

Avaya Solution & Interoperability Test Lab

Application Notes for Presence CRM Optimizer Voice with Avaya Communication Manager and Avaya Application Enablement Services Server – Issue 1.0

Abstract

These Application Notes describe the configuration steps required in order for Presence CRM Optimizer to successfully interoperate with Avaya Communication Manager Release 3.0 and Avaya Application Enablement Service Release 3.0.

Presence CRM Optimizer is a multi-channel contact management suite able to handle voice, text chat, e-mail and web contact mechanisms. Avaya Telephony Service API (TSAPI) interface is used to monitor and control agent stations, and handle routing of external calls. Presence CRM Optimizer consists of four modules. CRM Optimizer Voice was the only module that was compliance tested.

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

1. Introduction

These Application Notes describe the compliance-tested configuration using a Presence CRM Optimizer server and an Avaya Communication Manager system with Avaya Application Enablement Services (AES) Server used for CTI.

Presence CRM Optimizer is a multi-channel contact management suite able to handle voice, email and web chat contact mechanisms. Avaya's Telephony Service API (TSAPI) interface is used to monitor and control agent stations, generate phantom calls for non-voice contacts, and handle routing of external calls. Presence CRM Optimizer consists of four modules. These are:

- 1. CRM Optimizer Voice,
- 2. CRM Optimizer Messaging,
- 3. CRM Optimizer Internet and
- 4. CRM Optimizer Scripting

CRM Optimizer Voice was the only module that was compliance tested.

Upon start of the CRM Optimizer Voice application, the application automatically queries Avaya Application Enablement Services (AES) for device status and requests monitoring. The CRM Optimizer Voice specifies where to route each call and hence what call treatments to provide, based on agent status information that the application tracks, based on CTI device query results and event reports received from Avaya Application Enablement Services (AES) Server.

Figure 1 shows the reference configuration.



Figure 1: Avaya Communication Manager System with Presence CRM Optimizer Server

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2. Equipment and Software Validated

Equipment	Software
Avaya S8500 Media Server	CM 3.0.1 (346.0)
Avaya G650 Media Gateway	N/A
Application Enablement Services Server	3.0, build 46
Avaya C364T-PWR Converged Stackable Switch	4.3.12
Avaya 4600 Series IP Telephones	2.2.3 (4620SW)
Presence CRM Optimizer Server	5.13
Oracle Database	8i
Operating System for Presence Agent PC's	Windows XP

3. Configure Avaya Communication Manager

Basic configuration of Avaya Communication Manager and Avaya Application Enablement Services Server are beyond the scope of these Application Notes. See Section 10 for Avaya documentation details.

3.1. Verify Avaya Communication System parameters

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. On Page 3, OPTIONAL FEATURES form of the system-parameters customer options verify the following options are set to "yes", as shown below.

- Answer Supervision by Call Classifier to "y"
- Computer Telephony Adjunct Links? y

```
display system-parameters customer-options
                                                             Page
                                                                    3 of 11
                                OPTIONAL FEATURES
   Abbreviated Dialing Enhanced List? n
                                                   Audible Message Waiting? n
       Access Security Gateway (ASG)? n
                                                      Authorization Codes? n
       Analog Trunk Incoming Call ID? n Backup Cluster Automatic Takeover? n
A/D Grp/Sys List Dialing Start at 01? n
                                                                CAS Branch? n
Answer Supervision by Call Classifier? 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? 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
```

On Page 6, CALL CENTER OPTIONAL FEATURES form of the system-parameters features, verify the following customer options are set to "yes" as shown below.

- **ACD** to "y"
- Vectoring (Basic) to "y"
- Expert Agent Selection (EAS) to "y"

```
display system-parameters customer-options
                                                            Page
                                                                   6 of
                                                                         11
                        CALL CENTER OPTIONAL FEATURES
                         Call Center Release: 3.0
                             ACD? y
                                                            Reason Codes? n
                    BCMS (Basic)? n
                                                 Service Level Maximizer? n
                                               Service Observing (Basic)? y
      BCMS/VuStats Service Level? n
BSR Local Treatment for IP & ISDN? n
                                       Service Observing (Remote/By FAC)? y
               Business Advocate? n
                                               Service Observing (VDNs)? y
                 Call Work Codes? n
                                                               Timed ACW? n
   DTMF Feedback Signals For VRU? n
                                                       Vectoring (Basic)? y
                Dynamic Advocate? n
                                                    Vectoring (Prompting)? y
    Expert Agent Selection (EAS)? y
                                                Vectoring (G3V4 Enhanced)? n
                         EAS-PHD? n
                                                Vectoring (3.0 Enhanced)? n
                Forced ACD Calls? n Vectoring (ANI/II-Digits Routing)? n
            Least Occupied Agent? n
                                        Vectoring (G3V4 Advanced Routing)? n
       Lookahead Interflow (LAI)? n
                                                       Vectoring (CINFO)? n
                                        Vectoring (Best Service Routing)? n
Multiple Call Handling (On Request)? n
   Multiple Call Handling (Forced)? n
                                                    Vectoring (Holidays)? n
 PASTE (Display PBX Data on Phone)? n
                                                    Vectoring (Variables)? n
```

On Page 11, CALL CENTER SYSTEM PARAMETERS form of the system-parameters features, verify the following option is set to "yes" as shown below.

Expert Agent Selection (EAS) Enabled to "y"

display system-parameters features	Page	11 of	16
FEATURE-RELATED SYSTEM PARAMETERS			
CALL CENTER SYSTEM PARAMETERS			
EAS			
Expert Agent Selection (EAS) Enabled? y			
Minimum Agent-LoginID Password Length:			
Direct Agent Announcement Extension:	D	elay:	
Message Waiting Lamp Indicates Status For: station			

On Page 12, AGENT AND CALL SELECTION form of the system-parameters features, verify the following option is set to "yes" as shown below.

