



Application Notes for Witness Contact Store and Avaya Proactive Contact using Avaya PG230 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Witness Contact Store 7.7 to successfully interoperate with Avaya Proactive Contact 4.0 using Avaya PG230 switch. Witness Contact Store is a call recording solution capable of capturing audio from Avaya Communication Manager using a variety of integration mechanism. Witness Contact Store uses Avaya Proactive Contact Event Services to extract call event information and the DMCC interface to Avaya Application Enablement Services Server to obtain the audio.

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

1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya Proactive Contact 4.0.1 using Avaya PG230 switch (HardDialer) and Witness Contact Store Server 7.7.1 using PDS connector 3.0.2 (Witness CSS). Witness CSS uses the Event Service of Avaya HardDialer to extract call event information and the DMCC interface to Avaya Application Enablement Services Server (AES) to obtain the audio from Avaya Communication Manager. Additionally, Witness CSS uses the DMCC interface to Avaya AES to receive inbound call information for Predictive Agent Blending (PAB) campaign. For Outbound, Managed and Intelligent Call Blending (ICB) campaigns, Avaya HardDialer interacts directly with Avaya Communication Manager. The Avaya Proactive Contact using PG230 is a software and hardware solution.

Witness CSS uses the CMAPI extensions on Avaya Communication Manager to service observe the stations/extensions to be recorded. Witness CSS connects to Avaya Communication Manager via the DMCC interface to Avaya AES to get the audio traffic. Figure 1 shows the configuration used for the compliance testing.

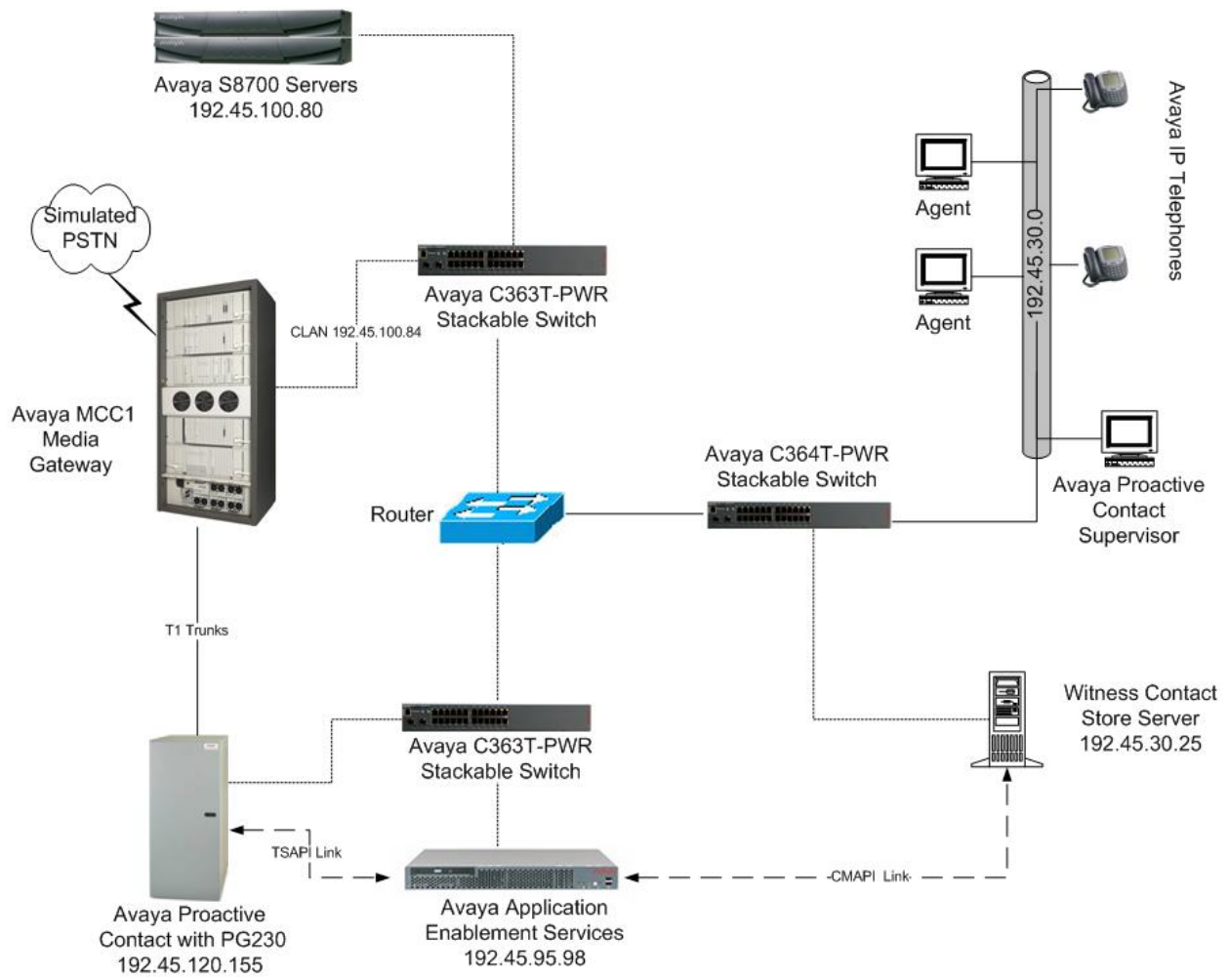


Figure 1: Avaya Proactive Contact, Avaya Communication Manager, Avaya AES and Witness Contact Store Configuration

2. Equipment and Software Validated

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

Equipment	Software
HP Proliant DL385G2	Avaya Proactive Contact 4.0.1 Build 105
Avaya S8700 Media Server	Avaya Communication Manager 4.0 (R014x.00.0.730.5)
Avaya MCC1 Media Gateway	
TN464 DS1 Interface	HW02, FW019
TN799DP C-LAN Interface	HW01 FW024
TN2302AP IP Media Processor	HW13 FW116
Avaya 4610 (H323)	2.1.3
Avaya Application Enablement Services Server	3.1.1
Avaya C363T-PWR Converged Stackable Switch	4.5.14
Witness Contact Store	7.7.1
Witness PDS connector	3.0.2

3. Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager. The following will be configured:

- Configure Avaya Communication Manager for Intelligent Call Blending on Avaya HardDialer
- Configure Avaya Communication Manager for Predictive Agent Blending on Avaya HardDialer
- Configure Service Observing feature
- Configure CMAPI stations

Configuration in the following sections is only for the fields where a value needs to be entered or modified. Default values are used for all other fields. These steps are performed from the Avaya Communication Manager System Access Terminal (SAT) interface and all changes are saved. Refer to [1] for additional details.

3.1. Configure Avaya Communication Manager for Intelligent Call Blending

Intelligent Call Blending uses T1 ports configured as DS1FD stations for inbound calls. The AAS option is used to allow the inbound ports to automatically log into the hunt group via the Agent LoginIDs. Implementation of the required DS1FD stations on Avaya Communication Manager can be achieved using the following series of steps.

