Application Notes for the Voice Print Activ! Voice Call Logger with Avaya Communication Manager and Avaya Application Enablement Services - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring the Voice Print Activ! Voice Call Logger to monitor and record calls placed to and from stations, and Vector Directory Numbers on Avaya Communication Manager. When the recording of a call is desired, the Voice Print Activ! Voice Call Logger issues a Single Step Conference request through events acquired from TSAPI. In the configuration discussed in these Application Notes, Voice Print Activ! Voice Call Logger employs Device and Media Call Control Application Programming Interface virtual stations as recording ports. During compliance testing, Voice Print Activ! Voice Call Logger successfully recorded calls placed to and from stations, as well as calls placed to a 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.

1. Introduction

These Application Notes describe a compliance-tested configuration comprised of an Avaya Communication Manager, an Avaya Application Enablement Services (AES) Server and the Voice Print Activ! Voice Call Logger. Activ! Voice Call Logger monitors, records, stores, and plays back phone calls for verification. Activ! Voice Call Logger uses TSAPI with an Avaya AES server to monitor stations, and/or VDNs, i.e. to obtain recording triggers and call information. Activ! Voice also uses the Device and Media Call Control interface (also known as the CMAPI) with the Avaya AES server to register CMAPI softphones that Activ! Voice Call Logger uses as recording ports. When recording of a call is desired, Activ! Voice Call Logger issues a Single Step Conference request through events acquired from TSAPI.

Figure 1 illustrates a sample configuration consisting of the following:

- an Avaya S8300 Media Servers with Avaya G700 Media Gateway
- an Avaya Application Enablement Services (AES) server
- a pair of redundant Avaya S8700 Media Servers with an Avaya G650 Media Gateway
- Avaya 4600 Series IP Telephones and an Avaya 9600 series IP Telephone
- an Avaya 6408D+ Digital Telephone
- an Analog Telephone
- a Voice Print Activ! Voice Call Logger

The solution described herein is also extensible to other Avaya Media Servers and Media Gateways. A pair of redundant Avaya S8700 Media Servers with an Avaya G650 Media Gateway was included during the test, to provide an IP trunk between two Avaya Communication Manager systems.

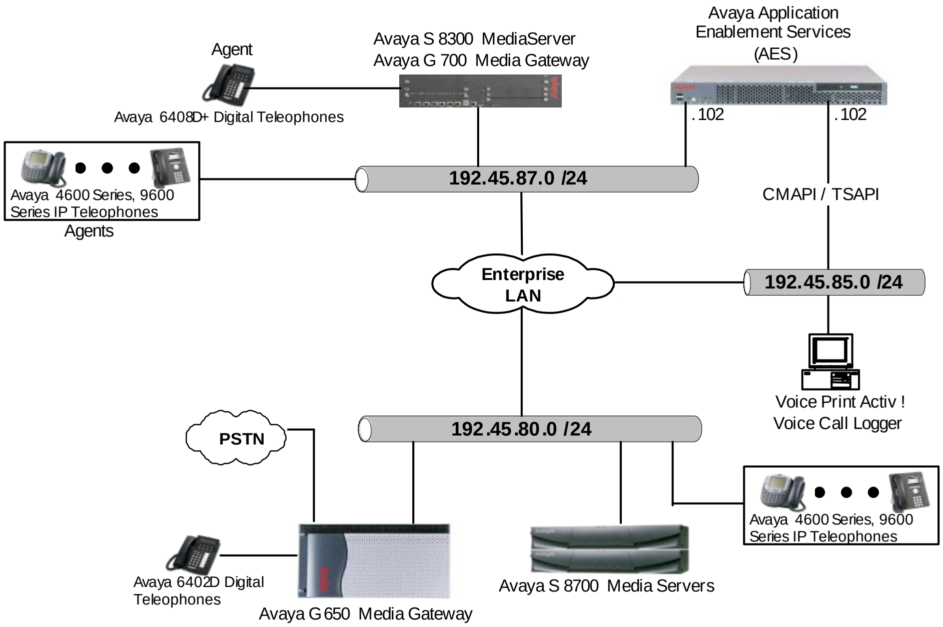

Agent
Avaya S 8300 MediaServer
Avaya G 700 Media Gateway
Avaya Application Enablement Services (AES)
Avaya 6408D+ Digital Teleophones
.102
.102
Avaya 4600 Series, 9600 Series IP Teleophones
Agents
192.45.87.0 /24
CMAPI / TSAPI
Enterprise LAN
192.45.85.0 /24
Voice Print Activ ! Voice Call Logger
PSTN
192.45.80.0 /24
Avaya 4600 Series, 9600 Series IP Teleophones
Avaya 6402D Digital Teleophones
Avaya G650 Media Gateway
Avaya S 8700 Media Servers

Figure 1: Sample Test Configuration for the Voice Print Activ! Voice Call Logger Solution

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 with Avaya G700 Media Gateway		Avaya Communication Manager 3.1.2 (R013x.01.2.632.1)
Avaya Application Enablement Services Server		3.1.2 Bundled Offer Build 46
Avaya S8700 Media Server		Avaya Communication Manager 4.0 (R014x.00.0.730.5 with patch 13566)
Avaya G650 Media Gateway		-
	TN2312BP IP Server Interface	HW11 FW030
	TN799DP C-LAN Interface	HW20 FW017
	TN2302AP IP Media Processor	HW01 FW108
	TN2602AP IP Media Processor	HW02 FW007
Avaya 4600 Series IP Telephones		
	4620 (H.323)	2.6
	4621 (H.323)	2.6
	4625 (H.323)	2.5
Avaya 9300 series IP Telephone (H.323)		1.2
Avaya 6408D+ Digital Telephone		-
Analog Telephones		-
Voice Print Activ! Voice Server on Windows Microsoft 2003 Server with Service Pack 1		2.8.3.9 Build 53

3. Configure Avaya Communication Manager

This section provides the procedures for configuring Computer Telephony Integration (CTI) links, UCID, hunt/skill groups, vectors, Vector Directory Numbers (VDN), agents, agent login/logoff codes, and recording ports on Avaya Communication Manager. All the configuration changes in Avaya Communication Manager are performed through the System Access Terminal (SAT) interface. The highlights in the following screens indicate the values used during the compliance test.

3.1. AES Link between Avaya Communication Manager and Avaya Application Enablement Services Server

The Avaya AES server forwards CTI requests, responses, and events between the Voice Print Activ! Voice Call Logger and Avaya Communication Manager. The AES server communicates with Avaya Communication Manager over an AES link. Within the AES link, CTI links may be configured to provide CTI services to CTI applications such as the Voice Print Activ! Voice Call Logger. The following steps demonstrate the configuration of the Avaya Communication Manager side of the AES and CTI links. See Section 4 for the details of configuring the AES side of the AES and CTI links.

Enter the **display system-parameters customer-options** command. On Page 3 of the system-parameters customer-options form, verify that the ASAI Link Core Capabilities field is set to **y**. If not, contact an authorized Avaya account representative to obtain the license.

```
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? y
        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? n
          ARS/AAR Dialing without FAC? y   Cvg Of Calls Redirected Off-net? n
          ASAI Link Core Capabilities? y                     DCS (Basic)? n
          ASAI Link Plus Capabilities? y                DCS Call Coverage? n
       Async. Transfer Mode (ATM) PNC? n               DCS with Rerouting? n
  Async. Transfer Mode (ATM) Trunking? n
              ATM WAN Spare Processor? n    Digital Loss Plan Modification? n
                                 ATMS? n                          DS1 MSP? y
                  Attendant Vectoring? n           DS1 Echo Cancellation? N
```

Enter the **add cti-link m** command, where **m** is a number between 1 and 64, inclusive. Enter a valid Extension under the provisioned dial plan in Avaya Communication Manager, set the Type field to **ADJ-IP**, and assign a descriptive Name to the CTI link.

```
add cti-link 1                                                  Page   1 of   2
                                    CTI LINK
 CTI Link: 3
Extension: 79001
     Type: ADJ-IP
                                                                        COR: 1
     Name: TSAPI
```

Enter the **change node-names ip** command. In the compliance-tested configuration, the procr IP address was utilized for registering H.323 endpoint (Avaya IP Telephones and IP Softphones, and AES Device and Media Control API stations) and the AES link.

```
change node-names ip                                                 Page   1 of 1
                                  IP NODE NAMES
    Name              IP Address
CLAN                192.45.80.87
IA770               192.45.87.12
default             0.0.0.0
procr               192.45.87.11                         .   .   .
```

Enter the **change ip-services** command. On Page 1 of the ip-services form, configure entries for the C-LAN board that is dedicated for the AES link:

- Service Type – set to **AESVCS**
- Enabled – set to **y**.
- Local Node – **procr**
- Local Port – set to **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 hostname of the AES server (ssh into the AES server and run **uname –a** to get the hostname) for the AE Services Server field and an alphanumeric password for the Password field. Set the Enabled field to **y**. The same password will be configured on the AES server in Section 4.1.

```
change ip-services                                              Page   4 of   4
                            AE Services Administration

   Server ID    AE Services       Password          Enabled    Status
                   Server
      1:      server1           xxxxxxxxxxxxxxxx      y        idle
      2:
      3:
```

