

Avaya Solution & Interoperability Test Lab

Application Notes for TriVium Systems CallAnalyst Enterprise Server with Avaya Communication Manager – Issue 1.0

Abstract

These Application Notes describe the configuration procedures required for TriVium Systems CallAnalyst Enterprise Server to successfully interoperate with Avaya Communication Manager to collect call detail records (CDR) using Avaya Reliable Session Protocol (RSP) over TCP/IP. CallAnalyst Enterprise Server is a software application that collects, stores and processes call records to provide call usage analysis and call accounting capabilities.

The general test approach was to perform a set of call scenarios that would generate varied data in the call detail records and verify that CallAnalyst Enterprise Server properly parsed and displayed the record fields. The call scenarios included inbound trunk calls, outbound trunk calls and intra-switch calls. Basic serviceability and performance testing was also conducted to assess the reliability of the solution. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe a compliance-tested call detail recording (CDR) solution comprised of Avaya Communication Manager and TriVium Systems CallAnalyst Enterprise Server. CallAnalyst Enterprise Server is a software application that collects, stores and processes call detail records to provide call usage analysis and call accounting capabilities.

Avaya Communication Manager communicates with CallAnalyst Enterprise Server via Avaya Reliable Session Protocol (RSP) over TCP/IP. RSP provides a transport mechanism for reliable delivery of CDR records. Avaya Communication Manager generates and sends the call records via RSP while CallAnalyst Enterprise Server collects, stores and processes the records at the other end.

Avaya Communication Manager can generate call detail records for intra-switch calls, inbound trunk calls and outbound trunk calls. In addition, split records can be generated for transferred calls and conference calls. CallAnalyst Enterprise Server supports the unformatted CDR format.

Multi Site Process Manager is a key component of CallAnalyst Enterprise Server. The Multi Site Process Manager is a Windows service that collects the records from the Avaya Communication Manager, processes the data and stores the data in the database. CallAnalyst Enterprise Server provides the reporting capabilities and allows the user to perform data management tasks and automation. Unless stated otherwise, this document will use CallAnalyst Enterprise Server to refer to the complete product including all components.

Figure 1 illustrates the network configuration that was used for the compliance test. The configuration consists of two CDR sources. The first is an Avaya S8300 Media Server running Avaya Communication Manager residing in an Avaya G700 Media Gateway. There are Avaya 6400D Series Digital Telephones and a PSTN PRI trunk connected to the Media Gateway. There are Avaya 4600 Series IP Telephones registered to the Media Server.

The second source is an Avaya S8500 Media Server running Avaya Communication Manager with an Avaya G650 Media Gateway. There are Avaya 4600 Series IP Telephones registered to the Media Server.

All network components are connected to an IP network comprised of an Extreme Networks Alpine 3804 switch and Avaya C363T-PWR Converged Stackable Switch. A Windows 2000 PC is connected to the network that hosts CallAnalyst Enterprise Server. A RSP session is established from each Avaya Communication Manager to CallAnalyst Enterprise Server to collect CDR records. In addition, a H.323 IP trunk is established between the two Avaya Media Servers so calls can be placed from one to the other.

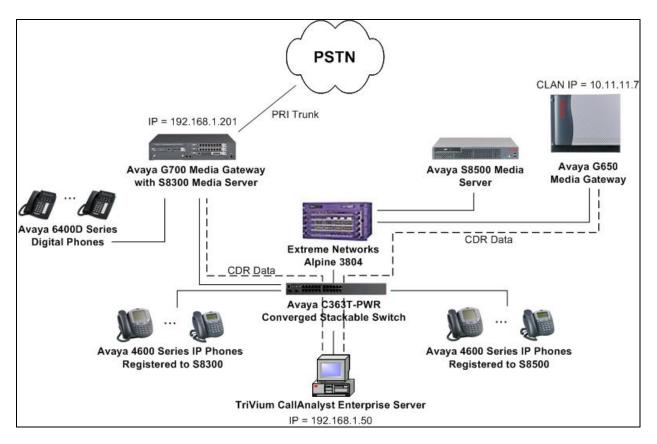


Figure 1: Test Configuration Collecting CDR Data from Multiple Servers

2. Equipment and Software Validated

The following equipment and software/firmware were used for the test configuration provided.

Equipment	Software/Firmware
Avaya S8300 Media Server	Communication Manager 3.0.1
	(R013x.00.1.346.0)
Avaya G700 Media Gateway (Media Gateway	24.21.1
Processor)	
Avaya S8500 Media Server	Communication Manager 3.0
	(R013x.00.0.340.3)
Avaya G650 Media Gateway	-
TN2312BP IP Server Interface (IPSI)	HW 03 FW 21
TN799DP C-LAN Interface (C-LAN)	HW 01 FW 15
TN2302AP IP Media Processor (MEDPRO)	HW 20 FW 104
Avaya 4600 Series IP Telephones	2.3 (4610SW H.323)
	2.3 (4620SW H.323)
	2.5 (4625SW H.323)
Avaya 6400D Series Digital Telephones	-
Avaya C363T-PWR Converged Stackable Switch	4.5.14

Equipment	Software/Firmware
Extreme Networks Alpine 3804	7.2.0 Build 25
CallAnalyst Enterprise Server running on Windows	2.3 (Build:5123 Update 1)
2000 Professional SP4	plus the following patches:
	CES2.3Patch1.zip
	AvayaHotFix.zip

3. Configure Avaya Communication Manager

This section describes the procedure for configuring call detail recording on Avaya Communication Manager. These steps are performed through the System Access Terminal (SAT). These steps describe the procedure used for the Avaya S8300 Media Server. All steps are the same for the other media servers unless otherwise noted. Avaya Communication Manager will be configured to generate CDR records using RSP over TCP/IP to the IP address of the PC running CallAnalyst Enterprise Server. For the Avaya S8300 Media Server, the RSP link originates at the IP address of the local media server. For other Avaya Media Servers, the RSP link originates at the IP address of the C-LAN board.