Step	Description
1.	<p>Enter the add ds1 xxxxx command, where xxxxx is the location of the DS1 circuit pack. Configure the following.</p> <ul style="list-style-type: none"> • Name – Set to any descriptive string value. • Bit Rate – Set to 1.544. • Line Coding – set to ami-zcs. • Framing Mode – set to d4. • Signaling Mode – set to robbed-bit. <pre style="border: 1px solid black; padding: 10px;"> add ds1 1a14 DS1 CIRCUIT PACK Location: 01A14 Name: PDS 1-21-1 Bit Rate: 1.544 Line Coding: ami-zcs Line Compensation: 1 Framing Mode: d4 Signaling Mode: robbed-bit Interface Companding: mulaw Idle Code: 11111111 Slip Detection? n Near-end CSU Type: other </pre>

Step	Description
2.	<p>Enter add station <i>n</i> command, where <i>n</i> is a valid extension as per the dial plan configure as follows:</p> <ul style="list-style-type: none"> • Type – Set to DS1FD. • Port – Enter DS1 port number. Ports 17 through 20 are used for inbound calls. • Name – Set to any descriptive string value. • Repeat this step to configure additional DS1 ports for inbound calls. <pre data-bbox="293 495 1292 831"> add station 30501 Page 1 of 3 STATION Extension: 30501 Lock Messages? n BCC: 0 Type: DS1FD Security Code: TN: 1 Port: 01A1417 Coverage Path 1: COR: 1 Name: PDS Sta 30501 s1-21-1-17 Coverage Path 2: COS: 1 Hunt-to Station: Tests? y STATION OPTIONS Loss Group: 4 Off Premises Station? y R Balance Network? n </pre>

Step	Description
3.	<p data-bbox="289 233 1468 300">Enter add hunt-group <i>n</i> command, where <i>n</i> is an unused hunt group number and configure as follows:</p> <ul data-bbox="337 310 1317 499" style="list-style-type: none"> • Group Name – Set to any descriptive string value. • Group Extension – Set to a valid extension provisioned in the dial plan. • ACD – Set to y. • Queue – Set to y. • Vector – Set to y. <div data-bbox="293 533 1474 995" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="293 533 1474 995"> add hunt-group 621 Page 1 of 3 HUNT GROUP Group Number: 621 ACD? y Group Name: Dialer ICB Queue? y Group Extension: 30500 Vector? y Group Type: ucd-mia TN: 1 COR: 1 MM Early Answer? n Security Code: Local Agent Preference? n ISDN/SIP Caller Display: Queue Limit: unlimited Calls Warning Threshold: Port: Time Warning Threshold: Port: </pre> </div> <p data-bbox="289 1037 1451 1066">On Page 2 of the HUNT GROUP form, set the Skill and AAS fields to y as shown below.</p> <div data-bbox="293 1066 1474 1266" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="293 1066 1474 1266"> add hunt-group 621 Page 2 of 3 HUNT GROUP Skill? y AAS? y Measured: none Supervisor Extension: Controlling Adjunct: none </pre> </div>

Step	Description
4.	<p data-bbox="293 235 1328 266">Enter add agent-loginID <i>n</i> command, where <i>n</i> is valid and configure as follows:</p> <ul data-bbox="342 275 1328 422" style="list-style-type: none"> • Name – Set to any descriptive string value. • AAS – Set to y. • Port Extension – Set to Port Extension field value configured in Step 2. • Repeat this step for other agent login ids to be configured. <pre data-bbox="293 457 1479 1024"> add agent-loginID 20521 Page 1 of 2 AGENT LOGINID Login ID: 20521 AAS? y Name: Dialer ICB AUDIX? n TN: 1 LWC Reception: spe COR: 1 LWC Log External Calls? n Coverage Path: AUDIX Name for Messaging: Security Code: LoginID for ISDN Display? n Port Extension: 30501 Auto Answer: station MIA Across Skills: system ACW Agent Considered Idle: system Aux Work Reason Code Type: system Logout Reason Code Type: system Maximum time agent in ACW before logout (sec): system WARNING: Agent must log in again before changes take effect </pre> <p data-bbox="293 1066 1458 1171">Navigate to Page 2 on the AGENT LOGINID form. Set the SN (Skill Number) field to 621, this is the hunt group number administered in Step 3. Set the SL (Skill Level) field to 1.</p> <pre data-bbox="293 1207 1479 1480"> change agent-loginID 20521 Page 2 of 2 AGENT LOGINID Direct Agent Skill: Call Handling Preference: skill-level Local Call Preference? n SN SL SN SL SN SL SN SL 1: 621 1 16: 31: 46: 2: 17: 32: 47: 3: 18: 33: 48: 4: 19: 34: 49: </pre>

Step	Description
5.	<p>Enter the change vector n command, where n is an unused vector number. This vector will be used to send inbound calls to Avaya HardDialer. The vector should queue to the skill configured in Step 4.</p> <pre data-bbox="293 373 1474 674"> change vector 621 Page 1 of 3 CALL VECTOR Number: 621 Name: PDS ICB 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? y 01 queue-to skill 621 pri m 02 03 </pre>
6.	<p>This VDN will be used to send inbound calls to Avaya HardDialer. Enter add vdn n command, where n is an unused extension and configure as follows:</p> <ul data-bbox="342 793 1073 863" style="list-style-type: none"> • Name – Set to any descriptive string value. • Vector Number – Set to vector configured in Step 5. <pre data-bbox="293 898 1474 1409"> add vdn 20600 Page 1 of 3 VECTOR DIRECTORY NUMBER Extension: 20600 Name*: Dialer ICB Vector Number: 621 Meet-me Conferencing? n Allow VDN Override? n COR: 1 TN*: 1 Measured: internal Acceptable Service Level (sec): 20 VDN of Origin Annc. Extension*: 1st Skill*: 2nd Skill*: 3rd Skill*: </pre>

3.2. Configure Avaya Communication Manager for Predictive Agent Blending

Avaya HardDialer via the CTI link monitors the activity on Avaya Communication Manager contact centre devices such as the inbound VDN and hunt groups, and uses this information to determine when to acquire agents for outbound calling and when to release the agents to handle inbound calls.

