

Avaya Solution & Interoperability Test Lab

# Application Notes for DuVoice Emergency Alert System 7.0 with Avaya IP Office Server Edition 11.1 – Issue 1.0

### Abstract

These Application Notes describe the configuration steps required for DuVoice Emergency Alert System 7.0 to interoperate with Avaya IP Office Server Edition 11.1. DuVoice Emergency Alert System is an emergency notification application.

In the compliance testing, DuVoice Emergency Alert System used the SNMP and SIP User interfaces from Avaya IP Office to provide monitoring and notification of emergency calls.

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 DuVoice Emergency Alert System (EAS) 7.0 to interoperate with Avaya IP Office Server Edition 11.1. EAS is an emergency notification application.

In the compliance testing, EAS used the SNMP and SIP User interfaces from IP Office to provide monitoring and notification of emergency calls.

The SNMP interface was used by EAS to monitor initiation of emergency calls by users on IP Office. In the compliance testing, the IP Office Server Edition configuration consisted of two IP Office systems, a primary Linux server and an expansion IP500V2 that were connected via Small Community Network (SCN) trunk. Both IP Office systems were configured to generate emergency call alarms and send corresponding SNMP traps to EAS when emergency calls are attempted by IP Office users. Upon informed of an emergency call attempt via SNMP trap, EAS sends notifications to configured call, email, and SMS alert destinations. The notifications included the caller ID of the emergency call originator and the dialed emergency number that were obtained from the SNMP trap.

The SIP User interface was used by EAS to notify call alert destinations of emergency calls. Upon connection with a call alert destination, EAS played voice announcement informing of the emergency call. The SIP connection between EAS and IP Office can be with either the primary or the expansion IP Office system. In the compliance testing, two virtual SIP users were configured and registered to the primary IP Office system.

Note that EAS is a standalone application from the DuVoice DV2000 solution, and as such there are references to DV2000 in various sections of these Application Notes.

# 2. General Test Approach and Test Results

The feature test cases were performed manually. Emergency calls were placed manually from various IP Office users on both IP Office systems to the simulated PSTN.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to EAS.

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 SIP User interface between IP Office and EAS did not include use of any specific encryption feature as requested by DuVoice.

# 2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on EAS:

- Proper SIP exchanges including registration, media shuffling/non-shuffling, G.711, codec negotiation, and transfer with REFER.
- Proper handling of emergency call scenarios involving originators from both IP Office systems, call alert destinations on both IP Office systems, unsuccessful notifications, transfer of call alert destination to emergency call originator, simultaneous emergency calls, and simultaneous notifications.

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

# 2.2. Test Results

All test cases were executed and verified. The following were observations on EAS from the compliance testing.

- By design, the EAS report only logs the attempted call, email, and SMS notifications without indication of delivery results.
- By design, EAS does not use the location nor any failure cause from the SNMP trap and therefore not included in the notifications and EAS report.
- By design, EAS reports the name of the emergency call originator from the SNMP trap in the email notification, and not in the call and SMS notifications.
- In the case that a call notification covered to the alert destination's voicemail on IP Office, no voice message was left by EAS. DuVoice shared that this will be addressed in a future EAS release.
- When an emergency call originated from one IP Office system and routed to the PSTN over the other IP Office system, EAS received one SNMP trap with user as type from the originating IP Office system and one SNMP trap with trunk as type from the routing IP Office system. In this case, EAS reported two sets of notifications one set of notification for each received SNMP trap.

#### 2.3. Support

Technical support on EAS can be obtained through the following:

- **Phone:** (425) 250-2393
- Email: <u>support@duvoice.com</u>

# 3. Reference Configuration

The configuration used for the compliance testing is shown in **Figure 1**. Each IP Office system has connectivity to the simulated PSTN, for testing of cross system PSTN scenarios.

The EAS server used in the testing included the Dialogic Host Media Processing Software for support of the SIP protocol.



**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 IP Office Server Edition (Primary) in Virtual Environment	11.1.0.0.0
Avaya IP Office on IP500V2 (Expansion)	11.1.0.0.0
Avaya 1120E IP Deskphone (SIP)	4.4.23.0
Avaya J129 IP Deskphone (SIP)	4.0.4.0.10
Avaya 1608-I IP Deskphone (H.323)	1.3120
Avaya 9611G IP Deskphone (H.323)	6.8202
Avaya 1408 Deskphone (Digital)	48.02
2500YMGK Analog Phone	NA
DuVoice DV2000 on Microsoft Windows 10 Pro	7.0.10
• Dialogic PowerMedia HMP	3.0.395

Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and also when deployed with IP Office Server Edition in all configurations.

# 5. Configure Avaya IP Office

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

- Verify license
- Obtain LAN IP address
- Administer SIP Registrar
- Administer SNMP system events
- Administer SIP extensions
- Administer SIP users
- Administer common locations
- Administer extensions with location
- Administer emergency ARS
- Administer locations with emergency ARS
- Administer short codes

Note that the emergency call configuration presented in these Application Notes represents the sample used in the compliance test, and that the actual configuration can vary based on customer needs. For more information on emergency call configuration, see reference [2].

