



Avaya Solution & Interoperability Test Lab

Application Notes for Virtual Hold Concierge with Avaya Communication Manager using Avaya Application Enablement Services – Issue 1.0

Abstract

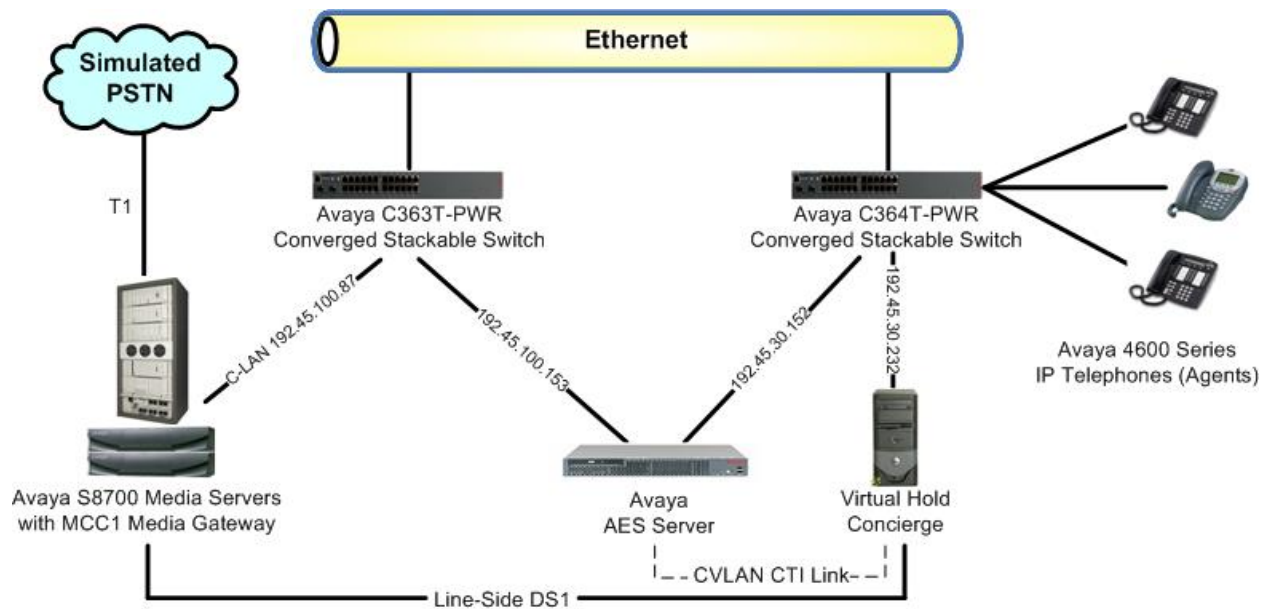
These Application Notes describe the configuration steps required for Virtual Hold Concierge to successfully interoperate with Avaya Communication Manager using Avaya Application Enablement Services. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

Virtual Hold Concierge is a contact center solution that provides intelligent queue management when incoming call traffic exceeds agent availability. Concierge calculates and informs the caller of expected wait time, maintains the caller position in a virtual queue, and calls the caller back when the caller's turn comes up. The CTI integration with Avaya Communication Manager is achieved through the Avaya Application Enablement Services (AES) CVLAN service.

Concierge uses the Avaya AES CVLAN service to query and monitor the skill/ACD queues. The information obtained from the CTI event reports is used to calculate the expected wait time. All incoming calls are routed by Concierge using the CTI adjunct routing capabilities. When the expected wait time for the skill/ACD queue reaches a defined threshold, Concierge can specify the call to be routed to an available line-side DS1 station that terminates to Concierge. The internal Interactive Voice Response (IVR) component of Concierge will play the expected wait time announcement and provide the caller with options to continue to wait in queue or to be called back.

Callers that decide to continue to wait in queue will be transferred by Concierge to the skill/ACD queue. Callers that decide to be called back will be prompted for a callback number and time, and Concierge will track the caller position in a virtual queue. When it is almost time for the caller to be serviced from the virtual queue, Concierge will place a callback call to the caller, and transfer the call to the skill/ACD queue with priority, such that the call will be placed in front of the queue. The callback calls are originated from available line-side DS1 stations. The DS1 circuit pack on Avaya Communication Manager is physically connected to the Dialogic T1/E1 card on Concierge. Callback calls are originated by Concierge from an available port on the Dialogic T1/E1 card, with call progress tones and tone detection handled by Concierge. When the callback call is connected and accepted by the caller, Concierge then utilizes the CTI domain control capabilities to transfer the callback call to the skill/ACD queue.



2. Equipment and Software Validated

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

Equipment	Software
Avaya S8700 Media Servers	Communication Manager 3.0.1, load 346.0
Avaya MCC1 Media Gateway <ul style="list-style-type: none"> TN799DP C-LAN Circuit Pack TN464GP DS1 Interface 	HW01 FW015 HW02 FW018
Avaya Application Enablement Services	3.0, build 46
Avaya C363T-PWR Converged Stackable Switch	4.5.14
Avaya C364T-PWR Converged Stackable Switch	4.5.14
Avaya 4600 Series IP Telephones	1.8.3 (4624), 2.1.3 (4610SW)
Virtual Hold Concierge on Dell Optiplex 170L with Windows 2003 Server <ul style="list-style-type: none"> Dialogic D240JCT-T1 Card 	6.2.0.1

3. Configure Avaya Communication Manager

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

- Verify Avaya Communication Manager License
- Administer IP node name for C-LAN
- Administer IP interface for C-LAN
- Administer data module for C-LAN
- Administer IP services for AES transport link
- Administer CTI link for CVLAN service
- Administer vectors and VDNs
- Administer line-side DS1 stations

The detailed administration of contact center devices, such as ACD/skill groups, logical agents and station extensions are assumed to be in place and are not covered in these Application Notes.

For the compliance testing, a skill group number of “101” with extension number “54101” was created. This information will be used to configure the vectors in **Section 3.7** and the Virtual Hold Concierge agent groups in **Section 5.3**.

3.1. Verify Avaya Communication Manager License

Log into the System Access Terminal (SAT) to verify that the Avaya Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “display system-parameters customer-options” command to verify that both the **ASAI Link Core Capabilities** and **ASAI Link Plus Capabilities** customer options are set to “y” on **Page 3**.

display system-parameters customer-options		Page 3 of 11
OPTIONAL FEATURES		
Abbreviated Dialing Enhanced List? y	Audible Message Waiting? y	
Access Security Gateway (ASG)? n	Authorization Codes? y	
Analog Trunk Incoming Call ID? y	Backup Cluster Automatic Takeover? n	
A/D Grp/Sys List Dialing Start at 01? y	CAS Branch? n	
Answer Supervision by Call Classifier? y	CAS Main? n	
ARS? y	Change COR by FAC? n	
ARS/AAR Partitioning? y	Computer Telephony Adjunct Links? y	
ARS/AAR Dialing without FAC? y	Cvg Of Calls Redirected Off-net? y	
ASAI Link Core Capabilities? y	DCS (Basic)? y	
ASAI Link Plus Capabilities? y	DCS Call Coverage? Y	

Navigate to **Page 6**, and verify that the **Vectoring (Basic)** customer option is set to “y”.

display system-parameters customer-options		Page 6 of 11
CALL CENTER OPTIONAL FEATURES		
Call Center Release: 3.0		
ACD? y	Reason Codes? y	
BCMS (Basic)? y	Service Level Maximizer? n	
BCMS/VuStats Service Level? y	Service Observing (Basic)? y	
BSR Local Treatment for IP & ISDN? n	Service Observing (Remote/By FAC)? y	
Business Advocate? n	Service Observing (VDNs)? y	
Call Work Codes? y	Timed ACW? y	
DTMF Feedback Signals For VRU? n	Vectoring (Basic)? y	
Dynamic Advocate? n	Vectoring (Prompting)? y	
Expert Agent Selection (EAS)? y	Vectoring (G3V4 Enhanced)? Y	

3.2. Administer IP Node Name for C-LAN

Use the “change node-names ip” command, and add an entry for the C-LAN that will be used for connectivity to the AES server. In this case, “clan-1b09” and “192.45.100.87” are entered as **Name** and **IP Address**. The actual node name and IP address may vary. Submit these changes.

```
change node-names ip

                                IP NODE NAMES

      Name      IP Address
clanP2-1a04    192.168.61 .21
clanP27-2a03   172.16 .252.200
clanP7-3a04    192.168.1 .10
default        0 .0 .0 .0
clan-1b09     192.45 .100.87
```

3.3. Administer IP Interface for C-LAN

Add the C-LAN to the system configuration using the “add ip-interface 1b09” command. Note that the actual slot number may vary. In this case, “1b09” is used as the slot number. Enter the C-LAN node name assigned from **Section 3.2** into the **Node Name** field. The **IP Address** field will be populated automatically.