Call Classification After Answer Supervision to "y"

```
display system-parameters features Page 12 of 16

FEATURE-RELATED SYSTEM PARAMETERS

AGENT AND CALL SELECTION

MIA Across Splits or Skills? n

ACW Agents Considered Idle? y

Call Selection Measurement: current-wait-time

Service Level Supervisor Call Selection Override? n

Auto Reserve Agents: none

ASAI

Copy ASAI UUI During Conference/Transfer? n

Call Classification After Answer Supervision? y

Send UCID to ASAI? n
```

3.2. Administer CTI Link with TSAPI Service

Enter **add cti-link n** command, where "n" is an available CTI link number. Enter an available extension number in the **Extension** field. The **Type** must be set to "ADJ-IP" and enter a descriptive name in the **Name** field.

```
add cti-link 3 Page 1 of 2
CTI Link: 3
Extension: 13000
Type: ADJ-IP
Name: TSAPI link 3
```

3.3. Administer Trunk for Inbound and Outbound Campaign Calls

Enter **change trunk group** <**xxx**> where xxx is the trunk group number for the pre-configured ISDN trunk which will be used for inbound and outbound campaign calls. It is assumed that the ISDN trunk and the corresponding signaling group are already configured.

Set the following values **UUI IE Treatment** to "shared" and **Maximum Size of UUI IE Contents** to "32". Default values may be used in the remaining fields.

change trunk-group 73		Page 2 of 21
TRUNK FEATURES		
ACA Assignment? n	Measured:	none Wideband Support? n
	Internal Alert?	n Maintenance Tests? y
	Data Restriction?	n NCA-TSC Trunk Member:
	Send Name:	y Send Calling Number: y
Used for DCS? n		
Suppress # Outpulsing? n	Format: public	
Outgoing Channel ID Encoding	: preferred UU	I IE Treatment: shared
	Maxim	um Size of UUI IE Contents: 32
		Replace Restricted Numbers? n
	F	Replace Unavailable Numbers? n
		Send Connected Number: y

3.4. Administer SIT Treatment for Call Classification

This form is used to specify the treatment of Special Information Tones (SITs) used for Outbound Call Management type calls with USA tone characteristics. Enter the **change sit-treatment** command. Set the **Pause Duration** to "0.8" and **Talk Duration** to "3.0". Note the values are in seconds.

Note: Answering Machine Detected (AMD) - An ASAI adjunct can request AMD for a call. If Answering Machine is detected, one of two treatments is specified. Valid entries are dropped and answered. Default is dropped.

change sit-treatment	Page 1 of 1
SIT TREATMENT FOR CALL CLASS	STETCATION
DII INEAIMENI FOR CALL CEADE	DIFICATION
SIT Ineffective Other: dro	ppped
SIT Intercept: ans	swered
SIT No Circuit: dro	opped
SIT Reorder: dro	opped
SIT Vacant Code: dro	opped
SIT Unknown: dro	opped
AMD Treatment: dro	opped
Pause Duration (seconds): 0.8	3
Talk Duration (seconds): 3.0)
	-

3.5. Administer Class of Restriction

Enter the **change cor 1** command. Set the **Direct Agent Calling** to "y" on the CLASS OF RESTRICTION form, that will be used for the Hunt groups, VDNs, Vectors and agent logins.

```
1 of
                                                                                            4
change cor 1
                                                                           Page
                                    CLASS OF RESTRICTION
                  COR Number: 1
            COR Description: Main COR
                          FRI: 0
                                                                        APLT? y
Can Be Service Observed? yCalling Party Restriction: noCan Be A Service Observer? yCalled Party Restriction: noPartitioned Group Number: 1Forced Entry of Account Codes? nPriority Queuing? nDirect Agent Calling? y
                                             Calling Party Restriction: none
                                               Called Party Restriction: none
     Restricted Call List? n
                                             Facility Access Trunk Test? n
                                                      Can Change Coverage? n
                                               Fully Restricted Service? n
              Access to MCT? y
Group II Category For MFC: 7
          Send ANI for MFE? 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
```

3.6. Administer Hunt Groups, Call Vectors and VDNs

Administer a set of hunt groups, vectors and Vector Directory Numbers (VDNs) per Presence CRM Optimizer installation documentation. VDNs and vectors were created to allow external calls to be handled by the CRM Optimizer server. These hunt groups, vectors and VDNs provide:

• Outbound Service (Progressive, Predictive)

<u>Progressive</u>: In this outbound service mode, the Presence Server generates the calls through progressive dialing via the specified CTI link. The call is generated only when the contact handling has been finished and the agent status is back to available, so that a one-to-one relationship between an agent and a call is possible in this mode. <u>Predictive:</u> In this outbound service mode, the Presence Server generates the calls through predictive dialing via the specified CTI link. The call is anticipated before the contact handling has been finished and the agent status is back to available, so that a higher number of calls than the number of agents available for the service is possible in this mode.

• Outbound Service (Preview)

<u>Preview:</u> In the preview mode, an agent working for an outbound service will receive a notification (through a phantom call) when the system detects that a call to an outbound record is due. Once the outbound record data have been retrieved, the agent will generate the call by clicking the Call button.

• Inbound Services

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Below is a table of the configuration of the VDNs, Vectors, Huntgroups and Agent Logins configured for the different campaigns tested during compliance testing.

	Predictive/Progressive	Preview	Inbound1	Inbound2
VDN	17001	17002	17003	17004
Vector	1	2	3	3
Skill Ext/	16001 / 1	16002 / 2	16003 / 3	16004 / 4
Huntgroup				
Agent Login	15001	15002	15003	15004

Enter the **add hunt-group n** command, where "n" is an unused hunt group number. On page 1 of the **hunt group** form, assign a **Group Name** and **Group Extension** valid under the provisioned dial plan. Set the following options to "yes" as shown below.