Step	Description
1.	<p>Use the display system-parameters customer-options command. On Page 3, verify that the Computer Telephony Adjunct Links option is set to y.</p> <pre data-bbox="302 646 1446 1150"> display system-parameters customer-options Page 3 of 11 OPTIONAL FEATURES Abbreviated Dialing Enhanced List? n Audible Message Waiting? n Access Security Gateway (ASG)? n Authorization Codes? n Analog Trunk Incoming Call ID? n Backup Cluster Automatic Takeover? n A/D Grp/Sys List Dialing Start at 01? n CAS Branch? n Answer Supervision by Call Classifier? y CAS Main? n ARS? y ARS/AAR Partitioning? y Computer Telephony Adjunct Links? y ARS/AAR Dialing without FAC? y Cvg Of Calls Redirected Off-net? n ASAI Link Core Capabilities? n DCS (Basic)? n ASAI Link Plus Capabilities? n DCS Call Coverage? n Async. Transfer Mode (ATM) PNC? n DCS with Rerouting? n Async. Transfer Mode (ATM) Trunking? n ATM WAN Spare Processor? n Digital Loss Plan Modification? n ATMS? n DS1 MSP? n Attendant Vectoring? n DS1 Echo Cancellation? n </pre>
2.	<p>On Page 6, verify that the ACD and Vectoring (Basic) fields are set to y.</p> <pre data-bbox="302 1255 1446 1770"> display system-parameters customer-options Page 6 of 11 CALL CENTER OPTIONAL FEATURES Call Center Release: 4.0 ACD? y BCMS (Basic)? n Reason Codes? n BCMS/VuStats Service Level? n Service Level Maximizer? n BSR Local Treatment for IP & ISDN? n Service Observing (Basic)? y Business Advocate? n Service Observing (Remote/By FAC)? y Call Work Codes? n Service Observing (VDNs)? y DTMF Feedback Signals For VRU? n Timed ACW? n Dynamic Advocate? n Vectoring (Basic)? y Expert Agent Selection (EAS)? y Vectoring (Prompting)? y EAS-PHD? n Vectoring (G3V4 Enhanced)? n Forced ACD Calls? n Vectoring (4.0 Enhanced)? n Least Occupied Agent? n Vectoring (ANI/II-Digits Routing)? n Lookahead Interflow (LAI)? n Vectoring (G3V4 Advanced Routing)? n Multiple Call Handling (On Request)? n Vectoring (CINFO)? n Multiple Call Handling (Forced)? n Vectoring (Best Service Routing)? n PASTE (Display PBX Data on Phone)? n Vectoring (Holidays)? n Vectoring (Variables)? n </pre>

3. Add a CTI link using the **add cti-link *n*** command; where *n* is an available CTI link number and configure as follows:

- **Extension** – Set to an available extension as per the dial plan.
- **Type** – Set to **ADJ-IP**
- **Name** – Set to any descriptive string value.

```
add cti-link 15                                     Page 1 of 2
                                                    CTI LINK
CTI Link: 15
Extension: 24998
  Type: ADJ-IP
                                                    COR: 1
Name: AES DEVCON2715
```

4. Enter **add hunt-group *n*** command, where *n* is an unused hunt group number and configure as follows:

- **Group Name** – Set to any descriptive string value.
- **Group Extension** – Set to a valid extension provisioned in the dial plan.
- **ACD** – Set to **y**.
- **Queue** – Set to **y**.
- **Vector** – Set to **y**.

```
add hunt-group 402                                 Page 1 of 3
                                                    HUNT GROUP
Group Number: 402
  Group Name: Dialer Inbound
Group Extension: 50402
  ACD? y
  Queue? y
  Vector? y
  Group Type: ucd-mia
    TN: 1
    COR: 1
    MM Early Answer? n
  Security Code:
  Local Agent Preference? n
ISDN/SIP Caller Display:
```

On **Page 2** of the **HUNT GROUP** form, set the **Skill** field to **y** as shown below.

```
add hunt-group 402                                 Page 2 of 3
                                                    HUNT GROUP
Skill? y
  AAS? n
  Measured: none
  Supervisor Extension:
  Controlling Adjunct: none
```

5. Enter **change vector *n*** command, where *n* is associated to hunt group **402**. Enter the commands to **queue_to skill 402** as shown below.

```
change vector 402                                     Page 1 of 3
                                     CALL VECTOR
Number: 402                                           Name: Dialer Inbound
      Attendant Vectoring? n      Meet-me Conf? n      Lock? n
Basic? y      EAS? y      G3V4 Enhanced? n      ANI/II-Digits? n      ASAI Routing? y
Prompting? y      LAI? n      G3V4 Adv Route? n      CINFO? n      BSR? n      Holidays? n
Variables? n      4.0 Enhanced? n
01 queue-to      skill 402      pri h
02 wait-time      60      secs hearing ringback
03
04
```

6. Enter **add vdn *n*** command, where *n* is an unused VDN and configure as follows:

- **Name** – Set to any descriptive string value.
- **Vector Number** – Set to the vector configured in above step.

```
add vdn 54402                                         Page 1 of 2
                                     VECTOR DIRECTORY NUMBER
                                     Extension: 54402
                                     Name: Dialer Inbound
                                     Vector Number: 402
Attendant Vectoring? N
Meet-me Conferencing? N
Allow VDN Override? N
COR: 1
TN: 1
Measured: none
1st Skill:
2nd Skill:
3rd Skill:
```

7. Enter the **add agent-loginID *n*** command, where *n* is valid extension as per the dial plan and configure as follows:

- **Name** – Set to any descriptive string value.
- **Auto Answer** - Set to **all**.
- Repeat this step to configure additional agent login IDs.

```

add agent-loginID 25020                                     Page 1 of 2
                                AGENT LOGINID
Login ID: 25020                                           AAS? n
Name: Agent1                                             AUDIX? n
TN: 1                                                    LWC Reception: spe
COR: 1                                                  LWC Log External Calls? n
Coverage Path:                                          AUDIX Name for Messaging:
Security Code:

LoginID for ISDN Display? n
Password:
Password (enter again):
Auto Answer: all
MIA Across Skills: system
ACW Agent Considered Idle: system
Aux Work Reason Code Type: system
Logout Reason Code Type: system
Maximum time agent in ACW before logout (sec): system
  
```

On **Page 2** of the **AGENT LOGINID** form, specify the list of skills in the **SN** (Skill Number) field and level in the **SL** (Skill Level) field assigned to this agent login as shown below.

```

change agent-loginID 25020                                 Page 2 of 2
                                AGENT LOGINID
Direct Agent Skill:
Call Handling Preference: skill-level
SN      SL      SN      SL      SN      SL      Local Call Preference? n
1: 402    2      16:    31:    46:
2:      17:    32:
3:      18:    33:    48:
4:      19:    34:    49:
  
```

8. Enter the **change station n** where n is already configured agent phone/headset extension used by the HardDialer. On **Page 3**, configure the following button assignments:
- **aux-work** – agent is logged on to the phone for outbound calls.
 - **auto-in** – agent goes to auto-in to accept inbound calls.
 - **after-call** –when the agent is in wrap up state after the call has ended.
 - **release** – to drop the call.
 - Repeat this step to configure additional agent phone/headset extensions.

```

change station 22720                                     Page 3 of 4
                                     STATION
SITE DATA
  Room:                                     Headset? n
  Jack:                                     Speaker? n
  Cable:                                    Mounting: d
  Floor:                                    Cord Length: 0
  Building:                                 Set Color:
ABBREVIATED DIALING
  List1:                                     List2:                                     List3:
BUTTON ASSIGNMENTS
  1: call-appr                               5: aux-work   RC:   Grp:
  2: call-appr                               6: auto-in   Grp:
  3: call-appr                               7: after-call Grp:
  4: call-fwd  Ext:                          8: release

```

3.3. Configure Service Observing

Witness CSS uses Avaya Communication Manager Service Observing feature to record calls on agent telephones. Implementation of the required Service Observing feature on Avaya Communication Manager can be achieved using the following steps.

