



Avaya Solution & Interoperability Test Lab

Application Notes for Algo 8028 SIP Doorphone with Avaya Aura® Session Manager and Avaya Aura® Communication Manager - Issue 1.0

Abstract

These Application Notes describe the steps required to integrate the Algo 8028 SIP Doorphone with Avaya Aura® Session Manager and Avaya Aura® Communication Manager configured as an Evolution Server. The 8028 SIP Doorphone provides hands-free intercom capability and entrance security with door unlock control. It is a SIP compliant device that registers with Session Manager. The 8028 Doorphone includes a Control Unit and Door Station.

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

1. Introduction

These Application Notes describe the steps required to integrate the Algo 8028 SIP Doorphone with Avaya Aura® Session Manager and Avaya Aura® Communication Manager configured as an Evolution Server. The 8028 SIP Doorphone provides hands-free intercom capability and entrance security with door unlock control. It is a SIP compliant device that registers with Session Manager. The 8028 Doorphone includes a Control Unit and Door Station.

A visitor can press the call button on the Door Station to ring a specified telephone. The called party can then answer the call to communicate with the Door Station. Using DTMF tones, the called party can press a digit on the phone keypad to activate the door control relay to open the door. Alternatively, a telephone can also originate a call to the Door Station, which would be automatically answered. The 8028 Doorphone is configured via a web interface.

2. General Test Approach and Test Results

To verify interoperability of the 8028 Doorphone with Communication Manager and Session Manager, calls were made from the doorphone to another specified telephone. The called telephone would ring and answer the call. Upon answering the call, a two-way audio path was established between the telephone and the Door Station. The called party would then be able to press a digit on the telephone keypad to open the door. In addition, incoming calls to the doorphone were also verified.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- Successful registration of the 8028 SIP Doorphone with Session Manager.
- Press call button at Door Station to ring specified telephone, answer the call, and establish a two-way audio path. Caller ID on the telephone was also verified.
- Called telephone can press a DTMF digit to open the door.
- Incoming calls to the 8028 Doorphone.
- G.711 codec support.
- Proper system recovery after the 8028 Doorphone loses power.

2.2. Test Results

All test cases passed and the 8028 SIP Doorphone successfully registered with Session Manager. Calls and delivery of DTMF tones to the doorphone were successful.

2.3. Support

For technical support on the 8028 SIP Doorphone, contact Algo Technical Support by phone, through their website, or email.

Phone: (877) 884-2546 (Canada & US only)
Web: <http://www.algosolutions.com/support/support.html>
Email: support@algosolutions.com

3. Reference Configuration

Figure 1 illustrates a sample configuration with an Avaya SIP-based network that includes Session Manager, Communication Manager running on an Avaya S8800 Server with a G650 Media Gateway, and the Algo 8028 SIP Doorphone. Communication Manager was configured as an Evolution Server and the 8028 SIP Doorphone registered with Session Manager.