### 5.1. Verify License

From a PC running the IP Office Manager application, select **Start**  $\rightarrow$  **Programs**  $\rightarrow$  **IP Office**  $\rightarrow$  **Manager** to launch the application. Select the proper primary IP Office system, and log in using the appropriate credentials. The **Avaya IP Office Manager for Server Edition IPO2-IPOSE** screen is displayed, where **IPO2-IPOSE** is the name of the primary IP Office system.

From the configuration tree in the left pane, select **License** (not shown) under the IP Office system that will be used for SIP user integration with EAS, in this case "IPO2-IPOSE", a list of licenses is displayed in the right pane. Verify that there is sufficient license for **3<sup>rd</sup> Party IP Endpoints**, as shown below.

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### 5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** under the IP Office system that will be used for SIP user integration with EAS, in this case "IPO2-IPOSE". Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane.

Make a note of the **IP Address**, which will be used later to configure EAS. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



# 5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below. Make a note of the **SIP Domain Name** field value, which will be used later to configure EAS.

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### 5.4. Administer SNMP System Events

Select the **System Events** tab, followed by the **Configuration** sub-tab.

Check **SNMP Enabled**, and enter a desired string for **Community**. Note that the community string is not used by EAS but required to be configured on IP Office for SNMP integration. Retain the default value in the remaining fields.

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IPO2-IPOSE	Location	
E Control Unit (8)	QOS Parameters	

Select the **Alarms** sub-tab and click **Add**.

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The screen is updated with new parameters, as shown below. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Trap:** Select this field.
- Server Address: The IP address of the EAS server.
- Emergency Calls: Check this field.

Note that the default value of "162" for **Port** must be retained, as required by EAS.

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Repeat this section to enable SNMP and emergency calls alarm on the expansion IP Office system, as shown in screenshots below.

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### 5.5. Administer SIP Extensions

From the configuration tree in the left pane, right-click on Extension under the IP Office system that will be used for SIP user integration with EAS, in this case "IPO2-IPOSE", and select New → SIP Extension from the pop-up list to add a new SIP extension. Enter the following values for the specified fields and retain the default values for the remaining fields.

- Base Extension: Enter an available extension number, in this case "21881".
- Phone Password:
- Enter a desired password.

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• Confirm Phone Password: Enter the same desired password.

Select the **VoIP** tab. Enter the following values for the specified fields and retain the default values for the remaining fields.

- Codec Selection: "Custom"
- Selected: Retain only the applicable G.711 codec variant.
- Reserve License: "Reserve 3rd party IP endpoint license"
- Media Security: "Disabled"

Repeat this section to add the desired number of SIP extensions. In the compliance testing, two SIP extensions with base extensions of 21881-21882 were created.

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DTMF Support	RFC2833/RFC4733	~	
3rd Party Auto Answer	None	~	
Media Security	Disabled	~	

### 5.6. Administer SIP Users

From the configuration tree in the left pane, right-click on **User** under the IP Office system that will be used for SIP user integration with EAS, in this case "IPO2-IPOSE", and select **New** from the pop-up list to add a new user.

Enter desired values for **Name** and **Full Name**. For **Extension**, enter the first SIP base extension from **Section 5.5**. Retain the default values in the remaining fields.

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Select the Voicemail tab, and uncheck Voicemail On, as shown below.

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Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check **Call Waiting On**, as shown below. Retain the default values in the remaining fields.

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Select the **Button Programming** tab. Retain only the first **Appearance** button and remove all others as shown below.

Repeat this section to add a new user for each SIP extension from **Section 5.5**. In the compliance testing, two users with names of "SIP-21881" and "SIP-21882" were created.

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### 5.7. Administer Common Locations

From the configuration tree in the left pane, right-click on **Solution**  $\rightarrow$  **Location**, and select **New** from the pop-up list to add a new common location.

For **Location Name**, enter a desired name for the primary IP Office system, in this case "Thorton". Retain the default values in the remaining fields.

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Repeat this section to add a common location for the expansion IP Office system, in this case "Morristown". The left pane of the screenshot below shows the two common locations that were created.

忧 Avaya IP Office Manager	for Server Edition IPO2-IPOSE [	11.1.0.0.0 build 237]				3 <u></u>	×
<u>File Edit V</u> iew <u>T</u> ool:	s <u>H</u> elp ocation <del>v</del> 3:	Morristown	- 2	🖉 - 🕞 💽 🖬 🔔	🖌 🔄		
Configuration	E	Мо	ristown		📥 🗕 🔤	X	<   >
BOOTP (8)     Operator (3)     Solution     Solution     User(21)     Group(12)     Short Code(52)     Directory(0)     Group Code(0)     Subscription     Account Code(0)     Subscription     Solution (2)     Solution     Solution	Location Address Location Name * This Location is common Location ID Subnet Address Subnet Mask Parent Location for CAC Call Admission Control Total Maximum Calls External Maximum Calls Internal Maximum Calls	Morristown to all systems, 3 0 0 0 0 0 0 0 <none> Unlimited Unlimited Unlimited</none>	· 0 · 0 · · 0				

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# 5.8. Administer Extensions with Location

From the configuration tree in the left pane, expand and select the first entry under **Solution**  $\rightarrow$  **IPO2-IPOSE**  $\rightarrow$  **Extension**, where **IPO2-IPOSE** is the name of the primary IP Office system.

