

Avaya Solution & Interoperability Test Lab

Application Notes for configuring Unified Dispatch Unibook platform as SIP Endpoint with Avaya IP Office 9.1 - Issue 1.0

Abstract

These Application Notes describe the configuration steps for Unified Dispatch Unibook platform using Dialogic HMP board to successfully interoperate with Avaya IP Office Server Edition 9.1 and IP500V2 Expansion. Unified Dispatch Unibook platform is an IVR application that is registered to IP Office as a SIP endpoint.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the 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 for Unified Dispatch Unibook platform sample application to successfully interoperate with Avaya IP Office 9.1 Server Edition and IP500V2 Expansion (IP Office). Unified Dispatch Unibook platform is set to register as a SIP Endpoint (IVR Endpoint) with IP Office.

Unified Dispatch UniBook platform integrates with PBX systems and ground transportation scheduling and dispatch systems to provide real time status and booking for transportation services. This integration enables users to place phone calls between PBX and UniBook System. All other elements of UniBook System interconnecting with dispatch systems, web services, etc. are detailed in various documents and could be provided upon request.

2. General Test Approach and Test Results

The general test approach was to place calls from simulated PSTN using SIP or PRI trunks into IP Office which based upon DNIS forwards the call to IVR Endpoint. Note: IVR Endpoint registered as a SIP Endpoint to both IP Office Server and IP Office IP500V2 Expansion. Once the IVR Endpoint receives a call, it initiates the sample application which has a variety of self-serving prompts including transferring the call to another agent/extension registered to IP Office.

The main objectives were to verify the following:

- Inbound call from an IP Office extension to the IVR Endpoint
- Inbound call from PSTN to IVR Endpoint using PRI trunk on IP Office IP500V2 Expansion
- Inbound call from PSTN to IVR Endpoint using SIP trunk on IP Office Server
- Calls can be transferred to another extension/agent from the IVR Endpoint
- IVR Endpoint can recognize DTMF tones using RFC2833
- IVR Endpoint can recognize in-band DTMF tones
- Serviceability

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

2.1. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The focus of interoperability compliance testing was primarily to verify that the IVR Endpoint using **sample application** can respond to DTMF tones. The scope of testing included the navigation of the paths provided by the IVR Endpoint **sample application** using DTMF including transfer to an agent/extension on IP Office.

The serviceability testing focused on verifying the ability of IVR Endpoint to recover from adverse conditions, such as power failures and disconnecting cables to the IP network.

2.2. Test Results

All functionality and serviceability test cases were completed successfully with the following results/observations:

- IVR Endpoint does not support shuffling/direct media
- IVR Endpoint only supports G711MU codec
- IVR Endpoint needs to be configured as UDP for transport
- Outbound calls from IVR Endpoint are supported but were not tested
- IVR Endpoint cannot hold the call but calls held by the calling party had no adverse effect
- Since IVR Endpoint is configured to handle both in-band and out-of-band DTMF tones, making calls using speakerphone may have unpredictable results because of the ambient noise
- IVR Endpoint was configured to support Blind Refer for transferring calls

2.3. Support

To obtain technical support for IVR, contact Unified Dispatch via web, email or phone.

- Web: <u>http://www.unified-dispatch.com/contact/</u>
- Email: support@unified-dispatch.com
- Phone: (626) 219-0800, select Option 1

3. Reference Configuration

Figure 1 illustrates the configuration used for testing. In this configuration, Unified Dispatch Unibook platform IVR applications register as SIP Endpoints with Avaya IP office.



Figure 1: Avaya IP Office Server/IP500V2 Expansion and Unified Dispatch Unibook platform

3.1. Equipment and Software Validated

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

| Equipment/Software | Release/Version |
|--|--------------------------------|
| Avaya IP Office Server Edition running on a HP Server | 9.1.2 build 91 |
| Avaya IP Office IP500V2 Expansion | 9.1.2 build 91 |
| Avaya 11xx/12xx SIP Deskphone | SIP Release SIP12x0.4.4.18 |
| Avaya 1616-1 H323 Deskphone | H323 Release 1.360A |
| Unified Dispatch Unibook platform running on Windows Server 2008 R2 Standard Pack 1 | Release 6.4.2.510015 |
| Dialogic HMP | Release 3.0 Service Update 354 |

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office IP500V2 and also when deployed with IP Office Server Edition in all configurations.

4. Configure Avaya IP Office

The configuration and verification operations illustrated in this section were all performed using IP Office Manager. The information provided in this section describes the configuration of IP Office for this solution. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 8**.

