then be stored and played back for analysis and agent evaluation.

Qfiniti interacts with an Avaya Computer Telephony server over TSAPI to monitor call events concerning particular stations, agents, and hunt/skill groups. Qfiniti also interacts with an Avaya Communication Manager Application Programming Interface server to register Communication Manager Application Programming Interface “virtual” stations with Avaya Communication Manager. The Communication Manager Application Programming Interface stations essentially appear as IP softphones to Avaya Communication Manager. When monitoring or recording of a call is demanded, Qfiniti instructs a Communication Manager Application Programming Interface station to bridge onto the call (via Service Observation). Since the IP address of the Communication Manager Application Programming Interface station is that of the Qfiniti server, the audio portion of the call is directed to Qfiniti and can thus be recorded.

Figure 1 illustrates a sample configuration consisting of an Avaya S8300 Media Server residing in an Avaya G700 Media Gateway, an Avaya Communication Manager Application Programming Interface server, an Avaya Computer Telephony server, agents logged into Avaya IP and Digital Telephones, and an etalk Qfiniti server. Avaya Communication Manager on the S8300 Media Server, though the solution described herein is also extensible to other Avaya Media Servers and Media Gateways.

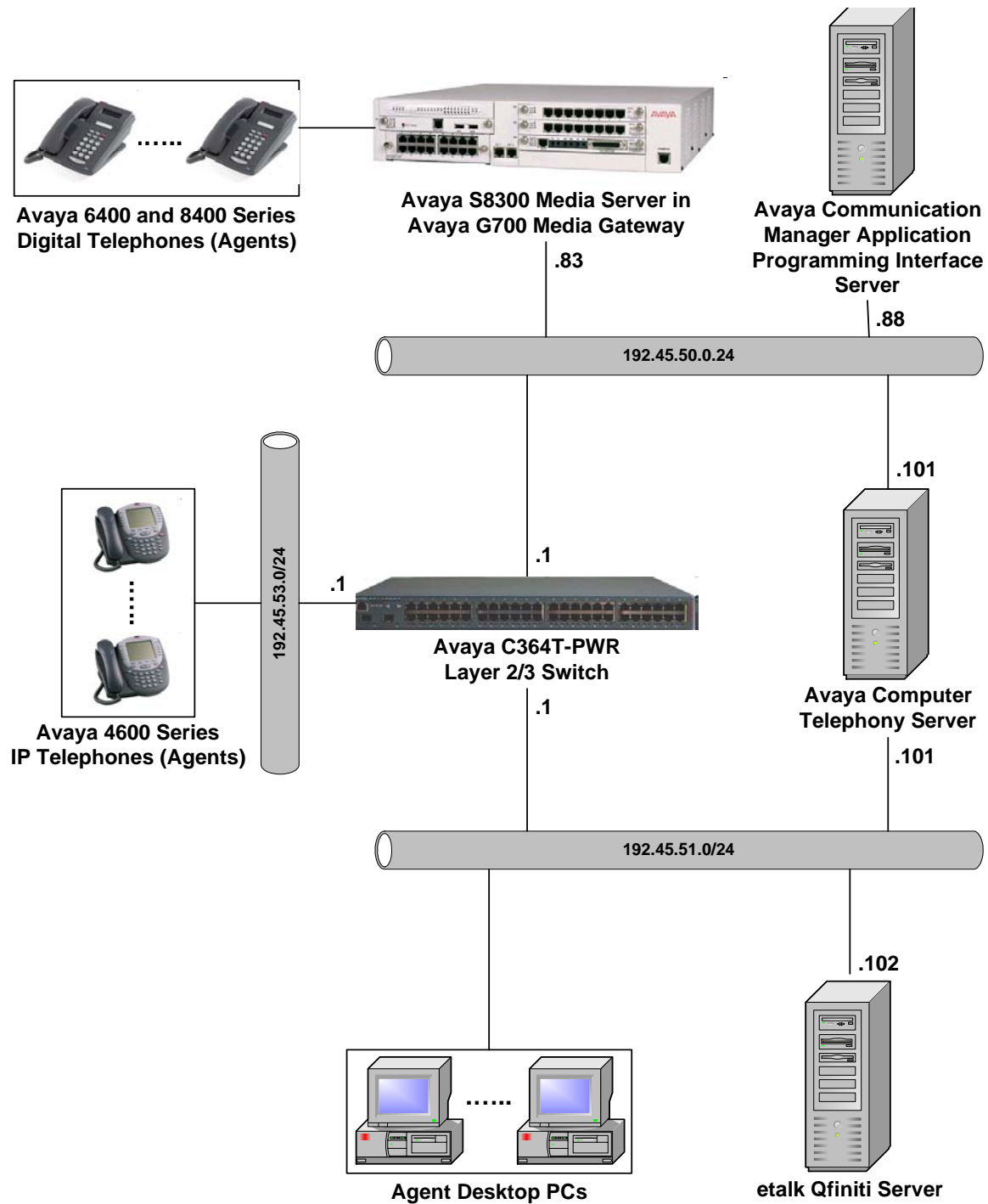


Figure 1: Sample configuration

2. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya S8300 Media Server	2.1.1 (R012x.01.1.414.1)
Avaya G700 Media Gateway	22.16.0 (Media Gateway Processor)
MM710 T1/E1 Media Module	9
MM711 Analog Media Module	17
MM712 DCP Media Module	5
VoIP Engine	43
Avaya 4600 Series IP Telephones	1.8.2 (4602SW) 2.1.1 (4610SW) 2.1.2 (4620SW) 2.0.1 (4630SW)
Avaya 6400 Series Digital Telephones	-
Avaya 8400 Series Digital Telephones	-
Avaya Communication Manager Application Programming Interface server	2.1.23
Avaya COMPUTER TELEPHONY server on Windows 2000 Server SP4	1.3
etalk Qfiniti server	1.7

3. Configure Avaya Communication Manager

This section describes the steps for configuring CTI links, hunt/skill groups, vectors, Vector Directory Numbers (VDNs), agents, agent login/logoff codes, and recording ports on Avaya Communication Manager. The steps are performed through the System Access Terminal (SAT) interface.

3.1. CTI Link

The Avaya Computer Telephony server communicates with Avaya Communication Manager via a CTI link. The following steps demonstrate the configuration of the Avaya Communication Manager side of the CTI link. See Section 4 for details on configuring the Avaya Computer Telephony server side of the CTI link.