For **Location**, select the location for the primary IP Office system from **Section 5.7**. Repeat the same location assignment for all extensions on the primary IP Office system.



Repeat this section to assign the applicable location to all extensions on the expansion IP Office system, as shown below.

🐮 Avaya IP Office Manager f	for Server Edition IPO2-IP500V2 [11.1.0.0.0 build 2	237]	– 🗆 X
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools	Help		
IPO2-IP500V2 • Ext	tension - 49 22001	- 🖄 🗁 - 🔙 🖪 🔛 🖬 🌙 🛹 🗉	9 🕂
Configuration	E Analogue I	Extension: 49 22001 🛛 🛃 🗸	🗐   🗙   🗸   <   > 🛔
Account Code(0)	Extension Analogue		
Location(2)	Extension ID	49	
IPO2-IPOSE IPO2-IP500V2	Base Extension	22001	
亩…ጫ System (1) 亩…行了 Line (4)	Caller Display Type	On	~
Control Unit (4)     Extension (32)     49 22001	Device Type	Analogue Handset	
	Location	3: Morristown	~
	Module	BP3	
	Port	1	
	Disable Speakerphone		

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### 5.9. Administer Emergency ARS

From the configuration tree in the left pane, right-click on **Solution**  $\rightarrow$  **IPO2-IPOSE**  $\rightarrow$  **ARS**, where **IPO2-IPOSE** is the name of the primary IP Office system, and select **New** from pop-up list to add an ARS for routing of emergency calls, if not already in place.

The screenshot below shows the ARS added to the primary IP Office system for routing of emergency calls, where **Line Group ID 8** is an existing line for connection to the simulated PSTN.

忧 Avaya IP Office Manager for Server Ed	ition IPO2-IPOSE [11.1.0.	0.0 build 237]		– 🗆 X
<u>File Edit View Tools H</u> elp IPO2-IPOSE - ARS	▼ 51: Thort	on Emergency 🔹 🗟 😁	- 🔎 🖬 🛄 🗸 🗸	/ 4
Configuration	12	Thorton Emerge	ency*	📸 - 🕑   🗙   🖌   <   >
	ARS ARS Route ID Route Name Dial Delay Time	51 Thorton Emergency System Default (4)		Secondary Dial tone SystemTone
	Description n Service	☑ ↓		→ Out of Service Route
Vser Rights (11)     KARS (2)     So: Main     So: Main     So: So: Main     Location (2)	Time Profile	<none></none>	Feature	Out of Hours Route
PO2-IP500V2     PO2-IP500V2     PO2-IP500V2     PO2-IP500V2     PO2-IP500V2     PO2-IP500V2     PO2-IP500V2     P──行 Line (4)	911 811	911 811	Dial Emergency Dial Emergency	8

Repeat this section to add an ARS to the expansion IP Office system for routing of emergency calls. In the screenshot below, **Line Group ID 99999** is an existing SCN line to the primary IP Office system.

📶 Avaya IP Office Manager for Server Ed	lition IPO2-IP500V2 [11.1.0	0.0.0 build 237]		- 0	Х
<u>E</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp IPO2-IP500V2 → ARS	✓ 51: Morris	stown Emergenc 🔹 🗄 😂 - 🔓		<b>4</b>	
Configuration	12	Morristown Emerge	ency*	📸 - 🕑   🗙   🗸	<   >
ie IPO2-IP500V2 ie System (1)	ARS				
回行了 Line (4) 一句 で Control Unit (4)	Description				^
	In Service	⊠		→ Out of Service Ro	ute
Service (0) RAS (1) Common Call Route (3)	Time Profile	<none></none>	~	→ Out of Hours Rou	ıte
	Code	* Telephone Number	Feature	Line Group ID	
IP Route (2)	911	911	Dial Emergency	99999	
Account Code (0) License (31) User Rights (10) ARS (2) Strike Strike	811	811	Dial Emergency	99999	

### 5.10. Administer Locations with Emergency ARS

From the configuration tree in the left pane, under Solution  $\rightarrow$  IPO2-IPOSE  $\rightarrow$  Location, expand and select the location associated with the primary IP Office system from Section 5.7, in this case Thorton. For Emergency ARS, select the ARS associated with routing of emergency calls for the primary IP Office system from Section 5.9, as shown below.