Enter proper values for the **Subnet Mask** and **Gateway Address** fields. In this case, “255.255.255.0” and “192.45.100.1” are used to correspond to the network configuration in these Application Notes. Set the **Enable Ethernet Port** field to “y”, and use a separate **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 1b09

                                IP INTERFACES

      Type: C-LAN
      Slot: 01B09
      Code/Suffix: TN799 D
      Node Name: clan-1b09
      IP Address: 192.45 .100.87
      Subnet Mask: 255.255.255.0
      Gateway Address: 192.45 .100.1
      Enable Ethernet Port? y
      Network Region: 2
      VLAN: n

Number of CLAN Sockets Before Warning: 400

                                ETHERNET OPTIONS

      Auto? y
```

3.4. Administer Data Module for C-LAN

Add a new data module using the “add data-module n” command, where “n” is an available extension. Enter the following values:

- **Name:** A descriptive name.
- **Type:** “ethernet”
- **Port:** Same slot number from **Section 3.3** above and port “17”.
- **Link:** An available link number.

```
add data-module 2001
                                DATA MODULE

Data Extension: 2001           Name: CLAN 1B09 Data Module
      Type: ethernet
      Port: 01B0917
      Link: 11

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

3.5. Administer IP Services for AES Transport Link

Administer the transport link to the AES server with the “change ip-services” command. Add an entry with the following values for fields on **Page 1**:

- **Service Type:** “AESVCS”
- **Enabled:** “y”
- **Local Node:** C-LAN node name from **Section 3.2**.
- **Local Port:** Retain the default value of “8765”.

```
change ip-services
Page 1 of 3

IP SERVICES
Service  Enabled  Local      Local      Remote      Remote
Type     Type     Node      Port      Node        Port
SAT       y      clanP27-2a03  5023    any         0
SAT       y      clan-1b04    5023    any         0
AESVCS    y      clan-1b04    8765
AESVCS  y    clan-1b09  8765
```

Proceed to **Page 3**, and enter the following values:

- **AE Services Server:** Name obtained from the AES server, in this case “AES-DevCon2”.
- **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 are case sensitive, and 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 the screen below will need to be set on the AES server, as described in **Section 4.3**.

change ip-services				Page	3 of 3
AE Services Administration					
Server ID	AE Services Server	Password	Enabled	Status	
1:	devconaes01	*	y	in use	
2:	AES-DevCon2	*	y		
3:					

3.6. Administer CTI Link for CVLAN Service

Add a CTI link using the “add cti-link n” command, where “n” is an available CTI link number. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter “ASAI-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 3		Page	1 of 2
CTI LINK			
CTI Link: 3			
Extension: 2203			
Type: ASAI-IP			
			COR: 1
Name: Virtual Hold CVLAN CTI Link			

3.7. Administer Vectors and VDNs

Administer a set of vectors and Vector Directory Numbers (VDNs) for the following purposes:

- **Entry:** To provide adjunct routing and failure coverage.
- **Holding:** To queue incoming calls to the skill/ACD group at medium priority.
- **Callback:** To queue callback calls to the skill/ACD group at high priority.

3.7.1. Entry Vector and VDN

Modify a vector using the “change vector n” command, where “n” is an existing vector number. The vector will be used to provide adjunct routing to the CTI link defined previously in **Section 3.6**. Note that the vector **Number**, **Name**, **wait-time** step, and **route-to number** may vary. The **route-to number** is used as the covering point to provide failure coverage in case of failures from adjunct route.

```
change vector 991                                     Page 1 of 3
                                     CALL VECTOR

  Number: 991                      Name: VH Entry
Multimedia? n                      Meet-me Conf? n      Lock? n
  Basic? y      EAS? y    G3V4 Enhanced? y    ANI/II-Digits? y    ASAI Routing? y
  Prompting? y   LAI? y   G3V4 Adv Route? y    CINFO? y    BSR? n    Holidays? n
  Variables? n   3.0 Enhanced? n
01 adjunct      routing link 3
02 wait-time    20 secs hearing silence
03 route-to     number 27992      with cov n if unconditionally
04
```

Add a VDN using the “add vdn n” command, where “n” is an available extension number. Enter a descriptive name for the **Name** field, and the vector number from above for the **Vector Number** field. Retain the default values for all remaining fields.

```
add vdn 27991                                         Page 1 of 2
                                     VECTOR DIRECTORY NUMBER

                                     Extension: 27991
                                     Name: VH Entry VDN
                                     Vector Number: 991
```

3.7.2. Holding Vector and VDN

Modify a vector to queue incoming calls to the skill/ACD group at medium priority. Note that the vector **Number**, **Name**, **queue-to skill**, and **wait-time** step may vary.

change vector 992	Page 1 of 3
CALL VECTOR	
Number: 992	Name: VH Holding
Multimedia? n	Meet-me Conf? n Lock? n
Basic? y	EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y
Prompting? y	LAI? y G3V4 Adv Route? y CINFO? y BSR? n Holidays? n
Variables? n	3.0 Enhanced? n
01 queue-to	skill 101 pri m
02 wait-time	20 secs hearing ringback
03	

Add a VDN with an available extension as shown below. Enter a descriptive name for the **Name** field, and the vector number from above for the **Vector Number** field.

add vdn 27992	Page 1 of 2
VECTOR DIRECTORY NUMBER	
Extension: 27992	
Name: VH Holding	
Vector Number: 992	

3.7.3. Callback Vector and VDN

Modify a vector to queue callback calls to the skill/ACD group at high priority. Note that the vector **Number**, **Name**, **queue-to skill**, and **wait-time** step may vary.

change vector 993	Page 1 of 3
CALL VECTOR	
Number: 993	Name: VH Callback
Multimedia? n	Meet-me Conf? n Lock? n
Basic? y	EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y
Prompting? y	LAI? y G3V4 Adv Route? y CINFO? y BSR? n Holidays? n
Variables? n	3.0 Enhanced? n
01 queue-to	skill 101 pri h
02 wait-time	20 secs hearing ringback
03	

Add a VDN with an available extension as shown below. Enter a descriptive name for the **Name** field, and the vector number from above for the **Vector Number** field.

add vdn 27993	Page 1 of 2
VECTOR DIRECTORY NUMBER	
Extension: 27993	
Name: VH Callback	
Vector Number: 993	

3.8. Administer Line-Side DS1 Stations

Administer the line-side DS1 stations. Each line-side DS1 station is a port off of the DS1 circuit pack that is physically connected to the Dialogix T1/E1 card in the Virtual Hold Concierge server. Typically half of the port capacities are configured to handle inbound calls, and the other half are configured to handle outbound callback calls. For the compliance testing, two ports were configured for handling of inbound calls, and two ports for handling of outbound callback calls. The customer can vary the number of ports to be used for each purpose.

3.8.1. Inbound Line-Side DS1 Stations

Use the “add station n” command, where “n” is an available extension number. Enter the following values for the specified fields, and retain the default values for all remaining fields. Submit these changes.

- **Type:** “DS1FD” to indicate line-side DS1.
- **Port:** An available port from the DS1 circuit pack.
- **Name:** A descriptive name.

add station 22291		Page 1 of 3
STATION		
Extension: 22291	Lock Messages? n	BCC: 0
Type: DS1FD	Security Code:	TN: 1
Port: 01B1701	Coverage Path 1:	COR: 1
Name: VH Inbound Line #1	Coverage Path 2:	COS: 1
	Hunt-to Station:	Tests? y

Repeat the “add station n” command to add the desired number of line-side DS1 stations to be used for handling of inbound calls. When possible, use consecutive extension numbers for the line-side DS1 stations, for ease of configuring Virtual Hold Concierge.

