AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for etalk Qfiniti with Avaya Communication Manager using Communication Manager Application Programming Interface (CMAPI) – Issue 1.0
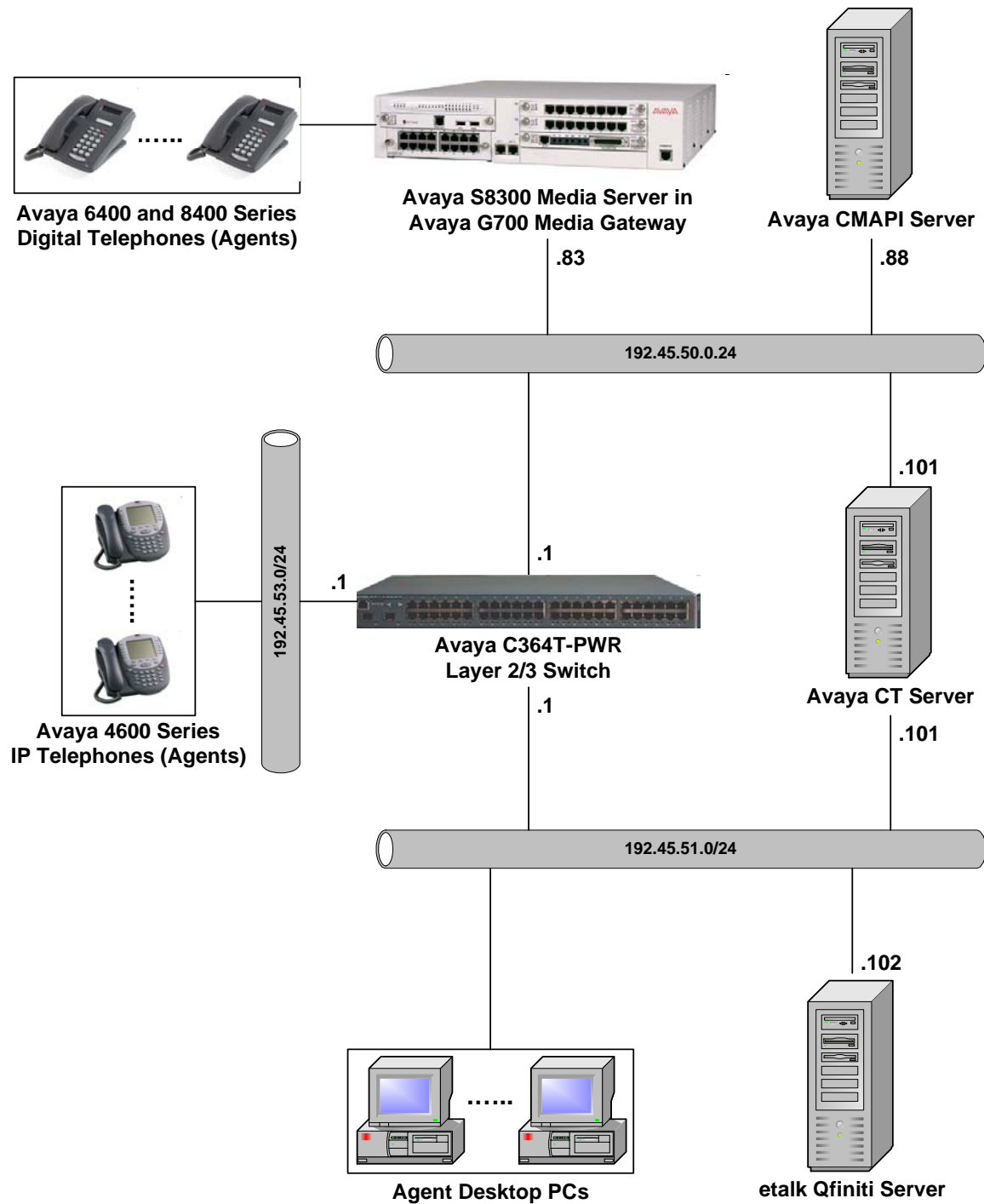
Abstract

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 (CMAPI) "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 Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya Communication Manager, Avaya Computer Telephony Integration (CTI) related interfaces, specifically the Telephony Services Application Programming Interface (TSAPI) and Communication Manager Application Programming Interface (CMAPI), 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 (CT) server over TSAPI to monitor call events concerning particular stations, agents, and hunt/skill groups. Qfiniti also interacts with an Avaya CMAPI server to register CMAPI "virtual" stations with Avaya Communication Manager. The CMAPI stations essentially appear as IP softphones to Avaya Communication Manager. When monitoring or recording of a call is demanded, Qfiniti instructs a CMAPI station to bridge onto the call (via Service Observation). Since the IP address of the CMAPI 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 CMAPI server, an Avaya CT server, agents logged into Avaya IP and Digital Telephones, and an etalk Qfiniti server. Avaya Communication Manager software on the S8300 Media Server, though the solution described herein is also extensible to other Avaya Media Servers and Media Gateways.