Step	Description
1.	<p>Enter change system-parameters customer-options and configure as follows:</p> <ul style="list-style-type: none"> • Service Observing (Basic) – Set to y. • Service Observing (Remote/By FAC) – Set to y. <p>Note: A license is required to activate these features</p> <pre> change system-parameters customer-options Page 6 of 11 CALL CENTER OPTIONAL FEATURES Call Center Release: 12.0 ACD? y PASTE (Display PBX Data on Phone)? y BCMS (Basic)? y Reason Codes? y BCMS/VuStats Service Level? y Service Level Maximizer? n BSR Local Treatment for IP & ISDN? n Service Observing (Basic)? y Business Advocate? n Service Observing (Remote/By FAC)? y Call Work Codes? y Service Observing (VDNs)? y DTMF Feedback Signals For VRU? n Timed ACW? y Dynamic Advocate? n Vectoring (Basic)? y Expert Agent Selection (EAS)? y Vectoring (Prompting)? y EAS-PHD? y Vectoring (G3V4 Enhanced)? y Forced ACD Calls? n Vectoring (ANI/II-Digits Routing)? y Least Occupied Agent? n Vectoring (G3V4 Advanced Routing)? y Lookahead Interflow (LAI)? y Vectoring (CINFO)? y Multiple Call Handling (On Request)? y Vectoring (Best Service Routing)? n Multiple Call Handling (Forced)? y Vectoring (Holidays)? n Vectoring (Variables)? n (NOTE: You must logoff & login to effect the permission changes.) </pre>
2.	<p>Enter change feature-access-codes and set Service Observing Listen Only Access Code to *05.</p> <pre> change feature-access-codes Page 5 of 8 FEATURE ACCESS CODE (FAC) Automatic Call Distribution Features After Call Work Access Code: *13 Assist Access Code: Auto-In Access Code: *15 Aux Work Access Code: *16 Login Access Code: *17 Logout Access Code: *20 Manual-in Access Code: *12 Service Observing Listen Only Access Code: *05 Service Observing Listen/Talk Access Code: *06 Add Agent Skill Access Code: Remove Agent Skill Access Code: Remote Logout of Agent Access Code: </pre>

3.4. Configure CMAPI stations for Witness Contact Store

CMAPI stations on Avaya Communication Manager are required to record telephone calls by Witness CSS. CMAPI stations are configured as follows:

Step	Description
1.	<p>Enter change cor 5 and configure as follows:</p> <ul style="list-style-type: none"> • COR Description – Enter any descriptive string value. • Can Be a Service Observer – Set to y. <pre> change cor 5 Page 1 of 4 CLASS OF RESTRICTION COR Number: 5 COR Description: Witness Server FRL: 7 APLT? y Can Be Service Observed? n Calling Party Restriction: none Can Be A Service Observer? y Called Party Restriction: none Time of Day Chart: 1 Forced Entry of Account Codes? n Priority Queuing? n Direct Agent Calling? n Restriction Override: all Facility Access Trunk Test? n Restricted Call List? y Can Change Coverage? n Access to MCT? y Fully Restricted Service? n Group II Category For MFC: 7 Hear VDN of Origin Annc.? n Send ANI for MFE? n Add/Remove Agent Skills? n MF ANI Prefix: Automatic Charge Display? n Hear System Music on Hold? y PASTE (Display PBX Data on Phone)? n Can Be Picked Up By Directed Call Pickup? n Can Use Directed Call Pickup? n Group Controlled Restriction: inactive </pre>
2.	<p>Enter add station <s>, where s is an unused extension and configure as follows:</p> <ul style="list-style-type: none"> • Type – Set to 4610. • Name – Set to any descriptive string value. • COR – Set to the class of restriction configured in Step 1. <pre> STATION Extension: 23301 Lock Messages? n BCC: 0 Type: 4610 Security Code: ***** TN: 1 Port: IP Coverage Path 1: COR: 5 Name: CMAPI Recording line 1 Coverage Path 2: COS: 1 Hunt-to Station: STATION OPTIONS Loss Group: 19 Time of Day Lock Table: Personalized Ringing Pattern: 1 Speakerphone: 2-way Message Lamp Ext: 23301 Display Language: english Mute Button Enabled? y Survivable GK Node Name: Media Complex Ext: Survivable COR: internal IP SoftPhone? y Survivable Trunk Dest? y IP Video Softphone? n </pre>

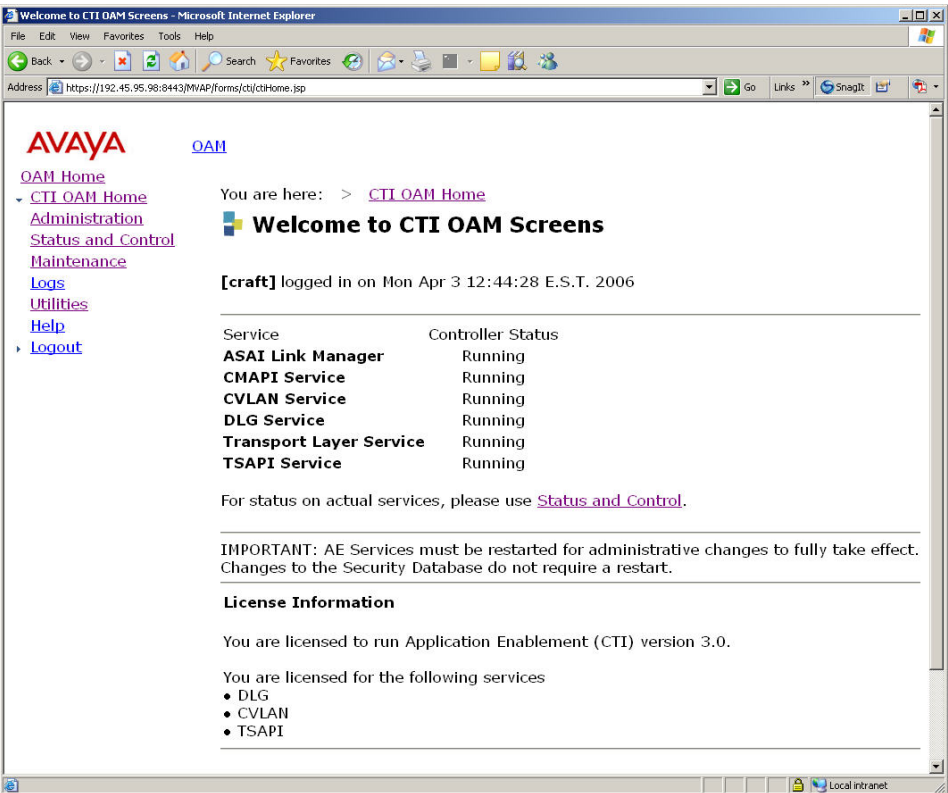
Step	Description
3.	<p data-bbox="277 233 1230 300">Go to Page 4 of the STATION form and add serv-obsrv in the BUTTON ASSIGNMENTS.</p> <pre data-bbox="277 342 1247 871"> add station 23301 Page 4 of 6 STATION SITE DATA Room: Headset? n Jack: Speaker? n Cable: Mounting: d Floor: Cord Length: 0 Building: Set Color: ABBREVIATED DIALING List1: List2: List3: BUTTON ASSIGNMENTS 1: call-appr 7: 2: call-appr 8: 3: call-appr 9: 4: conf-dsp 10: 5: serv-obsrv 11: 6: no-hld-cnf 12: </pre>
4.	<p data-bbox="277 884 1057 915">For additional CMAPI stations to be added, repeat Steps 2-3.</p>