!p ▼ 2: Th	orton	- 26		4	1			
	Inc	orton		<del>- *</del>	-	X	<ul> <li></li> </ul>	>
ocation Address Location Name * This Location is common Location ID Subnet Address Subnet Mask Emergency ARS Parent Location for CAC Call Admission Control	Thorton to all systems. 2 0 · 0 · 0 0 · 0 · 0 51: Thorton Emerger <none></none>	· 0 · 0 · 0						^
	ocation Name  This Location Is common Location ID Subnet Address Subnet Mask Emergency ARS Parent Location for CAC Call Admission Control — Total Maximum Calls External Maximum Calls	Address       Location Name     Thorton       * This Location is common to all systems.       Location ID     2       Subnet Address     0     0       Subnet Address     0     0       Subnet Mask     0     0       Emergency ARS     51: Thorton Emerger       Parent Location for CAC <none>       Call Admission Control    </none>	Address         Location Name       Thorton         * This Location is common to all systems.         Location ID       2         Subnet Address       0 · 0 · 0 · 0         Subnet Mask       0 · 0 · 0 · 0         Emergency ARS       51: Thorton Emergency ~         Parent Location for CAC          Call Admission Control	Address         Location Name       Thorton         * This Location is common to all systems.         Location ID       2         Subnet Address       0       0       0         Subnet Address       0       0       0       0         Subnet Mask       0       0       0       0       0         Emergency ARS       51: Thorton Emergency       ~         Parent Location for CAC        ~       ~         Call Admission Control        ~       ~         Total Maximum Calls       Unlimited       .       .         External Maximum Calls       Unlimited       .       .	Address         Location Name       Thorton         * This Location is common to all systems.         Location ID       2         Subnet Address       0 · 0 · 0 · 0         Subnet Mask       0 · 0 · 0 · 0         Emergency ARS       51: Thorton Emergency ✓         Parent Location for CAC          Call Admission Control       ✓         Total Maximum Calls       Unlimited         External Maximum Calls       Unlimited	Address     Location Name     Thorton     * This Location is common to all systems.   Location ID   2   Subnet Address   0   <	ocation       Address         Location Is common to all systems.         Location ID       2         Subnet Address       0 · 0 · 0 · 0         Subnet Mask       0 · 0 · 0 · 0         Emergency ARS       51: Thorton Emergency         Parent Location for CAC <none>         Call Admission Control       Iminited         Total Maximum Calls       Unlimited</none>	Address     Location Name     Thorton     * This Location is common to all systems.   Location ID   2   Subnet Address   0

Repeat this section to administer the expansion IP Office system location with the appropriate ARS from **Section 5.9**, as shown below.

🚹 Avaya IP Office Manag	ger for Se	erver Edition IPO2-IP500V2 [	[11.1.0.0.0 build 237]				<u>999</u> 0		×
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> o	ols <u>H</u>	elp							
IPO2-IP500V2 -	Location	n 🝷 3: M	Iorristown	- 1 2 C	3 - 🗐 🔺 🔝 🛃	V - 4			
Configuration	X		Mor	ristown		💣 🗕 🖻	X	<ul><li>✓</li></ul>	>
		Location Address							
<ul> <li>● 行 Line (4)</li> <li>● 一 Control Unit (4)</li> </ul>		Location Name	Morristown						^
		Location ID	3						
Short Code (65)		Subnet Address	0.0.	0 . 0					
	u	Subnet Mask Emergency ARS	51: Morristown En	ergency V					
Time Profile (0)	)	Parent Location for CAC	<none></none>	~					
IP Route (2)	)	Call Admission Control							
License (0)		Total Maximum Calls	Unlimited	-					
⊕¥ User Rights (10) ⊕`¥ ARS (2)		External Maximum Calls	Unlimited	<b>÷</b>					
E- a Location (2)		Internal Maximum Calls	Unlimited	•					
🔤 3: Morristown		Time Settings							_

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### 5.11. Administer Short Codes

From the configuration tree in the left pane, right-click on Solution  $\rightarrow$  IPO2-IPOSE  $\rightarrow$  Short Code, where IPO2-IPOSE is the name of the primary IP Office system, and select New from pop-up list to add a short code for dialing and routing of emergency calls.

In the case that the short code already exists, then select the short code to make modifications. Enter the following values for the specified fields and retain the default values for the remaining fields. In the compliance testing, two short codes 911 and 811 were created.

- Code: Digits that will be dialed for emergency call, in this case "911".
- Feature: "Dial"
- Telephone Number: Applicable number for proper routing of emergency call to PSTN.
- Line Group ID: The applicable ARS entry from Section 5.9.

Maya IP Office Manager for Server Edit	ion IPO2-IPOSE [11.1.0.0.0 buil	d 237]	- 🗆 X
IPO2-IPOSE	<b>-</b> 911	• 🗈 🖬 • 🖬 🖬 🖬 🔝	🖌 😄 🕢
Configuration	Z	<short code:0="">: Dial*</short>	📸 - 🔤   🗙   🗸   <   >
iPO2-IPOSE	Short Code		
⊕ fr Line (3)	Code	911	
Extension (11)	Feature	Dial ~	
⊕¶ User (11) ⊕∰ Group (10)	Telephone Number	911	
Short Code (62) Service (0)	Line Group ID	51: Thorton Emergency 🗸	
Incoming Call Route (2)	Locale	~	
······································	Force Account Code		
i IP Route (1) IP Route (1) Account Code (0)	Force Authorization Code		

Repeat this section to add or modify similar short codes for routing of emergency calls for the expansion IP Office system, as shown below.

🐮 Avaya IP Office Manager for Server Ed	lition IPO2-IP500V2 [11.1.0.0.0 bu	uild 237]	– 🗆 X
File Edit View Tools Help IPO2-IP500V2 • Short Code	<b>-</b> 911	• 🕴 🖄 🗁 • 属 🔺 🛄 📰 🔔	V - 4
Configuration	17	<short code:0="">: Dial*</short>	iii - ii ×   √   <   >
	<ul> <li>Short Code</li> <li>Code</li> <li>Feature</li> <li>Telephone Number</li> <li>Line Group ID</li> <li>Locale</li> <li>Force Account Code</li> <li>Force Authorization Code</li> </ul>	911 Dial ~ 911 51: Morristown Emergency ~ ~	

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# 6. Configure DuVoice Emergency Alert System

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

- Administer Setup Wizard
- Administer SIP configuration
- Administer site profile
- Administer EAS configuration
- Administer VeMail configuration
- Administer connector
- Administer mailbox
- Start services

# 6.1. Administer Setup Wizard

From the EAS server, launch the Setup Wizard by selecting Start  $\rightarrow$  DV2000  $\rightarrow$  System Configuration. The Wizard Start screen below is displayed upon initial access.