Enter the **change system-parameters features** command to enable the Universal Call ID (UCID). On Page 5 of the system-parameters features form, verify that the Create Universal Call ID (UCID) field is set to **y**, and the UCID Network Node ID field is specified. UCID Network Node ID can be obtained by executing the **display dialplan parameters** command.

```
change system-parameters features                               Page   5 of  17
                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS
  Endpoint:               Lines Per Page: 60

SYSTEM-WIDE PARAMETERS
                             Switch Name:

    Emergency Extension Forwarding (min): 10
  Enable Inter-Gateway Alternate Routing? n


MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
     Send All Calls Applies to: station    Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
     Create Universal Call ID (UCID)? y    UCID Network Node ID: 1
```

On Page 12 of the system-parameters features form, verify that the Send UCID to ASAI field is set to **y**.

```
change system-parameters features                              Page  12 of  17
                        FEATURE-RELATED SYSTEM PARAMETERS

  AGENT AND CALL SELECTION
                         MIA Across Splits or Skills? n
                          ACW Agents Considered Idle? y
                          Call Selection Measurement: current-wait-time
    Service Level Supervisor Call Selection Override? n
                                 Auto Reserve Agents: none
  ASAI
             Copy ASAI UUI During Conference/Transfer? n
         Call Classification After Answer Supervision? n
                                   Send UCID to ASAI? y
  CALL MANAGEMENT SYSTEM
                           Reporting Adjunct Release:

                               BCMS/VuStats LoginIDs? y
                   BCMS/VuStats Measurement Interval: hour
           BCMS/VuStats Abandon Call Timer (seconds):
                      Validate BCMS/VuStats Login IDs? y
                             Clear VuStats Shift Data: on-login
                 Remove Inactive BCMS/VuStats Agents? n
```

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

Enter the **display system-parameters customer-options** command. On Page 6, verify that the ACD and Vectoring (Basic) fields are set to **y**. If not, contact an authorized Avaya account representative to obtain these licenses.

```
display system-parameters customer-options                      Page   6 of  11
                         CALL CENTER OPTIONAL FEATURES

                          Call Center Release: 3.0

                               ACD? y                        Reason Codes? n
                      BCMS (Basic)? y               Service Level Maximizer? n
        BCMS/VuStats Service Level? n             Service Observing (Basic)? y
  BSR Local Treatment for IP & ISDN? n     Service Observing (Remote/By FAC)? y
                 Business Advocate? n              Service Observing (VDNs)? n
                   Call Work Codes? n                            Timed ACW? N

      DTMF Feedback Signals For VRU? n                   Vectoring (Basic)? y
                  Dynamic Advocate? n                Vectoring (Prompting)? n
       Expert Agent Selection (EAS)? n            Vectoring (G3V4 Enhanced)? n
                           EAS-PHD? n             Vectoring (3.0 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
  PASTE (Display PBX Data on Phone)? n               Vectoring (Variables)? n
      (NOTE: You must logoff & login to effect the permission changes.)
```

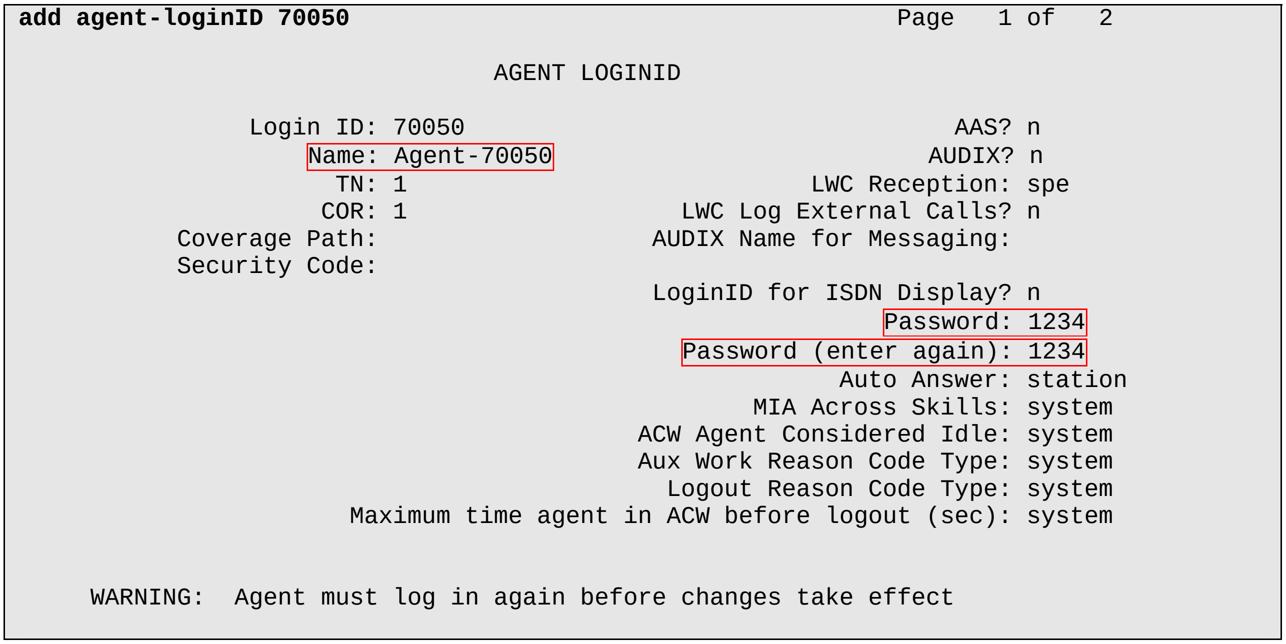
Enter the **add hunt-group n** command, where **n** is an unused hunt group number. On Page 1 of the hunt-group form, assign a descriptive Group Name and Group Extension valid in the provisioned dial plan. Set the ACD, Queue, and Vector fields to **y**. When ACD is enabled, hunt group members serve as 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   3
                                  HUNT GROUP

            Group Number: 1                                ACD? y
              Group Name: Test Pool                      Queue? y
         Group Extension: 70000                         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 the Skill field to **y**, which 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


        VuStats Objective:




                                      Redirect on No Answer (rings): 3
                                                    Redirect to VDN:
                   Forced Entry of Stroke Counts or Call Work Codes? n
```

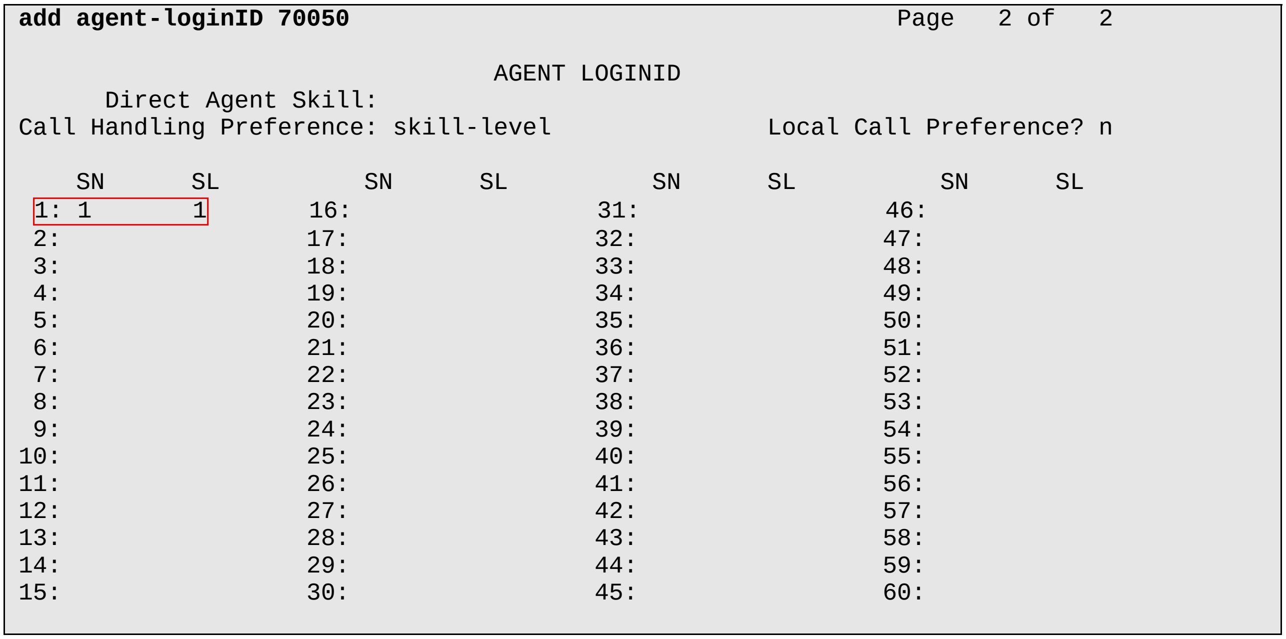
Enter the **add agent-loginID p** command, where **p** is a valid extension in the provisioned dial plan. On Page 1 of the agent-loginID form, enter a descriptive Name and Password.