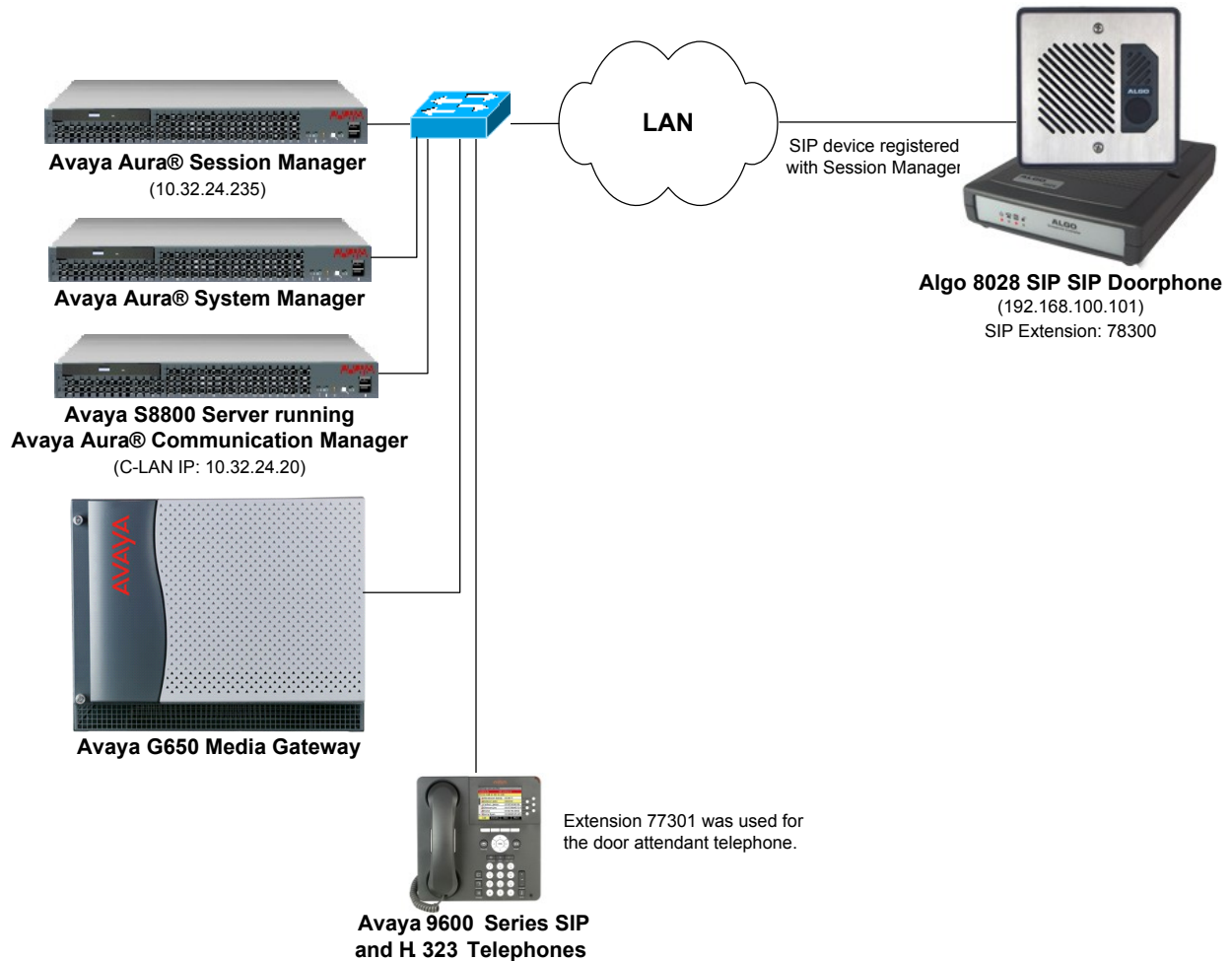


Figure 1: Avaya SIP Network with Algo 8028 SIP Doorphone

4. Equipment and Software Validated

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

Hardware Component	Version
Avaya S8800 Server and G650 Media Gateway	Avaya Aura® Communication Manager 6.0.1 SP 3 (R016x.00.1.510.1 w/Patch 19009)
Avaya Aura® Session Manager	6.1 (6.1.2.0-612004)
Avaya Aura® System Manager	6.1 (6.1.0.07345-6.1.5.106)
Avaya 9600 Series IP Telephones	3.1 (H.323) 2.6.4 (SIP)
Algo 8028 SIP Doorphone	1.4

5. Configure Avaya Aura® Communication Manager

This section describes the steps for configuring the 8028 SIP Doorphone as an Off-PBX Station (OPS) and configuring a SIP trunk between the Communication Manager and Session Manager. **Section 5.2** covers the station configuration for the 8028 SIP Doorphone. Use the System Access Terminal (SAT) to configure Communication Manager and log in with the appropriate credentials.

Note: If Communication Manager is already configured with a SIP trunk to Session Manager, skip **Section 5.1** and go directly to **Section 5.2** to configure the station for the 8028 SIP Doorphone.

5.1. Configure SIP Trunk

In the **IP Node Names** form, assign an IP address and host name for the S8800 Server processor, the C-LAN board in the G650 Media Gateway, and Session Manager. The host names will be used throughout the other configuration screens of Communication Manager.

```
change node-names ip                                     Page 1 of 2
                                                         IP NODE NAMES
  Name          IP Address
Gateway001     10.32.24.1
ModMsg         192.50.10.45
clancrm       10.32.24.20
default        0.0.0.0
devcon-asm   10.32.24.235
medprocrm      10.32.24.21
procr        10.32.24.10
procr6         ::
( 8 of 8 administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

In the **IP Network Region** form, the **Authoritative Domain** field is configured to match the domain name configured on Session Manager. In this configuration, the domain name is *avaya.com*. By default, **IP-IP Direct Audio** (shuffling) is enabled to allow audio traffic to be sent directly between IP endpoints without using media resources in the Avaya G650 Media Gateway. The **IP Network Region** form also specifies the **IP Codec Set** to be used for calls routed over the SIP trunk to Session Manager. This codec set is used when its corresponding network region (i.e., IP Network Region '1') is specified in the SIP signaling group.

```
change ip-network-region 1                                     Page 1 of 20
                                                           IP NETWORK REGION
  Region: 1
  Location: 1          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? y
    UDP Port Max: 65535
  DIFFSERV/TOS PARAMETERS
    Call Control PHB Value: 34
    Audio PHB Value: 46
    Video PHB Value: 26
  802.1P/Q PARAMETERS
    Call Control 802.1p Priority: 7
    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
```

In the **IP Codec Set** form, select the audio codec type supported for calls routed over the SIP trunk to the 8028 SIP Doorphone. The form is accessed via the **change ip-codec-set 1** command. Note that IP codec set '1' was specified in IP Network Region '1' shown above. The default settings of the **IP Codec Set** form are shown below. The 8028 SIP Doorphone supports G.711.

```
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:
  3:
  4:
  5:
  6:
  7:
```

Prior to configuring a SIP trunk group for communication with Session Manager, a SIP signaling group must be configured. Configure the signaling group form as follows:

- Set the **Group Type** field to *sip*.
- Set the **IMS Enabled** field to *n*.
- The **Transport Method** field was set to *tcp*. In a production network, TLS transport may also be used.
- Specify the C-LAN board and the Session Manager as the two ends of the signaling group in the **Near-end Node Name** field and the **Far-end Node Name** field, respectively. These field values are taken from the **IP Node Names** form.
- Ensure that the TCP port value of *5060* is configured in the **Near-end Listen Port** and the **Far-end Listen Port** fields.
- The preferred codec for the call will be selected from the IP codec set assigned to the IP network region specified in the **Far-end Network Region** field.
- Enter the domain name of Session Manager in the **Far-end Domain** field. In this configuration, the domain name is *avaya.com*.
- The **Direct IP-IP Audio Connections** field was enabled on this form.
- The **DTMF over IP** field should be set to the default value of *rtp-payload*.
Communication Manager supports DTMF transmission using RFC 2833. The default values for the other fields may be used.

```

add signaling-group 50                                     Page 1 of 1
                                     SIGNALING GROUP

Group Number: 50           Group Type: sip
IMS Enabled? n           Transport Method: tcp
  Q-SIP? n                                     SIP Enabled LSP? n
  IP Video? n                               Enforce SIPS URI for SRTP? y
Peer Detection Enabled? y Peer Server: SM

Near-end Node Name: clancrm           Far-end Node Name: devcon-asm
Near-end Listen Port: 5060           Far-end Listen Port: 5060
                                     Far-end Network Region: 1
                                     Far-end Secondary Node Name:

Far-end Domain: avaya.com

Incoming Dialog Loopbacks: eliminate           Bypass If IP Threshold Exceeded? n
                                     RFC 3389 Comfort Noise? n
  DTMF over IP: rtp-payload           Direct IP-IP Audio Connections? y
Session Establishment Timer(min): 3           IP Audio Hairpinning? n
  Enable Layer 3 Test? n               Initial IP-IP Direct Media? n
H.323 Station Outgoing Direct Media? n       Alternate Route Timer(sec): 6

```

Configure the **Trunk Group** form as shown below. This trunk group is used for calls to the SIP Phones. Set the **Group Type** field to *sip*, set the **Service Type** field to *tie*, specify the signaling group associated with this trunk group in the **Signaling Group** field, and specify the **Number of Members** supported by this SIP trunk group. Configure the other fields in bold and accept the default values for the remaining fields.