**Avaya 6400 and 8400 Series
Digital Telephones (Agents)**

**Avaya S8300 Media Server in
Avaya G700 Media Gateway**

Avaya CMAPI Server

.83

.88

192.45.50.0.24

.101

192.45.53.0/24

.1

**Avaya 4600 Series
IP Telephones (Agents)**

**Avaya C364T-PWR
Layer 2/3 Switch**

Avaya CT Server

.1

.101

192.45.51.0/24

.102

Agent Desktop PCs

etalk Qfiniti Server

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 CMAPI server	2.1.23
Avaya CT 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 CT 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 CT server side of the CTI link.

Step	Description
1.	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**".

```
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.)
```

Step	Description
2.	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.

```
add cti-link 1                                              Page   1 of   2
                                CTI LINK
 CTI Link: 1
Extension: 75999
     Type: ADJ-IP
                                                                   COR: 1

     Name: CTI Link to Avaya CT
```

Step	Description
3.	Enter the **change node-names ip** command. Specify a node name for the Avaya CT 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.

```
change node-names ip                                       Page   1 of   1
                            IP NODE NAMES
    Name              IP Address             Name             IP Address
AvayaCT           192.45 .50 .101                           .   .   .
default           0  .0  .0  .0                             .   .   .
procr             192.45 .50 .83                            .   .   .
```

Step	Description
4.	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**.

```
change ip-services                                         Page   1 of   3

                             IP SERVICES

  Service      Enabled      Local        Local        Remote       Remote
   Type                     Node         Port         Node         Port
DLG             y        procr          5678
```

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 CT server. For **Client Link**, enter the link number to be configured on the Avaya CT server side of the CTI link (see Step 2 of Section 4).

```
change ip-services                                         Page   3 of   3
                          DLG Administration

   CTI Link    Enabled     Client Name      Client Link   Client Status

      1          y        AvayaCT               1
```

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.	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.

```
change system-parameters customer-options                      Page   6 of  11
                       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.)
```

Step	Description
2.	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.

```
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:
```

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.

```
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
```

Step	Description
3.	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**.

```
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
```

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.

```
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:
```

Repeat this step as necessary to configure additional agent extensions.

Step	Description
4.	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.

```
change vector 1                                             Page   1 of   3
                             CALL VECTOR

    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
```

Step	Description
5.	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.

```
add vdn 72000                                               Page   1 of   2
                       VECTOR DIRECTORY NUMBER

                          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:
```

Step	Description
6.	Enter the **change feature-access-codes** command. Define the **Auto-In Access Code**, **Login Access Code**, and **Logout Access Code**.

```
change feature-access-codes                                    Page    5 of    6
                            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:
```