```
add agent-loginID 70050                                      Page   1 of   2

                                 AGENT LOGINID

                Login ID: 70050                                  AAS? n
                    Name: Agent-70050                          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: 1234
                                              Password (enter again): 1234
                                                         Auto Answer: station
                                                   MIA Across Skills: system
                                           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


     WARNING:  Agent must log in again before changes take effect
```

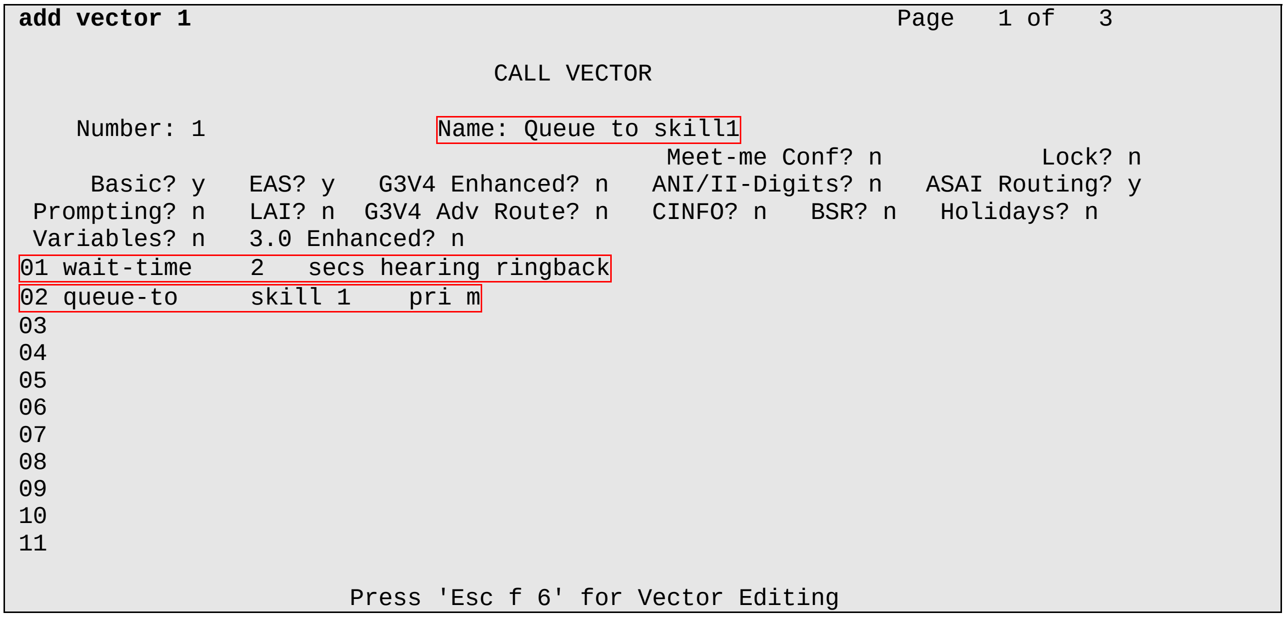
On Page 2, set the Skill Number (**SN**) to the hunt group number previously created. The Skill Level (**SL**) may be set according to customer requirements.

Repeat this step as necessary to configure additional agent extensions.



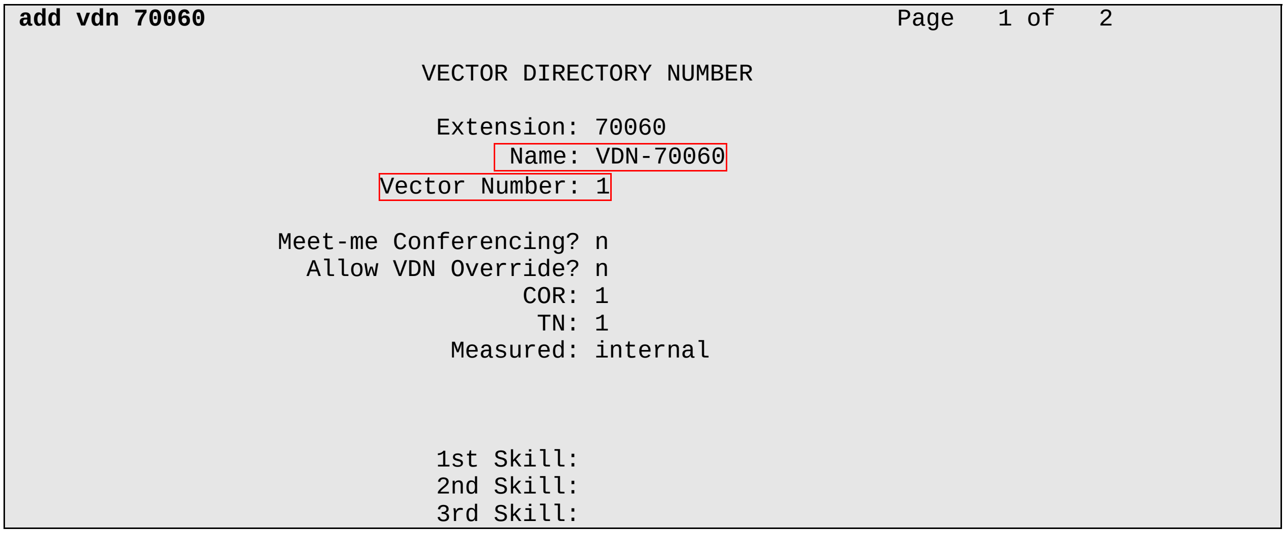
```
add agent-loginID 70050                                      Page   2 of   2

                                 AGENT LOGINID
      Direct Agent Skill:
Call Handling Preference: skill-level               Local Call Preference? n

    SN      SL          SN      SL          SN      SL          SN      SL
 1: 1       1       16:                 31:                 46:
 2:                 17:                 32:                 47:
 3:                 18:                 33:                 48:
 4:                 19:                 34:                 49:
 5:                 20:                 35:                 50:
 6:                 21:                 36:                 51:
 7:                 22:                 37:                 52:
 8:                 23:                 38:                 53:
 9:                 24:                 39:                 54:
10:                 25:                 40:                 55:
11:                 26:                 41:                 56:
12:                 27:                 42:                 57:
13:                 28:                 43:                 58:
14:                 29:                 44:                 59:
15:                 30:                 45:                 60:
```

Enter the **add vector q** command, where **q** is an unused vector number. Enter a descriptive Name, and program the vector to deliver calls to the hunt/skill group number. Agents that are logged into the hunt/skill group will be able to answer calls queued to the hunt/skill group.



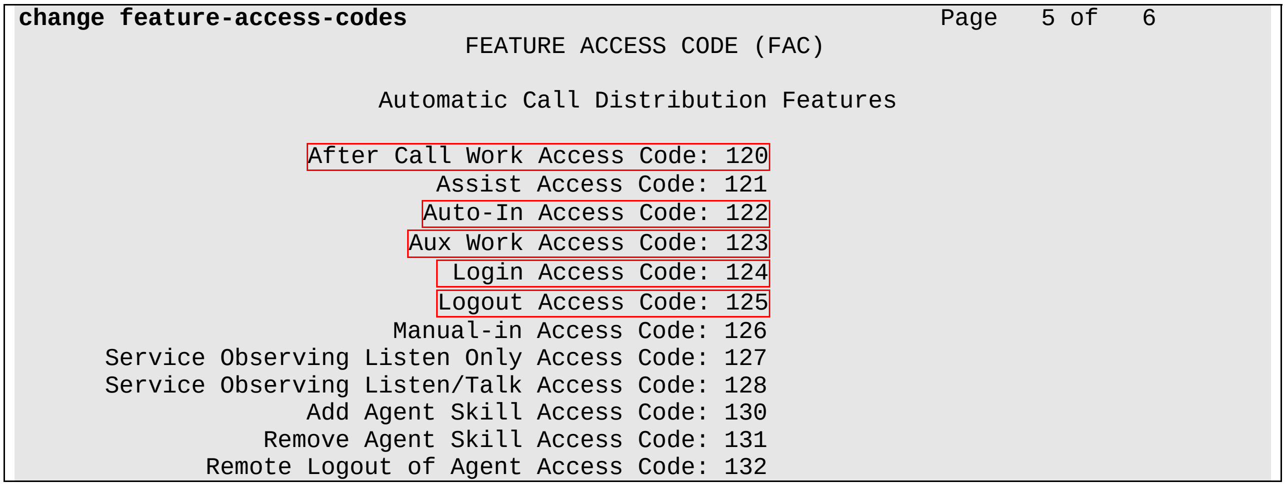
```
add vector 1                                                 Page   1 of   3

                                 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   3.0 Enhanced? n
01 wait-time    2   secs hearing ringback
02 queue-to     skill 1    pri m
03
04
05
06
07
08
09
10
11

                       Press 'Esc f 6' for Vector Editing
```

Enter the **add vdn r** command, where **r** is an extension valid in the provisioned dial plan. Specify a descriptive **Name** for the VDN and the **Vector Number** configured in the previous step. In the example below, incoming calls to the extension 70060 will be routed to VDN 70060, which in turn will invoke the actions specified in vector 1.



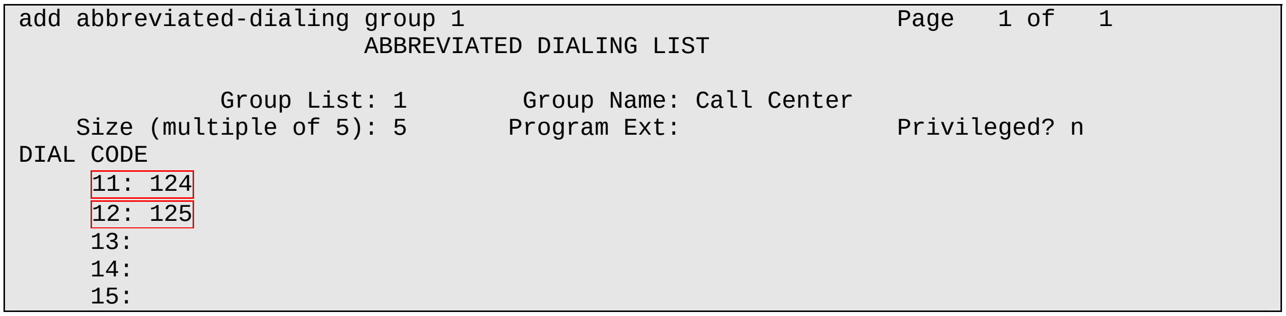
```
add vdn 70060                                                Page   1 of   2

                            VECTOR DIRECTORY NUMBER

                             Extension: 70060
                                  Name: VDN-70060
                         Vector Number: 1

                  Meet-me Conferencing? n
                    Allow VDN Override? n
                                   COR: 1
                                    TN: 1
                              Measured: internal



                             1st Skill:
                             2nd Skill:
                             3rd Skill:
```

Enter the **change feature-access-codes** command. Define the Auto-In Access Code, Login Access Code, Logout Access Code, and Aux Work Access Code.



