



Avaya Solution & Interoperability Test Lab

Application Notes for Global BHS FLAvoice with Avaya Aura® Session Manager and Avaya Aura® Communication Manager – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Global BHS FLAvoice to interoperate with Avaya Aura® Session Manager and Avaya Aura® Communication Manager. Global BHS FLAvoice is a hospitality solution.

In the compliance testing, Global BHS FLAvoice used the SIP User interface from Avaya Aura® Session Manager to provide hospitality features including voicemail, wakeup call, room status, and minibar.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 configuration steps required for Global BHS FLAvoice to interoperate with Avaya Aura® Session Manager and Avaya Aura® Communication Manager. FLAvoice is a hospitality solution that uses the SIP User interface from Session Manager to provide voicemail, wakeup call, room status, and minibar features.

In the compliance testing, FLAvoice emulated six virtual SIP users that registered to Session Manager. The six virtual SIP users were configured as separate members of three hunt groups for handling of voicemail, wakeup call, room status and minibar. FLAvoice used the Abto VoIP SIP SDK for Windows to support all SIP communications.

In the compliance testing, subscribers of FLAvoice voicemail consisted of all staff and guest station users on Communication Manager. The Call Coverage feature from Communication Manager was used to redirect calls to FLAvoice via an available virtual SIP user in the voicemail hunt group. The activation and deactivation of Message Waiting Indicator (MWI) for voicemail users were accomplished by FLAvoice via use of SIP NOTIFY.

Scheduling of wakeup calls were initiated from the staff and guest telephones by calling the wakeup call hunt group, and the delivery of wakeup calls were initiated by FLAvoice via available virtual SIP users associated with the wakeup feature.

Room status and minibar were accomplished by calling the room status and minibar hunt group from the guest telephones.

FLAvoice also supports the Property Management System (PMS) interface for integration with a third-party PMS system for initiation of other hospitality features such as check-in and check-out. In the compliance testing, the FLAvoice CHECK-INS AND CHECK-OUTS MANAGER VIA IP tool was used for setting of necessary check-in, check-out, and room change status for various guests on FLAvoice as part of testing the voicemail, wakeup call, room status and minibar features.

2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were made from local users to the hunt groups for various features. Calls were made from the PSTN to the voicemail hunt group to verify remote retrieval of voice messages.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to FLAvoice.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Session Manager and FLAvoice did not include use of any specific encryption features as requested by Global BHS.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on FLAvoice:

- Proper handling of SIP message exchanges including registration, G.711, G.729, media shuffling, codec negotiation, session refresh, DTMF, REFER, and NOTIFY.
- Voicemail recording, logging, and retrieval, with proper MWI activation/deactivation.
- Scheduling and delivery of wake-up calls, including retried attempts and escalation to staff.
- Proper handling of room status and minibar.

The serviceability testing focused on verifying the ability of FLAvoice to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet connection to FLAvoice.

2.2. Test Results

All test cases were executed. The following was observed on FLAvoice from the compliance testing.

- When a voicemail user calls from the PSTN to perform remote retrieval of voice message, the greeting announcement heard by the caller was slightly chopped off from the beginning. Global BHS shared that a configurable delay will be implemented in a future release to help address this observation.

2.3. Support

Technical support on FLAvoice can be obtained through the following:

- **Phone:** +1 (407) 501-7500
- **Email:** support@globalbhs.com
- **Web :** <http://globalbhs.com/suporte>

3. Reference Configuration

The configuration used for the compliance testing is shown in **Figure 1**, with the domain name used in the testing being “dr220.com”.

The configuration of Session Manager is performed via the web interface of System Manager. The detailed administration of basic connectivity between Communication Manager, System Manager, and Session Manager are not the focus of these Application Notes and will not be described.

The Communication Manager resources used in the compliance testing are shown in the table below.

Device Type	Extension
Staff Station	65001 (H.323)
Guest Station	66002 (SIP), 63001 (Analog)