3.3. Recording Ports

The recording ports in this configuration are CMAPI 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.**"
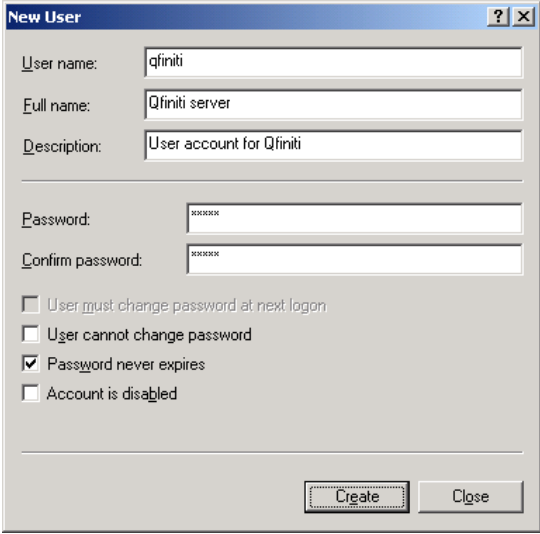
```
add station 76001                                              Page    1 of    3
                                STATION

Extension: 76001                        Lock Messages? n          BCC: 0
    Type: 4610                          Security Code: 12345       TN: 1
    Port: IP                         Coverage Path 1:              COR: 1
    Name: Recording-76001            Coverage Path 2:              COS: 1
                                     Hunt-to Station:


STATION OPTIONS
             Loss Group: 19          Personalized Ringing Pattern: 1
                                            Message Lamp Ext: 76001
          Speakerphone: 2-way               Mute Button Enabled? y
      Display Language: english


 Survivable GK Node Name:                   Media Complex Ext:
                                               IP SoftPhone? y
```
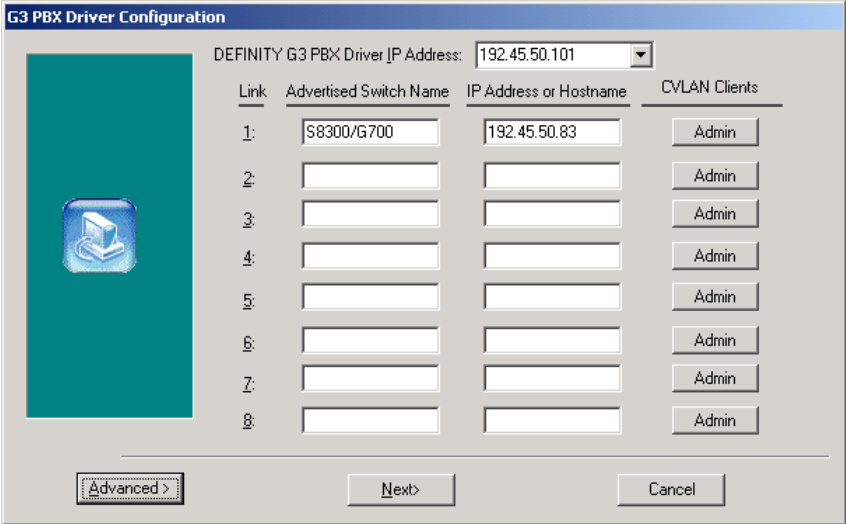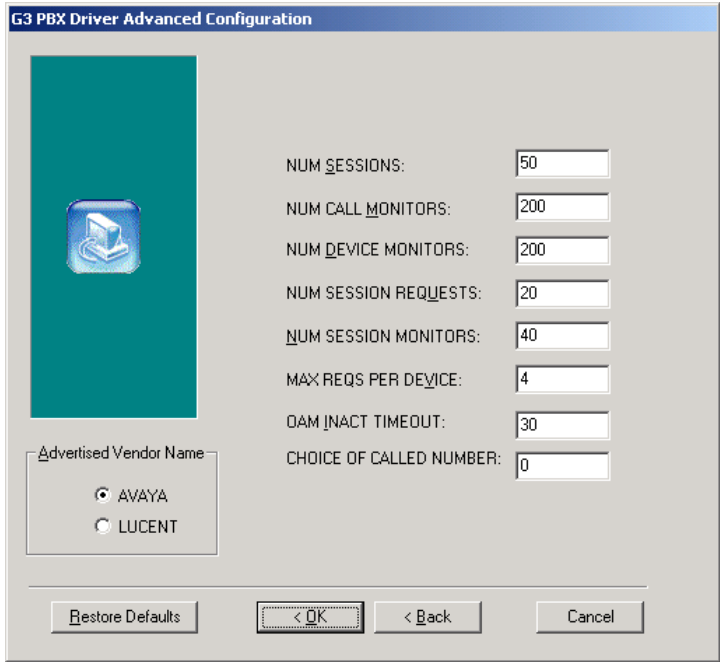
On Page 3, administer a "**serv-obsrv**" button. Note that Service Observing must be enabled in the COR of the station before the "**serv-obsrv**" button may be administered.

```
                              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:
```
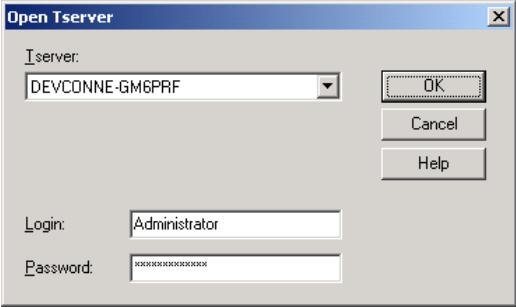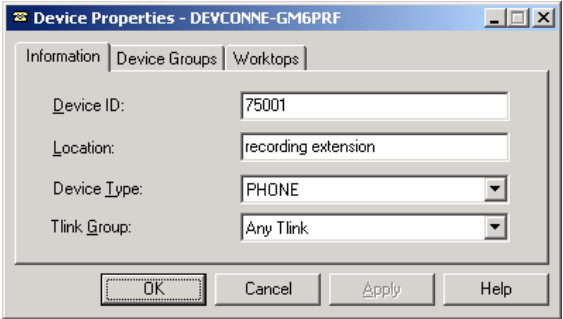
4. Configure the Avaya Computer Telephony (CT) Server

