



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Cotell FG1088-IP (2S) SP SIP Phone with Avaya Aura® Session Manager R6.3 and Avaya Aura® Communication Manager R6.2 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Cotell FG1088-IP (2S) SP SIP Phone to interoperate with Avaya Aura® Session Manager R6.3 and Avaya Aura® Communication Manager R6.2.

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

The Cotell FG1088-IP (2S) SP SIP Phone integrates with Avaya SIP infrastructure consisting of Avaya Aura® Session Manager R6.3 and Avaya Aura® Communication Manager R6.2 as third-party SIP endpoints. These Application Notes describe the steps required to configure Cotell FG1088-IP (2S) SP SIP Phone to work as Avaya third party SIP endpoints.

2. General Test Approach and Test Results

To verify interoperability of FG1088-IP (2S) SP SIP Phone with Session Manager and Communication Manager, calls were made between Cotell telephones and Avaya SIP, H.323 and Digital telephones using various codec settings and exercising common PBX features. The telephony features were activated and deactivated using speed-dial buttons.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- Successful registration of Cotell telephones with Session Manager.
- Calls between Cotell telephones and Avaya SIP, H.323, and digital telephones.
- G.711, G.722 and G729/B codec support and negotiation, with and without media shuffling.
- Basic features including phone display, mute/un-mute, answer, hang up, music on hold, DTMF transmission, Message Waiting Indicator (MWI) subscription and feature access code dialing.
- PBX features including Multiple Call Appearances, Hold, and Conference.
- Proper system recovery after a Cotell telephone after removal and reconnection of LAN cable.

2.2. Test Results

All test cases were executed and passed successfully. However, the following point was noted during the testing:

- Transfer feature whether attended or unattended is not supported.

This was intentional for Cotell FG1088-IP (2S) SP SIP Phone in Hospitality environment.

2.3. Support

Technical support from Cotell International Limited can be obtained through the following:

- Telephone: +86-755 2583 1520
- Website: www.cotell-international.com

3. Reference Configuration

The diagram illustrates an enterprise site with an Avaya SIP-based network, including Messaging, Session Manager, S8800 Server running Communication Manager with a G430 Media Gateway, and Avaya SIP, H.323 and Digital endpoints. System Manager is used for configuring Session Manager. The enterprise site also contains two FG1088-IP (2S) SP SIP Phones used in the compliance testing. The Cotell phones are registered with Session Manager and are configured as endpoint users.