Step		Ι	Description	
1.	of the PC running node name of <i>Call</i>	CallAnalyst Enterpris	e Server. The e	ew node name with the IP address example below shows a descriptive ess set to 192.168.1.50 as shown in
	change node-names		DDE NAMES	Page 1 of 1
	Name CallAnalyst	IP Address 192.168.1 .50	Name	IP Address
	Wireless-S8500 default procr	10 .11 .11 .7 0 .0 .0 .0 192.168.1 .201		

2. N				D	escription			
	Next, the	node 1	name of	the Media Serve	r or C-LAN cire	cuit pack must be	e det	ermir
ſ	This infor	matio	n will b	e used in Step 3.	If the Avaya S	8300 Media Serv	er is	used
n		e of th	ne Medi	a Server is requir	•			
ti 1	the C-LA	N, use C-LA	the list N in the	Media Server is p ip-interface all e list that will be ddress field.	command. If m	ultiple C-LANs a	are c	lispla
S	88500 Me	edia So edia So	erver us erver is	ows the output of ed in the complia <i>TR2-CLAN-1A13</i>	nce test. The n			
S	88500 Me 88500 Me	edia So edia So	erver us erver is	ed in the complia TR2-CLAN-1A13	ince test. The n			
S	88500 Me 88500 Me	edia So edia So	erver us erver is	ed in the complia	ince test. The n			
S	58500 Me 58500 Me	edia So edia So interf	erver us erver is	ed in the complia TR2-CLAN-1A13	nce test. The n	ode name of the o	C-LA	AN 0
S	S8500 Me S8500 Me list ip-: ON Type	interf	ace all Code Sf	IP INTE	RFACES Subnet Mask	Gateway Address	C-LA	AN o

Step	Description	
3.	3. Use the change ip-services command to define the CDR link to use RSP over	
	define a primary CDR link, set the Service Type to <i>CDR1</i> . A secondary link of	
	defined by setting Service Type to <i>CDR2</i> . If using the Avaya S8300 Media Set	
	Local Node is set to <i>procr</i> which is the node name of the local processor. If us	U
	another Avaya Media Server, the node name is set to the node name of the C-L	
	The Local Port number is fixed to 0. The Remote Node is set to the node nar	
	created in Step 1 for the PC running CallAnalyst Enterprise Server. The Remo	
	may be set to a value between 5000 and 64500 inclusive and must match the p configured in CallAnalyst Enterprise Server. See Section 4 Step 2.	on
	configured in CanAnaryst Enterprise Server. See Section 4 Step 2.	
	The example below shows the values used in the compliance test for each Med	lia Server
	The example below shows the values used in the compliance test for each free	nu berver.
	Values used on the Avaya S8300 Media Server:	
	change ip-services Page 1 of	3
	IP SERVICES	
	Service Enabled Local Local Remote Remote	
	TypeNodePortNodePortCDR1procr0CallAnalyst9000	
	Values used on the Avera \$2500 Media Server	
	Values used on the Avaya S8500 Media Server: change ip-services Page 1 of	3
	Change ip-services Page 1 of	5
	IP SERVICES Service Enabled Local Local Remote Remote	
	Type Node Port Node Port	
	CDR1 TR2-CLAN-1A13 0 CallAnalyst 9001	
4.		
	(RSP) for the CDR link by setting Reliable Protocol to y. Default values can	be used for
	the other fields.	
	change ip-services Page 3 of	3
	SESSION LAYER TIMERS	
	ServiceReliablePacket RespSession ConnectSPDUConnectivityTypeProtocolTimerMessage CntrCntrTimer	
	CDR1 y 30 3 3 60	

)	Description
5.	Use the change system-parameters cdr command to set the parameters for the type of calls to track and the format of the CDR data. The example below shows the values use in the compliance test.
	CDR Date format: month/dayUse ISDN Layouts? nPrimary Output Format: unformattedUse Enhanced Formats? nPrimary Output Endpoint: CDR1Modified Circuit ID Display? n
	 The remaining parameters define the type of calls that will be recorded and what data will be included in the record. See reference [2] for a full explanation of each field. The test configuration used some of the more common fields described below. Record Outgoing Calls Only? n [Allows incoming trunk calls to appear in the CDR records along with the outgoing trunk calls.] Suppress CDR for Ineffective Call Attempts? y [Prevents calls that are blocked from appearing in the CDR record.] Intra-switch CDR? y [Allows call records for internal calls involving specific stations.] Outg Trk Call Splitting? y [Allows a separate call record for any portion of ar outgoing call that is transferred or conferenced.]
	 Inc Trk Call Splitting? y [Allows a separate call record for any portion of a incoming call that is transferred or conferenced.] Note: If Suppress CDR for Ineffective Call Attempts is set to <i>n</i>, CallAnalyst Enterprise Server does not distinguish between these CDR records of blocked calls from completed call records. It is recommended that this parameter be set to <i>y</i> for use with CallAnalyst Enterprise Server.
	 Inc Trk Call Splitting? y [Allows a separate call record for any portion of a incoming call that is transferred or conferenced.] Note: If Suppress CDR for Ineffective Call Attempts is set to <i>n</i>, CallAnalyst Enterprise Server does not distinguish between these CDR records of blocked calls from completed call records. It is recommended that this parameter be set to <i>y</i> for use with CallAnalyst