The configuration operations described in this section can be summarized as follows:

- Verify Third Party IP Endpoint licenses
- Verify SIP Sessions
- Administer SIP Endpoint

Note: For PSTN calls, a PRI trunk was configured to IP Office IP500V2 Expansion and a SIP Trunk was configured to IP Office Server. IP Office Server does not support PRI Trunks.

4.1. Verify Third Party IP Endpoint Licenses

The license file installed on the system controls these attributes. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya sales representative.

- Navigate Solution $\rightarrow <$ *IP Office Name* $> \rightarrow$ License from the Configuration menu
- Verify that 3rd Party IP Endpoints has sufficient licenses available

| Configuration | | | | | Lie | ense | |
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| Group (3) | Aveya Softphon | | N/A | 255 | Valid | Never | PLDS Nodel |
| BM Short Code (3) | VMPro TTS - Sc | ansoft | N/A | 255 | Valid | Never | PLDS Nodal |
| Service (0) | VMPro TTS Prof | fessional | N/A | 255 | Valid | Never | PLDS Nodal |
| Incoming Call Route (3) | IPSec Tunneling | 1 | N/A | 255 | Valid | Never | PLDS Nodel |
| IP Route (1) | Power User | | N/A | 255 | Valid | Never | PLDS Nodal |
| ARS (1) | Avays IP Endpo | ints | N/A | 255 | Valid | Never | PLD5 Nodal |
| Location (0) | Voice Networkin | ng Channels | N/A | 255 | Valid | Never | PLDS Nodal |
| Authorization Code (0) | SIP Trunk Cham | nels | N/A | 255 | Valid | Never | PLDS Nodal |
| III | IP500 Universal | PRI - Incremental c | N/A | 255 | Valid | Never | PLD'S Nodal |
| | Third Party APE | | N/A | 255 | Valid | Never | PLDS Nodel |
| | Wave User | | N/A | 255 | Valid | Never | PLDS Nodal |
| | 3rd Party IP End | points | N/A | 255 | Valid | Never | PLD5 Nodel |
| | Centralized End | points | N/A | 255 | Valid | Never | PLD5 Nodal |
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| | WebLM Model | | N/A | 255 | Valid | Never | PLDS Nodal |
| | Software Upgra | de | N/A | 255 | Valid | Navar | PLDS Nodel |

4.2. Verify SIP Sessions

To allow SIP sessions to be established between IP Office and IVR, the maximum number of SIP Sessions must be verified as follows:

- Select **Solution**→*<IP Office Name*>→**System** from the **Configuration** menu
- Select the **Telephony** tab
- Verify the **Maximum SIP Sessions** value. Note, if there are not enough sessions configured, the calls from PSTN will fail.

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|---|---|--|---|---|---|
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4.3. Administer SIP Endpoint

A SIP Endpoint was created for IVR to register with IP Office.

- Navigate to Solution→<*IP Office Name*>→Extension from the Configuration menu
- Right click and select **New→SIP Extension** (not shown)
- Select the Extn tab
- Enter an unused Extension ID and Base Extension

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| Time Profile(0) Account Code(0) | Reset Volume After Calls | |
| | Device Type | Unknown SIP device |
| | Location | Automatic |
| Encontrol Unit (8) | Module | 0 |
| 11204 600 | Port | 0 |
| 11205 601 | Force Authorization | |
| 11201 622 11202 630 | | |

• Select the **VoIP** tab and uncheck the **Allow Direct Media Path**. Also, note that **DTMF Support** field can be modified for in band or out of band DTMF support.

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- Navigate to **Solution**→*<IP Office Name*>→**User** from the **Configuration** menu
- Right click and select **New** (not shown)
- Select the User tab
- Enter Name, Password, Confirm Password, Full Name and Extension fields. Note that the Extension field matches the Extension ID created in the beginning of this section.

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- Navigate to the **Telephony** > **Supervisor Settings**
- Enter the Login Code and Confirm Login Code fields. This is the SIP endpoints password to register with IP Office.

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| | External Incoming | Can Trace Calls |
| 622 Extn622 | | Deny Auto Intercom Calls |

• Repeat the steps in this section to configure additional SIP endpoints. In this reference configuration, four SIP endpoints were created for IVR, two each for registration with IP Server and IP Office 500V2 Expansion.

