



Avaya Solution & Interoperability Test Lab

Application Notes for Verint Systems Audiolog with Avaya Communication Manager using Avaya Application Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Verint Systems Audiolog 4.0 Service Pack 2 to successfully interoperate with Avaya Communication Manager 5.0 using Avaya Application Enablement Services.

Information in these Application Notes was obtained through compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

Verint Systems Audiolog is a contact center specific call recording application that features improvements to an agent's performance by asserting quality monitoring assessment software. Archived voice recordings can be stored using almost any third-party media, and can be retrieved using the browser-based Audiolog Interaction Review software. Additionally, supervisors can retrieve and play back recordings and evaluate agent performance either on site or remotely.

Verint Systems Audiolog utilizes the Computer Telephony Integration (CTI) event reports achieved through the Avaya Application Enablement Services (AES) Telephony Services Application Programming Interface (TSAPI) service, as illustrated in **Figure 1**.

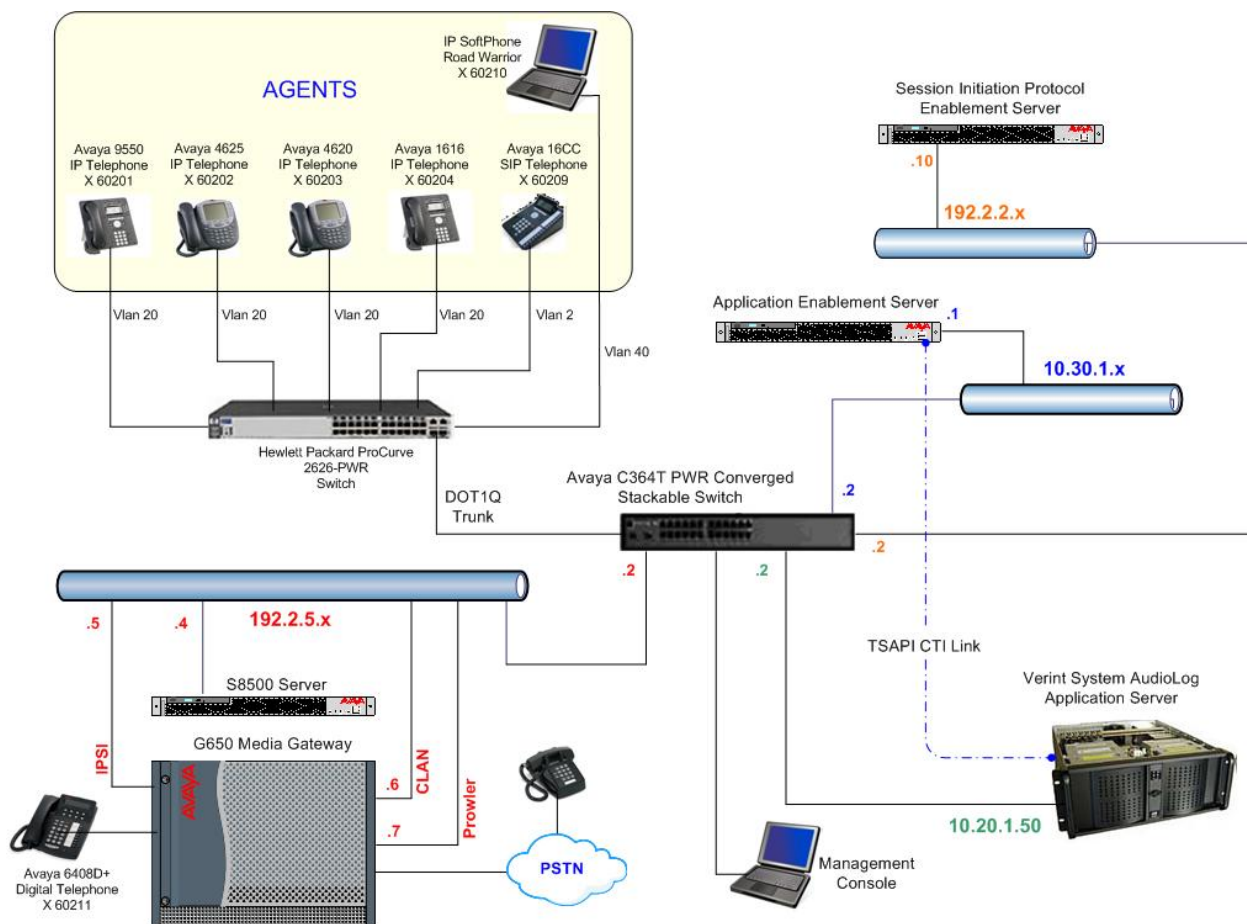


Figure 1: Verint Systems Audiolog with Avaya Communication Manager using AES

Compliance testing was performed on Verint Systems hardware platform running the latest Audiolog GA software version. In addition, compliance testing only used Digital, IP, IP Softphone (Road Warrior) and SIP telephones, although analog telephones are also supported.

2. Equipment and Software Validated

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

Equipment	Software
Avaya S8500 Server	Communication Manager 5.0.0, load 825.4
Avaya G650 Media Gateway <ul style="list-style-type: none">TN799DP C-LAN Circuit PackTN2302AP IP Media Processor Circuit Pack	HW01 FW015 HW13 FW095
Avaya Application Enablement Services	R4.1.31.2.0
Avaya Session Enablement Services	SES-5.0.0.0-825.31
Avaya C363T-PWR Converged Stackable Switch	4.3.12
Avaya 4610SW IP Telephone	2.3
Avaya 4625 Series IP Telephone	2.8.3
Avaya 9650 IP Telephones	2.21
Avaya 16CC SIP Telephone	1.0.11.2
Avaya 1616 IP Telephone	1.11
Verint Systems Audiolog Server	Release 4.0 Service Pack 2

3. Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager. The procedures fall into the following areas:

- Administer C-LAN for AES connectivity
- Administer transport link for AES connectivity
- Administer CTI link with TSAPI service

The detailed administration of contact center devices, such as VDN, Skill, Split, Logical Agents and Station Extensions are assumed to be in place and are not covered in these Application Notes.

3.1. Administer C-LAN for AES Connectivity

The C-LAN administration procedure will involve adding an IP node name, an IP interface, and a data module.

1. Add an entry for the C-LAN in the node-names form. Use the “change node-names ip” command, as shown in **Figure 2**. In this case, “Clan-1” and “192.2.5.6” are entered as **Name** and **IP Address** for the C-LAN that will be used for connectivity to the AES server. The actual node name and IP address may vary. Submit these changes.

```
change node-names ip
```

IP NODE NAMES	
Name	IP Address
Clan-1	192.2.5.6
Prowler-1	192.2.5.7
default	0.0.0.0
procr	192.2.5.4

Figure 2: IP Node Names

2. Add the C-LAN to the system configuration using the “add ip-interface 1a03” command. Note that the actual slot number may vary. In this case, “1a03” is used as the slot number, as shown in **Figure 3** below. Enter the node name assigned from **Figure 2** above into the **Node Name** field, and then the IP address will be populated automatically.

Enter proper values for the **Subnet Mask** and **Gateway Address** fields. In this case, “255.255.255.0” and “192.2.5.2” are used to correspond to the network configuration in these Application Notes. Set the **Enable Ethernet Port** field to “y”, and the **Network Region** for the C-LAN dedicated for AES connectivity. Default values may be used in the remaining fields. Submit these changes.

```
add ip-interface 01a03
```

Page 1 of 1

IP INTERFACES

Type: C-LAN
Slot: 01A03
Code/Suffix: TN799 D
Node Name: Clan-1
IP Address: 192.2 .5 .6
Subnet Mask: 255.255.255.0
Gateway Address: 192.2 .5 .2
Enable Ethernet Port? y
Network Region: 1
VLAN: n

Link: 1
Allow H.323 Endpoints? y
Allow H.248 Gateways? y
Gatekeeper Priority: 5

Target socket load and Warning level: 400
Receive Buffer TCP Window Size: 8320

ETHERNET OPTIONS

Auto? y

Page 1 of 1

Figure 3: IP Interface

3. Add a new data module using the “add data-module n” command, where “n” is an available extension. Enter the following values as shown in **Figure 4**:

- **Name:** A descriptive name.
- **Type:** “ethernet”
- **Port:** Same slot number from **Figure 3** and port “17”.
- **Link:** A link number not previously assigned on this switch.

```
add data-module 60000
                                DATA MODULE

Data Extension: 60000          Name: Clan-1
      Type: ethernet
      Port: 01a0317
      Link: 11

Network uses 1's for Broadcast Addresses? y
```

Figure 4: Data Module

3.2. Administer Transport Link for AES Connectivity

Administer the transport link to Avaya Application Enablement Services (AES) with the “change ip-services” command.

1. Add an entry with the following values for fields on Page 1, as shown in **Figure 5** below:

- **Service Type:** “AESVCS”
- **Enabled:** “y”
- **Local Node:** Node name for the Clan-1 assigned in **Figure 2**.
- **Local Port** Retain the default of “8765”.

change ip-services					Page	1 of	4
IP SERVICES							
Service	Enabled	Local	Local	Remote	Remote		
Type		Node	Port	Node	Port		
CDR1		Clan-1	0	TestSite	9002		
CDR2		Clan-1	0	CDR-2nd	9004		
AESVCS	y	Clan-1	8765				

Figure 5: IP Services Page 1

2. Go to Page 4 of the IP Services form, and enter the following values as shown in **Figure 6**:

- **AE Services Server:** Name obtained from the AES server, in this case “AES-Test”.
- **Password:** Same password to be administered on the AES server.
- **Enabled:** “y”

Note that the name and password entered for the **AE Services Server** and **Password** fields must match the name and password on the AES server. The administered name for the AES server is created as part of the AES installation, and can be obtained from the AES server by typing “uname -n” at the Linux command prompt. The same password entered in **Figure 6** below will need to be set on the AES server using **Administration > Switch Connections > Edit Connection > Set Password** as shown in **Figure 14**.

change ip-services				Page	3 of	3
AE Services Administration						
Server ID	AE Services Server	Password	Enabled	Status		
1:	AES-Test	***	y			
2:						

Figure 6: IP Services Page 3

3.3. Administer CTI Link with TSAPI Service

Add a CTI link and set the values as shown in **Figure 7** below using the “add cti-link n” command, where “n” is an available CTI link number.

1. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter “ADJ-IP” in the **Type** field, and a descriptive name in the **Name** field. Default values may be used in the remaining fields. Submit these changes.

add cti-link 1		Page 1 of 3	
CTI LINK			
CTI Link: 1			
Extension: 60100			
Type: ADJ-IP			
		COR: 1	
Name: TSAPI Link			

Figure 7: CTI Link

3.4. Administer Virtual Station and COR for Single Step Conference

Each channel Verint Systems Audiolog server uses for Single Step Conference requires a virtual softphone in Avaya Communication Manager.

1. Add station entries with the following values for fields as shown in **Figure 8** below:
 - **Type:** "4620"
 - **IP SoftPhone?** "y"
 - **Security Code:** "xxxx" – **Note:** 4 to 8 digits
 - **COR:** "N" - **Note:** Proper permission must be set, see Figure 9
 - **Auto Answer:** "all"

add station 60601		Page 1 of 5
STATION		
Extension: 60601	Lock Messages? n	BCC: 0
Type: 4620	Security Code: xxxx	TN: 1
Port: S00140	Coverage Path 1:	COR: 1
Name: V-4620-1	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 19	Time of Day Lock Table:	
	Personalized Ringing Pattern: 1	
	Message Lamp Ext: 60601	
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	
add station 60601		Page 2 of 5
		Customizable Labels? Y
FEATURE OPTIONS		
LWC Reception: spe	Auto Select Any Idle Appearance? n	
LWC Activation? y	Coverage Msg Retrieval? y	
LWC Log External Calls? n	Auto Answer: all	

Figure 8: Virtual Station

2. Verify that the COR associated with the Single Step Conference virtual stations has the **Can Be A Service Observer?** value set to "y" as displayed in **Figure 9** below.

change cor 1		Page 1 of 23
CLASS OF RESTRICTION		
COR Number: 1		
COR Description:		
FRL: 0	APLT? y	
Can Be Service Observed? n	Calling Party Restriction: none	
Can Be A Service Observer? y	Called Party Restriction: none	

Figure 9: Class of Restriction

4. Configure Avaya Application Enablement Services

This section provides the procedures for configuring Avaya Application Enablement Services. The procedures fall into the following areas:

- Verify Avaya Application Enablement Services License
- Administer local IP
- Administer switch connections
- Administer TSAPI link
- Administer security database
- Administer Verint Systems Audiolog user

4.1. Verify Avaya Application Enablement Services License

From the WEB browser, enter the IP address of the AES. For example enter <http://10.30.1.1>. The Avaya Application Enablement Services screen should display. At this point, either the **AE Server Administration** or the **WebLM Administration** can be selected (not shown). Select **AE Server Administration** and log into AES with the correct credentials.

1. The **Welcome to OAM** screen will be displayed as shown in **Figure 10**. From the left panel, initially select **CTI OAM Administration**. **Note: User Management** is covered in a later step.

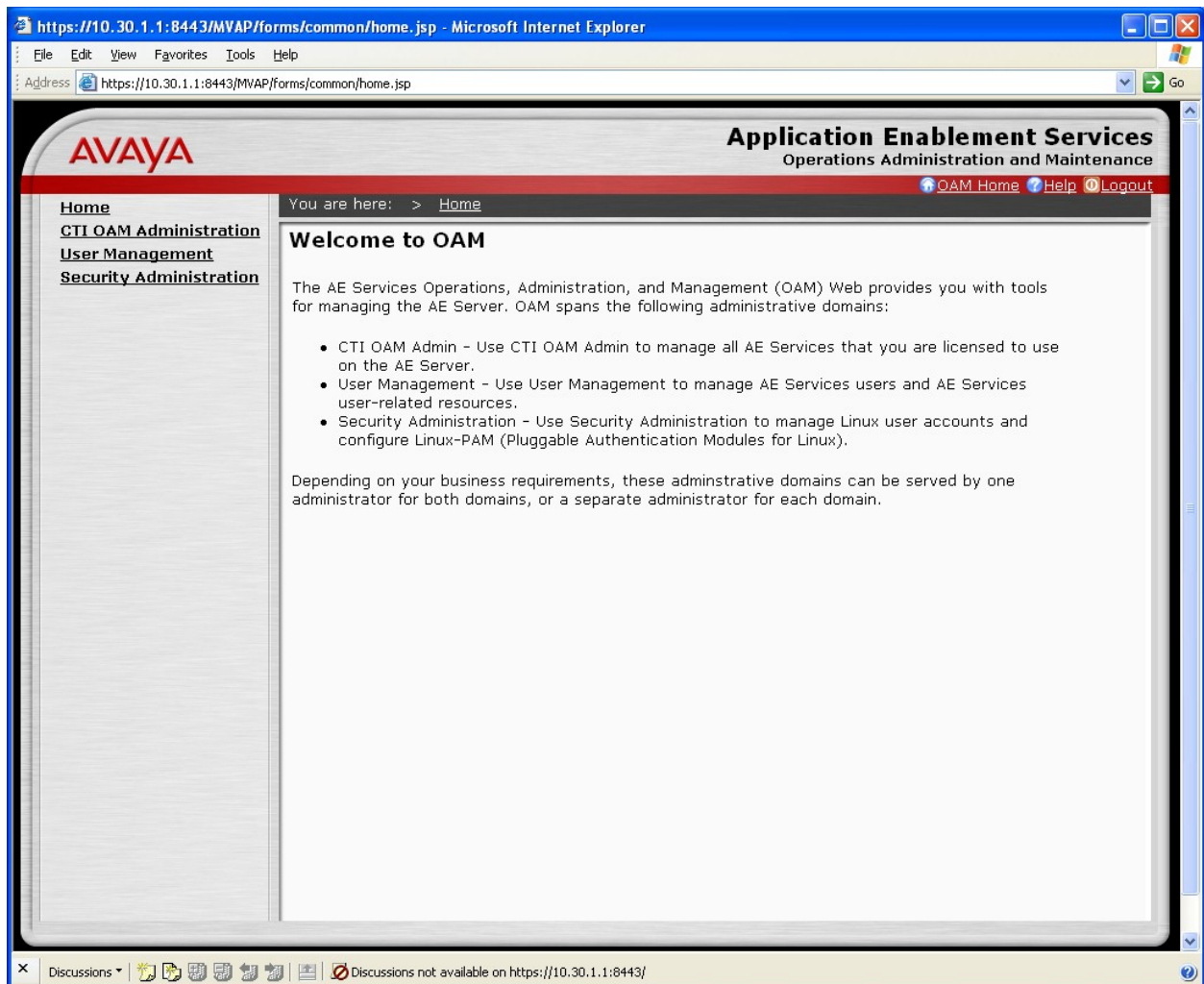


Figure 10: Welcome to OAM

2. The **License Information** must be visible as displayed in the **Welcome to CTI OAM Screens** as in **Figure 11**. Verify that the Avaya Application Enablement Services license has proper permissions for the features illustrated in these Application Notes by ensuring the TSAPI service is licensed. If the TSAPI service is not licensed, then contact the Avaya sales team or business partner for a proper license file.

