



Avaya Solution & Interoperability Test Lab

Application Notes for CallCopy cc:Discover with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services using Multi Registration for Recordings – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for CallCopy cc:Discover to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services using Multi Registration for Recordings.

The cc:Discover is a software-only solution for voice call recording that offers various recording, playback and archiving features and options.

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

CallCopy cc:Discover is a software-only solution for voice call recording that offers various recording, playback and archiving features and options. By combining media redirection from Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services with Multi Registration, call recording can be achieved without the use of physical connections to the CallCopy server other than standard network connections.

CallCopy cc:Discover uses the Telephony Services API (TSAPI) of Application Enablement Services to receive call related events. CallCopy cc:Discover's internal scheduling algorithm makes the determination on which calls should be recorded based on the events received via the TSAPI link and customer recording requirements.

2. General Test Approach and Test Results

All test cases were performed manually. The general approach was to place various types of calls to and from stations, and agents. These trunk calls were then monitored and recorded using CallCopy cc:Discover. The recordings were verified for each call. For feature testing, the types of calls included inbound and outbound trunk calls, transferred calls, bridged calls, and conferenced calls. For serviceability testing, failures such as cable pulls, busyouts/releases of the trunk group, and resets were applied.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing evaluated the ability of CallCopy cc:Discover to monitor and record calls placed to and from stations and agents. The serviceability testing introduced failure scenarios to see if CallCopy cc:Discover could resume recording after failure recovery.

2.2. Test Results

The test objectives were verified. For serviceability testing, CallCopy cc:Discover operated properly after recovering from failures such as cable disconnects, and resets of CallCopy cc:Discover, Application Enablement Services and Communication Manager.

2.3. Support

Technical support on the cc:Discover can be obtained through the following:

- **Phone:** (888) 922-5526 (Option 2)
- **Web:** <http://support.callcopy.com> or <http://www.callcopy.com/support>

3. Reference Configuration

Figure 1 illustrates the configuration used in these Application Notes. CallCopy cc:Discover was connected to the Communication Manager and Application Enablement Services highlighted in grey in the figure below. The other system shown below was used in the execution of various test cases but is not directly part of the solution. As such, it is not included in the configuration described in these Application Notes.

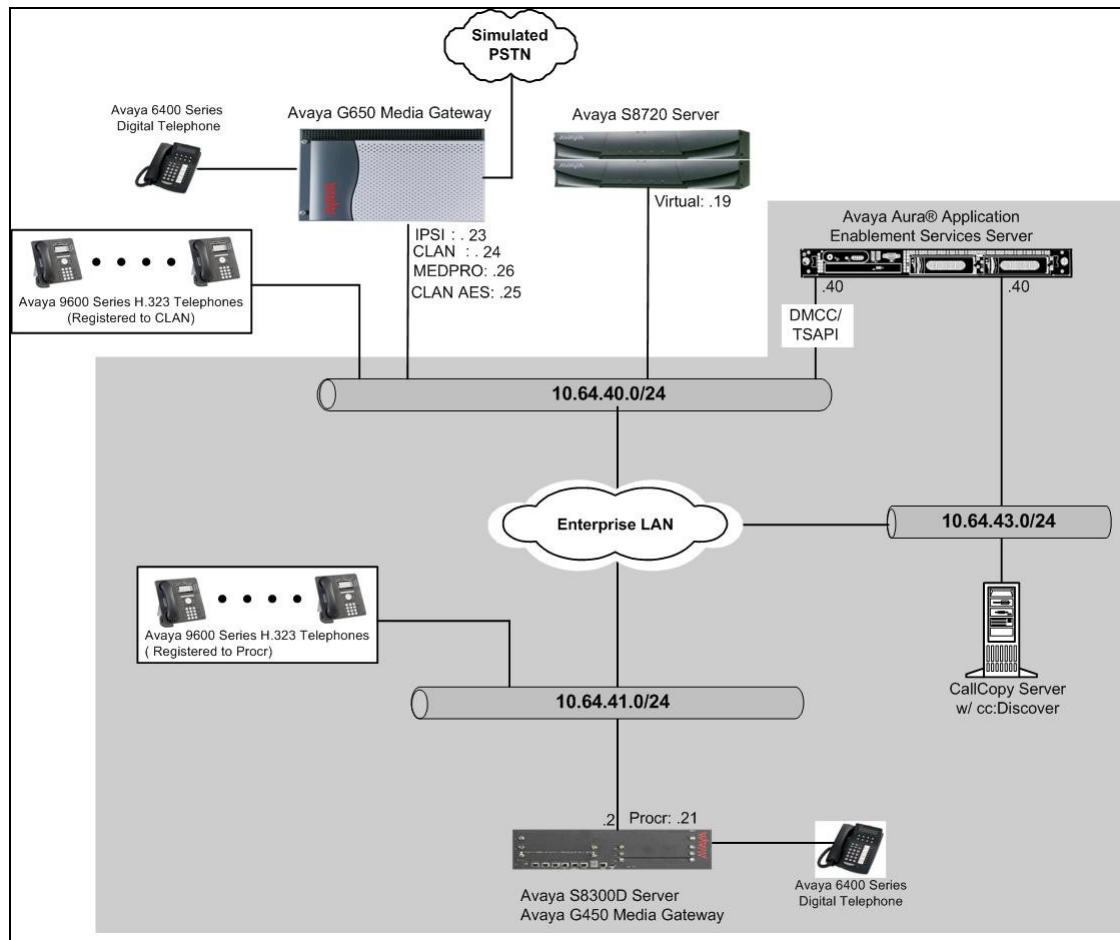


Figure 1: CallCopy cc:Discover with Avaya Aura®Communication Manager and Avaya Aura® Application Enablement Services

4. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya S8300D Server with Avaya G450 Media Gateway		Avaya Aura® Communication Manager 6.0.1(R016x.00.1.510.1) w/ patch 00.1.510.1-18860
Avaya Aura® Application Enablement Services Server		6.1 (R6-1-0-20-0)
Avaya S8700 Servers with Avaya G650 Media Gateway		Avaya Aura® Communication Manager 5.2.1 (R015x.02.1.016.4)
Avaya 9600 Series IP Telephones		
	9620 (H.323)	3.1
	9630 (H.323)	3.1
Avaya 9600 Series SIP Telephones		
	9630 (SIP)	2.6.4
	9640 (SIP)	2.6.4
	9650 (SIP)	2.6.4
Avaya 6400 Series Digital Telephones		N/A
Avaya C363T-PWR Converged Stackable Switch		4.5.14
Extreme Networks Summit 48		4.1.21
CallCopy cc:Discover		4.5 SP1

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring hunt/skill group, vectors, Vector Directory Numbers (VDN), agents, agent login/logout feature access codes, recording ports and recording (DMCC) stations, recorded stations, IP codec, IP network regions, and the Computer Telephony Interface (CTI) link in Communication Manager to integrate with cc:Discover. All the configuration changes in Communication Manager are performed through the System Access Terminal (SAT) interface. The highlights in the following screens indicate the values used during the compliance test. For the compliance testing, the following contact center devices were used.

Device Type	Device Number/Extension
VDN	72073
Vector	88
Skill group	88
Logical agent IDs	72091, 72092, 72093, 72094, 72095
Recorded stations (IP Telephones)	IP Telephones: 72001, 72002, 72003 DCP Telephone: 72007 IP Agents: 72006

5.1. Hunt/Skill Groups, Agent Logins, and Call Vectoring

Enter the **display system-parameters customer-options** command. On **Page 6**, verify that the ACD and Vectoring (Basic) fields are set to **y**. If not, contact an authorized Avaya account representative to obtain these licenses.

display system-parameters customer-options		Page 6 of 11
CALL CENTER OPTIONAL FEATURES		
Call Center Release: 6.0		
ACD? y	Reason Codes? y	
BCMS (Basic)? y	Service Level Maximizer? n	
BCMS/VuStats Service Level? y	Service Observing (Basic)? y	
BSR Local Treatment for IP & ISDN? y	Service Observing (Remote/By FAC)? y	
Business Advocate? n	Service Observing (VDNs)? y	
Call Work Codes? y	Timed ACW? y	
DTMF Feedback Signals For VRU? y	Vectoring (Basic)? y	
Dynamic Advocate? n	Vectoring (Prompting)? y	
Expert Agent Selection (EAS)? y	Vectoring (G3V4 Enhanced)? y	
EAS-PHD? y	Vectoring (3.0 Enhanced)? y	
Forced ACD Calls? n	Vectoring (ANI/II-Digits Routing)? y	
Least Occupied Agent? y	Vectoring (G3V4 Advanced Routing)? y	
Lookahead Interflow (LAI)? y	Vectoring (CINFO)? y	
Multiple Call Handling (On Request)? y	Vectoring (Best Service Routing)? y	
Multiple Call Handling (Forced)? y	Vectoring (Holidays)? y	
PASTE (Display PBX Data on Phone)? y	Vectoring (Variables)? y	
(NOTE: You must logoff & login to effect the permission changes.)		

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 descriptive **Group Name** and **Group Extension** valid in the provisioned dial plan. Set the **ACD**, **Queue**, and **Vector** fields to **y**. When ACD is enabled, hunt group members serve as ACD agents and must log in to receive ACD split/skill calls. When Queue is enabled, calls to the hunt group will be served by a queue. When Vector is enabled, the hunt group will be vector controlled.

add hunt-group 88		Page 1 of 4
HUNT GROUP		
Group Number: 88	ACD? y	
Group Name: hunt-4-Callcopy	Queue? y	
Group Extension: 72088	Vector? y	
Group Type: ucd-mia		
TN: 1		
COR: 1	MM Early Answer? n	
Security Code:	Local Agent Preference? n	
ISDN/SIP Caller Display:		
Queue Limit: unlimited		
Calls Warning Threshold: Port:		
Time Warning Threshold: Port:		

On **Page 2**, set the **Skill** field to **y**, which means that agent membership in the hunt group is based on skills, rather than pre-programmed assignment to the hunt group.

add hunt-group 88		Page 2 of 4
HUNT GROUP		
Skill? y	Expected Call Handling Time (sec): 180	
AAS? n		
Measured: none		
Supervisor Extension:		
Controlling Adjunct: none		
Multiple Call Handling: none		
Timed ACW Interval (sec):	After Xfer or Held Call Drops? n	

Enter the **add agent-loginID p** command, where **p** is a valid extension in the provisioned dial plan. On **Page 1** of the agent-loginID form, enter a descriptive **Name** and **Password**.

add agent-loginID 72091		Page 1 of 2
AGENT LOGINID		
Login ID: 72091	AAS? n	
Name: Agent-1	AUDIX? n	
TN: 1	LWC Reception: spe	
COR: 1	LWC Log External Calls? n	
Coverage Path:	AUDIX Name for Messaging:	
Security Code:	LoginID for ISDN/SIP Display? n	
	Password:	
	Password (enter again):	
	Auto Answer: station	
	MIA Across Skills: system	
	ACW Agent Considered Idle: system	
	Aux Work Reason Code Type: system	
	Logout Reason Code Type: system	
	Maximum time agent in ACW before logout (sec): system	
	Forced Agent Logout Time: :	
WARNING: Agent must log in again before changes take effect		

On **Page 2**, set the **Skill Number (SN)** to the hunt group number previously created in this section. The **Skill Level (SL)** may be set according to customer requirements.