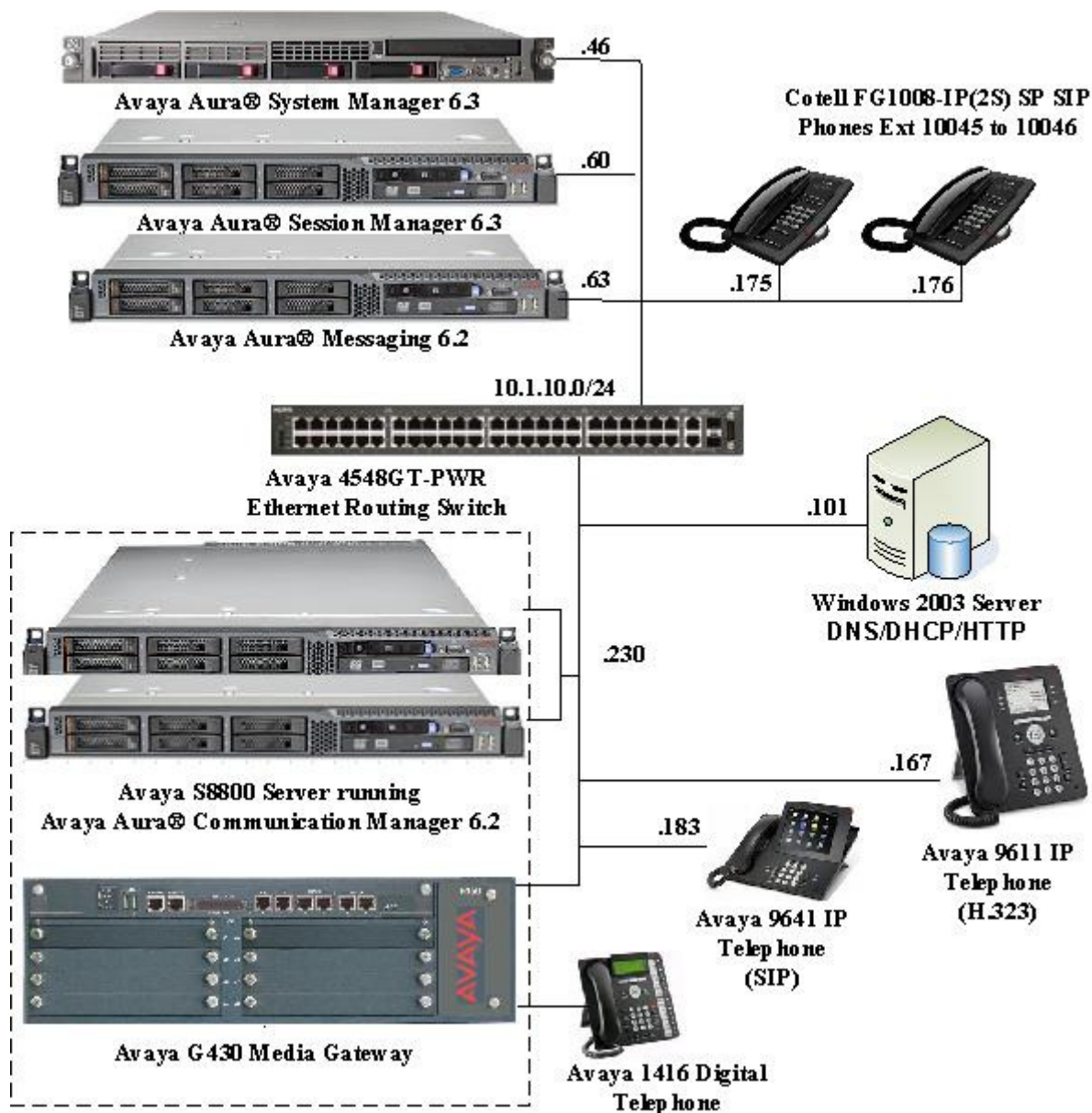


Figure 1: Cotell FG1088-IP(2S) SP SIP Phones with Avaya SIP Solution

Table 1 lists the extensions used for this testing.

Extension	Note
10001	Avaya 9611 IP Telephone (H.323)
10049	Avaya 9641 IP Telephone (SIP)
10016	Avaya 1416 Digital Telephone
10045 to 10046	Cotell FG1088-IP(2S) SP SIP Phones

Table 1 – Extension Setup

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager on Avaya S8800 Duplex Servers	R6.2 SP5
Avaya Aura® Messaging on DL360 G7 server	R6.2 SP2
Avaya G430 Media Gateway	32.26.0
Avaya Aura® Session Manager on Avaya S8800 Server	R6.3 SP1
Avaya Aura® System Manager on DL360 G7 server	R6.3 SP1
Avaya 9641IP Telephone (SIP)	6.2.1
Avaya 9611 IP Telephone (H.323)	6.2 SP3
Avaya 1416 Digital Telephone	R4 SP1
Avaya 4548GT-PWR Ethernet Routing Switch	V5.4.0.008
Cotell FG1088-IP(2S) SP SIP Phones	Firmware Version: Sep03, 2013 (2L) Hardware Version: v01A (2L base)

5. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Avaya Aura® Session Manager. The procedures include the following areas:

- Launch System Manager
- Administer users

5.1. Launch System Manager

Access the System Manager Web interface by using the URL “<https://ip-address>” in an internet browser window, where “ip-address” is the IP address of the System Manager server. Log in using the appropriate credentials.

The screenshot shows the Avaya Aura System Manager 6.3 login interface. At the top, the Avaya logo is on the left, and the text 'Avaya Aura® System Manager 6.3' is on the right. Below this is a red navigation bar with 'Home / Log On' in white. The main heading is 'Log On'. On the left, a box contains instructions: 'Recommended access to System Manager is via FQDN. Go to central login for Single Sign-On. If IP address access is your only option, then note that authentication will fail in the following cases: • First time login with "admin" account • Expired/Reset passwords. Use the "Change Password" hyperlink on this page to change the password manually, and then login.' The central login area has two input fields: 'User ID:' with 'admin' entered and a red asterisk icon, and 'Password:' with masked dots and a red asterisk icon. Below these are 'Log On' and 'Cancel' buttons. At the bottom, it lists 'Supported Browsers: Internet Explorer 8.x, 9.x or 10.x or Firefox 15.0, 16.0 or 17.0.' and a 'Change Password' link.