```
add trunk-group 50                                     Page 1 of 21
                                                    TRUNK GROUP
Group Number: 50                                     Group Type: sip                                     CDR Reports: y
  Group Name: To devcon-asm                           COR: 1                                     TN: 1                                     TAC: 1050
  Direction: two-way                                   Outgoing Display? n
  Dial Access? n                                       Night Service:
  Queue Length: 0
  Service Type: tie                                     Auth Code? n
                                                    Member Assignment Method: auto
                                                    Signaling Group: 50
                                                    Number of Members: 10
```

5.2. Configure Station

Use the **add station** command to add station for the 8028 SIP Doorphone. Use *9640SIP* for the **Station Type**. The **Name** field is optional. Use the default values for the other fields. The SIP station can also be configured automatically by Session Manager as described in **Section 6.7**.

```

add station 78300                                     Page 1 of 6
                                     STATION
Extension: 78300                                     Lock Messages? n          BCC: 0
  Type: 9640SIP                                     Security Code:            TN: 1
  Port: IP                                           Coverage Path 1:         COR: 1
  Name: 78300, Doorphone                           Coverage Path 2:         COS: 1
                                                         Hunt-to Station:
STATION OPTIONS
                                     Time of Day Lock Table:
  Loss Group: 19                                     Message Lamp Ext: 78300
  Display Language: english                         Button Modules: 0
  Survivable COR: internal
  Survivable Trunk Dest? y                          IP SoftPhone? n
                                                         IP Video? n
  
```

Use the **change off-pbx-telephone station-mapping** command to map the Communication Manager extension to the same extension on Session Manager. Enter the field values shown below. For the sample configuration, the **Trunk Selection** field is set to *aar* so that AAR call routing is used to route calls to Session Manager. AAR call routing configuration is not shown in these Application Notes. The **Config Set** value can reference a set that has the default settings.