The **Site Information** screen is displayed next. Enter descriptive values for the required fields.

		205
Site Name is required. All o	ther entries should be filled	
Site Name: Avaya DevCo	onnect	
Site Telephone	908-950-2222	
Dealer Name	Avaya	
Dealer Telephone	908-950-2222	
Address	350 Mount Kemble Ave	
Address		
State	NJ	
Zip	07960	
City	Morristown	
Country	USA	

The **Accounts** screen is displayed. Enter desired credentials for the **Administrator account** shown below. The administrator account will be used to access the EAS report.

Accounts	×
	Enter a default user account for an administrator and optionally a user account. These accounts are managed in the Security settings located in System Configuration. If you prefer to create them there click Next.
	Administrator account
	admin
	Password
	Usemame
	Password

The **Tenant Information** screen is displayed. Retain the default value for **Operator extension or huntgroup**, and check **Enable operator to send/receive voice messages and receive VeMail** as shown below.

Tenant Information		×
	Operator extension or huntgroup: 0 Enable operator to send/receive voice messages and receive VeMail.	

The **PBX Model** screen is displayed next. Expand and select **Avaya**  $\rightarrow$  **Avaya IP Office Server Edition**. Retain the default values in the remaining screens and complete the Setup Wizard.

PBX Model	×
	Select the telephone system the DuVoice will be connected to. If you do not see your particular telephone system listed select Other.
	<ul> <li>Alcatel</li> <li>Asterisk</li> <li>Avaya</li> <li>Avaya Aura Communications Manager</li> <li>Avaya Aura SM CS1000</li> <li>Avaya Communications Manager with SIP Enablement Services</li> <li>Avaya IP Office</li> <li>Avaya IP Office Server Edition</li> <li>Avaya PIMG Analog interface</li> <li>Avaya PIMG Digital interface</li> <li>Nortel</li> </ul>

### 6.2. Administer SIP Configuration

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



The System Configuration screen below is displayed. Select **Telephony**  $\rightarrow$  **SIP Integration** from the top menu.

🗐 System File <u>S</u> ite	Configuration <u>T</u> elephony <u>I</u>	eatures				22	- 0	×
Device	Extension	Hunt Group	PBX Template	SIP User	Server	Enable Register	Tenant	
SIP Line 1			SIP_IPOFFICE_SRVR			No	Avaya Dev	Connect
SIP Line 2			SIP_IPOFFICE_SRVR			No	Avaya Dev	Connect

The **SIP Configuration** screen is displayed next. Select **PBX Settings** from the left pane. Enter the following values for the specified fields and retain the default values for the remaining fields.

- PBX IP or DNS: IP address of the primary IP Office system.
- **Domain Name:** The IP Office domain name from **Section 5.3**.
- Realm: "ipoffice"
- **Register using:** Select **Domain Name**.

SIP Configuration				775 <u>–</u> 58	×
PBX Settings	PBX Settings				
Lines MWI / DMG Routing	Local address PBX IP or DNS Domain Name Register expire time Realm	10       64       101       202         10.64.101.234       dr220.com         160	Port 5060 Port 5060		
	Optional Backup Se	rvers	Transport Protocol     O		
	Order         PBX           1         2           3         4           5	IP or DNS Name	Register using C TCP Register using C PBX address C Local IP address C Domain Name		

Solution & Interoperability Test Lab Application Notes ©2020 Avaya Inc. All Rights Reserved. 25 of 39 DuVoiceE-IPO111 Select **Lines** from the left pane. For each row, enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Register:** Check this field.
- Extension: The corresponding SIP base extension from Section 5.5.
- Account: Same value as the extension number.
- **Password:** The corresponding SIP extension password from Section 5.5.

SIP Configuration						77 <u>—</u> 76		×
PBX Settings	Lines							
MWI / DMG Routing	Line	Register	Extension	Account	Password	User Agent	Display	Na
	1	¥	21881	21881	123456	DuVoice		
	2	~	21882	21882	234567	DuVoice		

### 6.3. Administer Site Profile

The System Configuration screen below is displayed again. Select Site  $\rightarrow$  Profiles from the top menu.