4. Configure Avaya Proactive Contact

These Application Notes assume that the interfaces between the Avaya Proactive Contact, Avaya S8700 Media Server and Avaya AES have been configured and are operational, and that a calling list has been successfully downloaded to Avaya HardDialer. Avaya HardDialer uses a TSAPI link to Avaya AES to monitor the inbound calls coming into Avaya Communication Manager. Since Witness CSS 7.7.1 does not support security features of Avaya Proactive Contact 4.0.1, security was turned off on the Avaya Proactive Contact Server and Supervisor. Refer to [6] for additional details to turn off the security.

5. Configure Avaya Application Enablement Services Server

This section provides the procedures for configuring Avaya Application Enablement Services. Basic configuration related to the switch connection between Avaya Communication Manager and Avaya Application Enablement Services is assumed. Configuration in the following sections is only for the fields where a value needs to be entered or modified. Default values are used for all other fields.

Step	Description														
1.	Launch a web browser, enter <a href="https://<IP address of AES server>:8443/MVAP">https://<IP address of AES server>:8443/MVAP in the URL, and log in with the appropriate credentials for accessing the AES CTI OAM pages.														
2.	<p>From the OAM Home menu, select CTI OAM Home and verify that the CMAPI service is licensed as shown below under the heading License Information.</p>  <p>The screenshot shows the following details:</p> <ul style="list-style-type: none"> Browser: Microsoft Internet Explorer Address: https://192.45.95.98:8443/MVAP/forms/ctiHome.jsp Page Title: Welcome to CTI OAM Screens User: [craft] logged in on Mon Apr 3 12:44:28 E.S.T. 2006 Service Status Table: <table border="1" data-bbox="609 1050 982 1207"> <thead> <tr> <th>Service</th> <th>Controller Status</th> </tr> </thead> <tbody> <tr> <td>ASAI Link Manager</td> <td>Running</td> </tr> <tr> <td>CMAPI Service</td> <td>Running</td> </tr> <tr> <td>CVLAN Service</td> <td>Running</td> </tr> <tr> <td>DLG Service</td> <td>Running</td> </tr> <tr> <td>Transport Layer Service</td> <td>Running</td> </tr> <tr> <td>TSAPI Service</td> <td>Running</td> </tr> </tbody> </table> License Information: <p>You are licensed to run Application Enablement (CTI) version 3.0.</p> <ul style="list-style-type: none"> • DLG • CVLAN • TSAPI 	Service	Controller Status	ASAI Link Manager	Running	CMAPI Service	Running	CVLAN Service	Running	DLG Service	Running	Transport Layer Service	Running	TSAPI Service	Running
Service	Controller Status														
ASAI Link Manager	Running														
CMAPI Service	Running														
CVLAN Service	Running														
DLG Service	Running														
Transport Layer Service	Running														
TSAPI Service	Running														

3. From the **CTI OAM Home** menu, select **Administration** → **Security Database** → **Devices**. Click on **Add Devices** at the next screen [not shown]. In the **Add/ Edit Device** screen shown below, configure the **Device ID** to match the CMAPI station configured in **Section 3.4, Step 2-3**. Click on **Apply Changes**.

AVAYA Application Enablement Services
Operations Administration and Maintenance

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You are here: > [Administration](#) > [Security Database](#) > [Devices](#)

Add / Edit Device

Device ID

Location

Device Type

Tlink Group

- CTI OAM Home
- Administration
 - Network Configuration
 - Switch Connections
 - CTI Link Admin
 - DMCC Configuration
 - TSAPI Configuration
- Security Database
 - SDB Control
 - CTI Users
 - Worktops
 - Devices
 - Device Groups
 - Tlinks
 - Tlink Groups
- Certificate Management
- Dial Plan
- Enterprise Directory
- Host AA
- SMS Configuration
- WebLM Configuration
- Bridged Alert Config

▶ **Status and Control**

▶ **Maintenance**

▶ **Alarms**

▶ **Logs**

▶ **Utilities**

▶ **Help**

4. From the **User Management Home Menu**, navigate to **User Management->Add User** and configure as follows:

- **User Id** – Set to any descriptive value.
- **Common Name** – Set to any descriptive value.
- **Surname** – Set to any descriptive value.
- **User Password** – Set to a valid password.
- **Confirm Password** – Set to the same value in **User Password** field.
- Click **Apply**.

AVAYA Application Enablement Services
Operations Administration and Maintenance

You are here: > [User Management](#) > [Add User](#) [QAM Home](#) [Help](#) [Logout](#)

User Management Home

- ▼ **User Management**
 - [List All Users](#)
 - [Add User](#)
 - [Search Users](#)
 - [Modify Default User](#)
 - [Change User Password](#)
- ▶ **Service Management**
- ▶ **Help**

Add User

Fields marked with * can not be empty.