Repeat this step as necessary to configure additional agent extensions.

add agent-loginID 72091						Page 2 of 2	
AGENT LOGINID							
Direct Agent Skill:						Service Objective? n	
Call Handling Preference: skill-level						Local Call Preference? n	
SN	RL	SL	SN	RL	SL		
1: 88		1	16:				
2:			17:				
3:			18:				
4:			19:				
5:			20:				

Enter the **change vector q** command, where **q** is an unused vector number. Enter a descriptive Name, and program the vector to deliver calls to the hunt/skill group number. Agents that are logged into the hunt/skill group will be able to answer calls queued to the hunt/skill group.

change vector 88		Page 1 of 6	
CALL VECTOR			
Number: 88		Name: Vector-callcopy	
Multimedia? n	Attendant Vectoring? n	Meet-me Conf? n	Lock? n
Basic? y	EAS? y G3V4 Enhanced? y	ANI/II-Digits? y	ASAI Routing? y
Prompting? y	LAI? y G3V4 Adv Route? y	CINFO? y	BSR? y Holidays? y
Variables? y	3.0 Enhanced? y		
01 wait-time	2 secs hearing ringback		
02 queue-to	skill 88 pri m		
03			

Enter the **add vdn r** command, where **r** is an extension valid in the provisioned dial plan. Specify a descriptive Name for the VDN and specify the vector configured in the previous step as the Vector Number. In the example below, incoming calls to extension 72073 will be routed to VDN 72073, which in turn will invoke the actions specified in vector 88.

add vdn 72073		Page 1 of 3	
VECTOR DIRECTORY NUMBER			
Extension: 72073			
Name*: VDN-Callcopy			
Destination: Vector Number 88			
Attendant Vectoring? n			
Meet-me Conferencing? n			
Allow VDN Override? n			
COR: 1			
TN*: 1			
Measured: none			
VDN of Origin Annc. Extension*:			
1st Skill*:			
2nd Skill*:			
3rd Skill*:			

Enter the **change feature-access-codes** command. Define the **Auto-In Access Code**, **Login Access Code**, **Logout Access Code**, and **Aux Work Access Code**.

```
change feature-access-codes                                     Page 5 of 10
                                FEATURE ACCESS CODE (FAC)

                                Call Center Features

AGENT WORK MODES
    After Call Work Access Code: 120
    Assist Access Code: 121
    Auto-In Access Code: 122
    Aux Work Access Code: 123
    Login Access Code: 124
    Logout Access Code: 125
    Manual-in Access Code: 126

SERVICE OBSERVING
    Service Observing Listen Only Access Code: 127
    Service Observing Listen/Talk Access Code: 128
    Service Observing No Talk Access Code: 129
    Service Observing Next Call Listen Only Access Code:
```

Enter the **add abbreviated-dialing group g** command, where **g** is the number of an available abbreviated dialing group. In the **DIAL CODE** list, enter the **Feature Access Codes**, created previously, for ACD Login and Logout.

```
add abbreviated-dialing group 1                               Page 1 of 1
                                ABBREVIATED DIALING LIST

                                Group List: 1      Group Name: Call Center
                                Size (multiple of 5): 5      Program Ext:      Privileged? n
DIAL CODE
    01: 124
    02: 125
    03:
    04:
    05:
```


5.2. Recorded Stations

The stations that were recorded during the compliance testing include an Avaya Digital Telephone, Avaya IP Telephones (Avaya 9600 Series), and an Avaya one-X Agent. The extensions used were in the ranges 72001-72009.

Enter the **add station s** command, where **s** is an extension valid in the provisioned dial plan. On **Page 1** of the STATION form, set the **Type** field to an IP telephone set type and enter a descriptive name, specify the **Security Code**, and set the **IP SoftPhone** field to **y**.

Repeat this step as necessary, with the same **Security Code**, to configure additional DMCC stations.

add station 72001		Page 1 of 5
STATION		
Extension: 72001	Lock Messages? n	BCC: 0
Type: 9620	Security Code: *	TN: 1
Port: S00002	Coverage Path 1:	COR: 1
Name: S8300-IP-1	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Location:	Time of Day Lock Table:	
Loss Group: 19	Personalized Ringing Pattern: 1	
	Message Lamp Ext: 72001	
Speakerphone: 2-way	Mute Button Enabled? y	
Display Language: english		
Survivable GK Node Name:		
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	IP SoftPhone? y	
	IP Video Softphone? n	
	Short/Prefixed Registration Allowed: default	

5.3. Audio Codec Configuration

Enter the **change ip-codec-set t** command, where **t** is a number between 1 and 7, inclusive.

Note: CallCopy cc:Discover supports G.711 (MU and A) and G.729. During the compliance test, G.711MU was utilized. The codec has to match between Communication Manager and CallCopy cc:Discover (recording codec).

change ip-codec-set 1		Page 1 of 2	
IP Codec Set			
Codec Set: 1			
Audio	Silence	Frames	Packet
Codec	Suppression	Per Pkt	Size (ms)
1: G.711MU	n	2	20
2:			

5.4. IP Network Regions

During compliance testing, a C-LAN board dedicated for H.323 endpoint registration was assigned to IP network region 1. Set the **Codec Set** field to **1**. The Avaya IP Telephones and Avaya IP Agent, as well as Avaya AES DMCC stations used by the cc:Discover, registered with the C-LAN board (CLAN) and were thus also assigned to IP network region 1. One consequence of assigning the aforementioned Avaya IP Telephones, Avaya IP Agent, Avaya AES DMCC stations, and MedPro boards to a common IP network region is that the RTP traffic between them is governed by the same codec set.

```
change ip-network-region 1                                     Page 1 of 20
                                IP NETWORK REGION
Region: 1
Location:                               Authoritative Domain: avaya.com
Name:
MEDIA PARAMETERS                                           Intra-region IP-IP Direct Audio: yes
  Codec Set: 1                                           Inter-region IP-IP Direct Audio: yes
  UDP Port Min: 2048                                       IP Audio Hairpinning? n
  UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
  Call Control PHB Value: 46
  Audio PHB Value: 46
  Video PHB Value: 26
802.1P/Q PARAMETERS
  Call Control 802.1p Priority: 6
  Audio 802.1p Priority: 6
  Video 802.1p Priority: 5      AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS                                           RSVP Enabled? n
  H.323 Link Bounce Recovery? y
  Idle Traffic Interval (sec): 20
  Keep-Alive Interval (sec): 5
  Keep-Alive Count: 5
```

5.5. Configure TSAPI CTI Link

Enter the **add cti-link m** command, where **m** is a number between 1 and 64, inclusive. Enter a valid **Extension** under the provisioned dial plan. Set the **Type** field to **ADJ-IP** and assign a descriptive **Name** to the CTI link. Default values may be used in the remaining fields.

```
add cti-link 4                                               Page 1 of 3
                                CTI LINK
CTI Link: 4
Extension: 72000
Type: ADJ-IP
Name: TSAPI
COR: 1
```