Avaya CT enables CTI applications to control and monitor telephony resources on Avaya Communication Manager. Avaya CT 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 CT 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.
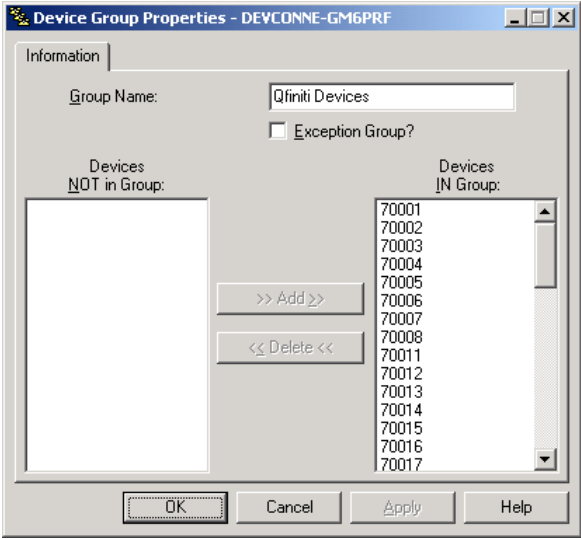
Step	Description
1.	Right click on the **My Computer** icon on the Avaya CT server desktop and select "**Manage**" to display the **Computer Management** window. From the **Computer Manager** window, right click on the **Users** folder under **Local Users and Accounts** and select "**New User…**" Add a new user account for Qfiniti as shown below.

Step	Description
2.	On the Avaya CT 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 CT server interface **connected to the same subnet as the S8300/G700**. 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 >**".
3.	Set **Advertised Vendor Name** to "**AVAYA**" and click on "**< OK**" to return to the **G3 PBX Driver Configuration** window.

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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.	On the Avaya CT 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. Verify that **Current IP Address used by TSAPI Telephony Services** is set to the IP address of the Avaya CT server interface **connected to same subnet as Qfiniti**; if not, click on **Change IP Address…** and change it accordingly. Click on "**Close**" to return to the **Telephony Services Controller** window. 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 dlg cti-link** command on Avaya Communication Manager via the SAT.

Step	Description
6.	The Telephony Services Administrator application is used to administer the Telephony Services Server (Tserver) and may be installed on the Avaya CT 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 CT server from the **Tserver** drop-down list and log into the Avaya CT server with Administrator permissions. *(Open Tserver dialog box shown: Tserver: DEVCONNE-GM6PRF, Login: Administrator, Password: ************, with OK, Cancel, Help buttons)*
7.	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: • a station extension • an agent extension • a hunt/skill group extension 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. *(Device Properties - DEVCONNE-GM6PRF dialog shown: Information / Device Groups / Worktops tabs. Device ID: 75001, Location: recording extension, Device Type: PHONE, Tlink Group: Any Tlink, with OK, Cancel, Apply, Help buttons)*

Step	Description
8.	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**".

Step	Description
9.	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. 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**".