* User Id

* Common Name

* Surname

* User Password

* Confirm Password

Admin Note

Avaya Role

Business Category

Car License

CM Home

Css Home


CT User

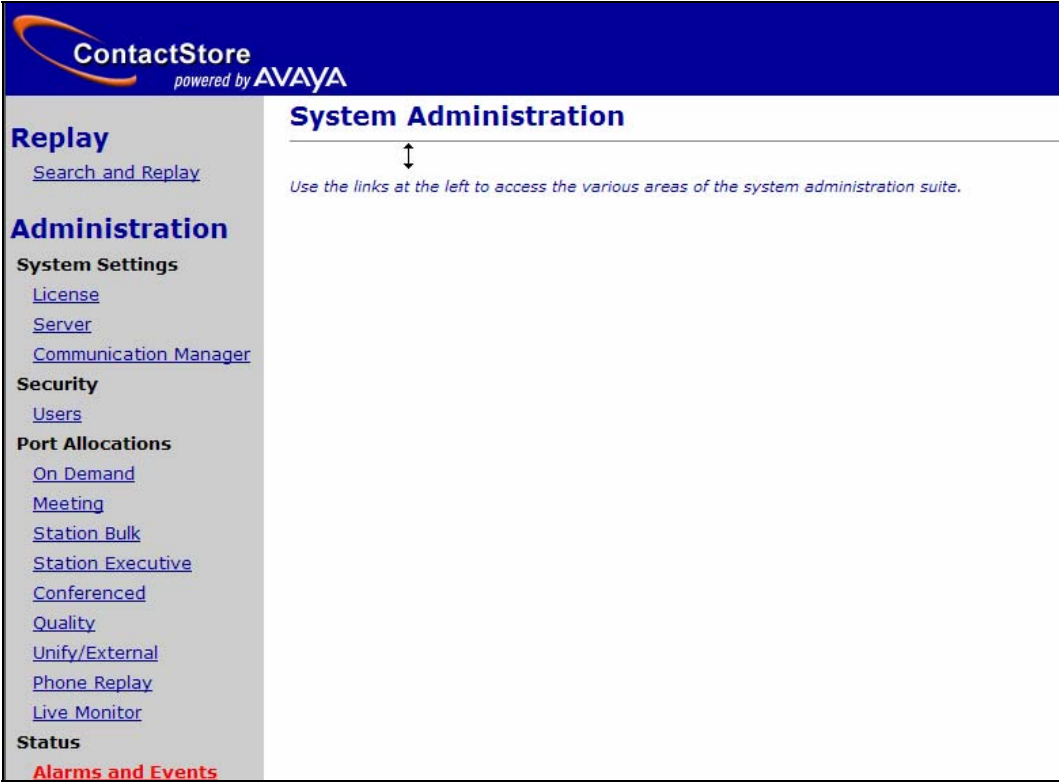
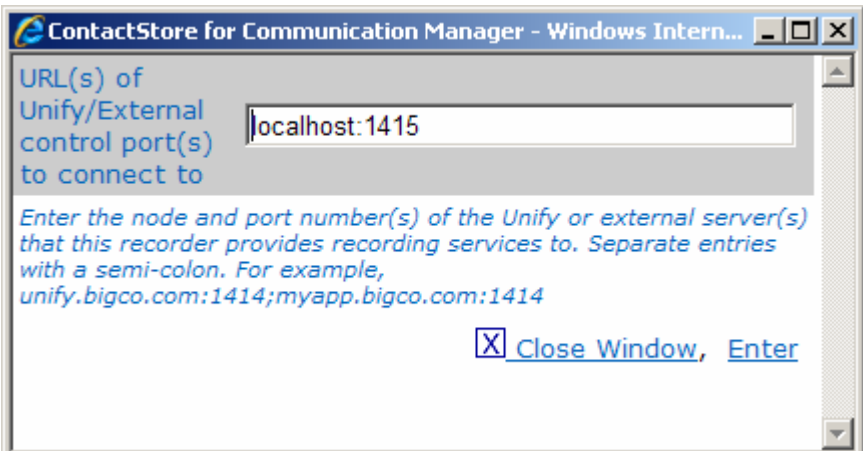
6. Configure Witness Contact Store Server

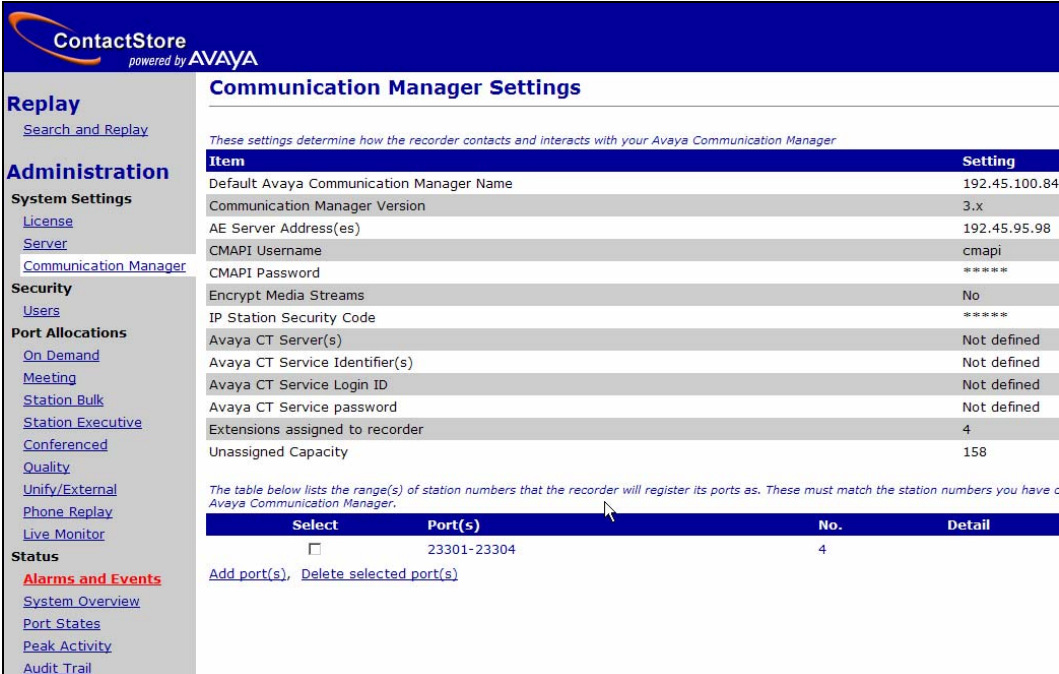
The following steps describe the configuration to integrate Witness CSS with Avaya Proactive Contact Avaya HardDialer.

6.1. Witness Contact Store Server System Administration

The steps in this section describe the system configuration of Witness CSS.

Step	Description
1.	Launch a web browser, enter <a href="http://<IP address of Contact Store server>:8080/">http://<IP address of Contact Store server>:8080/ in the URL.
2.	Login into Witness CSS using proper credentials. 

Step	Description
3.	<p>Following screen is displayed after logging on to the system.</p> 
4.	<p>Select Server tab on the System Administration screen at Step 3 to configure the URL(s) of Unify/External Control port(s) to connect to field. The port number should match the value of CSCMRecorder.Port in Section 6.2. The recommended value is 1919.</p> 

Step	Description								
5.	<p>Select Communication Manager tab on the System Administration screen at Step 3 to display this screen and verify the following:</p> <ul style="list-style-type: none"> • Default Avaya Communication Manager Name – Set to CLAN IP Address of the Avaya Communication Manager. • Communication Manager Version – Set to the right version of the Avaya Communication Manger. • AE Server Address (es) – Set to the IP address of the Avaya AES server. • CMAPI Username – Set to the User Id field value configured in Section 5, Step 4. • CMAPI Password – Set to the User Password field value configured in Section 5, Step 4. • IP Station Security Code – Set to the Security Code field value in Section 3.4, Step 2. • Ports/Port range specified in the screen should match the CMAPI stations defined in Section 3.4, Step 2-3. In this example, Port range specified is from 23301 to 23304.  <p>The screenshot shows the 'Communication Manager Settings' page in ContactStore. The left sidebar contains navigation links for 'Replay', 'Administration', 'System Settings', 'Security', 'Port Allocations', 'Status', and 'Alarms and Events'. The main content area displays a list of settings with their values. Below the settings list is a table for port ranges:</p> <table border="1"> <thead> <tr> <th>Select</th> <th>Port(s)</th> <th>No.</th> <th>Detail</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>23301-23304</td> <td>4</td> <td></td> </tr> </tbody> </table>	Select	Port(s)	No.	Detail	<input type="checkbox"/>	23301-23304	4	
Select	Port(s)	No.	Detail						
<input type="checkbox"/>	23301-23304	4							

Step	Description
6.	<p>Select Station Bulk tab on the System Administration screen at Step 3 to display this screen and verify the following:</p> <ul style="list-style-type: none"> • Audio format – Set to G.729A. • Record calls that do NOT have a VDN number? – Set to Yes. • Filter calls by VND and/or Skill Hunt Group? – Set to ALL Calls with a VDN. • Station/Station range specified in the screen should match the Agent headset extensions to be recorded by Witness CSS. In this example, Station range specified is from 22720 to 22721.