Enter the **change node-names ip** command. In the compliance-tested configuration, the procr IP address was utilized for registering H.323 endpoints (Avaya IP Telephones, Avaya IP Agents, and Avaya AES DMCC stations) and also was used for connectivity to the Application Enablement Services server.

change node-names ip		Page 1 of 2
IP NODE NAMES		
Name	IP Address	
CLAN	10.64.40.24	
IPOffice	10.64.44.21	
SES	10.64.40.41	
SM-1	10.64.40.42	
SM-2	10.64.21.31	
aes	10.64.43.40	
default	0.0.0.0	
msgserver-ip	10.64.41.21	
pcr	204.27.235.31	
procr	10.64.41.21	
procr6	::	

Enter the **change ip-services** command. On **Page 1**, configure the **Service Type** field to **AESVCS** and the **Enabled** field to **y**. The **Local Node** field should be pointed to **procr** that was configured previously in the node-name ip form. During the compliance test, the default port was utilized for the **Local Port** field.

change ip-services

Page1 of 4

IP SERVICES

Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
AESVCS	y	procr	8765		
CDR1		procr	0	pcr	5852
CDR2		procr	0	rdtt-1	9004

On **Page 4**, enter the hostname of the AES server for the AE Services Server field. The server name may be obtained by logging in to the AES server using ssh, and run **uname -a**. Enter an alphanumeric password for the **Password** field. Set the **Enabled** field to **y**. The same password will be configured on the AES server in **Section 6.1**.

change ip-services

Page 4 of 4

AE Services Administration

Server ID	AE Services Server	Password	Enabled	Status
1:	aes		y	idle
2:				
3:				
4:				
5:				
6:				

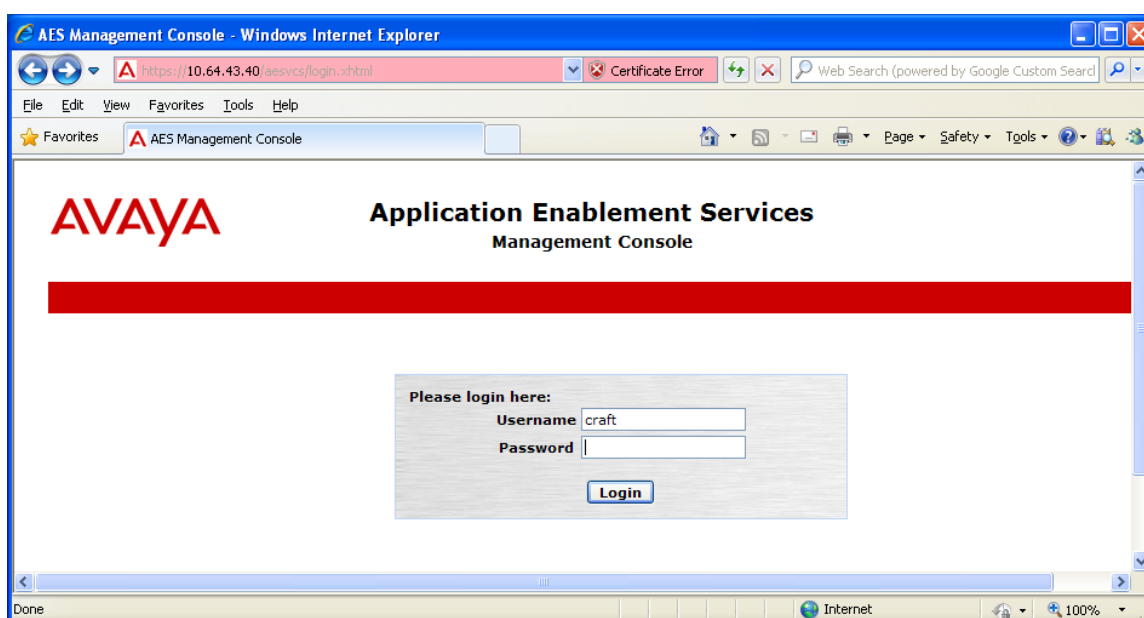
6. Configure Avaya Application Enablement Services

Application Enablement Services enable Computer Telephony Interface (CTI) applications to control and monitor telephony resources on Communication Manager. Application Enablement Services receive requests from CTI applications, and forwards them to Communication Manager. Conversely, Application Enablement Services receive responses and events from Communication Manager and forwards them to the appropriate CTI applications.

This section assumes that installation and basic administration of the Application Enablement Services server has been performed. The steps in this section describe the configuration of a Switch Connection, creating a CTI link for TSAPI, and a CTI user.

6.1. Configure Switch Connection

Launch a web browser, enter `https://<IP address of AES server>` in the URL, and log in with the appropriate credentials for accessing the Application Enablement Services Management Console page.



The Welcome to OAM screen is displayed next. Select **AE Services** from the left pane.

AVAYA **Application Enablement Services Management Console**

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

[Home](#) [Help](#) [Logout](#)

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▶ Status
- ▶ User Management
- ▶ Utilities
- ▶ Help

Welcome to OAM

The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:

- AE Services - Use AE Services to manage all AE Services that you are licensed to use on the AE Server.
- Communication Manager Interface - Use Communication Manager Interface to manage switch connection and dialplan.
- Licensing - Use Licensing to manage the license server.
- Maintenance - Use Maintenance to manage the routine maintenance tasks.
- Networking - Use Networking to manage the network interfaces and ports.
- Security - Use Security to manage Linux user accounts, certificate, host authentication and authorization, configure Linux-PAM (Pluggable Authentication Modules for Linux) and so on.
- Status - Use Status to obtain server status informations.
- User Management - Use User Management to manage AE Services users and AE Services user-related resources.
- Utilities - Use Utilities to carry out basic connectivity tests.
- Help - Use Help to obtain a few tips for using the OAM Help system

Depending on your business requirements, these administrative domains can be served by one administrator for both domains, or a separate administrator for each domain.