hony <u>F</u> eatures					
ension Hunt Group	PBX Template	SIP User	Server	Enable Register	Tenant
/1881	SIP_IPOFFICE_SRVR	21881	10.64.101.234	Yes	Avaya DevConnect
1882	SIP_IPOFFICE_SRVR	21882	10.64.101.234	Yes	Avaya DevConnect
	hony <u>F</u> eatures ension Hunt Group 21881 21882	hony         Eeatures           tension         Hunt Group         PBX Template           21881         SIP_IPOFFICE_SRVR           21882         SIP_IPOFFICE_SRVR	hony         Features           tension         Hunt Group         PBX Template         SIP User           21881         SIP_IPOFFICE_SRVR         21881           21882         SIP_IPOFFICE_SRVR         21882	hony         Eeatures           tension         Hunt Group         PBX Template         SIP User         Server           21881         SIP_IPOFFICE_SRVR         21881         10.64.101.234           21882         SIP_IPOFFICE_SRVR         21882         10.64.101.234	hony         Eeatures           tension         Hunt Group         PBX Template         SIP User         Server         Enable Register           21881         SIP_IPOFFICE_SRVR         21881         10.64.101.234         Yes           21882         SIP_IPOFFICE_SRVR         21882         10.64.101.234         Yes

The Profile Selection screen is displayed next. Select the default entry and click Edit.

Profile Selection			×
Profiles			Edit
Name System Default	Tenants 1	PBXLink	Add
			Сору

The **Profile Configuration** screen is displayed. Select **Line Access** in the left pane to display the **Line Access** screen. For each line access entry, select the **Notification** column as shown below to enable the line to be used for call notifications. Note that by default only the first SIP line is set to be used for call notifications.

Profile Configuration		34 <u>-</u>	×
Details	Line Access		
MWI Inband Codes WI Inband Codes Outdial Translations BX Link	MWI minimum idle 2  Notification minimum idle 0 Line Notification 1 2 V		

### 6.4. Administer EAS Configuration

The System Configuration screen below is displayed again. Select Features  $\rightarrow$  Emergency Alerts from the top menu.

elephony <u>F</u>	- eatures					
Extension	Hunt Group	PBX Template	SIP User	Server	Enable Register	Tenant
21881		SIP_IPOFFICE_SRVR	21881	10.64.101.234	Yes	Avaya DevConnect
21882		SIP_IPOFFICE_SRVR	21882	10.64.101.234	Yes	Avaya DevConnect
A DESCRIPTION OF A DESC	lephony <u>F</u> Extension 21881 21882	lephony <u>F</u> eatures Extension Hunt Group 21881 21882	Iephony         Eeatures           Extension         Hunt Group         PBX Template           21881         SIP_IPOFFICE_SRVR           21882         SIP_IPOFFICE_SRVR	Iephony         Features           Extension         Hunt Group         PBX Template         SIP User           21881         SIP_IPOFFICE_SRVR         21881           21882         SIP_IPOFFICE_SRVR         21882	Iephony         Features           Extension         Hunt Group         PBX Template         SIP User         Server           21881         SIP_IPOFFICE_SRVR         21881         10.64.101.234           21882         SIP_IPOFFICE_SRVR         21882         10.64.101.234	Iephony         Features           Extension         Hunt Group         PBX Template         SIP User         Server         Enable Register           21881         SIP_IPOFFICE_SRVR         21881         10.64.101.234         Yes           21882         SIP_IPOFFICE_SRVR         21882         10.64.101.234         Yes

The EAS Server Selection screen is displayed next. Click Add.

EAS Server Selection	×
μ	Edit,
	Add

The **EAS Configuration** screen is displayed. In the **Details** screen in the right pane, enter the following values for the specified fields and retain the default values for the remaining fields.

- **Enabled:** Check this field.
- **PBX:** "Avaya IP Office SNMP"
- **Description:** An optional description.

In the **Duplicate Protection** sub-section, configure the desired block for multiple emergency calls from the same originator within a specified number of seconds. In the compliance testing, the setting below was configured.

EAS Configuration			<u>(11)</u>	×
Details Alert Numbers Address List Extensions	Details      ✓ Enabled      PBX      Avaya IP Office SNMP     ✓      PBX DNS Name or IP      Password      Description (optional)      IP Office	Duplicate Protection       Alerts from an extension will be blocked if it dials any emergency number within the specified number of seconds.       0 = Disabled       5 • •       Image: Block per-number       Image: Block per-pbx		

Solution & Interoperability Test Lab Application Notes ©2020 Avaya Inc. All Rights Reserved. Select **Address List** from the left pane and add the desired notification destinations. Note that all alert destinations are to be provided by the customer and that multiple address list entries can be created. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Description:** A desired description.
- Email: A pertinent email address for email alert destination.
- Callout To: A pertinent user extension on IP Office for call alert destination.
- SMS: A pertinent SMS number for messaging alert destination.

In the compliance testing, one address list entry was created with sample **Email**, **Callout To**, and **SMS** destinations shown below. The **Email** destination below corresponded to a Microsoft Gmail test account, and the **Callout To** destination corresponded to a user extension on IP Office.

For **SMS**, note that EAS supports direct integration with Twilio and Clickatell for SMS notifications. In the compliance testing, a Twilio test account was used as sender of SMS notification messages, and the **SMS** destination below corresponded to a valid SMS number.

For customers that do not use Twilio and Clickatell for SMS notification, EAS will send SMS notifications via the email communication platform. In such case, the **SMS** destination in the screenshot below will need to be suffixed with the appropriate carrier domain name associated with the SMS destination. An example of this would be <u>14489285920@mms.att.net</u>.