- **ACD** to "y"
- **Queue** to "y"
- Vector to "y"

add hunt-group 1		Page		1 of	3
	HUNT GROUP				
Group Number:	1	ACD?	у		
Group Name:	Predictive/Progressiv	e Queue?	У		
Group Extension:	16001	Vector?	У		
Group Type:	ucd-mia				
TN:	1				
COR:	1	MM Early Answer?	n		
Security Code:	Local A	gent Preference?	n		
ISDN/SIP Caller Display:					
Queue Limit:	unlimited				
Calls Warning Threshold:	Port:				
Time Warning Threshold:	Port:				

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

add hunt-group 1		Page 2	of	3
	HUNT GROUP			
Skill? y				
AAS? n				
10.00				
Measured: none				
Supervisor Extension:				
Controlling Adjunct: none				
concrotting hajance. none				
	Redirect on No Answ	ver (rings):		
	Redir	ect to VDN:		
Forced Entry of	of Stroke Counts or Call	Work Codes?	n	

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Repeat the above step and create three more hunt groups with hunt-group extensions 16002 to 16004. The following figure lists the hunt-groups after the four hunt-groups are administered.

list hunt-group HUNT GROUPS Grp Grp ACD/ No. Cov Notif/ Dom No. Name/ Grp Message Ext Type MEAS Vec MCH Que Mem Path Ctg Adj Ctrl Center 1 Predictive/Progressive 16001 ucd-mia y/N SK none y 0 n n 2 Preview 16002 ucd-mia y/N SK none y 0 n n 3 Inbound 16003 ucd-mia y/N SK none y 0 n n Inbound 2 4 16004 ucd-mia y/N SK none y 0 n n

Enter the **change vector n** command, where "n" is associated to hunt group 1. Enter the commands to queue to the 1^{st} skill on the VDN as shown below.

change vector 1 Page 1 of 3 CALL VECTOR Number: 1 Name: Predic/Progress 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 3.0 Enhanced? n 01 queue-to skill 1 pri m 02 wait-time 5 secs hearing silence 03 disconnect after announcement none 04 stop 05

Repeat the above step and configure two more vectors. These vectors will queue the agents to the skills described earlier. The following figure lists the vector after the three vectors are administered.

List vector	CALL VECT	ORS
	Number	Name
	1	Predic/Progress
	2	Out Preview
	3	Inbound

Enter the **add vdn n** command, where "n" is an unused VDN number. On Page 1 of the VECTOR DIRECTORY NUMBER form, assign a **Name** for the VDN and enter **Vector Number** "1" related to vector 1 and **1st Skill** to "1".

Add vdn 17001			Page	1 of	2	
	VECTOR DIRE	CTORY NUMBER				
	Extension:	17001				
	Name:	Predictive/Progres	sive			
	Vector Number:	1				
	Attendant Vectoring?	N				
	Meet-me Conferencing?	Ν				
	Allow VDN Override?	Ν				
	COR:	1				
	TN:	1				
	Measured:	none				
	1 st Skill:	1				
	2 nd Skill:					
	3 rd Skill:					
	2 01111					

Repeat the above step and create three more VDNs with extensions 17002 to 17004. These VDNs will be sued for the different types of campaigns. The following figure lists the VDNs after the above administration is completed.

List vdn									
	VECT	OR D'	TREC	FORY	NUMB	ERS			
	1201	011 21				2110		Evnt	
		VDN			Vec		Orig	Noti	Skills
Name (22 characters)	Ext	Ovr	COR	TN	Num	Meas	Annc	Adj	1 st 2 nd 3 rd
Predictive/Progressive	17001	n	1	1	1	none			1
Outbound Preview	17002	n	1	1	2	none			2
Inbound 1	17003	n	1	1	3	none			3
Inbound 2	17004	n	1	1	3	none			4

3.7. Administer Agent Logins

Enter the **add agent-loginID n** command, where "n" is valid under the provisioned dial plan. Enter a descriptive name for the agent in the **Name** field. Ensure the **COR** field is set to "1" related to the COR configured in Section 3.5. The default value for **Auto Answer** is set to "station", except for those logins that will be used for progressive/predictive outbound services. In this case, the parameter value must be set to "all".

Add agent-loginID 15001		Page 1 of 2	
	AGENT LOGINID		
Login ID:	15001	AAS? N	
Name:	Pred/Prog Outbound Agent	AUDIX? N	
TN:	1 LWC	Reception: spe	
COR:	1 LWC Log Exter	rnal Calls? N	
Coverage Path:	AUDIX Name for	Messaging:	
Security Code:			
	LoginID for ISD	ON Display? N	
		Password:	
	Password (ent	er again):	
	Au	to Answer: all	
	MIA Acro	oss Skills: system	
	ACW Agent Consid	lered Idle: system	
	Aux Work Reason	Code Type: system	
	Logout Reason	Code Type: system	
Ma:	ximum time agent in ACW before loc	yout (sec): system	

On Page 2 of the AGENT LOGINID form, specify the list of skills assigned to the login and the level for each of them in the **SN/SL** field as shown below.