3.8.2. Outbound Line-Side DS1 Stations

The procedure for creating the line-side DS1 stations for outbound callback calls is exactly the same as the procedure for creating line-side DS1 stations for inbound calls. Follow the procedure described in **Section 3.8.1** to create the desired number of line-side DS1 stations for handling of outbound callback calls.

add station 22295		Page	1 of	3
STATION				
Extension: 22295	Lock Messages? n	BCC: 0		
Type: DS1FD	Security Code:	TN: 1		
Port: 01B1705	Coverage Path 1:	COR: 1		
Name: VH Outbound Line #1	Coverage Path 2:	COS: 1		
	Hunt-to Station:	Tests? y		

Below is a listing of all line-side DS1 stations created for the compliance testing.

list station 22291 count 4							
STATIONS							
Ext/ Type	Port/ Hunt-to	Name/ Surv GK NN	Move	Room/ Data Ext	Cv1/ Cv2	COR/ COS	Cable/ Jack
22291 DS1FD	01B1701	VH Inbound Line #1	no			1	
22292 DS1FD	01B1702	VH Inbound Line #2	no			1	
22295 DS1FD	01B1705	VH Outbound Line #1	no			1	
22296 DS1FD	01B1706	VH Outbound Line #2	no			1	

3.9. Administer Hunt Group

Administer a hunt group to be used for routing of inbound calls to the line-side DS1 stations. Use the “add hunt-group n” command, where “n” is an available hunt group number. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Group Name:** A descriptive name.
- **Group Extension:** An available extension number.

add hunt-group 234		Page 1 of 60	
HUNT GROUP			
Group Number: 234		ACD? n	
Group Name: VH Inbound DS1		Queue? n	
Group Extension: 54234		Vector? n	
Group Type: ucd-mia		Coverage Path:	
TN: 1		Night Service Destination:	
COR: 1		MM Early Answer? n	
Security Code:		Local Agent Preference? n	
ISDN/SIP Caller Display:			

Navigate to **Page 3** of the **HUNT GROUP** screen, and enter the extensions of all line-side DS1 stations to be used for handling of inbound calls from **Section 3.8.1**. Submit these changes.

add hunt-group 234		Page 3 of 60	
HUNT GROUP			
Group Number: 234		Group Extension: 54234	
Member Range Allowed: 1 - 1500		Group Type: ucd-mia	
		Administered Members (min/max): 1 / 2	
		Total Administered Members: 2	
GROUP MEMBER ASSIGNMENTS			
Ext	Name (24 characters)	Ext	Name (24 characters)
1: 22291	VH Inbound Line #1	14:	
2: 22292	VH Inbound Line #2	15:	
3:		16:	

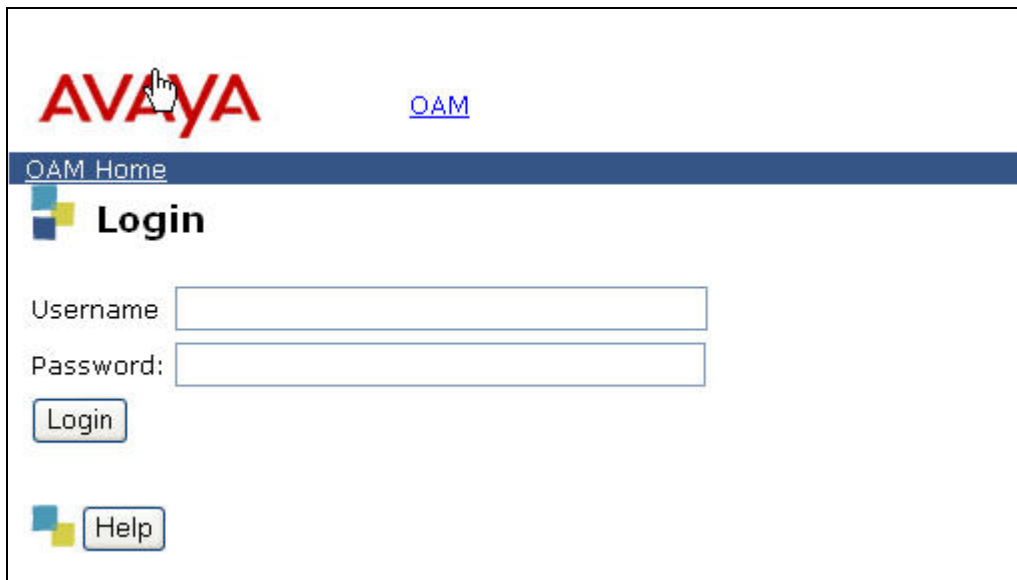
4. Configure Avaya Application Enablement Services

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

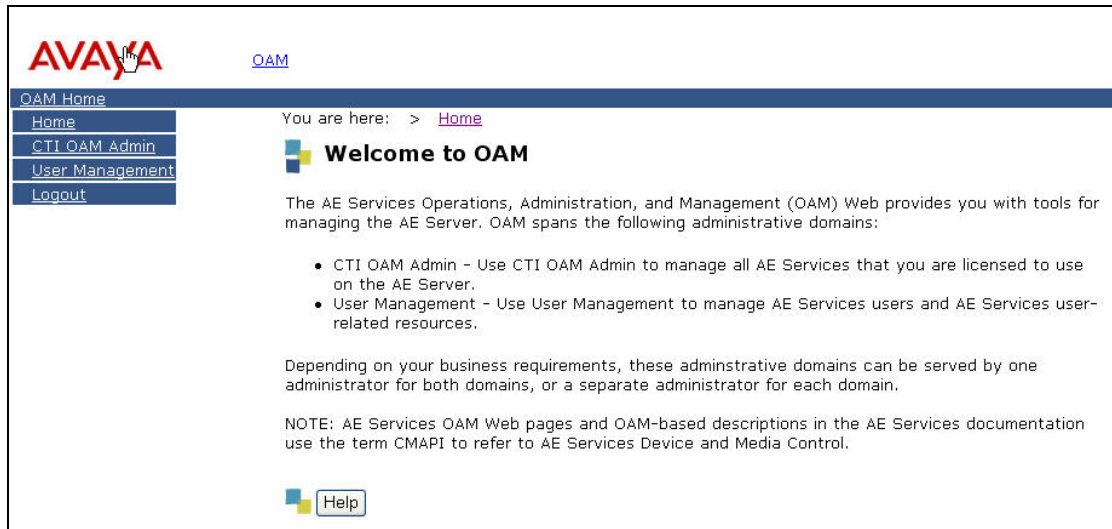
- Verify Avaya Application Enablement Services License
- Administer local IP
- Administer switch connection
- Administer CVLAN link

4.1. Verify Avaya Application Enablement Services License

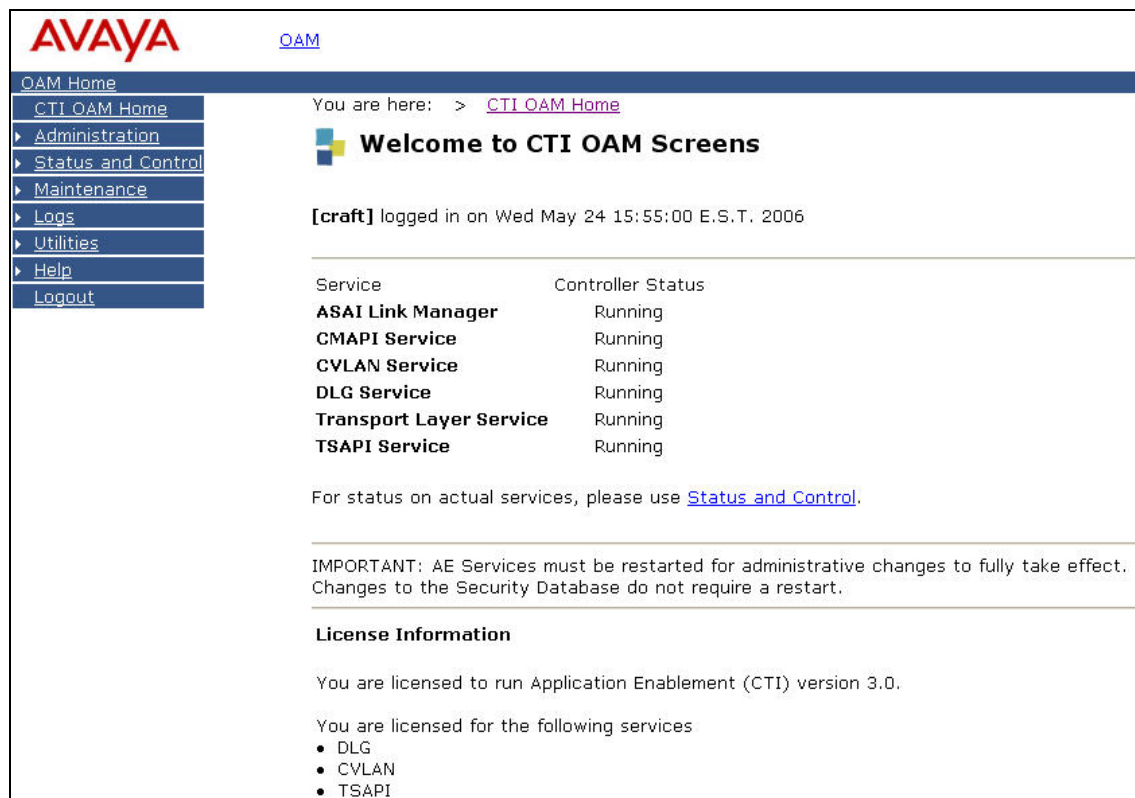
Access the AES OAM web based interface by using the URL “https://ip-address:8443/MVAP” in an Internet browser window, where “ip-address” is the IP address of the AES server. The **Login** screen is displayed as shown below. Note that the AES OAM includes two separate administrative accounts, one to access CTI OAM Admin and a separate one to access User Management. Log in using the CTI OAM Admin user name and password.