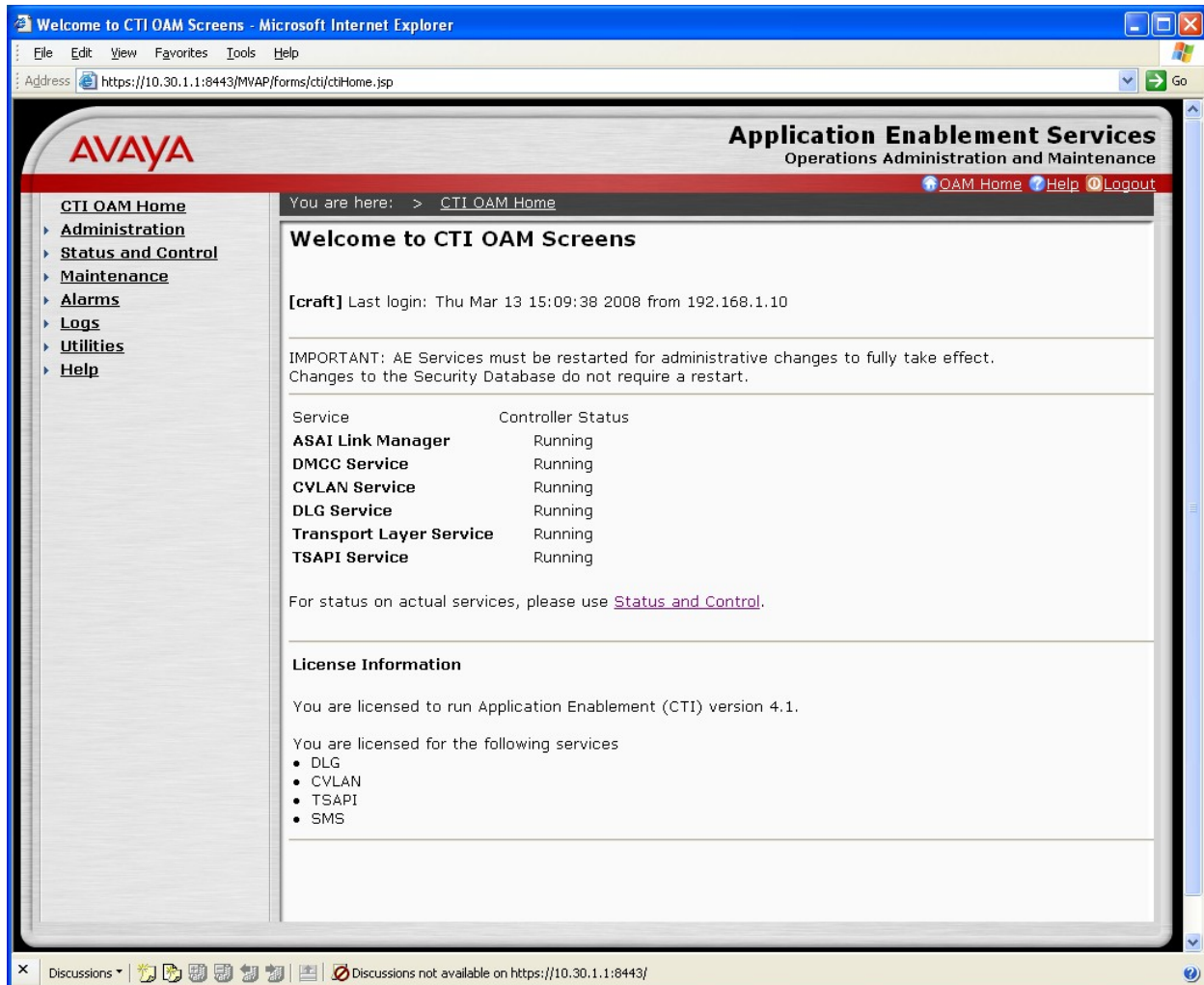


Figure 11: Welcome to CTI OAM Screens

4.2. Administer Local IP

From the menu column, select **Administration** → **Network Configuration** → **Local IP**.

1. As shown in **Figure 12**, in the **Client Connectivity** field, select the AES server IP address that will be used to connect to Verint Systems Audiolog. In the **Switch Connectivity** field, select the AES server IP address that will be used to connect to Avaya Communication Manager. Click on **Apply Changes**.

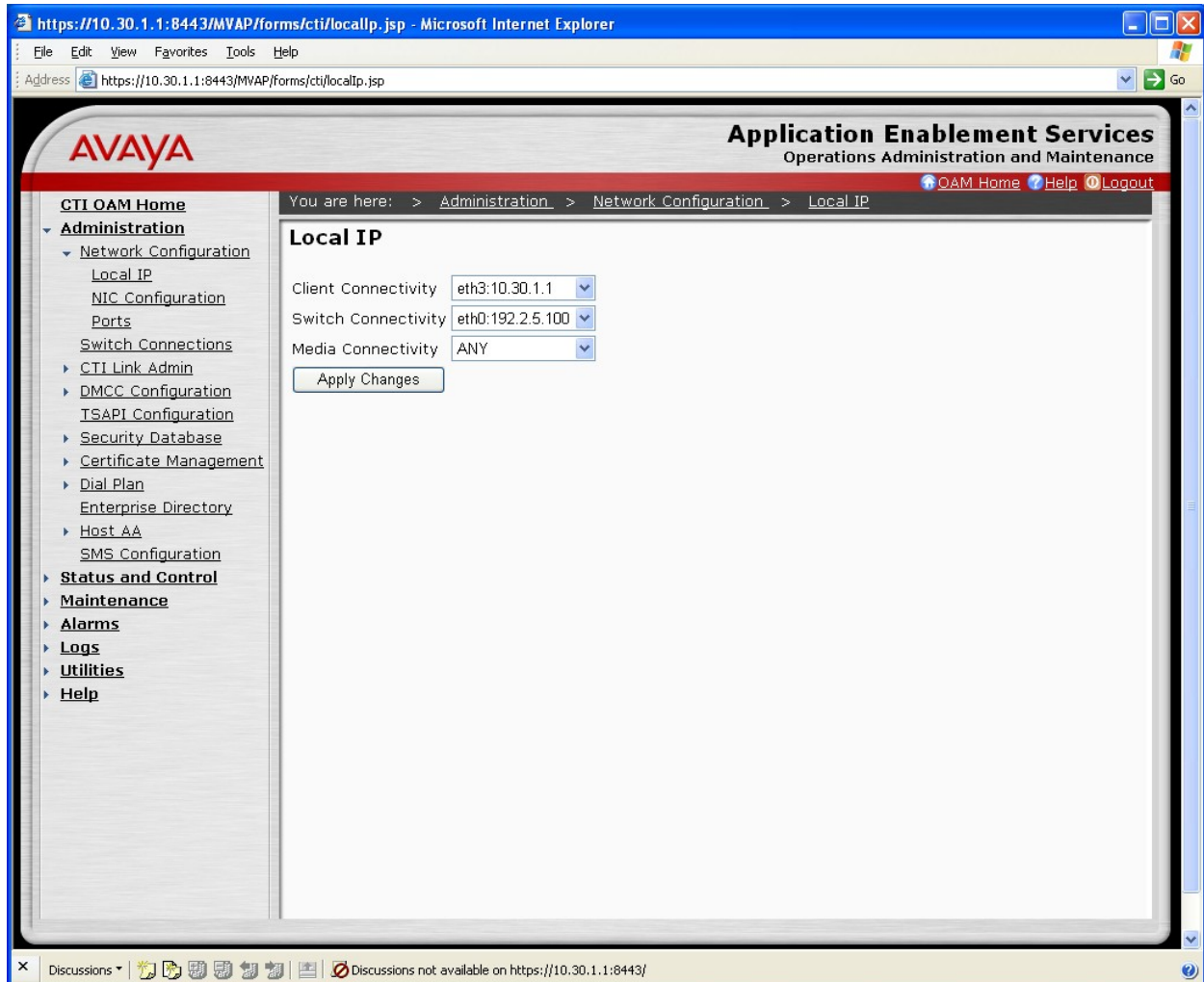


Figure 12: Local IP

4.3. Administer Switch Connections

1. From the CTI OAM Home menu, select **Administration** → **Switch Connections**. As shown in **Figure 13**, enter a descriptive name for the switch connection and click on **Add Connection**. In this case, the name **S8500** is used, and the actual switch connection name will vary.

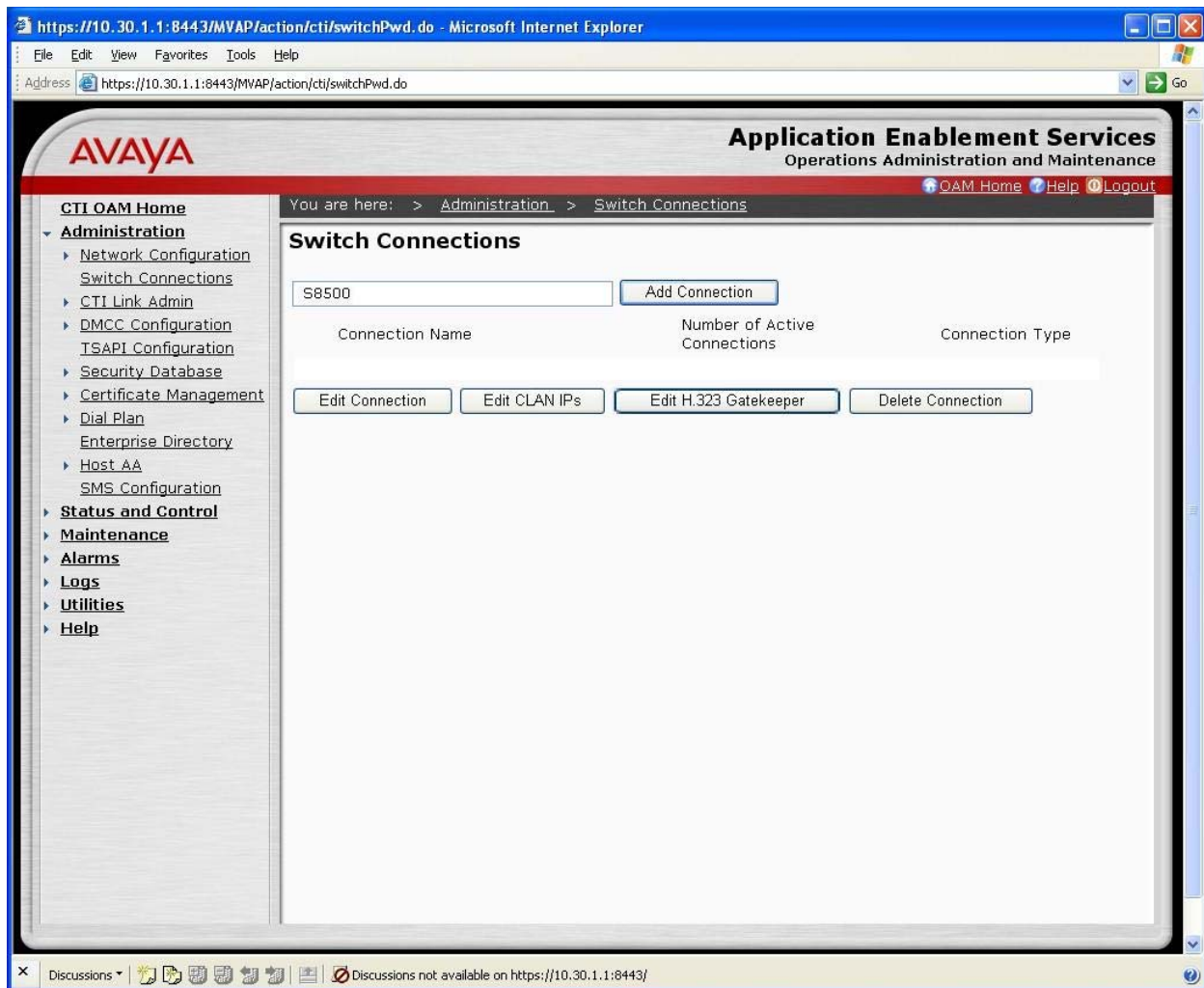


Figure 13: Switch Connections

2. The **Set Password** screen is displayed. As shown in **Figure 14**, enter the same password that was administered in Avaya Communication Manager using the IP Services form in **Figure 6**. Re-enter the same password in the **Confirm Switch Password** field. Note that the default value of checked may be retained for the **SSL** field. Had the switch been an Avaya DEFINITY Server G3csi, the **SSL** field would need to be unchecked. Click on **Apply**.

https://10.30.1.1:8443/MVAP/action/cti/switchConns.do - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address https://10.30.1.1:8443/MVAP/action/cti/switchConns.do Go

AVAYA **Application Enablement Services**
Operations Administration and Maintenance

QAM Home Help Logout

You are here: > Administration > Switch Connections

Set Password - S8500

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 ☒

Apply Cancel

Figure 14: Set Password

3. The S8500 entry is created as shown in **Figure 15**. Click on **Edit CLAN IPs** if you need to change the password.

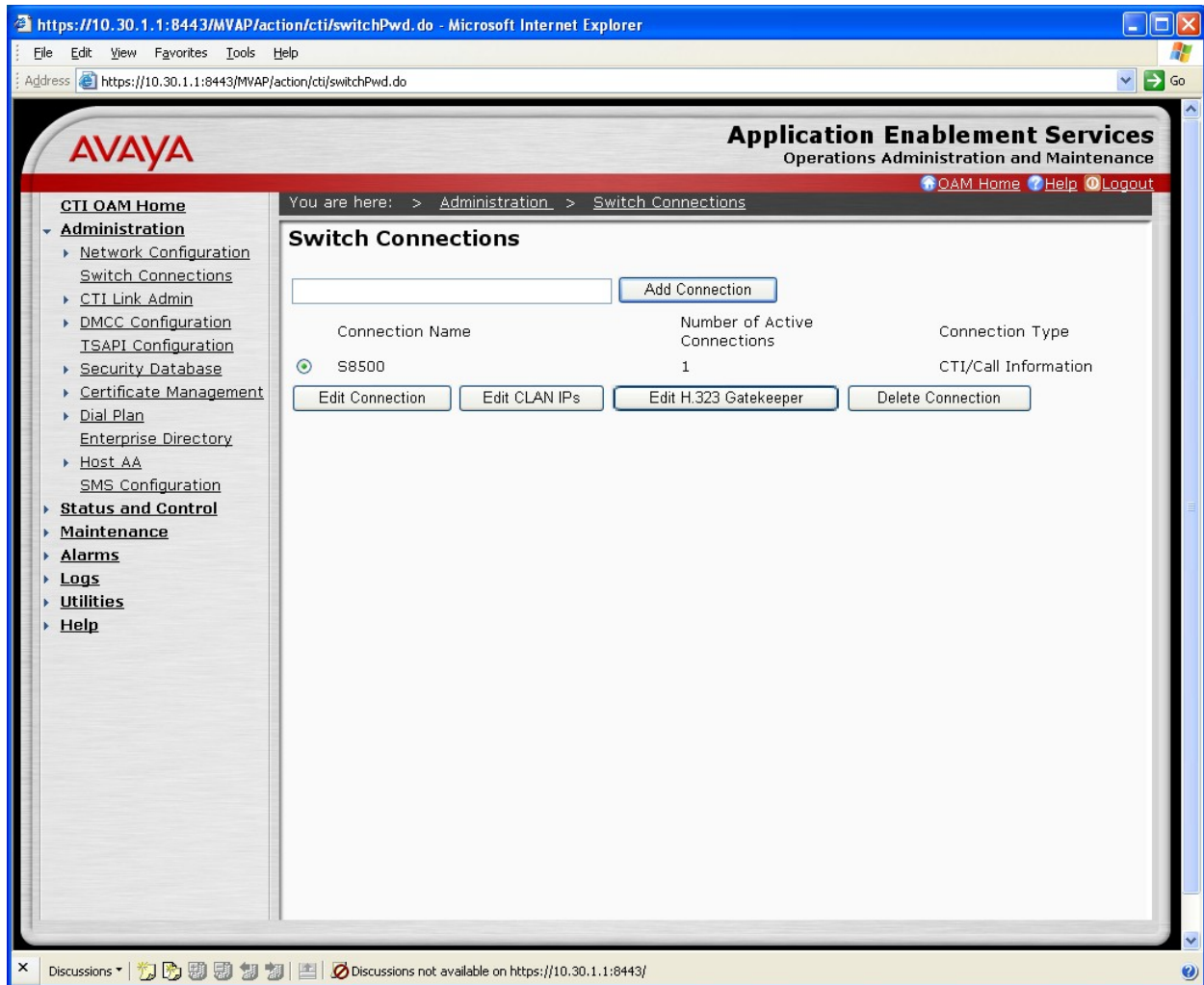


Figure 15: Configured Switch Connections

4. In the Edit CLAN IPs – S8500 screen, enter the host name or IP address of the C-LAN used for AES connectivity as shown in **Figure 16**. In this case, 192.2.5.6 is used, which corresponds to the C-LAN administered on Avaya Communication Manager in Figure 2. Click on Add Name or IP.