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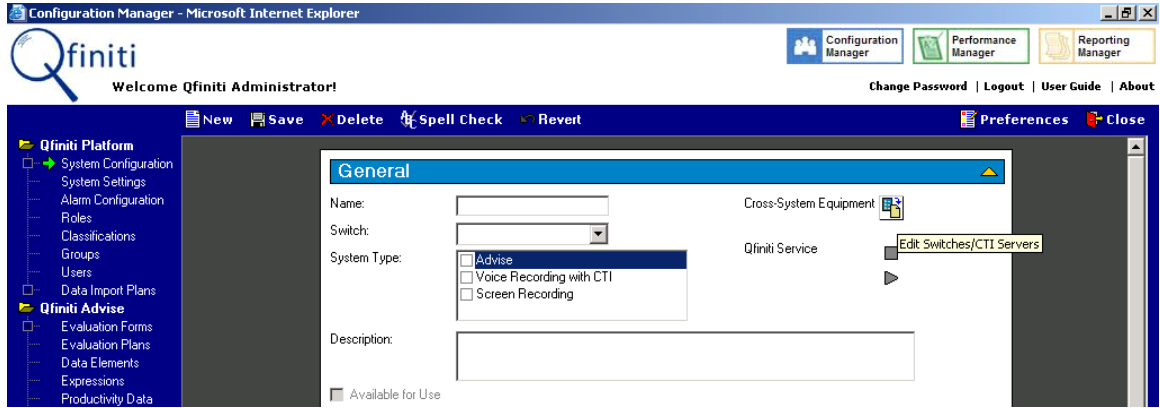
5. Configure the Avaya CMAPI Server
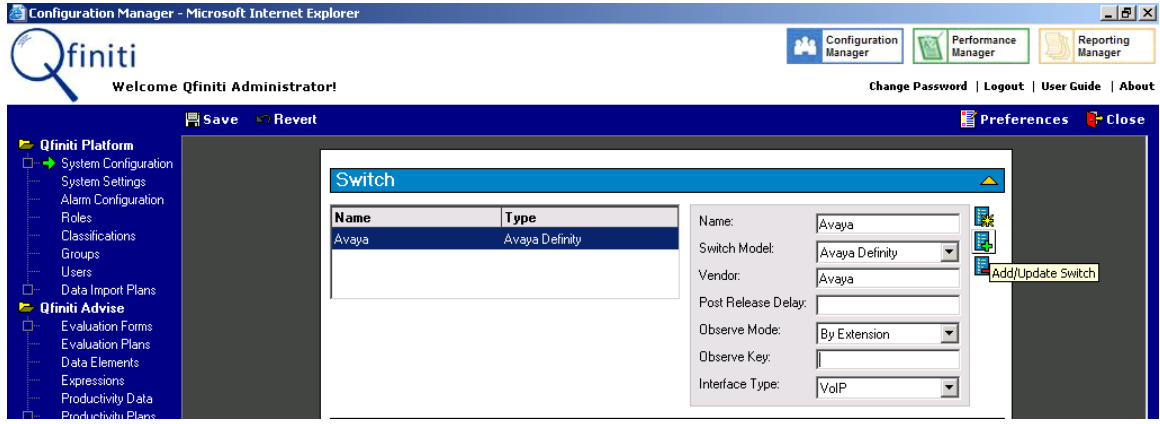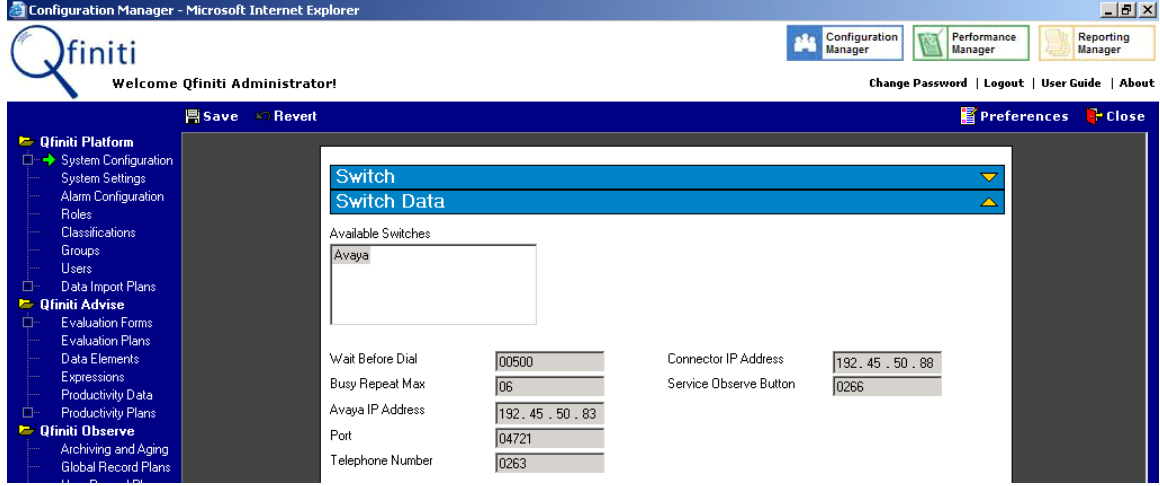
Consult [1] for details on configuring the Avaya CMAPI server.
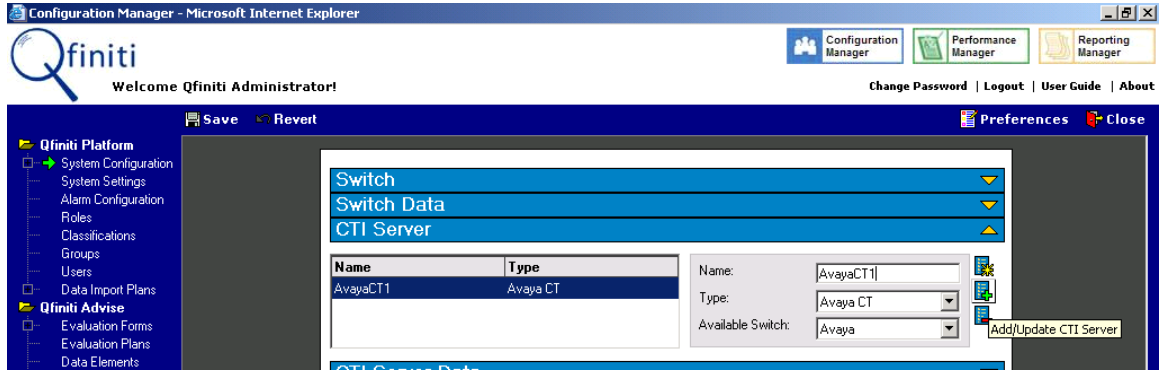
6. Configure etalk Qfiniti
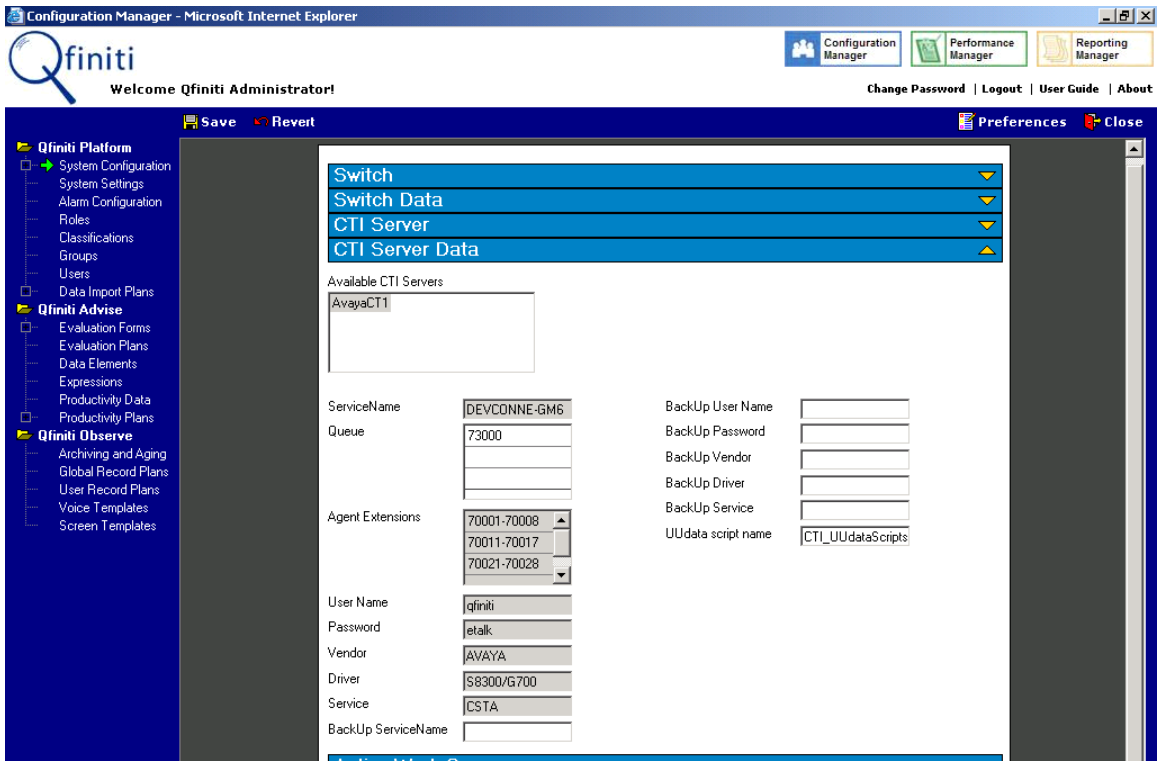