enter a specific extension whose usage will be tracked with a CDR record. Add for each additional extension of interest. Change intra-switch-cdr Page 1 of 2 Assigned Members: 4 of 1000 administered 1: 3000 19: 37: 55: 73: 91: 2: 3001 20: 38: 56: 74: 92: 3: 3010 21: 39: 57: 75: 93: 4: 3011 22: 40: 58: 76: 94: 5: 23: 41: 59: 77: 95: 6: 24: 42: 60: 78: 96: 7: 25: 43: 61: 79: 97: 8: 26: 44: 62: 80: 98: 9: 27: 45: 63: 81: 99: 10: 28: 46: 64: 82: 100: 11: 29: 47: 65: 83: 101: 12: 30: 48: 66: 84: 102: 13: 31: 49: 67: 85: 103: 14: 32: 50: 68: 86: 104: 15: 33: 51: 69: 87: 105: 16: 34: 52: 70: 88: 106: 17: 35: 53: 71: 89: 107: 18: 36: 54: 72: 90: 108: For each trunk group for which CDR records are desired, verify that CDR report enabled. To do this, use the change trunk-group <i>n</i> command, where <i>n</i> is the tr number, to verify that the CDR Reports field is set to y. This applies to all type groups. Change trunk-group 3 TRUNK GROUP Group Number: 3 Group Type: isdn CDR Reports: y Group Name: PSTN PRI 2 0 COR: 1 TN: 1 TAC: 103 Direction: two-way 0 utgoing Display? n Direction: 0 Direction:				ad with a	ssigned Members	
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18: 36: 54: 72: 90: 108: For each trunk group for which CDR records are desired, verify that CDR report nabled. To do this, use the change trunk-group <i>n</i> command, where <i>n</i> is the trunber, to verify that the CDR Reports field is set to <i>y</i> . This applies to all type roups. change trunk-group 3 Page 1 of 19 change trunk-group 3 Page 1 of 19 Group Number: 3 Group Type: isdn CDR Reports: y Group Name: PSTN PRI 2 COR: 1 TN: 1 TAC: 103 Direction: two-way Outgoing Display? n Carrier Medium: PRI/BF Dial Access? y Busy Threshold: 255 Night Service:						
For each trunk group for which CDR records are desired, verify that CDR report nabled. To do this, use the change trunk-group n command, where n is the trumber, to verify that the CDR Reports field is set to y. This applies to all type roups. change trunk-group 3 Page 1 of 19 change trunk-group 3 Page 1 of 19 Group Number: 3 Group Type: isdn CDR Reports: y Group Name: PSTN PRI 2 COR: 1 TN: 1 TAC: 103 Direction: two-way Outgoing Display? n Carrier Medium: PRI/BF Dial Access? y Busy Threshold: 255 Night Service:						
TRUNK GROUPGroup Number: 3Group Type: isdnCDR Reports: yGroup Name: PSTN PRI 2COR: 1TN: 1TAC: 103Direction: two-wayOutgoing Display? nCarrier Medium: PRI/BFDial Access? yBusy Threshold: 255Night Service:Queue Length: 0OutgoingDisplay?	nabled. To do this, use	the chang	e trunk-group <i>n</i>	comman	d, where <i>n</i> is the t	
Group Number: 3 Group Type: isdn CDR Reports: y Group Name: PSTN PRI 2 COR: 1 TN: 1 TAC: 103 Direction: two-way Outgoing Display? n Carrier Medium: PRI/BF Dial Access? y Busy Threshold: 255 Night Service: Queue Length: 0	habled. To do this, use umber, to verify that the	the chang	e trunk-group <i>n</i>	comman	d, where <i>n</i> is the t	
Group Name: PSTN PRI 2COR: 1TN: 1TAC: 103Direction: two-wayOutgoing Display? nCarrier Medium: PRI/BFDial Access? yBusy Threshold: 255Night Service:Queue Length: 0Outgoing Display? nCarrier Medium: PRI/BF	habled. To do this, use umber, to verify that the coups.	the chang	e trunk-group <i>n</i>	comman	d, where n is the transformed state of n is the transformed state of n and n	
Group Name:PSTN PRI 2COR:1TN:1TAC:103Direction:two-wayOutgoing Display?nCarrier Medium:PRI/BFDial Access?yBusy Threshold:255Night Service:Queue Length:0	habled. To do this, use umber, to verify that the coups.	the chang e CDR Re	e trunk-group <i>n</i> ports field is set	comman	d, where n is the transformed state of n is the transformed state of n and n	
Dial Access? Y Busy Threshold: 255 Night Service: Queue Length: 0	habled. To do this, use umber, to verify that the coups.	the chang e CDR Re	e trunk-group n ports field is set	to y. This	d, where <i>n</i> is the tress applies to all type Page 1 of 1	
Queue Length: 0	habled. To do this, use umber, to verify that the coups. change trunk-group 3 Group Number: 3	the chang cDR Re	e trunk-group n ports field is set	to y. This	d, where <i>n</i> is the transformed state of the transformed state of the transformation of transformation o	
	habled. To do this, use umber, to verify that the coups. change trunk-group 3 Group Number: 3 Group Number: 3 Direction: two-way	the chang e CDR Re TH 2 Outgo	e trunk-group n ports field is set RUNK GROUP Group Type: isdu COR: 1 Ding Display? n	n TN: Car	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B	
Service Type: tie Auth Code? n TestCall ITC: rest	change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y	the chang e CDR Re TH 2 Outgo	e trunk-group n ports field is set RUNK GROUP Group Type: isdu COR: 1 Ding Display? n	n TN: Car	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B	
Far End Test Line No:	change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y	the chang e CDR Re TH 2 Outgo	e trunk-group n ports field is set RUNK GROUP Group Type: isdu COR: 1 Ding Display? n	n TN: Car Nig	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B	