Add agen	t-loginID	15001]	Page 2 o	f 2
			r loginid				
Di	rect Agent	t Skill:					
Call Han	dling Pre	ference: ski	ll-level		Local Ca	all Prefer	ence? n
SN	SL	SN	SL	SN	SL	SN	SL
1: 1	1	16:		31:		46:	
2:		17:		32:		47:	
3:		18:		33:		48:	

Four hunt agent login's with extension from 15001 to 15004 were created for the different types of campaigns during compliance testing. This can be shown by entering a **list agent-loginID** command as shown below. Two inbound queues were configured so it is possible to transfer between agents in different Inbound queues. Agent 15003 & 15004 were also administered with two skills so Inbound 2 Agent would receive the call if Inbound 1 Agent was on a call.

list agent-loginID									
			AGENT	LOGIN	ID				
Login	Name/	Dir	AAS/	1	Ag				
ID	Extension	Agt	AUD	COR	Pr SO	Skil/Lv	Skil/Lv	Skil/Lv	
Skil/Lv									
15001	Pred/Prog Outbo			1 1	lvl	1/01	/	/	/
	unstaffe					/	/	/	/
15002	Preview Agent			1 1	lvl	2/01	/	/	/
	unstaffe					/	/	/	/
15003	Inbound 1 Agent			1	lvl	3/01	L 4/01	. /	/
	unstaffe					/	/	/	/
15004	Inbound 2 Agent			1 1	lvl	4/01	3/01	/	/
	unstaffe					/	/	/	/

3.8. Administer Agent Phone's

Extension 10000 and 10001 were used as agent phones during the compliance testing. It is assumed that stations are already administered on the Avaya Communication Manager. The following buttons were assigned to each phone as shown below. Enter the **change station n** where "n" is the agent phone extension. On page 3 of the STATION form configure the following BUTTON ASSIGNMENTS.

- **aux-work** Agent is logged on to the phone but not available
- manual-in Agent goes available to accept ACD calls
- after-call Agent state after the ACD call is completed ends the call
- **release** To drop the call

change station 10000			P	age	3 of	4
	STATIO	DN				
SITE DATA						
Room:			Headset	? n		
Jack:			Speaker	? n		
Cable:		I	Mounting	: d		
Floor:		Cord	d Length	: 0		
Building:		Se	et Color	:		
ABBREVIATED DIALING						
List1:	List2:		List3:			
BUTTON ASSIGNMENTS						
1: call-appr	5:	aux-work	RC:	Grp:		
2: call-appr	6:	manual-in		Grp:		
3: call-appr	7 :	after-call		Grp:		
4: call-fwd Ext:	8:	release				

3.9. Administer Phantom Extensions

Extensions 10500 and 10501 were created as phantom extensions for Outbound Preview campaign calls. They are also needed for These are configured as stations that do not have a physical port assigned. The configuration for the first of these stations is shown below using the **add station n** command.

- **Type**: 6408D+
- **Port**: X (indicates that this is a virtual port)
- **COR**: 1

add station 10500	I	Page 1 of 4
	STATION	
Extension: 10500	Lock Messages? n	BCC: 0
Type: 6408D+	Security Code:	TN: 1
Port: X	Coverage Path 1:	COR: 1
Name: Phantom 1	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 2	Personalized Ringir	ng Pattern: 1
Data Module? n	Message	e Lamp Ext: 10500
Speakerphone:	way Mute Butto	on Enabled? y
Display Language: 6	glish	-
	Media Co	omplex Ext:
	IP	SoftPhone? n

3.10. Administration for Direct transfer to Agents and Call Capturing

An additional vector and VDN is created for two additional Presence features Direct transfer to agents and Call capturing, configured in Section 5.8. The Direct Agent Calling (DAC) is an Expert Agent Selection (EAS) feature within Avaya Communication Manager that lets a caller calls the ACD agent directly.

- Contact a specific agent instead of a skill hunt group
- Queue for the agent if the agent is on a call
- Use Agent LoginID for callbacks and transfers

Enter the **change vector 4** command. The CTI link configured in Section 3.2 used by the Presence Server needs to be specified in the vector line 1. The command running in this line provides control over the call to the Presence Server so that the Presence Server may transfer it to a specific agent. Lines 3, 4 and 5 provide treatment to the call in case of an unsuccessful routing of the call by the adjunct link.

change vector	4	Page	1 of	3
	CALL VECTOR			
Number: 4	Name: CallCapture/DirectTransfer			
	Attendant Vectoring? n Meet-me Conf? n		Lock?	Ν
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	Holid	days? n	
Variables? n	3.0 Enhanced? n			
01 adjunct	routing link 3			
02 wait-time	10 secs hearing silence			
03 queue-to	skill 1st pri m			
04 wait-time	10 secs hearing silence			
05 disconnect	after announcement none			
06 stop				

Enter the **add vdn 17005** command. On Page 1 of the VECTOR DIRECTORY NUMBER form, assign a **Name** for the VDN and enter **Vector Number** "4" related to vector 4 and **1st Skill** to "3". Set the **Allow VDN Override** to "y". This VDN is used to configure the Direct Agent transfer in Section 5.8.

	_						-	-
add	vdn	17005			Page	1	of	2
			VECTOR DIREC	TORY NUMBER				
			Vietok Dikik	STORT NORBER				
			Extension:	17005				
			Name:	Routing				
			Vector Number:	4				
			Attendant Vectoring?	n				
			Meet-me Conferencing?	n				
			Allow VDN Override?	У				
			COR:	1				
			TN:	1				
			Measured:	none				
			1st Skill:	3				
			2nd Skill:					
			3rd Skill:					

Enter the **change agent-loginID 15004** command. On Page 2 of the AGENT LOGINID form, specify the list of skills assigned to the login and the level for each of them in the **SN/SL** field as shown below. Set the **Direct Agent Skill** to "3". This skill will be used to queue direct calls to the agent.

chai	nge ag	gent-login	nID 15004				Page	2 of 2
				AGENI	LOGINID			
	Di	rect Agent	t Skill: 3					
Cal	l Hano	dling Pret	ference: ski	ll-level		Local (Call Prefe	rence? n
	CNT	OT.	CNI	OT.	ON	OT.	CNT	QT.
	SN	SL	SN	SL	SN	SL	SN	SL
1:	4	1	16:		31:		46:	
2:	3	1	17:		32:		47:	
3:			18:		33:		48:	
4:			19:		34:		49:	

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4. Configure Avaya Application Enablement Services Server

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 TSAPI link
- Administer security database
- Administer CRM Optimizer user

4.1. Verify Avaya Application Enablement Services License

Log into the Avaya Application Enablement Services (AES) Server OAM web interface to verify that the Avaya Application Enablement Services license has proper permissions for features illustrated in these Application Notes. Select **CTI OAM Admin** and check to make sure the TSAPI service is licensed as shown below.