Verify that AES is licensed for the TSAPI service, as shown in the screen below.

AVAYA **Application Enablement Services Management Console**

Welcome: User craft
Last login: Wed Aug 31 09:39:49 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

AE Services [Home](#) [Help](#) [Logout](#)

- ▼ AE Services
 - ▶ CVLAN
 - ▶ DLG
 - ▶ DMCC
 - ▶ SMS
 - ▶ TSAPI
 - ▶ TWS
- ▶ Communication Manager Interface
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▶ Status
- ▶ User Management
- ▶ Utilities
- ▶ Help

AE Services

IMPORTANT: AE Services must be restarted for administrative changes to fully take effect. Changes to the Security Database do not require a restart.

Service	Status	State	License Mode	Cause*
ASAI Link Manager	N/A	Running	N/A	N/A
CVLAN Service	OFFLINE	Running	N/A	N/A
DLG Service	ONLINE	Running	NORMAL MODE	N/A
DMCC Service	ONLINE	Running	NORMAL MODE	N/A
TSAPI Service	ONLINE	Running	NORMAL MODE	N/A
Transport Layer Service	N/A	Running	N/A	N/A

For status on actual services, please use [Status and Control](#)

* -- For more detail, please mouse over the Cause, you'll see the tooltip, or go to help page.

License Information

You are licensed to run Application Enablement (CTI) version 6.0

Click on **Communication Manager Interface** → **Switch Connections** in the left pane to invoke the Switch Connections page. A Switch Connection defines a connection between the Application Enablement Services server and Communication Manager. Enter a descriptive name for the switch connection and click on **Add Connection**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections Home | Help | Logout

Left Navigation Pane:

- AE Services
- Communication Manager Interface
 - Switch Connections**
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Switch Connections

Connection Name: S8300D Add Connection

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
S8300D			

Buttons: Edit Connection Edit PE/CLAN IPs Edit H.323 Gatekeeper Delete Connection Survivability Hierarchy

The next window that appears prompts for the Switch Password. Enter the same password that was administered on Communication Manager in **Section 5.5**. Default values may be used in the remaining fields. Click on **Apply**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections Home | Help | Logout

Left Navigation Pane:

- AE Services
- Communication Manager Interface
 - Switch Connections**
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Connection Details - S8300D

Switch Password: [Redacted]

Confirm Switch Password: [Redacted]

Msg Period: 30 Minutes (1 - 72)

SSL: ☒

Processor Ethernet: ☐

Buttons: Apply Cancel

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on **Edit PE/CLAN IPs**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

Navigation Menu: AE Services, Communication Manager Interface, Switch Connections, Dial Plan, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, Help.

Switch Connections

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input checked="" type="radio"/> S8300D	No	30	0

Enter the IP address of Procr used for Application Enablement Services connectivity from **Section 5.5**, and click on **Add Name or IP**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

Navigation Menu: AE Services, Communication Manager Interface, Switch Connections, Dial Plan, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, Help.

Edit CLAN IPs - S8300D

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

After returning to the Switch Connections page, select the radio button corresponding to the switch connection added previously, and click on **Edit H.323 Gatekeeper**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Switch Connections

[Add Connection](#)

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
<input checked="" type="radio"/> S8300D	No	30	0

[Edit Connection](#) [Edit PE/CLAN IPs](#) [Edit H.323 Gatekeeper](#) [Delete Connection](#) [Survivability Hierarchy](#)

Enter the IP address of Procr used for Application Enablement Services connectivity from **Section 5.5**, and click on **Add Name or IP**.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Tue Sep 6 13:52:29 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Communication Manager Interface | Switch Connections [Home](#) | [Help](#) | [Logout](#)

- AE Services
- Communication Manager Interface
 - Switch Connections
 - Dial Plan
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

Edit H.323 Gatekeeper - S8300D

[Add Name or IP](#)

Name or IP Address

[Delete IP](#) [Back](#)

6.2. Configure TSAPI CTI Link

Navigate to **AE Services** → **TSAPI** → **TSAPI Links** to configure the TSAPI CTI link. Click the **Add Link** button to start configuring the TSAPI link.

The screenshot shows the Avaya Application Enablement Services Management Console. The top navigation bar includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for user "craft" with login details. The left sidebar shows a tree view of services, with "TSAPI Links" selected under "TSAPI". The main content area displays a table titled "TSAPI Links" with columns: Link, Switch Connection, Switch CTI Link #, ASAI Link Version, and Security. Below the table are buttons for "Add Link", "Edit Link", and "Delete Link". The "Add Link" button is highlighted with a red box.

Select the switch connection using the drop-down menu. Select the switch connection configured in **Section 6.1**. Select the **Switch CTI Link Number** using the drop-down menu. The CTI link number should match with the number configured in the cti-link form in **Section 5.5**. Click **Apply Changes**.

The screenshot shows the "Add TSAPI Links" form in the Avaya Application Enablement Services Management Console. The form contains several fields with drop-down menus: "Link" (set to 1), "Switch Connection" (set to S8300D), "Switch CTI Link Number" (set to 4), "ASAI Link Version" (set to 4), and "Security" (set to Both). The "Apply Changes" button is highlighted with a red box.

The following screen shows the TSAPI CTI link configuration.

AE Services | TSAPI | TSAPI Links

Home | Help | Logout

▼ AE Services

▶ CVLAN

▶ DLG

▶ DMCC

▶ SMS

▼ TSAPI

▪ TSAPI Links

▪ TSAPI Properties

▶ TWS


▶ Communication Manager Interface

▶ Licensing

▶ Maintenance

▶ Networking

TSAPI Links

Link	Switch Connection	Switch CTI Link #	ASAI Link Version	Security
 1	S8300D	4	4	Both

Add Link

Edit Link

Delete Link

6.3. Configure CTI User

Navigate to **User Management** → **Add User**. On the Add User page, provide the following information:

- **User Id**
- **Common Name**
- **Surname**
- **User Password**
- **Confirm Password**

Select **Yes** using the drop-down menu on the **CT User** field. This enables the user as a CTI user. Click the **Apply** button (not shown here) at the bottom of the screen to complete the process. Default values may be used in the remaining fields.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title 'Application Enablement Services Management Console', and a welcome message for user 'craft' with login details. A red navigation bar contains 'User Management | User Admin | Add User' and links for 'Home | Help | Logout'. A left sidebar lists various services, with 'User Management' expanded to show 'User Admin' and 'Add User' selected. The main content area is titled 'Add User' and contains a form with fields for user creation. Fields marked with an asterisk (*) are required. The 'CT User' field is set to 'Yes'.