The screenshot shows the 'Station Bulk Recording' configuration page. On the left is a navigation menu with categories: Replay, Administration, System Settings, Security, and Port Allocations. The main content area is titled 'Station Bulk Recording' and includes a 'Recording Mode Setup' table and a station selection table.

Recording Mode Setup	Setting
Apply Beep Tone within recorder	No
Audio format	G.729A (8kbps)
Delete Recording by entering	Not defined
Record calls that do NOT have a VDN number?	Yes
Filter calls by VDN and/or Skill Hunt Group?	ALL Calls with a VDN
Ports Configured	2
Unassigned Capacity	98

Select	Station(s)	No.	Detail
<input type="checkbox"/>	22720-22721	2	

6.2. Witness Contact Store PDS Connection Configuration

For Witness CSS to work with the Avaya HardDialer, the PDS Connector needs to be configured as follows:

- Login into the Witness Contact Store Server as **witness**.
- Edit the `/opt/witness/properties/pdscon.properties` file to modify the following:
 - **PDS.UserName** – User name created on the Avaya HardDialer Server.
 - **PDS.Password** – Password corresponding to the **Username**.
 - **PDS.DialerHost** – Name of the Avaya HardDialer Server. This name should be defined in `/etc/hosts` file.
 - **CSCMRecorder.Port** – Set to the port no. of the URL in **Section 6.1, Step 4**.
 - Save the changes.
- Start/restart the PDS connector service by issuing the command **service pdscon start**.

7. Interoperability Compliance Testing

This interoperability compliance test covers feature functionality, serviceability and basic load testing. Feature functionality focused on verifying that Witness CSS could successfully record calls when using events from Avaya HardDialer Event Service. Serviceability testing verified that the Witness CSS server recovered from adverse conditions, such as rebooting, power failure and network disconnect. Basic load testing verified that Witness CSS could successfully record calls for an extended period of time.

7.1. General Test Approach

Serviceability and basic functionality test cases were performed manually. During the manual tests, outbound calls were placed by Avaya HardDialer and routed to an available agent. The agent accepted the call and the conversation between the customer and the agent was recorded. The recordings were viewed using Witness CSS web interface. During the basic load testing, Avaya HardDialer executed a calling list which delivered calls to the agents for sustained periods.

7.2. Test Results

Witness CSS successfully recorded, stored and played back the calls between the agents and the customers. Witness CSS was successfully able to record and correlate calls put on hold. For transfers and conferences, only first part of the call prior to completion of transfer is properly tagged. For serviceability testing, Witness CSS was able to resume recording calls after restoration of connectivity to the Avaya HardDialer, after network disconnect/re-connect, and after reset of Witness CSS. For stability testing, Witness CSS successfully recorded calls for a sustained period of time.

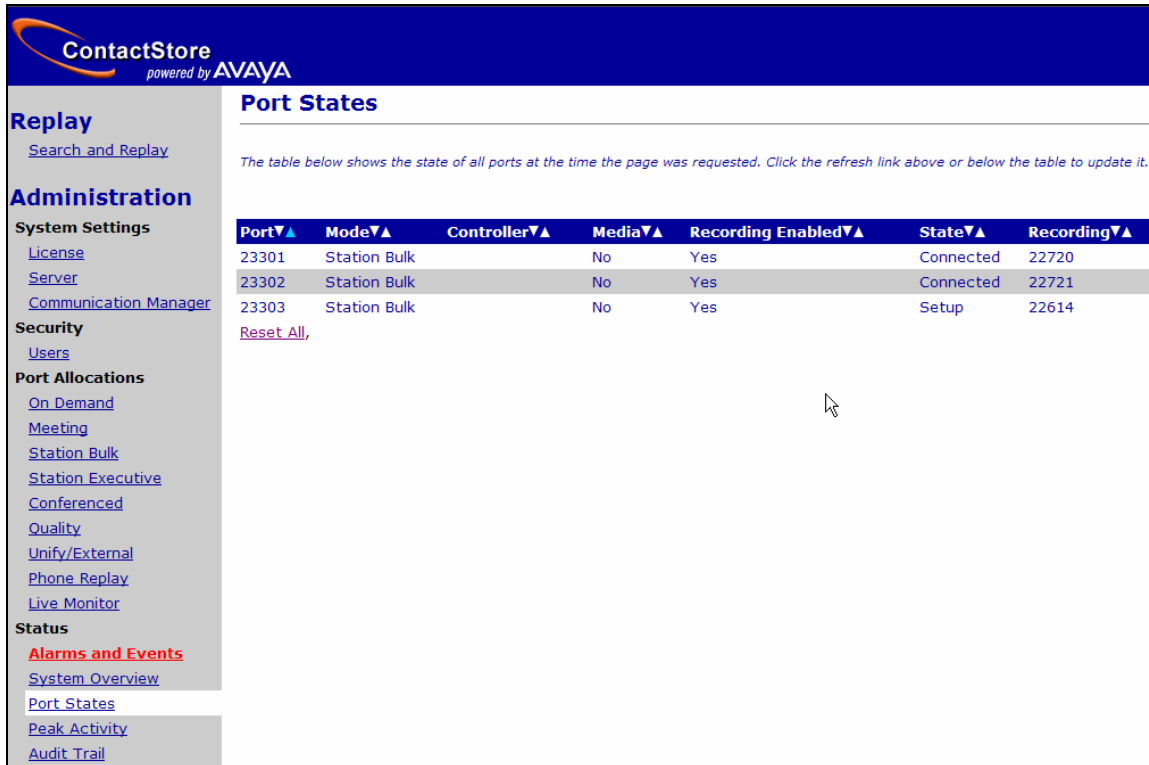
Following observations were made during testing:

- Witness CSS is not able to connect back to the Avaya HardDialer after the PDS connector on Witness CSS is stopped and restarted.
- Agent needs to logoff and log back on after the Avaya HardDialer restarts.

8. Verification

8.1. Port States

On the Witness CSS Administration interface, click on **Port States** to make sure that the ports configured in **Section 6.1, Step 5** are recording the Agent extensions to be supervised as configured in **Section 6.1, Step 6**.