TestCall BCC: 4 TRUNK PARAMETERS	habled. To do this, use number, to verify that the coups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0	the chang cDR Re TH 2 Outgo Bus	e trunk-group n ports field is set RUNK GROUP Group Type: isdn COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n	n TN: Car Nig	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service:	
Codeset to Send Display: 6 Codeset to Send National IEs: 6	habled. To do this, use umber, to verify that the roups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4	the chang cDR Re TH 2 Outgo Bus	e trunk-group n ports field is set RUNK GROUP Group Type: isdn COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n	n TN: Car Nig	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service:	
Max Message Size to Send: 260 Charge Advice: none	habled. To do this, use umber, to verify that the roups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS	the chang cDR Re TH 2 Outgo Bus Far End 7	e trunk-group n ports field is set RUNK GROUP Group Type: isdr COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Test Line No:	n TN: Car Nig	d, where <i>n</i> is the transformation of the formation of th	
Supplementary Service Protocol: a Digit Handling (in/out): enbloc/enbloc	habled. To do this, use umber, to verify that the coups. Change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS Codeset to Send	the change cDR Re TH 2 Outgo Bus Far End T d Display:	e trunk-group n ports field is set RUNK GROUP Group Type: isdr COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Fest Line No: 6 Codeset to	n TN: Car Send Nati	d, where <i>n</i> is the transformation of the formation of th	
Trunk Hunt: cyclical	habled. To do this, use umber, to verify that the coups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS Codeset to Seno Max Message Size	the change cDR Re TH 2 Outgo Bus Far End 7 d Display: e to Send:	e trunk-group n ports field is set RUNK GROUP Group Type: isd COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Test Line No: 6 Codeset to 260 Charge Adv.	n TN: Car Nig Send Nati	d, where <i>n</i> is the trass applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service: TestCall ITC: rest onal IES: 6	
Digital Loss Group: 13	habled. To do this, use amber, to verify that the coups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS Codeset to Seno Max Message Size Supplementary Service	the change c CDR Re c CDR Re TH 2 Outgo Bus Far End T d Display: e to Send: Protocol:	e trunk-group n ports field is set RUNK GROUP Group Type: isd COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Fest Line No: 6 Codeset to 260 Charge Adv.	n TN: Car Nig Send Nati ice: none ling (in/o	d, where <i>n</i> is the tr s applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service: TestCall ITC: rest onal IEs: 6 ut): enbloc/enbloc	
Bit Rate: 1200 Synchronization: async Duplex: full	habled. To do this, use number, to verify that the coups.	the chang c CDR Re CDR Re TH 2 Outgo Bus Far End T d Display: e to Send: Protocol: cyclical	e trunk-group a ports field is set RUNK GROUP Group Type: isda COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Test Line No: 6 Codeset to 260 Charge Adv. a Digit Hand	n TN: Car Nig Send Nati ice: none ling (in/o	d, where <i>n</i> is the trist applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service: TestCall ITC: rest onal IEs: 6 ut): enbloc/enbloc oss Group: 13	
	habled. To do this, use amber, to verify that the roups. change trunk-group 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS Codeset to Send Max Message Size Supplementary Service Trunk Hunt: Incoming Calling Number	the chang c CDR Re TH 2 Outgo Bus Far End T d Display: e to Send: Protocol: cyclical - Delete:	e trunk-group a ports field is set RUNK GROUP Group Type: isda COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Test Line No: 6 Codeset to 260 Charge Adv. a Digit Hand: Insert:	n TN: Car Nig Send Nati ice: none ling (in/o Digital L	d, where <i>n</i> is the trist applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service: TestCall ITC: rest onal IEs: 6 ut): enbloc/enbloc oss Group: 13 Format:	
Disconnect Supervision - In? n Out? n Answer Supervision Timeout: 0	habled. To do this, use umber, to verify that the coups. change trunk-group 3 Group Number: 3 Group Number: 3 Group Name: PSTN PRI 2 Direction: two-way Dial Access? y Queue Length: 0 Service Type: tie TestCall BCC: 4 TRUNK PARAMETERS Codeset to Send Max Message Size Supplementary Service Trunk Hunt: Incoming Calling Number Bit Rate: Disconnect Supervision	the change cDR Re cDR Re TH 2 0utgo Bus Far End T d Display: e to Send: Protocol: cyclical - Delete: 1200 - In? n (0)	e trunk-group a ports field is set RUNK GROUP Group Type: isda COR: 1 Ding Display? n sy Threshold: 255 Auth Code? n Test Line No: 6 Codeset to 260 Charge Adv. a Digit Hand: Insert: Synchronizatio	n TN: Car Nig Send Nati ice: none ling (in/o Digital L	d, where <i>n</i> is the trist applies to all type Page 1 of 1 CDR Reports: y 1 TAC: 103 rier Medium: PRI/B ht Service: TestCall ITC: rest onal IEs: 6 ut): enbloc/enbloc oss Group: 13 Format:	