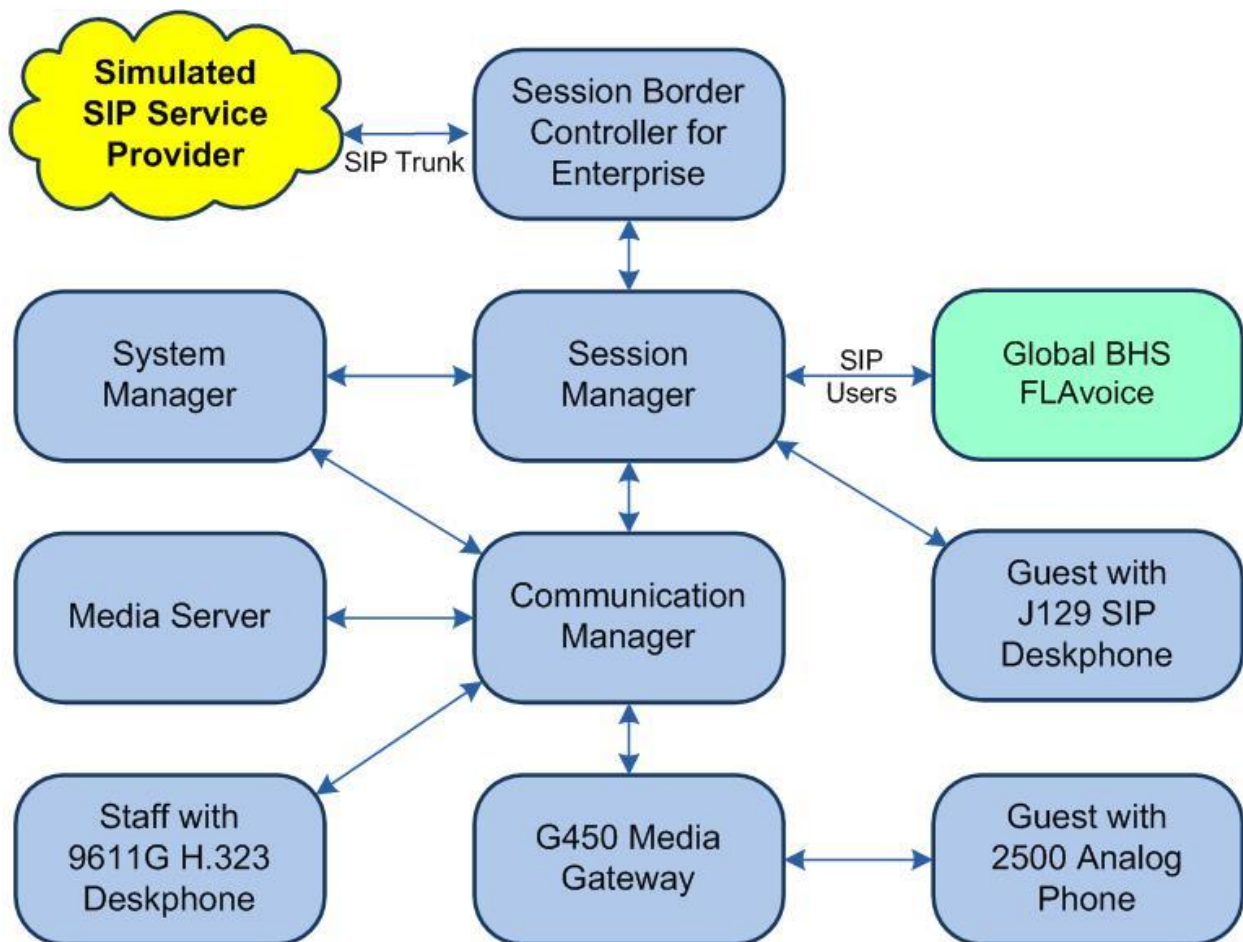


Figure 1: Compliance Testing Configuration

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 in Virtual Environment	8.1.1 (8.1.0.1.1.890.25763)
Avaya G450 Media Gateway	41.16.0
Avaya Aura® Media Server in Virtual Environment	8.0.1.121
Avaya Aura® Session Manager in Virtual Environment	8.1.1 (8.1.1.0.811021)
Avaya Aura® System Manager in Virtual Environment	8.1.1 (8.1.1.0.0310912)
Avaya 9611G IP Deskphone (H.323)	6.8202
Avaya J129 IP Deskphone (SIP)	4.0.2.1.3
2500YMGK Analog Phone	NA
Global BHS FLAvoice <ul style="list-style-type: none">Abto VoIP SIP SDK for Windows (SIPVoipSDK.dll)	9.4.7 4.11.406.1

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Administer IP codec set
- Administer hunt groups
- Administer coverage path
- Administer stations

5.1. Administer IP Codec Set

Administer a codec set for integration with FLAvoice. Use the “change ip-codec-set n” command, where “n” is an existing codec set number to use for interoperability. In the compliance testing, codec set “1” was used for FLAvoice and for the staff and guest stations.

For **Audio Codec**, enter the pertinent codec variants as shown below. For **Media Encryption** make certain “none” is included. For **Encrypted SRTP**, make certain the value is not “enforce-enc-srtp”.

```
change ip-codec-set 1                                     Page 1 of 2

                                IP MEDIA PARAMETERS

Codec Set: 1

Audio      Silence      Frames      Packet
Codec      Suppression   Per Pkt    Size(ms)
1: G.711MU      n           2          20
2: G.729        n           2          20
3:
4:
5:
6:
7:

Media Encryption                                Encrypted SRTP: best-effort
1: 1-srtp-aescm128-hmac80
2: aes
3: none
```

5.2. Administer Hunt Groups

Administer three hunt groups for FLAvoice voicemail, wakeup call, and combined room status and mini bar respectively.

5.2.1. Voicemail

Use the “add hunt-group n” command, where “n” is an available hunt group number. This hunt group is used for FLAvoice voicemail. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Group Number:** The available group number.
- **Group Name:** A descriptive name.
- **Group Extension:** An available extension number.
- **Group Type:** “circ”

add hunt-group 61		Page 1 of 60	
HUNT GROUP			
Group Number: 61			
Group Name: FLAvoice Voicemail			
Group Extension: 62001			
Group Type: circ		Coverage Path:	
TN: 1		Night Service Destination:	
COR: 1		MM Early Answer? n	
Security Code:		Local Agent Preference? n	
ISDN/SIP Caller Display:			

Navigate to **Page 3** and enter the extension of all FLAvoice virtual SIP users from **Section 6.3** for handling of voicemail, as shown below.

add hunt-group 61		Page 3 of 60	
HUNT GROUP			
Group Number: 61		Group Extension: 62001	
		Group Type: circ	
Member Range Allowed: 1 - 1500		Administered Members (min/max): 0 /0	
Total Administered Members: 0			
GROUP MEMBER ASSIGNMENTS			
Ext	Name(16 characters)	Ext	Name(16 characters)
1: 66991		14:	
2: 66992		15:	
3:		16:	

5.2.2. Wakeup Call

Use the “add hunt-group n” command, where “n” is an available hunt group number. This hunt group is used for FLAvoice wakeup call. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Group Number:** The available group number.
- **Group Name:** A descriptive name.
- **Group Extension:** An available extension number.
- **Group Type:** “circ”

add hunt-group 62		Page 1 of 60
HUNT GROUP		
Group Number: 62		
Group Name: FLAvoice Wakeup		
Group Extension: 62002		
Group Type: circ		
Coverage Path:		
TN: 1 Night Service Destination:		
COR: 1 MM Early Answer? n		
Security Code: Local Agent Preference? n		
ISDN/SIP Caller Display:		

Navigate to **Page 3** and enter the extension of all FLAvoice virtual SIP users from **Section 6.3** for handling of wakeup call, as shown below.

add hunt-group 62		Page 3 of 60
HUNT GROUP		
Group Number: 62 Group Extension: 62002 Group Type: circ		
Member Range Allowed: 1 - 1500 Administered Members (min/max): 0 /0		
Total Administered Members: 0		
GROUP MEMBER ASSIGNMENTS		
Ext	Name(16 characters)	Ext Name(16 characters)
1: 66993		14:
2: 66994		15:
3:		16:

5.2.3. Room Status and Minibar

Use the “add hunt-group n” command, where “n” is an available hunt group number. This hunt group is used for FLAvoice room status and minibar. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Group Number:** The available group number.
- **Group Name:** A descriptive name.
- **Group Extension:** An available extension number.
- **Group Type:** “circ”

add hunt-group 63		Page 1 of 60	
HUNT GROUP			
Group Number: 63			
Group Name: FLAvoice RoomBar			
Group Extension: 62003			
Group Type: circ		Coverage Path:	
TN: 1		Night Service Destination:	
COR: 1		MM Early Answer? n	
Security Code:		Local Agent Preference? n	
ISDN/SIP Caller Display:			

Navigate to **Page 3** and enter the extension of all FLAvoice virtual SIP users from **Section 6.3** for handling of room status and minibar, as shown below.

add hunt-group 63		Page 3 of 60	
HUNT GROUP			
Group Number: 63		Group Extension: 62003	
Group Type: circ			
Member Range Allowed: 1 - 1500		Administered Members (min/max): 0 /0	
Total Administered Members: 0			
GROUP MEMBER ASSIGNMENTS			
Ext	Name(16 characters)	Ext	Name(16 characters)
1: 66995		14:	
2: 66996		15:	
3:		16:	

5.3. Administer Coverage Path

Add a coverage path using the “add coverage path n” command, where “n” is an available coverage path number. This coverage path is used for coverage to FLAvoice for voicemail.

For **Point1**, enter “h61” to designate the voicemail hunt group “61” from **Section 5.2.1** as the first coverage point. Retain the default values in the remaining fields.

add coverage path 61		Page 1 of 1	
COVERAGE PATH			
Coverage Path Number: 61			
Cvg Enabled for VDN Route-To Party? n		Hunt after Coverage? n	
Next Path Number:		Linkage	
COVERAGE CRITERIA			
Station/Group Status	Inside Call	Outside Call	
Active?	n	n	
Busy?	y	y	
Don't Answer?	y	y	Number of Rings: 2
All?	n	n	
DND/SAC/Goto Cover?	y	y	
Holiday Coverage?	n	n	
COVERAGE POINTS			
Terminate to Coverage Pts. with Bridged Appearances? n			
Point1: h61	Rng:	Point2:	
Point3:		Point4:	
Point5:		Point6:	

5.4. Administer Stations

Use the “change station n” command, where “n” is a non-SIP station extension from **Section 3**. Note that similar configuration for SIP station extensions are performed from System Manager in **Section 6.2**.