The screenshot shows the Avaya OAM login interface. At the top left is the red 'AVAYA' logo with a mouse cursor pointing at it. To its right is a blue link labeled 'OAM'. Below these is a dark blue horizontal bar with the text 'OAM Home' in white. Underneath the bar, on the left, is a small blue and yellow square icon followed by the word 'Login' in bold. The main area contains two text input fields: 'Username' and 'Password:'. Below the 'Password:' field is a 'Login' button. At the bottom left, there is another small blue and yellow square icon followed by a 'Help' button.

The **Welcome To OAM** screen is displayed, as shown below. Select **OAM Home > CTI OAM Admin** from the left pane.



The **Welcome to CTI OAM Screens** is displayed. Verify that the Avaya Application Enablement Services license has proper permissions for the features illustrated in these Application Notes by ensuring the CVLAN service is licensed, as shown in the bottom of the screen below. If the CVLAN service is not licensed, contact the Avaya sales team or business partner for a proper license file.



4.2. Administer Local IP

From the **CTI OAM Home** menu in the left pane, select **Administration > Local IP**. The **Local IP** screen is displayed into the right pane, as shown below. In the **Client Connectivity** field, select the AES server IP address that will be used to connect to Virtual Hold Concierge. 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**.

The screenshot shows the Avaya OAM interface. The left navigation pane has a tree structure with 'Administration' expanded, showing 'Local IP' as the selected item. The main content area is titled 'Local IP' and contains three dropdown menus: 'Client Connectivity' (set to 'eth0:192.45.30.152'), 'Switch Connectivity' (set to 'eth1:192.45.100.153'), and 'Media Connectivity' (set to 'Any'). An 'Apply Changes' button is located below these fields. The breadcrumb trail at the top reads 'You are here: > Administration > Local IP'.

4.3. Administer Switch Connection

From the **CTI OAM Home** menu in the left pane, select **Administration > Switch Connections**. The **Switch Connections** screen is displayed, as shown below. Enter a descriptive name for the switch connection and click on **Add Connection**. In this case, “devcon27S8700” is used. Note that the actual switch connection name may vary.

The screenshot shows the Avaya OAM 'Switch Connections' page. The left navigation pane has 'Switch Connections' selected under 'Administration'. The main content area has a text input field containing 'devcon27S8700' and an 'Add Connection' button. Below this, a table lists existing connections. The first entry is 'devcon35S8710' with a status icon (a green circle with a dot) and '0' active connections. At the bottom of the table are four buttons: 'Edit Connection', 'Edit CLAN IPs', 'Edit H.323 Gatekeeper', and 'Delete Connection'. The breadcrumb trail at the top reads 'You are here: > Administration > Switch Connections'.

Next, the **Set Password – devcon27S8700** screen is displayed. Enter the same password that was administered in the Avaya Communication Manager **IP SERVICES** screen from **Section 3.5**, and re-enter the same password in the **Confirm Switch Password** field. Retain the check in the **SSL** check box. Had the switch been an Avaya DEFINITY Server G3csi, the **SSL** would need to be unchecked. Click on **Apply**.

The **Switch Connections** screen is displayed next, as shown below. Select the newly added switch connection name from the listing, and click on **Edit CLAN IPs**.

	Connection Name	Number of Active Connections
<input checked="" type="radio"/>	devcon27S8700	0
<input type="radio"/>	devcon35S8710	0

The **Edit CLAN IPs – devcon27S8700** screen is displayed next. Enter the host name or IP address of the C-LAN used for AES connectivity from **Section 3.2**. In this case, “192.45.100.87” is used. Click on **Add Name or IP**.

4.4. Administer CVLAN Link

To administer a CVLAN link, select **Administration > CTI Link Admin > CVLAN Links** from the **CTI OAM Home** menu in the left pane. The **CVLAN Links** screen is displayed, as shown below. Click on **Add Link**.

Signal	Proprietary	Switch Connection	Switch CTI Link Number	ASAI Link Version	Heartbeat State	Active Clients
2	YES	devcon27S8700	2	4	OFF	0
3	YES	devcon35S8710	7		ON	0
4	NO	devcon35S8710	8		ON	0

Buttons: Add Link, Edit Link, Delete Link, Edit Client

The **Add/Edit CVLAN Link** screen is displayed next. Select the following values for the specified fields, and click on **Apply Changes**.

- **Signal:** An available signal number from the drop down list.
- **Switch Connection:** Name of switch connection from **Section 4.3**.
- **Switch CTI Link Number:** CTI link number from **Section 3.6**.
- **ASAI Link Version:** Version “4” from the drop down list.

Fields:

- Signal: 5 (dropdown)
- Proprietary: ☐
- Switch Connection: devcon27S8700 (dropdown)
- Switch CTI Link Number: 3 (dropdown)
- ASAI Link Version: 4 (dropdown)
- Heartbeat: ☐

Buttons: Apply Changes, Cancel Changes

The **Apply Changes to Link** screen is displayed. Click on **Apply**.

Warning! Are you sure you want to apply the changes?
Changing the link version may drop all active clients.

Buttons: Apply, Cancel

4.5. Administer CVLAN Client

The **CVLAN Links** screen is displayed again and updated with the newly added CVLAN link. Select the radio button next to the newly added CVLAN link, and click on **Edit Client**.

	Signal	Proprietary	Switch Connection	Switch CTI Link Number	ASAI Link Version	Heartbeat State	Active Clients
<input type="radio"/>	2	YES	devcon27S8700	2	4	OFF	0
<input type="radio"/>	3	YES	devcon35S8710	7		ON	0
<input type="radio"/>	4	NO	devcon35S8710	8		ON	0
<input checked="" type="radio"/>	5	NO	devcon27S8700	3	4	OFF	0

Buttons: Add Link, Edit Link, Delete Link, Edit Client

The **Edit Clients** screen is displayed next. Enter the IP address of the Virtual Hold Concierge server, in this case “192.45.30.232”, and click on **Add Client**.

192.45.30.232

Add Client

Name or IP Address	Status
--------------------	--------

Drop Client Delete Client

5. Configure Virtual Hold Concierge

This section provides the procedures for configuring Virtual Hold Concierge. The procedures include the following areas:

- Launch configuration wizard
- Administer switch connection
- Administer agent groups
- Administer IVR servers and extensions
- Administer queues
- Administer incoming extensions

Virtual Hold Concierge can be configured on a single server or with components distributed across multiple servers. For ease of compliance testing, the configuration used a single server hosting all components.