AVAYA Avaya Aura® System Manager 6.3

Home / Log On

Log On

Recommended access to System Manager is via FQDN.
[Go to central login for Single Sign-On](#)
If IP address access is your only option, then note that authentication will fail in the following cases:

- First time login with "admin" account
- Expired/Reset passwords

Use the "Change Password" hyperlink on this page to change the password manually, and then login.

User ID: *

Password: *

[Change Password](#)

Supported Browsers: Internet Explorer 8.x, 9.x or 10.x or Firefox 15.0, 16.0 or 17.0.

5.2. Administer Users

In the subsequent screen (not shown), select **Users** → **User Management** → **Manage Users** to display the **User Management** screen below. Click **New** to add a user.

The screenshot shows the Avaya Aura System Manager 6.3 interface. The top header includes the Avaya logo, the product name, and the user's login status. The left sidebar contains navigation links for User Management, Manage Users, Public Contacts, Shared Addresses, and System Presence ACLs. The main content area is titled 'User Management' and displays a table of users. The 'New' button is circled in red.

Avaya Aura® System Manager 6.3

Last Logged on at September 3, 2013 4:18 PM
Help | About | Change Password | Log off admin

User Management

Home / Users / User Management / Manage Users

Users

View Edit **New** Duplicate Delete More Actions

Advanced Search

7 Items Refresh Show ALL Filter: Enable

	Last Name	First Name	Display Name	Login Name	SIP Handle	Last Login
<input type="checkbox"/>	ADVD	User1	ADVD User1	10070@sglab.com	+10070	
<input type="checkbox"/>	ADVD	User2	ADVD User2	10069@sglab.com	+10069	
<input type="checkbox"/>	AVAYA	SIP3	AVAYA, SIP3	10049@sglab.com	+10049	
<input type="checkbox"/>	AVAYA	SIP4	AVAYA, SIP4	10050@sglab.com	+10050	

5.2.1. Identity

The **New User Profile** screen is displayed. Enter desired **Last Name** and **First Name**. For **Login Name**, enter “n@z”, where “n” is the Cotell FG1088-IP(2S) user extension and “z” is the domain name used for compliance testing, in this case “**10046@sglab.com**”. For **Password** and **Confirm Password**, enter the appropriate credentials for SIP user for registration. Retain the default values in the remaining fields.

AVAYA Avaya Aura® System Manager 6.3 Last Logged on at September 3, 2013 4:18 PM
Help | About | Change Password | Log off admin

User Management * Home

Home / Users / User Management / Manage Users Help ?

New User Profile

Commit & Continue Commit Cancel

Identity * Communication Profile * Membership Contacts

Identity ▾

* Last Name: Fuego

* First Name: Cotell2

Middle Name:

Description:

* Login Name: 10046@sglab.com

* Authentication Type: Basic

Password: ●●●●●●●●

Confirm Password: ●●●●●●●●

5.2.2. Communication Profile

Select Communication **Profile** tab. For **Communication Profile Password** and **Confirm Password**, enter the desired password for the SIP user to use for registration. Scroll down to Communication **Address** sub-section, and click **New** to add a new address.

Avaya Aura® System Manager 6.3

Last Logged on at September 3, 2013 4:18 PM
Help | About | Change Password | Log off admin

User Management * Home

Home / Users / User Management / Manage Users

Help ?

New User Profile

Commit & Continue Commit Cancel

Identity * Communication Profile * Membership Contacts

Communication Profile

Communication Profile Password:
Confirm Password:

New Delete Done Cancel

Name
Primary

Select : None

* Name: Primary

Default : ☒

Communication Address

New Edit Delete

Type	Handle	Domain
No Records found		

For **Type**, retain “Avaya SIP”. For **Fully Qualified Address**, enter and select the SIP user extension. The domain was pre-configured and is not shown in this document.

Communication Address

New Edit Delete

Type	Handle	Domain
No Records found		

Type: Avaya SIP

* Fully Qualified Address: 10046 @ sglab.com

Add Cancel

Scroll down to check and expand **CM Endpoint Profile**. For **System**, select the value corresponding to the applicable Communication Manager. For **Profile Type**, select **Endpoint**. For **Extension**, enter the SIP user extension from **Section 5.2.1**. For **Template**, select **“9630SIP_DEFAULT_CM_6_3”**. For **Port**, select **“IP”**. Retain the default values in the remaining fields.