EAS Configuration								ц),	×
Details Alert Numbers Address List Extensions	Addres	ss List Add Dele	te						
I Extensions		Description Notification 1	Ten Any	Email dev@gmail.com	Send Message To	Callout To 21041	SMS 18470	567050	5

### 6.5. Administer VeMail Configuration

The System Configuration screen below is displayed again. Select Features  $\rightarrow$  VeMail from the top menu.

×	- 0	77 <u>-</u>				eatures	Configuration <u>T</u> elephony <u>F</u>	System File Site
	Tenant	Enable Register	Server	SIP User	PBX Template	Hunt Group	Extension	Device
Connect	Avaya DevConr	Yes	10.64.101.234	21881	SIP_IPOFFICE_SRVR		21881	SIP Line 1
Connect	Avaya DevConr	Yes	10.64.101.234	21882	SIP_IPOFFICE_SRVR		21882	SIP Line 2
C	Avaya Dev Avaya Dev	Yes	10.64.101.234	21882	SIP_IPOFFICE_SRVR		21882	SIP Line 2

The **VeMail Configuration** screen is displayed next. Check **Enable VeMail** on the right side of the screen. Follow reference [3] to configure the appropriate settings using customer provided information for email communication. The screenshot below represents a sample configuration.

SMTP		ОК
Server Name or IP Address	Server Name or IP Address	
smtp.gmail.com		Test
Reply-To Address	Port:	Cancel
test@gmail.com	110	
Port:	SSL/TLS	🔽 Enable VeMail
587		Enable Reply-to-Delete
SSL/TLS		Check for new every
🗌 Use Anonymous Logon		60 - seconds
User name	User name	
test@gmail.com		
Password	Password	Send retries
test		

### 6.6. Administer Connector

The System Configuration screen below is displayed again. For customers that use Twilio or Clickatell for SMS notification, an appropriate connector needs to be configured. Select **Features**  $\rightarrow$  **Connectors** from the top menu.

System File Site	Configuration <u>T</u> elephony <u>I</u>	i Eeatures				22	- 0 X
Device	Extension	Hunt Group	PBX Template	SIP User	Server	Enable Register	Tenant
SIP Line 1	21881		SIP_IPOFFICE_SRVR	21881	10.64.101.234	Yes	Avaya DevConnect
SIP Line 2	21882		SIP_IPOFFICE_SRVR	21882	10.64.101.234	Yes	Avaya DevConnect

The **Connectors** screen is displayed next. Select the appropriate connector in the left pane, in this case **Twilio**, followed by **Add** in the updated right pane.

Connectors			1 <u>777</u> 5		×
Clickatell HTNG Server LDAP	Twilio				
	Send SMS notifications.	Twilio.com	Delete	Add	
Twilio	Descript   Tenant				
	There are	no items to show in this <sup>.</sup>	view.		

The **Twilio Account** screen is displayed. Enter a desired **Description**, and pertinent values associated with the sender account to use for SMS notifications.

Description	SMS Gateway	
Twilio Phone number	14575576557	
Account SID	AC	
Auth Token	4c	
Optional		
Tenant	Any	
equired field for selecting th aximum 60 characters.	nis account.	

### 6.7. Administer Mailbox

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



The **Mailbox Administration** screen is displayed. Follow reference [3] to create a mailbox for each call alert destination from **Section 6.4** along with "Standard" as mailbox **Type**, as shown below.

Mailbox Administr <u>File</u> <u>Mailbox</u> <u>Temple</u>	ration lates Rep	orts			7			ı ×
Distribution List	Mailbox	Extension	First name	Туре	Description	Tenant	COS	SDA
Group	0	0	Operator	Standard	Operator	Avaya DevConnect	standard	standard
⊕ Guest	991	991	Auto Attendant	System	Auto Attendant	Avaya DevConnect	system	default
QA Standard System	21041	21041	Standard 21041	Standard	Standard	Avaya DevConnect	standard	standard

Next, select **Templates**  $\rightarrow$  **Class of Service** from the top menu of the **Mailbox Administration** screen above to display the **Class of Service Templates** screen below. Select the **standard** entry followed by **Edit**.

Name	Used	<u> </u>
audiotext	0	
directvm 🗄	0	<u>C</u> opy
emergency alert	0	Delete
extended stay	0	
group	0	
🖻 guest	0	<u>N</u> ew
standard	7	1
🖹 system	1	Import
toshiba perception	0	
-		Close

The **COS** - standard screen is displayed. Select **Recording** to display the **Recording** screen. Uncheck **Allow receiving messages** as shown below. Note that this setting is necessary for EAS standalone deployments that are not using the DV2000 voicemail feature.

COS - standard		×
<ul> <li>General</li> <li>Recording</li> <li>Playback</li> <li>Transfers</li> <li>VeMail</li> <li>Greetings / Prompts</li> <li>Wakeup Calls</li> </ul>	Message Settings         Allow sending messages         Allow receiving messages         Block delivery to checked out rooms         Allow urgent messages         Allow urgent messages         Allow urgent messages         Max message storage in minutes         Nax call screening name record         Save	
	<u>Save</u> Save <u>As</u> Cancel	

#### 6.8. Start Services

From the EAS server, navigate to Windows  $\rightarrow$  Windows System  $\rightarrow$  Windows Administrative Tools  $\rightarrow$  Services to display the Services screen below. Locate the SNMP Trap service, set the Startup Type to "Automatic" and start the service as shown below.



