



Avaya Solution & Interoperability Test Lab

Application Notes for Voxtronic Voxlog Professional Voice Recorder with Avaya Aura[®] Communication Manager and Avaya Aura[®] Application Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Voxtronic Voxlog Professional voice recorder to interoperate with Avaya Aura[®] Communication Manager using Avaya Aura[®] Application Enablement Services. Voxtronic Voxlog Professional voice recorder is a call recording solution. In the compliance testing, Voxtronic Voxlog Professional voice recorder used the Telephony Services Application Programming Interface from Avaya Aura[®] Application Enablement Services to monitor stations on Avaya Aura[®] Communication Manager. This solution also used the Service Observe feature via the Avaya Aura[®] Application Enablement Services Device, Media, and Call Control interface to capture the media associated with the monitored stations for call recording.

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

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1. Introduction

These Application Notes describe the configuration used to enable the Voxtronic Voxlog Professional voice recorder to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services. The Voxlog Professional voice recorder offers various methods of voice recording. For the purpose of the tests described by these Application Notes, the Avaya Aura® Communication Manager Service Observe feature was used.

Voxlog Professional can be configured to monitor specific local endpoints and record calls made to or from those endpoints. Calls between or among local endpoints which are each monitored produce multiple voice files: one for each monitored endpoint.

Voxlog Professional does not record calls which are made from Avaya telephone bridged appearances.

1.1. Interoperability Compliance Testing

The following tests were performed as part of the compliance testing:

- The following test scenarios were used to test the various Voxlog Professional features:
 - Basic call
 - Hold/retrieve
 - Transfer / Blind transfer
 - Conferencing
 - Hunt group calls
 - Calls to/from bridged appearances
- Voxlog Professional's robustness was tested by verifying its ability to recover from interruptions to its external connections including:
 - The LAN connection between and Voxlog Professional and the network
 - The connection of the PBX to the network
- Voxlog Professional's robustness was further tested by verifying its ability to recover from power interruptions to the following components:
 - The Voxlog Professional server
 - The Avaya Aura® Communication Manager Server to which the Voxlog Professional is attached.

1.2. Support

Support for Voxlog Professional is available at:

General technical support from Voxlog Professional can be obtained by sending mail to: support@voxtronic.com.

Support enquiry can also be presented through the form available at the Voxtronic web site: <http://www.voxtronic.com/en/Request-Support>.

The PBX 2 system is attached to PBX 1 via an IP/QSIG interface, and is used as a networked PBX system. This allows remote networked telephones (g, h) to be included in the test.

The following table contains additional information about each of the telephones shown in **Figure 1**. A “*” in the “Monitored” column indicates that the telephone is monitored by the Voxlog Professional voice recorder. Note that one Virtual CTI Station is required for each endpoint which is to be monitored, as these are used by Voxlog Professional to initiate Service Observe operations.

Phone	Monitored	Model	Extension
A	*	Avaya 9640G (SIP)	10182
b		Avaya 9640G (SIP)	10184
C	*	Avaya 9630G (H.323)	10183
d		Avaya 1608 (H.323)	10065
E	*	Avaya 2410	
f		Avaya 2410	
g		Avaya 2410	60007
h		Avaya 2410	60008
j		N/A	069 7505 6174
k		N/A	015209160934
l		Hunt Group (A & C)	11304
x		CTI Station	11401
y		CTI Station	11402
z		CTI Station	11403

Table 1: Device Monitor Configuration

3. Equipment and Software Validated

Component	Version
Avaya G430 Media Gateway	30.14.0
Avaya Aura [®] Communication Manager	R015x.02.1.016.4
Avaya Aura [®] SIP Enablement Services (co-resident)	Patch: 18365
Avaya Aura [®] Application Enablement Services	5.2.2
Avaya Aura [®] Application Enablement Services TSAPI Client	5.2 Build 483
Avaya 96xx H.323 Telephones	3.1.1
Avaya 96xx SIP Telephones	2.5.0
Voxtronic Voxlog Professional	3.10.0.810
Voxtronic Voxlog Professional platform OS: MS Win XP	SP3

Table 2: Hardware/Software Component Versions

4. Configure Avaya Aura[®] Communication Manager

The configuration information in this section covers only PBX 1 – the system to which the Voxlog Professional voice recorder is attached.

The configuration and verification operations illustrated in this section were all performed using the Communication Manager System Administration Terminal (SAT).

The information provided in this section describes the configuration of Communication Manager for this solution. For all other provisioning information such as installation and configuration, please refer to the product documentation in references **Error! Reference source not found.** and **Error! Reference source not found.**

4.1. Verify system-parameters customer-options

Use the **display system-parameters customer options** command to verify that Communication Manager is configured to meet the minimum requirements to run Voxlog Professional. Those items shown in **bold** indicate required values or minimum capacity requirements. If these are not met in the configuration, please contact an Avaya representative for further assistance.

Parameter	Usage
Maximum Concurrently Registered IP Stations (Page 2)	This must be sufficient to support the total number of IP stations.
IP Stations (Page 4)	This parameter must be set to “y”.
Service Observing (Basic) (Page 6)	This parameter must be set to “y”.
IP_Phone (Page 10)	This parameter must be set to the number of IP stations plus 1 for each station which is to be monitored.

Table 3: System-Parameters Customer-Options Parameters

display system-parameters customer-options		Page 2 of 11
OPTIONAL FEATURES		
IP PORT CAPACITIES		USED
Maximum Administered H.323 Trunks: 100		40
Maximum Concurrently Registered IP Stations: 450		3
Maximum Administered Remote Office Trunks: 450		0
Maximum Concurrently Registered Remote Office Stations: 450		0
Maximum Concurrently Registered IP eCons: 0		0
Max Concur Registered Unauthenticated H.323 Stations: 0		0
Maximum Video Capable H.323 Stations: 0		0
Maximum Video Capable IP Softphones: 0		0
Maximum Administered SIP Trunks: 100		30
Maximum Administered Ad-hoc Video Conferencing Ports: 0		0
Maximum Number of DS1 Boards with Echo Cancellation: 0		0
Maximum TN2501 VAL Boards: 0		0
Maximum Media Gateway VAL Sources: 1		1
Maximum TN2602 Boards with 80 VoIP Channels: 0		0
Maximum TN2602 Boards with 320 VoIP Channels: 0		0
Maximum Number of Expanded Meet-me Conference Ports: 0		0

Figure 2: System-Parameters Customer-Options Screen, Page 2

display system-parameters customer-options	Page 4 of 11
OPTIONAL FEATURES	
Emergency Access to Attendant? y	IP Stations? y
Enable 'dadmin' Login? y	
Enhanced Conferencing? n	ISDN Feature Plus? n
Enhanced EC500? y	ISDN/SIP Network Call Redirection? n
Enterprise Survivable Server? n	ISDN-BRI Trunks? y
Enterprise Wide Licensing? n	ISDN-PRI? y
ESS Administration? n	Local Survivable Processor? n
Extended Cvg/Fwd Admin? y	Malicious Call Trace? n
External Device Alarm Admin? n	Media Encryption Over IP? n
Five Port Networks Max Per MCC? n	Mode Code for Centralized Voice Mail? n
Flexible Billing? n	
Forced Entry of Account Codes? n	Multifrequency Signaling? y
Global Call Classification? n	Multimedia Call Handling (Basic)? n
Hospitality (Basic)? y	Multimedia Call Handling (Enhanced)? n
Hospitality (G3V3 Enhancements)? n	Multimedia IP SIP Trunking? n
IP Trunks? y	
IP Attendant Consoles? n	

Figure 3: System-Parameters Customer-Options Screen, Page 4

display system-parameters customer-options	Page 6 of 11
CALL CENTER OPTIONAL FEATURES	
Call Center Release: 5.0	
ACD? y	Reason Codes? n
BCMS (Basic)? n	Service Level Maximizer? n
BCMS/VuStats Service Level? n	Service Observing (Basic)? y
BSR Local Treatment for IP & ISDN? n	Service Observing (Remote/By FAC)? n
Business Advocate? n	Service Observing (VDNs)? n
Call Work Codes? n	Timed ACW? n
DTMF Feedback Signals For VRU? n	Vectoring (Basic)? y
Dynamic Advocate? n	Vectoring (Prompting)? n
Expert Agent Selection (EAS)? y	Vectoring (G3V4 Enhanced)? n
EAS-PHD? y	Vectoring (3.0 Enhanced)? n
Forced ACD Calls? n	Vectoring (ANI/II-Digits Routing)? n
Least Occupied Agent? n	Vectoring (G3V4 Advanced Routing)? n
Lookahead Interflow (LAI)? n	Vectoring (CINFO)? n
Multiple Call Handling (On Request)? n	Vectoring (Best Service Routing)? n
Multiple Call Handling (Forced)? n	Vectoring (Holidays)? n
PASTE (Display PBX Data on Phone)? n	Vectoring (Variables)? n