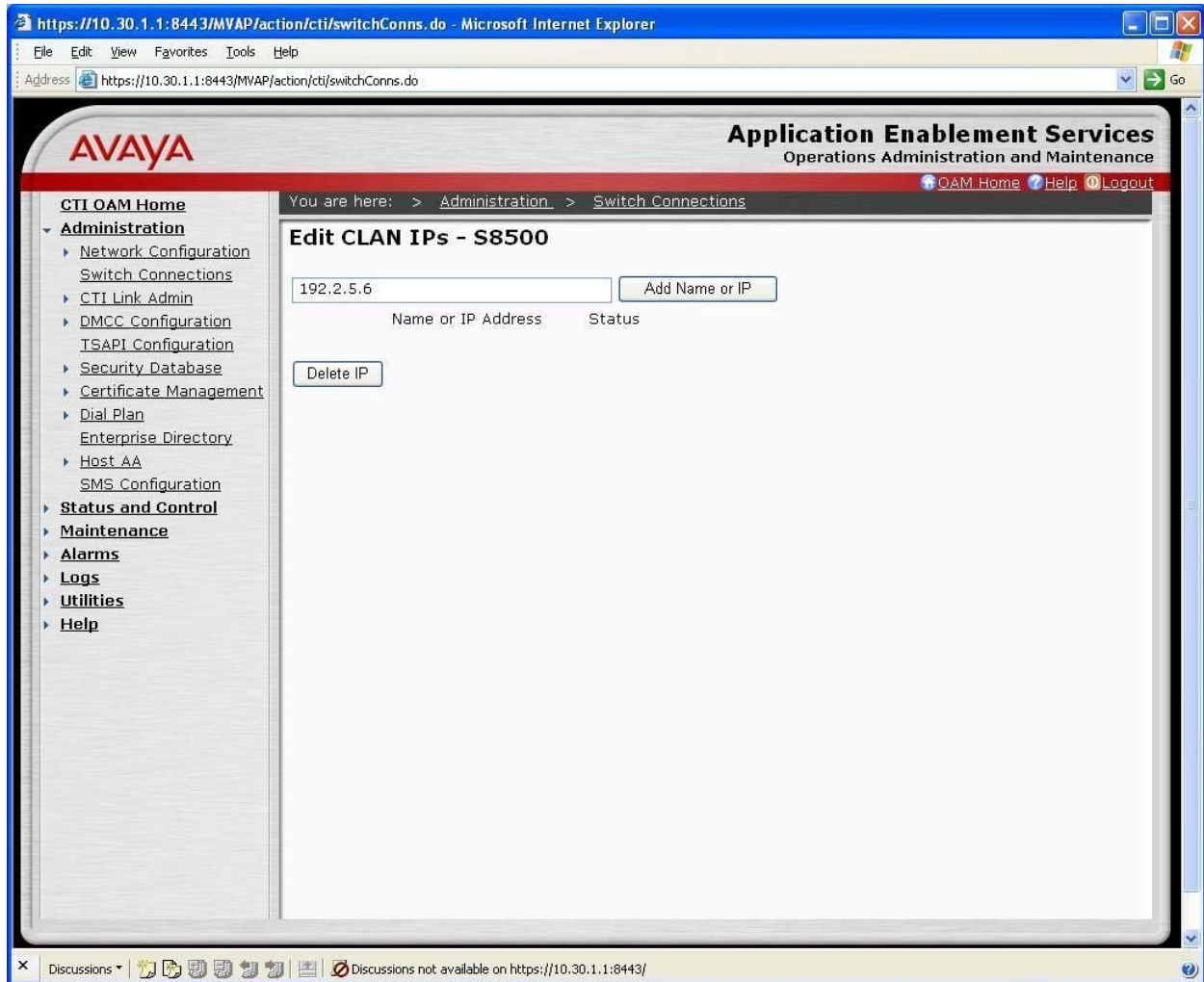


Figure 16: Edit CLAN IPs

4.4. Administer TSAPI Service

1. To administer a TSAPI link on AES, select **Administration > CTI Link Admin > TSAPI Links** from the CTI OAM Home menu as shown in **Figure 17** below. Click on **Add Link**.

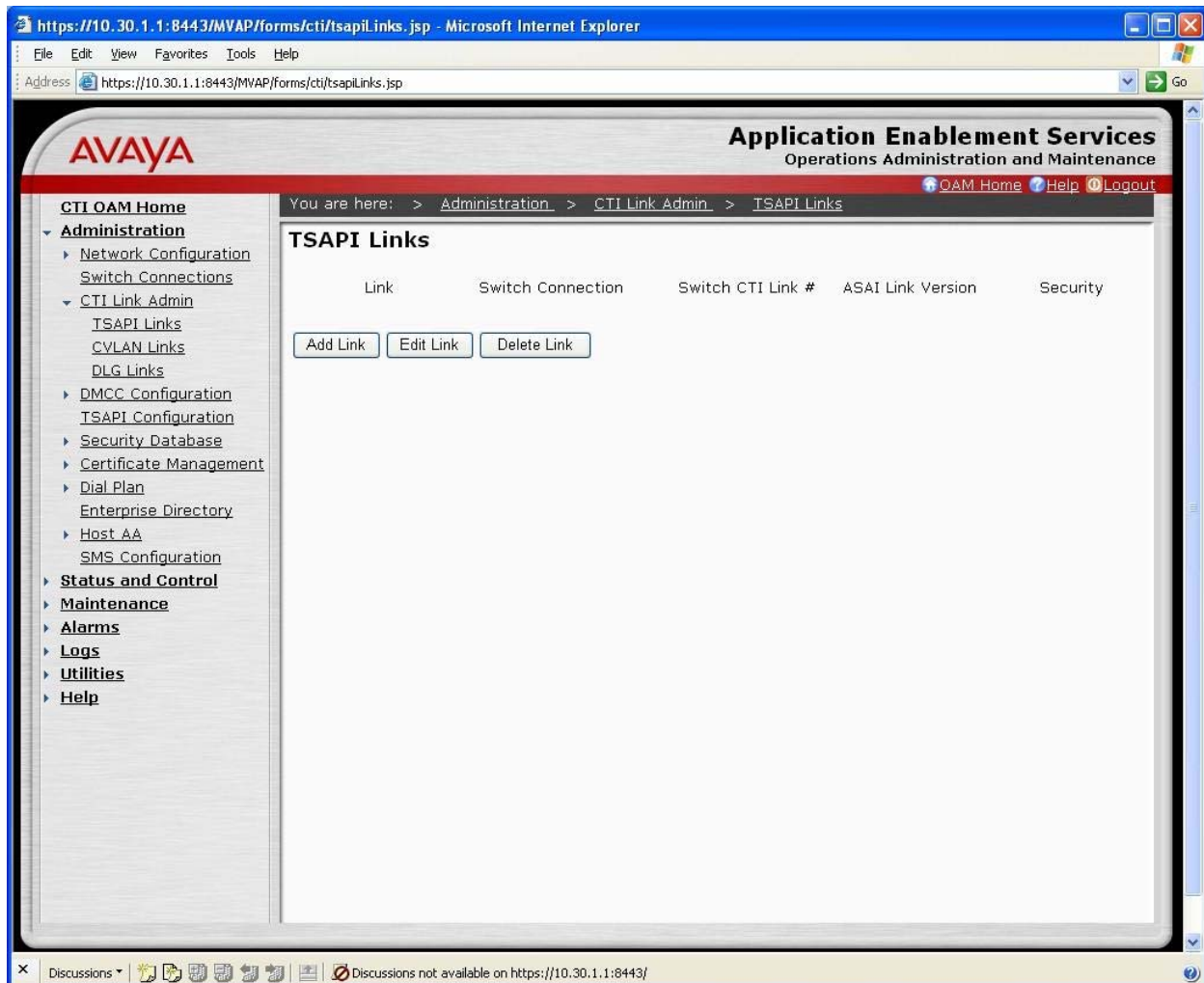


Figure 17: TSAPI Links

2. In the Add/Edit TSAPI Links screen, select the following values as shown in **Figure 18**:

- **Switch Connection:** Administered switch connection configured in **Figure 13**.
- **Switch CTI Link Number:** Corresponding CTI link number configured in **Figure 7**.

Note: The actual values for both fields may vary. Click on **Apply Changes**.

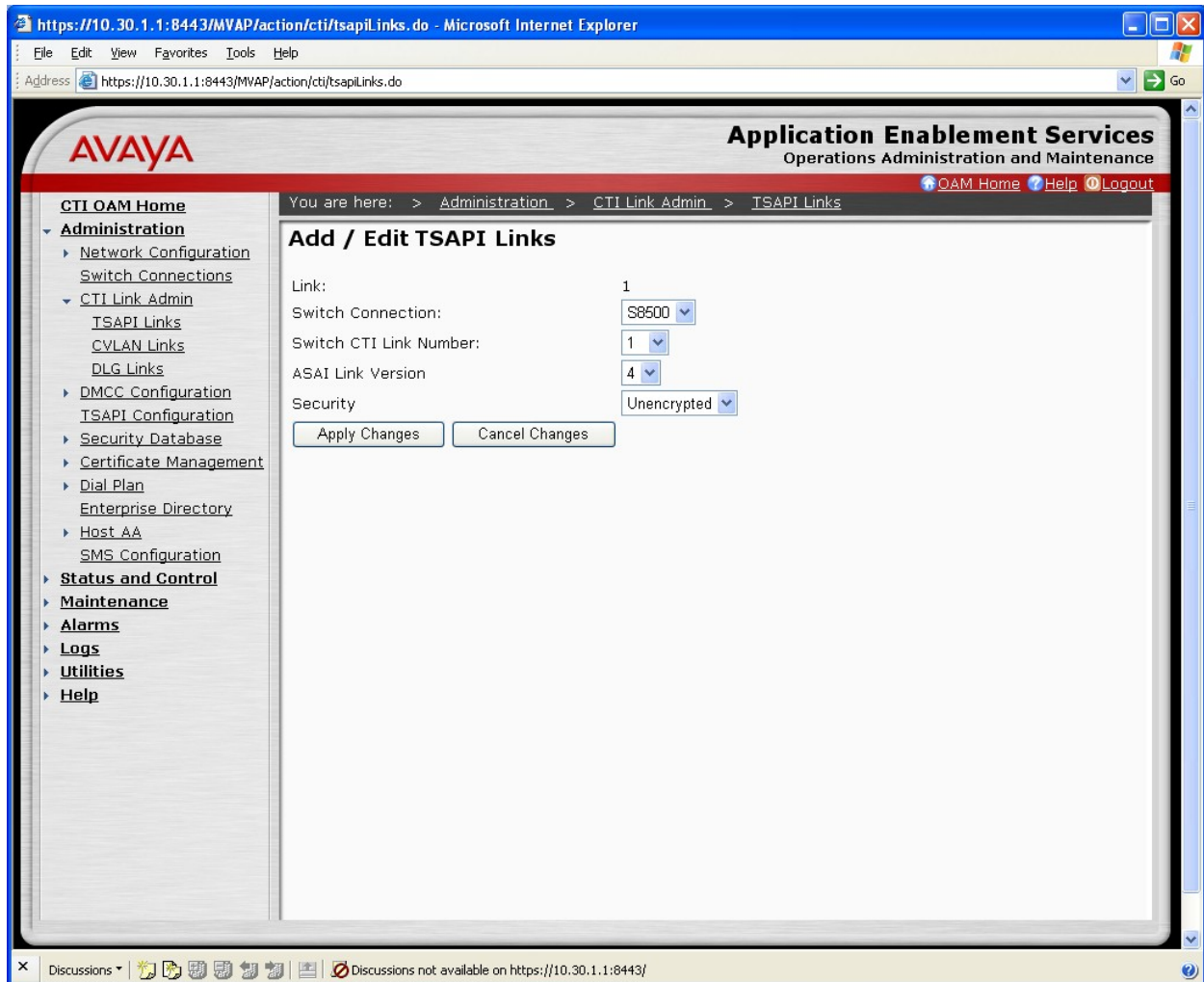


Figure 18: Add/Edit TSAPI Links

3. Enable the security database on AES, as this functionality is utilized by Verint Systems Audiolog. From the CTI OAM Home menu, select **Administration > TSAPI Configuration** to display the TS Configuration screen shown in **Figure 19** below. For **TCP Preferred Naming Format** select **IP Address** followed by **Apply Changes**.

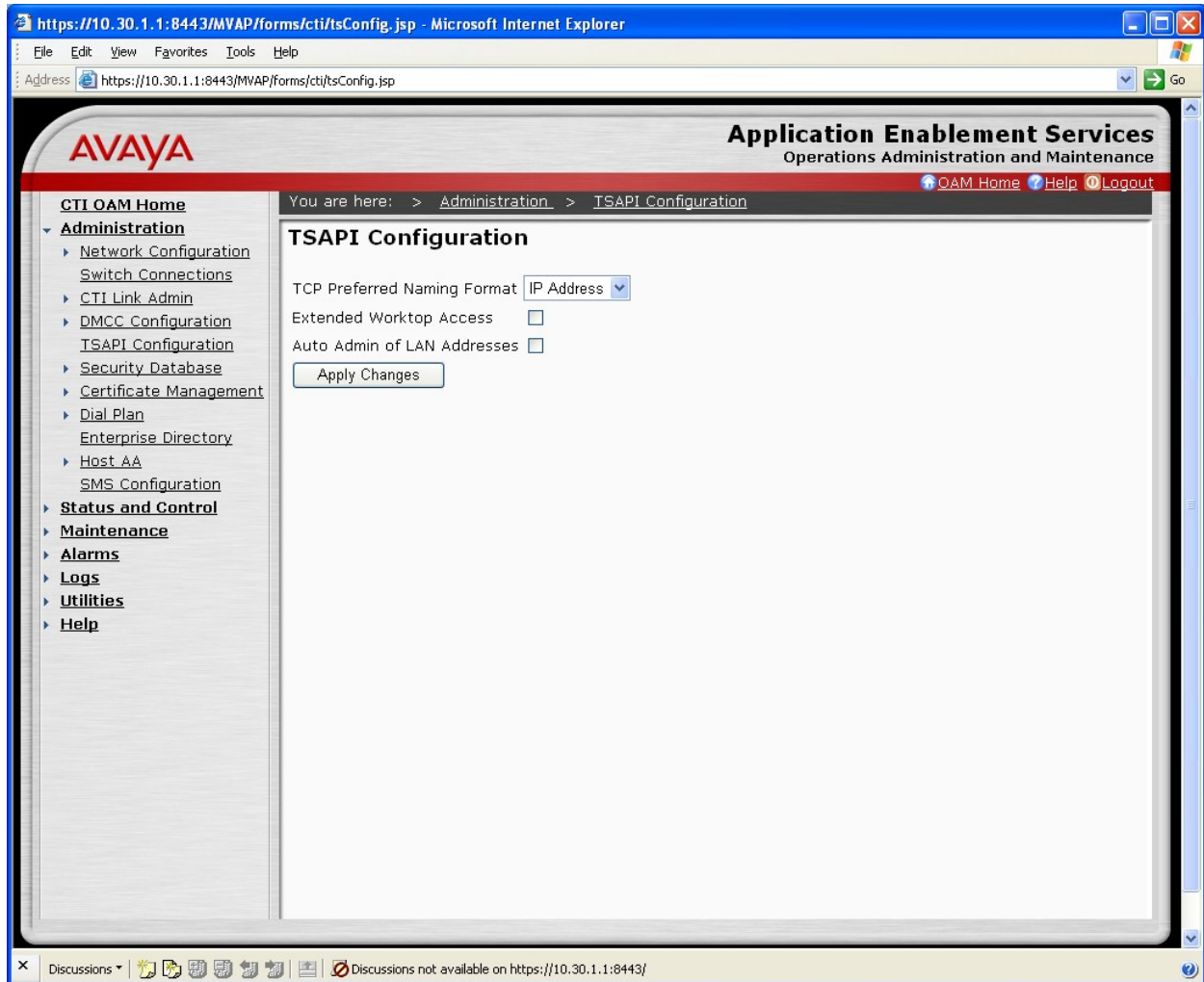


Figure 19: TSAPI Configuration

4. Navigate to the Tlinks screen by selecting **Administration > Security Database > Tlinks** from the CTI OAM Home menu. Note the value of the **Tlink Name**, as this will be needed for configuring Verint Systems Audiolog.

In this case, the **Tlink Name** is **AVAYA#S8500#CSTA#AES-TEST**, which is automatically created by the AES server and shown in **Figure 20**.



Figure 20: TSAPI Links

4.5. Administer Security Database

All devices that are monitored by Verint Systems Audiolog need to be configured in the AES security database. This includes the virtual stations setup within Avaya Communication Manager for Single Step Conference.

1. From the CTI OAM Home menu, select **Administration > Security Database > Devices**, and add each device by entering the device extension and clicking on **Add Device**. A sample listing of the configured devices used for compliance testing is shown in **Figure 21**. Note that the total number of devices may vary, as this depends on the number of extensions to be recorded and monitored.

