

Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Genesis Call Accounting to Interoperate with Avaya Aura® Communication Manager R6.0.1 – Issue 1.0

Abstract

These Application Notes describe a compliance-tested configuration consisting of Genesis Systems Corporation Call Accounting solution and Avaya Aura® Communication Manager R6.0.1.

Genesis offers a unified management and reporting solution for a variety of communication systems, including Avaya Aura[®] Communication Manager, Avaya Communication Server 1000, and Nortel Meridian systems. This compliance test focused on the interoperability of Genesis Call Accounting with Avaya Aura[®] Communication Manager R6.0.1.

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

1. Introduction

These Application Notes describe a compliance-tested configuration consisting of Genesis Systems Corporation Call Accounting solution and Avaya Aura® Communication Manager R6.0.1.

Genesis offers a unified management and reporting solution for a variety of communication systems, including Communication Manager, Avaya Communication Server 1000, and Nortel Meridian systems. This compliance test focused on the interoperability of Genesis Call Accounting with Communication Manager R6.0.1.

The Call Accounting solution receives Call Detail Recording (CDR) data from Communication Manager using the TCP network protocol. Users access the server using a web browser in order to perform administrative tasks and administer and run scheduled and ad-hoc reports.

The GenSwitch solution was tested in parallel with Communication Manager R6.0.1 and R5.2.1 as well as the Call Accounting module with Communication Manager R6.0.1. Separate Application Notes for these solutions titled *Application Notes for Configuring Genesis GenSwitch to Interoperate with Avaya Aura* ** Communication Manager R5.2.1 and Application Notes for Configuring Genesis GenSwitch to Interoperate with Avaya Aura ** Communication Manager R6.0.1 can be found at http://support.avaya.com.

2. General Test Approach and Test Results

The compliance test focused on the ability for the Genesis Call Accounting application to accurately report Call Detail Report data from Avaya Aura® Communication Manager.

2.1. Interoperability Compliance Testing

The compliance test validated the accuracy of CDR data including common uses such as account and authorization codes and call center users. Additionally, tests were performed to confirm the ability to recover from network outages and server reboots.

2.2. Test Results

The objectives described in **Section 2.1** were verified.

2.3. Support

Information, Documentation and Technical support for Genesis products can be obtained at:

Phone: 1 (888) 993-2288 or 1 (604) 530-9348

Web: http://www.buygenesis.comEmail: support@buygenesis.com

3. Reference Configuration

Figure 1 illustrates the compliance test configuration consisting of:

- Avaya Aura[®] Communication Manager
- Various IP and Digital endpoints
- Genesis server
- Windows PC used for browser access to the Genesis Call Accounting UI.

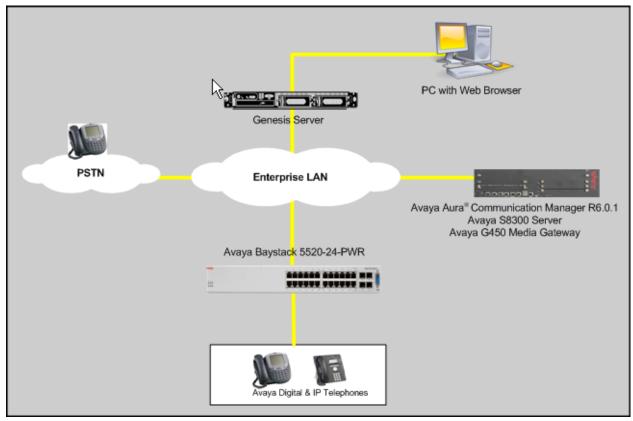


Figure 1 – Genesis Call Accounting Compliance Test Configuration

4. Equipment and Software Validated

The following equipment and version were used in the reference configuration described above:

Equipment	Version					
Avaya S8300 Server and G450 Media	Avaya Aura® Communication Manager R6.0.1					
Gateway	SP5					
Avaya Phones						
9650	H.323 FW 3.11					
4620	H.323 FW 2.9.2					
6408D	N/A					
Windows 2008 R2 Server	Genesis GenSwitch (Nov. 2011)*					

^{*}Note: Genesis does not manage releases with a single release number. The solution contains numerous components which are modified as required. The solution tested was the Generally Available release as of November, 2011 which included support for Avaya Aura® Communication Manager.