The screenshot shows the ContactStore Administration interface. The main content area is titled "Port States" and contains a table with the following data:

Port	Mode	Controller	Media	Recording Enabled	State	Recording
23301	Station Bulk		No	Yes	Connected	22720
23302	Station Bulk		No	Yes	Connected	22721
23303	Station Bulk		No	Yes	Setup	22614

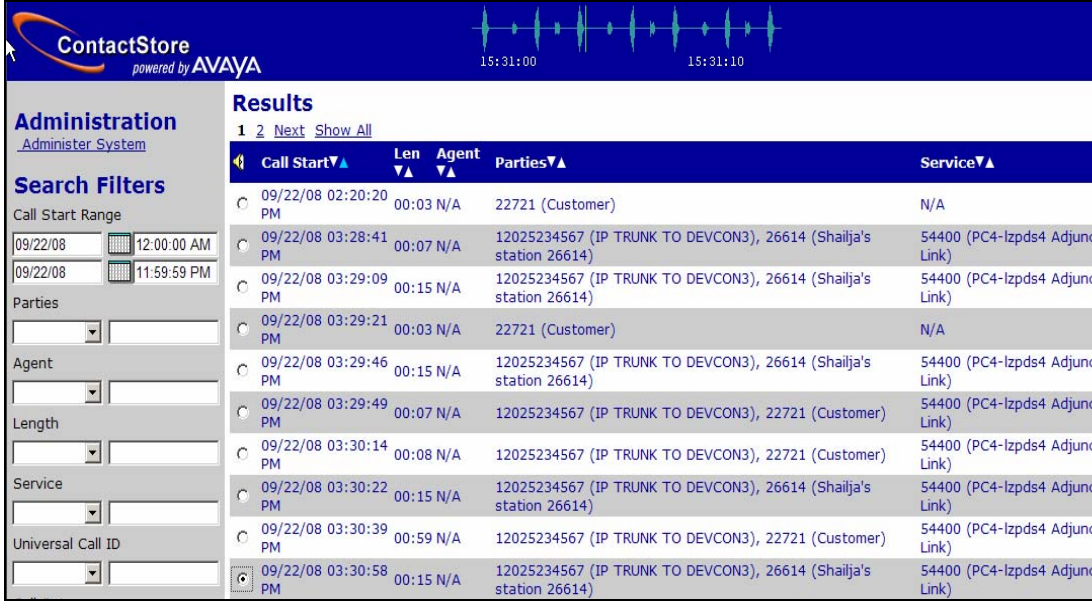
Below the table, there is a link labeled "Reset All,". The sidebar on the left contains the following navigation links:

- Replay
 - Search and Replay
- Administration
 - System Settings
 - License
 - Server
 - Communication Manager
 - Security
 - Users
 - Port Allocations
 - On Demand
 - Meeting
 - Station Bulk
 - Station Executive
 - Conferenced
 - Quality
 - Unify/External
 - Phone Replay
 - Live Monitor
 - Status
 - Alarms and Events
 - System Overview
 - Port States
 - Peak Activity
 - Audit Trail

8.2. PDS Connector Link

Login into the Witness Contact Store Server as **witness** and verify in the `/opt/witness/logs/pdscon.log` file that there is an entry **PDS Connector – checkTimeout : connected to PDS true** indicating that the connectivity to the Avaya HardDialer has been established.

8.3. Witness CSS Recording Playback

Step	Description																																																							
1.	<p>On the Witness CSS Administration interface [not shown], click on Search and Replay. Enter the search criteria and select the recording to be heard by checking the box on the left.</p>  <p>The screenshot shows the ContactStore Administration interface. On the left, there are search filters for Call Start Range, Parties, Agent, Length, Service, and Universal Call ID. The main area displays a 'Results' table with columns for Call Start, Len, Agent, Parties, and Service. A search result is selected, indicated by a checked radio button in the left margin.</p> <table border="1"> <thead> <tr> <th>Call Start</th> <th>Len</th> <th>Agent</th> <th>Parties</th> <th>Service</th> </tr> </thead> <tbody> <tr> <td>09/22/08 02:20:20 PM</td> <td>00:03</td> <td>N/A</td> <td>22721 (Customer)</td> <td>N/A</td> </tr> <tr> <td>09/22/08 03:28:41 PM</td> <td>00:07</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:29:09 PM</td> <td>00:15</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:29:21 PM</td> <td>00:03</td> <td>N/A</td> <td>22721 (Customer)</td> <td>N/A</td> </tr> <tr> <td>09/22/08 03:29:46 PM</td> <td>00:15</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:29:49 PM</td> <td>00:07</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:30:14 PM</td> <td>00:08</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:30:22 PM</td> <td>00:15</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:30:39 PM</td> <td>00:59</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> <tr> <td>09/22/08 03:30:58 PM</td> <td>00:15</td> <td>N/A</td> <td>12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)</td> <td>54400 (PC4-Izpbs4 Adjunct Link)</td> </tr> </tbody> </table>	Call Start	Len	Agent	Parties	Service	09/22/08 02:20:20 PM	00:03	N/A	22721 (Customer)	N/A	09/22/08 03:28:41 PM	00:07	N/A	12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:29:09 PM	00:15	N/A	12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:29:21 PM	00:03	N/A	22721 (Customer)	N/A	09/22/08 03:29:46 PM	00:15	N/A	12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:29:49 PM	00:07	N/A	12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:30:14 PM	00:08	N/A	12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:30:22 PM	00:15	N/A	12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:30:39 PM	00:59	N/A	12025234567 (IP TRUNK TO DEVCON3), 22721 (Customer)	54400 (PC4-Izpbs4 Adjunct Link)	09/22/08 03:30:58 PM	00:15	N/A	12025234567 (IP TRUNK TO DEVCON3), 26614 (Shailja's station 26614)	54400 (PC4-Izpbs4 Adjunct Link)
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9. Support

For technical support on any Witness product, contact Witness Systems Customer Support at 1-800-4-WITNESS (1-800-494-8637). Technical support email may be sent to support@witness.com.

10. Conclusion

These Application Notes describe the configuration steps required for Witness Systems Contact Store 7.7.1 to successfully interoperate with the Avaya HardDialer. All feature functionality and serviceability test cases were completed successfully.

11. Additional References

The following documents may be found at <http://support.avaya.com>:

- [1] *Administrator Guide for Avaya Communication Manager*, Document ID 03-300509, Issue 4.0, February 2007
- [2] *Implementing Proactive Contact 4.0*, May, 2008
- [3] *Administering Avaya Proactive Contact (Linux-based Interface)*, January 2008
- [4] *Sample Avaya Proactive Contact 3.0 with CTI Installation and Configuration*, Issue 1.0
- [5] *Sample Avaya Proactive Contact 3.0 Intelligent Call Blending Configuration*, Issue 1.0
- [6] *PSN #2070U Instructions to disable CORBA SSL security on Avaya Proactive Contact 4.0.1* <http://support.avaya.com/elmodocs2/PSN/PSN2070u.doc>

Witness Documentation:

- [7] Witness Contact Store 7.7.1 documentation can be accessed using online help

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