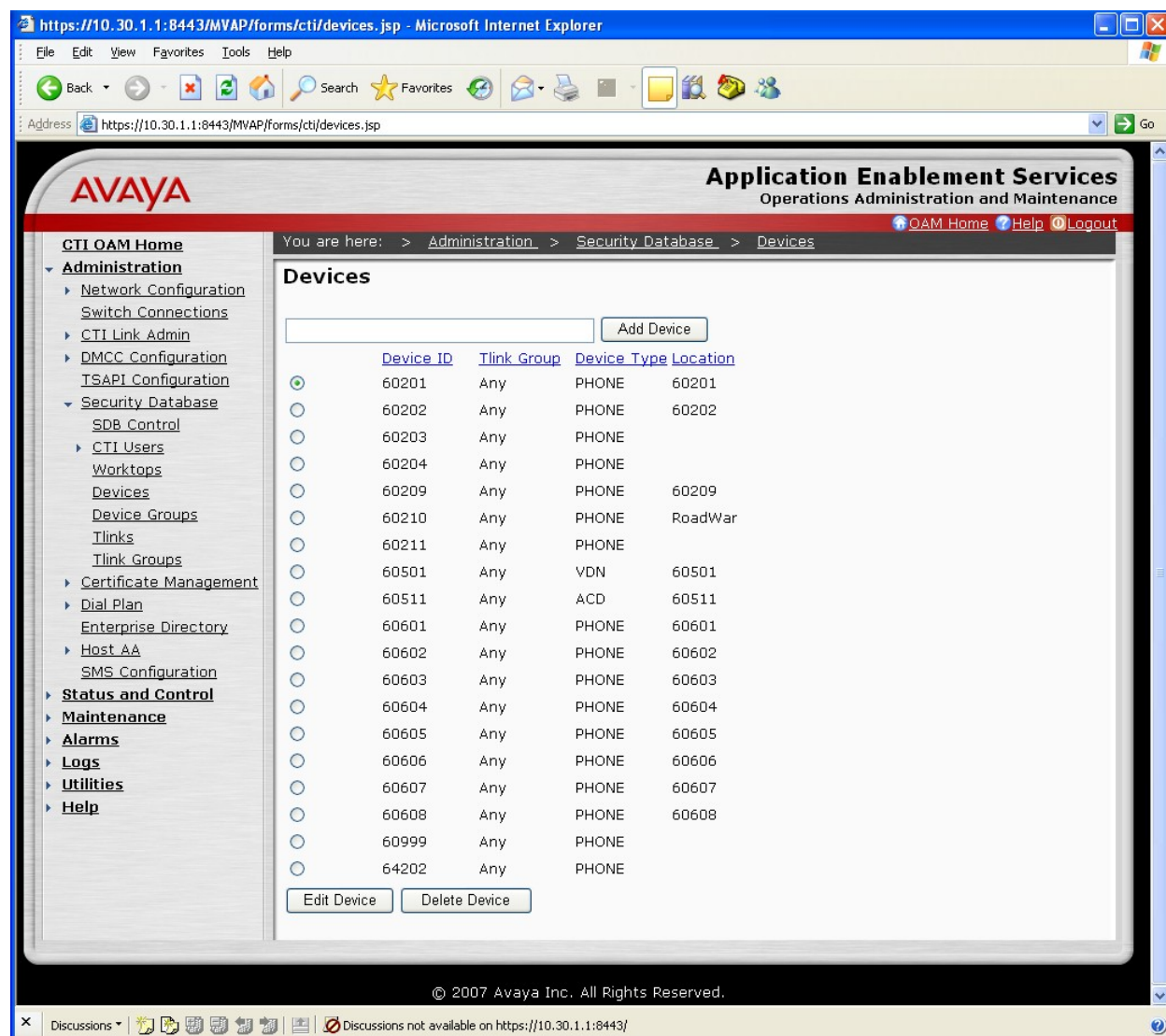


Figure 21: Devices

2. The associated field values for each device are entered in the **Add / Edit Device** screen shown in **Figure 22**. The following is a description of the device types that can be monitored by Verint Systems Audiolog:
- **PHONE:** Station extensions.
 - **VDN:** Vector Directory Number extensions.
 - **AGENT ID:** Logical agent extensions.
 - **ACD:** ACD split or Skill group extensions

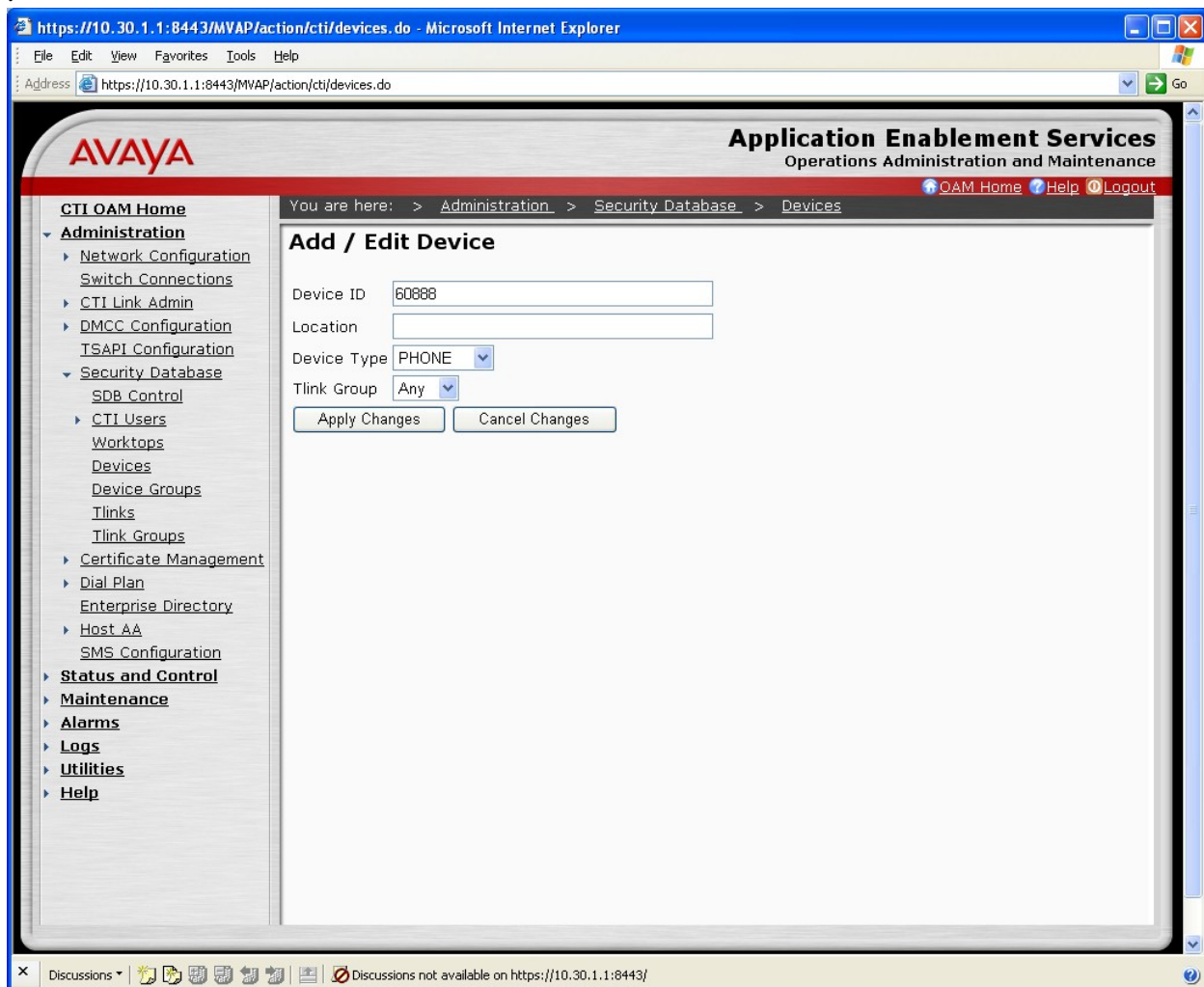


Figure 22: Add/Edit Devices

4.6. Administer An AES Verint Systems Audiolog User

Select **OAM Home -> User Management** to display the AES login screen. Log in using the User Management user name and password, and the same Welcome To OAM screen from **Figure 10** is displayed.

1. To create the Verint user on AES, select **OAM Home > User Management > Add User** from the User Management Home menu. In the **Add User** screen shown in **Figure 23**, enter the following values:

- **User Id:** A meaningful user id.
- **Common Name:** A descriptive name.
- **Surname:** A descriptive surname.
- **User Password:** Password for the Verint user.
- **Confirm Password:** Re-enter the same password for the Verint user.
- **Avaya Role:** Retain the default of “None”.
- **CT User:** Select “Yes” from the dropdown menu.

Click on **Apply** at the bottom of the screen (not shown in **Figure 23**).

AVAYA Application Enablement Services
Operations Administration and Maintenance

You are here: > User Management > List All Users

Add User

Fields marked with * can not be empty.

* User Id: verint

* Common Name: Verint

* Surname: verint

New Password:

Confirm New Password:

Admin Note:

Avaya Role: None

Business Category:

Car License:

CM Home:

Css Home:

CT User: Yes

Department Number:

Display Name:

Employee Number:

Employee Type:

Enterprise Handle:

Given Name:

Home Phone:

Home Postal Address:

Initials:

Figure 23: Add User

2. Select **OAM Home** then **CTI OAM Administration** from the Home menu. From the CTI OAM Home menu, select **Administration -> Security Database -> CTI Users -> List All Users** to get a listing of all CTI users, as shown in **Figure 24**. Select the “verint” user created in **Figure 23** and click on **Edit**.

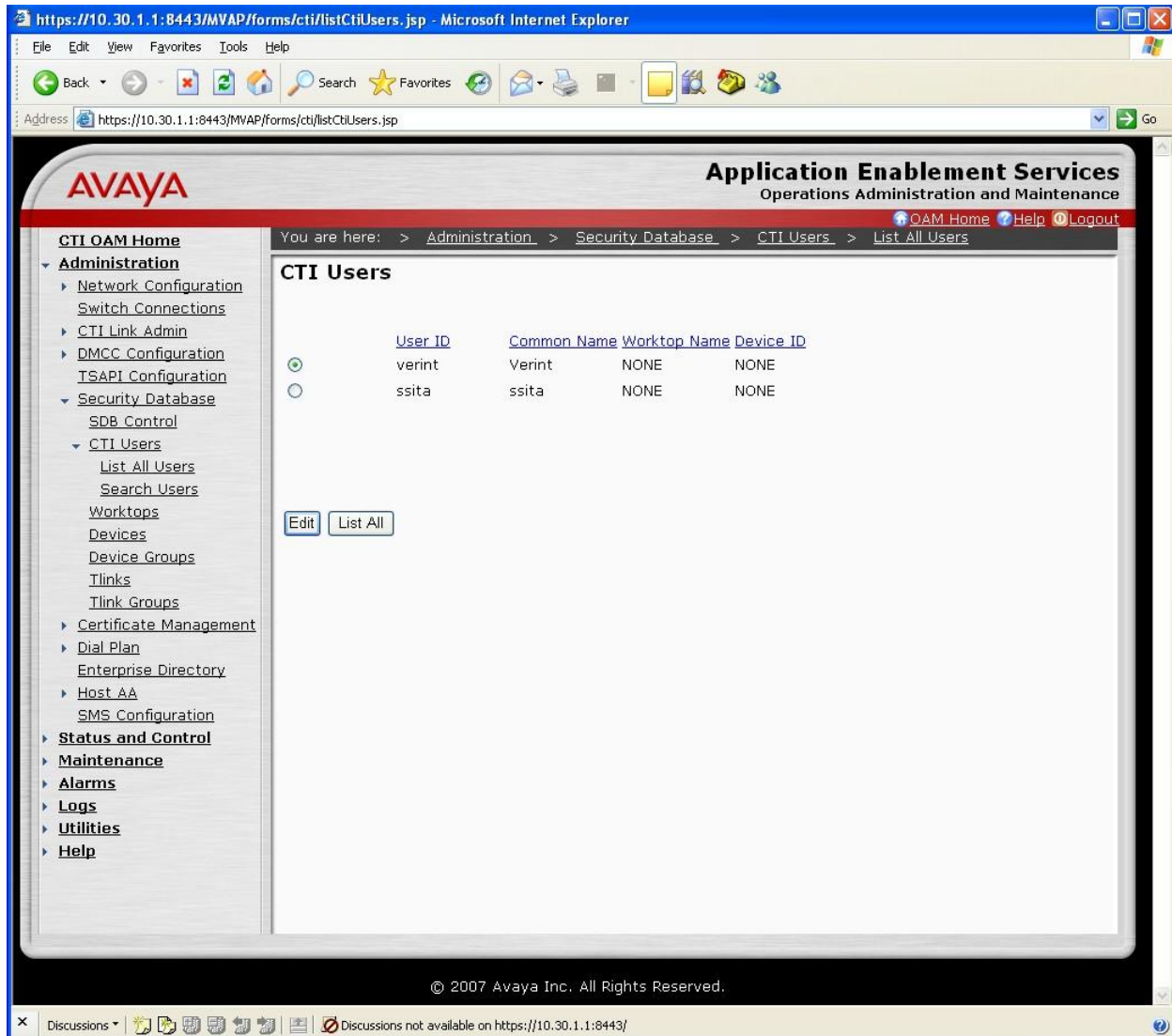


Figure 24: CTI Users

3. The Edit CTI User screen is displayed, as shown in **Figure 25**. Select **Any** from the drop down menu for the **Call Origination and Termination**, **Device / Device**, **Call / Device**, and **Allow Routing on Listed Device** fields. Enable (check mark) the **Call / Call**, followed by **Apply Changes**.

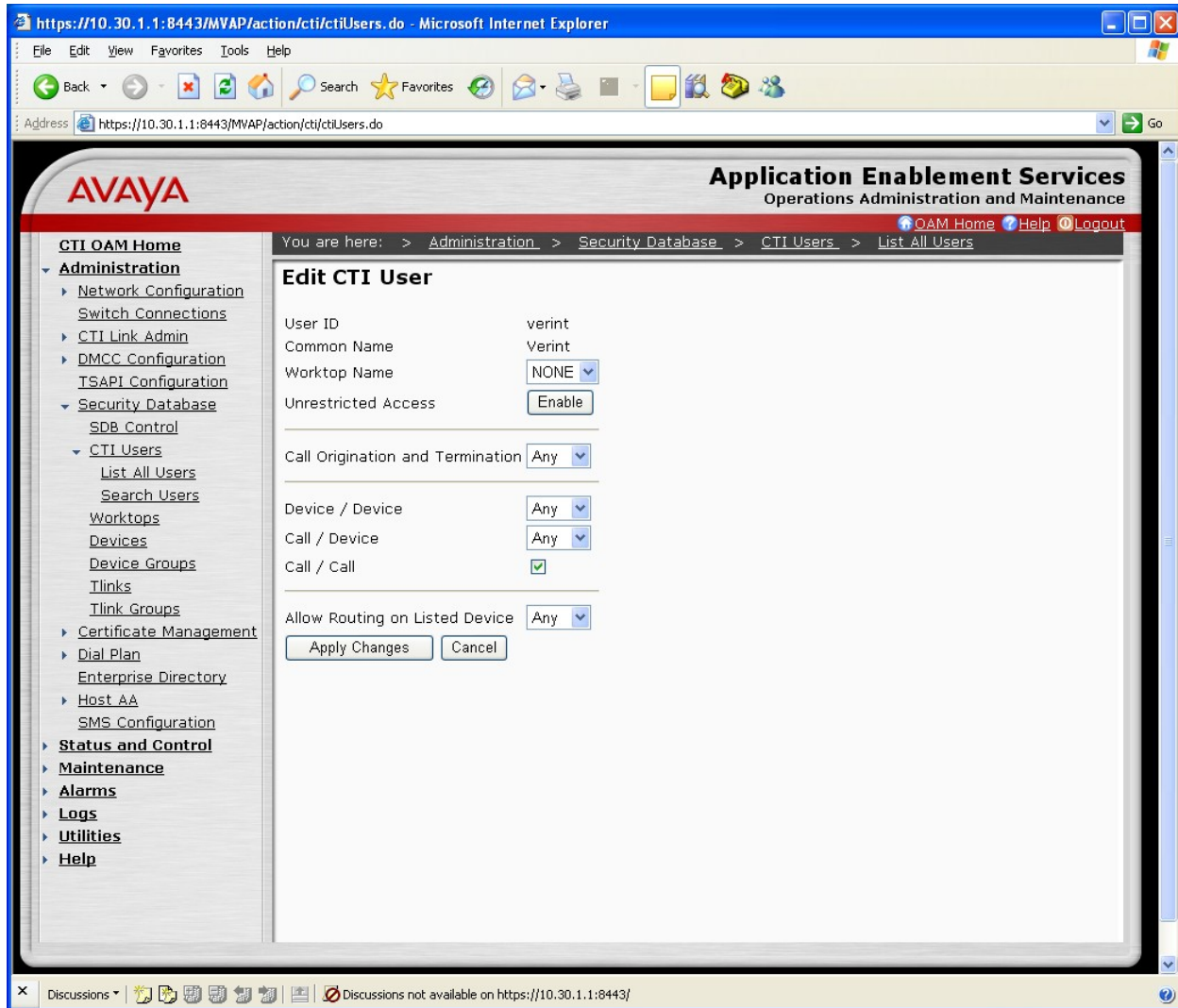


Figure 25: Edit CTI User

5. Configure Verint Systems Audiolog

The Verint Systems Audiolog Server should be pre-installed with the latest Audiolog software and Service Pack, and the TSAPI Client software is operational. This section provides only a guideline for administering the Verint Systems Audiolog application to function with Avaya Application Enablement Services. For a complete administrative overview, please consult **Reference [1]** when administering Verint Systems Audiolog and TSAPI Client with Avaya Application Enablement Services.

Note, the setting used for the compliance test with Verint Systems Audiolog and Avaya Application Enablement Services will vary based on system configurations and customer needs.


Start the Verint Systems Audiolog Server console, and the initial **Manager** screen in **Figure 26** should be displayed. On the left side, click on the center button . The Configuration Manager screen should be displayed. See **Figure 27**.