5. Configure Avaya Aura® Communication Manager

Configuration of Communication Manager required user access via SAT session.

5.1. Configure Communication Manager Details

Tasks required included:

Step

- 1. Configure CDR System Parameters
- 2. Configure IP Node-Name for Genesis Server
- 3. Enable CDR IP-Services
- 4. Verify Authorization Codes
- 5. Verify Feature Access Codes

1.	Configure CDR System Parameters									
	Use the change system-parameters cdr command to configure system-wide CDR									
	parameters. All of the highlighted settings were used throughout the duration of the testing with the exception of the following which alternated between settings as noted									
	based on test case requirements:									
	Calls to Hunt Group - Record: group-ext/member-ext									
	1 0 1									
	Record Called Vector Directory Number Instead of Group or Member? y/n									
	Record Agent ID on Incoming? n/y									
	Record Agent ID on Outgoing? n/y									
	A second CDR2 endpoint was defined to verify CDR data. This was a PC running the									
	Avaya Reliable Data Transport Tool (RDTT). Both the Genesis server and the RDTT									
	client received customized CDR data as defined on the second page.									
	change system-parameters cdr Page 1 of 2									
	CDR SYSTEM PARAMETERS									
	Node Number (Local PBX ID): CDR Date Format: month/day									
	Primary Output Format: customized Primary Output Endpoint: CDR1									
	Secondary Output Format: customized Secondary Output Endpoint: CDR2									
	Use ISDN Layouts? n Enable CDR Storage on Disk? y									
	Use Enhanced Formats? n Condition Code 'T' For Redirected Calls? y									
	Use Legacy CDR Formats? n Remove # From Called Number? n									
	Modified Circuit ID Display? n Intra-switch CDR? y									
	Record Outgoing Calls Only? n Outg Trk Call Splitting? y Suppress CDR for Ineffective Call Attempts? y Outg Attd Call Record? n									
	Disconnect Information in Place of FRL? y Interworking Feat-flag? n									
	Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n									
	Calls to Hunt Group - Record: group-ext									
	Record Called Vector Directory Number Instead of Group or Member? y									
	Record Agent ID on Incoming? n Record Agent ID on Outgoing? n									
	Inc Trk Call Splitting? y									
	Record Non-Call-Assoc TSC? n Call Record Handling Option: warning									
	Record Call-Assoc TSC? n Digits to Record for Outgoing Calls: dialed									
	Privacy - Digits to Hide: 0 CDR Account Code Length: 3									