AVAYA	OAM						
OAM Home							
CTI OAM Hore	You are here: > <u>CTI OAM</u>	Home					
 <u>Administration</u> <u>Status and Control</u> 	늘 Welcome to CTI OAM Screens						
Maintenance							
Logs	[craft] logged in on Thu Oct	2 17:51:56 E.S.T. 2005					
<u>Utilities</u>							
Help	Service Ci	ontroller Status					
	ASAI Link Manager	Running					
	CMAPI Service	Running					
	CVLAN Service	Running					
	DLG Service	Running					
	Transport Layer Service	Running					
	TSAPI Service	Running					
	For status on actual services, please use <u>Status and Control</u> .						
	IMPORTANT: AE Services must be restarted for administrative changes to fully take effect. Changes to the Security Database do not require a restart.						
	License Information						
	You are licensed to run Application Enablement (CTI) version 3.0.						
	You are licensed for the follo • DLG • CVLAN	You are licensed for the following services • DLG • CVI AN					
	• TSAPI						

4.2. Administer TSAPI Service

From the CTI OAM Admin menu, select Administration \rightarrow CTI Link Admin \rightarrow TSAPI Links. Click on Add Link. In the Add/ Edit TSAPI Links form shown below enter the Link, Switch Connection and Switch CTI Link Number. Click on Apply Changes.

- Switch Connection: Choose a switch number between 1 and 16 that is available
- Switch CTI Link Number: Corresponding CTI link number configured in Section 3.2

Αναγα	OAM	
OAM Home		
CTI OAM Home	You are here: > <u>Administration</u> >	<u>CTI Link Admin</u> > <u>TSAPI Links</u>
✓ <u>Administration</u> <u>Local IP</u> <u>Ports</u>	🚪 Add / Edit TSAPI Links	1
Switch Connections CTI Link Admin TSAPI Links CVLAN Links	Link: Switch Connection: Switch CTI Link Number:	3 V S8500aDC1 V 3 V
DLG Links CMAPI Configuration <u>TSAPI Configuration</u> Security Database <u>Status and Control</u>	Apply Changes Cancel Changes	

During compliance testing, the TSAPI Security Database (SDB) was not used for testing. Verify that Enable SDB is not set on the Administration \rightarrow TSAPI Configuration \rightarrow TS Configuration form.

AVAYA	OAM	
OAM Home		
CTI OAM Home	You are here: > <u>Adı</u>	ministration > <u>TSAPI Configuration</u>
🗕 Administration	📕 TS Configui	ation
Local IP		
Ports	TCP Preferred Naming	
Switch Connections	Format	IP Address
CTI Link Admin	Extended Worktop	
CMAPI Configuration	Access	
TSAPI Configuration	Auto Admin of LAN	
Security Database	Addresses	
Status and Control	Enable SDB	
Maintenance	Apply Changes	
Logs		

Note: In environments where the TSAPI SDB is enabled, the devices to be monitored must be configured in the TSAPI SDB.

Navigate to the Tlinks screen by selecting **Administration > Security Database > Tlinks**. Note the value of the **Tlink Name**, as this will be needed for configuring the CRM Optimizer server in Section 5.1. The **Tlink Name** shown below is automatically created by the AES server.



4.3. Administer CRM Optimizer User

An User Id and password needs to be configured for the CRM Optimizer server to communicate as a TSAPI Client with the AES server. Click on **OAM Home** \rightarrow **User Management** and log into the User Management pages. Note that the user will be prompted with the User Management user name and password. Click on **User Management** and then **Add User**. In the **Add User** screen shown below, enter the following values:

- User Id: This will be used by the CRM Optimizer Server in Section 5.1
- Common Name and Surname: A descriptive names need to be entered
- CT User: Select "Yes" from the dropdown menu.
- New Password and Confirm Password: This will be used with the User Id in Section 5.1

AVAYA	OAM		
OAM Home			new contract
User Management Home	You are here: > <u>Use</u>	<u>r Management</u> >	<u>Add User</u>
✓ <u>User Management</u> List All Users	🚦 Add User		
<u>Add User</u> <u>Search Users</u>	Fields marked with * ca	an not be empty.	
Modify Default User	* User Id	presence	
Service Management	* Common Name	Presence	
▶ <u>Help</u>	* Surname	Presence User	
Logout	New Password		
	Confirm New Password		
	Admin Note		
	Avaya Role	None	~
	Business Category		
	Car License		
	CM Home		
	Css Home		
	CT User	Yes 💌	

5. Configure the Presence CRM Optimizer Server

The Presence Server and Oracle database was pre-installed on the same machine for convenience, during the compliance testing. The standard practice would be to install the Oracle database on a separate machine. The configuration applications Presence Administrator (Section 5.2) and Presence Agent configuration (Section 5.6) and were also installed and configured on the same machine.

5.1. Presence Server Configuration

Launch the Presence Server configuration application by double clicking the **pcoservercfg.exe** located in the Presence folder on the Presence Server. In the **Identification** tab, enter the **Server name**. The server name entered is for identification of the server configuration. The **Port** can be left as the default value "6100". Note that, the actual value for server port can vary.