Figure 4: System-Parameters Customer-Options Screen, Page 6

display system-parameters customer-options			Page 10 of 11
MAXIMUM IP REGISTRATIONS BY PRODUCT ID			
Product ID	Rel. Limit	Used	
IP_API_A	: 100	0	
IP_API_B	: 100	0	
IP_API_C	: 100	0	
IP_Agent	: 100	0	
IP_IR_A	: 100	0	
IP_NonAgt	: 100	0	
IP_Phone	: 450	2	
IP_ROMax	: 450	0	
IP_Soft	: 100	0	
IP_Supv	: 100	0	
IP_eCons	: 68	0	
oneX_Comm	: 450	1	

Figure 5: System-Parameters Customer-Options Screen Page 10

4.2. Configure system-parameters features

Use the **change system-parameters customer options** command to set the parameters as shown in the following table.

Parameter	Usage
Allow Two observers in Same Call	Set this parameter to “y”.

Table 4: System-Parameters Customer-Options Parameters

change system-parameters features			Page 11 of 18
FEATURE-RELATED SYSTEM PARAMETERS			
CALL CENTER SYSTEM PARAMETERS			
EAS			
Expert Agent Selection (EAS) Enabled? y			
Minimum Agent-LoginID Password Length:			
Direct Agent Announcement Extension:			Delay:
Message Waiting Lamp Indicates Status For: station			
VECTORIZING			
Converse First Data Delay: 0			Second Data Delay: 2
Converse Signaling Tone (msec): 100			Pause (msec): 70
Reverse Star/Pound Digit For Collect Step? n			
Store VDN Name in Station's Local Call Log? n			
SERVICE OBSERVING			
Service Observing: Warning Tone? y			or Conference Tone? n
Service Observing Allowed with Exclusion? n			
Allow Two Observers in Same Call? y			

Figure 6: System-Parameters Features Screen, Page 1

4.3. Configure Feature Access Codes

Use the **change feature-access-codes** command to assign an access code to the Service Observing No Talk Access Code to allow SpeechLog to activate the Service Observe operation.

Parameter	Usage
Service Observing No Talk Access Code	Assign an otherwise unused access code which is configured by Voxlog to activate this feature.

Table 5: Parameters for the Feature Access Codes (FAC)

change change feature-access-codes	Page 5 of 8
FEATURE ACCESS CODE (FAC)	
Automatic Call Distribution Features	
After Call Work Access Code: *70	
Assist Access Code: *71	
Auto-In Access Code: *72	
Aux Work Access Code: *73	
Login Access Code: *74	
Logout Access Code: *75	
Manual-in Access Code: *76	
Service Observing Listen Only Access Code: *220	
Service Observing Listen/Talk Access Code: *221	
Service Observing No Talk Access Code: *222	
Add Agent Skill Access Code: *77	
Remove Agent Skill Access Code: *78	
Remote Logout of Agent Access Code: *79	

Figure 7: Feature Access Code (FAC) Form, Page 5

4.4. Configure Avaya Aura® Application Enablement Services Interface

Use the **change ip-services** command to configure the interface to the Application Enablement Services server, as shown in the following table.

Parameter	Usage
Service Type (Page 1)	Enter “AESVCS”.
Enabled (Page 1)	Enter “y” to enable the service.
Local Node (Page 1)	Enter the IP node name for the CLAN or Processor Ethernet interface, as appropriate. For the Avaya G430 Media Gateway, enter “procr” to select the gateway’s integrated Processor Ethernet interface.
AE Services Server (Page 4)	Enter the name that was assigned to the Application Enablement Services server when it was installed.
Password (Page 4)	Enter the password that was assigned to the switch connection, as shown in Figure 30 .
Enabled (Page 4)	Enter “y” to enable the connection.

Table 6: IP Services Parameters

change ip-services				Page 1 of 4	
IP SERVICES					
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
AESVCS	y	procr	8765		

Figure 8: IP Services Form, Page 1

change ip-services				Page	4 of	4
AE Services Administration						
Server ID	AE Services Server	Password	Enabled	Status		
1:	AES	interop123456789	y	in use		

Figure 9: IP Services Form, Page 4

Use the **add cti-link** command to add a CTI link by TSAPI. The link number can be any value between 1 and 64 which is not currently assigned to another link. The link number specified must be the same value that is used in the “Switch CTI Link Number” field shown in **Figure 33**. Use an unused extension as the value for the “Extension” parameter. The value chosen for the “Name” parameter is a matter of personal preference.

add cti-link 4	Page 1 of 3
CTI LINK	
CTI Link: 4	
Extension: 19996	
Type: ADJ-IP	
COR: 1	
Name: AES-devcon223-tsapi	

Figure 10: CTI Link Form

4.5. Configure Network Region

Use the **change ip-network-region** command to assign an appropriate domain name to be used by Communication Manager.

change ip-network-region 1	Page 1 of 19
IP NETWORK REGION	
Region: 1	
Location:	Authoritative Domain: ffm.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	RTCP Reporting Enabled? y
Call Control PHB Value: 46	RTCP MONITOR SERVER PARAMETERS
Audio PHB Value: 46	Use Default Server Parameters? y
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	

Figure 11: IP Network Region Form

4.6. Configure Stations

4.6.1. Configure IP Stations

Use the **add station** command to create each of the IP stations listed in **Table 1**, using the values shown in the following table.

Parameter	Usage
Extension	Use an unused extension which is compatible with the dial plan.
Type	Use a type value which corresponds to the physical station to be used.
Name	Any alphanumeric string can be assigned as an extension name, which is used for identification purposes.
Security Code	Enter an appropriate numeric string to be used as a security code.

Table 7: Configuration IP Stations

```
add station 10183                                     Page 1 of 5
                                                    STATION
Extension: 10183                                     Lock Messages? n          BCC: 0
Type: 9630                                           Security Code: 123456      TN: 1
Port: S00007                                         Coverage Path 1:          COR: 1
Name: extn 10183                                     Coverage Path 2:          COS: 1
                                                    Hunt-to Station:
STATION OPTIONS
Loss Group: 19                                     Time of Day Lock Table:
Speakerphone: 2-way                                Personalized Ringing Pattern: 1
Display Language: english                          Message Lamp Ext: 10183
Survivable GK Node Name:                           Mute Button Enabled? y
Survivable COR: internal                            Button Modules: 0
Survivable Trunk Dest? y                           Media Complex Ext:
                                                    IP SoftPhone? n
                                                    Customizable Labels? yy
```

Figure 12: Station Form

4.6.2. Configure Virtual CTI Stations

Use the **add station** command to create a station for each of the Virtual CTI Stations listed in **Table 1**. A separate Virtual CTI Station is required for each station to be monitored. These stations are subsequently assigned by the Voxtronic Voxlog Professional for monitoring in **section 7**. The extension list of the provisioned Virtual CTI Stations is specified for Voxlog Professional by the **recordingDevices** parameter in **avayarps_config.xml** (see **Section 7**). Note that the station numbers must be sequential.

Parameter	Usage
Type (Page 1)	Enter “9620”.
Name (Page 1)	Any alphanumeric string can be assigned as an extension name.
Security Code (Page 1)	Enter a common security code for all provisioned Virtual CTI Stations.
IP Softphone (Page 1)	Enter “y”.
Button 5 (Page 4)	Create a “serv-oberv” button.