The steps in this section describe the configuration of the Qfiniti system and the agents to be monitored and recorded by Qfiniti. Consult etalk documentation for guidance on configuring recording plans and templates.
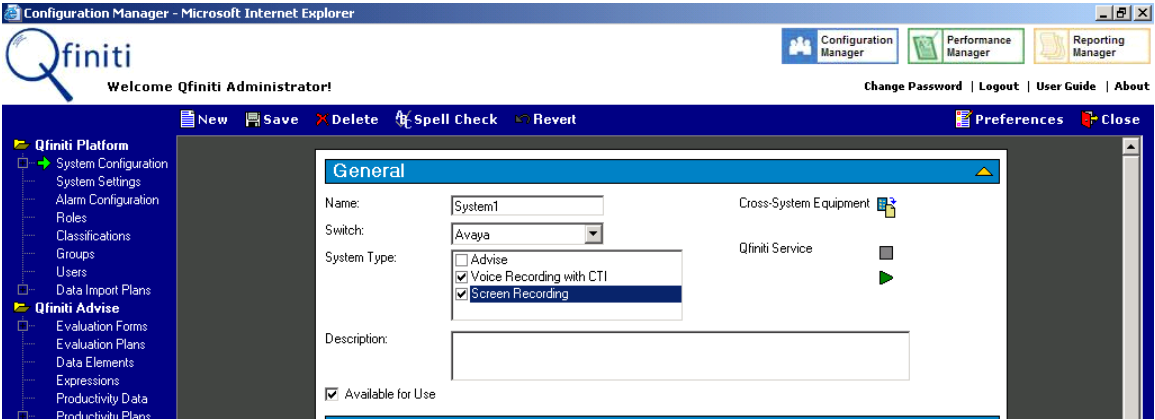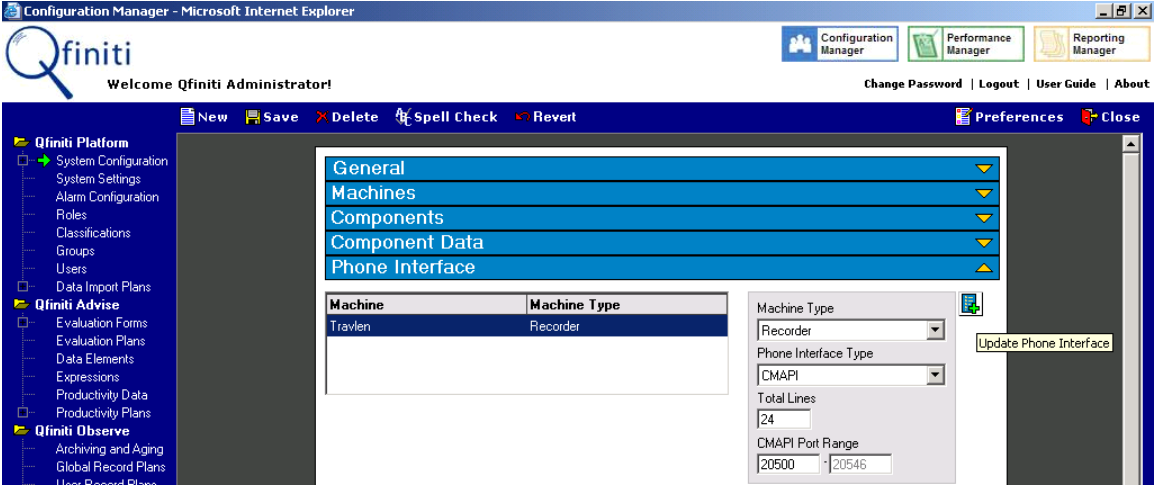
6.1. System Configuration
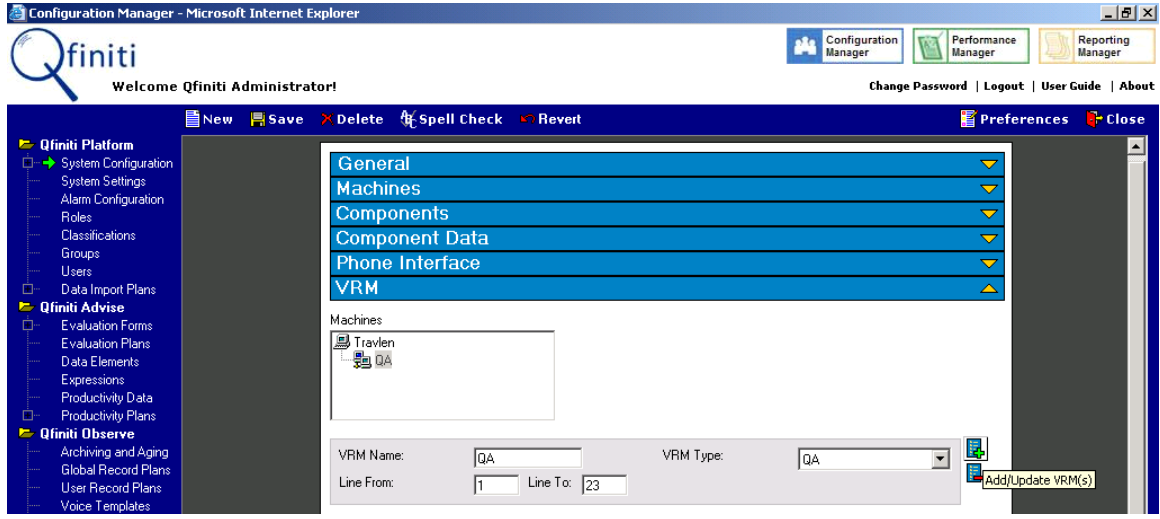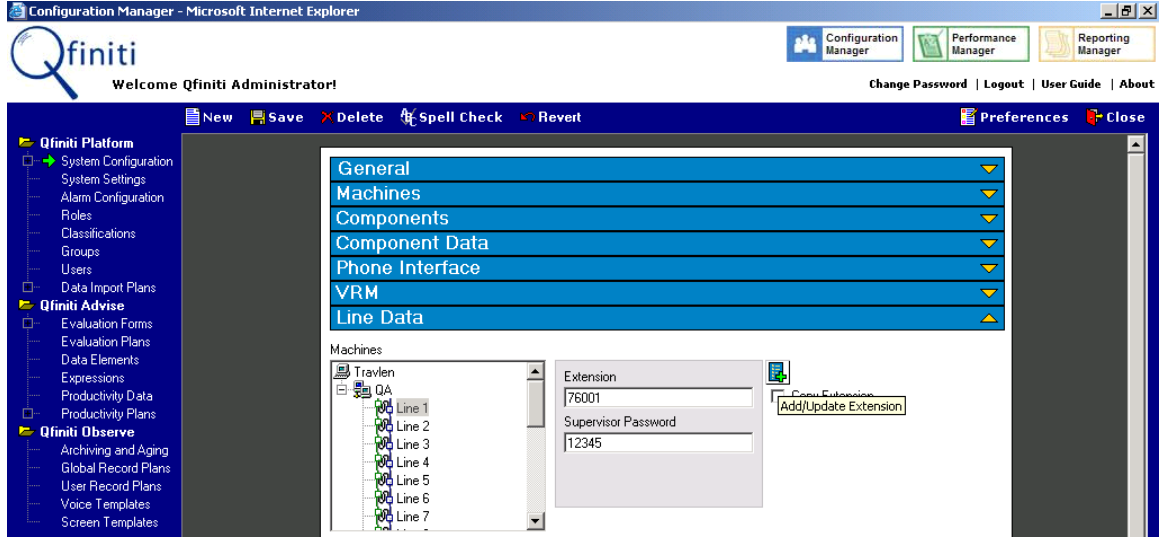
Step	Description
1.	Log into the Qfiniti Configuration Manager with the appropriate credentials.
2.	Under the **Qfiniti Platform** folder in the left panel, click on "**System Configuration**".
3.	Click on the "**New**" icon in the top toolbar.
4.	Click on the **General** section header and then the "**Cross-System Equipment**" icon.