CTM; Reviewed: SPOC 4/16/2006

Step	Description
8.	Repeat Steps 1-7 for each Avaya Communication Manager sending CDR records to
	CallAnalyst Enterprise Server. The CDR format must be the same for each Avaya
	Communication Manager. However, the CDR port number should be different for each
	Avaya Communication Manager and match the value configured in CallAnalyst
	Enterprise Server for each. For the compliance test, port 9000 was used for the Avaya
	S8300 Media Server and port 9001 was used for the Avaya S8500 Media Server.

4. Configure CallAnalyst Enterprise Server

This section describes the procedures for configuring CallAnalyst Enterprise Server to collect CDR records from Avaya Communication Manager. The following procedures assume CallAnalyst Enterprise Server has been previously installed and licensed as per reference [3] including all relevant software patches.

Step	Description
1.	To configure the link between CallAnalyst Enterprise Server and Avaya Communication
	Manager, navigate from the Windows Start Menu to Start \rightarrow Programs \rightarrow TriVium \rightarrow
	Multi Site Configuration.

Step		Description					
2.	The main Multi Site Configu	ation screen appears. Set the Phone System field to					
	8	from the pull-down menu. Click the radio button next to					
	Special Interface for the Call I	Data Source. Set the Server Port field to the same value					
	set on Avaya Communication						
	The remaining fields affect ho	v calls are classified and displayed in the reports. The					
	e	the customer requirements. For the compliance test, the					
	• • • •	ong distance calls are prefixed with "1". The Local					
		e i					
		the Other Toll Free Area codes field, the value 800 was					
		s the Data Request Interval set to 1440 minutes which is					
		is interval has no effect when using RSP as the data					
		clicking the radio button next to Special Interface for the					
	Call Data Source.						
	Default values were used for a	l other fields.					
	Select Save to continue.						
	Multi Site Configuration						
	Sites	Code: 1 Site Name: Local Site					
	- Phone S	stem					
		Definity(Unformatted)					
	- Call Data	C Future (DB, C) (ch (UDL), C) and File (C, TCD/ID, C, Special					
	Port	C External DB C Web (UNL) C Log nie C TCP/IP C Interface					
	Server P						
	9000	Browse					
	Data Request Interval (max 7 day equivalent) : 1440 mins. Advanced options (Check if True)						
	Image: Construction of the state of the						
		umbers for Local Calls: Trunk #					
	678	▲dd Delete Help CTX Code Length 0					
	Route	umbers for Long Distance Calls:					
		Add Delete Help					
		Parameters					
		ate directory dynamically Local DM IP Address 127.0.0.1					
	E Rec	ord TIE Line Activity Calls Receive UDP Port Number 16000					
	Add Site	CDR to remote DM? Receive TCP Port Number 17000					
	Delete Site						

Step	Description
3.	CallAnalyst Enterprise Server can collect data from multiple Avaya Communication Manager sites. For each additional site, a license must be obtained from TriVium Systems. To enable CDR collection for the additional site, select Add Site at the bottom of the window.
	Multi Site Configuration
	Sites Site Code: Site Name: Local Site Phone System [Avaye-Definity[Unformatted]) Image: Color
4.	Enter a Site Name to represent the new site. Site Code will automatically increment to
	the next available number.
	Select OK to continue.
	New Site Site Name Site Code 0K Cancel

Step	Description
5.	The main Multi Site Configuration window appears again with the new site name highlighted in the Sites list. Set the Phone System field and the Call Data Source field to the same values as used for the first site. The Server Port must be a different value than the first site and must match the value configured on the second Avaya Communication Manager. The compliance test set the Server Port field to <i>9001</i> for the second site as described in Section 3 Steps 3 and 8. For the purposes of the compliance test, the Advanced options fields were set in the same manner as the first site. In a customer configuration, these fields may vary from site to site. Default values were used for all other fields.
	Select Save to continue.
	Multi Site Configuration
	Sites 1. Local Site Site Code: 2. Site Name: \$85500-Site2
	2. S8500-Site2 Phone System
	Avaya - Definity(Unformatted)
	C Comm Port C External DB C Web (URL) C Log File C TCP/IP C Special Interface
	Server Port
	9001 Browse
	Data Request Interval (max 7 day equivalent) : 1440 mins.
	Advanced options (Check if True) Dialed number in call data output includes the trunk access code prefix (eg. 8 or 9) Discard extra digits dialed after phone number Member site of a multi-site installation Collate call records ✓ Long distance calls are prefixed with '1' Local Area Code: 732 Other Toll Free Area codes: 800 Route Numbers 00 < Add Delete Help Trunk # Trunk # Add Delete Add Delete Add Delete Members for Local Calls: Trunk # Add Delete Add Delete Add Delete
	Add Site Delete Site Common Parameters Vupdate directory dynamically Local DM IP Address 127.0.0.1 Receive UDP Port Number 16000 Send CDR to remote DM? Remote DM IP Address Remote DM IP Address Remote DM IP Address Remote DM IP Address Close

Step	Description
6.	The following window appears, asking if the changes should be committed.
	Select Yes to continue.
	Settings Changed
	Commit changes?
	Yes No
7.	Lastly, to enable the RSP link to recover automatically after a network outage or system restart, the following modification is required in the cdm.ini file. The cdm.ini file is
	located in the CallAnalyst Enterprise Server installation directory, typically <i>C:Program Files/TriVium</i> .
	Changing the value of the TCPInterval determines the regularity, in minutes, with which
	CallAnalyst Enterprise Server will check the connection with the Avaya Communication
	Manager. Use a text editor such as Notepad to locate the line that defines the
	TCPInterval . For the compliance test, the TCPInterval was set to <i>1</i> minute as indicated by the highlighted entry in the example below. Thus, the CallAnalyst Enterprise Server
	will check the connection once every minute.
	🖉 cdm.ini - Notepad
	Eile Edit Format Help
	[General] CountryCodeList=1,44,91,978 DMIP=127.0.0.1
	DMPort=16000 Configured=True DMRxPort=17000
	DMTxFlag=False DMTxIP= DMTxPort=
	DMExTIP=192.168.1.60 DynamicupdateDirectory=True RecordStationToStationCalls=True
	RecordTIELineActivity=False AreaCodes=201,202,203,204,205,206,207,208,209,210,212,213,214,215,216,217,218,219,224,225,22
	8,779,780,781,784,785,786,787,800,801,802,803,804,805,806,807,808,809,810,812,813,814,815,81 CountryCodes=20,212,213,216,218,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,: TCPInterval=1
	[Log] MSPM=10
	MSDM=10 MSRCDM1=10 MSRCDM2=10
	MSRCDM3=10 MSRCDM4=10 MSRCDM5=10
	MSRCDM6=10 MSRCDM7=10 MSRCDM8=10
	MSRCDM9=10 MSAdvPrs=10
	[NECPingPing] PingTimeoutDuration= 5 PingACKTimeoutDuration= 4
	ResetonNPingFailures=0