Presence Server Configuration	×
Identification Database General Switch Links Nortel License	
Presence will use the following information to identify the server within a network, which may comprise several installed servers.	
Server name: PRESENCE SERVER	
Change	
Port: 6100	
OK Cancel	

The Presence Server also has the database installed of the customer records for convenience during compliance testing. This Oracle database, OPR3 is installed on the Presence CRM Server. Click on the **Database** tab. In the **Database server connection string** field, enter the IP address of the Oracle Server followed by a colon and then the default port number for the Oracle database "1521"followed by another colon and then the pre-administered Oracle instance "OPR3".

dentification	Database	General	Switch	Linka	Nortel	Licen	l	8
dentineditori		acticidit	ownen	cuika I	Honor	LICCH	130 [
Database	connection v	/alues						1
Databa	se server conr	nection stri	ng:	10.1.1	0.56:152	1:0PR	13	
				15		1		

Click on the **Switch** tab, in the **Switch configuration** section. The default values are kept on this tab for the Switch configuration values. The **CTI agent** field is the extension that is used for reporting on outbound call statistics to the Oracle Server. Click on the check box, **Specify phantom extension for preview mode**, these are the phantom extensions that have been configured in Section 3.9 and will be used for the preview mode campaigns.

Identification Database General Switch	Links	Nortel	License
Switch configuration values Prefix for outgoing calls: CTI agent. This login will be assigned to outgoing calls handled by the switch: Specify phantom extensions for previo	o all	9 9995 e:	199
To specify phantom extensions, you ca in the form (Range1-Range2). Use a se ranges.	an enter micolon	extension to separa	n <mark>ranges</mark> ate
10500;10501			

Click on the **Links** tab, click the **Enable links** check box, then click the **Edit** button in the **Primary** section.

Presence Server Conf	iguration			1	×
Identification Database	e General Switch	Links	Nortel	License	
You must specify the can specify up to 7 al service mode. CTI link	primary link which v ternative links to use is required to enable	vill be us in predic this opt	ed as de ctive outt ion.	fault link. You bound	
Primary Server name:		Edit	1	Remove 1	
Secondary					
	Add	Edit		Remove	
			ОК	Cancel	

In the **Name** field enter the Tlink name from Section 4.2 and the user name and password configured in Section 4.3 on the Avaya AES.

rimary link config	guration data	
Name:	AVAYA#S8500ADC1#CSTA#AESER	VER
User:	presence	
Password:	*****	

Click on the **License** tab, and enter a license key that is be provided by Presence and then click **OK**. The figure below has no license information. Either have a figure with the license information or remove the figure.

The final Presence Server configuration step is to start the Presence Server service from Windows Services Screen shown below.

Servicios						
Archivo Acción Ver	Ayuda					
+ → 🖪 🗗 🛊) 🖪 👔 🕨 🖬 💷 🖦					
Servicios (locales)	No. Servicios (locales)					
	Presence Server	Nombre /	Descripción	Estado	Tipo de inicio	Ir 🔺
		CradeOraHome81CMAdmin			Manual	S
	Detener el servicio	OracleOraHome81CMan			Manual	S
	Pausar el servicio Reiniciar el servicio	OracleOraHome81DataGatherer			Manual	S
	Keinidar er servicio	OracleOraHome81HTTPServer			Manual	S
		CracleOraHome81PagingServer			Manual	S
		🖏 OracleOraHome81TNSListener		Iniciado	Automático	S
		OracleServiceOPR3		Iniciado	Automático	S
		CAnywhere Host Service	"Permite a	Iniciado	Deshabilitado	S
		Republic Plug and Play	Habilita un	Iniciado	Automático	S
		Portafolios	Habilita el V		Deshabilitado	S
		Researce Intelligent Routing Server			Deshabilitado	S
		Resence Server		Iniciado	Manual	S
		Presence Statistics Server		Iniciado	Manual	S
		Programador de tareas	Habilita un	Iniciado	Automático	S
		Reproveedor de compatibilidad con seguridad LM de Windows NT	Ofrece seg		Manual	S
		Rublicación en World Wide Web	Proporcion		Manual	S
		QoS RSVP	Ofrece funcion	nalidad de se	ñalización de red	y control
		Registro de sucesos	Habilita me	Iniciado	Automático	S .
		Registro remoto	Habilita usu	Iniciado	Automático	SI
		Registros y alertas de rendimiento	Recopila inf		Manual	S
		Remote Packet Capture Protocol v.0 (experimental)	Allows to c		Manual	S
		Servicio COM de grabación de CD de IMAPI	Administra I		Manual	S
		Servicio de alerta	Notifica a u		Deshabilitado	SI
		Servicio de aprovisionamiento de red	Administra I		Manual	S
		Servicio de descubrimientos SSDP	Habilita el d		Manual	s
		Servicio de Index Server	Indiza el co		Manual	S
		Servicio de informe de errores	Permite inf	Iniciado	Automático	S
		Servicio de puerta de enlace de capa de aplicación	Proporcion	Iniciado	Manual	SI
		Servicio de restauración de sistema	Realiza fun		Automático	S _1
		Servicio de transferencia intelinente en segundo plano.	Transfiere I		Manual	<u> </u>
	Extendido Estándar /					

5.2. Presence Administrator Configuration

Launch the Presence Administrator Configuration application by double clicking the **pcoadmincfg.exe** located in the Presence folder. For testing convenience, the Presence Administrator Configuration Application was also located on the Presence Server machine. Click the **Add** button in the Presence Administrator Configuration screen.

Presence S	erver	Port	
			Up †
			Down ↓
	r- Ja	1	i -

Enter the **Presence Server IP address**. The **Presence Server port** can be left as the default value "6100". Click **OK**.



5.3. Edit the Outbound Predictive or Preview Campaign

Launch the Presence Administrator application by double clicking the **pcoadmin.exe** located in the Presence folder. The username and password that appear in the User and Password field are created during the Presence Server installation.

Presence Admin	istrator login	×
~	User: presence	1
(\mathbf{D})	Password: ******	
U	Server: PRESENCE SERVER	*
	ОК	Cancel

Click on **Outbound** in the left hand pane under Options. Highlight the PREDICTIVE campaign in the main window and click on **Edit** in the task bar. The campaign must be disabled by clicking the **Disable** button in the task bar before the values can be edited within the campaign chosen. Please refer to the Presence documentation for creating campaigns in Section 10.