For **Coverage Path 1**, enter the coverage path number from **Section 5.3**.

For analog stations, the **Message Waiting Indicator** may need modification, depending on the type of analog telephone. In the compliance testing, one analog station with phone **Type** of “2500” was required to have the **Message Waiting Indicator** set to “led” for interoperability.

change station 63001		Page 1 of 4
STATION		
Extension: 63001	Lock Messages? n	BCC: 0
Type: 2500	Security Code:	TN: 1
Port: 001V302	Coverage Path 1: 61	COR: 1
Name:	Coverage Path 2:	COS: 1
Unicode Name? n	Hunt-to Station:	Tests? y
STATION OPTIONS		
XOIP Endpoint type: auto	Time of Day Lock Table:	
Loss Group: 1	Message Waiting Indicator: led	
Off Premises Station? n	Message Lamp Ext: 63001	

Repeat this section and **Section 6.2** to administer all stations from **Section 3**.

In the compliance testing, three stations were configured as shown below.

list station 63001 count 3										Page 1	
STATIONS											
Ext/ Hunt-to	Port/ Type	Name/ Surv	GK	NN	Move	Cable	Room/ Jack	Cv1/ Cv2	COR/ COS	TN	
63001	001V201	Analog		Room				61	1		
	2500				no				1	1	
65001	S000103	H323		Staff				61	1		
	9611				no				1	1	
66002	S000068	Avaya,		SIP 2				61	1		
	J129				no				1	1	

6. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Session Manager, which is performed via the web interface of System Manager. The procedures include the following areas:

- Launch System Manager
- Administer existing SIP users
- Administer virtual SIP users
- Administer Session Manager entity

6.1. 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 System Manager. Log in using the appropriate credentials.

This system is restricted solely to authorized users for legitimate business purposes only. The actual or attempted unauthorized access, use, or modification of this system is strictly prohibited.

Unauthorized users are subject to company disciplinary procedures and or criminal and civil penalties under state, federal, or other applicable domestic and foreign laws.

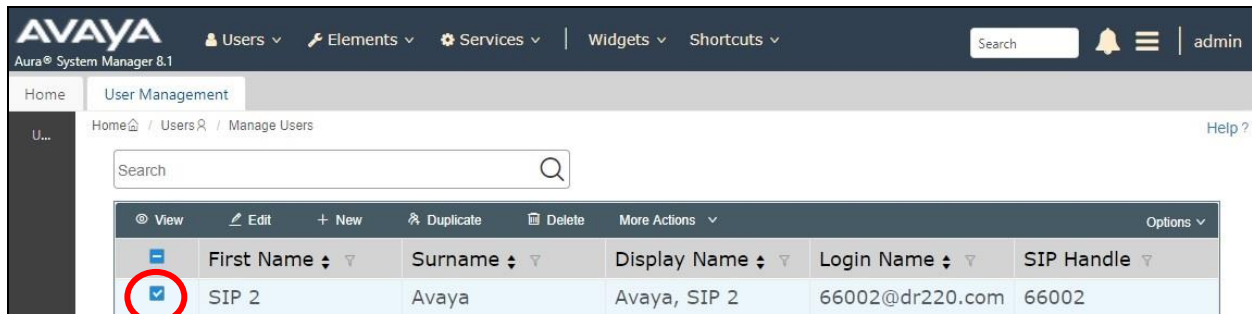
The use of this system may be monitored and recorded for administrative and security reasons.

User ID:

Password:

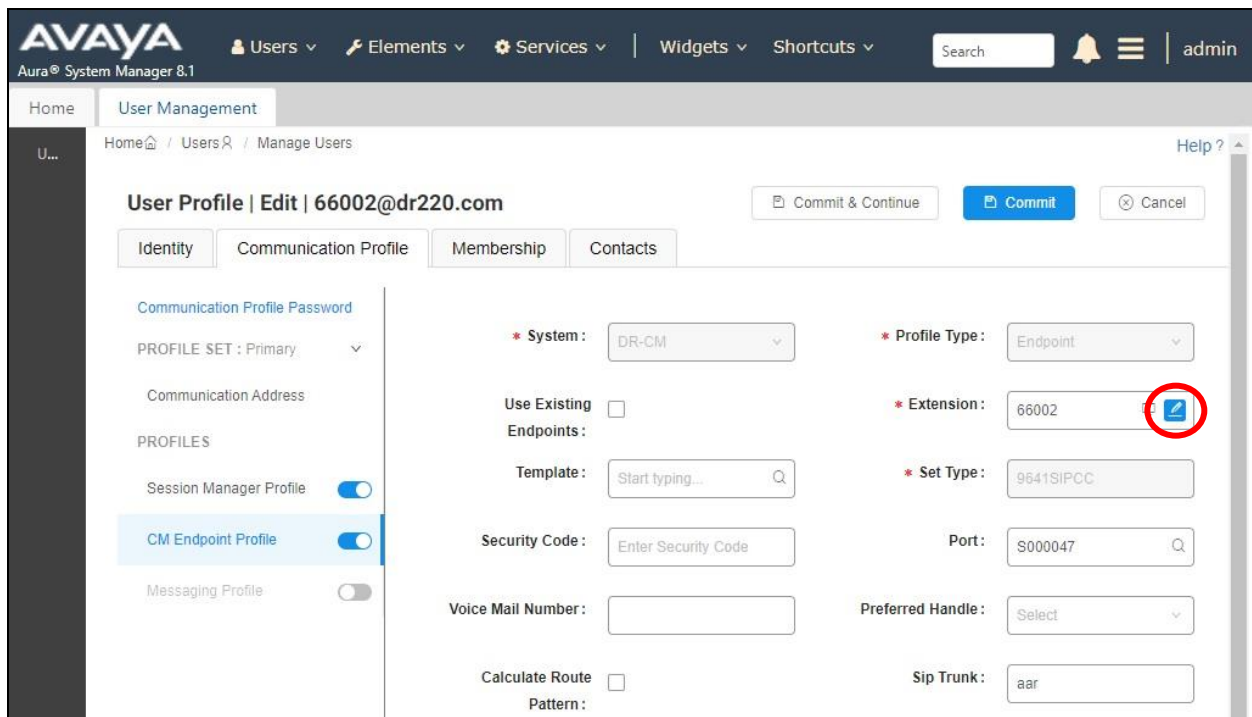
6.2. Administer Existing SIP Users

In the subsequent screen, select **Users** → **User Management** from the top menu. Select **User Management** → **Manage Users** (not shown) from the left pane to display the screen below. Select the entry associated with the first SIP station user from **Section 3**, in this case “66002”, and click **Edit**.



The **User Profile | Edit** screen is displayed. Select the **Communication Profile** tab, followed by **CM Endpoint Profile** to display the screen below.