Add User	
Fields marked with * can not be empty.	
* User Id	callcopy
* Common Name	Callcopy123&
* Surname	Callcopy123&
* User Password	••••••••
* Confirm Password	••••••••
Admin Note	
Avaya Role	None
Business Category	
Car License	
CM Home	
Css Home	
CT User	Yes

Once the user is created, navigate to the **Security → Security Database → CTI Users → List All Users** page. Select the **User ID** created previously, and click the **Edit** button to set the permission of the user.

The screenshot shows the Avaya Application Enablement Services Management Console. The top navigation bar includes 'Security | Security Database | CTI Users | List All Users' and 'Home | Help | Logout'. The left sidebar shows a tree view with 'Security Database' expanded, and 'CTI Users' selected, with 'List All Users' highlighted. The main content area, titled 'CTI Users', displays a table with the following data:

User ID	Common Name	Worktop Name	Device ID
callcopy	Callcopy123&	NONE	NONE

Below the table are 'Edit' and 'List All' buttons. The 'Edit' button is highlighted with a red box.

Provide the user with unrestricted access privileges by checking the **Unrestricted Access** check box. Click the **Apply Changes** button.

The screenshot shows the 'Edit CTI User' page in the Avaya Application Enablement Services Management Console. The top navigation bar and left sidebar are the same as in the previous screenshot. The main content area is titled 'Edit CTI User' and shows the user profile for 'callcopy'. The 'Unrestricted Access' checkbox is checked and highlighted with a red box. Below this, there are sections for 'Call and Device Control', 'Call and Device Monitoring', and 'Routing Control', each with a 'None' dropdown menu. At the bottom, the 'Apply Changes' button is highlighted with a red box.

Navigate to the **Security → Security Database → Tlinks** page and verify the Tlink name. The following screen shows the Tlink used during the compliance test.

The screenshot displays the Avaya Application Enablement Services Management Console. The top header includes the Avaya logo, the title "Application Enablement Services Management Console", and a welcome message for user "craft" with login details. A red navigation bar contains "Security | Security Database | Tlinks" and links for "Home | Help | Logout". On the left, a sidebar menu lists various services, with "Security Database" expanded to show "Tlinks" selected. The main content area, titled "Tlinks", shows a "Tlink Name" section with two radio buttons: "AVAYA#S8300D#CSTA#AES" (selected) and "AVAYA#S8300D#CSTA-S#AES". A "Delete Tlink" button is also present.

AVAYA Application Enablement Services Management Console

Welcome: User craft
Last login: Wed Aug 24 15:11:27 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

Security | Security Database | Tlinks Home | Help | Logout

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▼ Security
 - ▶ Account Management
 - ▶ Audit
 - ▶ Certificate Management
 - Enterprise Directory
 - ▶ Host AA
 - ▶ PAM
 - ▼ Security Database
 - Control
 - ⊕ CTI Users
 - Devices
 - Device Groups
 - **Tlinks**
 - Tlink Groups