Description

Step	Description											
	Configure CDR System Parameters (Continued)											
	Genesis is capable of receiving any CDR data from Communication Manager by											
	mapping the fields to data objects in the application. The compliance test used the											
	following which is a common format for Genesis customers.											
	change system-par	ameters o	cdr			Page	2 of 2					
			CDR SYSTEM PARAM	METERS								
	Data Item -	Length	Data Item -	Length		Data Item - Lengt						
	1: date	- 6		- 15	33:		-					
	2: space	- 1	18: space 19: dialed-num 20: space 21: vdn 22: space 23: auth-code 24: space 25: acct-code 26: space 27: return 28: line-feed 29: 30:	- 1	34:		-					
	3: time	- 4	19: dialed-num	- 23	35:		-					
	4: space	- 1	20: space	- 1	36:		-					
	5: sec-dur	- 5	21: vdn	- 13	37:		-					
	6: space	- 1	22: space	- 1	38:		-					
	7: cond-code	- 1	23: auth-code	- 13	39:		-					
	8: space	- 1	24: space	- 1	40:		-					
	9: in-trk-code	- 4	25: acct-code	- 15	41:		-					
	10: space	- 1	26: space	- 1	42:		-					
	11: in-crt-id	- 3	27: return	- 1	43:		-					
	12: space	- 1	28: line-feed	- 1	44:		-					
	13: code-used	- 4	29:	_	45:		-					
	14: space	- 1	30:	-			-					
	14: space 15: out-crt-id 16: space	- 3 - 1	31: 32:	_ _	47: 48:		_					
	10. Space	_	J2 •		40.							
			Record length	= 124								
2.	Configure IP Nod	e-Name f	or Genesis Server									
	<u> </u>		es a Node-Name tab	le to man h	ost na	mes to IP A	ddresses					
		-		-								
			es in the configuration									
	names ip comman	d to create	e a mapping for the O	Genesis ser	ver as	shown below	V.					
	Note the PDTT no	da nama i	was used to direct Cl	DR data to	tha ca	cond CDP c	ollector as					
			was used to direct Ci	JK data to	the se	cond CDK c	offector as					
	described above in	Step 1.										
	<pre>change node-names ip</pre> Page 1 of 2											
			IP NODE NA	AMES								
	Name		Address									
	procr		.10.67									
	Gateway001	10.64										
	RDTT		.10.51									
	default	0.0.0										
	genesis	10.64	.22.100									

\neg	Description									
	Enable CDR IP-Services Use the change ip-services command to define the ports used to send CDR data to the two hosts. The system used in the test was an S8300 on G450 gateway which used the processor ethernet port (procr) for all IP Services. On other systems, this could be a Control Lan (CLAN) card in a local or remote port network in which case the Node-Name of the CLAN would be used for the Local Node setting. The Remote Port is the port the data will be sent to on the remote host, the Genesis server defined this port (see Section 6, Step 3) to ensure proper communication. Enter the node-names defined in									
	change ip-		nd RDTT hosts in	the Remote N	Node setting	g. Page	1 of			
						rage	1 01			
	Service Type AESVCS	Enabled y p	IP Local Node rocr		Remote Node	Remote Port				
	CDD1			0 gene	seie	9001				
	CDR1 CDR2	-	rocr	0 RDTT		9000				
	On the third for the RD Note that by lose up to 1 Reliable Pro Accounting	I page, set the TT host. All of y not supportion of potocol is an enapplication.		col to <i>n</i> for the e default.	Genesis se I, the Genesork outage.	erver (CDR sis applicate Support for update to the	ion coul r the ne Call			
	On the third for the RD ? Note that by lose up to 1 Reliable Pro	I page, set the TT host. All of y not supportion of potocol is an enapplication.	Reliable Protocother settings wer	col to <i>n</i> for the e default.	Genesis se I, the Genesork outage.	erver (CDR sis applications support for	ion coul			
	On the third for the RD Note that by lose up to 1 Reliable Pro Accounting	I page, set the TT host. All of y not supportion of potocol is an enapplication.	e Reliable Protocother settings wereng the Avaya Recall data in the evaluation of the evaluation of the Session Packet Resp	col to <i>n</i> for the e default.	Genesis se I, the Genes ork outage. or a future to	erver (CDR sis applicate Support for applicate to the Page	ion coul r the ne Call			

4. Configure Authorization Codes

Authorization codes are used to override restricted calling privileges for certain users. Authorization codes were sent to the application for calls which used the code to dial outbound.

In the test configuration, an Authorization code was defined using the **Change Authorization-code 1234** command, setting the **Class of Restriction (COR)** to 3 as demonstrated below.

```
Change authorization-code 1234

LIST AUTHORIZATION CODES REPORT

Authorization Code Class of Restriction (COR)
1234

3
```