Click on the **Editor** icon shown below.



The popped-up screen below is displayed. For **Coverage Path 1**, enter the coverage path number from **Section 5.3**.

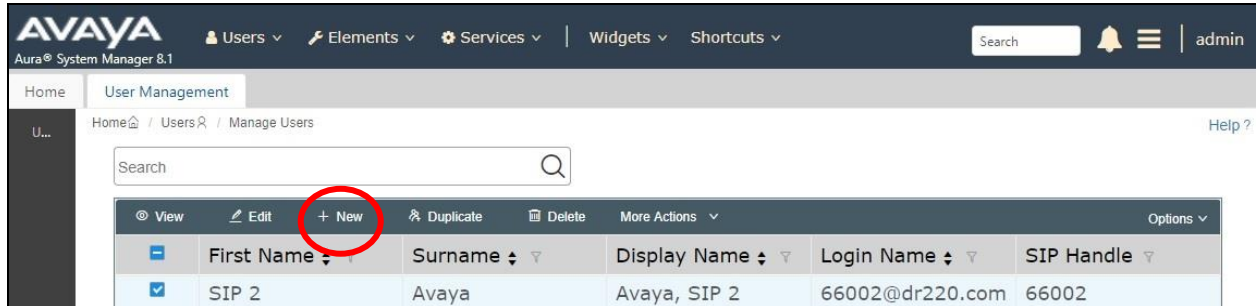
Repeat this section to administer all SIP station users that will be using FLVoice for voicemail. In the compliance testing, one SIP station user was configured as shown below.

The screenshot shows the Avaya Aura System Manager 8.1 interface. The top navigation bar includes the Avaya logo, 'Aura® System Manager 8.1', and tabs for Users, Elements, Services, Widgets, and Shortcuts. A search bar and notification icons are also present. The main content area is titled 'User Profile | Edit | 66002@dr220.com' and includes buttons for 'Commit & Continue', 'Commit', and 'Cancel'. The 'General Options (G)' tab is active, displaying various configuration fields. The 'Coverage Path 1' field is highlighted with a red rectangle and contains the value '61'. Other fields include 'Class of Restriction (COR)' with value '1', 'Emergency Location Ext' with value '66002', 'Tenant Number' with value '1', 'SIP Trunk' with value 'Qaar', 'Class Of Service (COS)' with value '1', 'Message Lamp Ext.' with value '66002', 'Type of 3PCC Enabled' with value 'Avaya', 'Coverage Path 2' (empty), 'Localized Display Name' with value 'Avaya, SIP 2', and 'Enable Reachability for Station Domain Control' with value 'system'.

General Options (G) *		Feature Options (F)		Site Data (S)	
Abbreviated Call Dialing (A)		Enhanced Call Fwd (E)		Button Assignment (B)	
Profile Settings (P)		Group Membership (M)			
* Class of Restriction (COR)	1	* Class Of Service (COS)	1		
* Emergency Location Ext	66002	* Message Lamp Ext.	66002		
* Tenant Number	1				
* SIP Trunk	Qaar	Type of 3PCC Enabled	Avaya		
Coverage Path 1	61	Coverage Path 2			
Lock Message	<input type="checkbox"/>	Localized Display Name	Avaya, SIP 2		
Multibyte Language	Not Applicable	Enable Reachability for Station Domain Control	system		

6.3. Administer Virtual SIP Users

The screen below is displayed again. Click **New** to add a virtual SIP user for handling of FLVoice voicemail.



6.3.1. Identity

The **User Profile | Add** screen is displayed. Enter desired **Last Name** and **First Name**.

For **Login Name**, enter “n@x”, where “n” is the desired user extension and “x” is the applicable domain name from **Section 3**. Retain the default values in the remaining fields.

User Profile | Add

Commit & Continue Commit Cancel

Identity Communication Profile Membership Contacts

Basic Info

Address

LocalizedName

User Provisioning Rule: [v]

* Last Name: FLVoice Last Name (in Latin alphabet characters): FLVoice

* First Name: Voicemail-1 First Name (in Latin alphabet characters): Voicemail-1

* Login Name: 66991@dr220.com Middle Name: Middle Name Of User

Description: Description Of User Email Address: Email Address Of User

Password: ***** User Type: Basic [v]

* Confirm Password: Localized Display Name: Localized Display Name Of User

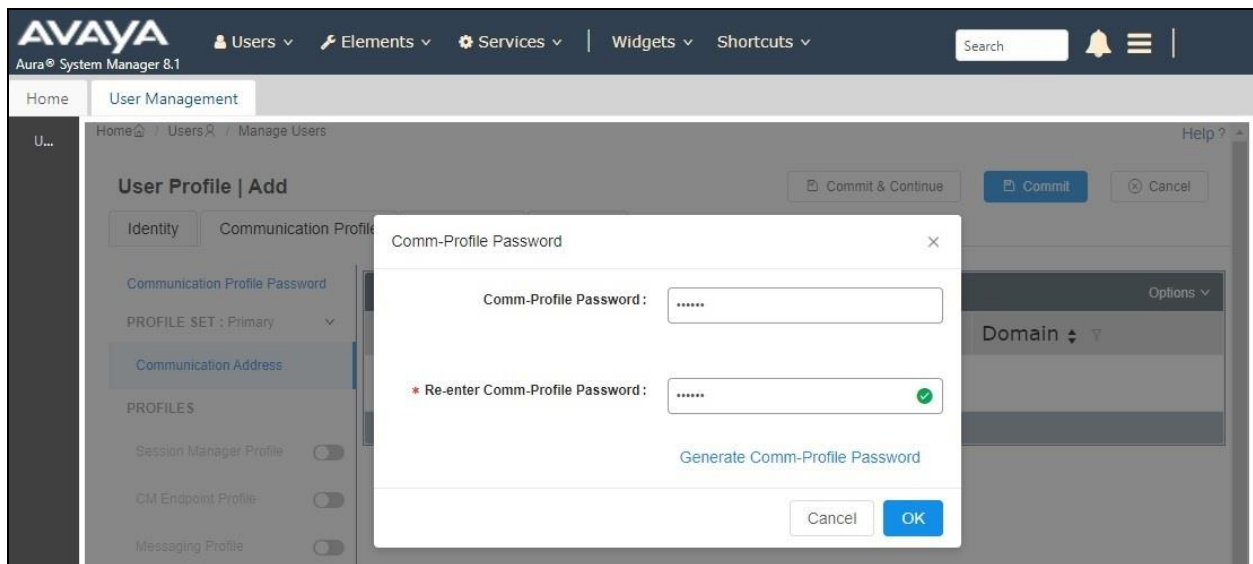
Endpoint Display Name: Endpoint Display Name Of User Title Of User: Title Of User

Language Preference: [v] Time Zone: [v]