Table 8: Virtual CTI Station Parameters

add station 11401		Page 1 of 5
STATION		
Extension: 11401	Lock Messages? n	BCC: 0
Type: 9620	Security Code: 1234	TN: 1
Port: S00017	Coverage Path 1:	COR: 1
Name: CTI 11401	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
	Time of Day Lock Table:	
Loss Group: 19	Personalized Ringing Pattern: 1	
	Message Lamp Ext: 11401	
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	
	Customizable Labels? y	

Figure 13: Virtual CTI Station Form, Page 1

add station 11401		Page 4 of 5
STATION		
SITE DATA		
Room:		Headset? n
Jack:		Speaker? n
Cable:		Mounting: d
Floor:		Cord Length: 0
Building:		Set Color:
ABBREVIATED DIALING		
List1:	List2:	List3:
BUTTON ASSIGNMENTS		
1: call-appr	4:	
2: call-appr	5: serv-obsrv	
3: call-appr	6:	
voice-mail Number:		

Figure 14: Virtual CTI Station Form, Page 4

4.7. Configure Hunt Group

Use the **add hunt-group** command to create a hunt group which is used to test the ability of Voxlog Professional to monitor hunt groups. Assign an unused extension to the hunt group. Add extensions for telephones “A” and “C” to the hunt group, which are assigned to IP phones which are monitored by Voxlog Professional.

Parameter	Usage
Group Name (Page 1)	Any alphanumeric string can be used as a Group Name.
Group Extension (Page 1)	Use an unused extension which is compatible with the dial plan.
GROUP MEMBER ASSIGNMENTS (Page 3)	Add the extensions which are to be assigned to this hunt group. For this test, extensions “A” and “C” are used.

Table 9: Configuration IP Stations

```
add hunt-group 3                                     Page 1 of 60
                                     HUNT GROUP

      Group Number: 3                                ACD? n
      Group Name: A + C                               Queue? n
      Group Extension: 11304                           Vector? n
      Group Type: ucd-mia                             Coverage Path:
      TN: 1                                             Night Service Destination:
      COR: 1                                           MM Early Answer? n
      Security Code:                                Local Agent Preference? n
      ISDN/SIP Caller Display:
```

Figure 15: Hunt Group Form, Page 1

```
add hunt-group 3                                     Page 3 of 60
                                     HUNT GROUP

      Group Number: 3      Group Extension: 11304      Group Type: ucd-mia
      Member Range Allowed: 1 - 1500      Administered Members (min/max): 1 /2
                                     Total Administered Members: 2

GROUP MEMBER ASSIGNMENTS
      Ext      Name(19 characters)      Ext      Name(19 characters)
      1: 10182      extn 10182      14:
      2: 10183      extn 10183      15:
      3:                                16:
      4:                                17:
      5:                                18:
      6:                                19:
      7:                                20:
      8:                                21:
      9:                                22:
      10:           23:
      11:           24:
      12:           25:
      13:           26:

      At End of Member List
```

Figure 16: Hunt Group Form, Page 3

4.8. Configure SIP Interface to SES

Use the **add signaling-group** command to configure the Signaling Group parameters for the SIP trunk group. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type	Enter the Group Type as “sip”.
Co-Resident SES	Enter “y”.
Far-end Network Region	Enter the number of the network region configured in Figure 11 .

Table 10: Signaling-Group Parameters for SIP Interface

add signaling-group 1		Page 1 of 1
SIGNALING GROUP		
Group Number: 1	Group Type: sip	
	Transport Method: tls	
IMS Enabled? n	Co-Resident SES? y	
Near-end Node Name: procr	Far-end Node Name: procr	
Near-end Listen Port: 6001	Far-end Listen Port: 5061	
	Far-end Network Region: 1	
Far-end Domain:		
Incoming Dialog Loopbacks: eliminate	Bypass If IP Threshold Exceeded? n	
DTMF over IP: rtp-payload	RFC 3389 Comfort Noise? n	
Session Establishment Timer(min): 3	Direct IP-IP Audio Connections? y	
	IP Audio Hairpinning? n	
	Direct IP-IP Early Media? n	
H.323 Station Outgoing Direct Media? n	Alternate Route Timer(sec): 6	

Figure 17: Signaling Group Form

Use the **add trunk-group** command to configure the SIP interface to Avaya SES. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type	Specify the Group Type as “sip”.
Group Name	Select an appropriate name to identify the device.
TAC	Specify a trunk access code that can be used to provide dial access to the trunk group.
Service Type	Designate the trunk as a “tie” line to a peer system.
Signaling Group	Enter the number assigned to the SIP signaling group shown in Figure 17 .
Number of Members	Specify sufficient number of members to support the maximum simultaneous connections required.

Table 11: Trunk-Group Parameters for the SIP Interface

add trunk-group 1		Page 1 of 21	
TRUNK GROUP			
Group Number: 1	Group Type: sip	CDR Reports: y	
Group Name: ses	COR: 1	TN: 1	TAC: *001
Direction: two-way	Outgoing Display? n	Night Service:	
Dial Access? n			
Queue Length: 0			
Service Type: tie	Auth Code? n		
		Signaling Group: 1	
		Number of Members: 30	

Figure 18: Trunk Group Form

After the configuration steps for Avaya Aura[®] Communication Manager are complete, enter the command **save translation** to make these changes permanent.

5. Configure Avaya Aura® SIP Enablement Services

Configure SIP Enablement Service by entering “<SES IP Address>/admin” in a web browser. After entering the administrator name and password, the following screen content is displayed:

AVAYA

Integrated Management
SIP Server Management

Help Exit

This Server: [1]

Top

Setup

✚ Users

Address Map Priorities

✚ Adjunct Systems

✚ Aggregator

✚ Conferences

Emergency Contacts

✚ Export/Import to ProVision

✚ Hosts

IM logs

✚ Communication Manager Servers

✚ Communication Manager Extensions

✚ Server Configuration

✚ SIP Phone Settings

✚ Survivable Call Processors

System Status

✚ Trace Logger

✚ Trusted Hosts

 **Top**

Manage Users	Add and delete Users.
Manage Address Map Priorities	Adjust Address Map Priorities.
Manage Adjunct Systems	Add and delete Adjunct Systems.
Manage Event Aggregators	Add/Delete Event Aggregators.
Manage Conferencing	Add and delete Conference Extensions.
Manage Emergency Contacts	Add and delete Emergency Contacts.
Export Import to ProVision	Export and import data using ProVision on this host.
Manage Hosts	Add and delete Hosts.
IM logs	Download IM Logs.
Manage Communication Manager Servers	Add and delete Communication Manager Servers.
Manage Communication Manager Extensions	Add and delete Communication Manager Extensions.
Server Configuration	View Properties of the system.
Manage SIP Phone Settings	Add/Delete Phone Settings
Manage Survivable Call Processors	Add and delete Survivable Call Processors.
System Status	View System Status.
Trace Logger	Manage SIP Trace Logs.
Manage Trusted Hosts	Add and delete Trusted Hosts.

Figure 19: SIP Enablement Service “Top” Configuration Screen

5.1. Server Configuration

Select “System Properties” from the “Server Configuration” menu from the left pane of the screen. Enter values in this screen as shown in the following table:

Parameter	Usage
SIP Domain	Enter the same SIP domain name assigned in Figure 11 .
License Host	Enter the IP address of the license host, in this case the IP address of the SES server.
Management System Login / Password	Enter the authentication credentials for Communication Manager administrative login.

Table 12: Parameters for System Properties

Integrated Management
SIP Server Management

[Help](#)
[Exit](#)
This Server: [1]

Top
 Setup
 + Users
 Address Map Priorities
 + Adjunct Systems
 + Aggregator
 + Conferences
 Emergency Contacts
 + Export/Import to ProVision
 + Hosts
 IM logs
 + Communication Manager Servers
 + Communication Manager Extensions
 + Server Configuration
 Admin Setup
 IM Log Settings
 License
 System Properties
 + SIP Phone Settings
 + Survivable Call Processors
 System Status
 + Trace Logger
 + Trusted Hosts

View System Properties

SES VersionSES-5.2.1.0-016.1
 System ConfigurationSimplex
 Host TypeCM combined home-edge

SIP Domain*

ffm.com

Note that the DNS domain is unknown

If you are unsure about this field, most often the SIP domain should be the root level DNS domain. For example, for a DNS domain of eastcoast.example.com, the SIP domain would likely be configured to example.com. This allows SIP calls and instant messages to users with handles of the format handle@example.com

SIP License Host*

192.168.150.126

DiffServ/TOS Parameters
 Call Control PHB Value*46

802.1 Parameters
 Priority Value*6

Management System Access Login

admin

Management System Access Password

••••••••

DB Log Leveldisabled

Update

Figure 20: System Properties Screen

Navigate to “Server Configuration” → “Admin Setup”, select the “This server is the SES Master...” radio button, and click “Setup”.