```
change feature-access-codes                                     Page   5 of   6
                               FEATURE ACCESS CODE (FAC)

                         Automatic Call Distribution Features

                    After Call Work Access Code: 120
                             Assist Access Code: 121
                            Auto-In Access Code: 122
                           Aux Work Access Code: 123
                              Login Access Code: 124
                             Logout Access Code: 125
                          Manual-in Access Code: 126
      Service Observing Listen Only Access Code: 127
      Service Observing Listen/Talk Access Code: 128
                    Add Agent Skill Access Code: 130
                 Remove Agent Skill Access Code: 131
             Remote Logout of Agent Access Code: 132
```

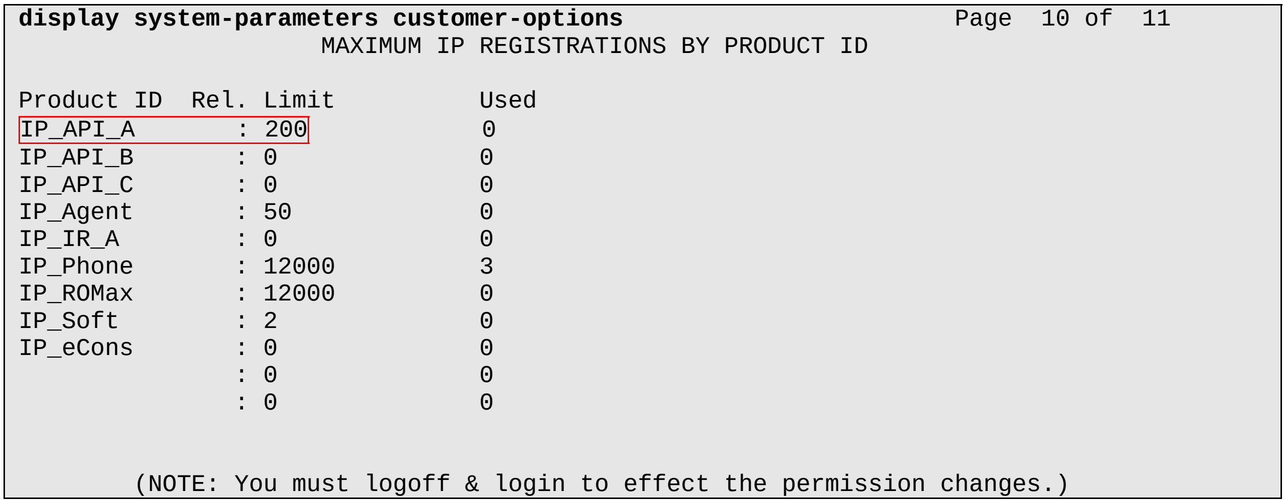
Enter the **add abbreviated-dialing group g** command, where **g** is the number of an available abbreviated dialing group. In the DIAL CODE list, enter the Feature Access Codes, created previously, for ACD Login and Logout.



```
add abbreviated-dialing group 1                              Page   1 of   1
                        ABBREVIATED DIALING LIST

              Group List: 1        Group Name: Call Center
    Size (multiple of 5): 5       Program Ext:               Privileged? n
DIAL CODE
     11: 124
     12: 125
     13:
     14:
     15:
```

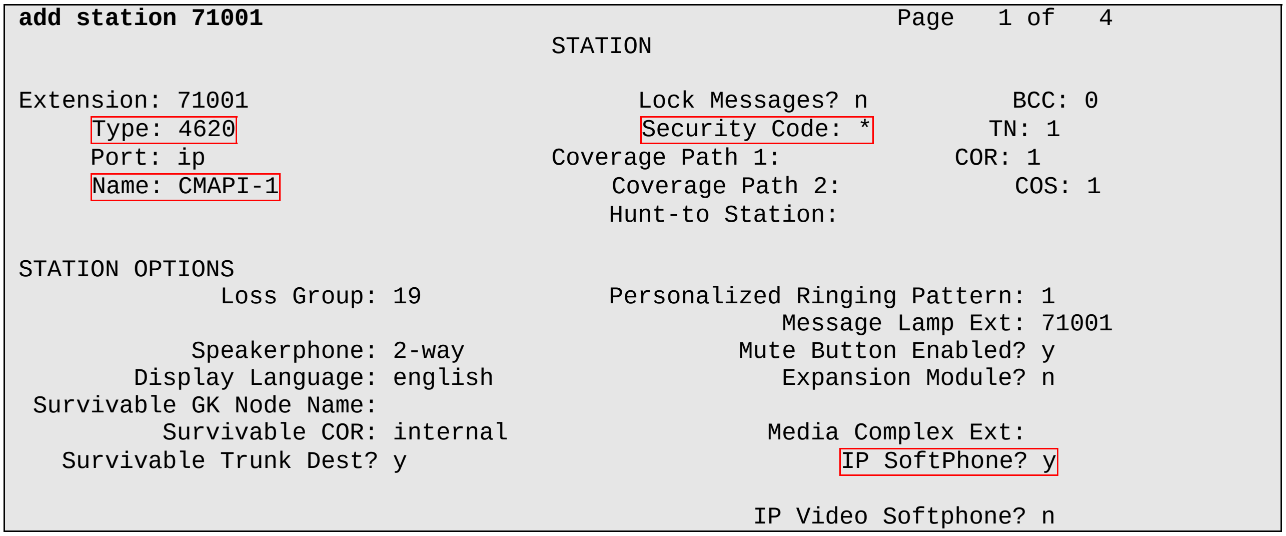
3.3. Recording Ports

The recording ports in this configuration are CMAPI stations that essentially appear as IP Softphones, to Avaya Communication Manager. Each CMAPI station requires an IP_API_A license. Note that this is separate and independent of Avaya IP Softphone licenses, which are required for Avaya IP Softphones but not required for AES Device and Media Call Control API stations. Enter the **display system-parameters customer-options** command and verify that there are sufficient IP_API_A licenses. If not, contact an authorized Avaya account representative to obtain these licenses.



```
display system-parameters customer-options                        Page  10 of  11
                     MAXIMUM IP REGISTRATIONS BY PRODUCT ID

Product ID  Rel. Limit            Used
IP_API_A       : 200              0
IP_API_B       : 0                0
IP_API_C       : 0                0
IP_Agent       : 50               0
IP_IR_A        : 0                0
IP_Phone       : 12000            3
IP_ROMax       : 12000            0
IP_Soft        : 2                0
IP_eCons       : 0                0
               : 0                0
               : 0                0


        (NOTE: You must logoff & login to effect the permission changes.)
```

Enter the **add station s** command, where **s** is an extension valid in the provisioned dial plan. On Page 1 of the STATION form, set the Type field to an IP telephone set type, enter a descriptive Name, specify the Security Code, and set the IP SoftPhone field to **y**.
Repeat this as necessary, with the same Security Code, to configure additional AES CMAPI API stations.



```
add station 71001                                             Page   1 of   4
                                    STATION

Extension: 71001                          Lock Messages? n         BCC: 0
     Type: 4620                           Security Code: *          TN: 1
     Port: ip                       Coverage Path 1:              COR: 1
     Name: CMAPI-1                      Coverage Path 2:           COS: 1
                                        Hunt-to Station:

STATION OPTIONS
              Loss Group: 19            Personalized Ringing Pattern: 1
                                                    Message Lamp Ext: 71001
            Speakerphone: 2-way                  Mute Button Enabled? y
        Display Language: english                   Expansion Module? n
 Survivable GK Node Name:
          Survivable COR: internal                 Media Complex Ext:
   Survivable Trunk Dest? y                             IP SoftPhone? y

                                                   IP Video Softphone? n
```

3.4. Recorded Stations

Enter the **add station s** command, where **s** is an extension valid in the provisioned dial plan. On Page 1 of the STATION form, set the Type field to an IP telephone set type, enter a descriptive Name, and specify the Security Code.