The Facility Restriction Locator (FRL) associated with COR 3 was set to 3 using the change cor 3 command.

```
change cor 3
                                                                                                               Page 1 of 23
                                                    CLASS OF RESTRICTION
                          COR Number: 3
                 COR Description: Auth Code
                                     FRL: 3
                                                                                                        APLT? y
Can Be Service Observed? n
Calling Party Restriction: none
Can Be A Service Observer? n
Time of Day Chart: 1
Priority Queuing? n
Restriction Override: none

Restricted Call List? n

Calling Party Restriction: none
Called Party Restriction: none
Forced Entry of Account Codes? n
Direct Agent Calling? n
Facility Access Trunk Test? n
        Restricted Call List? n
                                                                             Can Change Coverage? n
Access to MCT? y

Group II Category For MFC: 7

Send ANI for MFE? n

MF ANI Prefix:

Fully Restricted Service? n

Hear VDN of Origin Annc.? n

Add/Remove Agent Skills? n

Automatic Charge Display? 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
```

Configure Authorization Codes (Continued)

Finally, Route Pattern 2 was changed to use an **FRL** setting of *3*. In order to use this route pattern, an endpoint would either need to be assigned a COR with an FRL value of 3 or greater, or the user would need to provide the authorization code which was defined with an FRL of 3 or greater. All user endpoints in the test configuration were assigned to a COR with an FRL value of 0 meaning that they were blocked from using this route pattern and thus needed to use an authorization code in order to make outbound calls.

chai	nge i	rout	e-pa	tter	n 2							Page	1 (of 3
			_		Pattern	Number SCCAN		Pattern Secur	Name: e SIP?		Hub			
	_	FRL	NPA		Hop Toll		Inser							' IXC
	No			Mrk	Lmt List		Digit	S					QSIO Int.v	
1:	2	3	303			Dgts 0							n	user
2:	۷	ے	505			U								
3:													n	user
4:													n n	user
5:														user
6:													n	user
0:													n	user
	BC	C VA	LUE	TSC	CA-TSC	ITC	BCIE	Service/	Featur	e PARM	No.	Numbe	ering	, LAR
	0 1	2 M	4 W		Request						Dgts	Forma	at	
										Su	baddr	ess		
1:	у у	у у	y n	n		rest	5							none
2:	у у	у у	y n	n		rest	5							none
3:	у у	у у	y n	n		rest	5							none
4:	у у	у у	y n	n		rest	-							none
5:	УУ	УУ	y n	n		rest	:							none
6:	у у	УУ	y n	n		rest	5							none

5. Verify Feature Access Codes

A Feature Access Code (FAC) was defined to enable users to associate an account code with outbound calls. This was done using the **change feature-access-codes** command, a value of *111 was assigned to the **CDR Account Code Access Code** setting.

Account codes are generally used to track charges associated with a given client. Account codes are not specifically defined in Communication Manager, however a **CDR Account Code Length** was defined on the **change system-parameters cdr** form as shown above in **Step 1**. Thus, dialing *111, then a 3 digit Account Code, then the external number to dial would result in an account code being associated with CDR records.

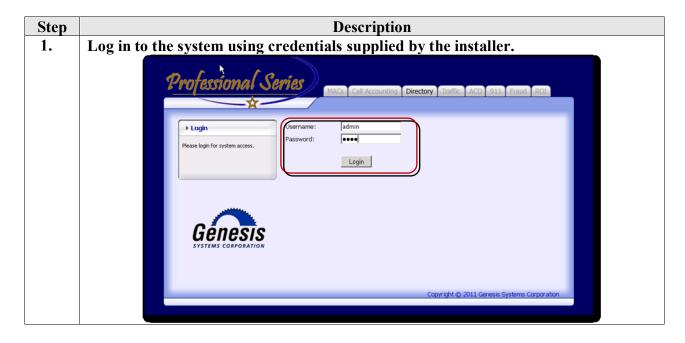
```
change feature-access-codes
                                                             Page 1 of 10
                              FEATURE ACCESS CODE (FAC)
        Abbreviated Dialing List1 Access Code:
        Abbreviated Dialing List2 Access Code:
        Abbreviated Dialing List3 Access Code:
Abbreviated Dial - Prgm Group List Access Code:
                     Announcement Access Code: *116
                      Answer Back Access Code:
                       Attendant Access Code:
     Auto Alternate Routing (AAR) Access Code: 8
   Auto Route Selection (ARS) - Access Code 1: 9
                                                  Access Code 2:
               Automatic Callback Activation:
                                                   Deactivation:
Call Forwarding Activation Busy/DA: All:
                                                    Deactivation:
  Call Forwarding Enhanced Status:
                                                   Deactivation:
                       Call Park Access Code:
                      Call Pickup Access Code:
CAS Remote Hold/Answer Hold-Unhold Access Code:
                 CDR Account Code Access Code: *111
                       Change COR Access Code:
                  Change Coverage Access Code:
           Conditional Call Extend Activation:
                                                    Deactivation:
                  Contact Closure Open Code:
                                                      Close Code:
```