6.3.2. Communication Profile

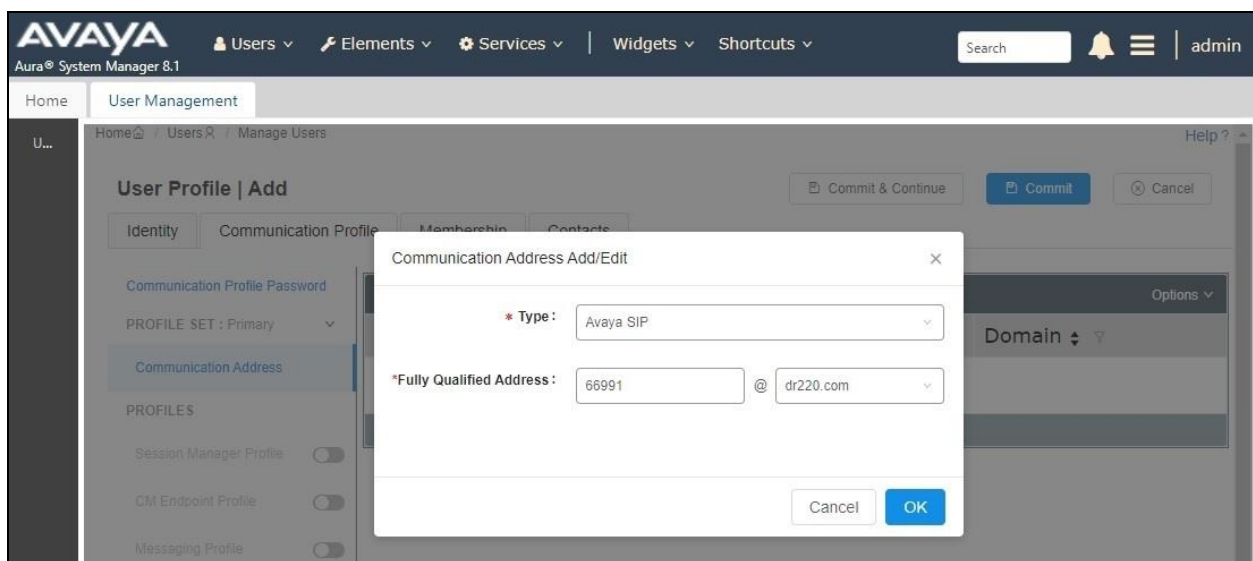
Select the **Communication Profile** tab, followed by **Communication Profile Password** to display the **Comm-Profile Password** pop-up box.

For **Communication-Profile Password** and **Re-enter Comm-Profile Password**, enter the desired password for the virtual SIP user to use for registration.



Select **Communication Address** from the left, followed by **New** to display the **Communication Address Add/Edit** pop-up box.

For **Type**, select “Avaya SIP”. For **Fully Qualified Address**, enter and select the SIP user extension and domain name to match the login name from **Section 6.3.1**.



Select **Session Manager Profile**. For **Primary Session Manager**, **Origination Sequence**, **Termination Sequence**, and **Home Location**, select the values corresponding to the applicable Session Manager and Communication Manager as shown below. Retain the default values in the remaining fields.

AVAYA
Aura® System Manager 8.1

Users ▾ Elements ▾ Services ▾ | Widgets ▾ Shortcuts ▾

Home User Management

Home / Users / Manage Users

User Profile | Add

Identity Communication Profile Membership Contacts

Communication Profile Password

PROFILE SET : Primary ▾

Communication Address

PROFILES

Session Manager Profile ☒

CM Endpoint Profile ☐

Messaging Profile ☐

SIP Registration

* Primary Session Manager: DR-SM

Secondary Session Manager: Start typing...

Survivability Server: Start typing...

Max. Simultaneous Devices: Select

Block New Registration When Maximum Registrations Active? ☐

Application Sequences

Origination Sequence: DR220-CM-APP-Sequence

Termination Sequence: DR220-CM-APP-Sequence

Emergency Calling Application Sequences

Emergency Calling Origination Sequence: Select

Emergency Calling Termination Sequence: Select

Call Routing Settings

* Home Location: NJ-Loc

Aura® System Manager 8.1

Users ▾Elements ▾Services ▾Widgets ▾Shortcuts ▾

Search

admin

User Management

Home / Users / Manage Users

Help ?

User Profile | Add

Commit & ContinueCommitCancel

IdentityCommunication ProfileMembershipContacts

Communication Profile Password

PROFILE SET : Primary ▾

Communication Address

PROFILES

Session Manager Profile ☒

CM Endpoint Profile ☒

Messaging Profile ☐

* System :

DR-CM ▾

* Profile Type :

Endpoint ▾

Use Existing Endpoints :☐

* Extension :

66991

* Template :

9620SIP_DEFAULT_CM_8_1 🔍

* Set Type :

9620SIP

Security Code :

Enter Security Code

Port :

IP 🔍

Voice Mail Number :

Preferred Handle :

Select ▾

Calculate Route Pattern :☒

Sip Trunk :

aar

SIP URI :

Select ▾

Delete on Unassign from User or
on Delete User :☒

Override Endpoint Name and
Localized Name :☒

Allow H.323 and SIP Endpoint Dual
Registration :☐

AVAYA
Aura® System Manager 8.1

Users ▾ Elements ▾ Services ▾ Widgets ▾ Shortcuts ▾

Search [] [] []

Home Session Manager User Management

Home / Users / Manage Users

Search [] []

	View	Edit	New	Duplicate	Delete	More Actions	Options
<input checked="" type="checkbox"/>	First Name	Surname	Display Name	Login Name	SIP Handle		
<input checked="" type="checkbox"/>	SIP 2	Avaya	Avaya, SIP 2	66002@dr220.com	66002		
<input type="checkbox"/>	VoiceMail-1	FLVoice	FLVoice, VoiceMail-1	66991@dr220.com	66991		
<input type="checkbox"/>	VoiceMail-2	FLVoice	FLVoice, VoiceMail-2	66992@dr220.com	66992		
<input type="checkbox"/>	WakeUp-1	FLVoice	FLVoice, WakeUp-1	66993@dr220.com	66993		
<input type="checkbox"/>	WakeUp-2	FLVoice	FLVoice, WakeUp-2	66994@dr220.com	66994		
<input type="checkbox"/>	RoomBar-1	FLVoice	FLVoice, RoomBar-1	66995@dr220.com	66995		
<input type="checkbox"/>	RoomBar-2	FLVoice	FLVoice, RoomBar-2	66996@dr220.com	66996		

6.4. Administer Session Manager Entity

Select **Elements** → **Routing** → **SIP Entities** from the top menu to display the **Routing** tab, followed by the applicable SIP entity for Session Manager from the left pane (not shown), in this case “DR-SM”. The **SIP Entity Details** screen is displayed.

AVAYA
Aura® System Manager 8.1

Users ▾ Elements ▾ Services ▾ | Widgets ▾ Shortcuts ▾ Search

Home Routing

R...

SIP Entity Details

Commit Cancel

General

* **Name:** DR-SM

* **IP Address:** 10.64.101.238

SIP FQDN:

Type: Session Manager ▾

Notes: TLT DR SM

Location: DR-Loc ▾

Outbound Proxy: ▾

Time Zone: America/New_York ▾

Minimum TLS Version: Use Global Setting ▾

Credential name:

Scroll down to **Listen Ports** sub-section and verify that the transport protocol used by FLAvoice is specified in the list, in this case “UDP”. Also verify that the corresponding **Endpoint** column is checked, as shown below.