Step	Description
1.	<p>Enter the display system-parameters customer-options command and verify that Computer Telephony Adjunct Links and Co-Res DEFINITY LAN Gateway are set to “y”.</p> <pre> display system-parameters customer-options Page 3 of 11 OPTIONAL FEATURES Abbreviated Dialing Enhanced List? n Audible Message Waiting? n Access Security Gateway (ASG)? n Authorization Codes? n Analog Trunk Incoming Call ID? n Backup Cluster Automatic Takeover? n A/D Grp/Sys List Dialing Start at 01? n CAS Branch? n Answer Supervision by Call Classifier? n CAS Main? n ARS? y Change COR by FAC? n ARS/AAR Partitioning? y Computer Telephony Adjunct Links? y ARS/AAR Dialing without FAC? n Co-Res DEFINITY LAN Gateway? y ASAI Link Core Capabilities? n Cvg Of Calls Redirected Off-net? n ASAI Link Plus Capabilities? n DCS (Basic)? n Async. Transfer Mode (ATM) PNC? n DCS Call Coverage? n Async. Transfer Mode (ATM) Trunking? n DCS with Rerouting? n ATM WAN Spare Processor? n ATMS? n Digital Loss Plan Modification? n Attendant Vectoring? n DS1 MSP? n DS1 Echo Cancellation? n (NOTE: You must logoff & login to effect the permission changes.) </pre>

Step	Description
2.	<p>Enter the add cti-link m command, where m is a number between 1 and 16, inclusive, and is the link number on the Avaya Communication Manager side of the CTI link. Enter an Extension valid under the provisioned dial plan in Avaya Communication Manager, set Type to “ADJ-IP”, and assign a descriptive Name to the CTI link.</p> <pre> add cti-link 1 CTI LINK CTI Link: 1 Extension: 75999 Type: ADJ-IP COR: 1 Name: CTI Link to Avaya CT </pre>
3.	<p>Enter the change node-names ip command. Specify a node name for the Avaya Computer Telephony server and enter its IP address. The node name and IP address for procr (the S8300 Media Server Processor Ethernet) are automatically set when the S8300 is configured with an IP address.</p> <pre> change node-names ip IP NODE NAMES Name IP Address Name IP Address AvayaCT 192.45 .50 .101 default 0 .0 .0 .0 procr 192.45 .50 .83 </pre>
4.	<p>Enter the change ip-services command. On page 1 of the ip-services form, configure and enable a “DLG” Service Type and specify procr as the Local Node. The Local Port should be fixed at 5678.</p> <pre> change ip-services IP SERVICES Service Enabled Local Local Remote Remote Type Type Node Port Node Port DLG y procr 5678 </pre> <p>On page 3 of the ip-services form, configure and enable a CTI Link with the same link number configured in Step 2. For Client Name, enter the node name configured in Step 3 for the Avaya Computer Telephony server. For Client Link, enter the link number to be configured on the Avaya Computer Telephony server side of the CTI link (see Step 2 of Section 4).</p> <pre> change ip-services DLG Administration CTI Link Enabled Client Name Client Link Client Status 1 y AvayaCT 1 </pre>

3.2. Agent Logins, Agent Hunt/Skill Groups, and Call Vectoring

The following steps describe the configuration of hunt/skill groups, agent logins, and call vectoring in Avaya Communication Manager.

Step	Description
1.	<p>Enter the display system-parameters customer-options command and verify that ACD and Vectoring (Basic) are set to “y”. Expert Agent Selection was enabled for the testing, but the feature is not required. Service Observing (Basic) must also be set to “y” since Qfiniti uses Service Observation to bridge onto and record a call.</p> <pre> change system-parameters customer-options CALL CENTER OPTIONAL FEATURES Call Center Release: 12.0 ACD? y PASTE (Display PBX Data on Phone)? n BCMS (Basic)? y Reason Codes? n BCMS/VuStats Service Level? n Service Level Maximizer? n BSR Local Treatment for IP & ISDN? n Service Observing (Basic)? y Business Advocate? n Service Observing (Remote/By FAC)? n Call Work Codes? n Service Observing (VDNs)? n DTMF Feedback Signals For VRU? n Timed ACW? n Dynamic Advocate? n Vectoring (Basic)? y Expert Agent Selection (EAS)? y Vectoring (Prompting)? n EAS-PHD? n Vectoring (G3V4 Enhanced)? n Forced ACD Calls? n Vectoring (ANI/II-Digits Routing)? n Least Occupied Agent? n Vectoring (G3V4 Advanced Routing)? n Lookahead Interflow (LAI)? n Vectoring (CINFO)? n Multiple Call Handling (On Request)? n Vectoring (Best Service Routing)? n Multiple Call Handling (Forced)? n Vectoring (Holidays)? n Vectoring (Variables)? n (NOTE: You must logoff & login to effect the permission changes.) </pre>

Step	Description
2.	<p>Enter the add hunt-group n command, where n is a number between 1 and 99, inclusive. On page 1 of the hunt-group form, assign a Group Name and Group Extension valid under the provisioned dial plan, enter a Class of Restriction (COR) that has Service Observing enabled, and set ACD, Queue, and Vector to “y”. When ACD is enabled, hunt group members serve as ACD agents and must log in to receive ACD split/skill calls. When Queue is enabled, calls to the hunt group will be served by a queue. When Vector is enabled, the hunt group will be vector controlled.</p>
	<pre> add hunt-group 1 Page 1 of 61 HUNT GROUP Group Number: 1 ACD? y Group Name: agent pool Queue? y Group Extension: 73000 Vector? y Group Type: ucd-mia TN: 1 COR: 1 MM Early Answer? n Security Code: ISDN Caller Display: Calls Warning Threshold: Port: Time Warning Threshold: Port: </pre>
	<p>On page 2, set Skill to “y”. This means that agent membership in the hunt group is based on skills, rather than pre-programmed assignment to the hunt group.</p>
	<pre> add hunt-group 1 Page 2 of 3 HUNT GROUP Skill? y AAS? n Measured: internal Supervisor Extension: Controlling Adjunct: none Redirect on No Answer (rings): Redirect to VDN: Forced Entry of Stroke Counts or Call Work Codes? n </pre>

Step	Description
3.	<p>Enter the add agent-loginID p command, where p is an extension valid under the provisioned dial plan. On page 1 of the agent-loginID form, enter a descriptive Name and Password.</p> <pre> add agent-loginID 75001 Page 1 of 2 AGENT LOGINID Login ID: 75001 AAS? n Name: Agent-75001 AUDIX? n TN: 1 LWC Reception: spe COR: 1 LWC Log External Calls? n Coverage Path: AUDIX Name for Messaging: Security Code: LoginID for ISDN Display? n Password: 12345 Password (enter again): 12345 Auto Answer: station WARNING: Agent must log in again before skill changes take effect </pre> <p>On page 2, set the Skill Number (SN) to the hunt group number assigned in Step 2. The Skill Level (SL) may be set according to customer requirements.</p> <pre> add agent-loginID 75001 Page 2 of 2 AGENT LOGINID Direct Agent Skill: Call Handling Preference: skill-level SN SL SN SL 1: 1 1 16: 2: 17: 3: 18: 4: 19: 5: 20: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: </pre> <p>Repeat this step as necessary to configure additional agent extensions.</p>

Step	Description
4.	<p>Enter the change vector q command, where q is a number between 1 and 256, inclusive. Enter a descriptive Name, and program the vector to deliver calls to the hunt/skill group number defined in Step 2. Agents that are logged into the hunt/skill group will be able to answer calls queued to the hunt/skill group.</p> <pre> change vector 1 CALL VECTOR Page 1 of 3 Number: 1 Name: Queue to skill1 Meet-me Conf? n Lock? n Basic? y EAS? y G3V4 Enhanced? n ANI/II-Digits? n ASAI Routing? y Prompting? n LAI? n G3V4 Adv Route? n CINFO? n BSR? n Holidays? n Variables? n 01 wait-time 2 secs hearing ringback 02 queue-to skill 1 pri m 03 </pre>
5.	<p>Enter the add vdn r command, where r is an extension valid under the provisioned dial plan. Specify a descriptive Name for the VDN and the Vector Number configured in Step 4. In the example below, incoming calls to the extension 72000 will be routed to VDN 72000, which in turn will invoke the actions specified in vector 1.</p> <pre> add vdn 72000 VECTOR DIRECTORY NUMBER Page 1 of 2 Extension: 72000 Name: VDN-72000 Vector Number: 1 Meet-me Conferencing? n Allow VDN Override? n COR: 1 TN: 1 Measured: none 1st Skill: 2nd Skill: 3rd Skill: </pre>