```
add station 72001                                            Page   1 of   4
                                     STATION

Extension: 72001                         Lock Messages? n               BCC: 0
     Type: 4621                          Security Code: *                TN: 1
     Port: S00142                      Coverage Path 1:                 COR: 1
     Name: 72001                       Coverage Path 2:                 COS: 1
                                       Hunt-to Station:
STATION OPTIONS
                                           Time of Day Lock Table:
              Loss Group: 19         Personalized Ringing Pattern: 1
                                                 Message Lamp Ext: 72001
            Speakerphone: 2-way                Mute Button Enabled? y
        Display Language: english                 Expansion Module? n
 Survivable GK Node Name:
          Survivable COR: internal               Media Complex Ext:
   Survivable Trunk Dest? y                           IP SoftPhone? n



                                            Customizable Labels? y
```

On Page 3 of the STATION form, for ABBREVIATED DIALING List 2, enter the abbreviated dialing group configured in Section 3.2. On Pages 3 and 4 of the STATION forms, configure the following BUTTON ASSIGNMENTS in addition to the call-appr (call appearance) buttons:

- auto-in
- aux-work
- abrv-dial – configure two of these buttons, one for Login and one for Logout.
- after-call

```
add station 72001                                            Page   3 of   4
                                     STATION
 SITE DATA
       Room:                                            Headset? n
       Jack:                                            Speaker? n
      Cable:                                           Mounting: d
      Floor:                                        Cord Length: 0
   Building:                                          Set Color:

ABBREVIATED DIALING
     List1: personal 1         List2: group     1        List3:




BUTTON ASSIGNMENTS
 1: call-appr                            5: auto-in            Grp:
 2: call-appr                            6: aux-work    RC:    Grp:
 3: call-appr                            7: abrv-dial  List: 2 DC: 11
 4:                                      8: abrv-dial  List: 2 DC: 12
```

```
add station 72001                                          Page   4 of   4
                                     STATION