AVAYA

Integrated Management
SIP Server Management

HelpExitThis Server: [1]

Top

Setup

+ Users

Address Map Priorities

+ Adjunct Systems

+ Aggregator

+ Conferences

Emergency Contacts

+ Export/Import to ProVision

+ Hosts

IM logs

+ Communication Manager Servers

+ Communication Manager Extensions

+ Server Configuration

Admin Setup

IM Log Settings

License

Setup Master Administration

This is the first time the SES administration system has been setup on this server. You can choose to configure the SES Master Administration system to run on this server, or configure this server to use an existing SES Master Administration System on another server. Note that there should only be one master administration system per SIP domain.

You must select "Setup" below to set up Data Services.

☒ This server is the SES Master Administration System for the SES Network.

☐ This server is configured to use another SES Administration System with the following address:

Master Administration IP Address

Setup

Figure 21: Master Administration Screen

5.2. Add Hosts

Navigate to “Hosts” → “Add Host” from the left pane of the top level screen shown in **Figure 19**. Enter values in this screen as shown in the following table, accepting the default values for those parameters which are not listed.

Parameter	Usage
Profile Service Password	Enter the password which was entered from the initial setup script when SES was installed.

Table 13: “Add Host” Parameters

The screenshot shows the 'Add Host' configuration page in the Avaya Integrated Management SIP Server Management interface. The left sidebar contains a navigation menu with options like Top, Setup, Users, Address Map Priorities, Adjunct Systems, Aggregator, Conferences, Emergency Contacts, Export/Import to ProVision, Hosts, IM logs, Communication Manager Servers, Communication Manager Extensions, Server Configuration, SIP Phone Settings, Survivable Call Processors, System Status, Trace Logger, and Trusted Hosts. The main content area is titled 'Add Host' and contains various configuration fields. The 'Profile Service Password*' field is highlighted with a red rectangle. Other fields include Host IP Address*, Host Type (CM combined home-edge), Parent (NONE), Listen Protocols (UDP, TCP, TLS), Link Protocols (UDP, TCP, TLS), Access Control Policy (Default) (Allow All, Deny All), Emergency Contacts Policy (Allow, Deny), Minimum Registration (seconds) (900), Registration Expiration Timer (seconds)* (86400), Subscription Expiration Timer (seconds)* (86400), Line Reservation Timer (seconds)* (30), Outbound Routing Allowed (Internal, External), OutboundProxy, Outbound Direct Domains, Default Ringer Volume** (5), Default Ringer Cadence* (2), Default Receiver Volume** (5), Default Speaker Volume* (5), VMM Server Address, VMM Server Port (5005), and VMM Report Period (5).

Figure 22: Add Host Screen

Navigate to “Communication Manager Servers” → “list”, enter the “Near-end Listen Port” value assigned to the SIP trunk in **Figure 17** into the “SIP Trunk Port” field, and click “Update”.

The screenshot displays the Avaya Integrated Management SIP Server Management interface. The top header includes the Avaya logo, the title 'Integrated Management SIP Server Management', and a status indicator 'This Server: [1]'. A navigation menu on the left lists various system components, with 'Communication Manager Servers' selected. The main content area is titled 'Edit Communication Manager Server Interface' and contains a table of configuration parameters. The 'SIP Trunk Port*' field is highlighted with a red rectangular box and contains the value '6001'. Below the table, there is a section for 'Communication Manager Server' with additional configuration options and an 'Update' button.

Edit Communication Manager Server Interface	
Communication Manager Server Interface Name*	192.168.150.126CM
Host	192.168.150.126
SIP Trunk IP Address*	192.168.150.126
SIP Trunk Port*	6001

Communication Manager Server

Communication Manager Server Admin Address*	192.168.150.126
---	-----------------

(see Help)
Fields marked * are required.
[Update](#)

Figure 23: Edit Communication Manager Server Interface Screen

Navigate to “Users” → “Add”. For each of the SIP phones in **Table 1**, enter the parameters shown in the following table, and click “Add”.

Parameter	Usage
Primary Handel	Enter the SIP phone extension.
User ID	Enter the SIP phone extension.
Password / Confirm	Enter password with which the phone is to use for registration.
First Name / Last Name	Enter first and last names to identify the telephone user.
Add Communication Manager Extension	Check this box.

Table 14: SIP User Parameters

AVAYA Integrated Management SIP Server Management
 Help Exit This Server: [1]

Add User

Primary Handle* 10182
 User ID 10182
 Password*
 Confirm Password*
 Host* 192.168.150.126
 First Name* extn
 Last Name* 10182
 Address 1
 Address 2
 Office
 City
 State
 Country
 Zip
 Survivable Call Processor none
 Add Communication Manager Extension ☒
 Fields marked * are required.
 Add

Figure 24: Add User Screen

Enter the SIP phone extension and click “Add”.

The screenshot shows the Avaya Integrated Management SIP Server Management interface. The top header includes the Avaya logo, the title 'Integrated Management SIP Server Management', and a status bar with 'Help', 'Exit', and 'This Server: [1]'. A left sidebar contains a navigation menu with 'Top', 'Setup', 'Users', 'Add', 'Default Profile', 'Delete', 'Edit', 'List', 'Password', and 'Search'. The main content area is titled 'Add Communication Manager Extension' and contains the instruction 'Add Communication Manager extension for user 10182.'. Below this, there are two input fields: 'Extension' with the value '10182' (highlighted by a red box) and 'Communication Manager Server' with the value '192.168.150.126CM'. A note states 'Fields marked * are required.'. An 'Add' button is located at the bottom of the form.

Figure 25: Add Extension Screen

6. Configure Avaya Aura® Application Enablement Services

The Application Enablement Services server is configured via a web browser by accessing the following URL:

https://<AES server address>/

Click “Continue To Login”.