```

change off-pbx-telephone station-mapping 78300      Page 1 of 3
                                     STATIONS WITH OFF-PBX TELEPHONE INTEGRATION
Station      Application Dial CC Phone Number Trunk Config Dual
Extension    Prefix      Selection Set Mode
78300          OPS        -          78300    aar        1
  
```


6. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Session Manager. The procedures include adding the following items:

- SIP domain
- Logical/physical Locations that can be occupied by SIP Entities
- SIP Entities corresponding to Session Manager and Communication Manager
- Entity Links, which define the SIP trunk parameters used by Session Manager when routing calls to/from SIP Entities
- Define Communication Manager as Administrable Entity (i.e., Managed Element)
- Application Sequence
- Add SIP User for the 8028 SIP Doorphone
- Session Manager, corresponding to the Session Manager Server to be managed by System Manager

Configuration of Session Manager is accomplished by accessing the browser-based GUI of System Manager using the URL “https://<ip-address>/SMGR”, where <ip-address> is the IP address of System Manager. Log in with the appropriate credentials. The initial screen is displayed as shown below. The configuration in this section will be performed under **Routing** and **Session Manager** listed within the **Elements** box.

The screenshot shows the Avaya Aura System Manager 6.1 GUI. The header includes the Avaya logo, the title "Avaya Aura™ System Manager 6.1", and navigation links: "Help | About | Change Password | Log off admin". The main content area is organized into three columns:

- Users**
 - Administrators**: Manage Administrative Users
 - Groups & Roles**: Manage groups, roles and assign roles to users
 - Synchronize and Import**: Synchronize users with the enterprise directory, import users from file
 - User Management**: Manage users, shared user resources and provision users
- Elements**
 - Application Management**: Manage applications and application certificates
 - Communication Manager**: Manage Communication Manager objects
 - Conferencing**: Conferencing
 - Inventory**: Manage, discover, and navigate to elements, update element software
 - Messaging**: Manage Messaging System objects
 - Presence**: Presence
 - Routing**: Network Routing Policy
 - SIP AS 8.1**: SIP AS 8.1
 - Session Manager**: Session Manager Element Manager
- Services**
 - Backup and Restore**: Backup and restore System Manager database
 - Configurations**: Manage system wide configurations
 - Events**: Manage alarms, view and harvest logs
 - Licenses**: View and configure licenses
 - Replication**: Track data replication nodes, repair replication nodes
 - Scheduler**: Schedule, track, cancel, update and delete jobs
 - Security**: Manage Security Certificates
 - Templates**: Manage Templates for Communication Manager and Messaging System objects

6.1. Specify SIP Domain

Add the SIP domain for which the communications infrastructure will be authoritative. Do this by selecting **Domains** on the left and clicking the **New** button (not shown) on the right. The following screen will then be shown. Fill in the following:

- **Name:** The authoritative domain name (e.g., *avaya.com*)
- **Notes:** Descriptive text (optional).

Click **Commit**.

Since the sample configuration does not deal with any other domains, no additional domains need to be added.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The top navigation bar includes the Avaya logo, the title "Avaya Aura™ System Manager 6.1", and links for "Help | About | Change Password | Log off admin". Below the navigation bar, there are tabs for "Routing" and "Home". The left sidebar contains a menu with "Routing" expanded, showing sub-items: "Domains", "Locations", "Adaptations", "SIP Entities", "Entity Links", "Time Ranges", "Routing Policies", "Dial Patterns", "Regular Expressions", and "Defaults". The main content area is titled "Domain Management" and includes a breadcrumb "Home / Elements / Routing / Domains - Domain Management". There are "Commit" and "Cancel" buttons at the top right. Below the title, there is a table with one item:

Name	Type	Default	Notes
* avaya.com	sip	<input type="checkbox"/>	Enterprise Domain

At the bottom of the table, there is a red asterisk and the text "* Input Required". There are "Commit" and "Cancel" buttons at the bottom right.

6.2. Add Locations

Locations can be used to identify logical and/or physical locations where SIP Entities reside for purposes of bandwidth management. To add a location, select **Locations** on the left and click on the **New** button (not shown) on the right. The following screen will then be shown. Fill in the following:

Under *General*:

- **Name:** A descriptive name.
- **Notes:** Descriptive text (optional).

Under *Location Pattern*:

- **IP Address Pattern:** A pattern used to logically identify the location.
- **Notes:** Descriptive text (optional).

The screen below shows addition of the *BR-DevConnect* location, which includes the Communication Manager and Session Manager. Click **Commit** to save the Location definition.

The screenshot displays the Avaya Aura™ System Manager 6.1 web interface. The top navigation bar includes the Avaya logo, the product name, and links for Help, About, Change Password, and Log off admin. The breadcrumb trail is Home / Elements / Routing / Locations - Location Details. A left-hand menu lists various configuration categories, with 'Locations' selected. The main content area is titled 'Location Details' and includes a 'Help ?' link, 'Commit', and 'Cancel' buttons. A message states: 'Call Admission Control has been set to ignore SDP. All calls will be counted using the Default Audio Bandwidth. See Session Manager -> Session Manager Administration -> Global Setting'. The 'General' section contains a required field for 'Name' (BR-DevConnect) and an optional 'Notes' field. The 'Overall Managed Bandwidth' section has a dropdown for 'Managed Bandwidth Units' (Kbit/sec) and a 'Total Bandwidth' input field. The 'Per-Call Bandwidth Parameters' section includes a required 'Default Audio Bandwidth' field set to 80 Kbit/sec. The 'Location Pattern' section features 'Add' and 'Remove' buttons, a table with one row for 'IP Address Pattern' (10.32.24.*), and a 'Notes' column. A 'Filter: Enable' option is present. At the bottom, there is a '* Input Required' message and 'Commit' and 'Cancel' buttons.