Step	Description
6.	Enter the change feature-access-codes command. Define the Auto-In Access Code , Login Access Code , and Logout Access Code .
	<pre> change feature-access-codes FEATURE ACCESS CODE (FAC) Automatic Call Distribution Features After Call Work Access Code: Assist Access Code: Auto-In Access Code: #66 Aux Work Access Code: Login Access Code: #65 Logout Access Code: *65 Manual-in Access Code: Add Agent Skill Access Code: Remove Agent Skill Access Code: Remote Logout of Agent Access Code: </pre>

3.3. Recording Ports

The recording ports in this configuration are Communication Manager Application Programming Interface stations that essentially appear as IP softphones to Avaya Communication Manager. Enter the **add station s** command, where s is an extension valid under the provisioned dial plan. On Page 1 of the **station** form, set **Type** to an IP or Digital phone set type with at least four configurable button assignments (i.e., excludes 4602 and 6402 phone set types since they each have two fixed button assignments), set **Port** to **IP**, enter a descriptive **Name**, specify the **Security Code**, and set **IP Softphone** to “y.”

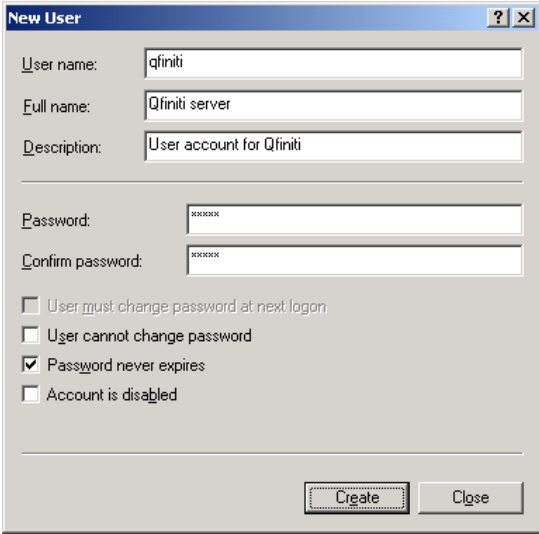
add station 76001	Page 1 of 3
STATION	
Extension: 76001	Lock Messages? n
Type: 4610	Security Code: 12345
Port: IP	Coverage Path 1:
Name: Recording-76001	Coverage Path 2:
	Hunt-to Station:
STATION OPTIONS	
Loss Group: 19	Personalized Ringing Pattern: 1
Speakerphone: 2-way	Message Lamp Ext: 76001
Display Language: english	Mute Button Enabled? y
Survivable GK Node Name:	Media Complex Ext:
	IP SoftPhone? y

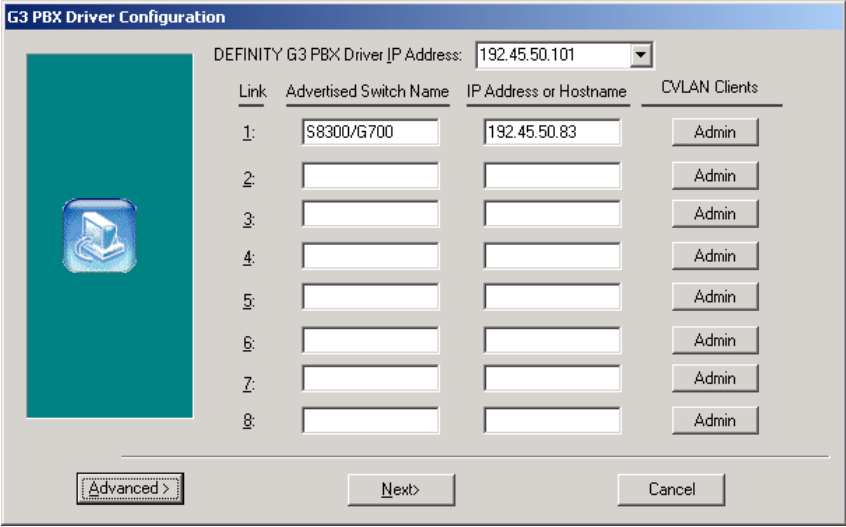
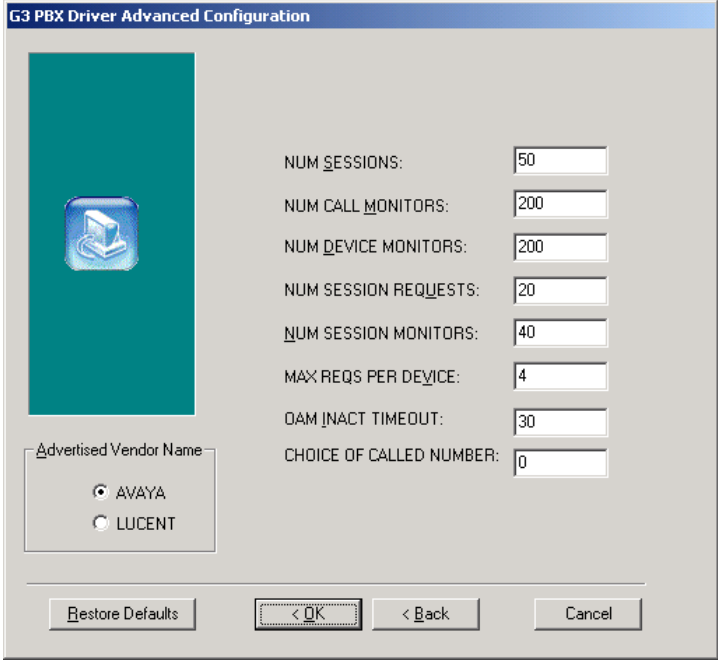
On Page 3, administer a “**serv-obsrv**” button. Note that Service Observing must be enabled in the COR of the station before the “**serv-obsrv**” button may be administered.