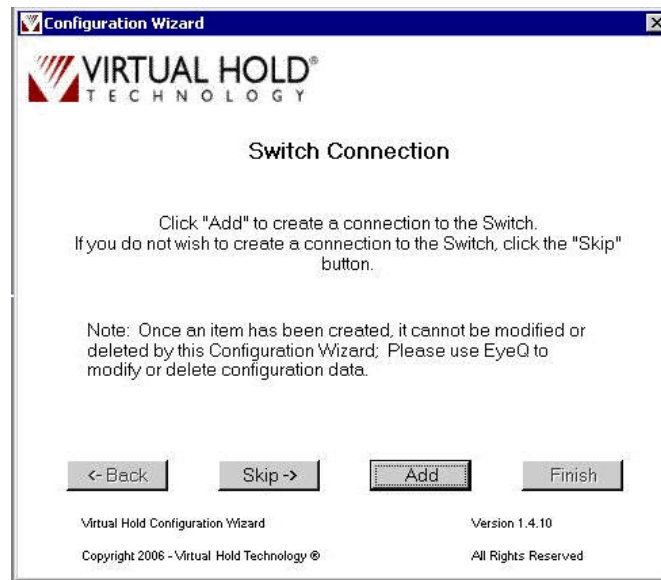
5.1. Launch Configuration Wizard

From the Virtual Hold Concierge server, navigate to **Start > Programs > VHT > VHT Configuration Wizard** to launch the Configuration Wizard. The **Welcome to the Virtual Hold Configuration Wizard** screen is displayed, as shown below. Click **Configure** to proceed.



5.2. Administer Switch Connection

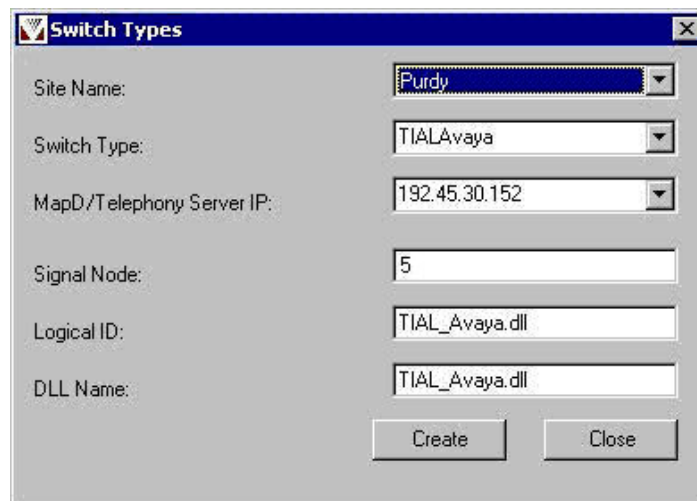
The **Switch Connection** screen is displayed. Click **Add** to create a connection to the switch.



The **Switch Types** screen is displayed next. Enter the following values for the specified fields.

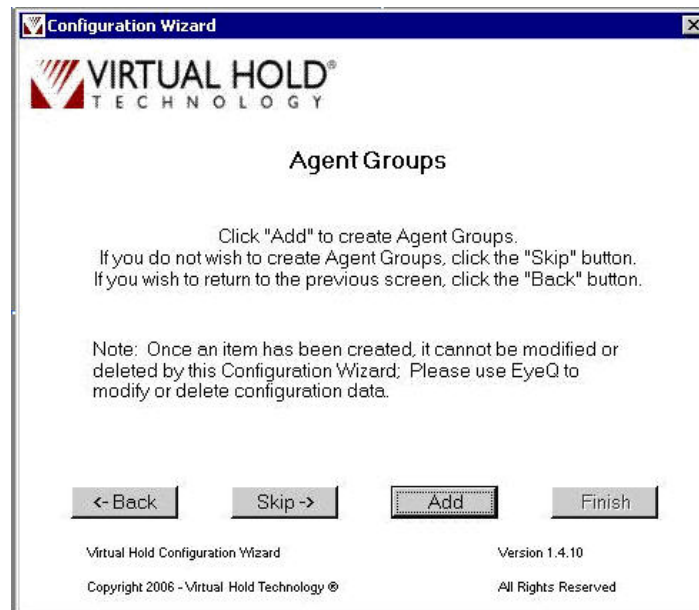
- **Switch Type:** Select "TIALAvaya" from the drop down list.
- **MapD/Telephony Server IP:** Client connectivity IP on AES server from **Section 4.2**.
- **Signal Node:** CVLAN signal number on AES server from **Section 4.4**.

Note that the value of the **Site Name** field is automatically populated and was created as part of the installation. The values in the **Logical ID** and **DLL Name** fields are changed automatically upon selecting the value for the **Switch Type** field. Click **Create**, followed by **Close**.



5.3. Administer Agent Groups

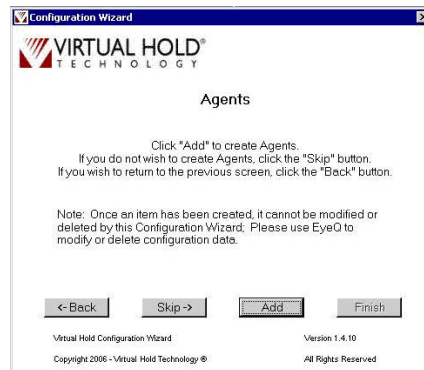
The **Agent Groups** screen is displayed. Click **Add** to create agent groups.



The **Agent Groups** screen below is displayed next. This screen is used to define the skill/ACD group. For the **Starting Agent Group** field, enter a descriptive agent group name and the agent group extension number, separated by a colon. Note that the agent group name, in this case “DevConnect”, will be used later to administer queues in **Section 5.5**. The agent group extension number, in this case “54101”, is the skill extension number on Avaya Communication Manager. Click **Create**, followed by **Close**.

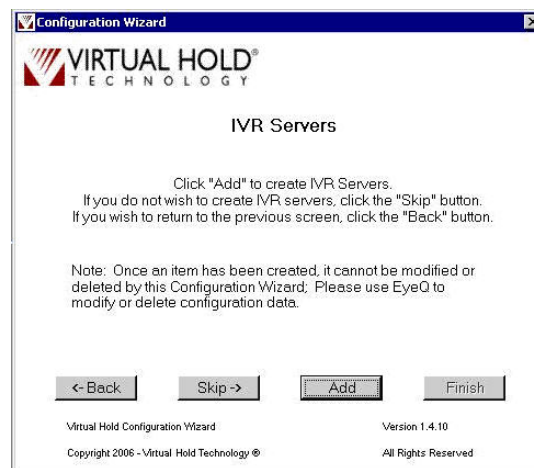


The **Agents** screen is displayed. Click **Skip**.



5.4. Administer IVR Servers and Extensions

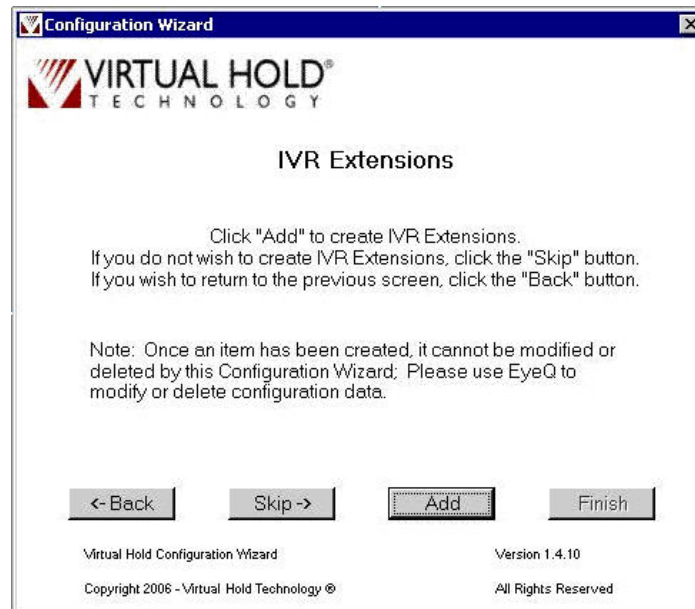
The **IVR Servers** screen is displayed. Click **Add** to create IVR servers.



The **IVR Servers** screen below is displayed next. For the **Route Point** field, enter the extension of the hunt group for the inbound line-side DS1 stations from **Section 3.9**. Default values may be retained for all remaining fields. Click **Create**, followed by **Close**.

The screenshot shows a dialog box titled "IVR Servers". It contains four input fields: "Site Name" with a dropdown menu showing "Purdy", "IVR ID" with the text "IVR", "Host Name" with the text "RUTHLESS", and "Route Point" with the text "54234". At the bottom, there are two buttons: "Create" and "Close".

The **IVR Extensions** screen is displayed. Click **Add** to create IVR extensions.