6.3. Add SIP Entities

In the sample configuration, a SIP Entity is added for Session Manager and the C-LAN in the G650 Media Gateway.

6.3.1. Session Manager

A SIP Entity must be added for Session Manager. To add a SIP Entity, select **SIP Entities** on the left and click on the **New** button (not shown) on the right. The following screen is displayed. Fill in the following:

Under *General*:

- **Name:** A descriptive name.
- **FQDN or IP Address:** IP address of the signaling interface on Session Manager.
- **Type:** Select *Session Manager*.
- **Location:** Select the location defined previously.
- **Time Zone:** Time zone for this location.

Under *Port*, click **Add**, and then edit the fields in the resulting new row as shown below:

- **Port:** Port number on which the system listens for SIP requests.
- **Protocol:** Transport protocol to be used to send SIP requests.
- **Default Domain** The domain used for the enterprise (e.g., *avaya.com*).

Defaults can be used for the remaining fields. Click **Commit** to save each SIP Entity definition.

- Routing
- Domains
- Locations
- Adaptations
- SIP Entities
- Entity Links
- Time Ranges
- Routing Policies
- Dial Patterns
- Regular Expressions
- Defaults

SIP Entity Details

Commit Cancel

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Location:

Outbound Proxy:

Time Zone:

Credential name:

SIP Link Monitoring

SIP Link Monitoring:

Entity Links

Entity Links can be modified after SIP Entity is committed.

Port

Add Remove

3 Items Refresh Filter: Enable

<input type="checkbox"/>	Port	Protocol	Default Domain	Notes
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="UDP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="TCP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5061"/>	<input type="text" value="TLS"/>	<input type="text" value="avaya.com"/>	<input type="text"/>

Select : All, None

* Input Required

Commit Cancel

6.3.2. Communication Manager

A SIP Entity must be added for the Communication Manager. To add a SIP Entity, select **SIP Entities** on the left and click on the **New** button (not shown) on the right. The following screen is displayed. Fill in the following:

Under *General*:

- **Name:** A descriptive name.
- **FQDN or IP Address:** IP address of the signaling interface (e.g., C-LAN board) on the telephony system.
- **Type:** Select *CM*.
- **Location:** Select the location defined previously.
- **Time Zone:** Time zone for this location.

Defaults may be used for the remaining fields. Click **Commit** to save the SIP Entity definition.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The top navigation bar includes the Avaya logo, the title "Avaya Aura™ System Manager 6.1", and links for "Help | About | Change Password | Log off admin". A secondary navigation bar shows "Routing" and "Home". The left sidebar contains a menu with "Routing" selected, and sub-items: Domains, Locations, Adaptations, SIP Entities, Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area is titled "SIP Entity Details" and has a breadcrumb trail "Home / Elements / Routing / SIP Entities - SIP Entity Details". There are "Commit" and "Cancel" buttons in the top right. The "General" section contains the following fields:

- * Name: devcon13
- * FQDN or IP Address: 10.32.24.20
- Type: CM
- Notes: (empty text area)
- Adaptation: (dropdown menu)
- Location: BR-DevConnect
- Time Zone: America/New_York
- Override Port & Transport with DNS SRV:
- * SIP Timer B/F (in seconds): 4
- Credential name: (empty text area)
- Call Detail Recording: none

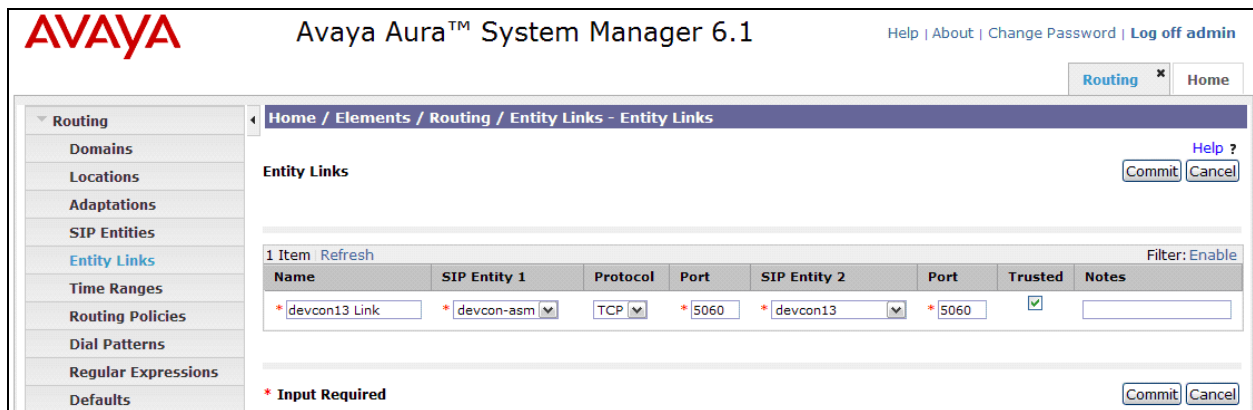
The "SIP Link Monitoring" section has a dropdown menu set to "Use Session Manager Configuration". The "Entity Links" section has a red warning: "Entity Links can be modified after SIP Entity is committed." At the bottom right, there are "Commit" and "Cancel" buttons. A note at the bottom left says "* Input Required".

6.4. Add Entity Link

The SIP trunk from Session Manager to Communication Manager is described by an Entity link. To add an Entity Link, select **Entity Links** on the left and click on the **New** button (not shown) on the right. Fill in the following fields in the new row that is displayed:

- **Name:** A descriptive name (e.g., *devcon13 Link*).
- **SIP Entity 1:** Select the Session Manager.
- **Protocol:** Select the appropriate protocol.
- **Port:** Port number to which the other system sends SIP requests.
- **SIP Entity 2:** Select the name of Communication Manager.
- **Port:** Port number on which the other system receives SIP requests.
- **Trusted:** Check this box. *Note: If this box is not checked, calls from the associated SIP Entity specified in Section 6.3.2 will be denied.*

Click **Commit** to save the Entity Link definition.



The screenshot shows the Avaya Aura System Manager 6.1 interface. The main content area displays the 'Entity Links' configuration page. A table lists one entity link with the following details:

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted	Notes
* devcon13 Link	* devcon-asm	TCP	* 5060	* devcon13	* 5060	<input checked="" type="checkbox"/>	

Below the table, there is a red asterisk indicating that input is required for the 'Name' and 'Port' fields. The 'Commit' and 'Cancel' buttons are visible at the bottom right of the configuration area.

6.5. Define Communication Manager as Managed Element

Before adding SIP users, Communication Manager must be added to System Manager as a managed element. This action allows System Manager to access Communication Manager over its administration interface. Using this administration interface, System Manager will notify Communication Manager when new SIP users are added.

To define Communication Manager as a managed element, select **Elements**→**Inventory**→**Manage Elements** on the left and click on the **New** button (not shown) on the right. In the **New Entities Instance** screen (not shown), select **CM** in the **Type** field, then click **Commit**.

In the **New CM Instance** screen, fill in the following fields as follows:

In the *Application* tab:

- **Name:** Enter an identifier for Communication Manager.