STATION		
SITE DATA		
Room:		Headset? n
Jack:		Speaker? n
Cable:		Mounting: d
Floor:		Cord Length: 0
Building:		Set Color:
ABBREVIATED DIALING		
List1:	List2:	List3:
BUTTON ASSIGNMENTS		
1: call-appr	5:	
2: call-appr	6:	
3: call-appr	7:	
4: serv-obsrv	8:	

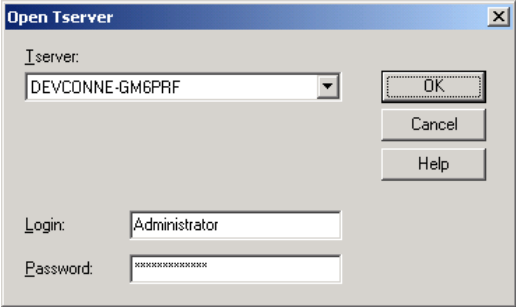
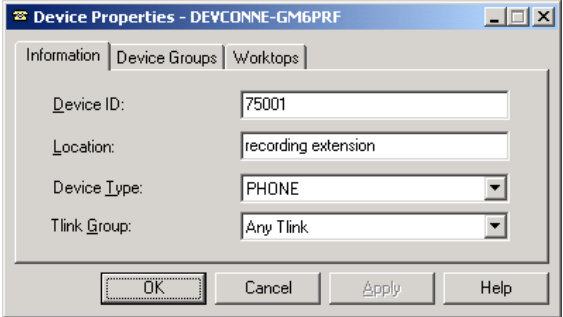
4. Configure the Avaya Computer Telephony Server

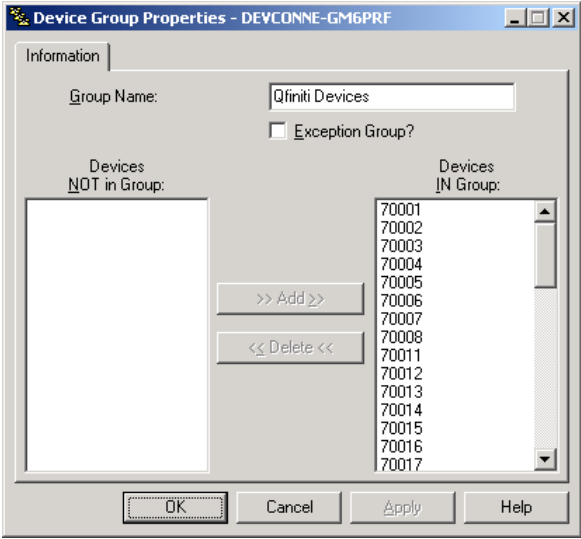
Avaya Computer Telephony enables CTI applications to control and monitor telephony resources on Avaya Communication Manager. Avaya Computer Telephony consists of two components: a DEFINITY® G3 PBX Driver and a Telephony Services Server (Tserver). The DEFINITY® G3 PBX Driver maintains CTI links between the Avaya Computer Telephony server and Avaya Communication Manager systems and forwards messages between the Tserver and Avaya Communication Manager systems. The Tserver receives requests from CTI applications and forwards them to Avaya Communication Manager via the DEFINITY® G3 PBX Driver. Conversely, the Tserver receives responses and events from Avaya Communication Manager via the DEFINITY® G3 PBX Driver and forwards them to the appropriate CTI applications. The Tserver also secures CTI application access to telephony resources based on the logins and permissions configured for the CTI applications.

Step	Description
1.	<p>Right click on the My Computer icon on the Avaya Computer Telephony server desktop and select “Manage” to display the Computer Management window. From the Computer Manager window, right click on the Users folder under Local Users and Accounts and select “New User...” Add a new user account for Qfiniti as shown below.</p> 

Step	Description
2.	<p>On the Avaya Computer Telephony server, select Start->Programs->Avaya Computer Telephony->DEFINITY G3 PBX Driver->G3 PBX Driver Configuration. Set the DEFINITY G3 PBX Driver IP Address to the IP address of the Avaya Computer Telephony server interface <u>connected to the same subnet as the S8300/G700</u>. Define a CTI link to the S8300/G700 by entering an Advertised Switch Name and the IP Address of the Processor Ethernet on the S8300/G700. Click on “Advanced >”.</p> 
3.	<p>Set Advertised Vendor Name to “AVAYA” and click on “< OK” to return to the G3 PBX Driver Configuration window.</p> 

Step	Description
4.	In the G3 PBX Driver Configuration window, click on “ Next ” and follow the rest of the configuration wizard steps until a message is displayed indicating that the DEFINITY® G3 PBX driver configuration has been updated.
5.	<p>On the Avaya Computer Telephony server, select Start->Programs->Avaya Computer Telephony->TS Controller to display the Telephony Services Controller window. Check the Automatically Start Telephony Services on Server Boot and Automatically Restart Telephony Services checkboxes and click on “Advanced...” to invoke the TSAPI Telephony Services Advanced Functions window.</p> <div data-bbox="633 594 1153 1043" data-label="Image"> </div> <p>Verify that Current IP Address used by TSAPI Telephony Services is set to the IP address of the Avaya Computer Telephony server interface <u>connected to same subnet as Ofiniti</u>; if not, click on Change IP Address... and change it accordingly. Click on “Close” to return to the Telephony Services Controller window.</p> <div data-bbox="500 1262 1282 1610" data-label="Image"> </div> <p>In the Telephony Services Controller window, click on “Start”. If the start is successful, a message stating “TSAPI Telephony Services started successfully” is displayed. Verify that the CTI link is up by using the status dlq cti-link command on Avaya Communication Manager via the SAT.</p>

Step	Description
6.	<p>The Telephony Services Administrator application is used to administer the Telephony Services Server (Tserver) and may be installed on the Avaya Computer Telephony server or on another computer. Select Start->Programs->Avaya Computer Telephony->TS Win32 Client->Telephony Services Admin. The Open Tserver dialog box is displayed. Select the Avaya Computer Telephony server from the Tserver drop-down list and log into the Avaya Computer Telephony server with Administrator permissions.</p>  <p>The 'Open Tserver' dialog box has a title bar with a close button. It contains a 'Tserver:' label above a dropdown menu showing 'DEVCONNE-GM6PRF'. To the right are 'OK', 'Cancel', and 'Help' buttons. Below these are 'Login:' and 'Password:' labels, each followed by a text input field. The 'Login' field contains 'Administrator' and the 'Password' field contains a series of asterisks.</p>
7.	<p>Define the extensions of stations, agents, and hunt/skill groups that are to be monitored by Qfiniti. In the Telephony Services Administrator window, select the “Create Device” icon from the toolbar or the “Create Device” option from the Admin menu. In the Create Device window, set Device ID to one of the following:</p> <ul style="list-style-type: none"> • a station extension • an agent extension • a hunt/skill group extension <p>Set Tlink Group to “Any Tlink” and click on “OK”. Location Type and Device Type are optional and for informational purposes only. Repeat this step for the rest of the station, agent, and hunt/skill group extensions to be monitored by Qfiniti.</p>  <p>The 'Device Properties - DEVCONNE-GM6PRF' dialog box has three tabs: 'Information', 'Device Groups', and 'Worktops'. The 'Information' tab is active. It contains four labels with corresponding input fields: 'Device ID:' with '75001', 'Location:' with 'recording extension', 'Device Type:' with a dropdown menu showing 'PHONE', and 'Tlink Group:' with a dropdown menu showing 'Any Tlink'. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.</p>

Step	Description
8.	<p>In the Telephony Services Administrator window, select the “Create Device Group” icon from the toolbar or the “Create Device Group” option from the Admin menu. In the Create Device Group window, add the devices created in Step 7 to the Devices IN Group list and click on “OK”.</p> 