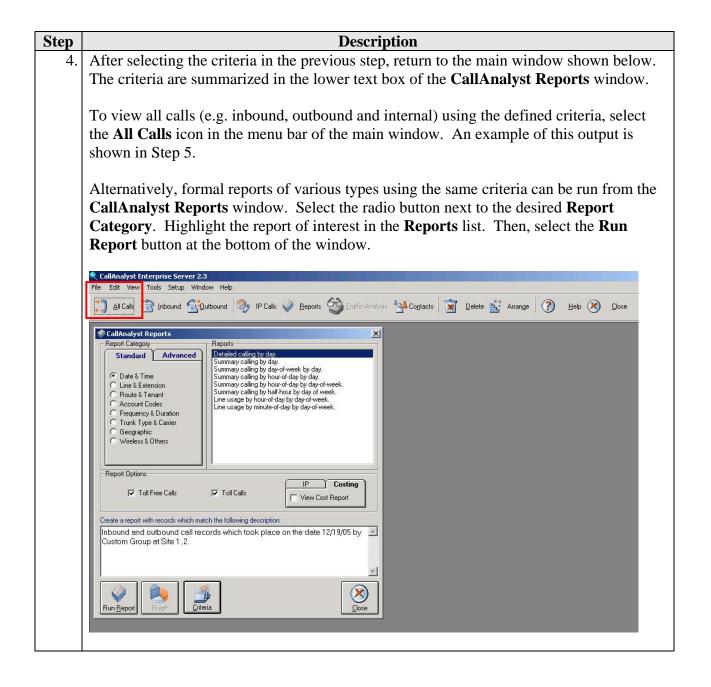
tep			Description								
8.	After changing the	Julti Site Confi	auration screen	ne the	Multi	Site Proce	es Managar				
	After changing the Multi Site Configuration screens, the Multi Site Process Manager										
	Windows service needs to be restarted.										
	From the Windows Start Menu, navigate to Start \rightarrow Control Panel \rightarrow Administrative										
	•										
	Tools \rightarrow Computer Management \rightarrow Services and Applications \rightarrow Services . In the										
	Services window that appears, highlight the Multi Site Process Manager in the list of										
	services. Right-click on this entry and select Restart .										
	services. Right ener	con this entry a		•••							
	This completes the a	onfiguration of	the DCD limb								
	This completes the configuration of the RSP link.										
	Computer Management										
	Action ⊻iew		■>								
	Tree	Name /	Description	Status	Startup Type	Log On As					
	Computer Management (Local)	Messenger	Sends and receives messages		Automatic	LocalSystem					
	🚊 🌇 System Tools	MGABGEXE		Started	Automatic	LocalSystem					
	🗄 ᡚ Event Viewer	MSSQLSERVER		Started	Automatic	LocalSystem					
	E System Information	MSSQLServerADHelper			Manual	LocalSystem					
	⊕ ∰ Performance Logs and Alerts ⊕ ∰ Shared Folders	Multi Site Process Manager	Support Start	Started	Automatic Manual	.\DevConnect LocalSystem					
		NetMeeting Remote Desk	pubbour -		Manual	LocalSystem					
	E Cocal Users and Groups	Network Associates McShi		Started	Automatic	LocalSystem					
	🖻 🎥 Storage	Network Associates Task	Resume	Started	Automatic	LocalSystem					
	- Disk Management	Network Connections	Manage Restart o	Started	Manual	LocalSystem					
	🛛 🚱 Disk Defragmenter	Network DDE	Provide All Tasks 🕨 n		Manual	LocalSystem					
		Network DDE DSDM	Managea		Manual	LocalSystem					
	E Services and Applications	NT LM Security Support P	Provide Refresh r		Manual	LocalSystem					
	MMI Control	Office Source Engine	Saves ir Properties P		Manual	LocalSystem					
	Services	Performance Logs and Al		17.00 C. 00 C. 00 C.	Manual	LocalSystem					
	🕀 🎦 Indexing Service	Plug and Play	Manage Help n	Started	Automatic	LocalSystem					
	nu ni 100 minutosano Disele de Seneral de Calendaria en Secolo de L		Retrieves the serial number of	Charles	Manual	LocalSystem					
		Print Spooler	Loads files to memory for later Provides protected storage fo	Started Started	Automatic Automatic	LocalSystem LocalSystem					
		QoS RSVP	Provides network signaling an	Starteu	Manual	LocalSystem					
			Creates a connection to a rem		Manual	LocalSystem					
			Creates a network connection.	Started	Manual	LocalSystem					
			Allows to capture traffic on thi	0.00000000	Manual	LocalSystem					
			Provides the endpoint mapper	Started	Automatic	LocalSystem	-				
		Remote Procedure Call (R	Manages the RPC name servic		Manual	LocalSystem					
		Remote Registry Service	Allows remote registry manipul	Started	Automatic	LocalSystem					
		Removable Storage	Manages removable media, dri	Started	Automatic	LocalSystem					
			Offers routing services to busi		Disabled	LocalSystem					
		RunAs Service	Enables starting processes un	Started	Automatic	LocalSystem					
		Security Accounts Manager	Stores security information for	Started	Automatic Automatic	LocalSystem					
			Provides RPC support and file,	started		LocalSystem LocalSystem					
		Smart Card	Manager and controls according								
	Stop and Start service Multi Site Process Ma	Smart Card	Manages and controls access t		Manual	LocalSystem					

5. Using CallAnalyst Enterprise Server

This section shows an example of how to view a specific set of calls stored by CallAnalyst Enterprise Server. The example shown includes all calls made on a particular day. For more information on using CallAnalyst Enterprise Server refer to reference [4].