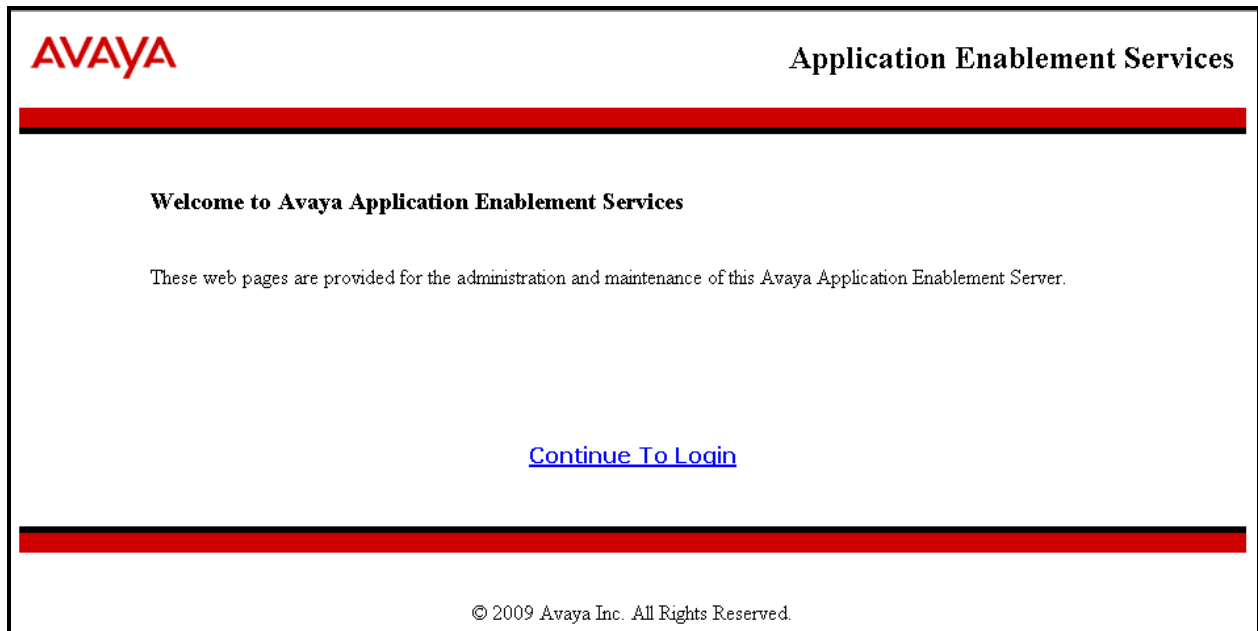
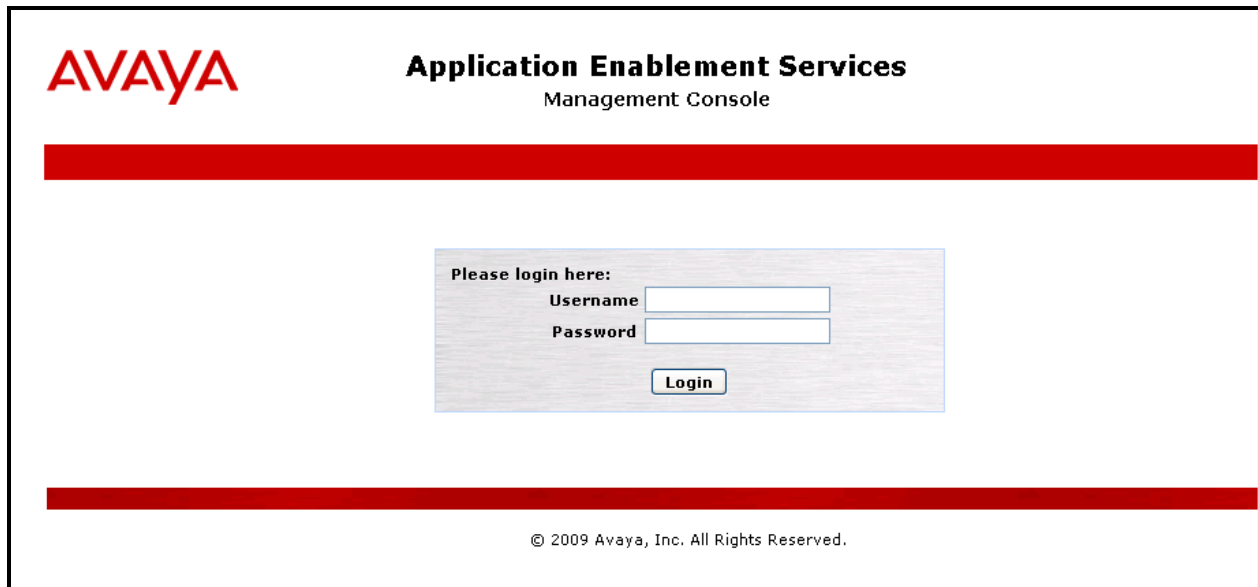


Figure 26: Avaya Application Enablement Services Welcome Screen

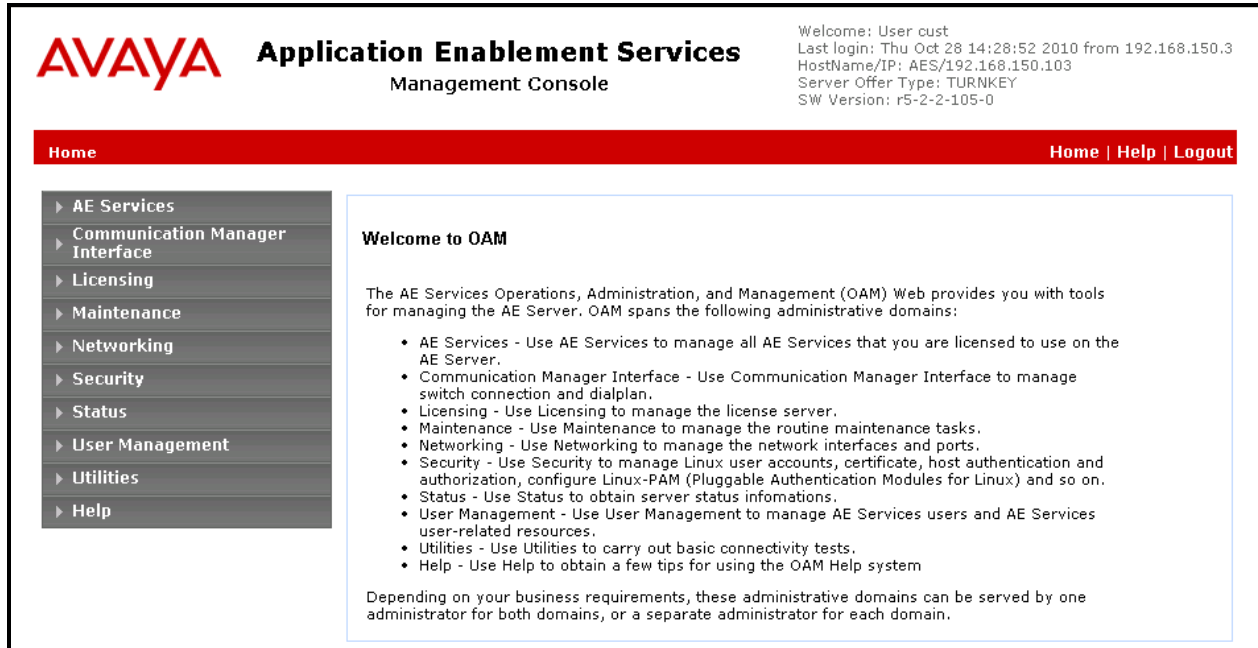
Once the login screen appears, enter the login credentials for performing administrative activities.



The login screen features the Avaya logo in red on the top left. The title "Application Enablement Services Management Console" is centered at the top. A large red horizontal bar spans the width of the page below the title. In the center, there is a light gray box with a blue border containing the login form. The form includes the text "Please login here:" followed by "Username" and "Password" labels, each with a corresponding text input field. Below these fields is a "Login" button. Another large red horizontal bar is positioned below the login box. At the bottom center, the copyright notice "© 2009 Avaya, Inc. All Rights Reserved." is displayed.

Figure 27: Application Enablement Services Login Screen


Click “AE Services” in left frame.



The main screen displays the Avaya logo and the title "Application Enablement Services Management Console" at the top. On the right side, a welcome message is shown: "Welcome: User cust", "Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3", "HostName/IP: AES/192.168.150.103", "Server Offer Type: TURNKEY", and "SW Version: r5-2-2-105-0". Below the title, a red navigation bar contains the text "Home | Help | Logout". On the left, a vertical menu lists several options: "AE Services", "Communication Manager Interface", "Licensing", "Maintenance", "Networking", "Security", "Status", "User Management", "Utilities", and "Help". The main content area on the right is titled "Welcome to OAM" and contains a paragraph: "The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:". This is followed by a bulleted list of domains and their functions: "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.", and "Help - Use Help to obtain a few tips for using the OAM Help system". At the bottom of the main content area, a note states: "Depending on your business requirements, these administrative domains can be served by one administrator for both domains, or a separate administrator for each domain."

Figure 28: Application Enablement Services Main Screen

Navigate to **Communication Manager Interface**→**Switch Connections**. Enter the name of the Switch Connection to be added, and click on the “Add Connection” button. This name should match what will be used by the Voxtronic Voxlog Professional in **section 7**.



Application Enablement Services
Management Console

Welcome: User cust
Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

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

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
Evolution	Yes	30	1

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Figure 29: Switch Connection Screen

The Communication Manager Interface | Switch Connections is presented. At this point, enter the screen fields as described in the following table, and click the “Apply” button.

Parameter	Usage
Switch Password	The Switch Password must be the same as was entered into the Communication Manager AE Services Administration form via the “change ip-services” command, described in Figure 9 . Passwords must consist of 12 to 16 alphanumeric characters
SSL	SSL (Secure Socket Layer) is enabled by default. Keep the default setting unless you are adding a Switch Connection for a DEFINITY Server CSI
Processor Ethernet	Check this box.