Click on **Outbound type** in the left pane. Choose **Type** "Predictive". In the ACD Items section, enter the VDN and huntgroup extension configured for Predictive outbound dialing on Avaya Communication Manager in Section 3.6. Enter the Tlink name configured in Avaya AES in Section 4.2. The Prediction by field in Predictive outbound mode has two options are available: Application and Time.

- Application: The application integrated with the service is responsible for generating the call based on a value defined in the numeric field Level.
- Time: A new predictive call is generated by the system when the specified time has elapsed after a call is received by an agent. All other fields should left with default values.

General	Outbound type
Maximums Queues Schedule Softphone Alternative phone no. Time zones Sounds Other Logo	Type: Predictive ACD Items VDN/CDN: 17001 Extension/Skill: 16001 Links: AVAYA#S8500ADC1#CSTA#AESERVER Prediction by: Application Level: 1 Number of concurrent calls: 1
	Enable call capturing VDN/CDN for capturing: Maximum time before call: seconds

The configuration for the Preview campaign would be exactly the same, except to choose Preview from the **Type** drop down menu and the appropriate VDN. In this case, VDN 17002 and huntgroup extension 16002 will be entered. This should match the configuration on Avaya Communication Manager in Section 3.6.

Finally enable the predictive campaign by clicking the **Enable** button on the taskbar in the main Presence Administrator screen.

5.4. Configure Inbound Campaign

Click on **Inbound** in the left hand pane under Options. Highlight the INBOUND1 campaign in the main window and click on **Edit** in the task bar.



Click on ACD in the left pane. Enter the Huntgroup extensions in the Skills section and the VDNs in the VDN/CDN section, configured in Avaya Communication Manager in Section 3.6.

Inbound service	the second s		×
☑ General ☑ ACD ∞ Softphone ▲ Malicious calls ▲ Sounds I Stop control ῷ Other ➡ Logo	ACD Skills Extension/Skill (A) 16003 16004		
	VDN/CDN		
	Remove	OK Cancel	

5.5. Create Presence Agent Logins

Click on Logins in the left hand pane under Options. Click on New in the task bar.



Enter the range of agent login IDs created in Avaya Communication Manager in Section 3.7 in the **Logins** field. Click the **Softphone always enabled** checkbox. Leave the password fields empty, as none was configured for the agent's logins in Avaya Communication Manager.

Add logins		×
General Croups	General Logins: 15001-15004 Password:	
	ОК	Cancel

5.6. Presence Agent Configuration

Launch the Presence agent configuration application by double clicking the **pcoagentcfg.exe** located in the Presence folder. Enter the **Presence Server IP address**. The **Presence Server port** can be left as the default value of "6100". Enter the Agent phone extension in the **ACD/Phone extension** field configured Avaya Communication Manager in section 3.8. Check the **Hang up calls before logging in** check box. In the **Use configuration for field** choose "Machine" from the drop down menu. Click **OK**. This step is needed for every agent only the ACD station/Phone extension will vary.

esence	Agent configuration	3
	Presence will use the following information to configure the different Presence Agent connections.	
TCP/I	P connection to Presence Server	-
	Presence Server IP 10.1.10.56	
	Presence Server port: 6100	
-Conne ACD	ection to phone extension 9 station/Phone extension: 10000	
	Hang up calls before logging in	
Use co	nfiguration for: Machine	
	OK Cance	Ū,

5.7. Presence Agent Application

Launch the Presence agent configuration application by double clicking the **pcoagent.exe** located in the Presence folder. Enter agent login Id and click on **OK**.



In the screen below click on the **Blending service** button in the task bar. Compliance testing was only carried for blending service.

Stopped	Outbound
	(*)
	Stopped

A task bar is present at the top of the Agent PC. Click on the green arrow to make the agent in an available state.

D 🔁	• 🛈 🖄 🛞 🔋 (• • 77 7	26	te to te te te	
	Stopped	00:00:21	÷ 🙆 🚍		

The information status on the task bar goes to available indicating the agent is ready to receive calls.



5.8. Direct Agent Transfer and Call Capturing feature Configurations

The Presence agent application has two additional features Direct agent transfer and Call capturing that were tested, the relevant VDNs and Vectors for these additional features have been configured in Section 3.10

- Enable direct transfer to agents of this service: This option enables the voice and data transfer to agents of this service from the Presence Agent softphone. When this option is selected, agents from this or another service can check the current status of agents (such as 'Available', Speaking', etc.) and then transfer the call and data to any agent of the service.
- Enable call capturing: When this option is enabled, an agent can mark a contact from the service as 'Captured' for a specific period of time. This way the call will automatically be transferred to the capturing agent if the customer calls the service again within the specified time and the agent who captured the contact is available.

In the main Presence Administrator screen, click on **Inbound** in the left hand pane under Options. Highlight the INBOUND1 campaign in the main window and click on **Edit** in the task bar. In the Inbound service screen, click on **Other** in the left pane and then click the **Enable call capturing** check box. **Enable direct transfer to agents of this service** checkbox. Enter the VDN configured in Section 3.6 to be used for direct transfer on the **Use the following VDN/CDN for transfer** field.

Inbound service		×
General ACD Softphone Malicious calls Sounds Stop control Cother Logo	Call capturing Call capturing Force routing to agent who captured the call Automatically capture calls for Transfer to agents Enable direct transfer to agents of this service Use the following VDN/CDN for transfer: 17005 Minimum after-call work time: seconds	
	OK Cancel	

6. Interoperability Compliance Testing

The Interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on verifying CRM Optimizer handling of TSAPI messages in the areas of routing, call control and event notification. The serviceability testing focused on verifying the CRM Optimizer ability 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

Testing included validation of correct operation of typical CRM functions including, inbound voice calls and outbound campaign calls both in preview and predictive modes. Functionality testing included basic telephony operations such as answer, hold/retrieve, transfer, and conference exercised from both the agent telephones and the agent softphones for the inbound and outbound campaign calls. Additional features such as call capturing, direct agent transfer calls and malicious calls were tested. 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

All other test cases passed successfully. There were some issues on the serviceability test cases related to the length of time the AES was disconnected from the Presence Server In the situation where connection has been lost by the Presence Agent application then restart the Presence application.