LYM; Reviewed: Solution & Interoperability Test Lab Application Notes 9 of 17
SPOC 11/5/2013 ©2013 Avaya Inc. All Rights Reserved. FG1000IP-2S-SM

Repeat **Section 5.2** to add a user for the other Cotell FG1088-IP(2S) user. In the compliance testing, two users with extensions “**10045**” and “**10046**” were added.

6. Configure Avaya Aura® Communication Manager

The configuration for SIP trunk between Communication Manager and Session Manager was pre-configured and is not shown in this document. This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Verify Communication Manager license
- Administer IP codec set

6.1. Verify Communication Manager License

Log in to the System Access Terminal (SAT) to verify that Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “**display system-parameters customer-options**” command to verify that there is sufficient capacity for SIP stations by comparing the **Maximum Off-PBX Telephones - OPS** field value with the corresponding value in the **USED** column. The difference between the two values needs to be greater than or equal to the number of Cotell FG1088-IP(2S) SIP Phone extensions.

The license file installed on the system controls the maximum permitted. If there is insufficient capacity, contact an authorized Avaya sales representative to make the appropriate changes.

```
display system-parameters customer-options                               Page 1 of 11
                                OPTIONAL FEATURES

G3 Version: V16                                     Software Package: Enterprise
Location: 2                                           System ID (SID): 1
Platform: 28                                         Module ID (MID): 1

                                USED
Platform Maximum Ports: 65000 392
Maximum Stations: 41000 200
Maximum XMOBILE Stations: 41000 0
Maximum Off-PBX Telephones - EC500: 41000 1
Maximum Off-PBX Telephones - OPS: 41000 35
Maximum Off-PBX Telephones - PBFMC: 41000 0
Maximum Off-PBX Telephones - PVFMC: 41000 0
Maximum Off-PBX Telephones - SCCAN: 0 0
Maximum Survivable Processors: 313 2

(NOTE: You must logoff & login to effect the permission changes.)
```

6.2. Administer IP Codec Set

Use the “**change ip-codec-set n**” command, where **n** is the existing codec set number associated with the SIP trunk group to Session Manager. Update the audio codec types in the **Audio Codec** fields as necessary to include G.711MU, G.711A, G.729 and G.729B.

change ip-codec-set 6				Page	1 of	2
IP Codec Set						
Codec Set: 6						
Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size(ms)			
1: G.711A	n	2	20			
2: G.711MU	n	2	20			
3: G.729	n	2	20			
4: G.729B	n	2	20			
5:						
6:						
7:						

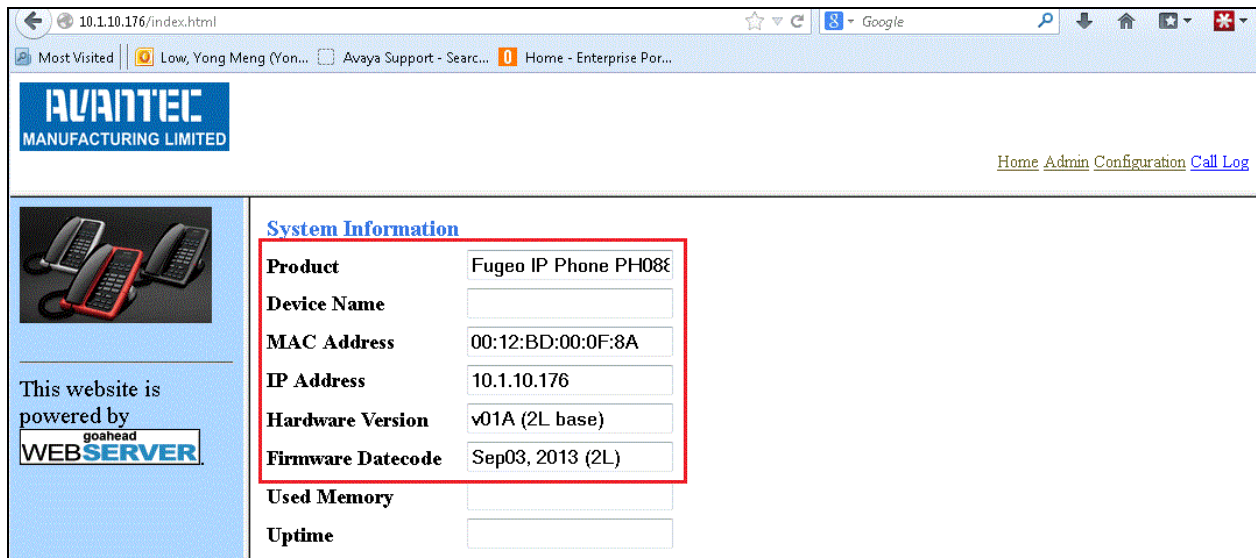
7. Configure Cotell FG1088-IP(2S) SIP Phones