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Step	Description
5.	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.
6.	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 CMAPI 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 CMAPI 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.

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Step	Description
7.	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.

Step	Description
8.	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. For **ServiceName**, **Vendor**, **Driver**, and **Service**, use the Service ID (given in the format \<Vendor>#\<Driver>#\<Service>#\<ServiceName>) of the Avaya CT server. Alternatively, set those fields as follows: • **ServiceName**: hostname of the Avaya CT 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**" Click on the "**Save**" icon and then the "**Close**" icon in the top toolbar.

Step	Description
9.	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.
10.	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 (CMAPI stations) plus one* and click on the "**Update Phone Interface**" icon. * etalk plans to eliminate the plus one requirement in a future release.

Step	Description
11.	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.
12.	Click on the **Line Data** section header and select a recording line. Enter the extension and password of the recording line (recall CMAPI recording stations were configured in Section 3.3) and click on the "**Add/Update Extension**" icon. Repeat this step for each recording line.
13.	Click on the "**Save**" icon.

Step	Description
14.	Click on the **General** section header and then the "**Start Service**" icon.

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.

Step	Description
4.	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.
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 CMAPI and CT servers and agent desktop computers and verify connectivity.
- From the Avaya CMAPI and CT 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 CT server is up (use the **status dlg cti-link** command on the SAT).
- Verify that Qfiniti is logged into the Avaya CT 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 CMAPI 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.