6. Configure Genesis Call Accounting

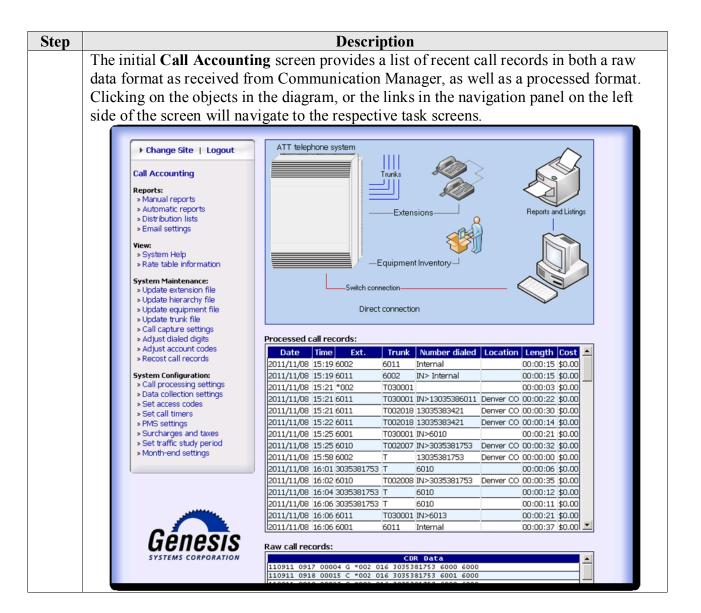
Genesis or an approved installer will install and initially configure all server components including matching the CDR data defined in **Section 5**, **Step 1** above with the internal data structure of the Genesis Call Accounting application database. Details of the steps are beyond the scope of this document.

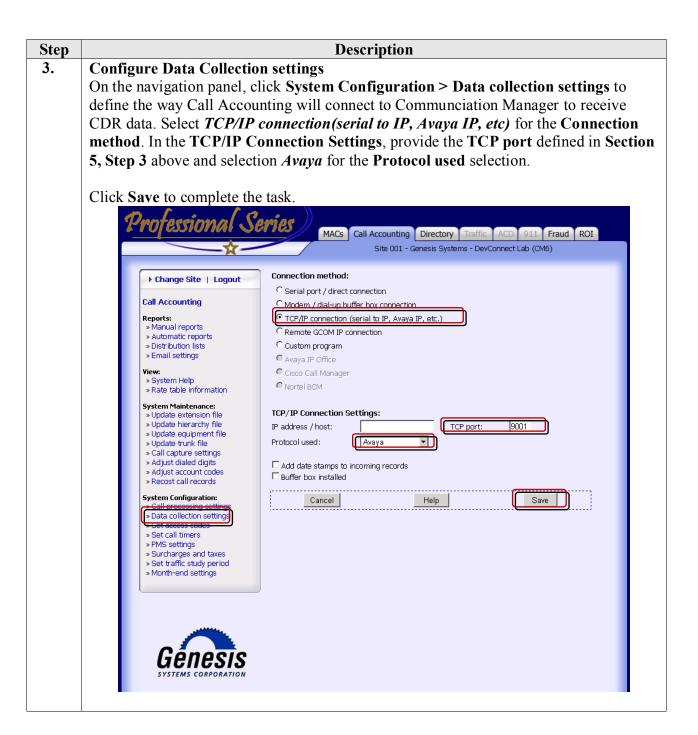
6.1. Genesis GenSwitch Configuration Details

The Call Accounting application is accessed via a web browser. Enter <a href="http://<hostname>/GenWeb/">http://<hostname>/GenWeb/ where hostname is the IP address or qualified domain name of the Genesis server.