Step	Description
9.	<p>Create a user object for Qfiniti. The permissions defined for the Qfiniti user object determine which telephony resources, i.e. calls and devices, that Qfiniti can control and/or monitor. In the Telephony Services Administrator window, select the “Create User” icon from the toolbar or the “Create User” option from the Admin menu. In the Information tab of the Create User window, enter the Login that was created for Qfiniti in Step 1 and uncheck the Unrestricted Access Rights checkbox.</p> <div data-bbox="591 480 1208 974" data-label="Image"> </div> <p>In the Access Rights tab of the Create User window, specify the Access Group (defined earlier in Step 8) that contains the devices that Qfiniti will be able to control and monitor and click on “OK”.</p> <div data-bbox="591 1155 1208 1648" data-label="Image"> </div>

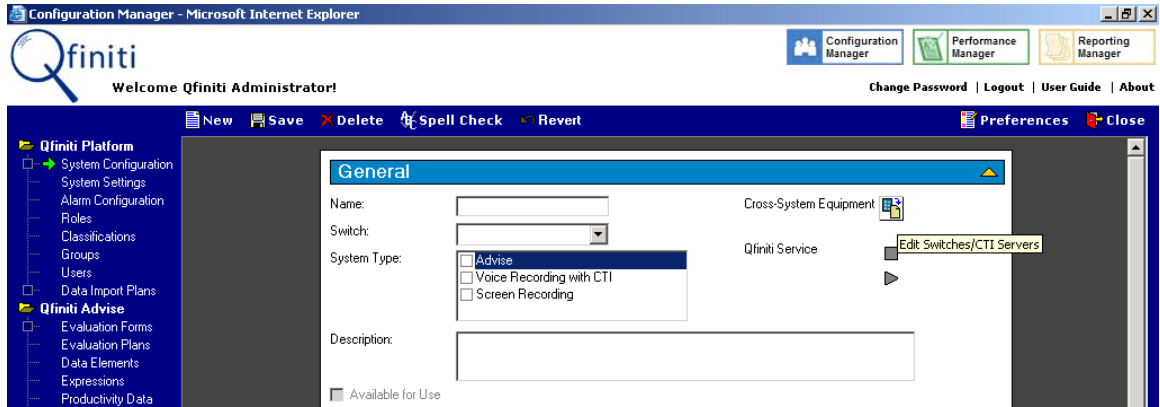
5. Configure the Avaya Communication Manager Application Programming Interface Server

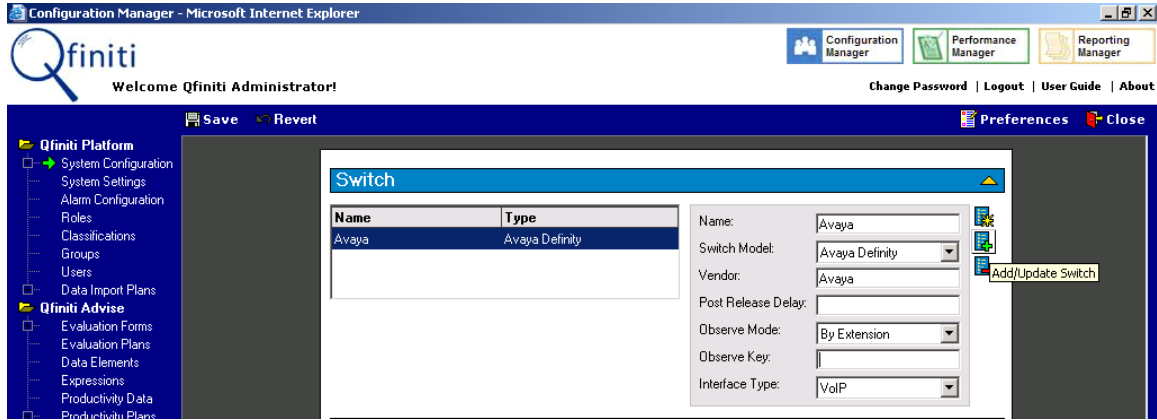
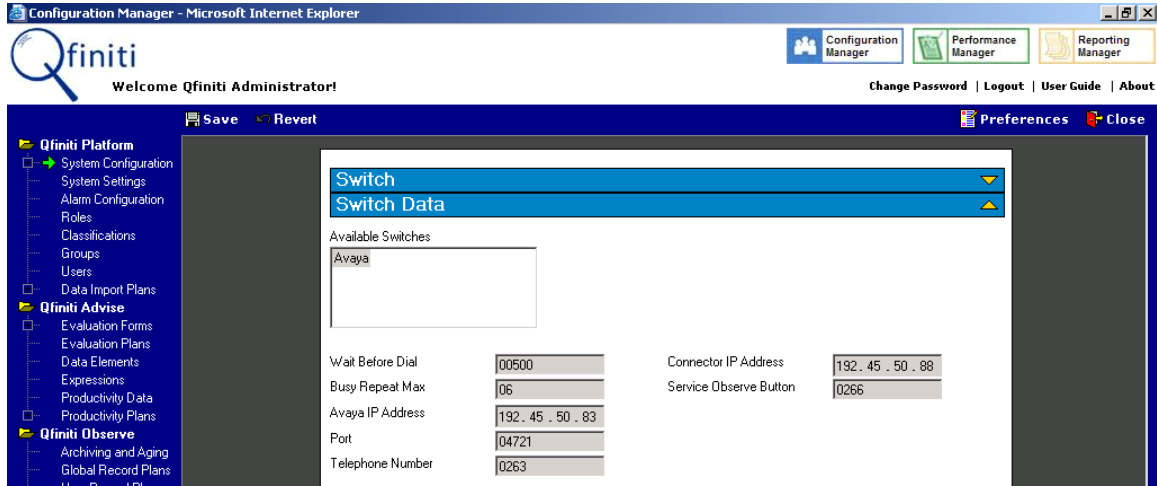
Consult [1] for details on configuring the Avaya Communication Manager Application Programming Interface server.