Step	Description									
1.	Launch CallAnalyst Enterprise Server on the PC where the software was installed. From the Windows Start menu, navigate to Start \rightarrow Programs \rightarrow TriVium \rightarrow CallAnalyst.									
	the windows start menu, navigate to start / rograms / ritvium / CanAnalyst.									
2.	The main window and the CallAnalyst Reports window appear as shown below. The									
	CallAnalyst Reports window will be used to define the criteria for calls to be viewed. In the CallAnalyst Reports window, under Report Options , click the check boxes next to									
	Toll Free Calls and Toll Calls. Use the default values for all other fields.									
	Select the Criteria button to continue.									
	Select the Criteria button to continue.									
	ReallAnalyst Enterprise Server 2.3									
	🏥 All Calls 📸 Inbound 🖄 Utbound 🧐 IP Calls 💚 Beports 🚭 Iraffic Analysis 🕍 Contacts 🕅 Delete 🔛 Arrange 🛛 🕐 Help 🛞 Close									
	CallAnalyst Reports									
	Standard Datalled calling by day. Summary calling by day. Summary calling by day.									
	C Date & Time Summary calling by hour-of-day by day- C Line & Extension Summary calling by hour-of-day by day-of-week. Summary calling by hour-of-day by day-of-week. Summary calling by hour-of-day by day-of-week.									
	C Route & Tenant Summary caung by har-hout by day of week. Line usage by hour-of-day by day-of-week. Line usage by minute-of-day by day-of-week. Line usage by minute-of-day by day-of-week.									
	C Trunk Type & Carrier C Geographic C Wrieless & Others									
	Report Options									
	Image: Image									
	Create a report with records which match the following description: Inbound and outbound call records which took place on the date 12/20/05 by									
	Custom Group at Site 1,2.									
	Run Report Graph Crimeria									

Step	Description
3.	The Call Selector window appears. To view calls limited to a specific date, enter a valid
	date in the Start and End fields. Use the default values for all the other values.
	Select Accept to submit the changes and close the Call Selector window.
	🛒 Call Selector
	Report Title
	Date & Time Selection Start End
	Custom
	All day
	Call Duration (Minutes) Minimum Maximum
	All lengths Call Cost
	Group Selection
	1st Ext Clear
	Acct. Code Select
	Caller / Callee
	Name Number
	Call Direction C Inbound C Outbound C Both Site Code 1,2
	Contact Select Rate Plan Advanced Criteria >>
	Image: Clear Selection Edit Criteria Selection Cancel Accept
	C Client Matter
	Clear Selection



ep					De	escri	ption				
5.	The example	he	-low s	hows output f	rom se	electi	no the A	II Calls icc	n in t	he nre	vious sten
5.	The example below shows output from selecting the All Calls icon in the previous step. The main window is populated with the selected calls. Verify that the radio button next										
	The main wi	nd	OW IS	populated with	n the s	elect	ed calls.	Verify the	it the :	radio t	outton next
	to Use Criteria at the bottom of the window is active. If not, select this radio button and										
	select Refresh .										
	Soluti Men USH.										
	Select the Close button at the bottom right-hand corner of the window to close the All										
	Select the Cl	105	e Dull		in rigi	ii-na		of the will	luow		
	Calls screen										
	Cuild Sereen	•									
	CallAnalyst Enterprise Server 2.3 - [All Call Records]										
					All Calls	Sorted By	Date And Time)				1
	Date/Time ▶ 12/19/2005 2:07:53 PM	Direc	00:00:06	Line Name Phone Number (000) 000-3000	Extension 3001	Call Line	Acco Trunk Type PBX Internal	Route Tenar Site Co	de DNIS	Auto Carrier	Call Status Connect (call completed
	12/19/2005 2:07:53 PM		00:00:06	(000) 000-3011	3000	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:12:09 PM		00:00:42	(000) 000-3000	3001	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:12:09 PM		00:00:24	(000) 000-3011	3001	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:15:55 PM		00:00:12	(000) 000-3011	3001	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:15:55 PM		00:00:30	(000) 000-3000	3001	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:18:47 PM		00:00:24	(000) 000-3000	3001	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:18:47 PM	Out	00:00:30	(000) 000-3011	3000	0	PBX Internal	1			Connect (call completed
	12/19/2005 2:22:05 PM		00:00:24		3010	1	Unknown	1	60001		Connect (call completed
	12/19/2005 2:23:09 PM		00:01:00		3001	1	Unknown	1	60001		Connect (call completed
	12/19/2005 2:23:09 PM	Out	00:01:30	(000) 006-3010	60001	4	PBX Internal	2			Connect (call completed
	12/19/2005 2:28:27 PM	In	00:00:12	(XXX) XXX-XXXX	3001	1	Unknown	1	60001		Connect (call completed
	12/19/2005 2:28:27 PM		00:00:12		3010	1	Unknown	1	60001		Connect (call completed
	12/19/2005 2:28:43 PM		00:00:30	(000) 006-3010	60001	5	PBX Internal	2			Connect (call completed
	12/19/2005 2:32:11 PM		00:00:18	(000) 006-0001	3001	2	PBX Internal	1			Connect (call completed
	12/19/2005 2:32:11 PM		00:00:18	(XXX) XXX-XXXX	60001	1	Unknown	2	3001		Connect (call completed
	12/19/2005 2:32:11 PM		00:00:54	(732) 852-1649	3001	12	Unknown	1			Connect (call completed
	12/19/2005 2:41:27 PM		00:00:36	(000) 006-0001	3001	3	PBX Internal	1	0001		Connect (call completed
	12/19/2005 2:41:27 PM		00:00:36	(202) 052 1040	60001 3001	13	Unknown	2	3001		Connect (call completed
	12/19/2005 2:41:27 PM 12/19/2005 2:46:45 PM		00:00:48	(732) 852-1649 (732) 852-1649	3001	8	Unknown Unknown	9 1			Connect (call completed Connect (call completed
	12/19/2005 2:46:45 PM		00:00:42	[/32] 632*1645 [XXX] XXX-XXXX	60001	1	Unknown	2	3000		Connect (call completed
	12/19/2005 2:46:45 PM		00:00:36	(000) 006-0001	3000	4	PBX Internal	1	3000		Connect (call completed
	12/19/2005 2:52:37 PM		00:01:00	(732) 852-1649	3000	9	Unknown	9 1			Connect (call completed
	12/19/2005 2:52:37 PM		00:00:42	(2002) 2002 1010	60001	1	Unknown	2	3000		Connect (call completed
	12/19/2005 2:52:37 PM		00:00:42	(000) 006-0001	3000	5	PBX Internal	1			Connect (call completed
	12/19/2005 2:57:20 PM		00:02:18	(000) 000-3001	3010	0	PBX Internal	1			Conference call
	12/19/2005 2:58:20 PM	Out	00:02:36	(000) 000-3011	3010	0	PBX Internal	1			Conference call
	12/19/2005 3:01:52 PM		00:01:24	(000) 000-3011	3010	0	PBX Internal	1			Conference call
	12/19/2005 3:01:52 PM		00:01:12	(000) 000-3000	3011	0	PBX Internal	1			Conference call
	12/19/2005 3:05:00 PM		00:01:42	(000) 006-3011	60001	6	PBX Internal	2			Connect (call completed
	12/19/2005 3:05:58 PM		00:01:42	[XXX] XXX-XXXX	3011	1	Unknown	1	60001		Conference call
	12/19/2005.3:05:58 PM	lln	00.01.24	2000/2000/2000/	3010	1	Unknown	1	60001		Conference call
				All Calls							
	C All Calls		<u></u> <u>C</u> riteria	40							Close
	Criteria Refresh										0030
	Criteria Refresh		Distance							_	3 PM 12/19/2005