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 Presence CRM Optimizer.

7.1. Verify Avaya Communication Manager

The following steps can ensure that the communication between Avaya Communication Manager and the Avaya Application Enablement Services server is working.

Verify that the service state of the TSAPI link is established.

status	status aesvcs cti-link							
			AE SERVICES	CTI LINK STAT	US			
CTI	Version	Mnt	AE Services	Service	Msgs	Msgs		
Link		Busy	Server	State	Sent	Rcvd		
1	4	no	AEServer	established	15	15		
3	4	no	AEServer	established	15	15		

7.2. Verify Avaya Enablement Services

Verify the status of the TSAPI link by selecting **Status and Control** \rightarrow **Services Summary**. Click on **TSAPI Service**, followed by **Details**. The TSAPI Link Details screen is displayed as shown below.

AVAYA	MAO	
OAM Home CTI OAM Home Administration	You are here: > <u>Status and Control</u> > <u>Services Summary</u>	
 <u>Status and Control</u> <u>Switch Conn Summary</u> <u>Services Summary</u> Maintenance 	Switch Conn Switch CTI Link Name Link Number Conn Status Since State Version	n Number of ASAI n Associations Rate
→ Logs → Utilities → Help	 3 8500 3 Talking 2005-09-09 Online 13 Online Offline 	0 72
	For service-wide information, choose one of the following: TSAPI Service Status TLink Status User Status	

7.3. Presence CRM Optimizer

Presence CRM Optimizer has a CTI Message tracing capability to aid fault diagnosis in the field. A startup log is started when the Presence Server is trying to load and connect to the Avaya AES. The screen below indicates the server has started.

🔋 Pres	sence Serve	er								
Server	Debug									
В	6	8	2 🗊	* 5	1			3	1	Outbound 🔽
17/01 17/01 17/01 17/01 17/01 17/01 17/01 17/01 17/01	12:57:25 12:57:25 12:57:25 12:57:25 12:57:25 12:57:25 12:57:25 12:57:24 12:57:24 12:57:24	Server Servia Loadin Servia Loadin Updat: Connec Initia Connec Initia	r start ce PRES ng inbo ce PRES ing outb ing age cting t alizing cting t alizing	ed ENCE INE Und serv ENCE OUT ound ser nt conne o CTI li structu o databa server.	OUND rices BOUND vices sction nk res se	loade (1 se load (1 s	ed ervice led servic ords.	203) 2003).	5 **	

The Presence CRM Optimizer system maintains a log of the events that have occurred in the system. The Events command is located in the Utilities menu in the main administration menu and is used to display and delete the system event log.

🗐 List of event	5		
× 2			
Show events:	☑ Information	🔽 Error	Alert
Date 🗸	Description		
17/01/200	6 15:38:23 Service enab	oled (Id: 100)	
17/01/200	6 15:38:19 Service disat	oled (Id: 100)	
17/01/200	6 15:36:30 Server starte	d	
17/01/200	6 15:36:26 Server shut o	lown	
17/01/200	6 15:36:01 Service enat	oled (Id: 100)	
17/01/200	6 15:30:05 Storage of an	ctive calls statu	s completed
17/01/200	6 15:30:05 Presence Sta	atistics Server (I	Code: 0). Range updated: 17/01/2006 15:30:00 (Tim
17/01/200	6 15:29:35 Service disat	oled (Id: 100)	
17/01/200	6 15:29:34 Service enab	oled (Id: 100)	
17/01/200	6 15:24:07 New outbour	nd service load	ed (Id: 100)
17/01/200	6 15:02:44 Storage of an	ctive calls statu	s completed
17/01/200	6 15:02:44 Presence Sta	atistics Server (I	Code: 0). Range updated: 17/01/2006 15:00:00 (Tim
17/01/200	6 15:02:34 Server starte	d	
17/01/200	6 14:52:41 Server shut o	lown	
17/01/200	6 14:52:30 Server shut o	lown	
17/01/200	6 14:52:10 Server shut d	lown	
17/01/200	6 14:51:49 Server shut o	lown	
A 17/01/200	6 14:51:28 Server shut o	lown	
17/01/200	6 14:51:08 Server shut o	łown	
A 17/01/200	6 14:50:47 Server shut o	łown	
A 17/01/200	16 14:50:27 Server shut o	łown	
A 17/01/200	6 14:50:06 Server shut o	lown	
A 17/01/200	16 14:49:45 Server shut o	lown	
A 17/01/200	16 14:49:25 Server shut o	lown	
17 101 1000		1	

8. Support

If technical support is required for the Presence CRM Server, contact their Technical Support Department. Email: support@presenceco.com

9. Conclusion

These Application Notes describe the configuration steps required for Presence CRM Optimizer 5.13 to successfully interoperate with Avaya Communication Manager 3.0.1 using Avaya Application Enablement Services 3.0. All feature functionality and serviceability test cases were completed successfully.

10. Additional References

This section references the Avaya and Presence CRM Optimizer product documentation that are relevant to these Application Notes.

- Administrator Guide for Avaya Communication Manager, Document ID 02-300309, Issue 1, June 2005, available at <u>http://support.avaya.com</u>
- Avaya Application Enablement Services 3.0 Administration and Maintenance Guide, Document ID 02-300357, Issue 1, June 2005, available at http://support.avaya.com

The following documentation is available on request from Presence:

- ACD System Administration Guide (Avaya) Presence CRM Optimizer
- Presence Administrator Manual Presence CRM Optimizer
- Presence Installation Guides Presence Software
- PBX/ACD Requirements Presence Software

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