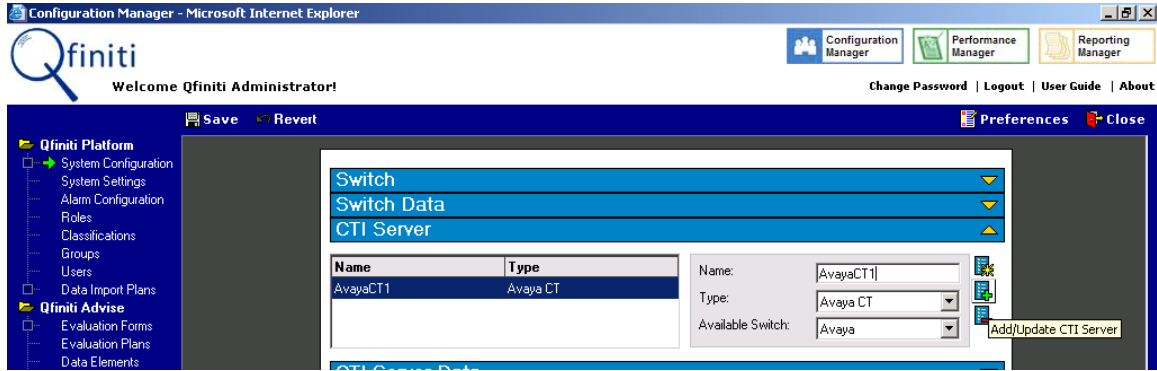
6. Configure etalk Qfiniti

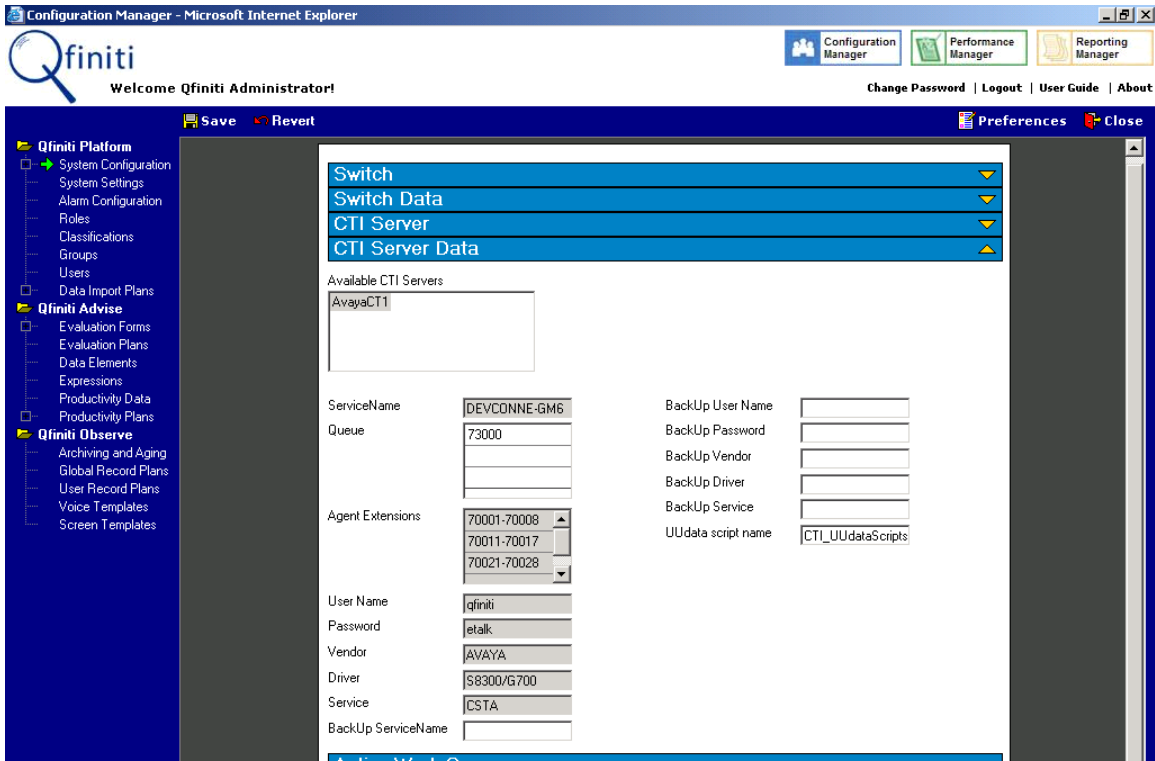
The steps in this section describe the configuration of the Qfiniti system and the agents to be monitored and recorded by Qfiniti. Consult etalk documentation for guidance on configuring recording plans and templates.

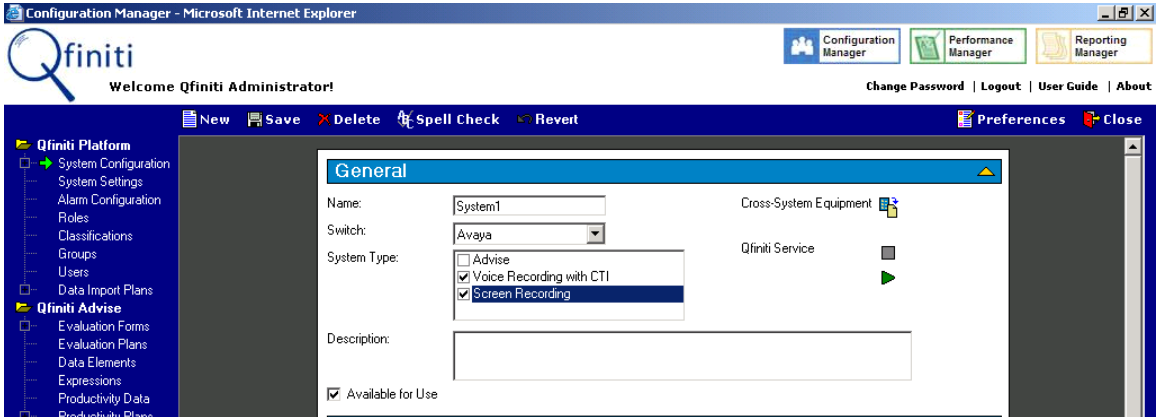
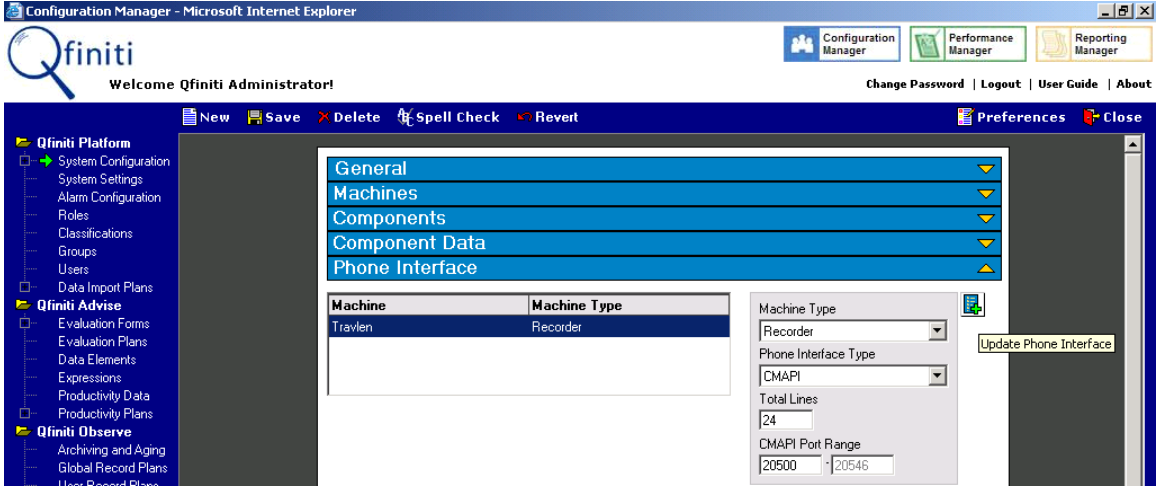
6.1. System Configuration