- **Type:** Select **CM** from the drop-down field.
- **Node:** Enter the IP address of the administration interface for Communication Manager.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The breadcrumb trail is Home / Elements / Inventory / Manage Elements - New CM Instance. The main content area is titled 'New CM Instance' and has 'Commit' and 'Cancel' buttons. Below the title, there are two tabs: 'Application' (selected) and 'Attributes'. The 'Application' tab contains the following fields:

- Name:** devcon13-CM-ES
- Type:** CM (selected in a dropdown menu, with a 'Reset' button next to it)
- Description:** (empty text area)
- Node:** 10.32.24.10

Below these fields, there are sections for 'Access Point' and 'Port', both of which are currently empty. At the bottom left, there is a legend indicating that an asterisk (*) denotes a required field. At the bottom right, there are 'Commit' and 'Cancel' buttons.

In the *Attributes* tab:

- **Login / Password:** Enter the login and password used for administration access.
- **Is SSH Connection:** Enable SSH access.
- **Port:** Enter the port number for SSH administration access (5022).

Defaults can be used for the remaining fields. Click **Commit** to save the settings.

The screenshot shows the Avaya Aura System Manager 6.1 web interface. The main title is "Avaya Aura™ System Manager 6.1". The breadcrumb navigation is "Home / Elements / Inventory / Manage Elements - New CM Instance". The page title is "New CM Instance". The "Attributes" tab is selected, showing the following fields:

- SNMP Attributes:** Version (radio buttons: None, V1, V3)
- Attributes:**
 - * Login:** [Redacted]
 - Password:** [Redacted]
 - Confirm Password:** [Redacted]
 - Is SSH Connection:**
 - * Port:** 5022
 - Alternate IP Address:** [Empty]
 - RSA SSH Fingerprint (Primary IP):** [Empty]
 - RSA SSH Fingerprint (Alternate IP):** [Empty]
 - Is ASG Enabled:**
 - ASG Key:** [Empty]
 - Confirm ASG Key:** [Empty]
 - Location:** [Empty]

Buttons for "Commit" and "Cancel" are present at the bottom right. A "*Required" legend is at the bottom left.

6.6. Add Application Sequence

To define an application for Communication Manager, navigate to **Elements → Session Manager → Application Configuration → Applications** on the left and select **New** button (not shown) on the right. Fill in the following fields:

- **Name:** Enter name for application.
- **SIP Entity:** Select the Communication Manager SIP entity.
- **CM System for SIP Entity** Select the Communication Manager managed element.

Click **Commit** to save the Application definition.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The top navigation bar includes the Avaya logo, the title "Avaya Aura™ System Manager 6.1", and links for "Help | About | Change Password | Log off admin". Below the navigation bar is a breadcrumb trail: "Home / Elements / Session Manager / Application Configuration / Applications - Applications". The main content area is titled "Application Editor" and contains the following fields:

- Name:** Text input field containing "DEVCON-APP".
- SIP Entity:** Dropdown menu with "devcon13" selected.
- CM System for SIP Entity:** Dropdown menu with "devcon13-CM-ES" selected, a "Refresh" button, and a link "View/Add CM Systems".
- Description:** Text input field.

Below these fields is a section titled "Application Attributes (optional)" which contains a table with two columns: "Name" and "Value".

Name	Value
Application Handle	<input type="text"/>
URI Parameters	<input type="text"/>

At the bottom of the form, there is a legend for "*Required" and two buttons: "Commit" and "Cancel".

Next, navigate to **Elements → Session Manager → Application Configuration → Application Sequences** to define the Application Sequence for Communication Manager as shown below. Provide a **Name** (e.g., *DEVCON App Sequence*) for the Application Sequence and under **Available Applications**, click on the plus (+) sign by *DEVCON-APP* to add it under the **Application in this sequence** section.

Verify a new entry is added to the **Applications in this Sequence** table and the **Mandatory** column is as shown below.

Note: The Application Sequence defined for Communication Manager Evolution Server can only contain a single Application.

Avaya Aura™ System Manager 6.1 Help | About | Change Password | Log off admin

Session Manager * Home

Home / Elements / Session Manager / Application Configuration / Application Sequences - Application Sequences Help ?

Application Sequence Editor

Application Sequence

*Name

Description

Applications in this Sequence

1 Item					
<input type="checkbox"/>	Sequence Order (first to last)	Name	SIP Entity	Mandatory	Description
<input type="checkbox"/>	▲ ▼ ✕	DEVCON-APP	devcon13	<input checked="" type="checkbox"/>	

Select : All, None

Available Applications

4 Items Refresh Filter: Enable

Name	SIP Entity	Description
✕ BR110-APP	BR110-CM	
✕ DEV4 EVO	Dev4 AACM	
✕ DEVCON-APP	devcon13	
✕ SP3-CM-APP	sp3-cm	

*Required

6.7. Add SIP User

Add a SIP user for the 8028 SIP Doorphone. The following configuration will automatically create the SIP station on Communication Manager Evolution Server.

To add new SIP users, navigate to **Users → User Management → Manage Users** from the left and select **New** button (not shown) on the right.

Enter values for the following required attributes for a new SIP user in the **Identity** tab of the new user form.

- **Last Name:** Enter the last name of the user.
- **First Name:** Enter the first name of the user.
- **Login Name:** Enter <extension>@<sip domain> of the user (e.g., 78300@avaya.com).
- **Authentication Type:** Select *Basic*.
- **Password:** Enter the password which will be used to log into System Manager
- **Confirm Password:** Re-enter the password from above.

The screen below shows the information when adding a new SIP user to the sample configuration.

The screenshot shows the Avaya Aura System Manager 6.1 interface. The top navigation bar includes the Avaya logo, the title 'Avaya Aura® System Manager 6.1', and links for 'Help | About | Change Password | Log off admin'. The breadcrumb trail is 'Home /Users / User Management / Manage Users- New User Profile'. The main content area is titled 'New User Profile' and features a 'Commit' button and a 'Cancel' button. The 'Identity' tab is selected, showing the following fields:

- * Last Name: 78300
- * First Name: Doorphone
- Middle Name: (empty)
- Description: (empty)
- * Login Name: 78300@avaya.com
- * Authentication Type: Basic
- * Password: (masked with dots)
- * Confirm Password: (masked with dots)
- Localized Display Name: (empty)
- Endpoint Display Name: (empty)
- Honorific: (empty)
- Language Preference: English
- Time Zone: (empty)

Enter values for the following required attributes for a new SIP user in the **Communication Profile** tab of the new user form.

- **Communication Profile Password:** Enter the password which will be used by the 8028 SIP Doorphone to register with Session Manager.
- **Confirm Password:** Re-enter the password from above.

Scroll down to the **Communication Address** section and select **New** to define a **Communication Address** for the new SIP user. Enter values for the following required fields:

- **Type:** Select *Avaya SIP*.
- **Fully Qualified Address:** Enter extension number and select SIP domain.

The screen below shows the information when adding a new SIP user to the sample configuration. Click **Add**.

AVAYA Avaya Aura® System Manager 6.1 Help | About | Change Password | Log off admin

User Management x Home

Home /Users / User Management / Manage Users- New User Profile Help ?

New User Profile

Commit Cancel

Identity * Communication Profile * Membership Contacts

Communication Profile

Communication Profile Password: [password field]

Confirm Password: [password field]

New Delete Done Cancel

Name
Primary

Select : None

* Name: Primary

Default :

Communication Address

New Edit Delete

Type	Handle	Domain
No Records found		

Type: Avaya SIP

* Fully Qualified Address: 78300 @ avaya.com

Add Cancel

In the *Session Manager Profile* section, specify the Session Manager entity from **Section 6.3.1** for **Primary Session Manager** and assign the **Application Sequence** defined in **Section 6.6** to the new SIP user as part of defining the **SIP Communication Profile**. The **Application Sequence** can be used for both the originating and terminating sequence. Set the **Home Location** field to the **Location** configured in **Section 6.2**.

Session Manager Profile ▼

* **Primary Session Manager** ▼

Primary	Secondary	Maximum
13	0	13

Secondary Session Manager ▼

Primary	Secondary	Maximum

Origination Application Sequence ▼

Termination Application Sequence ▼

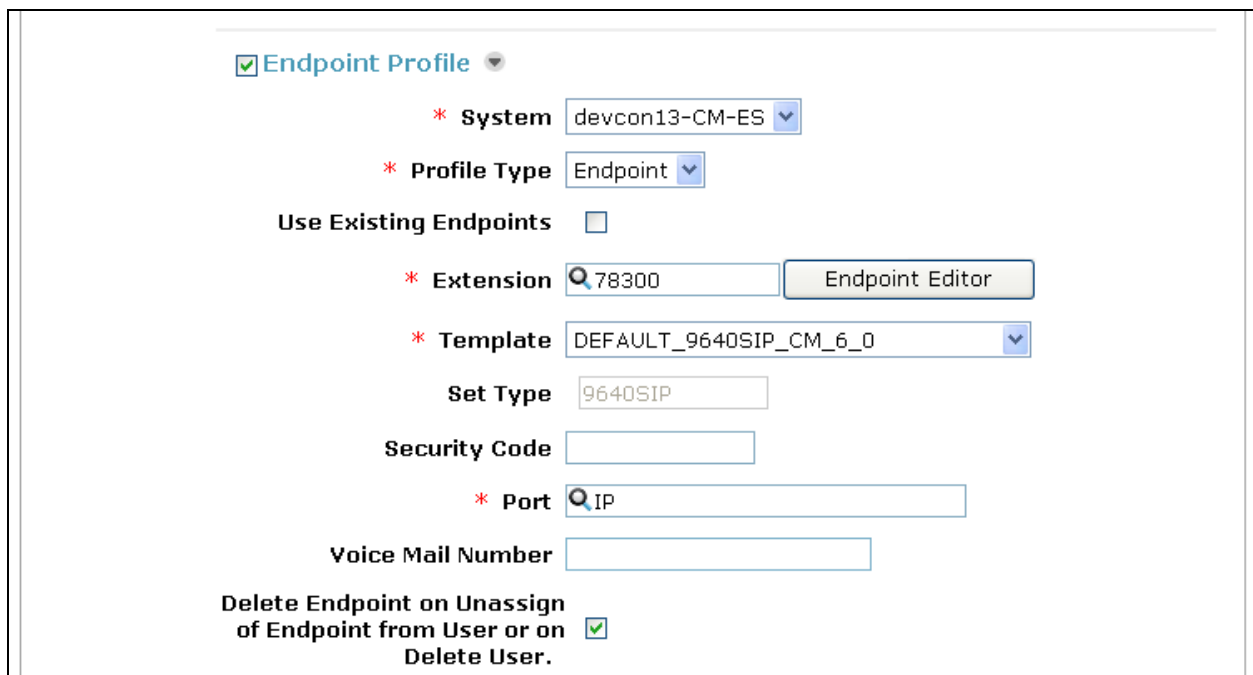
Survivability Server ▼

* **Home Location** ▼

In the **Endpoint Profile** section, fill in the following fields:

- **System:** Select the managed element corresponding to Communication Manager.
- **Profile Type** Select *Endpoint*.
- **Use Existing Stations:** If field is not selected, the station will automatically be added in Communication Manager.
- **Extension:** Enter extension number of SIP user.
- **Template:** Select template for type of SIP phone.
- **Port:** Enter *IP*.
- **Delete Endpoint on Unassign of Endpoint:** Enable field to automatically delete station when **Endpoint Profile** is un-assigned from user.

Note: To specify a coverage path for voicemail, click on the **Endpoint Editor** button.



The screenshot shows a web-based configuration form for an Endpoint Profile. At the top, there is a checked checkbox labeled "Endpoint Profile" with a dropdown arrow. Below this, several fields are listed, some with red asterisks indicating they are required:

- * System:** A dropdown menu showing "devcon13-CM-ES".
- * Profile Type:** A dropdown menu showing "Endpoint".
- Use Existing Endpoints:** An unchecked checkbox.
- * Extension:** A text input field containing "78300" with a magnifying glass icon on the left. To its right is a button labeled "Endpoint Editor".
- * Template:** A dropdown menu showing "DEFAULT_9640SIP_CM_6_0".
- Set Type:** A text input field containing "9640SIP".
- Security Code:** An empty text input field.
- * Port:** A text input field containing "IP" with a magnifying glass icon on the left.
- Voice Mail Number:** An empty text input field.
- Delete Endpoint on Unassign of Endpoint from User or on Delete User:** A checked checkbox.

6.8. Add Session Manager

To complete the configuration, adding the Session Manager will provide the linkage between System Manager and Session Manager. Expand the **Session Manager** menu on the left and select **Session Manager Administration**. Click **Add** (not shown), and fill in the fields as described below and shown in the following screen:

Under *Identity*:

- **SIP Entity Name:** Select the name of the SIP Entity added for Session Manager
- **Description:** Descriptive comment (optional)
- **Management Access Point Host Name/IP:** Enter the IP address of the Session Manager management interface.

Under *Security Module*:

- **Network Mask:** Enter the network mask corresponding to the IP address of Session Manager
- **Default Gateway:** Enter the IP address of the default gateway for Session Manager

Use default values for the remaining fields. Click **Commit** to add this Session Manager.

AVAYA Avaya Aura™ System Manager 6.1 [Help](#) | [About](#) | [Change Password](#) | [Log off admin](#)

Session Manager Administration

Home / Elements / Session Manager / Session Manager Administration - Session Manager Administration

Edit Session Manager

Commit Cancel

General | Security Module | NIC Bonding | Monitoring | CDR | Personal Profile Manager (PPM) - Connection Settings | Event Server |
Expand All | Collapse All

General

SIP Entity Name devcon-asm

Description

*Management Access Point Host Name/IP 10.32.24.233

*Direct Routing to Endpoints Enable

Security Module

SIP Entity IP Address 10.32.24.235

*Network Mask 255.255.255.0

*Default Gateway 10.32.24.1

*Call Control PHB 46

*QOS Priority 6

*Speed & Duplex Auto

VLAN ID

7. Configure Algo 8028 SIP Doorphone

The configuration of the 8028 SIP Doorphone was performed by using a web interface tool, which is accessed by entering the 8028 IP address into a browser. The 8028 supports DHCP as the default method to assign an IP address to the unit. Alternatively, if DHCP is not available, a pre-assigned IP address may be used to access the unit. The default IP address is 192.168.1.111. A valid password will be required. Refer to [3] for more information, including installation.