Figure 26: Manager

5.1. Verint Systems Audiolog Configuration Manager Elements

1. The **Configuration Manager** displayed in **Figure 27** is the place from which all administration is performed. Select and click the **Components** button from **Configuration Manager**.

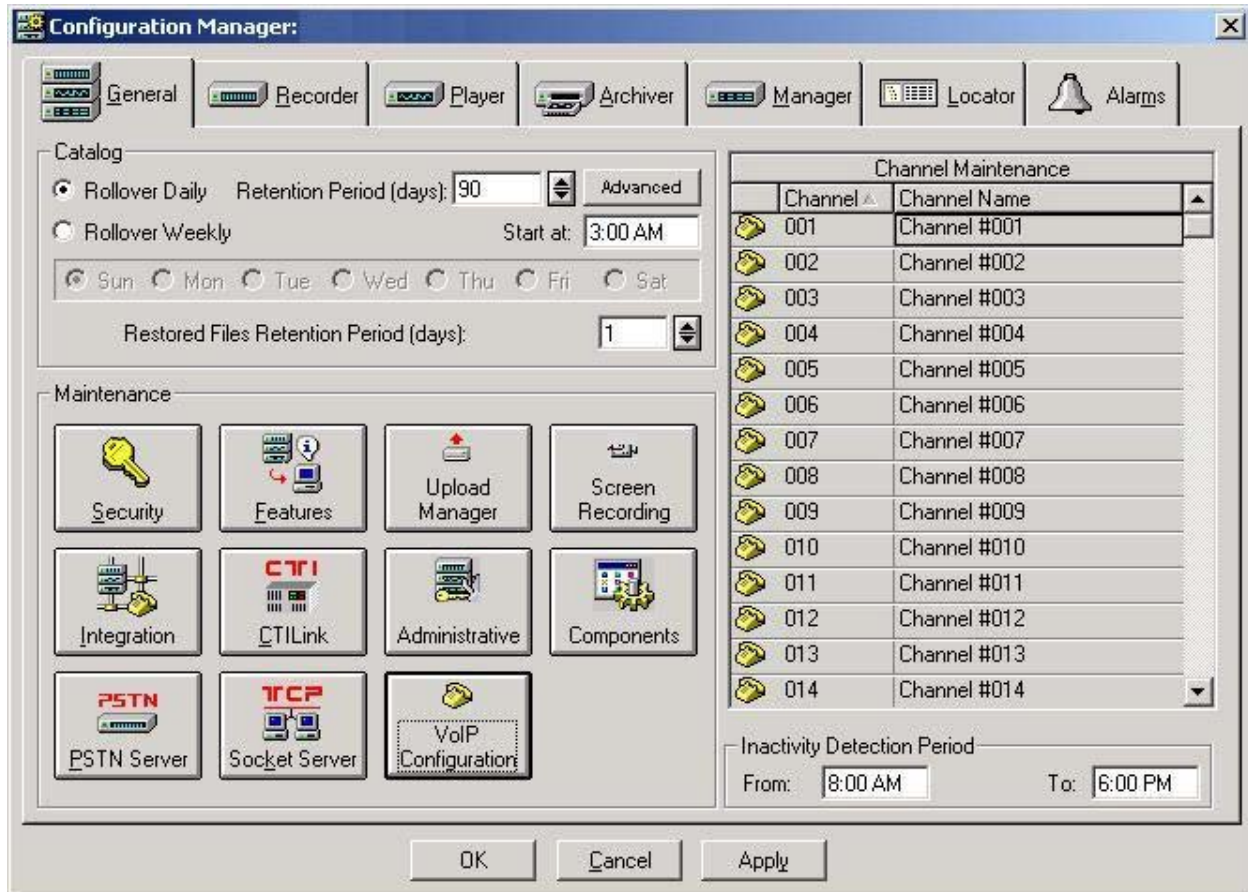


Figure 27: Employee Management Screen

2. The **Components** screen in **Figure 28** should be displayed. Verify the **Enable CTILink Miscellaneous** parameter is checked.

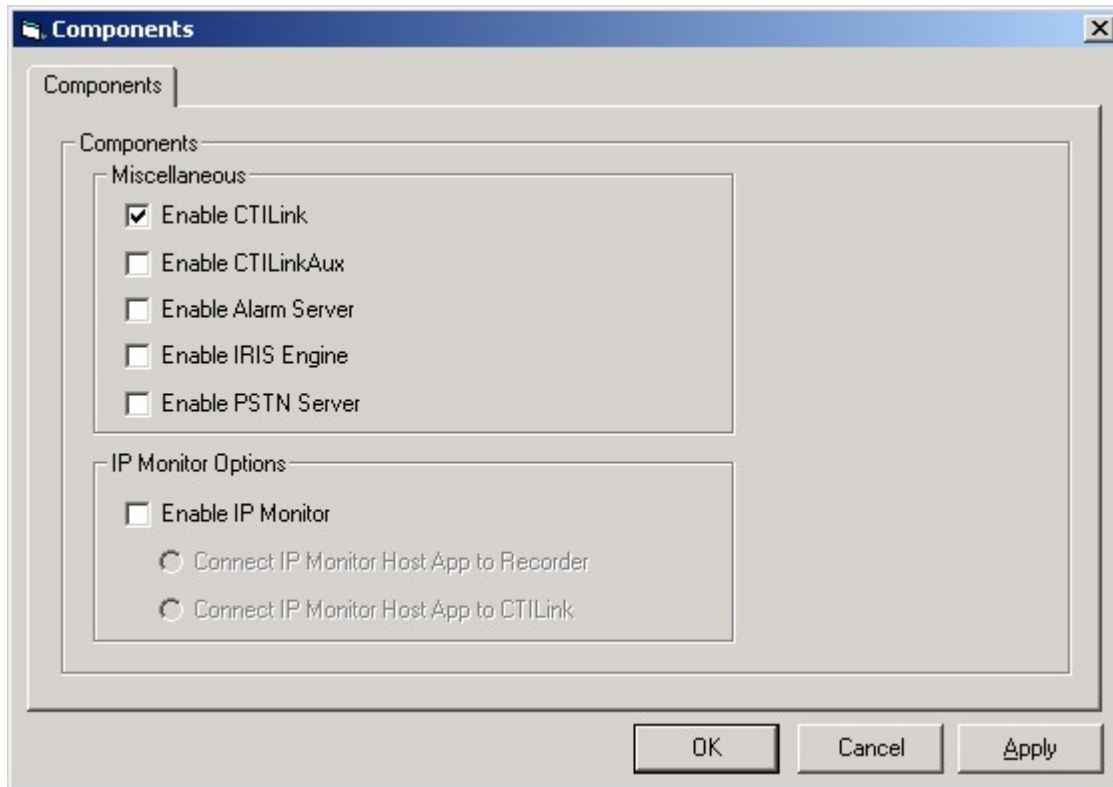
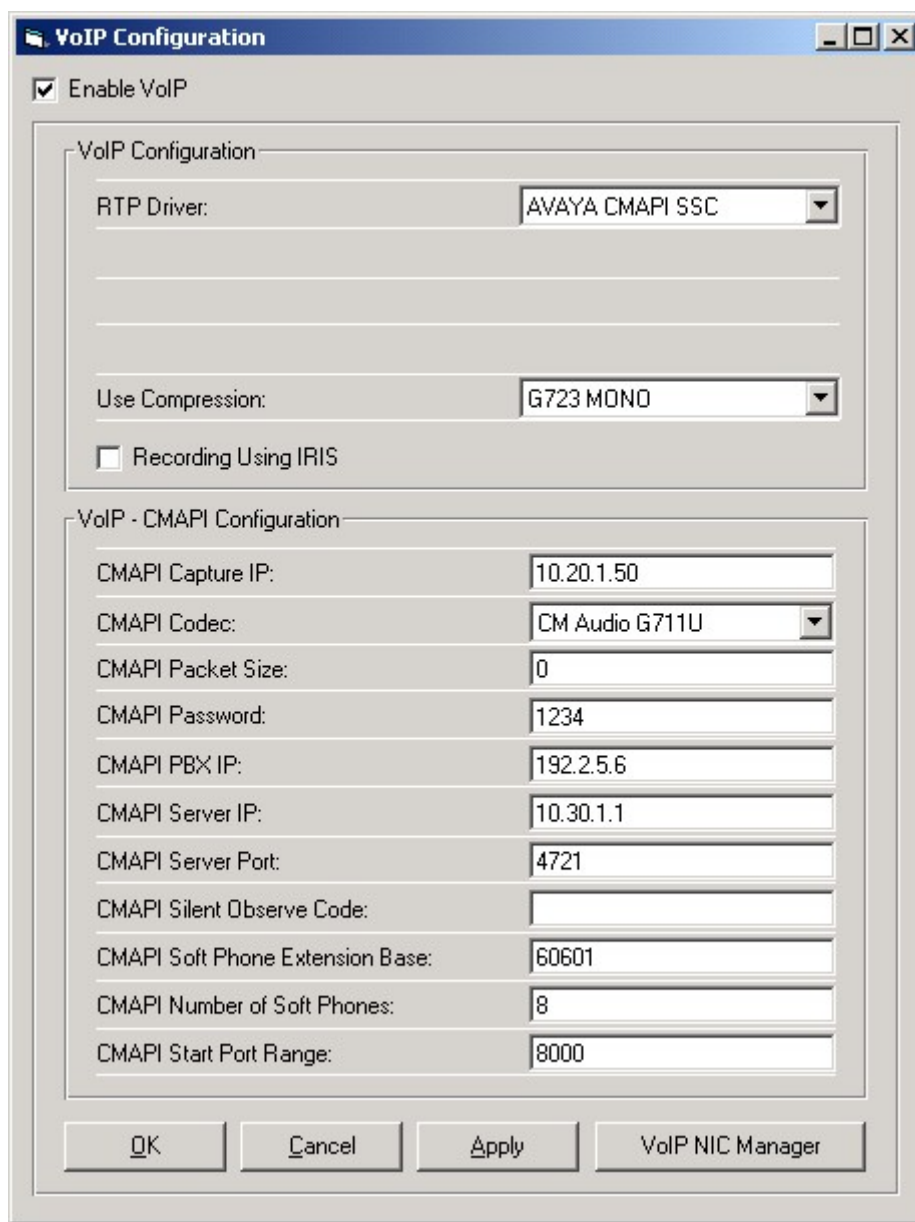


Figure 28: Components

3. From the **Configuration Manager** displayed in **Figure 27**, select and click the **VoIP Configuration** button. The **VoIP Configuration** screen in **Figure 29** should be displayed. Administer the following fields:

- **RTP Driver:** AVAYA CMAPI SSC
- **Use Compression:** G723 MONO
- **CMAPI Capture IP:** IP Address of the Audiolog Server
- **CMAPI Codec:** CM Audio G711U
- **CMAPI Packet Size:** 0
- **CMAPI Password:** Password assigned in **Section 4.6, Step 1**.
- **CMAPI PBX IP:** IP Address of CLAN in Section 3.1.
- **CMAPI Server IP:** IP Address of the Avaya Enablement Services Server
- **CMAPI Server Port:** 4721
- **CMAPI Soft Phone Extension Base:** Starting extension number of the virtual soft phone extensions administered as in **Section 3.4, Step 1**.
- **CMAPI Number of Soft Phones** 8
- **CMAPI Start Port Range:** 8000



The image shows a 'VoIP Configuration' dialog box with a blue title bar. It contains two main sections: 'VoIP Configuration' and 'VoIP - CMAPI Configuration'. The 'VoIP Configuration' section has a checked 'Enable VoIP' checkbox, an 'RTP Driver' dropdown set to 'AVAYA CMAPI SSC', a 'Use Compression' dropdown set to 'G723 MONO', and an unchecked 'Recording Using IRIS' checkbox. The 'VoIP - CMAPI Configuration' section contains several text and dropdown fields: 'CMAPI Capture IP' (10.20.1.50), 'CMAPI Codec' (CM Audio G711U), 'CMAPI Packet Size' (0), 'CMAPI Password' (1234), 'CMAPI PBX IP' (192.2.5.6), 'CMAPI Server IP' (10.30.1.1), 'CMAPI Server Port' (4721), 'CMAPI Silent Observe Code' (empty), 'CMAPI Soft Phone Extension Base' (60601), 'CMAPI Number of Soft Phones' (8), and 'CMAPI Start Port Range' (8000). At the bottom are buttons for 'OK', 'Cancel', 'Apply', and 'VoIP NIC Manager'.

Field	Value
Enable VoIP	<input checked="" type="checkbox"/>
RTP Driver	AVAYA CMAPI SSC
Use Compression	G723 MONO
Recording Using IRIS	<input type="checkbox"/>
CMAPI Capture IP	10.20.1.50
CMAPI Codec	CM Audio G711U
CMAPI Packet Size	0
CMAPI Password	1234
CMAPI PBX IP	192.2.5.6
CMAPI Server IP	10.30.1.1
CMAPI Server Port	4721
CMAPI Silent Observe Code	
CMAPI Soft Phone Extension Base	60601
CMAPI Number of Soft Phones	8
CMAPI Start Port Range	8000

Figure 29: VoIP Configuration

Click **Apply** when completed. Click **VoIP NIC Manager** button displayed on **Figure 29**.

4. From the **VoIP NIC Manager** screen displayed in **Figure 30**, select and click the **Network Adapter** for **Capture NIC** (only one NIC board installed). Refer to **Reference [1]** and complete the **Capture NIC** setup.

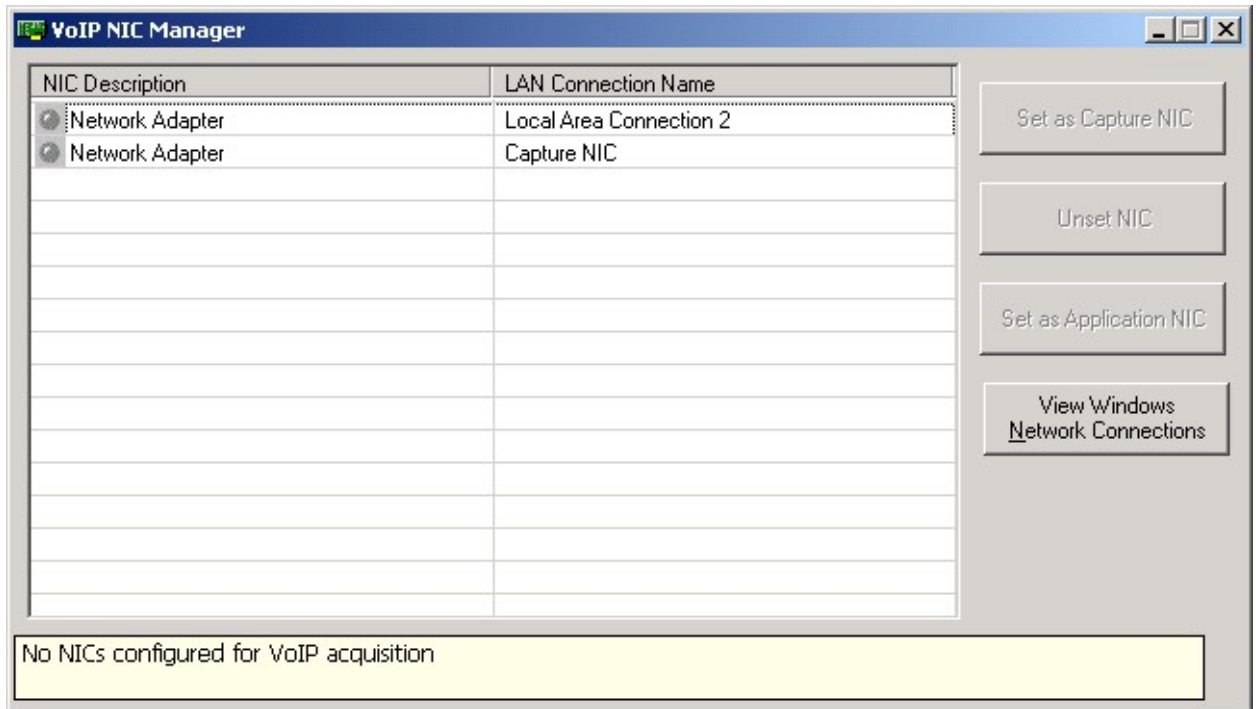


Figure 30: VoIP NIC Manger

5. From the **Configuration Manager** displayed in **Figure 27**, select and click the **CTILink Configuration** button. The **CTILink Configuration** screen in **Figure 31** should be displayed. On the **General Link** tab, administer the following:
 - **Server Name 1:** 127.0.0.1
 - **Link Type Protocol:** INTELLILINKClick **Apply**. Click the **Options / Devices** tab.

The image shows a 'CTILink Configuration' dialog box with a blue title bar and a close button. It features a tabbed interface with the following tabs: 'General Link' (selected), 'Options / Devices', 'CT Server', 'Serial', 'User Data', 'TCP/IP', and 'Triggers'. The 'General Link' tab is active, displaying two main sections: 'CT Server' and 'Monitor Link Status'.