6. Interoperability Compliance Testing

The interoperability compliance testing included feature, serviceability and performance testing. The feature testing evaluated the ability of CallAnalyst Enterprise Server to collect and process CDR records for various types of calls. The serviceability testing introduced failure scenarios to verify that CallAnalyst Enterprise Server can resume CDR collection after failure recovery. The performance testing produced bulk call volumes to generate a substantial amount of CDR records.

6.1. General Test Approach

The general test approach was to manually place intra-switch calls, inbound trunk and outbound trunk calls to and from telephones attached to the Avaya Media Servers and verify that CallAnalyst Enterprise Server collects the CDR records and properly classifies and reports the attributes of the call. For serviceability testing, physical and logical links were disabled/re-enabled, Media Servers were reset and CallAnalyst Enterprise Server was restarted. For performance testing, a call generator was used to place calls over an extended period of time.

6.2. Test Results

CallAnalyst Enterprise Server successfully collected the CDR records from Avaya Communication Manager via a RSP connection for all types of calls generated including intraswitch calls, inbound/outbound PSTN trunk calls, inbound/outbound private IP trunk calls, transferred calls, and conference calls. For serviceability testing, CallAnalyst Enterprise Server was able to resume collecting CDR records after failure recovery including buffered CDR records for calls that were placed during the outages. Performance tests verified that CallAnalyst Enterprise Server could collect call records during a sustained, high volume of calls.

The following observations were made during the CallAnalyst Enterprise Server compliance testing.

- After successfully configuring the second site, if the **Multi Site Configuration** window is reopened and the second site is highlighted, the **Server Port** value incorrectly displays the value used for site 1 instead of site 2.
- Inbound trunk calls that dial less than 10 digits (as may occur from a private trunk) are not displayed in the **Phone Number** field in the report output. See Section 5 Step 5. Instead, the dialed digits are displayed in the **DNIS** field.
- Outbound trunk calls that dial less than 10 digits (as may occur on a private trunk) are classified in the report output as *PBX Internal* calls. See Section 5 Step 5.
- CallAnalyst Enterprise Server does not distinguish between CDR records of blocked calls from completed call records. Thus, it is recommended that Avaya Communication Manager be configured to suppress CDR records for ineffective call attempts. See Section 3 Step 5.

7. Verification Steps

The following steps may be used to verify the configuration:

- Use the **ping** command, to verify IP communication between CallAnalyst Enterprise Server and Avaya Communication Manager. For the Avaya S8300 Media Server, ping the Media Server IP address from the CallAnalyst Enterprise Server PC. For the other Media Servers, ping the C-LAN IP address from the CallAnalyst Enterprise Server PC.
- On the SAT of each Avaya Media Server, enter the **status cdr-link** command and verify that the CDR link state is up.
- Place a call and verify that CallAnalyst Enterprise Server received the CDR record for the call. Compare the values of data fields in the CDR record with the expected values and verify that the values match.
- Place internal, inbound trunk, and outbound trunk calls to and from various telephones, generate an appropriate report in CallAnalyst Enterprise Server, and verify the report's accuracy.

8. Support

Technical support for CallAnalyst Enterprise Server can be obtained by contacting TriVium Systems at (503) 439-9338.

9. Conclusion

These Application Notes describe the procedures for configuring CallAnalyst Enterprise Server to collect call detail records from Avaya Communication Manager running on Avaya Media Servers. CallAnalyst Enterprise Server successfully passed all compliance testing.

10. Additional References

The following Avaya product documentation can be found at <u>http://support.avaya.com</u>. [1] *Feature Description and Implementation For Avaya Communication Manager*, Release 3.0, Issue 3.0, June 2005, Document Number 555-245-205.

[2] *Administrator Guide for Avaya Communication Manager*, Release 3.0, Issue 1.0, June 2005, Document Number 03-300509.

The following CallAnalyst Enterprise Server product documentation is available from TriVium Systems. Visit <u>http://www.triviumsys.com</u> for company and product information.

[3] CallAnalyst Enterprise Server (Version 2.3) Installation and Configuration Guide.

[4] CallAnalyst Enterprise Server (Version 2.3) User Guide.

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