From an internet browser, enter `http://<ip-addr>` in the URL field, where `<ip-addr>` is the IP address of the 8028 SIP Doorphone. The screen shown below is displayed. Log in with the appropriate credentials.

ALGO 8028 SIP Doorphone Control Panel Firmware: 1.4
Kernel: r2
DSP: 1.7

Status

Welcome

Welcome to the 8028 SIP Doorphone Control Panel

Please take a minute to set up your 8028 SIP Doorphone:

Step 1: Configure your 8028 SIP Doorphone

Log in with the default password **algo** and use the config page to set up the SIP connection information.

Step 2: Check network settings (Optional)

Use the Network section on Config page to change network settings. The default setting for the 8028 SIP Doorphone is to obtain its IP address from a DHCP server. Contact your Network System administrator if you plan to assign a static IP address, Mask, and Gateway to the 8028 SIP Doorphone device.

Step 3: Secure your 8028 SIP Doorphone (Optional)

Use the Admin section on Config page to change the administrator password.
⚠ Changing the password is extremely important if the 8028 is directly connected to a public network.

Step 4: Register your SIP Audio Alerter (Optional)

Please register your product using the link below:
<http://www.algosolutions.com/8028reg>

Registration ensures your access to the latest upgrades to this product and important service notices.

Login

Password: [password field] Login

Info

Device Name:	doorphone	MAC:	00:22:EE:03:00:6A
Extension:		IP:	192.168.1.111
SIP Registration:	No proxy configured.	Netmask:	255.255.255.0
Call Status:	Idle	Door Station:	Model 3201 Firmware 2

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In the **Config** tab, set the **SIP Domain/Proxy** field to the Session Manager IP address. This should be the IP address to which the 8028 SIP Doorphone will send SIP messages. Specify the **Extension** and **Auth ID**, along with the **Password**, configured in **Section 6.7**. The **Dialing Extension** (e.g., 77301) should specify the telephone number that will be dialed when the call button on the Door Station is pressed.

The screenshot shows the ALGO 8028 SIP Doorphone Control Panel interface. The top navigation bar includes 'Status', 'Config', 'Services', and 'About'. The 'Config' tab is active, and a 'Save Settings' button is visible. The 'SIP' section contains the following fields:

- SIP Domain/Proxy: 10.32.24.235
- Outbound Proxy (optional): [Empty]
- STUN Server (optional): [Empty]
- Registrar (optional): [Empty]
- Register Period (seconds): 3600
- Keep-alive Method: None Double CRLF
- Keep-alive Period (seconds): 30
- Extension: 78300
- Auth ID: 78300
- Password: [Masked]
- Dialing Extension: 77301

The 'Features' section is expanded to show several sub-sections:

- Audio Settings:** Speaker Volume (8), Microphone Volume (7), DSP Noise Reduction (Off), Ringback Tone (Enabled).
- Inbound Call Settings:** Answer Inbound Call (Enabled), Answer Tone (Enabled).
- Door Relay Settings:** Momentary Open Code (6), Duration (3 seconds), Cancel if Door Opened (No), Latch Open Code, Latch Closed Code.
- Ring Settings:** Outbound Ring Limit (5 rings), Cancel if Door Opened (No).
- Auxiliary I/O Settings:** Controller Output (In-Use), Door Station Output (Call Button Press), Door Relay (Door Control), Controller Input (Door Sensor, Normally Closed Input), Door Station Input (Call Button, Normally Open Input).
- Security Settings:** Max Door Open (None), Door Open Alarm (None), Door Station Disconnected (None).

Finally, configure the 8028 with the appropriate IP network parameters. Use the configured IP address to access the 8028 instead of the default IP address. Click **Save Settings**.

The screenshot shows the 'Network' configuration tab. The settings are as follows:

- DHCP: On Off
- IP Address: 192.168.100.101
- Netmask: 255.255.255.0
- Gateway: 192.168.100.1
- DNS 1: [Empty]
- DNS 2: [Empty]
- VLAN support: Enabled Disabled
- Advanced Settings: [Expandable]

8. Verification Steps

The following steps can be used to verify and/or troubleshoot installations in the field.

1. Verify that the 8028 SIP Doorphone has successfully registered with Session Manager. The **SIP Registration** field in the **Status** tab should indicate successful registration as shown below.

The screenshot shows the 'Status' tab of the 8028 SIP Doorphone Control Panel. The page header includes the ALGO logo, the title '8028 SIP Doorphone Control Panel', and firmware information: 'Firmware: 1.4', 'Kernel: r2', and 'DSP: 1.7'. The main content area is divided into three sections: 'Welcome', 'Login', and 'Info'. The 'Login' section contains a password field and a 'Login' button. The 'Info' section displays the following details:

Device Name:	doorphone	MAC:	00:22:EE:03:00:6A
Extension:	78300	IP:	192.168.100.101
SIP Registration:	Successful	Netmask:	255.255.255.0
Call Status:	Idle	Door Station:	Model 3201 Firmware 2

At the bottom of the page, there is a copyright notice: '© Copyright 2008-2011 Algo Communication Products Ltd.'

2. Verify that when the call button on the Door Station is pressed, the specified telephone on Communication Manager rings, and upon answering the call, two-way audio path is established.
3. Verify that the 8028 SIP Doorphone returns to the idle state when the call is terminated.
4. Verify that incoming calls to the 8028 SIP Doorphone are also successful.

9. Conclusion

These Application Notes describe the administration steps required to integrate the Algo 8028 SIP Doorphone with Avaya Aura® Communication Manager and Avaya Aura® Session Manager. The 8028 SIP Doorphone successfully registered with Session Manager and incoming and outgoing calls were successful. In addition, unlocking a door using DTMF tones was successful. All test cases passed.

10. Additional References

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

- [1] *Administering Avaya Aura™ Communication Manager*, June 2010, Release 6.0, Issue 6.0, Document Number 03-300509.
- [2] *Administering Avaya Aura® Session Manager*, November 2010, Issue 1.1, Release 6.1, Document Number 03-603324.

The following Algo product documentation is available at <http://www.algosolutions.com>.

- [3] *Algo 8028 SIP Doorphone Installation and User Guide*, Document Number 90-00054A.

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