Tlinks

Tlink Name

☒ AVAYA#S8300D#CSTA#AES

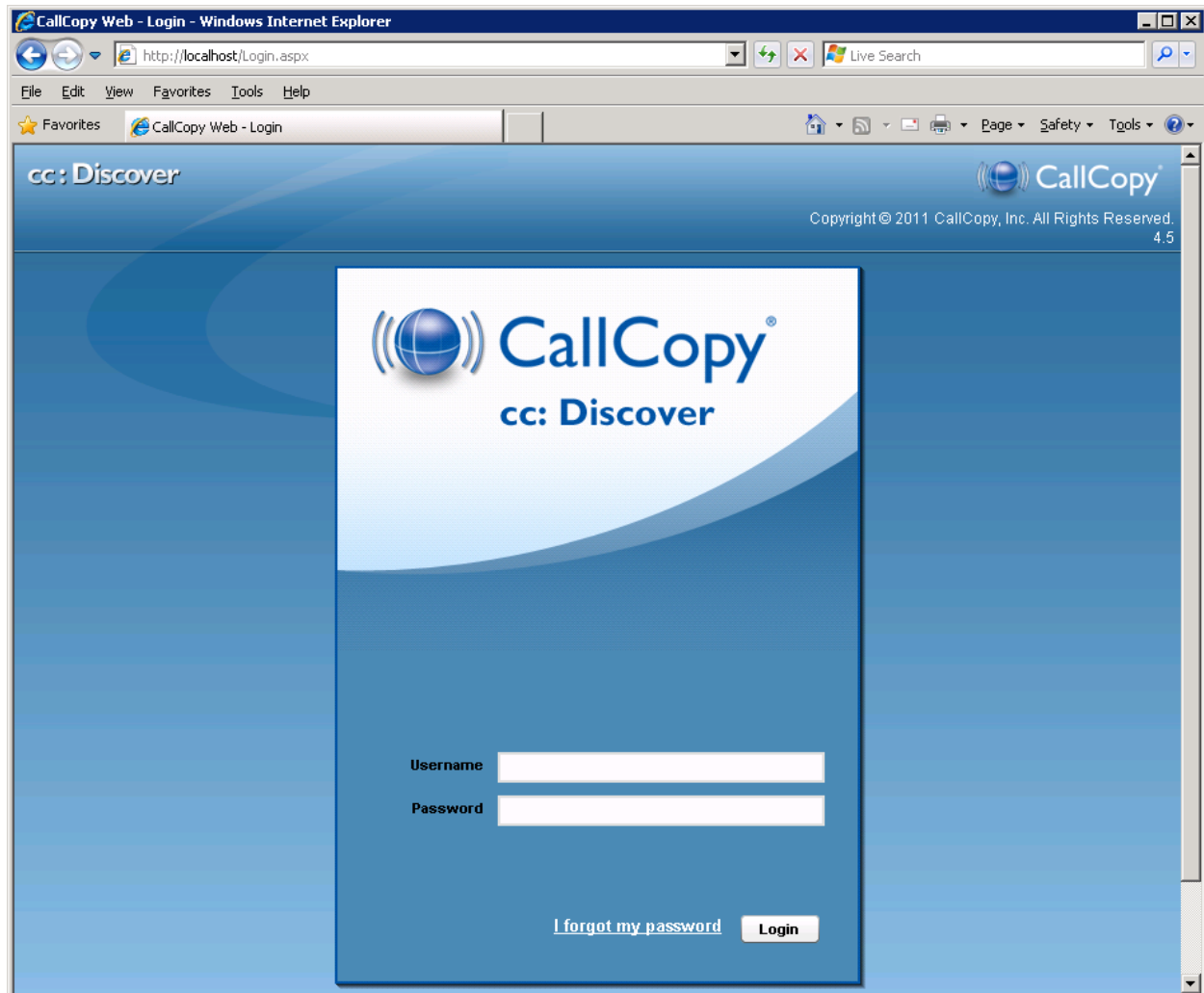
☐ AVAYA#S8300D#CSTA-S#AES

Delete Tlink

7. Configure CallCopy cc:Discover

CallCopy installs, configures, and customizes the cc:Discover application for their end customers. This section only describes the interface section of the cc:Discover configuration.

Launch a web browser, enter <http://<IP address of CallCopy server>> in the URL, and log in with the appropriate credentials for accessing the CallCopy cc:Discover main pages.



Select **Administration** on the top menu, and select the **Settings → CTI Core List** link from the left pane to configure the interface. From the right pane, select **Avaya**.

Note: *Avaya (CTI Core List)* was created by a CallCopy engineer prior to the actual test.

The screenshot displays the 'cc: Discover' web application interface. The top navigation bar includes links for Home, Web Player, Coaching, Reporting, Surveys, and Administration. The user is logged in as 'avaya'. The left sidebar shows a tree view of settings, with 'CTI Core List' highlighted under the 'Settings' section. The main content area is titled 'CTI Cores List' and contains a table with one entry, 'Avaya', which is highlighted with a red box. An 'Add Core' button is visible in the top right corner of the table area.

#	Name
1	Avaya

cc: Discover

Home

Web Player

Coaching

Reporting

Surveys

Administration

Core Functions

Add-Ons

Permissions

Settings

API Servers List

Archive Actions

Archiver

Channel Map

CTI Configuration

CTI Core List

CTI Monitors

Custom Extensions

Custom Lookup

Data Server

Device Alias Map

Disk Space Notifications

Exporter Settings

IP Phones

Notifications

On Demand

Recording Filters

Recording Filters Import

Server Nodes

SSL Settings

Stations

Stations Import

Terminology

Transcoder

Scheduling

Tools

Settings

Name: Avaya

Host: 10.64.43.121

Port: 5685

Monitor Reload Frequency: 300 (s)

Record Method: Passive

Playback Method: - Select -

Enable Event Interface: Yes

Cryptography: No

API Port: 6620

JCOM Timeout Interval: 300 (ms)

JCOM Reconnect Interval: 300 (ms)

Default Screen Capture Port: 5999

Generate XML with recordings: Yes

Transcode by Board: No

Channel Selection: First Available

Local Data Directory: c:\temp

Use Media Server: No

Desktop Only Max Record Time: 6000

Desktop Only Min Record Time: 10

Desktop Only Max Silence: 600

Desktop Only Recording Path: E:\Recordings

Default Filename Mask: %Y%M%D%H%A-%H-%N-%S

Related Components

Related Boards

Related Core(s)

Related Schedules

1 - AVAYADMCC

Record All

Ondemand

CTI Modules

#

Name

1

cc_AvayaTSAPIFx

2

cc_AvayaDMCC

The following screen displays the **Avaya TSAPI:: Settings** page. Provide the following information:

- **Server Name** – Enter the **TLink** name used in Application Enablement Services for the CTI Connect String field.
- **Server Username** – Enter an appropriate CTI username that was created in **Section 6.3**.
- **Server Password** – Enter an appropriate CTI password that was created in **Section 6.3**.

Click the **Save** button.

cc: Discover CallCopy

Home Web Player Coaching Reporting Surveys **Administration** Logged in as avaya | Change Password | Logout

Core Functions Add-Ons

Permissions

Agents
Groups
Users

Settings

Scheduling

Tools

Avaya TSAPI:: Settings Back Save

Server Name: AVAYA#S8300D#CSTA#AES

Server Username: callcopy

Server Password:

Register Monitor Delay: 180

Private Data Type: ECS#2-7

TS Version: TS1-2

Query Info On Establish: No

Monitors:

Monitor Type: Device +

Monitor Values: X

Prefix:

Postfix:

Filter Monitors: All Monitors Y

ID	Monitor Type	
72001	device	X
72002	device	X
72003	device	X
72004	device	X
72005	device	X
72006	device	X
72007	device	X
72008	device	X
72021	device	X
72022	device	X
72088	group	X

Select the **Voice Boards** link under the **Settings** section. To add a new board, click **Add Board** (not shown). From the **New Board** page, select **AVAYACMCC** as a Hardware Type, and click **Next** button (not shown). Provide the following information:

- **AES/DMCC Host** - IP address of the AES/DMCC host.
- **DMCC User** - DMCC username used for authenticating with Application Enablement Services during the DMCC session startup.
- **DMCC Password** - DMCC password used for authenticating with Application Enablement Services during the DMCC session startup.
- **Avaya Call Manager Host** - Procr (or CLAN) IP address of Communication Manager.
- **DMCC Station Endpoint Host** - IP address that will be receiving the RTP/RTCP traffic from Communication Manager. This will be the server running the Avaya DMCC Integration (usually the CallCopy Server). You must enter the actual IP address of the server – do not use localhost or 127.0.0.1.

Click the **Save** button.