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



Select Service  $\rightarrow$  Start from the top menu to start the application.

<u>ए</u>	Activity N	Monitor							_	×
<u>F</u> ile	Service	Reports	Tools							
Sour	ce    S	Summary								
1	I	ldle								
2	1	Idle								
POP3	n	ot enabled	. Next	check	in 300	seco	onds.			
SMTP	I	idle								
Serv	ice F	Running								
SNMP	EAS I	idle								
							_			
<										>
🔵 Tł	ne systen	n is running	Tota	l hours	6249		Key: 11247	Version: 7.0	00.10	//.

# 7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office and EAS.

# 7.1. Verify SIP User Integration

From a PC running the IP Office Monitor application, select Start  $\rightarrow$  All Programs  $\rightarrow$  IP Office  $\rightarrow$  Monitor to launch the application, and connect to the primary IP Office system. The Avaya IP Office SysMonitor screen is displayed. Select Status  $\rightarrow$  SIP Phone Status from the top menu.



The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each SIP extension from **Section 5.5**, that the **User Agent** is "DuVoice", and that the **Status** is "SIP: Registered", as shown below.

SIPI	PhoneSt	atus										245	
Total Co	nfigured:	4					Wa	aiting 1 secs for update					
Total Re	gistered:	4			Registered Sta	atus							
Extn	User	Phone	Security	В	IP Address	P.	Transport	User Agent	Licensed	SI	S.	S	Status
21041 21040	21041 21040	J129 SIP J129 SIP	best effort best effort		192.168.200.144 192.168.200.146		TLS TLS	Avaya J129 IP Phone 4.0.4.0.10 Avaya J129 IP Phone 4.0.4.0.10	Avaya IP Avaya IP	RU RU		a a	SIP: Registered SIP: Registered
21881	21881	SIP	disable disable		10.64.101.202		UDP	DuVoice DuVoice	3rd Party IP R 3rd Party IP B	R		0	SIP: Registered
LICOL	LIGOL	011	GIOGDIO		10.04.101.202		0.01	5 470105	old r dig in million				
<													
Display	y Options ow All	C Beais	tered C I	InBr	enistered Page	1	÷ s.	ave Page Reset Phones R	eregister Phones		Cance	el	1

# 7.2. Verify Call Notification

Make an emergency call from an IP Office user. Verify that a call notification is placed from an available virtual SIP user by EAS to the configured call alert destination in **Section 6.4**.

Answer the call at the call alert destination, and verify that the user hears the proper announcement "An emergency number was dialed by extension 21031 for phone number 911, to replay this message press 1, for help press pound, to cancel this operation press star", where "21031" is the extension of the emergency call originator, and "911" is the emergency number that was dialed.

# 7.3. Verify Email Notification

Log the email alert destination into the applicable email application. Verify that there is email notification for the emergency call from **Section 7.2** as shown below, where "H323 Prim" is the name of the emergency call originator obtained from the SNMP trap.



# 7.4. Verify SMS Notification

Log the SMS alert destination into the applicable SMS application or cell phone. Verify that there is SMS notification for the emergency call from **Section 7.2** as shown below.

3:28 PM Fri May 15 Conversations III C Q Search	(457	<ul> <li>? € 100% ■</li> <li></li></ul>
(457) 557-6557 3:25 PM Sent from your Twilio trial acc	Toda Sent from your Twilio trial account - 911 was dialed by 21031	ay 3:25 PM

### 7.5. Verify EAS Report

Access the EAS web-based interface by using the URL http://ip-address where "ip-address" is the IP address of the EAS server.

DuVoice DV2000
InnDesk
Emergency Alert System
Administration
Dulleine DV2000 7 00 10 - 11247 11247 - 2020/05/15 12-18-44

The DuVoice DV2000 screen below is displayed. Select Emergency Alert System.

The screen below is displayed next. Verify that there is an entry for each call, email, and SMS notification associated with the attempted emergency call from **Section 7.2**, as shown below.

Show 50 v entries				🖶 Print	Search:	
Date/Time ↓	Extension 1	Name 🕼	Number 🕼	Result 🗍	Note	Source
05/15 3:25:01 pm	21031		911	SMS	SMS alert sent to 18470567056	IP Office ()
05/15 3:25:01 pm	21031		911	Callout message	Callout alert to mailbox 21041	IP Office ()
05/15 3:25:00 pm	21031		911	Email	Email alert sent to dev@gmail.com	IP Office ()
Showing 1 to 3 of 3	entries				Previous	1 Next

# 8. Conclusion

These Application Notes describe the configuration steps required for DuVoice Emergency Alert System 7.0 to successfully interoperate with Avaya IP Office Server Edition 11.1. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

# 9. Additional References

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

- **1.** *Administering Avaya IP Office*<sup>™</sup> *Platform with Manager*, Release 11.1, Issue 1, April 2020, available at <u>http://support.avaya.com</u>.
- **2.** Making Use of the Emergency Services Access Enhancements in IP Office Release 9.0/9.1, available at <a href="http://support.avaya.com">http://support.avaya.com</a>.
- **3.** *DV2000 7 System Reference Guide*, available at <u>http://support.duvoice.com/product/vs7/manual/home</u>.

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