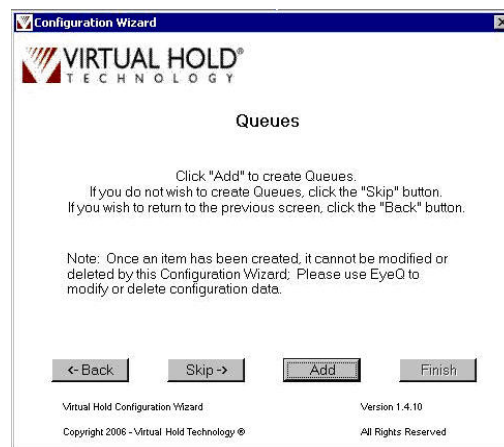
The **IVR Extensions** screen below is displayed next. For the **Starting Extension** fields, enter the starting extension number of the inbound and outbound line-side DS1 stations from **Section 3.8**. For the **Starting Time Slot** fields, enter the starting DS1 port number of the inbound and outbound line-side DS1 stations from **Section 3.8**. For the **Number to Create** fields, enter the number of inbound and outbound line-side DS1 stations that were created from **Section 3.8**. Retain the default values for all remaining fields. Click **Create**, followed by **Close**.

In the case that the line-side DS1 station extension numbers are not sequential, then each extension number will need to be entered individually on this screen.

The screenshot shows the "IVR Extensions" configuration window. At the top, "Site Name" is set to "Purdy" and "Host Name" is set to "RUTHLESS". The window is divided into two main sections: "Inbound" and "Outbound".
In the "Inbound" section:
- "Starting Extension*" is 22291
- "Starting Line Number" is 1
- "Starting Time Slot" is 1
- "Board" is 1
- "Number to Create" is 2
- The checkbox "Create Inbound Extensions" is checked.
In the "Outbound" section:
- "Starting Extension*" is 22295
- "Starting Line Number" is 3
- "Starting Time Slot" is 5
- "Board" is 1
- "Number to Create" is 2
- The checkbox "Create Outbound Extensions" is checked.
Below these sections is the "Board Type" section with three radio buttons: "T1 (24 Lines)" (selected), "E1 (30 Lines)", and "Analog (4 lines)".
At the bottom right, there are two checkboxes: "Auto Numbering" (checked) and "Extension Prefix" (unchecked).
At the very bottom are "Create" and "Close" buttons.

5.5. Administer Queues

The **Queues** screen is displayed. Click **Add** to create queues.

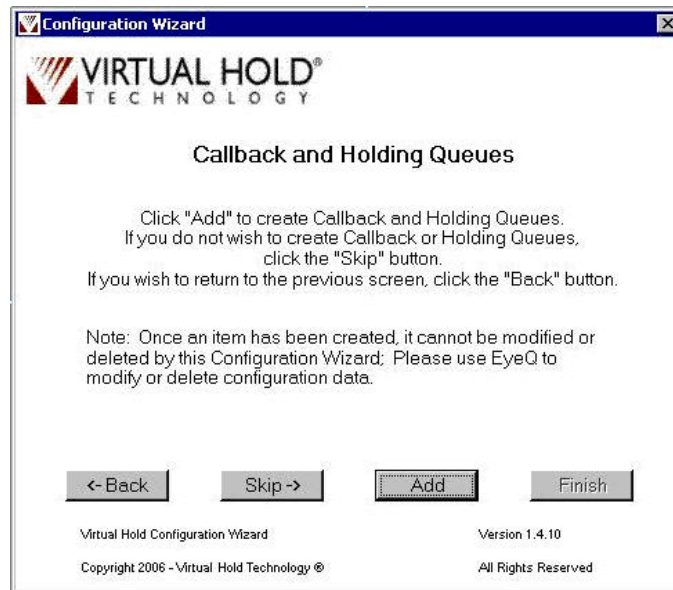


The **Queues Setup** screen is displayed next. The **QueueSettings** area contains parameters relating to the skill/ACD queue. The **Business Hours** area contains the hours of normal business operation. The **Callbacks Offered** area contains the hours of when the callback option will be offered to the callers. The **Callbacks Allowed** area contains the maximum threshold of callback calls that can be launched. Consult the Virtual Hold Concierge documentation for proper values to administer for these areas.

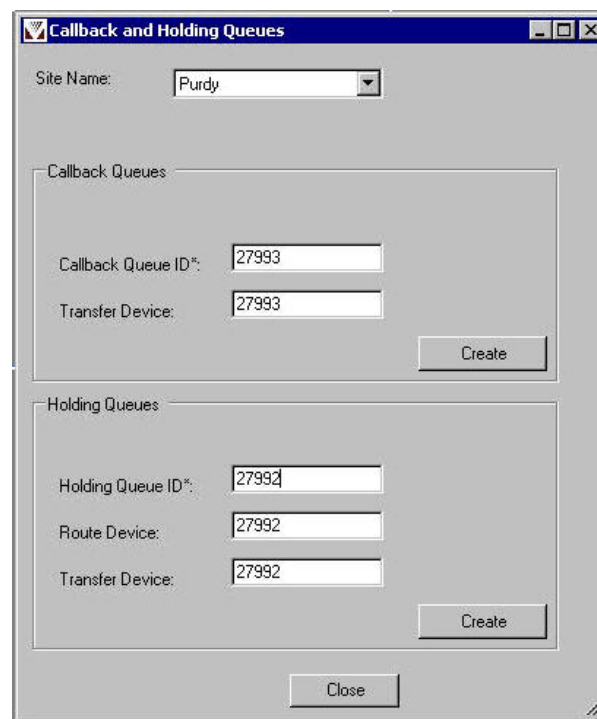
The **Queue ID** field value needs to match the agent group name from **Section 5.3**. For the compliance testing, the **Name** field was modified for a more descriptive name, as shown below. All remaining default values were retained from the **Use Test Defaults** option. Note that the **Turn On Threshold** field defines the threshold for when the incoming calls are to be routed to the line-side DS1 stations. Click **Create**, followed by **Close**.

The screenshot shows the "Queues Setup" window. At the top, "Site Name" is set to "Purdy" and "Queue ID" is "DevConnect". There are buttons for "Use Production Defaults" and "Use Test Defaults". The "QueueSettings" section includes: "Op Mode" (Normal), "Turn On Threshold (sec)" (0), "Call Handle Time (sec)" (45), "No Ans Period (sec)" (60), "Name" (DevConnect Q), "Script Number" (1), "Busy Attempts" (3), "Try Again Attempts" (3), "Mode" (Predictive), "Agents Staffed Override" (TRUE), "Busy Period (sec)" (60), "Try Again Period (sec)" (60), "Group" (VHT_Test), "Callback Threshold (sec)" (45), "No Ans Attempts" (3), and "Max Attempts" (5). The "Business Hours" section has checkboxes for all days of the week (Sun-Sat) and time ranges from 00:00 to 23:59. The "Callbacks Offered" section also has checkboxes for all days of the week and time ranges from 00:00 to 23:59. The "Callbacks Allowed" section has checkboxes for all days of the week and a "Sched callbacks allowed/15 min" field set to 15. At the bottom are "Create" and "Close" buttons.

The **Callback and Holding Queues** screen is displayed. Click **Add** to create queues.

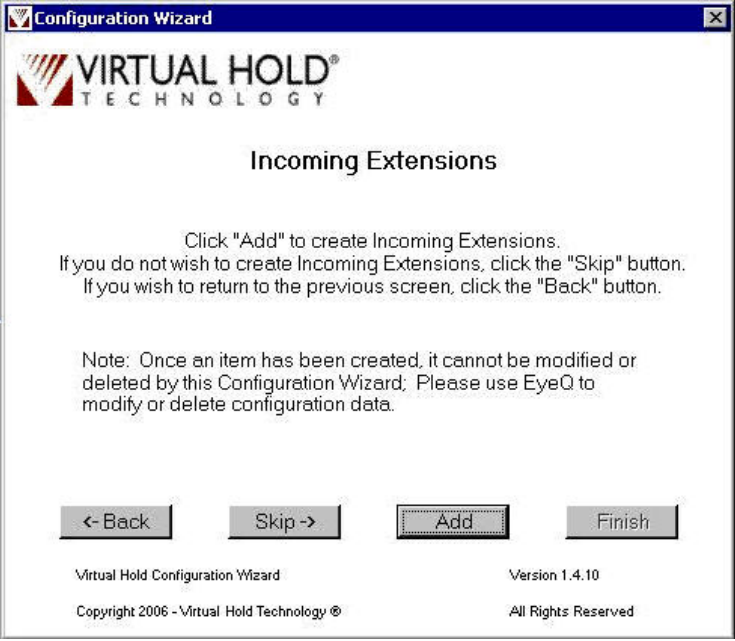


The **Callback and Holding Queues** screen below is displayed next. For the **Callback Queue ID** field, enter the extension of the Callback VDN from **Section 3.7.3**, and the corresponding **Transfer Device** field will be populated automatically. For the **Holding Queue ID** field, enter the extension of the Holding VDN from **Section 3.7.2**, and the corresponding **Route Device** and **Transfer Device** fields will be populated automatically. Retain the default in the **Site Name** field. Click **Create**, followed by **Close**.