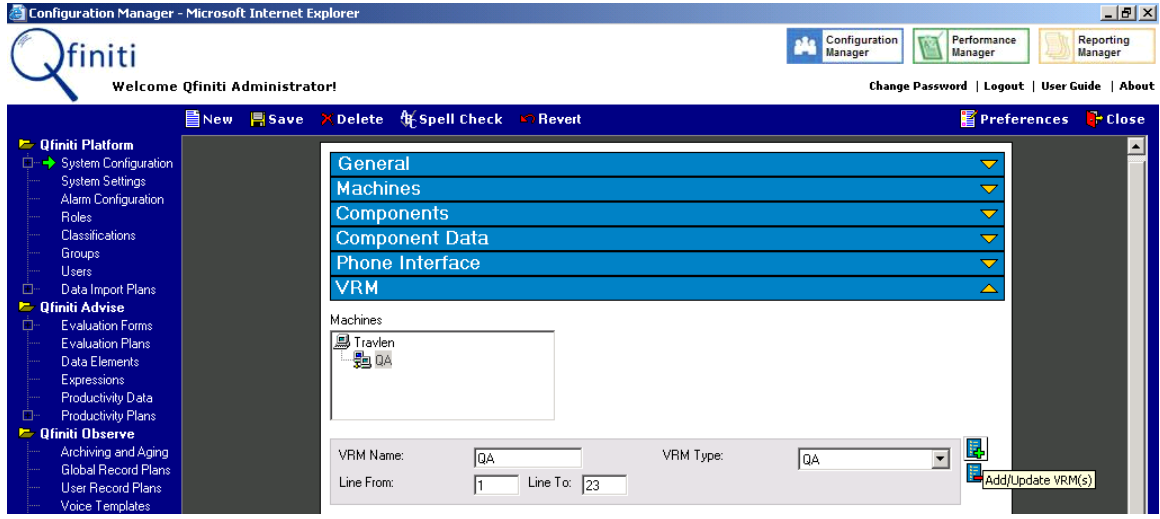
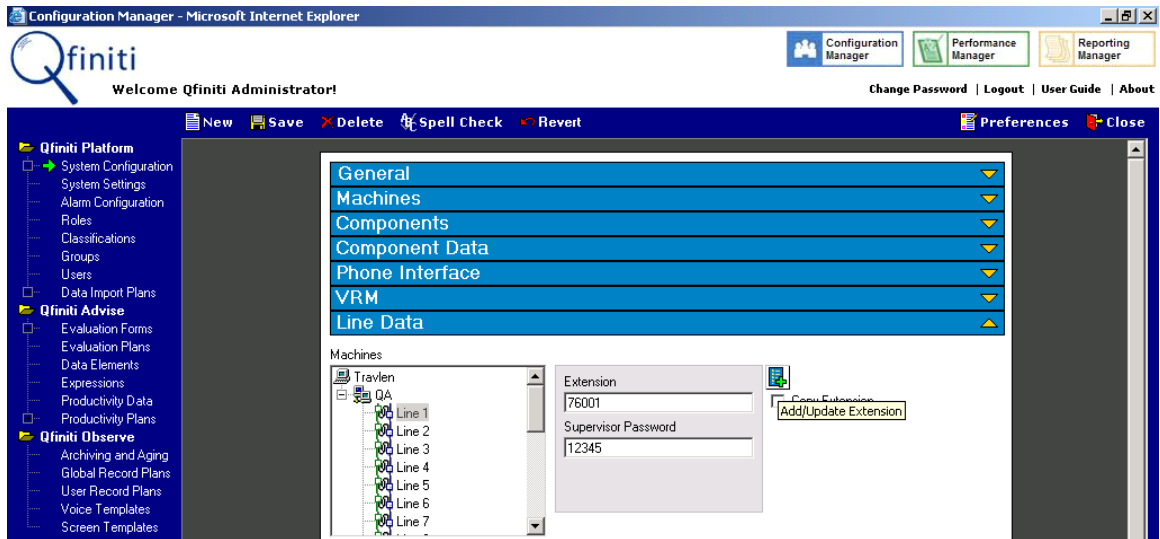
Step	Description
1.	Log into the Qfiniti Configuration Manager with the appropriate credentials.
2.	Under the Qfiniti Platform folder in the left panel, click on “ System Configuration ”.
3.	Click on the “ New ” icon in the top toolbar.
4.	Click on the General section header and then the “ Cross-System Equipment ” icon. 

Step	Description
5.	<p>Click on the “New Switch” icon and then the Switch section header. Assign descriptive strings for Name and Vendor, and set Switch Model to “Avaya Definity”, Observe Mode to “By Extension”, and Interface Type to “VoIP”. Click on the “Add/Update Switch” icon.</p> 
6.	<p>Click on the Switch Data section header and from the Available Switches list, select the switch configured in Step 5. Set Avaya IP Address to the IP address of the S8300 (or C-LAN for S8500 and S8700 Media Servers), Port to “04721”, and Connector IP Address to the IP address of the Communication Manager Application Programming Interface server. For Telephone Number, enter “0263” (corresponds to the first call appearance button on IP and Digital phone sets). For Service Observe Button, enter a value in the range 0266 to 0286, inclusive, corresponding to the Service Observe button administered on each Communication Manager Application Programming Interface station in Section 3.3. “0266” corresponds to Button 4 on IP and Digital phone sets, “0267” corresponds to Button 5, and so on. Note that the maximum number of buttons varies with the phone set type.</p> 

Step	Description
7.	<p>Click on the CTI Server section header and then the “New CTI Server” icon. Assign a descriptive Name, set Type to “Avaya CT”, and set Available Switch to the switch configured in Step 5. Click on the “Add/Update CTI Server” icon.</p> 

Step	Description
8.	<p>Click on the CTI Server Data section header and in the Available CTI Servers list, select the CTI server configured in Step 7. Enter the User Name and Password of the user account created in Step 1 of Section 4. For Queue, enter the hunt/skill groups that agents will log into. For Agent Extensions, enter the extensions of the physical stations that agents will use.</p> <p>For ServiceName, Vendor, Driver, and Service, use the Service ID (given in the format <Vendor>#<Driver>#<Service>#<ServiceName>) of the Avaya Computer Telephony server. Alternatively, set those fields as follows:</p> <ul style="list-style-type: none"> • ServiceName: hostname of the Avaya Computer Telephony server • Vendor: “AVAYA” (see Step 3 of Section 4) • Driver: the Advertised Switch Name of the CTI link entered in Step 2 of Section 4. • Service: “CSTA” <p>Click on the “Save” icon and then the “Close” icon in the top toolbar.</p> 

Step	Description
9.	<p>Enter a descriptive Name, set Switch to the switch configured in Step 5, and check the Voice Recording with CTI and Available for Use checkboxes. Check the Screen Recording checkbox if screen recordings are also desired.</p> 
10.	<p>Click on the Phone Interface section header. Set Machine Type to “Recorder” and Phone Interface Type to “CMAPI”. For Total Lines, enter the number of recording lines (Communication Manager Application Programming Interface stations) plus one* and click on the “Update Phone Interface” icon.</p> <p>* etalk plans to eliminate the plus one requirement in a future release.</p> 

Step	Description
11.	<p>Click on the VRM section header and then the “New VRM” icon. Enter a descriptive VRM Name, set VRM Type to “QA”, and enter the range of recording lines. Click on the “Add/Update VRM(s)” icon.</p> 
12.	<p>Click on the Line Data section header and select a recording line. Enter the extension and password of the recording line (recall Communication Manager Application Programming Interface recording stations were configured in Section 3.3) and click on the “Add/Update Extension” icon. Repeat this step for each recording line.</p> 
13.	Click on the “ Save ” icon.

Step	Description
14.	Click on the General section header and then the “ Start Service ” icon.