AVAYA
Aura® System Manager 8.1

Users ▾ Elements ▾ Services ▾ | Widgets ▾ Shortcuts ▾ Search

Home Routing

R...

Listen Ports

Add Remove

3 Items

<input type="checkbox"/>	Listen Ports	Protocol	Default Domain	Endpoint	Notes
<input type="checkbox"/>	5060	TCP ▾	dr220.com ▾	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	5060	UDP ▾	dr220.com ▾	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	5061	TLS ▾	dr220.com ▾	<input checked="" type="checkbox"/>	

Select : All, None

7. Configure Global BHS FLAvoice

This section provides the procedures for configuring FLAvoice. The procedures include the following areas:

- Launch FLAvoice
- Administer PBX
- Administer channel functions
- Administer mailboxes
- Administer wakeup call
- Administer room status and minibar

7.1. Launch FLAvoice

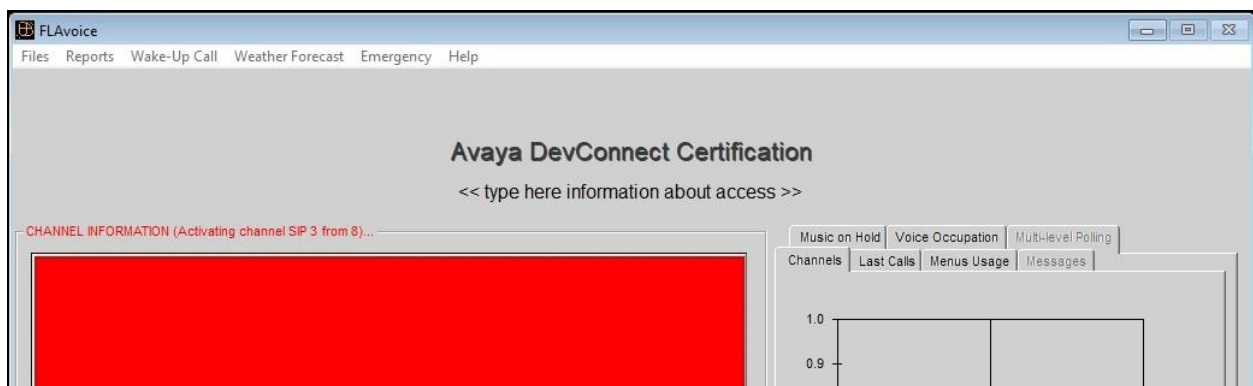
From the FLAvoice server, double-click on the **FLAvoice** icon shown below, which was created as part of installation.



The **FLAvoice** screen below is displayed, where “Avaya DevConnect Certification” is the customer name picked up from the applied license file as part of installation.

Select **Files → Unlock Access to Settings** from the top menu and enter the appropriate credentials in the subsequent screen (not shown) to unlock settings. The **FLAvoice** screen is displayed again and updated to allow access to settings.

Select **File → Settings** from the top menu.




7.2. Administer PBX

The **Settings** screen is displayed. Select the **PBX** tab. For **PBX Model**, select the value shown below. Retain the default values in the remaining fields and click **Configure SIP parameters**.

Settings - v.9.4.7

Hotel - Express Check-out | Hotel - Room Hygienization | Hotel - Emergency Calls | Hotel - Integration with PMS | Hotel - Call Accounting | Hotel - Take My Tray | Apps |
SNMP | Tools via IP | Hotel - Broadband Internet | Hotel - Room Status and Minibar | Hotel - Room Service | Hotel - Wake-up Call | Hotel - Weather Forecast |
Messages Loop | Security Module | Music on Hold | Pop-up Notification | Call queuing | Fax Mail and Server | Outside Line Request |
Messages, Notifications and E-Mails | Messages and Alarms | General settings | Pre-Paid Telephony | Access Control | Polling | Technical Support IVR |
PBX | Channel Functions | Mailboxes | Auto-Attendant | Redirections | Main Window and Owner | Voice Channels |

PBX model (ordered by manufacturer and model): AVAYA model Avaya Aura Communication Manager v.8.1 (SIP) ?

 Does not accept multi-function channels. Analog extensions connected to the PBX may require that they be configured as 'LED' for their Message Waiting Indicator (MWI) to work correctly. Version certified by Avaya DevConnect.
PBX accepts control of MWI via SIP NOTIFY.

Set up PBX Integration...

Configure SIP parameters...

Dialing type:
☒ Use tone dialing for redirection.
Flash time: 450 ms (originally: 450 ms) [Recommended: 100 ms]
☐ Use pulse dialing to transfer and resume calls.

Pause time: 1200 ms (originally: 1200 ms)

Outside line access code:

Out-of-band Caller ID Information Settings...

☐ Show number in tab names.

END SETTINGS

The **SIP account settings** screen is displayed. For **SIP Proxy**, enter the IP address of the Session Manager signaling interface. For **UDP Port**, enter “5060”. In the channel entries sub-section, enter the extension and password for each virtual SIP user from **Section 6.3**. Retain the default values in the remaining fields.

SIP account settings - v.9.4.7

PBX: AVAYA model Avaya Aura Communication Manager v.8.1 (SIP)

SIP Proxy (IPv4):

Port:

Transport:

Listen IP:

Outbound Proxy:

Realm:

IP port for CSTA:

Dialing detection

☒ Accept DTMF dialing.

☒ Accept dialing via RFC 2833.

☒ Accept SIP INFO dialing.

Channel	Extension number	Password	Authentication ID
▶ 1	66991	123456	
2	66992	234567	
3	66993	345678	
4	66994	456789	
5	66995	567890	
6	66996	123456	
7			
8			

CODEC to be used by SIP extensions (only 1 can be in use at a time)

CODEC: [Recommended: G711u]

OK

7.3. Administer Channel Functions

The **Settings** screen is displayed again. Select the **Channel Functions** tab to display the screen shown below.

Settings - v.9.4.7

Hotel - Express Check-out | Hotel - Room Hygienization | Hotel - Emergency Calls | Hotel - Integration with PMS | Hotel - Call Accounting
SNMP | Tools via IP | Hotel - Broadband Internet | Hotel - Room Status and Minibar | Hotel - Room Service | Hotel - Wake-up Call | Hotel -
Messages Loop | Security Module | Music on Hold | Pop-up Notification | Call queuing | Fax Mail and Server | Outside Line Request |
Messages, Notifications and E-Mails | Messages and Alarms | General settings | Pre-Paid Telephony | Access Control | Polling | Technical S
PBX | Channel Functions | Mailboxes | Auto-Attendant | Redirections | Main Window and Owner | Voice Channels |

PBX Model: AVAYA model Avaya Aura Communication Manager v.8.1 (SIP)

CHANNEL	Function of the channel	Language
1	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
2	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
3	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
4	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
5	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
6	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
7	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
8	CHANNEL WITH NO FUNCTION ASSIGNED YET	English

Click the **Function of the channel** field for the first channel, and select the value shown in the screen below from the associated drop-down list. Repeat as necessary for remaining channels.