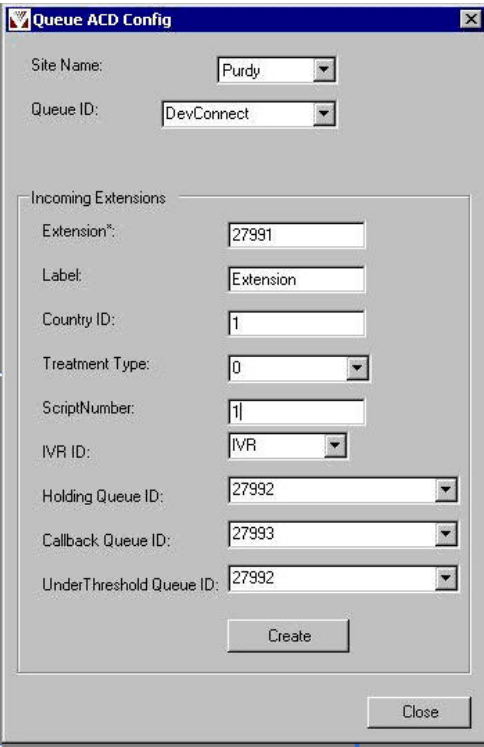
5.6. Administer Incoming Extensions

The **Incoming Extensions** screen is displayed. Click **Add**.



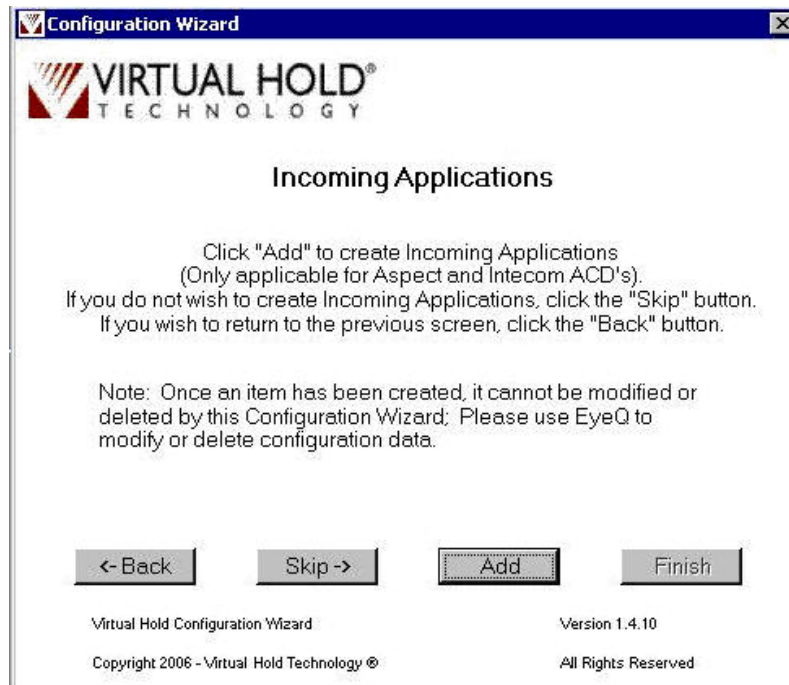
The screenshot shows a window titled "Configuration Wizard" with the Virtual Hold Technology logo. The main heading is "Incoming Extensions". Below the heading, there is instructional text: "Click 'Add' to create Incoming Extensions. If you do not wish to create Incoming Extensions, click the 'Skip' button. If you wish to return to the previous screen, click the 'Back' button." A note states: "Note: Once an item has been created, it cannot be modified or deleted by this Configuration Wizard; Please use EyeQ to modify or delete configuration data." At the bottom, there are four buttons: "<- Back", "Skip ->", "Add", and "Finish". The footer contains "Virtual Hold Configuration Wizard", "Version 1.4.10", "Copyright 2006 - Virtual Hold Technology ©", and "All Rights Reserved".

The **Queue ACD Config** screen is displayed next. For the **Extension** field, enter the extension of the Entry VDN from **Section 3.7.1**. Retain the default values in all remaining fields. Click **Create**, followed by **Close**.

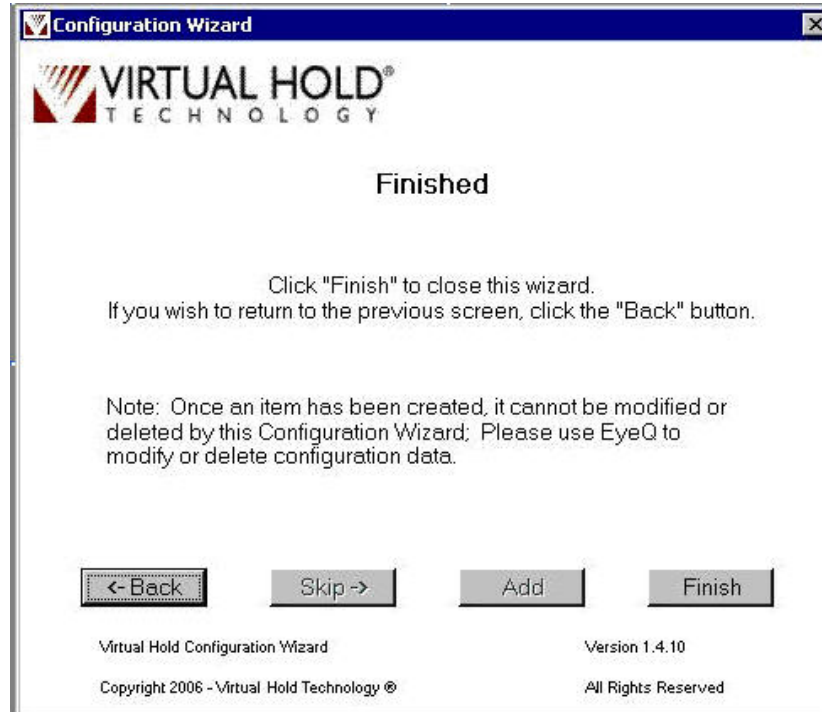


The screenshot shows a window titled "Queue ACD Config". It has two dropdown menus at the top: "Site Name:" with "Purdy" selected and "Queue ID:" with "DevConnect" selected. Below these is a section titled "Incoming Extensions" containing several fields: "Extension:" with "27991", "Label:" with "Extension", "Country ID:" with "1", "Treatment Type:" with "0" (dropdown), "ScriptNumber:" with "1", "IVR ID:" with "IVR" (dropdown), "Holding Queue ID:" with "27992" (dropdown), "Callback Queue ID:" with "27993" (dropdown), and "UnderThreshold Queue ID:" with "27992" (dropdown). At the bottom of this section is a "Create" button. At the bottom of the entire window is a "Close" button.

The **Incoming Applications** screen is displayed. Click **Skip**.



The **Finished** screen is displayed next. Click **Finish** to close the Configuration Wizard.



6. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying Virtual Hold Concierge handling of CVLAN messages in the areas of routing, domain control, event notification, and value queries. The call scenarios included building up the skill/ACD queue and expected wait time, routing of inbound calls to the inbound line-side DS1 stations, and originating and transferring of outbound callback calls.

The serviceability testing focused on verifying the ability of Virtual Hold Concierge 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

The feature test cases were performed both automatically and manually. Upon start of the Virtual Hold Concierge application, the application automatically queries Avaya Communication Manager for skill/ACD status and requests monitoring. For the manual part of the testing, incoming calls were made to the monitored VDNs to enable event reports to be sent to Virtual Hold Concierge. Manual call controls from the agent telephones were exercised to verify event reports associated with remaining features such as conferencing and transferring of calls.