Table 15: Configuration of Switch Password

AVAYA Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

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

Connection Details - Evolution

Switch Password

Confirm Switch Password

Msg Period Minutes (1 - 72)

SSL ☒

Processor Ethernet ☒

Figure 30: Set Switch Password Screen

From the **Communication Manager Interface**→**Switch Connections** screen, click the “Edit PE/CLAN IPs” button, (not shown), to display the screen shown below. Enter the IP address of the Processor Ethernet or CLAN that Application Enablement Services will use for communication with the switch, and click the “Add/Edit Name or IP” button.

The screenshot displays the Avaya Application Enablement Services Management Console. At the top left is the Avaya logo. To its right, the text reads 'Application Enablement Services Management Console'. In the top right corner, a welcome message states: 'Welcome: User cust', 'Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3', 'HostName/IP: AES/192.168.150.103', 'Server Offer Type: TURNKEY', and 'SW Version: r5-2-2-105-0'. Below this is a red navigation bar with 'Communication Manager Interface | Switch Connections' on the left and 'Home | Help | Logout' on the right. A left-hand menu contains several options: 'AE Services', 'Communication Manager Interface' (which is expanded to show 'Switch Connections' and 'Dial Plan'), 'Licensing', 'Maintenance', 'Networking', 'Security', 'Status', 'User Management', 'Utilities', and 'Help'. The main content area is titled 'Edit Processor Ethernet IP - Evolution'. It features a text input field containing the IP address '192.168.150.126' and a button labeled 'Add/Edit Name or IP'.

Figure 31: Edit Processor Ethernet IP Screen

Navigate to **AE Services**→**TSAPI**→**TSAPI Links**. The following screen is displayed. Click the “Add Link” button.

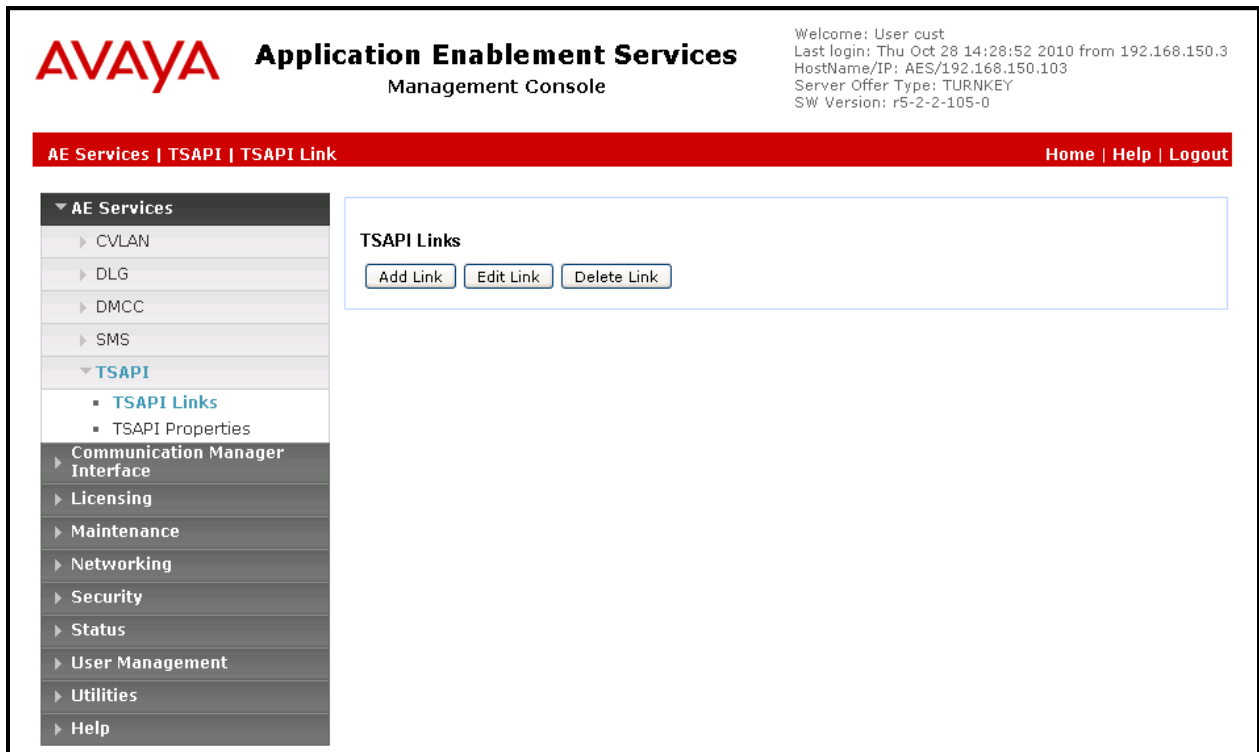


Figure 32: TSAPI Links Screen

Fill in the parameters for the link to be added. The “Link” parameter must be a unique value between 1 and 16. The “Switch Connection” parameter should be the name of the Avaya Server which is to be controlled by this link. The value for the TSAPI “Switch CTI Link Number” must be a value between 1 and 64, and must be the same as was used in the Avaya Aura[®] Communication Manager “add cti-link” configuration command in **Figure 10**. Click the “Apply Changes” button.

The screenshot shows 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 'cust' with login details. A red navigation bar contains 'AE Services | TSAPI | TSAPI Link' and links for 'Home | Help | Logout'. On the left is a sidebar menu with categories like 'AE Services', 'TSAPI', and 'Communication Manager Interface'. The main content area is titled 'Add TSAPI Links' and contains five dropdown menus: 'Link' (set to 1), 'Switch Connection' (set to Evolution), 'Switch CTI Link Number' (set to 4), 'ASAI Link Version' (set to 4), and 'Security' (set to Unencrypted). At the bottom of this form are 'Apply Changes' and 'Cancel Changes' buttons.

Figure 33: Add TSAPI Link Screen

Navigate to **User Management→User Admin→Add User**. The “CT User” field for this user must be set to “Yes”. In this case, the Application Enablement Services user is the Voxlog Professional application, which uses Application Enablement Services to monitor stations and initiate switching operations. The “User Id” and “User Password” must be the same as what will be configured for Voxtronic Voxlog Professional in **Section 7**.



Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

User Management | User Admin | List All Users

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

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▶ Status
- ▼ User Management
 - ▶ Service Admin
 - ▼ User Admin
 - **Add User**
 - Change User Password
 - List All Users
 - Modify Default Users
 - Search Users
- ▶ Utilities
- ▶ Help

Add User

* User Id	<input type="text" value="avaya"/>
* Common Name	<input type="text" value="avaya"/>
* Surname	<input type="text" value="avaya"/>
User Password	<input type="password" value="....."/>
Confirm Password	<input type="password" value="....."/>
Admin Note	<input type="text"/>
Avaya Role	<input type="text" value="None"/>
Business Category	<input type="text"/>
Car License	<input type="text"/>
CM Home	<input type="text"/>
Css Home	<input type="text"/>
CT User	<input type="text" value="Yes"/>
Department Number	<input type="text"/>
Display Name	<input type="text"/>
Employee Number	<input type="text"/>
Employee Type	<input type="text"/>

Figure 34: Add User Screen

Navigate to **Security → Security Database → CTI Users → List All Users**, and then click “Edit User” for the newly added user “avaya”, (not shown). Enable “Unrestricted Access” and click “Apply Changes”.

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 'cust' with login details. A red navigation bar shows the path: Security | Security Database | CTI Users | List All Users, with links for Home, Help, and Logout.

On the left is a sidebar menu with categories: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security (expanded), Account Management, Audit, Certificate Management, Enterprise Directory, Host AA, PAM, Security Database (expanded), and Control.

The main content area is titled 'Edit CTI User'. It contains the following fields and controls:

- User Profile:**
 - User ID: avaya
 - Common Name: avaya
 - Worktop Name: NONE (dropdown menu)
 - Unrestricted Access: ☒
- Call Origination and Termination / Device Status:** None (dropdown menu)
- Call and Device Monitoring:**
 - Device: None (dropdown menu)
 - Call / Device: None (dropdown menu)
 - Call: ☐
- Routing Control:**
 - Allow Routing on Listed Devices: None (dropdown menu)

At the bottom of the form are two buttons: 'Apply Changes' and 'Cancel Changes'.

Figure 35: Edit CTI User Screen

Navigate to **Networking → Ports** and configure the DMCC Server Ports as shown in the following table.