CT Server Section:

- Server Name 1: 127.0.0.1
- Server Port 1: 0
- Server Name 2: (empty)
- Server Port 2: 0
- Server User ID: (empty)
- Server Password: (empty)
- Link Type Protocol: INTELLILINK (dropdown menu)
- Switch Type: (empty dropdown menu)

Monitor Link Status Section:

- ☒ Monitor Link Startup
- ☒ Monitor Link Poll
- Monitor Link Interval: 10
- Monitor Link Retries: 1
- Connect Timeout: 60
- Status Station ID: (empty)
- Heartbeat Interval: 30

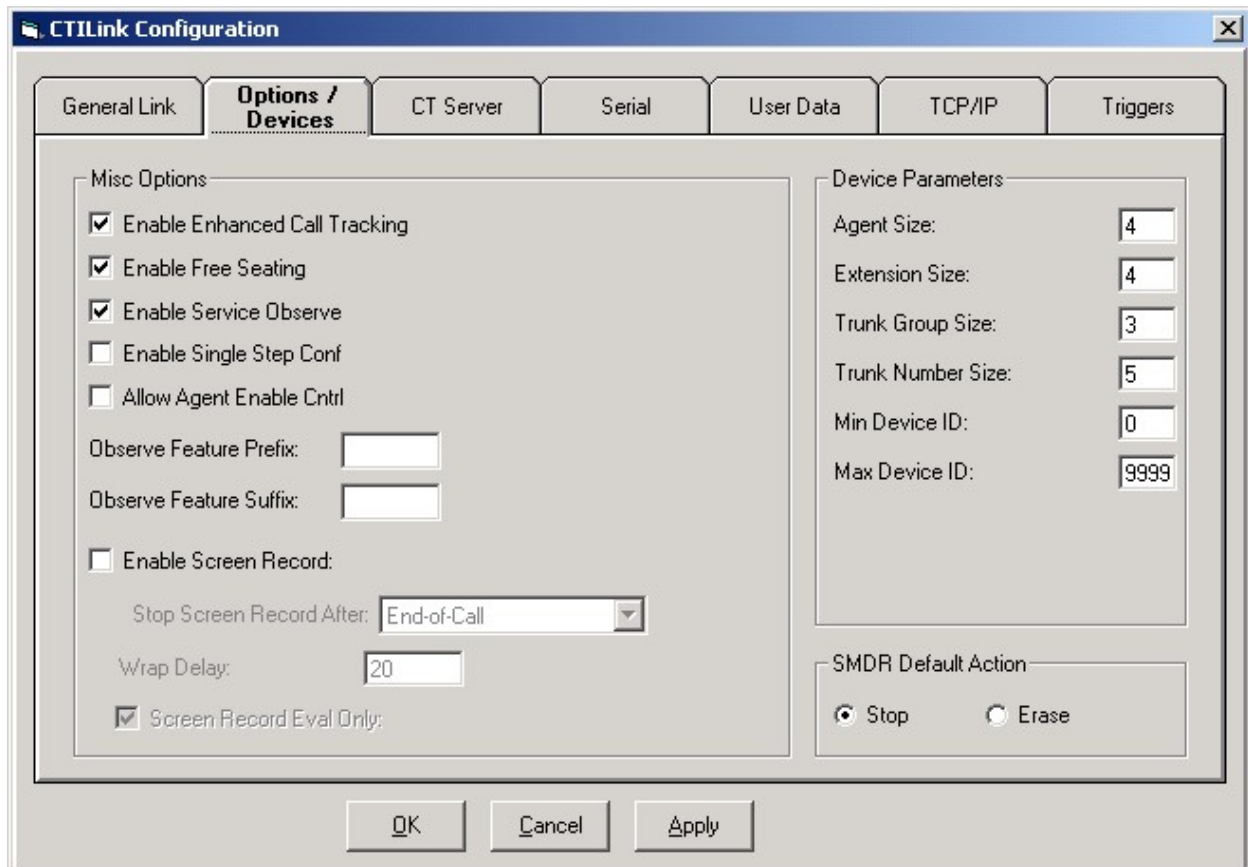
Diagnostic Settings Section:

- Diagnostics Level: Trace (dropdown menu)

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Apply'.

Figure 31: CTILink Configuration

6. The **Options / Devices** screen in **Figure 32** should be displayed. Enable (check mark) the following **Misc Options**:
- **Enable Enhanced Call Tracking:**
 - **Enable Free Seating:**
 - **Enable Service Observe:**
- Click **Apply**. Click the **CT Server** tab.



The image shows the 'CTILink Configuration' window with the 'Options / Devices' tab selected. The window has a title bar and a tabbed interface with tabs for 'General Link', 'Options / Devices', 'CT Server', 'Serial', 'User Data', 'TCP/IP', and 'Triggers'. The 'Options / Devices' tab is active, displaying two main sections: 'Misc Options' and 'Device Parameters'. In the 'Misc Options' section, the following options are checked: 'Enable Enhanced Call Tracking', 'Enable Free Seating', and 'Enable Service Observe'. Other options include 'Enable Single Step Conf', 'Allow Agent Enable Cntrl', 'Observe Feature Prefix' (with an empty text box), 'Observe Feature Suffix' (with an empty text box), 'Enable Screen Record' (unchecked), 'Stop Screen Record After' (set to 'End-of-Call' in a dropdown), 'Wrap Delay' (set to '20' in a text box), and 'Screen Record Eval Only' (checked). In the 'Device Parameters' section, the following values are entered: 'Agent Size' (4), 'Extension Size' (4), 'Trunk Group Size' (3), 'Trunk Number Size' (5), 'Min Device ID' (0), and 'Max Device ID' (9999). At the bottom of the 'Device Parameters' section, there is an 'SMDR Default Action' section with two radio buttons: 'Stop' (selected) and 'Erase'. At the bottom of the window, there are three buttons: 'OK', 'Cancel', and 'Apply'.

Section	Option	Value / Status
Misc Options	Enable Enhanced Call Tracking	Checked
	Enable Free Seating	Checked
	Enable Service Observe	Checked
	Enable Single Step Conf	Unchecked
	Allow Agent Enable Cntrl	Unchecked
	Observe Feature Prefix	
	Observe Feature Suffix	
	Enable Screen Record	Unchecked
	Stop Screen Record After	End-of-Call
	Wrap Delay	20
Device Parameters	Agent Size	4
	Extension Size	4
	Trunk Group Size	3
	Trunk Number Size	5
	Min Device ID	0
	Max Device ID	9999
	SMDR Default Action	Stop (Selected), Erase

Figure 32: Options / Devices Configuration

7. The **CT Server** screen in **Figure 33** should be displayed. Enable (check mark) the following:

- **Enable Login:**
- **Enable Logoff:**
- **Enable Private Data:**
- **Switch ID:** 1 (default)

Click **Apply**. Click the **IntelliLink Configuration Utility**.

The screenshot shows the 'CTILink Configuration' dialog box with the 'CT Server' tab selected. The dialog has several tabs: 'General Link', 'Options / Devices', 'CT Server', 'Serial', 'User Data', 'TCP/IP', and 'Triggers'. The 'CT Server' tab contains three main sections: 'Logon/Logoff Events', 'IP Monitor', and 'CT Agent/Device Map'. In the 'Logon/Logoff Events' section, 'Enable Logon' and 'Enable Logoff' are both checked. In the 'IP Monitor' section, 'Enable IP Monitor' is unchecked. In the 'CT Agent/Device Map' section, 'Agent Data Index', 'Agent ID Index', and 'Device ID Index' are all set to 0. Below these sections is the 'INTELLILINK' section, which contains a 'Switch ID' field set to 1 and 'Enable Private Data' checked. At the bottom of the dialog are 'OK', 'Cancel', and 'Apply' buttons. A button labeled 'IntelliLink Configuration Utility' is also present within the 'INTELLILINK' section.

Section	Option	Value/Status
Logon/Logoff Events	Enable Logon:	<input checked="" type="checkbox"/>
	Enable Logoff:	<input checked="" type="checkbox"/>
IP Monitor	Enable IP Monitor:	<input type="checkbox"/>
	CT Agent/Device Map	
CT Agent/Device Map	Agent Data Index:	0
	Agent ID Index:	0
	Device ID Index:	0
INTELLILINK	Switch ID:	1
	Enable Private Data:	<input checked="" type="checkbox"/>

Figure 33: CT Server Configuration

8. From the **Recording Mode** drop-down list box on the **General** displayed in **Figure 34**, select **Station Side**. Then right-click on the **IntelliLink** empty left panel.

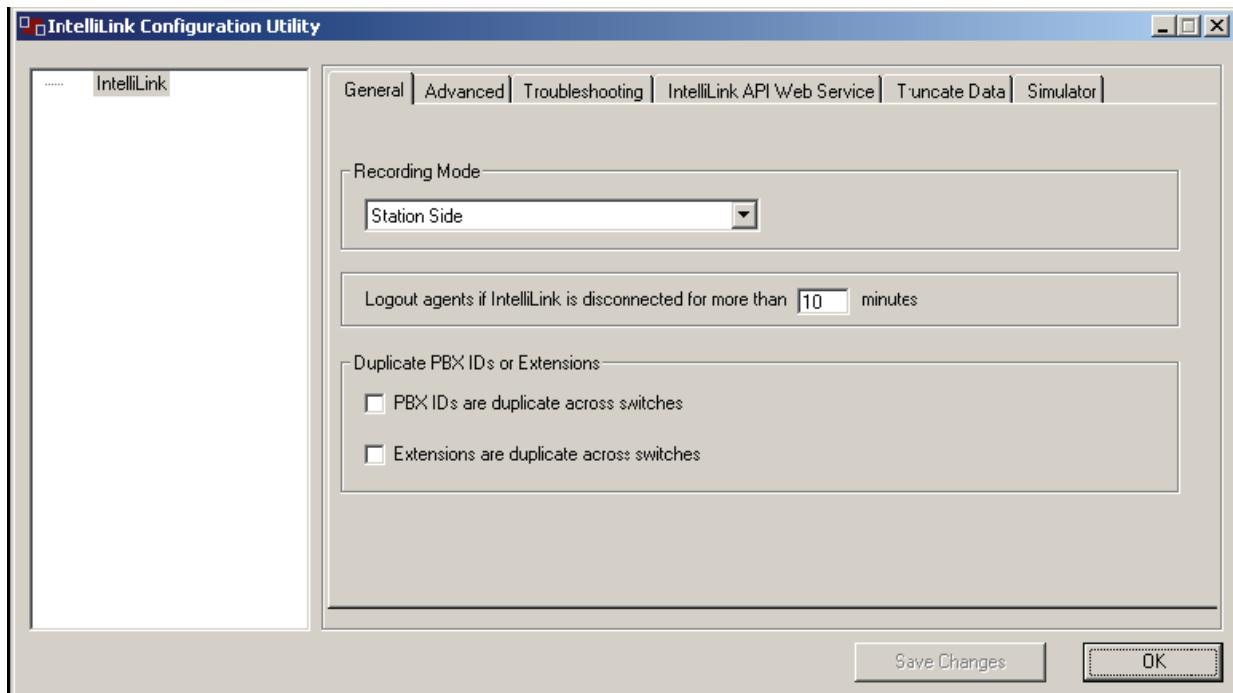


Figure 34: IntelliLink Configuration Utility

9. From the **Switch Type** list displayed as in **Figure 35**, select **Avaya Communication Manager** and click **Next**.

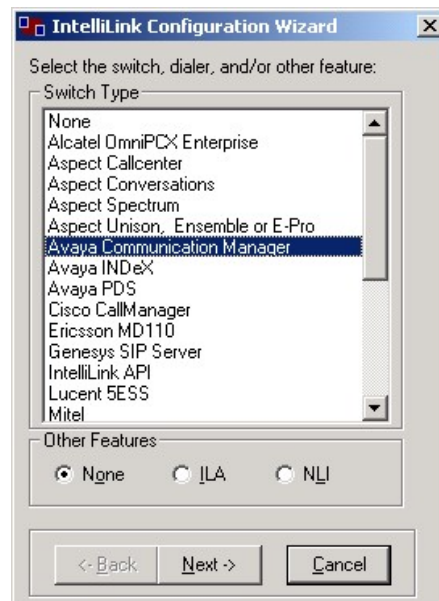


Figure 35: Switch Selection

10. From the **Protocol** list displayed in **Figure 36**, select **TSAPI** and click Next.

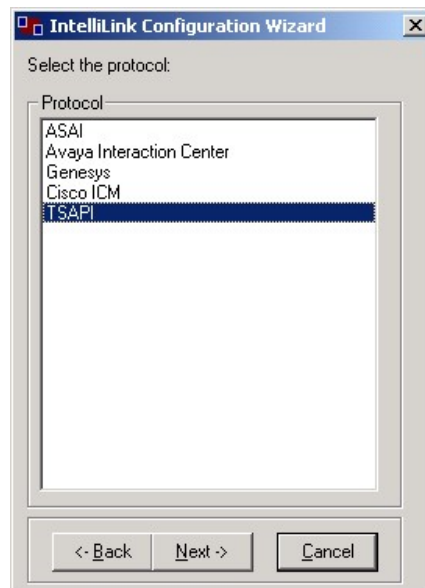


Figure 36: Protocol Selection

11. A **Confirmation** dialog box should be displayed (not shown) confirming the switch and protocol selected followed by the information provided in **Figure 37**.

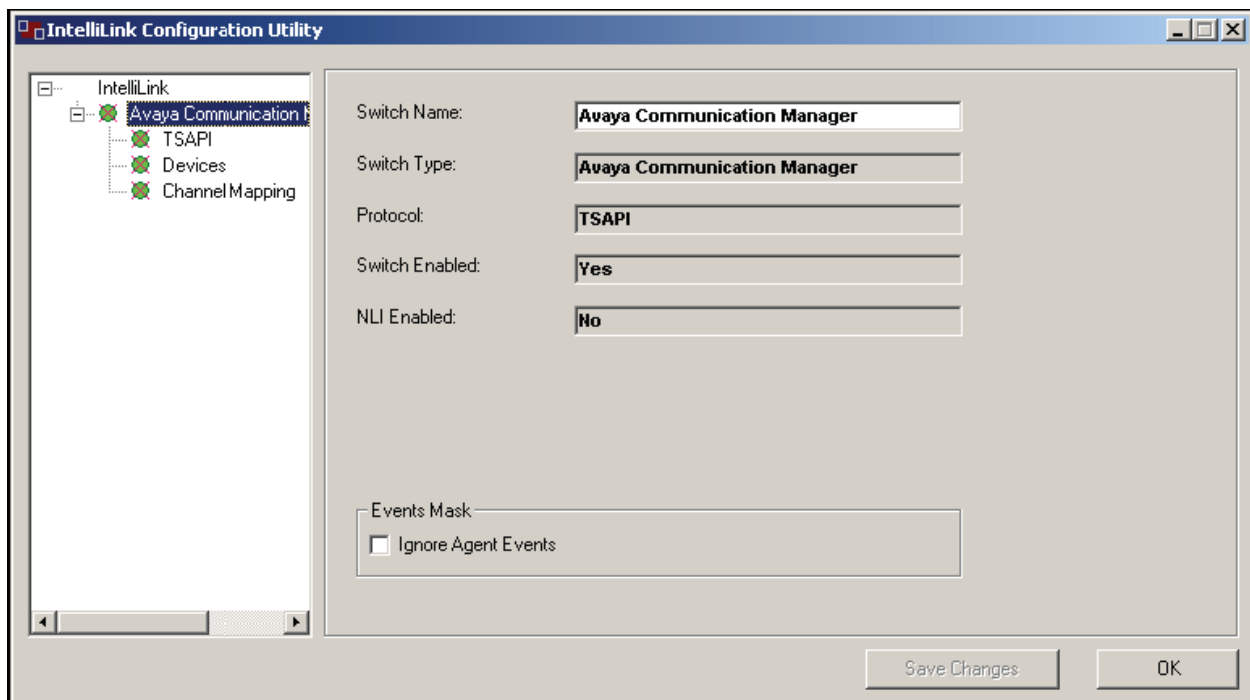


Figure 37: Selected Parameters

12. Click on the **TSAPI** node on the left panel and enter the **Server Name** as in **Section 4.4, Step 4** and the **Login ID** and **Password** administered in **Section 4.6, Step 1** as displayed in **Figure 38**. Click **Save Changes** when completed and then on the left panel once again, click on the **IntelliLink** node.