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

The verification of all tests included checking of proper states at the telephone sets, and monitoring the event report logs from the Virtual Hold Concierge server log files.

6.2. Test Results

All test cases were executed and passed.

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 Virtual Hold Concierge.

7.1. Verify Avaya Communication Manager

Verify the status of the administered CTI link by using the “status aesvcs cti-link” command.

Verify the **Service State** is “established” for the CTI link number administered in **Section 3.6**, as shown below.

status aesvcs cti-link						
AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1		no		down	0	0
2	4	no	AES-DevCon2	restarted	30	15
3	4	no	AES-DevCon2	established	15	15

Verify the status of an inbound line-side DS1 station during an active inbound call using the “status station n” command, where “n” is the extension of the connected station. Verify that the **Service State** is “in-service/off-hook” as shown below.

status station 22291		Page 1 of 3	
GENERAL STATUS			
Administered Type: DS1FD		Service State: in-service/off-hook	
Connected Type: N/A		Parameter Download: not-applicable	
Extension: 22291		SAC Activated? no	
Port: 01B1701		User Cntrl Restr: none	
Call Parked? no		Group Cntrl Restr: none	
Ring Cut Off Act? no		CF Destination Ext:	
Active Coverage Option: 1			

Verify the status of an outbound line-side DS1 station during an active outbound callback call using the “status station n” command, where “n” is the extension of the connected station. Verify that the **Service State** is “in-service/off-hook” as shown below.

status station 22295		Page 1 of 3	
GENERAL STATUS			
Administered Type: DS1FD		Service State: in-service/off-hook	
Connected Type: N/A		Parameter Download: not-applicable	
Extension: 22295		SAC Activated? no	
Port: 01B1705		User Cntrl Restr: none	
Call Parked? no		Group Cntrl Restr: none	
Ring Cut Off Act? no		CF Destination Ext:	
Active Coverage Option: 1			

7.2. Verify Avaya Application Enablement Services

From the **CTI OAM Home** menu, verify the status of the switch connection by selecting **Status and Control > Switch Conn Summary** from the left pane. Verify the **Conn State** is “Talking” for the switch connection administered in **Section 4.3**, as shown below.

AVAYA OAM

OAM Home

CTI OAM Home

Administration

Status and Control

Switch Conn Summary

Services Summary

Maintenance

Logs

Utilities

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 MCI Conns	Msgs To Switch	Msgs From Switch	Msg Period
devcon27S8700	Talking	2006-05-23 11:23:11.0	Online	1 / 1	4	225	240	30
devcon31S8700	Talking	2006-05-21 22:03:31.0	Online	1 / 1	1	194	194	30
devcon35S8710	TCP Down	2006-02-07 09:06:36.0	Online	0 / 1	4	0	0	30

Online Offline Message Period Switch Connection Details

Per Service Switch Connections Details

Help

Verify the status of the CVLAN link by selecting **Status and Control > Services Summary** from the left pane. Click on **CVLAN Service**, followed by **Details**. The **CVLAN Service Summary** screen is displayed. Verify the **Conn Status** is “Talking” for the CVLAN link signal administered in **Section 4.4**, as shown below.

AVAYA OAM

OAM Home

CTI OAM Home

Administration

Status and Control

Switch Conn Summary

Services Summary

Maintenance

Logs

Utilities

Help

Logout

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

CVLAN Service Summary

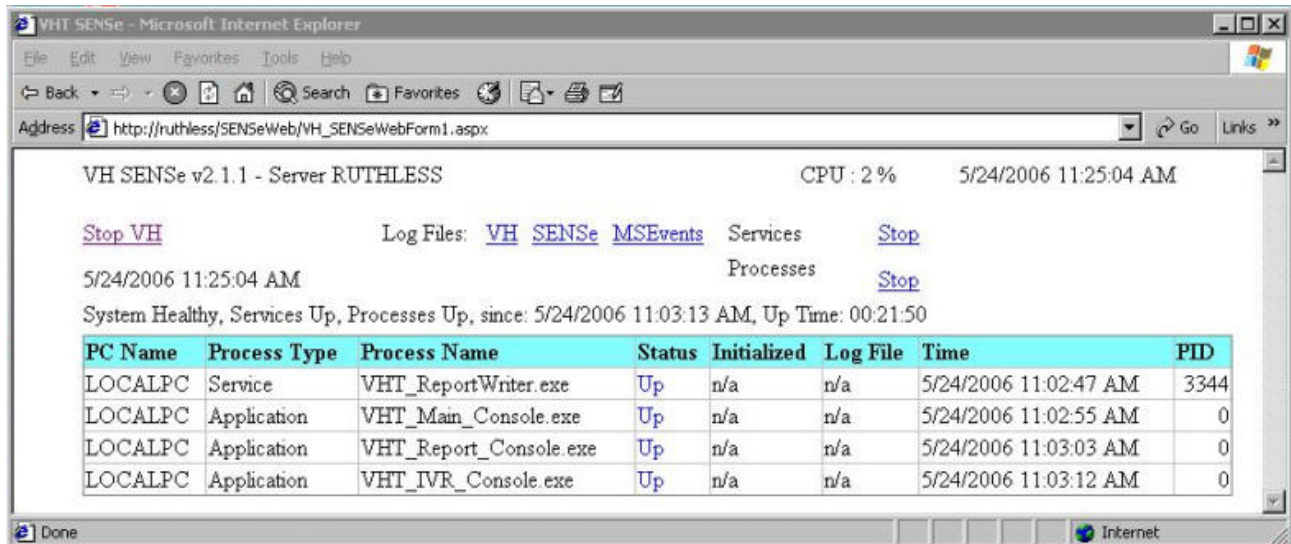
Signal	Switch Conn Name	Switch CTI Link	Conn Status	Since	Service State	Version	# of Assocs	Msgs To Switch	Msgs From Switch	Msg Period
2	devcon27S8700	2	Talking	2006-05-07 11:23:11.0	Online	4	0	15	30	30
3	devcon35S8710	7	CM Down	2006-02-07 09:06:32.0	Online		0	0	0	30
4	devcon35S8710	8	CM Down	2006-02-07 09:06:32.0	Online		0	0	0	30
5	devcon27S8700	3	Talking	2006-05-23 11:23:11.0	Online	4	0	15	15	30

Disconnect Clients Online Offline

Help

7.3. Verify Virtual Hold Concierge

Bring up the web based process monitoring window by using the URL “http://host name/SENSeWeb/VH_SENSEWebForm1.aspx” in an Internet browser window, where “host name” is the host name of the Concierge server. The screen below is displayed, and shows a listing of the processes. Verify that the **Status** of all processes is “Up”.



Bring up the web based queue monitoring window by using the URL “http://host name/eyeQ/Home.aspx” in an Internet browser window, where “host name” is the host name of the Concierge server. Log in with proper credentials. Click on the **QueueWATCH** icon followed by **Queue Statistics** (not shown). In the **Queue Statistics** screen below, verify that the data values properly reflect the current system activity.

Queue Statistics - Microsoft Internet Explorer												
Queue Name	Op Mode	Mode Status	EWT	Agents Available	Agents Staffed	ACD Queue	Holding Queue	Virtual Queue	Priority Queue	Calls in IVR	Total Calls in VH	Appts
DevConnect Queue	NORMAL		00:01:07	0	2	2	2	0	0	1	3	0

8. Support

Technical support on Virtual Hold Concierge can be obtained through the following:

- **Phone:** (866) 670-2223
- **Email:** support@virtualhold.com

9. Conclusion

These Application Notes describe the configuration steps required for Virtual Hold Concierge 6.2 to successfully interoperate with Avaya Communication Manager 3.0.1 using Avaya Application Enablement Services 3.0. All feature and serviceability test cases were completed successfully.

10. Additional References

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

- *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 1, June 2005, available at <http://support.avaya.com>
- *Avaya Application Enablement Services 3.0 Administration and Maintenance Guide*, Document ID 02-300357, Issue 1, June 2005, available at <http://support.avaya.com>.
- *Virtual Hold ACD Configuration Guide*, available from the Virtual Hold Concierge 6.2 Installation CD.
- *Virtual Hold Version 6 Deployment Guide*, available from the Virtual Hold Concierge 6.2 Installation CD.

©2006 Avaya Inc. All Rights Reserved.

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

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