Default values may be used for all other fields.

cc: Discover CallCopy

Home Web Player Coaching Reporting Surveys **Administration** Logged in as avaya | Change Password | Log

Core Functions Add-Ons

Permissions

Settings

- CTI Configuration
- CTI Core List
- CTI Monitors
- Custom Extensions
- Custom Lookup
- Data Server
- Device Alias Map
- Disk Space Notifications
- Exporter Settings
- IP Phones
- Notifications
- On Demand
- Recording Filters
- Recording Filters Import
- Server Nodes
- SSL Settings
- Stations
- Stations Import
- Terminology
- Transcoder
- VDNs Via Trunk
- Voice Boards**
- VOIP Alerting Configuration
- Web Portal
- WebAPI/Export Servers
- Loader Settings (Legacy)

Scheduling

Tools

Avaya DMCC :: Board Options Cancel Save

Number of Channel : 8

Virtual Board Host : http://127.0.0.1:2002

AES/DMCC Host : 10.64.43.40

Use Media Server : No

Media Server Host : 127.0.0.1

Media Server Port : 5630

Secure DMCC Connection : False

DMCC Port : 4721

DMCC Application Name : CallCopy

DMCC User : callcopy

DMCC Password :

DMCC Protocol Version : 3.0

DMCC Protocol Session Cleanup Delay : 5

DMCC Protocol Session Duration : 180

Avaya Call Manager Host : 10.64.41.21

Logging Server Port : 2003

API Server Host : 127.0.0.1

API Port : 5620

API Connection Timeout : 1000

API Socket Timeout : 10000

API Reconnect Tries : 5000

DMCC Station Endpoint Host : 10.64.43.121

DMCC Codec : G.711 - Mu-Law

RTP Listening Interface (NIC) : E9200679-4083-4990-8904-7651B82F149E

DMCC Station Endpoint Initial Port : 7000

UNC Paths : Add

The following screen is a continuation of the previous screen. Enter all recording stations and a password for each station.

Board1 of 1 :: Channel Configuration			
#Assign	Station	Password	Name
1	Anything ▼ 72501	1234	
2	Anything ▼ 72502	1234	
3	Anything ▼ 72503	1234	
4	Anything ▼ 72504	1234	
5	Anything ▼ 72505	1234	
6	Anything ▼ 72506	1234	
7	Anything ▼ 72507	1234	
8	Anything ▼ 72508	1234	

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager and Application Enablement Services.

8.1. Verify Avaya Aura® Communication Manager


Verify the status of the administered CTI link by using the **status aesvcs cti-link** command. Verify the Service State is “**established**” for the CTI link number administered in **Section 5.5**, as shown below.

```
status aesvcs cti-link
```

AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1		no		down	0	0
4	4	no	aes	established	15	15

8.2. Verify Avaya Aura® Application Enablement Services

From the Application Enablement Services Management Console web pages, verify the state of the TSAPI Service is set to **ONLINE** by selecting **Status** from the left pane.

**Application Enablement Services**
Management Console

Welcome: User craft
Last login: Tue Sep 6 14:57:50 2011 from 10.64.44.2
HostName/IP: aes.avaya.com/10.64.43.40
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-1-0-20-0

StatusHome | Help | Logout

▶ AE Services

▶ Communication Manager Interface

▶ Licensing

▶ Maintenance

▶ Networking

▶ Security

▼ Status

Alarm Viewer

▶ Logs

▶ Status and Control

▶ User Management

▶ Utilities


▶ Help

Services Summary

Service	State	Since	Cause
CVLAN Service	OFFLINE *	2011-08-30 16:01:21	NO_LICENSE_ACQUIRED
DLG Service	ONLINE	2011-08-30 16:01:18	NORMAL
DMCC Service	ONLINE	2011-08-30 16:01:22	NORMAL
TSAPI Service	ONLINE	2011-08-30 16:42:12	NORMAL

* The state of the CVLAN and DLG services can either be ONLINE or OFFLINE. Also, the OFFLINE status would appear either until a link is administered or a valid license is acquired.

The **TSAPI Link Details** screen is displayed. Verify that the **Status** is **Talking**, as shown below.


Application Enablement Services
Management Console

Welcome: User craft
 Last login: Tue Sep 6 14:57:50 2011 from 10.64.44.2
 HostName/IP: aes.avaya.com/10.64.43.40
 Server Offer Type: VIRTUAL_APPLIANCE
 SW Version: r6-1-0-20-0

Status | Status and Control | TSAPI Service Summary
 Home | Help | Logout

▶ AE Services
 ▶ Communication Manager Interface
 ▶ Licensing
 ▶ Maintenance
 ▶ Networking
 ▶ Security
 ▼ **Status**
 Alarm Viewer
 ▶ Logs
 ▼ **Status and Control**
 ▪ CVLAN Service Summary
 ▪ DLG Services Summary
 ▪ DMCC Service Summary
 ▪ Switch Conn Summary
 ▪ **TSAPI Service Summary**

TSAPI Link Details
☐ Enable page refresh every 60 seconds

	Link	Switch Name	Switch CTI Link ID	Status	Since	State	Switch Version	Associations	Msgs to Switch	Msgs from Switch	Msgs Period
	1	S8300D	4	Talking	Tue Aug 30 16:01:19 2011	Online	16	0	15	15	30

For service-wide information, choose one of the following:

9. Conclusion

These Application Notes describe the configuration steps required for CallCopy cc:Discover (Version 4.5 SP1) to interoperate with Avaya Aura® Communication Manager 6.0.1 and Avaya Application Enablement Services 6.1. All feature and serviceability test cases were completed.

10. Additional References

This section references the Avaya and CallCopy product documentation that is relevant to these Application Notes.

- [1] *Administering Avaya Aura™ Communication Manager*, Document 03-300509, Issue 6.0, June 2010 available at <http://support.avaya.com>.
- [2] *Avaya Aura® Application Enablement Services Administration and Maintenance Guide*, Release 6.1, Issue 2, February 20011 available at <http://support.avaya.com>
- [3] *CallCopy Avaya DMCC Integration*.
- [4] *CallCopy Avaya TSAPI Integration*.

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