Parameter	Usage
Unencrypted Port	Set this port to 4721.

Table 16: Avaya Aura® Application Enablement Services Port Parameters

AVAYA Application Enablement Services Management Console

Welcome: User cust
Last login: Thu Oct 28 14:28:52 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

Networking | Ports [Home](#) [Help](#) [Logout](#)

Ports

CVLAN Ports

			Enabled	Disabled
Unencrypted TCP Port	9999		<input checked="" type="radio"/>	<input type="radio"/>
Encrypted TCP Port	<input type="text" value="9998"/>		<input checked="" type="radio"/>	<input type="radio"/>

DLG Port

			Enabled	Disabled
TCP Port	5678		<input checked="" type="radio"/>	<input type="radio"/>

TSAPI Ports

			Enabled	Disabled
TSAPI Service Port	450		<input checked="" type="radio"/>	<input type="radio"/>
Local TLINK Ports				
TCP Port Min	1024			
TCP Port Max	1039			
Unencrypted TLINK Ports				
TCP Port Min	<input type="text" value="1050"/>			
TCP Port Max	<input type="text" value="1065"/>			
Encrypted TLINK Ports				
TCP Port Min	<input type="text" value="1066"/>			
TCP Port Max	<input type="text" value="1081"/>			

DMCC Server Ports

			Enabled	Disabled
Unencrypted Port	<input type="text" value="4721"/>		<input checked="" type="radio"/>	<input type="radio"/>
Encrypted Port	<input type="text" value="4722"/>		<input checked="" type="radio"/>	<input type="radio"/>
TR/87 Port	<input type="text" value="4723"/>		<input type="radio"/>	<input checked="" type="radio"/>

Figure 36: Application Enablement Services Port Configuration

7. Configure Voxtronic Voxlog Professional Server

The configuration values for the external interfaces used by Voxlog Professional are read from the **avayarps_config.xml** configuration file, located in the server's

C:\voxtronic\voxct_v3\bin\rps\avayarps directory. This XML property file contains a series of keys and associated values for various interface settings. This file can be edited with a text editor. The format of this file is shown in the following illustration.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<properties version="1.0">
  <entry key="key 1">value 1</entry>
  ...
  <entry key="key n">value n</entry>
</properties>
```

Figure 37: Voxtronic Voxlog Configuration File Format

The following table shows the various key names and associated values which were used to configure Voxlog to interoperate with Communication Manager.

Key	Value
recordingMethod	Selects the <u>Client-side IP call recording</u> method: SINGLE_STEP_CONFERENCING or SERVICE_OBSERVING. Set this value to “ SERVICE_OBSERVING ”.
switchLinkName	Name of the communication link between the AE-Services and the Communication Manager. This must match the name used for the “Switch Connection” in Figure 29 .
CMServerIpAddr	IP-Address of the Communication Manager Server (CLAN/PROCR/Gatekeeper). Set this to the IP address of the Communication Manager PROCR interface.
DMCCServerIpAddr	IP-Address of the AES DMCC-Server. Set this to the IP address of the Avaya Application Enablement Server.
DMCCServerPort	Port number of the AES DMCC-Server (service). Set this value to 4721.
DMCCServerUserName	User name of the AES DMCC-Server (service).. Enter the user name configured in Figure 34 .
DMCCServerPassword	Password of the AES DMCC-Server (service).. Enter the password configured in Figure 34 .
voxlogServerIpAddr	IP-Address of the Voxlog Server. Set this to the IP address of the Voxlog Professional Server.
voxlogServerPort	Voxlog Professional Server Port Set this value to: 6814
voxlogRtpIpAddr	IP-Address of the local Media-Stream. The RTP stream is forwarded to this local IP address by the Communication Manager. Set this to the IP address of the Voxlog Professional Server.
voxlogRtpPortRange	Port range of the local Media-Streams in Voxlog Professional. The

	RTP Media Stream ports are assigned continuously from this port number. Set this value to 6000.
recordingDevices	Comma-separated list of Virtual CTI Station (Recording-Device) extensions. The extensions are provisioned with the CM in Figure 13 .
commonRDPassword	Common password of the Virtual CTI stations (Recording-Devices). Enter the common "Security Code" value assigned to all of the Virtual CTI stations in Figure 13 .
recorderCodecs	Comma-separated list of codecs used by Voxlog Media Processor. Specifies the allowed Media Stream (RTP) Payload Types. Set this value to "g711A, g711U".
recorderPacketSize	Size of the configured Media Stream (RTP) packets in milliseconds. Set this value to <u>20</u> .
serviceObservingFAC	Feature Access Code (FAC) of Service Observing. Enter the value for the "Service Observing No Talk Access Code" configured in Figure 7 .
sessionDurationTimer	Avaya AES Session duration time in seconds. Set this value to 60.
sessionCleanupDelay	Avaya AES Session cleanup delay in seconds. Set this value to 300.
applicationDescription	Avaya application description. Set this to: "Voxlog Professional - Client-side IP Call Recording"
ownExternalNumber	External Telephone Number of the location where the Voxlog Professional is running.

Table 17: Voxtronic Voxlog Professional Configuration Values

The following **avayarps_config.xml** configuration was used for the compliance test:

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE properties (View Source for full doctype...)>
<properties version="1.0">
<comment>Config file for Avaya DMCC</comment>
<!--
1. Client-side Ip-call recording method:
    SINGLE_STEP_CONFERENCING |
    SERVICE_OBSERVING
-->
<entry key="recordingMethod">SERVICE_OBSERVING</entry>
<!--
2. Name of the communication link between AES and CM
    e.g.: S8500
    Evolution
-->
<entry key="switchLinkName">Evolution</entry>
```

```

- <!--
3.  CM-Server: IP-Address
    e.g.: 10.64.120.12
        192.168.150.126
-->
<entry key="CMServerIpAddr">192.168.150.126</entry>
- <!--
4.  AES DMCC-Server: IP-Address (See: cmapi.server_ip)
    e.g.: 10.64.120.15
        192.168.150.103
-->
<entry key="DMCCServerIpAddr">192.168.150.103</entry>
- <!--
5.  AES DMCC-Server: Port:      (See: cmapi.server_port)
    Unsecure connection: 4721,
    Secure   connection: 4722
-->
<entry key="DMCCServerPort">4721</entry>
- <!--
6.  AES DMCC-Server: User name  (See: cmapi.username)
    e.g.: aessim
        avaya
-->
<entry key="DMCCServerUserName">avaya</entry>
- <!--
7.  AES DMCC-Server: Password   (See: cmapi.password)
    e.g.: AESsim123#
        ou812
-->
<entry key="DMCCServerPassword">ou812</entry>
- <!--
8.  Voxlog Professional Server: IP-Addresss
    192.168.1.4
    192.168.150.13
-->
<entry key="voxlogServerIpAddr">192.168.150.13</entry>
- <!--
9.  Voxlog Professional Server: Port
    6814
-->
<entry key="voxlogServerPort">6814</entry>
- <!--
10. Media-Stream Recorder: IP-Address (MediaProcessor of Voxlog
Professional)
    e.g.: 10.10.101.215
        192.168.150.13
-->
<entry key="voxlogRtpIpAddr">192.168.150.13</entry>
- <!--
11. Media-Stream Recorder: Port-Range

```

```

        e.g.: 6000
-->
<entry key="voxlogRtpPortRange">6000</entry>
- <!--
12. Provisioned comma-separated list of Recording-Device (CTI) extensions.
    e.g.: 46001, 46002, 46003, 46004
        11401, 11402, 11403, 11404
-->
<entry key="recordingDevices">11401, 11402, 11403, 11404</entry>
- <!--
13. Common password of all Recording-Devices
    e.g.: 1234
-->
<entry key="commonRDPasswd">1234</entry>
- <!--
14. Comma-separated list of codecs in MediaProcessor. Allowed: g711A, g711U,
g723
    e.g.: g711A, g711U
-->
<entry key="recorderCodecs">g711A, g711U</entry>
- <!--
15. Size of RTP media packets in milliseconds (For RTP PayloadType: A-law,
u-law, G.723).
    e.g.: 20
-->
<entry key="recorderPacketSize">20</entry>
- <!--
16. Provisioned Feature Access Code (FAC) of Service Observing:
    e.g.: 'Service Observing Listen Only' ==> *220
        'Service Observing Listen/Talk' ==> *221
        'Service Observing No Talk' ==> *222
-->
<entry key="serviceObservingFAC">*222</entry>
- <!--
17. Avaya AES Session duration timer in seconds
    Allowed: 5..7200
        60
-->
<entry key="sessionDurationTimer">60</entry>
- <!--
18. Avaya AES Session cleanup delay in seconds
    Allowed: 0..7200
        300
-->
<entry key="sessionCleanupDelay">300</entry>
- <!--
19. Avaya application description
    "Voxlog Professional - Client-side IP Call Recording"
-->