This section provides the procedures for configuring Cotell FG1088-IP(2S) SIP Phones. The procedures include the following areas:

- Access Web Interface
- Configure Network Settings
- Configure SIP Settings
- Configure SIP Accounts
- Configure Audio Settings

7.1. Access Web Interface

Enter <http://<ip-addr>/>, where <ip-addr> is the IP address of the Cotell phone, into the address bar of web browser and log in using a valid account. The **System Information** screen is displayed on the Home page.



The screenshot shows a web browser window with the address bar displaying "10.1.10.176/index.html". The page header includes the "AVANTEC MANUFACTURING LIMITED" logo and navigation links: "Home", "Admin", "Configuration", and "Call Log". The main content area is titled "System Information" and contains a table of device details. A red box highlights the "Product", "Device Name", "MAC Address", "IP Address", "Hardware Version", and "Firmware Datecode" fields. The "Used Memory" and "Uptime" fields are also visible but not highlighted.

System Information	
Product	Fugeo IP Phone PH088
Device Name	
MAC Address	00:12:BD:00:0F:8A
IP Address	10.1.10.176
Hardware Version	v01A (2L base)
Firmware Datecode	Sep03, 2013 (2L)
Used Memory	
Uptime	

7.2. Configure Network Settings

Select **Configuration** menu (top right) and the left menu for **Configuration Settings** will be shown. Select the **Network/Print Log Settings** from the left menu. Uncheck the **DHCP** as Static IP is used in this testing. Enter the appropriate **IP address**, **Subnet Mask**, **Default Gateway** and **Primary DNS**. Select **IPv4** for the **IP Mode**. Leave the rest as default. Click **Save** (not shown) to continue.

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MANUFACTURING LIMITED

Home Admin Configuration Call Log

Configuration Settings
Network / Print Log Settings
Network Applications
Phone Settings
SIP / NAT Settings
SIP Accounts
Account 1
Account 2
Call Settings
Account 1
Account 2
Audio Settings
Account 1
Account 2

Network Settings

DHCP ☐

Primary Interface Eth0

Secondary Interface Eth1

IP Address 10.1.10.176

Subnet Mask 255.255.255.0

Default Gateway 10.1.10.1

Primary DNS 10.1.10.101

Secondary DNS 0.0.0.0

IP Mode IPv4

7.3. Configure SIP Settings

Select **Configuration** (top right) and the left menu for **Configuration Settings** will be shown. Select **SIP/NAT Settings** from the left menu. Select UDP as **Transport**. Check on the **Flash button for same account**. This is to allow making 3rd party call with same line using flash button. Enter the Voice Mail number as **10000** in **MSG Key**. This depends on the Voice Mail number setup in the configuration. Leave the rest as default. Click **Save** (not shown) to continue.

Avanteec
MANUFACTURING LIMITED

Home Admin Configuration Call Log

Configuration Settings
Network / Print Log Settings
Network Applications
Phone Settings
SIP / NAT Settings
SIP Accounts
Account 1
Account 2
Call Settings
Account 1
Account 2
Audio Settings
Account 1
Account 2

SIP Settings

Transport UDP

Session Timer ☐

Update ☐

PRACK ☐

NAPTR ☐

Flash button for same account ☒

Local SIP Port 5060

MSG Key 10000

7.4. Configure SIP Accounts

Select **Configuration** menu (top right), the left menu for **Configuration Settings** will be shown. Select **Accounts 1** under **SIP Accounts** from the left menu. Enter **Display Name**, **User Id** and **Password** with the account details as shown below to match the user settings in Session Manager added in **Section 5.2**. Check to activate the **User Account**. Enter the **Registrar IP and Proxy Server Address** with Session Manager address and the default port as **5060**. Enter the **Expiry Time** as **1200**. Click **Save** (not shown) to continue. Repeat with the same user settings for **Account 2**. For a different user account, a new user has to be created in Session Manager as in **Section 5.2**.