In the compliance testing, the first two channels corresponded to the two virtual SIP users in **Section 6.3** for handling of voicemail; the next two channels corresponded to the two virtual SIP users in **Section 6.3** for handling of wakeup call, and the last two channels corresponded to the two virtual SIP users in **Section 6.3** for handling of room status and minibar.

Settings - v.9.4.7

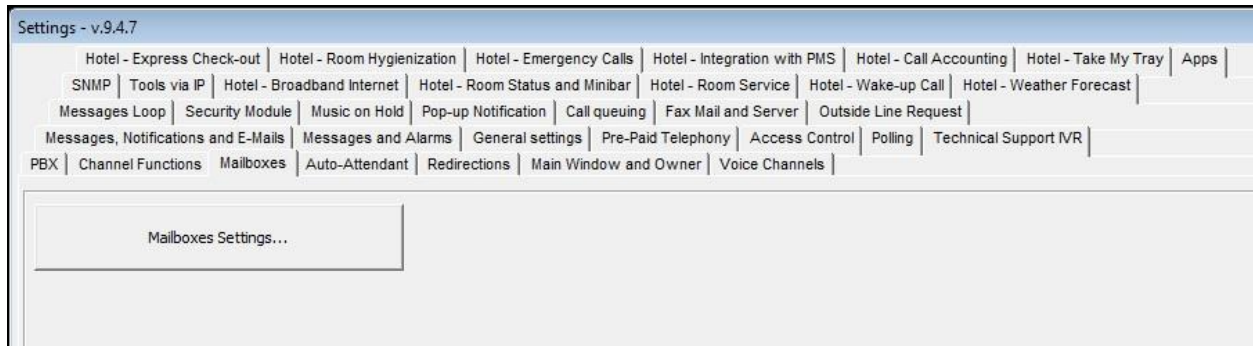
Hotel - Express Check-out | Hotel - Room Hygienization | Hotel - Emergency Calls | Hotel - Integration with PMS | Hotel - Call Accounting
SNMP | Tools via IP | Hotel - Broadband Internet | Hotel - Room Status and Minibar | Hotel - Room Service | Hotel - Wake-up Call | Hotel -
Messages Loop | Security Module | Music on Hold | Pop-up Notification | Call queuing | Fax Mail and Server | Outside Line Request |
Messages, Notifications and E-Mails | Messages and Alarms | General settings | Pre-Paid Telephony | Access Control | Polling | Technical S
PBX | Channel Functions | Mailboxes | Auto-Attendant | Redirections | Main Window and Owner | Voice Channels |

PBX Model: AVAYA model Avaya Aura Communication Manager v.8.1 (SIP)

CHANNEL	Function of the channel	Language
1	Voice mail + Auto-attendant (incoming)	English
2	Voice mail + Auto-attendant (incoming)	English
3	Wake-up Call and Wake-up Programming (incoming and outgoing)	English
4	Wake-up Call and Wake-up Programming (incoming and outgoing)	English
5	Room Status and Minibar (incoming)	English
6	Room Status and Minibar (incoming)	English
7	CHANNEL WITH NO FUNCTION ASSIGNED YET	English
8	CHANNEL WITH NO FUNCTION ASSIGNED YET	English

7.4. Administer Mailboxes

From the **Settings** screen, select the **Mailboxes** tab to display the screen below. Click **Mailboxes Settings**.



Follow reference [3] to create a mailbox for each staff and guest station from **Section 3**. Set **Type of the extension** to “guest” for guest stations and to “service” for staff stations, as shown below.

Mailboxes Settings - v.9.4.7								
Mailbox	Enabled	Extension	Extension is digital	Password	User's full name	Type of the extension	Language	Bilingual per
63001	<input checked="" type="checkbox"/>	63001	<input type="checkbox"/>		Avaya Analog	guest	English	
65001	<input checked="" type="checkbox"/>	65001	<input type="checkbox"/>	65001	STAFF	service	English	
66002	<input checked="" type="checkbox"/>	66002	<input type="checkbox"/>		Avaya SIP	guest	English	

7.5. Administer Wakeup Call

From the **Settings** screen, select the **Hotel – Wake-up Call** tab to display the screen below. Configure the **Wake-up call settings** sub-section as desired.

In the **How to alarm if the guest doesn't answer the wake-up call** sub-section, check **Call the extension**, and enter the staff extension from **Section 3** as shown below. Retain the default values in the remaining fields.

Settings - v.9.4.7

Messages Loop | Security Module | Music on Hold | Pop-up Notification | Call queuing | Fax Mail and Server | Outside Line Request | Messages, Notifications and E-Mails | Messages and Alarms | General settings | Pre-Paid Telephony | Access Control | Polling | Technical Support IVR | PBX | Channel Functions | Mailboxes | Auto-Attendant | Redirections | Main Window and Owner | Voice Channels | Hotel - Express Check-out | Hotel - Room Hygienization | Hotel - Emergency Calls | Hotel - Integration with PMS | Hotel - Call Accounting | Hotel - Take My Tray | Apps | SNMP | Tools via IP | Hotel - Broadband Internet | Hotel - Room Status and Minibar | Hotel - Room Service | **Hotel - Wake-up Call** | Hotel - Weather Forecast

Wake-up call settings

Attempts to set the alarm clock: Recommended: 3

Number of rings for wake-up call: Recommended: 4

Number of attempts for wake-up: Recommended: 3

Interval between 2 attempts: min Recommended: 2

Time interval (min) for reinforcement call

☒ off ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

When restarting the computer

☒ Turn off wake-up call if already overdue.

Assisted wake-up call

Extension of the assisted wake-up call

(This extension will receive a call from the system asking it to manually wake a guest up)

Wake-up self test

☐ Enable wake-up self test.

Voice-mail's group number:

Wake-up call options...

How to alarm if the guest doesn't answer the wake-up call

☒ Alarm is independent of the PBX identification in the network.

☐ Send an e-mail to the operator.

Addresses:

☒ Call the extension: Set alternative extension...

☐ Print a warning at the default printer.

☐ Print warning only if the operator doesn't answer the wake-up alarm call.

☐ Send SMS to:

☐ Alarm depends on the PBX identification in the network.

Define alarm dependent on the PBX identification in the network...

Groups of extensions for the Wake-up call

Mailbox types (guest, service, transit, business)

Wake-up calls report

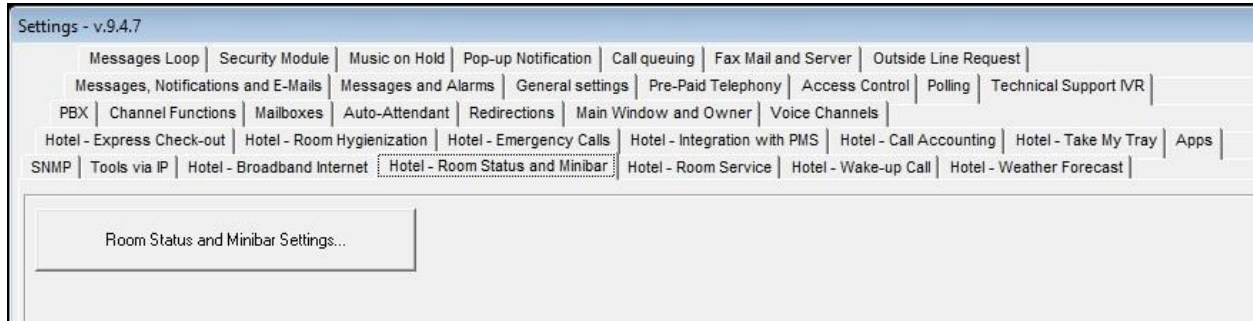
Special settings

☐ Show number in tab names.