The screenshot shows the Qfiniti Configuration Manager web application. The left sidebar contains a tree view under 'Qfiniti Platform' with 'System Configuration' expanded. The main content area is titled 'General' and contains the following fields:

- Name: System1
- Switch: Avaya
- System Type:
 - ☐ Advise
 - ☒ Voice Recording with CTI
 - ☒ Screen Recording
- Description: (empty text box)
- ☒ Available for Use

On the right side of the 'General' panel, there are checkboxes for 'Cross-System Equipment' and 'Qfiniti Service', and a 'Start Service' button.

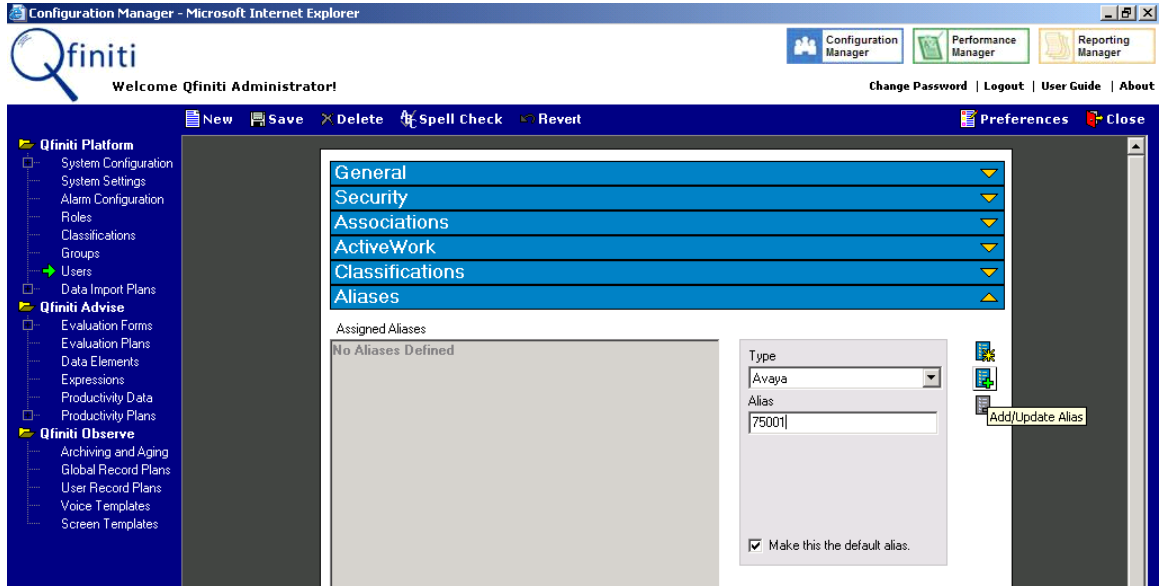
6.2. Agent Configuration

Step	Description
1.	Under the Qfiniti Platform folder in the left panel, click on “ Users ”.
2.	Click on the “ New ” icon in the top toolbar.
3.	Click on the General section header and enter the agent’s information.

The screenshot shows the Qfiniti Configuration Manager web application. The left sidebar contains a tree view under 'Qfiniti Platform' with 'Users' expanded. The main content area is titled 'General' and contains the following fields:

- First Name: A
- Middle Name: (empty)
- Last Name: 75002
- Email Address: (empty)
- ☐ Inactive User

On the right side of the 'General' panel, there is a 'Phone Player Prompt' section with a play button and a red stop button.

Step	Description
4.	<p>Click on the Aliases section header and then the “New Alias” icon. Set Type to an appropriate agent type and enter the agent’s extension in Alias. Click on the “Add/Update Alias” icon and then the “Save” icon in the top toolbar.</p> 
5.	Repeat steps 2 through 4 for each agent.

7. Interoperability Compliance Testing

The interoperability compliance testing included feature, serviceability, and performance testing. The feature testing evaluated the ability of Qfiniti to monitor and record agent calls using various Qfiniti recording modes. The serviceability testing introduced failure scenarios to see if Qfiniti can resume monitoring and recording after failure recovery. The performance testing stressed the Qfiniti server by continuously placing calls to agents over extended periods of time.

7.1. General Test Approach

The general approach was to place internal, inbound trunk, and outbound trunk calls to and from agents, record them using Qfiniti, and verify the recordings. The recording modes included live monitoring, scheduled recording plans, trigger-based (ANI, DNIS) recording plans, and on-demand recording (by supervisors and by agents). For performance testing, a call generator continuously placed calls to a VDN that queues the calls in a hunt/skill group, which in turn delivers the calls to agents logged into the hunt/skill group. For serviceability testing, failures such as cable pulls and resets were applied.

7.2. Test Results

Qfiniti successfully recorded agent calls under the various recording modes discussed in Section 7.1. For serviceability testing, after pulling and restoring the cable connection to the Qfiniti server, Qfiniti was able to resume monitoring and recording agent calls. For performance testing, Qfiniti successfully recorded agent calls under a high call volume over an hour and a moderate call volume over 12 hours.

The following observations were made during the testing:

1. Follow on Transfer (FOT) is not supported in the tested Qfiniti release (1.7), though etalk plans to support it in a future release of Qfiniti. FOT ensures that a call transferred from one agent to another agent is recorded, and all portions of a conference call where at least one agent is participating in the conference are recorded.
2. If network connectivity to Avaya Communication Manager is lost, i.e. the Avaya Media Server is reset or the cable connection to the Avaya Media Server is pulled, then Qfiniti must be restarted after connectivity is restored. etalk plans to resolve this in a future release.

8. Verification Steps

The following steps may be used to verify the configuration:

- From the Qfiniti server, ping the Avaya Communication Manager Application Programming Interface and Computer Telephony servers and agent desktop computers and verify connectivity.
- From the Avaya Communication Manager Application Programming Interface and Computer Telephony servers, ping the Avaya S8300 Media Server and verify connectivity.
- Verify that calls may be successfully completed between the IP and Digital telephones.
- Verify the CTI link between Avaya Communication Manager and the Avaya Computer Telephony server is up (use the **status dlgl cti-link** command on the SAT).
- Verify that Qfiniti is logged into the Avaya Computer Telephony Server.
- Log an agent into a hunt/skill group and verify that calls placed to and from the agent are completed successfully.
- Configure the agent in Qfiniti and perform live monitoring or recording of calls placed to and from the agent. Verify that the recordings are accurate and complete.

9. Support

For technical support on etalk products, contact etalk at:

- Phone: (800) 346-4436
- Email: techsupport@etalk.com

10. Conclusion

These Application Notes illustrate the procedures for configuring the etalk Qfiniti quality monitoring system to monitor and record calls placed to and from agents on an Avaya Communication Manager system. In the configuration described in these Application Notes, Qfiniti employs Communication Manager Application Programming Interface virtual stations as the recording ports. During compliance testing, Qfiniti successfully recorded agent calls using various recording modes such as live monitoring, supervisor on-demand, agent on-demand, scheduled recording, and trigger-based recording. Qfiniti was also able to record agent calls under continuous call volumes over extended periods of time.

11. Additional References

[1] Avaya Communication Manager API Installation and Administration, Issue 3, May 2004, Document Number 03-300085

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

Product information for etalk products may be found at <http://www.etalk.com/~products/Index.cfm>.

©2005 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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