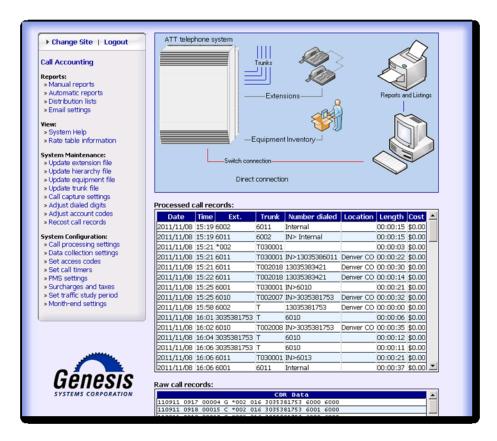
7. Verification Steps

Verify that the Genesis Call Accounting (COSTCDR001) and Genesis Data Collection (GCOM) applications are online and operational by ensuring their status is displayed as **Running (online)**. This screen can be viewed by clicking the **GenStart** icon (not shown) in the Windows System Tray on the Genesis server. Note there will be a COSTCDR application running for each licensed and installed Call Accounting site.

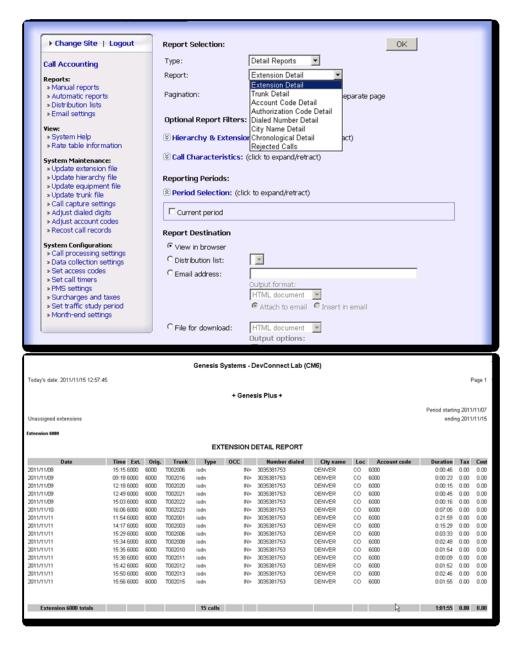


Each service can be started, shutdown or restarted by right clicking and choosing the appropriate option from the popup menu (not shown).

Calls were made to and from Communication Manager endpoints and call details were verified by comparing the data collected from the Avaya Reliable Data Transport Tool (not shown) to the data in the Genesis Call Accounting application.



Additionally, reports were run from the Genesis Call Accounting application as shown below. The Genesis Call Accounting solution is capable of running reports Ad-hoc (Manual Reports) as well as configuring reports to be automatically run on regular intervals and being emailed to a single user, or to a distribution list. The full details of reports are beyond the scope of these Application Notes.



8. Conclusion

These Application Notes describe the procedures required to configure Genesis Systems Corporation Call Accounting solution to interoperate with Avaya Aura® Communication Manager R6.0.1 for the purpose of collecting Call Detail Records. The Call Accounting application successfully passed compliance testing.

9. Additional References

Product documentation for Avaya products may be found at http://support.avaya.com. **Avaya**

[1] Administering Avaya Aura™ Communication Manager, Doc # 03-300509, Release 6.0, Issue 6.0, June 2010.

Genesis

Product information for Genesis products can be found at http://www.buygenesis.com.

©2012 Avaya Inc. All Rights Reserved.

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

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