```



```
<entry key="applicationDescription">"Voxlog Professional - Client-side IP Call  
Recording"</entry>  
-<!--  
  20. External Telephone Number of the location running Voxlog Professional  
      e.g.: 90739887  
-->  
<entry key="ownExternalNumber">"90739887"</entry>  
</properties>
```

8. General Test Approach and Test Results

The compliance testing between Voxtronic Voxlog Professional and Communication Manager was performed manually. The tests were all functional in nature, and no performance testing was done. The test method employed can be described as follows:

- Avaya Aura[®] Communication Manager was configured to support various local IP telephones, as well as a networked PBX connection and a PSTN connection.
- An E1 PSTN interface was attached to Avaya Aura[®] Communication Manager.
- The Voxtronic Voxlog Professional was configured to monitor various telephones attached to Avaya Aura[®] Communication Manager.
- The major Voxtronic Voxlog Professional features and functions were verified using the above-mentioned local and external telephones, including the ability to record calls made to and from
 - Locally attached IP and digital telephones
 - Telephones attached to the PSTN via E1 trunk.
 - Telephones attached to a networked PBX via QSIG trunk.

The tests performed are shown in **Section 1.1**. All tests performed produced the expected result.

9. Verification Steps


The correct installation and configuration of Voxtronic Voxlog Professional voice recorder can be verified by performing the following steps using the SAT terminal from PBX 1.

- Use the “status aesvcs cti-link” command to verify that the TSAPI link allocated in **Figure 10** is “established”.

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
2		no		down	0	0
3		no		down	0	0
4	4	no	AES	established	15	15

Figure 38: Status Aesvcs Cti-link Screen

- Login to Avaya Aura® Application Enablement Services, and navigate to the **AE Services** screen. Verify that the DMCC and TSAPI Services are licensed, ONLINE, and Running.



Application Enablement Services
Management Console

Welcome: User cust
Last login: Mon Nov 8 08:47:39 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

AE Services
Home | Help | Logout

▼ AE Services

- ▶ CVLAN
- ▶ DLG
- ▶ DMCC
- ▶ SMS
- ▶ TSAPI
- ▶ 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	OFFLINE	Running	N/A	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 5.0

Figure 39: Application Enablement Services AE Services Screen

- Navigate to **Status → Status and Control → Switch Conn Summary**, select the PBX 1, and click “Switch Connection Details”. Verify that the connection state is “Online” and “Talking”.


Application Enablement Services
Management Console


Welcome: User cust
Last login: Mon Nov 8 08:47:39 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

Status | Status and Control | Switch Conn 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**

Switch Connections Summary

☐ Enable page refresh every seconds

	Switch Conn	Conn State	Since	Online/Offline	Active/Admin'd AEP Conns	Num of TCI Conns	SSL	Msgs To Switch	Msgs From Switch	Msg Period
	Evolution	Talking	Fri Nov 5 16:36:57 2010	Online	1 / 1	2	Enabled	614	629	30

Online Offline Connection Details Per Service Connections Details

Figure 40: Application Enablement Services Switch Connection Details Screen

- Navigate to **Status** → **Status and Control** → **TSAPI Service Summary** and click “Details” for “TSAPI Service”. Verify that the TSAPI service for PBX 1 is “Online” and “Talking”.

Application Enablement Services
Management Console

Welcome: User cust
Last login: Mon Nov 8 08:47:39 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

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 seconds

	Link	Switch Name	Switch CTI Link ID	Status	Since	State	Switch Version	Associations	Msgs to Switch	Msgs from Switch	Msgs Period
	1	Evolution	4	Talking	Mon Nov 1 12:03:22 2010	Online	15	0	15	15	30

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

Figure 41: TSAPI Link Details Screen

- Navigate to **Status** → **Status and Control** → **DMCC Service Summary** and click “Service Summary”. Verify that the Voxtronic Voxlog Professional has established a session.

AVAYA Application Enablement Services Management Console

Welcome: User cust
Last login: Wed Nov 10 14:05:37 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

Status | Status and Control | DMCC 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
 - ▶ User Management
 - ▶ Utilities
 - ▶ Help

DMCC Service Summary - Session Summary

☐ Enable page refresh every seconds

Session Summary [Device Summary](#)
Generated on Thu Nov 11 16:39:30 CET 2010

Service Uptime: 1 days, 2 hours 28 minutes

Number of Active Sessions: 1

Number of Sessions Created Since Service Boot: 29

Number of Existing Devices: 7

Number of Devices Created Since Service Boot: 201

	Session ID	User	Application	Far-end Identifier	Connection Type	# of Associated Devices
<input type="checkbox"/>	7DE4AC0F76B65DACC CB9C53769311529-30	avaya	"Voxlog Professional - Client-side IP Call Recording"	192.168.150.13	XML Unencrypted	7

Item 1-1 of 1

Figure 42: DMCC Service Summary Screen

- Navigate to **Status** → **Status and Control** → **DMCC Service Summary** and click “Device Summary”. Verify that the Voxtronic Voxlog Professional has registered each of the CTI stations.

AVAYA Application Enablement Services Management Console

Welcome: User cust
Last login: Wed Nov 10 14:05:37 2010 from 192.168.150.3
HostName/IP: AES/192.168.150.103
Server Offer Type: TURNKEY
SW Version: r5-2-2-105-0

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

DMCC Service Summary - Device Summary

☐ Enable page refresh every **60** seconds

Session Summary Device Summary
Generated on Thu Nov 11 16:40:17 CET 2010

Service Uptime: 1 days, 2 hours and 29 minutes
Number of Active Sessions: 1
Number of Sessions Created Since Service Boot: 29
Number of Existing Devices: 7
Number of Devices Created Since Service Boot: 201

	Device ID	State	Associated Sessions
<input type="checkbox"/>	10001:Evolution:192.168.150.126:0	IDLE	1
<input type="checkbox"/>	10094:Evolution:192.168.150.126:0	IDLE	1
<input type="checkbox"/>	10183:Evolution:192.168.150.126:0	IDLE	1
<input type="checkbox"/>	11401:Evolution:192.168.150.126:0	REGISTERED	1
<input type="checkbox"/>	11402:Evolution:192.168.150.126:0	REGISTERED	1
<input type="checkbox"/>	11403:Evolution:192.168.150.126:0	REGISTERED	1
<input type="checkbox"/>	11404:Evolution:192.168.150.126:0	REGISTERED	1

Terminate Devices
Item 1-7 of 7

Figure 43: DMCC Device Summary Screen

10. Conclusion

These Application Notes describe the compliance testing of the Voxtronic Voxlog Professional voice recorder with Avaya Aura[®] Communication Manager. Silent monitoring via the Service Observe recording method offered by the Voxlog Professional was tested. A detailed description of the configuration required for both the Avaya and the Voxtronic equipment is documented within these Application Notes. The Voxlog Professional passed all of the tests performed, which included both functional and robustness tests.

11. References

- [1] *Administering Avaya Aura™ Communication Manager*, May 2009, Document Number 03-300509.
- [2] *Avaya Aura™ Communication Manager Feature Description and Implementation*, May 2009, Issue 7, Document Number 555-245-205.
- [3] *Avaya Aura™ Application Enablement Services Administration and Maintenance Guide*, November 2009, Document Number 02-300357
- [4] *Administering Avaya Aura™ SIP Enablement Services on the Avaya S8300 Server*, May 2009, Document Number 03-602508
- [5] Voxlog User Manual Web Interface V.3.2 1. - *VLX3 - Benutzerhandbuch 3.2.2.5.En.doc*
- [6] Voxlog Technical Manual - *VLX3 - Technisches Handbuch V7_EN.doc*

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