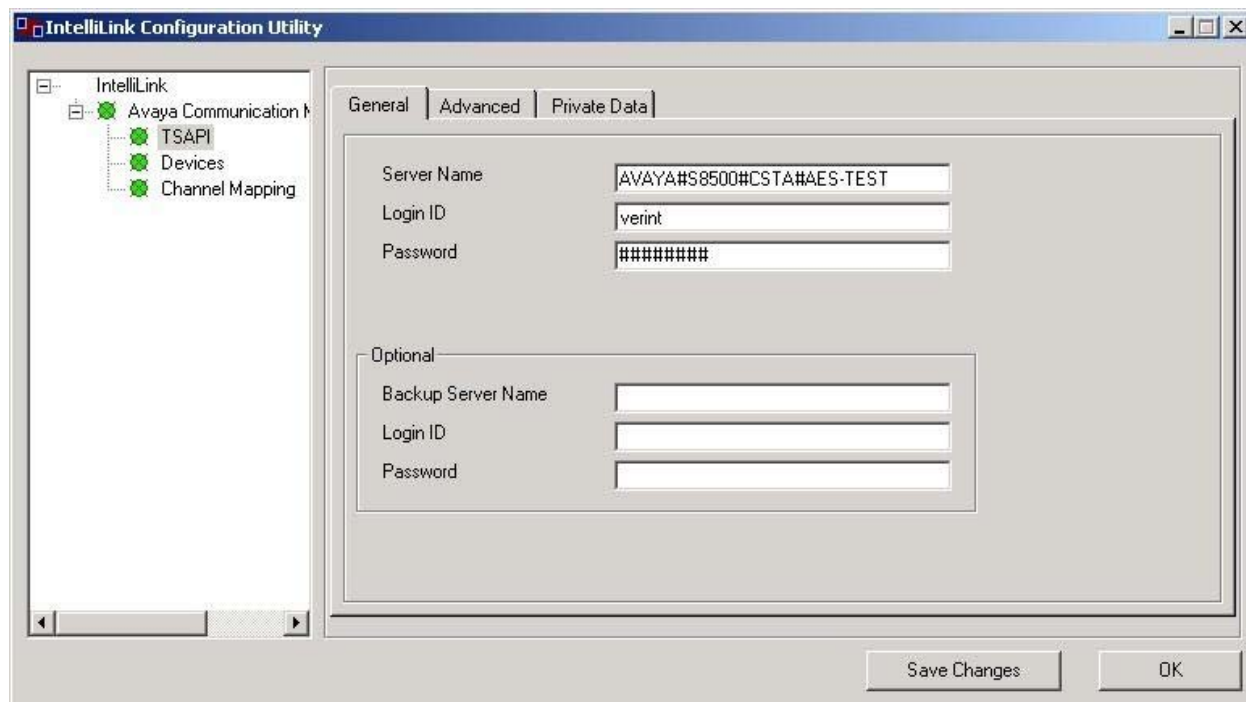


Figure 38: TSAPI Information

13. Click on the **Advanced** tab on the **IntelliLink Configuration Utility** displayed in **Figure 39** and enable **Use Dynamic channel allocation** and **Renew Recordings** and select **Switch1** for **Switch number for active CTI requests:** as displayed in **Figure 39**. **Save Changes** when completed.

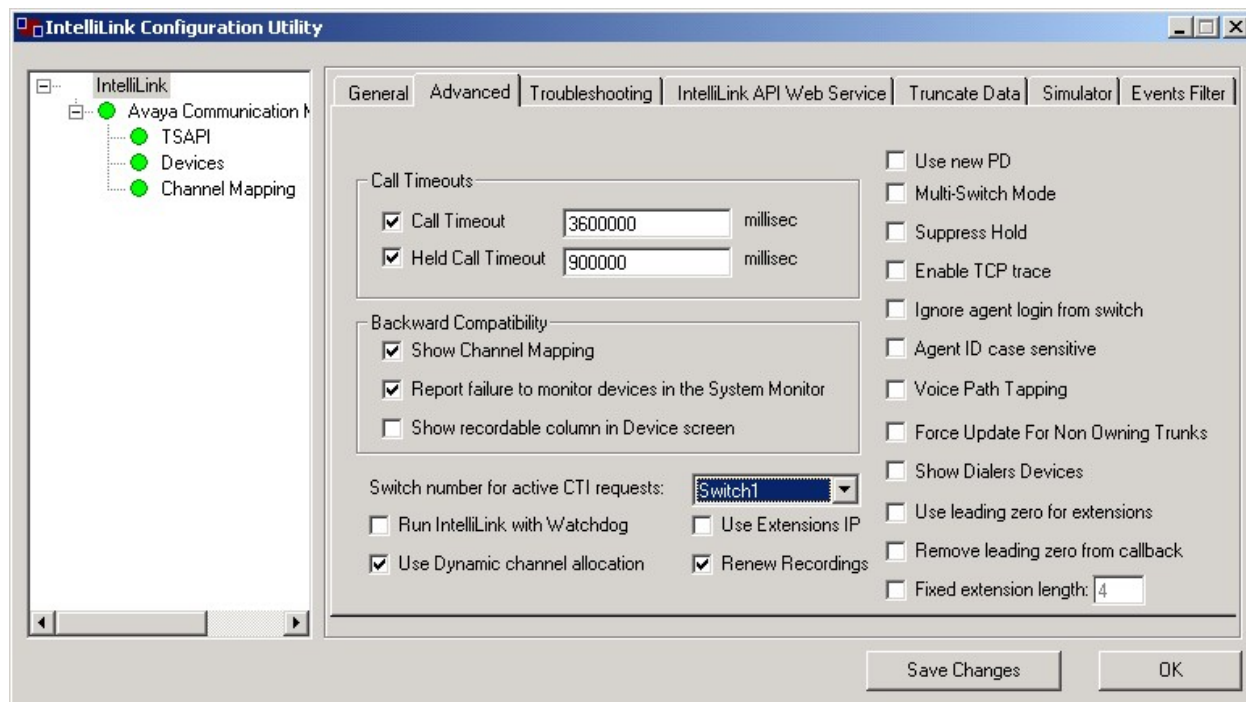

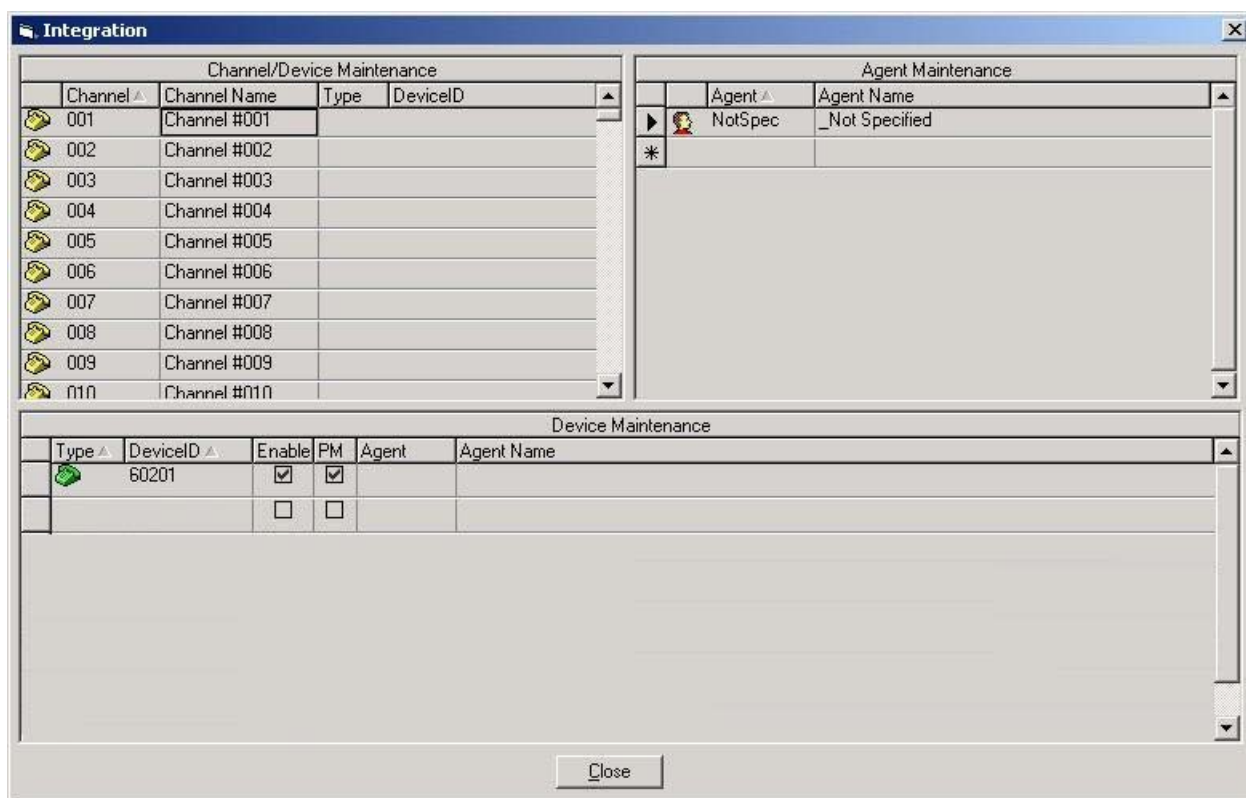


Figure 39: Additional Information

5.2. Add Station Extensions Verint Systems Audiolog

From the **Configuration Manager** displayed in **Figure 27**, select and click the **Integration** button. The **Integration** screen in **Figure 40** should be displayed.

1. Select the **Type** field under **Device Maintenance** and select the  (telephone) icon. Enter the **DeviceID** corresponding to each Avaya Communication telephone device used for the compliance test. In this case, extension **60201** has been added. Click **Enable** and **PM**.



The screenshot shows a software window titled "Integration" with three main sections:

- Channel/Device Maintenance:** A table with columns: Channel, Channel Name, Type, and DeviceID. It lists channels 001 through 010, each with a telephone icon in the Type column.
- Agent Maintenance:** A table with columns: Agent and Agent Name. It shows one entry: "NotSpec" with "_Not Specified".
- Device Maintenance:** A table with columns: Type, DeviceID, Enable, PM, Agent, and Agent Name. It shows one entry: Type is a telephone icon, DeviceID is "60201", Enable is checked, PM is checked, Agent is empty, and Agent Name is empty.

A "Close" button is located at the bottom right of the window.

Figure 40: Integrating Devices

2. Repeat **Step 1** for all telephone devices. Include administered Automatic Call Distribution (ACD) telephone number(s) administered within Avaya Communication Manager, and do not enable the **PM** check-box for the ACD, as was compliance tested. This is applicable if the Verint Systems Audiolog **Free Seating** option is selected (**Figure 32**) and the customer wants Audiolog to keep track of logon and logoff events, and assign agents to stations accordingly.

6. Interoperability Compliance Testing

The Interoperability compliance test included selected feature functionality, load, and serviceability testing.

The feature functionality testing focused on verifying Verint Systems Audiolog voice recording and archiving of simple telephone conversations, along with more complicated conversations that involved incoming and outgoing Transferring, Conferencing, and placed and release calls from Hold. In addition, playback of archived conversations was continually used during the compliance test to verify the previous telephone conversation. Monitoring the **Caller/Called Number**, among many other parameters, were also displayed during the compliance test.

The load testing focused on verifying the ability of Verint Systems Audiolog to record conversation to six (6) user extensions over a period of time from a moderate traffic load.

The serviceability testing focused on verifying the ability of Verint Systems Audiolog to recover from adverse conditions, such as busying out the CTI link and disconnecting the Ethernet cable for the CTI link.

6.1. General Test Approach

Compliance testing took on a three phase approach that was comprised of the following:

- Installation and configuration of the Verint Systems Audiolog solution
- Interoperability feature test cases between Verint Systems Audiolog and Avaya Communication Manager
- Serviceability and performance tests of the Verint Systems Audiolog solution

Verint Systems Audiolog hardware server platform is pre-loaded prior to the compliance test. Configuring the appropriate system parameters to operate with the Avaya Application Enablement Services was setup on site, and was performed by the Verint test engineer without difficulty.

The verification of all interoperability feature test cases included manually checking proper states at the telephone sets, and monitoring the report logs on the Verint Systems Audiolog application.

The performance test cases were performed by generating ~ 720 calls over a 60 minute period to 6 available agents, and by verify accuracy of various real-time and historical analysis reports using the Verint Systems Audiolog application.

The serviceability test cases were performed manually by busying out and releasing the CTI link, and by disconnecting and reconnecting the LAN cables.

6.2. Test Results

There was an issue getting G.729 functioning. This was rectified by changing the CMAPI Packet Size from 172 to 0. See **Figure 29**.

There was an issue logging in using the Verint credentials created with Avaya Enablement Services. A fixed to Verint Systems Service Pack 2 was applied.

During serviceability testing, disconnecting / reconnecting the Verint Systems Audiolog server from the network caused call cataloging to stop occurring. A Registry parameter required being changed as a result.

All test cases have passed successfully.

7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager, Avaya Application Enablement Services, and Verint Systems Audiolog.

7.1. Verify Avaya Communication Manager

Verify the status of the administered CTI link by using the **status aesvcs cti-link** command as shown in **Figure 41**.

status aesvcs cti-link						
AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1	4	no	AES-Test	established	186	48

Figure 41: Status Aesvcs CTI-link

7.2. Verify Avaya Enablement Services

1. From the Avaya Application Enablement Services **CTI OAM Home** menu, verify the status of the switch connection by selecting **Status and Control > Switch Conn Summary**, as shown in **Figure 42**.

https://10.30.1.1:8443/MVAP/forms/cti/switchConnSumm.jsp - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address https://10.30.1.1:8443/MVAP/forms/cti/switchConnSumm.jsp

AVAYA **Application Enablement Services**
Operations Administration and Maintenance

[OAM Home](#) [Help](#) [Logout](#)

You are here: > [Status and Control](#) > [Switch Conn Summary](#)

Switch Connections Summary

Switch Conn	Conn State	Since	Online/Offline	Active CLANs/ Admin'd CLANs	# of TCI Conns	Msgs To Switch	Msgs From Switch	Msg Period
S8500	Talking	2008-04-03 11:32:13.0	Online	1 / 1	2	248	337	30

[Online](#) [Offline](#) [Message Period](#) [Switch Connection Details](#)

[Per Service Switch Connections Details](#)

Discussions not available on https://10.30.1.1:8443/

Figure 42: Switch Connections Summary

2. Verify the status of the TSAPI link by selecting **Status and Control > Services Summary** from the Avaya Application Enablement Services **CTI OAM Home** menu shown in **Figure 43**. Click on **TSAPI Service**, followed by **Details**.

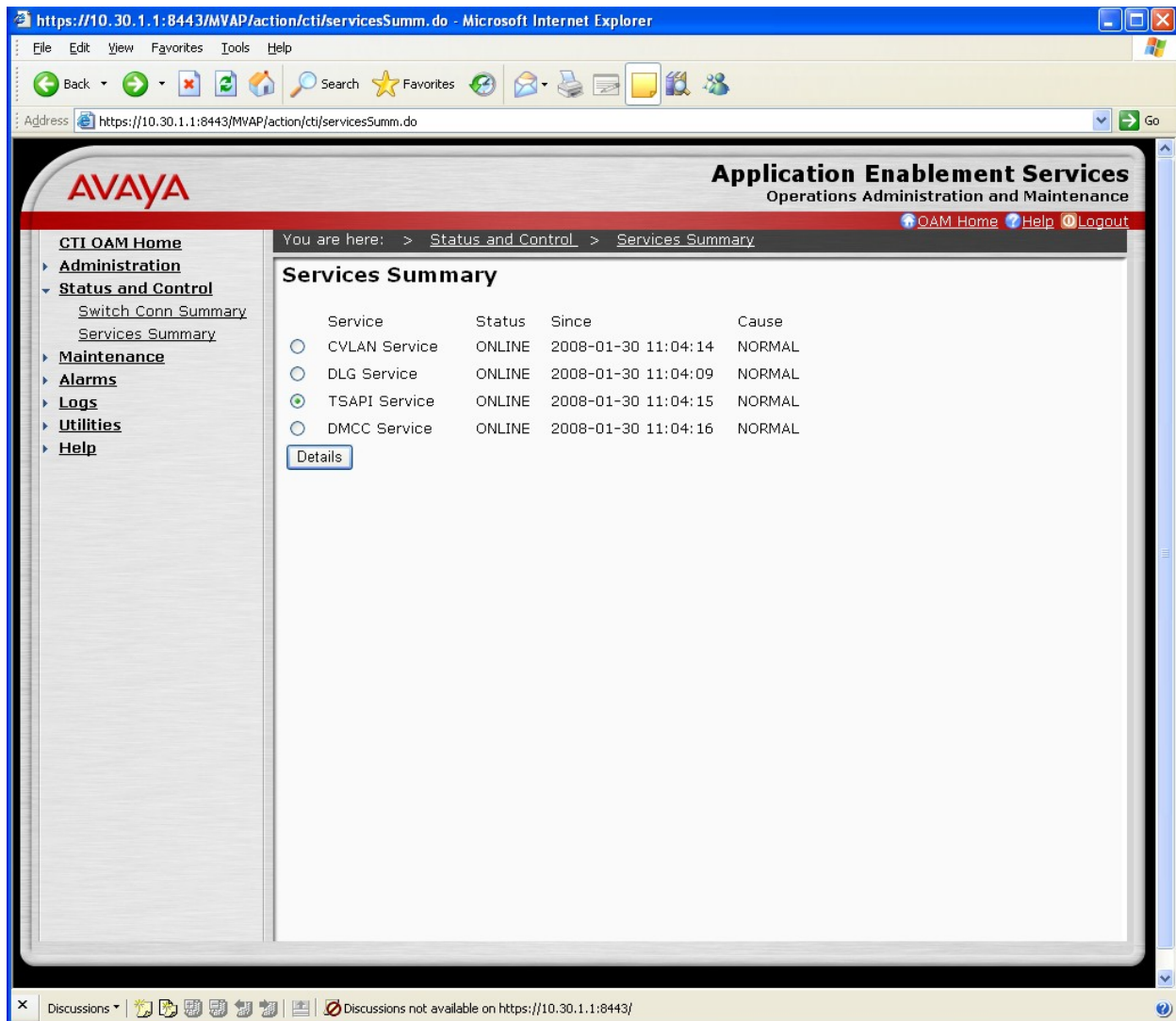


Figure 43: Services Summary

3. The TSAPI Link Details screen is displayed, as shown in **Figure 44**.

https://10.30.1.1:8443/MVAP/action/cti/servicesSumm.do - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail News RSS Feeds

Address https://10.30.1.1:8443/MVAP/action/cti/servicesSumm.do Go

AVAYA **Application Enablement Services**
Operations Administration and Maintenance

[OAM Home](#) [Help](#) [Logout](#)

You are here: > [Status and Control](#) > [Services Summary](#)

TSAPI Link Details

Link	Switch Conn Name	Switch CTI Link Number	Conn Status	Since	Service State	Switch Version	Number of Associations	ASAI Message Rate
1	S8500	1	Talking	2008-04-03 11:32:13.0	Online	15	8	15

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

Discussions Discussions not available on https://10.30.1.1:8443/

Figure 44: TSAPI Link Details

4. Verify the status of **DMCC Service** by selecting **Status and Control > Services Summary** from the Avaya Application Enablement Services **CTI OAM Home** menu shown in **Figure 45**.