FEATURE BUTTON ASSIGNMENTS

 9: after-call         Grp:
10:
11:
```

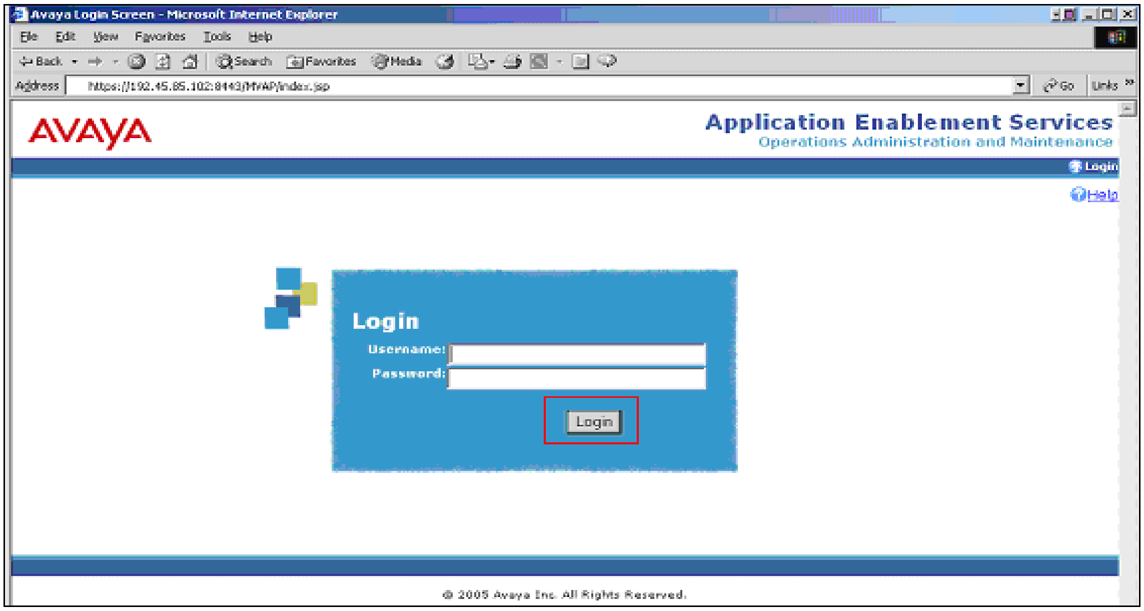
4. Configure Avaya Application Enablement Services

The Avaya Application Enablement Services (AES) server enables Computer Telephony Interface (CTI) applications to control and monitor telephony resources on Avaya Communication Manager. The Avaya Application Enablement Services (AES) server receives requests from CTI applications, and forwards them to Avaya Communication Manager. Conversely, the Avaya Application Enablement Services (AES) server receives responses and events from Avaya Communication Manager and forwards them to the appropriate CTI applications.

This section assumes that installation and basic administration of the Avaya Application Enablement Services server has been performed. The steps in this section describe the configuration of a Switch Connection, a CTI user, a CMAPI port, and creating a CTI link for TSAPI.

4.1. Configure Switch Connection

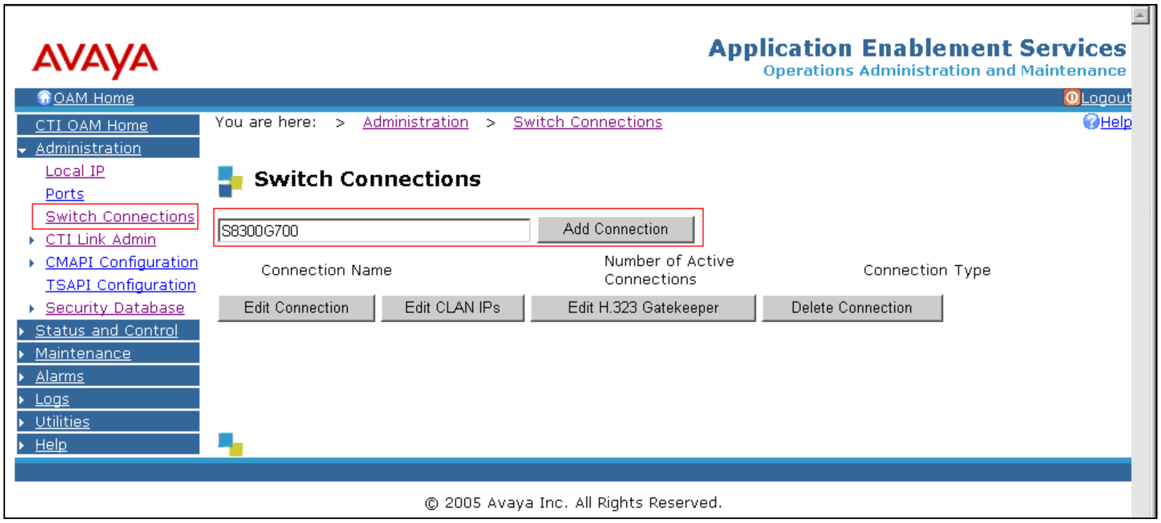
Launch a web browser, enter https://<IP address of AES server>:8443/MVAP in the URL, and log in with the appropriate credentials for accessing the AES CTI OAM pages.



Address https://192.45.85.102:8443/MVAP/index.jsp

Avaya Login Screen - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Go Links
AVAYA
Application Enablement Services
Operations Administration and Maintenance
Login
Help
Login
Username:
Password:
Login
© 2005 Avaya Inc. All Rights Reserved.

Click on **CTI OAM Home → Administration → Switch Connections** in the left pane to invoke the Switch Connections page. A Switch Connection defines a connection between the AES server and Avaya Communication Manager. Enter a descriptive name for the Switch Connection and click on **Add Connection**.

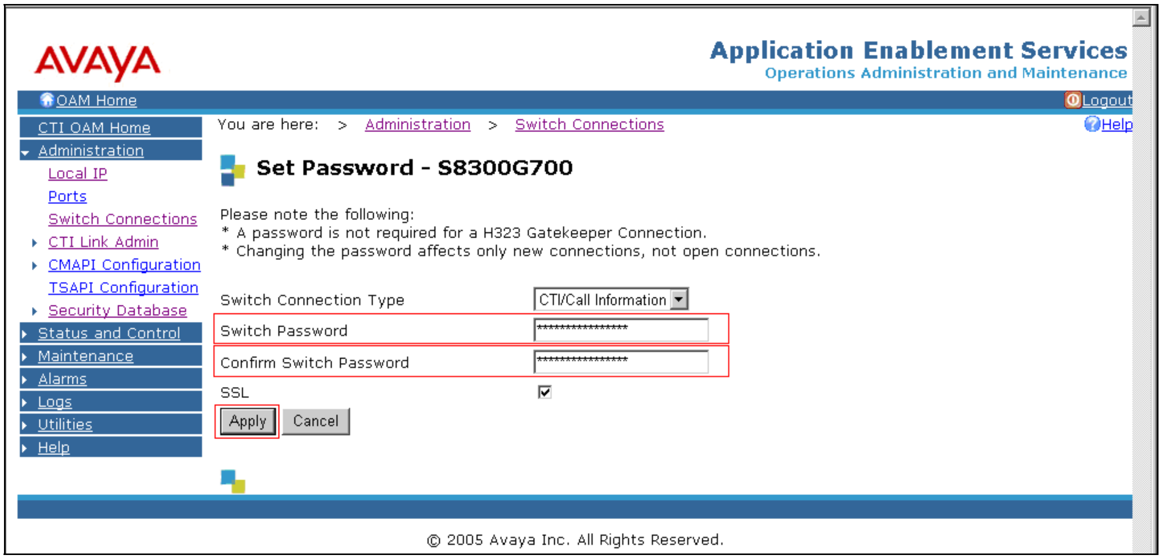


You are here: > Administration > Switch Connections

Switch Connections

S8300G700

The next window that appears prompts for the Switch Connection password. Enter the same password that was administered in Avaya Communication Manager in Section 3.1. Default values may be used in the remaining fields. Click on **Apply**.



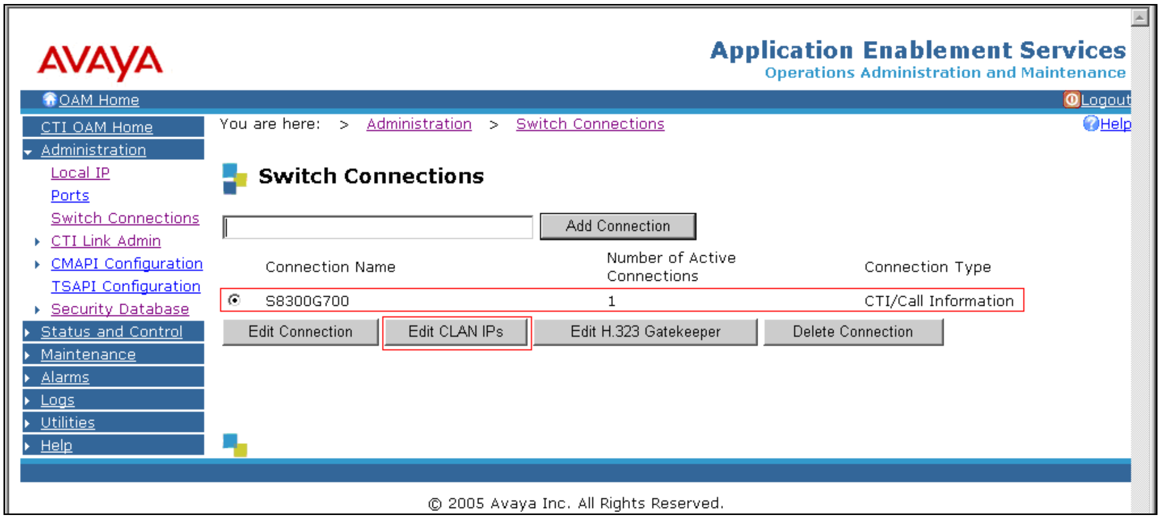
You are here: > Administration > Switch Connections

Set Password - S8300G700

Please note the following:
* A password is not required for a H323 Gatekeeper Connection.
* Changing the password affects only new connections, not open connections.

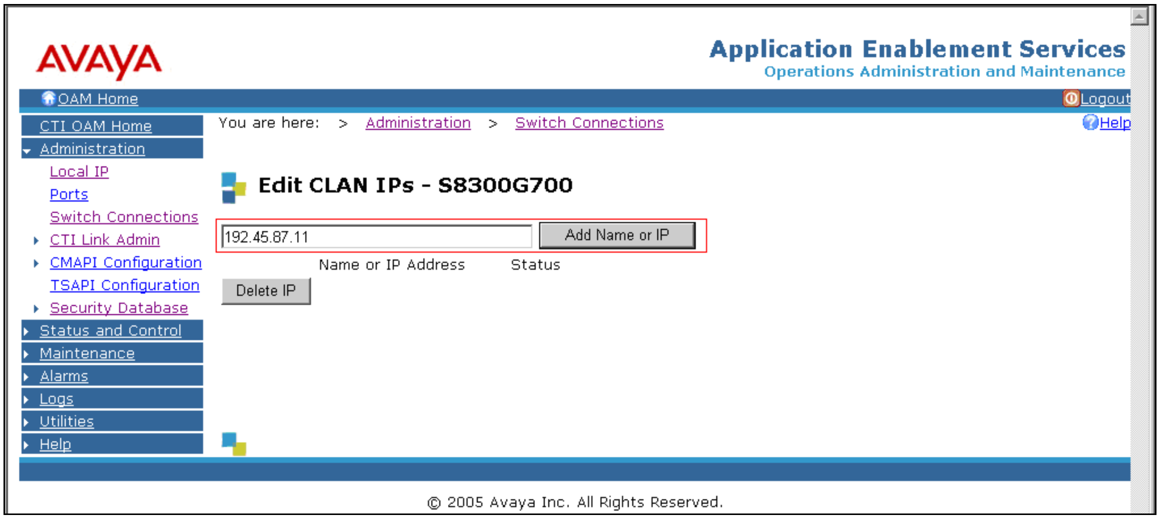
Switch Connection Type	CTI/Call Information
Switch Password	****************
Confirm Switch Password	****************
SSL	☑

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on **Edit CLAN IPs**.



	Connection Name	Number of Active Connections	Connection Type
●	S8300G700	1	CTI/Call Information

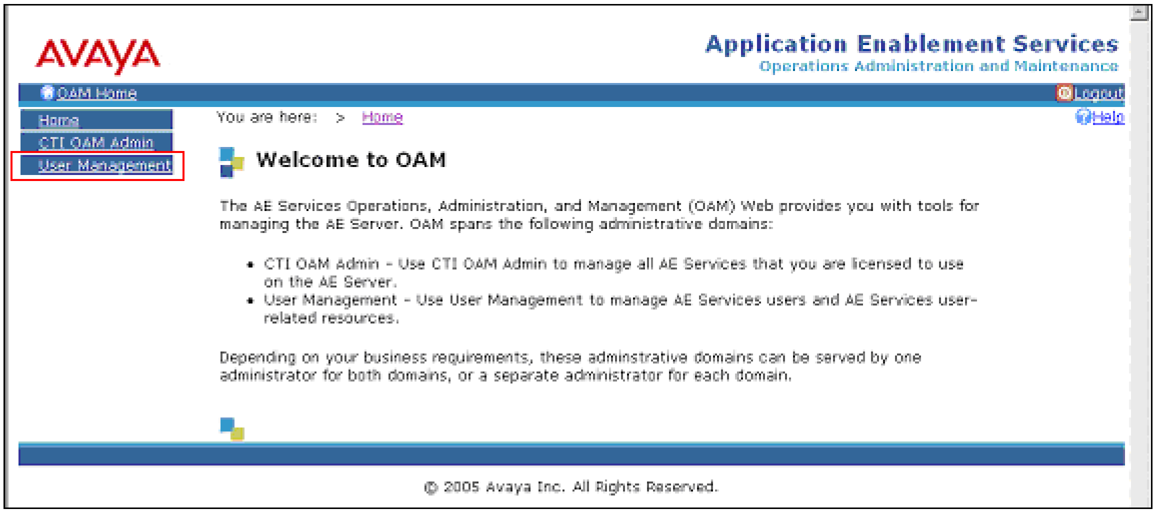
Enter the procr IP address which enabled with Application Enablement Services (see Section 3.1) and click on **Add Name or IP**. Repeat this step as necessary to add other C-LAN boards (or procr) enabled with Application Enablement Services.



192.45.87.11

4.2. Configure the CTI Users

The steps in this section describe the configuration of a CTI user and a CMAPI port. From the OAM Home page, navigate to the **OAM Home → User Management Home → User Management → Add User** page to add a CTI user.



Welcome to OAM

The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:

- CTI OAM Admin - Use CTI OAM Admin to manage all AE Services that you are licensed to use on the AE Server.
- User Management - Use User Management to manage AE Services users and AE Services user-related resources.

Depending on your business requirements, these adminstrative domains can be served by one administrator for both domains, or a separate administrator for each domain.

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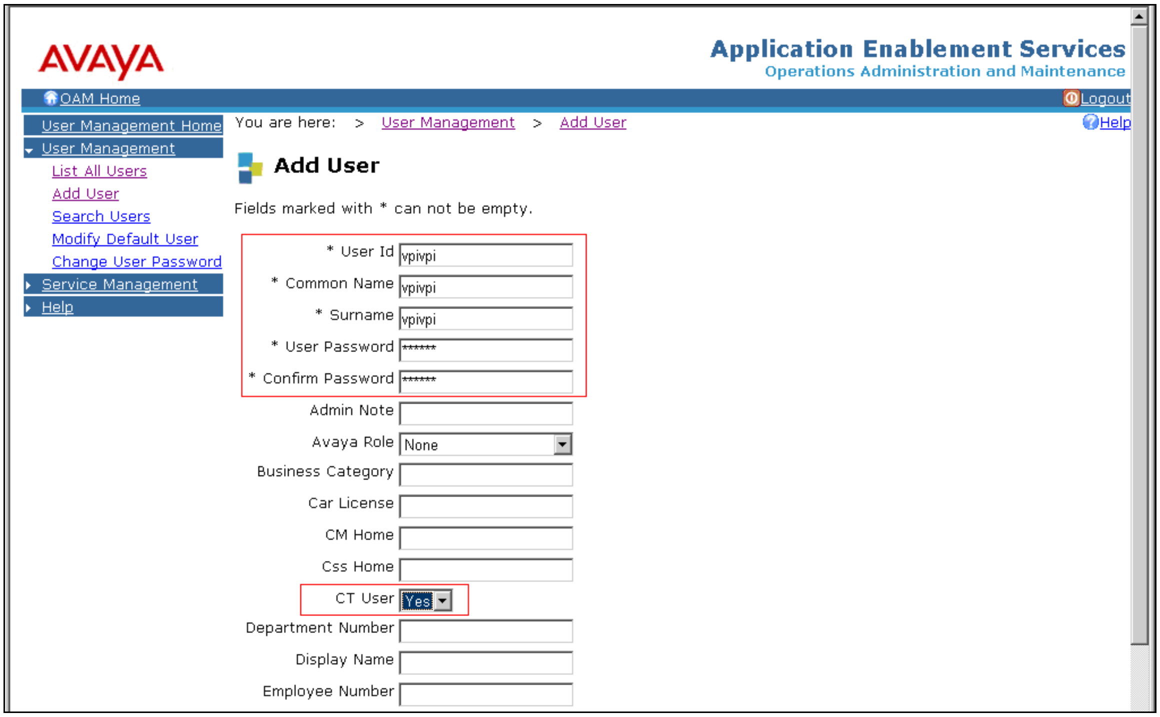
On the Add User page, provide the following information:

- User Id
- Common Name
- Surname
- User Password
- Confirm Password

Select **Yes** using the drop down menu on the CT User field. This enables the user as a CTI user. Click the **Apply** button (not shown here) at the bottom of the screen to complete the process. Default values may be used in the remaining fields

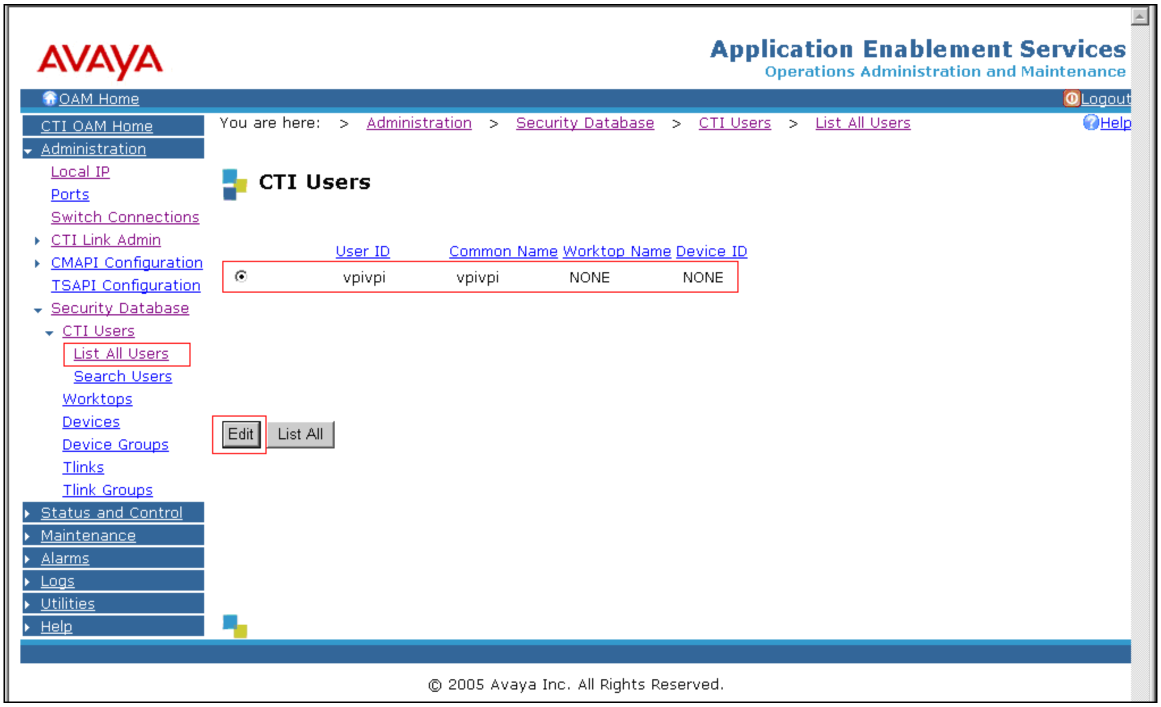


Add User

Fields marked with * can not be empty.

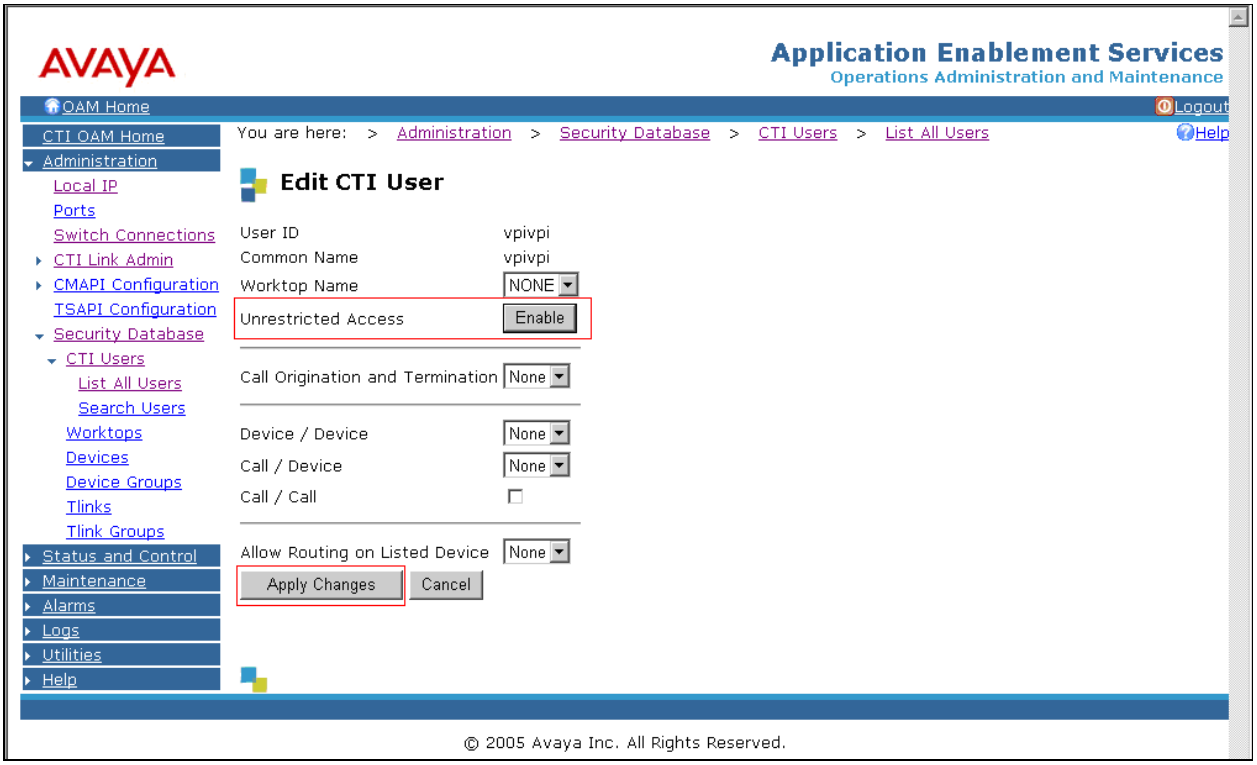
* User Id vpivpi
* Common Name vpivpi
* Surname vpivpi
* User Password ******
* Confirm Password ******
Admin Note
Avaya Role None
Business Category
Car License
CM Home
Css Home
CT User Yes
Department Number
Display Name
Employee Number

Once the user is created, navigate to the **OAM Home → CTI OAM Admin → Administration → Security Database → CTI Users → List All Users** page. Select an appropriate Used ID, and click the **Edit** button to set the permission of the user.



	User ID	Common Name	Worktop Name	Device ID
●	vpivpi	vpivpi	NONE	NONE

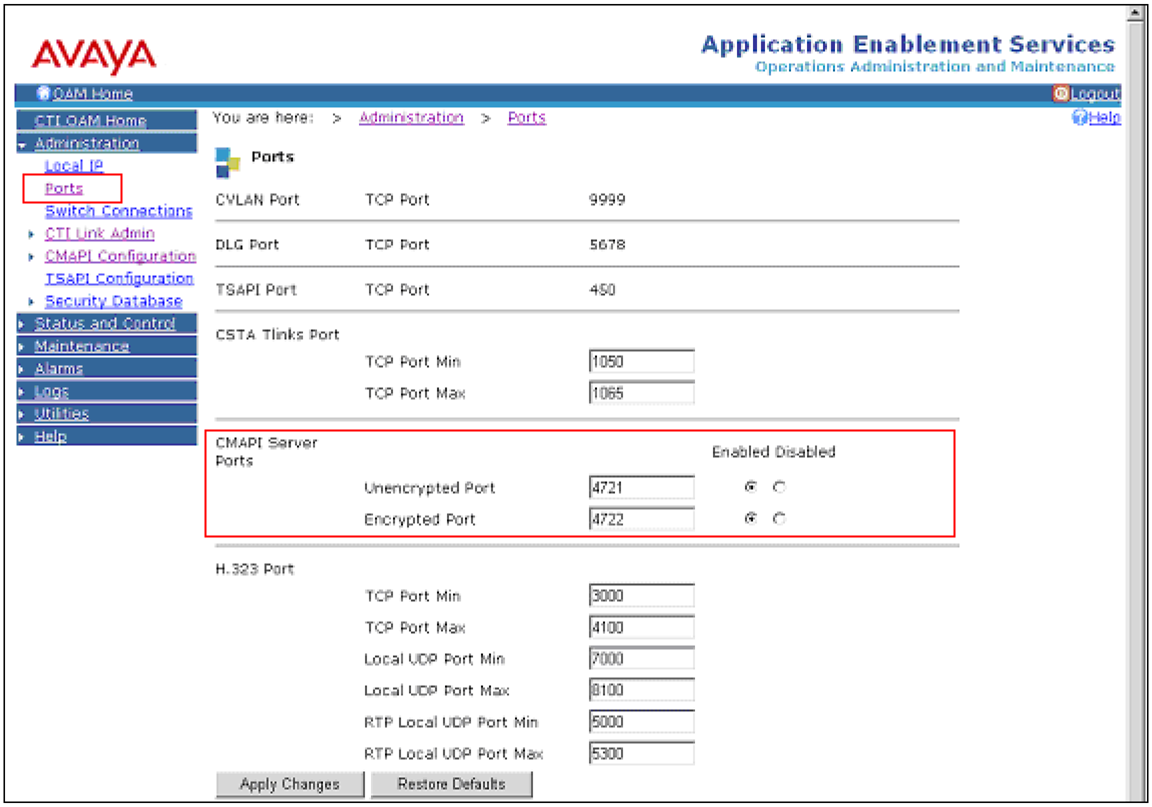
Provide the user with unrestricted access privileges by clicking the **Enable** button on the Unrestricted Access field. Click the **Apply Changes** button.



Edit CTI User

User ID vpivpi
Common Name vpivpi
Worktop Name NONE
Unrestricted Access Enable
Call Origination and Termination None
Device / Device None
Call / Device None
Call / Call ☐
Allow Routing on Listed Device None

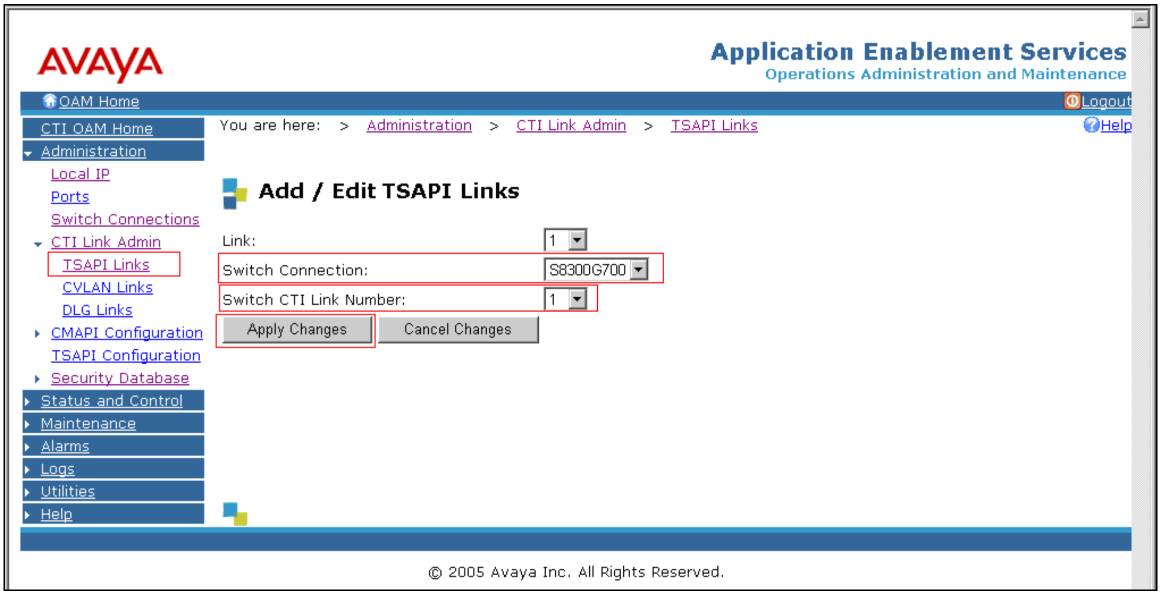
Navigate to the **OAM Home → CTI OAM Admin → Administration → Ports** page to set the CMAPI server port. During the compliance test, the default port values were utilized. The following screen displays the default port values. If CMAPI Server Ports are changed, then, click the **Apply Changes** button to submit new values.



			Enabled	Disabled
CVLAN Port	TCP Port	9999		
DLG Port	TCP Port	5678		
TSAPI Port	TCP Port	450		
CSTA Tlinks Port	TCP Port Min	1050		
	TCP Port Max	1065		
CMAPI Server Ports	Unencrypted Port	4721	●	○
	Encrypted Port	4722	●	○
H.323 Port	TCP Port Min	3000		
	TCP Port Max	4100		
	Local UDP Port Min	7000		
	Local UDP Port Max	8100		
	RTP Local UDP Port Min	5000		
	RTP Local UDP Port Max	5300		

4.3. Configure the CTI Link

Navigate to the **OAM Home → CTI OAM Admin → Administration → CTI Link Admin → TSAPI Links** page to set the TSAPI CTI Link. Select a Switch Connection using the drop down menu. The Switch Connection is configured in Section 4.1. Select the Switch CTI Link Number using the drop down menu. The CTI link number should match with the number configured in the cti-link form in Section 3.1. Click the **Apply Changes** button.



Link: 1
Switch Connection: S8300G700
Switch CTI Link Number: 1

5. Configure the Voice Print Activ! Voice Call Logger

Voice Print installs, configures, and customizes the Activ! Voice Call Logger application for their end customers. Refer to [3] for configuring the Voice Print Activ! Voice Call Logger application.

6. Interoperability Compliance Testing

The interoperability compliance test included feature, serviceability, and performance testing. The feature testing evaluated the ability of the Voice Print Activ! Voice Call Logger to monitor and record calls placed to and from stations and VDNs. The serviceability testing introduced failure scenarios to see if the Voice Print Activ! Voice Call Logger can resume recording after failure recovery. The performance testing stressed the Voice Print Activ! Voice Call Logger by continuously placing calls over extended periods of time.

6.1. General Test Approach

The general approach was to place various types of calls to and from stations, agents, and VDNs, monitor and record them using the Voice Print Activ! Voice Call Logger, and verify the recordings. For feature testing, the types of calls included internal calls, inbound and outbound trunk calls, transferred calls, bridged calls, conferenced calls, Redirection On No Answer (RONA) calls. Performance tests verified that the Voice Print Activ! Voice Call Logger could record calls during a sustained, high volume of calls. For serviceability testing, failures such as cable pulls, CTI link busyouts/releases, and resets were applied.