Voice channels will need to reload

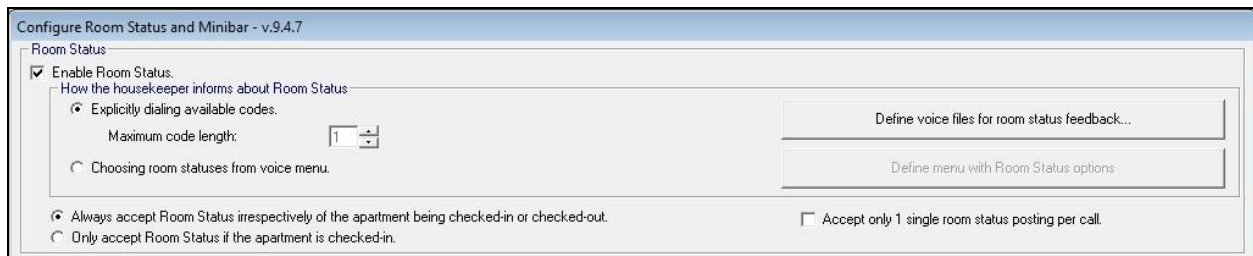
7.6. Administer Room Status and Minibar

From the **Settings** screen, select the **Hotel – Room Status and Minibar** tab to display the screen below. Click **Room Status and Minibar Settings**.

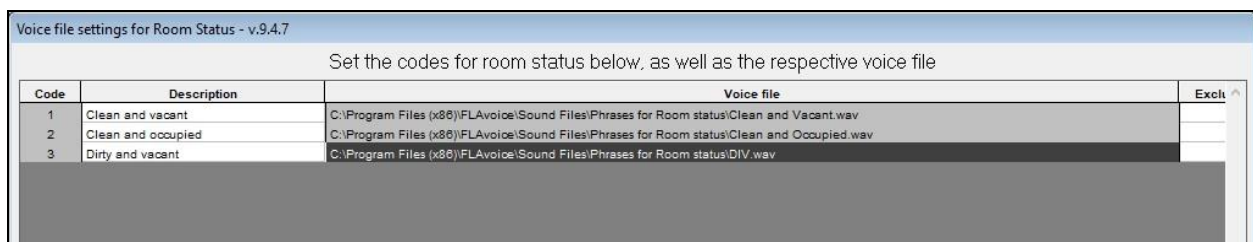


7.6.1. Room Status

The **Configure Room Status and Minibar** screen is displayed. In the **Room Status** sub-section, check **Enable Room Status** and retain the default values in the remaining fields. Select **Define voice files for room status feedback**.



The **Voice file settings for Room Status** screen is displayed next. Follow reference [3] to create desired room status and corresponding voice files. In the compliance testing, three room status entries were created as shown below.



Code	Description	Voice file	Exit
1	Clean and vacant	C:\Program Files (x86)\FLAvoice\Sound Files\Phrases for Room status\Clean and Vacant.wav	
2	Clean and occupied	C:\Program Files (x86)\FLAvoice\Sound Files\Phrases for Room status\Clean and Occupied.wav	
3	Dirty and vacant	C:\Program Files (x86)\FLAvoice\Sound Files\Phrases for Room status\DIV.wav	

7.6.2. Minibar

The **Configure Room Status and Minibar** screen is displayed again. In the **Minibar** subsection, check **Enable Minibar** and retain the default values in the remaining fields. Select **Define voice files for Minibar Products feedback**.

Configure Room Status and Minibar - v.9.4.7

Room Status

☒ Enable Room Status.

How the housekeeper informs about Room Status

☒ Explicitly dialing available codes.

Maximum code length:

☐ Choosing room statuses from voice menu.

☒ Always accept Room Status irrespectively of the apartment being checked-in or checked-out.

☐ Only accept Room Status if the apartment is checked-in.

☐ Accept only 1 single room status posting per call.

Minibar

☒ Enable Minibar.

Maximum code length: Maximum quantity length:

☒ Always accept Minibar irrespectively of the apartment being checked-in or checked-out.

☐ Only accept Minibar if the apartment is checked-in.

☒ Accept only 1 single minibar posting per call.

The **Voice file settings for Minibar products** screen is displayed next. Follow reference [3] to create desired minibar products and corresponding voice files. In the compliance testing, two minibar entries were created as shown below.

Voice files settings for Minibar products - v.9.4.7

Set the codes for products below, as well as their voice files

Code	Product	Price	Voice file (singular)
1	Chocolate bar	0	C:\Program Files (x86)\FLAvoice\Sound Files\Products for Minibar\Chocolate bar.wav
2	Bottle of water	0	C:\Program Files (x86)\FLAvoice\Sound Files\Products for Minibar\Bottle of water.wav

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager, Session Manager, and FLAvoice.

From the System Manager web-based interface, select **Elements** → **Session Manager** → **System Status** → **User Registrations** (not shown) to display the **User Registrations** screen.

Verify that all virtual SIP users from **Section 6.3** are registered, as shown below with a check in the **Registered Prim** column.

AVAYA

Aura® System Manager 8.1

Users

Elements

Services

Widgets

Shortcuts

Search

🔔

☰

admin

Home

Session Manager

S...

Help ?

User Registrations

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

View

Default

Export

Force Unregister

AST Device Notifications:

Reboot

Reload

Fallback

As of 9:26 AM

Customize

Advanced Search

8 Items

Show

All

Filter: Enable

<input type="checkbox"/>	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	66002@dr220.com	SIP 2	Avaya	NJ-Loc	192.168.200.148	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66991@dr220.com	Voicemail-1	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66992@dr220.com	Voicemail-2	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66993@dr220.com	Wakeup-1	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66994@dr220.com	Wakeup-2	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66995@dr220.com	RoomBar-1	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	66996@dr220.com	RoomBar-2	FLAvoice	DR-Loc	10.64.101.205	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Select : All, None

9. Conclusion

These Application Notes describe the configuration steps required for Global BHS FLAvoice to successfully interoperate with Avaya Aura® Session Manager and Avaya Aura® Communication Manager. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

10. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Release 8.1.x, Issue 6, March 2020, available at <http://support.avaya.com>.
2. *Administering Avaya Aura® Session Manager*, Release 8.1, Issue 4, May 2020, available at <http://support.avaya.com>.
3. *FLAvoice USER'S MANUAL*, 9.3.1, available from <http://www.globalbhs.com/suporte/>.

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