AvanteC
MANUFACTURING LIMITED

Home Admin Configuration Call Log

Configuration Settings
Network / Print Log Settings
Network Applications
Phone Settings
SIP / NAT Settings
SIP Accounts
Account 1
Account 2
Call Settings
Account 1
Account 2
Audio Settings
Account 1
Account 2

SIP Account 1

Display Name 10046

User Id 10046

Password *****

Use Account ☒

Registrar IP 10.1.10.60

Registrar Port 5060

Proxy Server Address 10.1.10.60

Expiry Time 1200

7.5. Configure Audio Settings

Select **Configuration** menu (top right), the left menu for **Configuration Settings** will be shown. Select **Account 1** under **Audio Settings** in the left menu. Select **RFC 2833** for **DTMF Mode**. Leave the **Jitter** and **Packetization Time** as default **20** ms. In codec preference, select the appropriate codec to be supported for the phone in the order listed. In the screen shown below, **PCMA** is set as first preference and **PCMU** is set as second preference. Click **Save** (not shown). Repeat the same for **Account 2** under **Audio Settings**.

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Home Admin Configuration Call Log

Configuration Settings
Network / Print Log Settings
Network Applications
Phone Settings
SIP / NAT Settings
SIP Accounts
Account 1
Account 2
Call Settings
Account 1
Account 2
Audio Settings
Account 1
Account 2

Audio Settings - Port 1

DTMF Mode RFC 2833

SRTP Mode Disabled

Silence Suppression ☐

Jitter 20

Packetization Time 20

Audio Codec 1 PCMA

Audio Codec 2 PCMU

Audio Codec 3 Disabled

Audio Codec 4 Disabled

Audio Codec 5 Disabled

Audio Codec 6 Disabled

Audio Codec 7 Disabled

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Session Manager and Cotell FG1088-IP(2S) SIP Phones.

From the System Manager Web interface, select **Elements → Session Manager → System Status → User Registrations** to display the **User Registrations** screen. Verify that the user created is registered, as shown below with a check in the **Registered Prim** column.

Avaya Aura® System Manager 6.3

Last Logged on at September 9, 2013 3:40 PM
[Help](#) | [About](#) | [Change Password](#) | [Log off admin](#)

[Session Manager](#) × [Home](#)

[Home](#) / [Elements](#) / [Session Manager](#) / [System Status](#) / [User Registrations](#) [Help ?](#)

User Registrations

Select rows to send notifications to devices. Click on Details column for complete registration status.

[View](#) ▾ [Default](#) [Force Unregister](#) **AST Device Notifications:** [Reboot](#) [Reload](#) ▾ [Failback](#) **As of 10:11 AM** [Advanced Search](#) ▾ [Customize](#) ▾

7 Items [Refresh](#) [Show](#) [ALL](#) ▾ [Filter: Enable](#)

	Details	Address	First Name ▲	Last Name	Actual Location	IP Address	Remote Office	Shared Control	Simult. Devices	AST Device	Registered		
											Prim	Sec	Surv
<input type="checkbox"/>	Show	10045@sglab.com	Cotell1	Fuego	Location1	10.1.10.176:5060	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/> (AC)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Show	10046@sglab.com	Cotell2	Fuego	Location1	10.1.10.176:5060	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/> (AC)	<input type="checkbox"/>	<input type="checkbox"/>

9. Conclusion

These Application Notes describe the configuration steps required for Cotell FG1088-IP(2S) SP SIP Phones to successfully interoperate with Avaya Aura® Session Manager 6.3 and Avaya Aura® Communication Manager 6.2. All feature and serviceability test cases were completed successfully.

10. Additional References

This section references documentation relevant to these Application Notes. Avaya product documentation is available at <http://support.avaya.com>.

- [1] *Administering Avaya Aura® Communication Manager Server Options*, Release 6.2, Doc ID 03-300509, Issue 3, July 2012.
- [2] *Administering Avaya Aura® Session Manager*, Release 6.3, December 2012.
- [3] *Implementing Avaya Aura® Communication Manager Messaging*, Release 6.2, Issue 2, January 2013.

The following document is provided by Cotell International Limited.

- [1] *Hospitality Telephones User Guide for Fuego 1000™ Desktop IP Telephone FG1088-IP (2S) SP 2-line IP Guestroom Telephone*
- [2] *Fuego SmartStation IP Datasheet*.

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