6.2. Test Results

During compliance testing, the following abnormalities were observed:

- When the Hold button is pressed during a call, the Voice Print Activ! Voice Call Logger stopped recording the both calling station and holding station.
- During a consult transfer, the Voice Print Activ! Voice Call Logger stuck on recording position and does not finish recording. Therefore, no recording is accomplished.
- When multiple agents are logged into ACD, the Voice Print Activ! Voice Call Logger only recognized the last agent ID.
- During the load test, the Voice Print Activ! Voice Call Logger failed to record all calls.

The new firmware (2.8.3.9 Build 53) was loaded to fix the above problems. With the new firmware the Voice Print Activ! Voice Call Logger successfully monitored, recorded, stored, and played back the various types of calls discussed in Section 6.1. For serviceability testing, the Voice Print Activ! Voice Call Logger was able to resume recording calls after restoration of connectivity to the Voice Print Activ! Voice Call Logger server, after busyout/release of the CTI link, and after resets of the Voice Print Activ! Voice Call Logger servers and S8700 Media Server. For performance testing, the Voice Print Activ! Voice Call Logger successfully recorded calls under call rates of approximately 2000 Call Completions in an hour. The configuration used 8 virtual stations as the recording ports.

7. Verification Steps

The following steps may be used to verify the configuration:

- Verify that calls can be successfully completed between the IP and Digital telephones.
- Verify the CTI link between Avaya Communication Manager and the Avaya Application Enablement Services server is up (use the **status aesvcs cti-link**, **status aesvcs link,** and **status aesvcs interface** commands on the SAT).
- Log an agent into a hunt/skill group and verify that calls placed to and from the agent are completed successfully.

8. Support

Technical support for the Voice Print Activ! Voice Call Logger can be obtained by contacting via the support link at http://support@vpi-corp.com or by calling the support telephone number at 1-805-389-5201.

9. Conclusion

These Application Notes illustrate the procedures for configuring the Voice Print Activ! Voice Call Logger call recording solution to monitor and record calls placed to and from stations and VDNs on an Avaya Communication Manager system. In the configuration described in these Application Notes, the Voice Print Activ! Voice Call Logger employs Device and Call Control Application Programming Interface virtual stations as recording ports. During compliance testing, the Voice Print Activ! Voice Call Logger successfully monitored events and recorded calls placed to and from stations, as well as calls placed to a VDN and then queued to an agent hunt/skill group. The Voice Print Activ! Voice Call Logger was also able to record calls under continuous call volumes over extended periods of time.

10. Additional References

This section references the Avaya and Teleformix documentation that are relevant to these Application Notes.

The following Avaya product documentation can be found at http://support.avaya.com .

[1] *Feature Description and Implementation for Avaya Communication Manager*, Release 3.1, Issue 4, February 2006, Document Number 555-245-205.

[2] *Application Enablement Services Administration and Maintenance Guide*, Release 3.1, Issue 2, February 2006, Document Number 02-300357

[3] *VPI ACTIV! VOICE TSAPI CHANNEL MANAGER APPLICATION NOTES*, May 11 2007.

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.