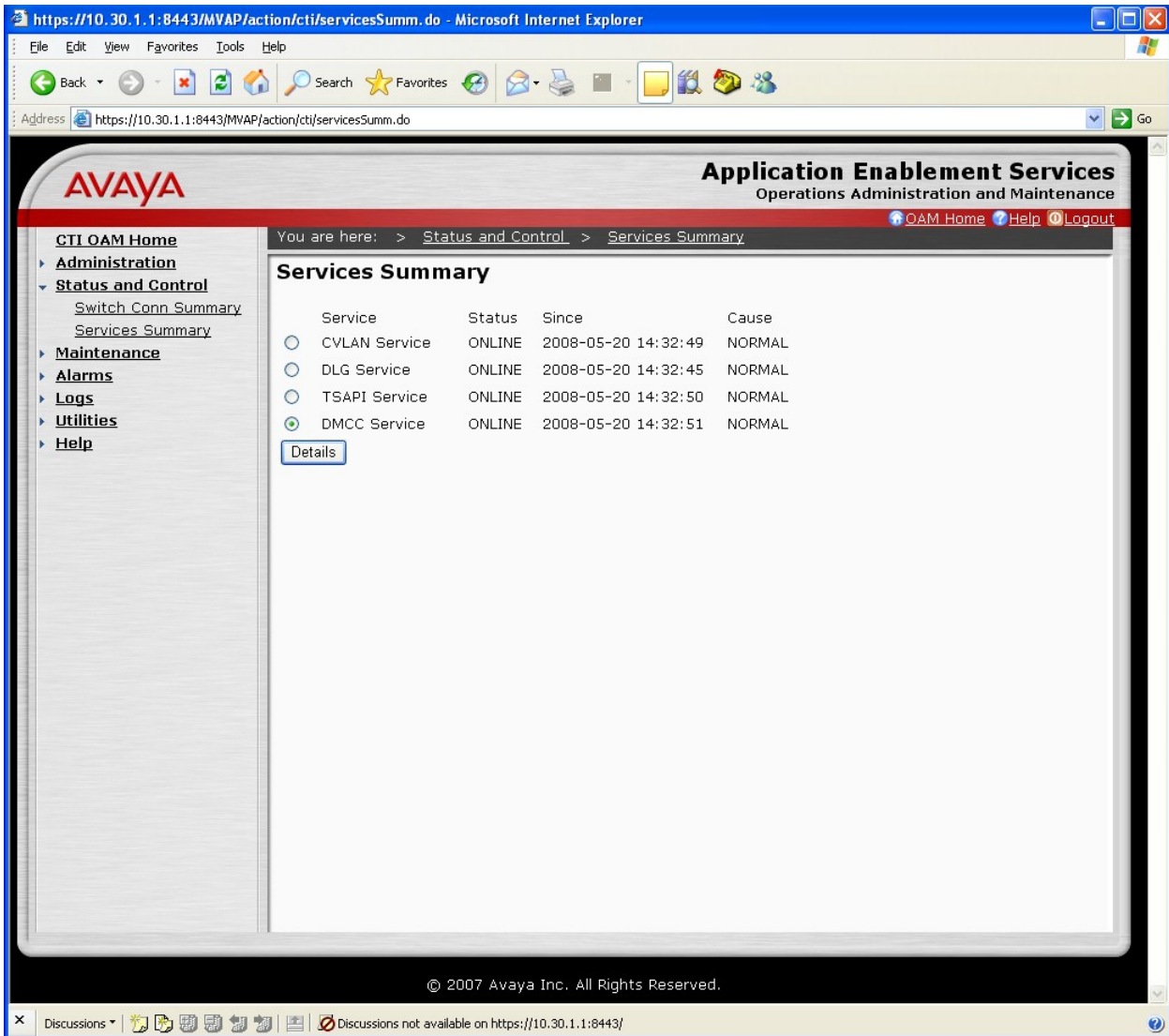


Figure 45: DMCC Service

5. Select **DMCC Services** click on **Details**. **Figure 46** displays the active session ID with Verint. Click on the **Session ID** number.

The screenshot shows the Avaya Application Enablement Services (AES) web interface. The browser address bar shows <https://10.30.1.1:8443/MVAP/action/cti/servicesSumm.do>. The page title is "Application Enablement Services" with the subtitle "Operations Administration and Maintenance". The left sidebar contains a navigation menu with categories: CTI OAM Home, Administration, Status and Control (selected), Maintenance, Alarms, Logs, Utilities, and Help. Under "Status and Control", there are links for Switch Conn Summary, Services Summary (selected), and Maintenance. The main content area is titled "DMCC Service Summary - Session Summary". It includes a "Session Summary" link and a "Device Summary" link. Below the links, it states "Generated on Thu, May 22, 2008 02:35:52 PM EDT". The statistics section shows: Service Uptime: 2 days, 0:03 hours; Number of Active Sessions: 3; Number of Sessions Created Since Service Boot: 44; Number of Existing Devices: 9; and Number of Devices Created Since Service Boot: 266. A table lists active sessions with columns: Session ID, User, Application, Far-end Identifier, Connection Type, and # of Associated Devices. The table contains one row with the Session ID [1D6AF73FBD6155A56](#) and [63DA1A933DB0006-47](#), User verint, Application UltraCMAPI1, Far-end Identifier 10.20.1.50, Connection Type XML Unencrypted, and # of Associated Devices 8. Below the table are two buttons: "Terminate Sessions" and "Show Terminated Sessions". The footer of the page shows "© 2007 Avaya Inc. All Rights Reserved." and a message "Discussions not available on https://10.30.1.1:8443/".

Session ID	User	Application	Far-end Identifier	Connection Type	# of Associated Devices
1D6AF73FBD6155A56 63DA1A933DB0006-47	verint	UltraCMAPI1	10.20.1.50	XML Unencrypted	8

Figure 46: Active Session

6. The DMCC Summary displayed in **Figure 47** shows a list of virtual stations configured in **Section 3.4, Step 1** for Single Step Conferencing, and are registered by Verint Systems Audiolog software. For each User / Agent extension being recorded, one of these registered DeviceID is assigned.

The screenshot shows the Avaya Application Enablement Services (AES) interface. The browser address bar displays the URL: <https://10.30.1.1:8443/MVAP/action/cti/sessionDetail.do?submit=refresh&id=1D6AF73FBD6155A5663DA1A933DB0006-47>. The page title is "Application Enablement Services" with the subtitle "Operations Administration and Maintenance". The breadcrumb trail shows "You are here: > Status and Control > Services Summary".

The main content area is titled "DMCC Service Summary - Session Detail". It includes a "Detailed Session View" section with the following information:

- Generated on Thu, May 22, 2008 02:35:59 PM EDT
- Session ID: 1D6AF73FBD6155A5663DA1A933DB0006-47
- State: Active
- Time Established: Thu, May 22, 2008 02:26:02 PM EDT
- Uptime: 0 hours, 9 minutes, 56 seconds,
- Cleanup Delay Timer (seconds): 30
- Session Duration Timer (seconds): 30
- Time of Most Recent Timer Reset: 0

Below the session details is a "Terminate Session" button. The "Devices Associated with Session" section contains a table with the following data:

<input type="checkbox"/>	Device ID	State
<input type="checkbox"/>	60604:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60606:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60602:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60607:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60601:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60605:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60603:S8500:192.2.5.6:0	REGISTERED
<input type="checkbox"/>	60608:S8500:192.2.5.6:0	REGISTERED

At the bottom of the table is a "Terminate Selected Devices" button. The footer of the page states "© 2007 Avaya Inc. All Rights Reserved.".

Figure 47: Virtual Device Registered

7.3. Verint Systems Audiolog Monitoring

1. Verify monitoring on the Verint Systems Audiolog application; activate the Manager and CTILink applications. **Figure 48** displays information regarding the previous call in terms of channel utilized, duration, etc.

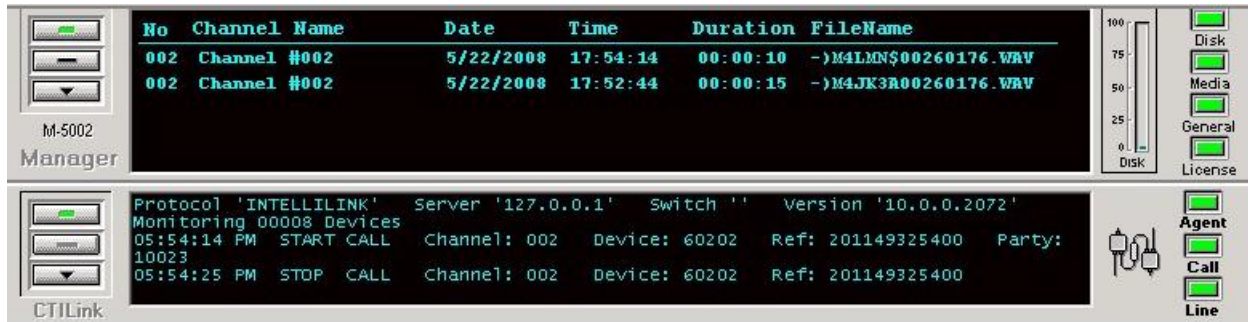



Figure 48: Verint Systems Audiolog User Application

2. Click the  (middle) button on the Player application as in **Figure 49**.

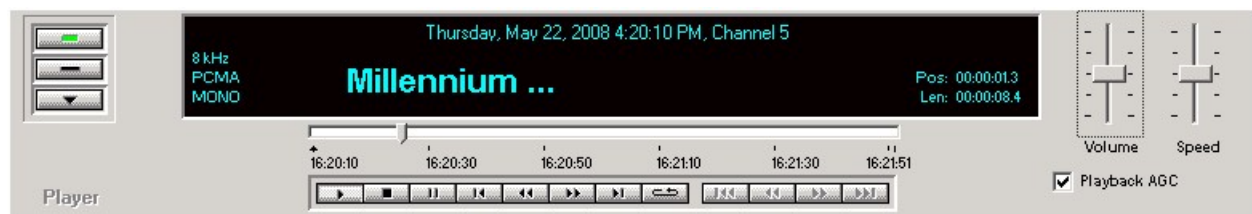
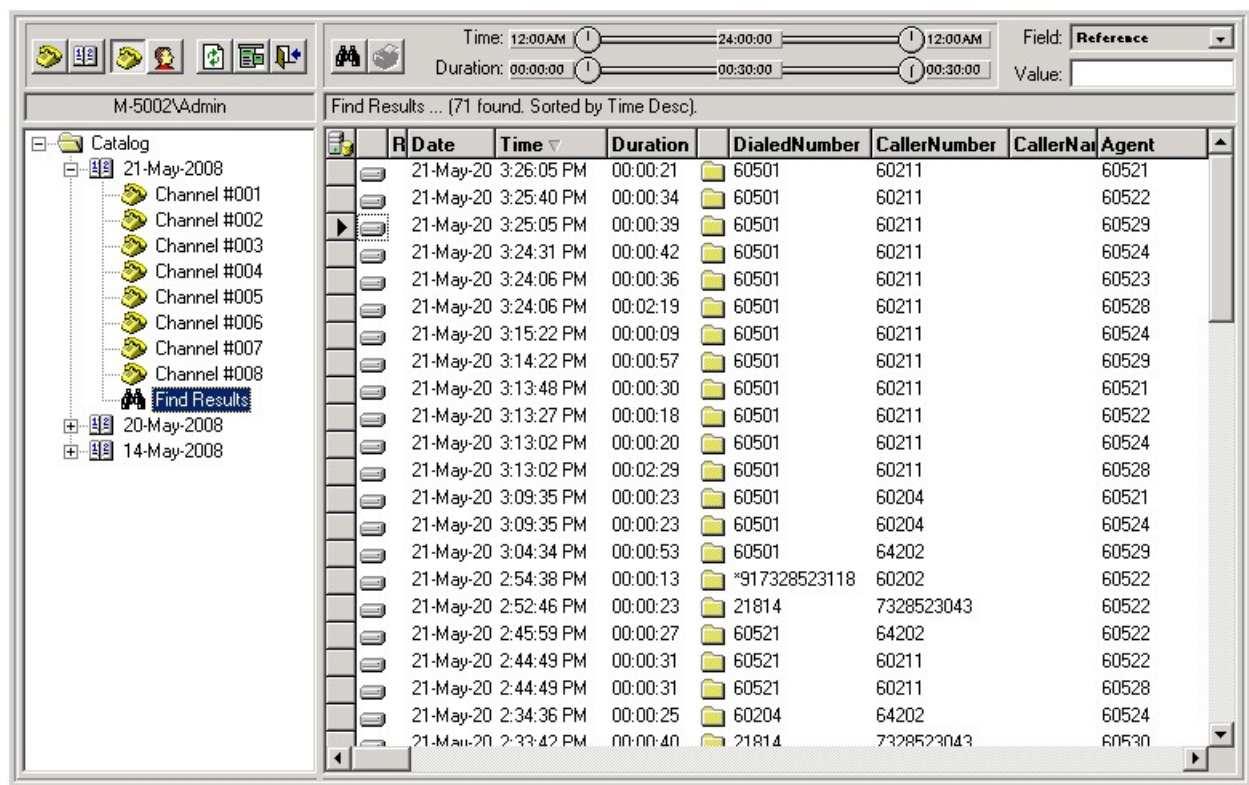


Figure 49: Play Application

7.4. Verint Systems Audiolog Reports

Details relating to any recorded call can be located within the Player application.

1. Many details related to a call can be located and categorized within this application.
Listening to details of any call can also be performed.



The screenshot shows the Verint Systems Audiolog Player application interface. On the left is a 'Catalog' tree with folders for '21-May-2008', '20-May-2008', and '14-May-2008'. The '21-May-2008' folder is expanded, showing sub-folders for 'Channel #001' through 'Channel #008'. A 'Find Results' button is visible. The main area displays a table of search results, sorted by Time Desc. The table has columns: R, Date, Time, Duration, DialedNumber, CallerNumber, CallerName, and Agent. The results list 20 calls from May 21, 2008, at various times between 2:33 PM and 3:26 PM. Most calls are from DialedNumber 60501 to CallerNumber 60211, with Agent 60521 or 60522. One call at 2:54:38 PM has DialedNumber *917328523118 and CallerNumber 60202, with Agent 60522. The last entry is partially cut off.

R	Date	Time	Duration	DialedNumber	CallerNumber	CallerName	Agent
	21-May-20	3:26:05 PM	00:00:21	60501	60211		60521
	21-May-20	3:25:40 PM	00:00:34	60501	60211		60522
	21-May-20	3:25:05 PM	00:00:39	60501	60211		60529
	21-May-20	3:24:31 PM	00:00:42	60501	60211		60524
	21-May-20	3:24:06 PM	00:00:36	60501	60211		60523
	21-May-20	3:24:06 PM	00:02:19	60501	60211		60528
	21-May-20	3:15:22 PM	00:00:09	60501	60211		60524
	21-May-20	3:14:22 PM	00:00:57	60501	60211		60529
	21-May-20	3:13:48 PM	00:00:30	60501	60211		60521
	21-May-20	3:13:27 PM	00:00:18	60501	60211		60522
	21-May-20	3:13:02 PM	00:00:20	60501	60211		60524
	21-May-20	3:13:02 PM	00:02:29	60501	60211		60528
	21-May-20	3:09:35 PM	00:00:23	60501	60204		60521
	21-May-20	3:09:35 PM	00:00:23	60501	60204		60524
	21-May-20	3:04:34 PM	00:00:53	60501	64202		60529
	21-May-20	2:54:38 PM	00:00:13	*917328523118	60202		60522
	21-May-20	2:52:46 PM	00:00:23	21814	7328523043		60522
	21-May-20	2:45:59 PM	00:00:27	60521	64202		60522
	21-May-20	2:44:49 PM	00:00:31	60521	60211		60522
	21-May-20	2:44:49 PM	00:00:31	60521	60211		60528
	21-May-20	2:34:36 PM	00:00:25	60204	64202		60524
	21-May-20	2:33:42 PM	00:00:40	21814	7328523043		60530

Figure 50: Report and Results

8. Support

Verint Systems Audiolog systems are sold through system resellers. For technical support, the reseller should be first contacted. For other Verint Systems information, contact the following:

- Call the Verint Systems technical support at 1(866) 787-2020.
- Submit a questionnaire to Verint Systems technical support at ESSupport@verint.com.
- For more information visit <http://www.verint.com>.

9. Conclusion

These Application Notes describe the configuration steps required for Verint Systems Audiolog Release 4.0 Service Pack 2 to successfully interoperate with Avaya Communication Manager 5.0.0 using Avaya Application Enablement Services 4.1. All feature functionality and serviceability test cases were completed successfully.

10. Additional References

This section references the product documentation relevant to these Application Notes.

[1] *Verint Audiolog CTI Integration*. CTILink – IntelliLink Integration Note. Version C – May 2008, CTI_IL_008C.

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