5. Configuration of Unified Dispatch Unibook platform

5.1. Dialogic HMP Setup

- Verify License SIP sessions for:
 - IP_Call_Control SIP Call Control
 - **RTP_G_711** RTP for G.711
 - Voice and Speech_Integration Voice and Speech Integration (using Dialogic HMP Media Server)

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- Verify default settings that Telephony Manager (SIP client) is setting up with Dialogic HMP. These settings are found in the parameters area of the Telephony Manager device. In the IVR GUI, select the **Application Server** in the left panel, right click and from drop down menu select **Open Table**. The configuration table will open on the right panel, select the **Telephony Manager** device line. In the **Parameters** area, verify that the IP Virtual Board section contains the following settings:
 - SipInfoMask Set to 1, which sets SIP parameters for transport to UDP and codec to G.711

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• SIPSignalingPort - Set to 5060

• Verify that **Server IP Address 10.80.130.200** is set as the default IP address in Dialogic Configuration ManagerNote that in case the server has multiple network cards, the setup of IP address that is handling telephony traffic may be done here.



5.2. Unibook Setup

• Use any browser to access OmniView GUI, import a default configuration and configure the Unibook Managers needed for the sample application:

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- The following screen shows all the services configured along with the ports used.
 - CFM Configuration Manager using port 9001 on localhost
 - DM Data Manager using port 7001, 7002 on localhost
 - AM TEST (15) Application Manager using port 7020 on localhost
 - CM Call Manager ports 7020, 7010 on localhost
 - TM Telephony Manager using port 7020 on localhost

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• Navigate to Application Servers→IMS Application Server and select License Management from drop down list to verify that proper licenses have been applied.

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• Select Add Dongle followed by Add Key for adding all needed license keys. The screen below shows BASE, VOICE and VOIP keys required for telephony implementation to work.

| Constituent - Internet Explorer | | - LogMain | | |
|--|--|---|--|---|
| The Edit Wey Tools Writing Help | APEXYC#"DowneurDown /P 🛃 🏤 🎯 Or | entieve 🕲 👘 🛄 | | |
| 0.00 10 10 10 1 10 10 | 0 A 75 2 4 4 0 1 | ◇□ ● × 豊田御子 藤氏 ≠ 0 | 空母に尊幸点様と | I.I. |
| User: System Administrator | StartPage TestAvasalitament.orf RooteTa SJN: AP15300102 | lin, and [Lindbook_SP_Avasa_Test] DVG Application Server | - Interface Noreton IBNS Applications Server - D | conse Hanager |
| 🗄 n 😏 (Mi Application Server (1) | 12 Makin | Gry | Ressources | Days remaining |
| - 6 (Laliford, SP_Araya - 7 (Laliford, SP_Ara | BASE VOICE OORC VOP PEEDARC TTS | 0.000-0.001-A-01073-35900 0.3284-3A21A-06073-K-584 0.1538-3Q43A-08073-30304 0.3208-0.313A-08073-30304 0.3800-99903A-08073-30300 0.3800-9303A-09073-37810 | 6 5 enabled enabled 6 enabled | Universal Universal Universal Universal Universal |

• Configure Telephony Manager SIP network devices by setting up the IP interface for SIP as shown below:

| rites | Start Page Testificació teoris uni Rom | (Table limit) | Unificark SIP Aways Test | MS Application Set | rise - Interface Hereiter | ING April | tation Ser | Server - Litanuel Manager | | | | | |
|---------------------------|--|---------------|---------------------------------------|--------------------|---------------------------|-----------|------------|---|--|--|--|--|--|
| tem Administratur | Tierre | Devis 10 | Take tiere | Tuin | Batule | Terms | - | Faculturia | | | | | |
| pication liarvers | 8 8 CM 00 | 1 | | Barrer. | Carlinicatory Manager | 1 | | | | | | | |
| 245 Application Server 11 | | | | Senter | Telectrona National | | | Viteri versione"1.2" escodege "uti-6"7> «Can | | | | | |
| a E traffook SIF Awaya | = a Pinterface | 281 | | Container. | General | | | and the second se | | | | | |
| picatione | TOTAL VOP Interface L | 1232 | ALL DRIVE P. | Sinterface. | 109 | | 10.00 | Criptogram Files (Julie) WHEN SEP (Environments) | | | | | |
| Aleses | n # VCD Metwork 2:1 | 113 | A pertin pressure sp | Network | 108 | 11 | | 3(3)0 | | | | | |
| Application Files | A # 70P Netwold 3-2 | 234 | N_p8172PL pm83C2P_5P | Technorik | 107 | 33 | .0 | 2;2:0 | | | | | |
| - A Calification Tables | - It # 1439 failuark 3-3 | 215 | N_DRITIM_DRIESCIP_SP | Network | 107 | 11 | -8 | 3,300 | | | | | |
| a J SP Servers Appy | n er woor Network 3-4 | 196 | IN \$4817424 \$HE3CHP SIP | Hetwork | 1009 | 11 | 8 | 3,3,0 | | | | | |
| < 1 TestAvaveIndourst.ont | IN POIR Herberry 1-5 | 227 | N_040111H_0+0103F_0F | Network . | VCP | 11 | | 3,310 | | | | | |
| on Librarian | | 138 | IN SHEETER JOHN SHEETER SER | 144 bicorile | (09) | 33 | 10 | 3(3)0 | | | | | |
| Services | - top work technology - 1 | 139 | R.pd.CTPL percon | Saturday | 109 | 41 | | 3.34 | | | | | |
| | 11 2 Hartstort 1-0 | 240 | N JOB CTEM (MEDCER) SP | Retrief | 909 | 11 | | 9.0/1 | | | | | |
| | (i) (P) HC27 Network 3-9 | 241 | 11_pdf17834_pd63C829_SP | 14boril | HOP | 11 | | 2,2,0 | | | | | |
| | We vote Hetwork 1-16 | 243 | Pr. (pet 17 st Pr. (pert 10 ctur) 584 | fastersk . | YOP | 33 | | 2,2,0 | | | | | |
| | - AN POR Network 5-15 | 243 | PLEMISTISM ANNOUSE SP | Network | 109 | 11 | | 8:30 | | | | | |
| | In Car Manuark 1-12 | 244 | 45_pd8171244_pe810124_329_329 | Netronk | 107 | 33 | | 3(3)0 | | | | | |
| | - NOP Network 1-15 | 245 | 14_pdi171314_pedi1C154_58 | Setsion | 109 | 33 | | 3(3) | | | | | |
| | 5 2 POF Network 1-14 | 246 | PERMITTENE AND COMPANY | Network | YOP | 11 | .0 | 3/3/0 | | | | | |
| | n COP Network 1-15 | 247 | 94_pd81715#_pm81C10#_50# | Network | YOP | 31 | | 3,3,0 | | | | | |
| | () P PCDP Network 5-18 | 240 | PA_petiTitePA_peril/Color_S2P | Tilatingril | YCEP | 33 | | 3(3)9 | | | | | |
| | | 346 | PE_DEBUTITE_M_BENELUCSTP_SEP | Network | 109 | 44 | | 3,34 | | | | | |
| | THE WORK Network 1-18 | 250 | PE_(00121307307100001221007_020 | fast-colt | 1009 | 10 | | 3,5,8 | | | | | |
| | () (2) 9007 Fartnerit 1-18 | 111 | 15_b01718.9(_bm01018/9_52) | Sisteral . | HODP | 11 | | 3.30 | | | | | |
| | | 252 | PL_p401730.00 pwd sC20.9_50 | Setural V | 100 | 11 | | 2,2,0 | | | | | |
| | the wolf Hetwork 9.21 | 260 | Property March 1994 | Setuph . | 1009 | 33 | | 3.5/8 | | | | | |
| | A P HOD Network 2-22 | 254 | PLEASTIZE AND SCIENCES | Network | 1009 | 11 | | 100 | | | | | |
| | AVER NOOP Manhoode 1.23 | 255 | 44_b45172344_berdslc234F_52F | Sature | 109 | 11 | | 3(3)9 | | | | | |
| | WW WOR technold 5-24 | 196 | N_pt01724M_pm81C24P_SP | Section's | 109 | 33 | | 3:3:0 | | | | | |
| | D POP Network 2-25 | 297. | IN JUB (125 PL and 1025 PL SP | Network | 109 | 11 | | 3/3/0 | | | | | |
| | n 100 NOD Network 3-26 | 158 | 11 pd01130 P pr01020 P 50 | Setrork. | 109 | 31 | -8 | 3(50) | | | | | |
| | graph VCDP Network 5-27 | 159 | 11 pdf (1221)H gmd (1221)P 52H | faithing it | VOP | 13 | | 3:30 | | | | | |
| | - Steel wide Network 3-28 | 2993 | Physiol 1730 Physiol 12200 (187 | feetwork . | 909 | 44 | | 3(3)(7) | | | | | |
| | (I) (F) POP Network 3 28 | 281 | 14_pdf173834_peed102387_538 | Retrick | 1009 | 13 | | 2:30 | | | | | |
| | 0.00 Flatteers 2.00 | 262 | 14_pdf1130.94_pmd14C30.9_528 | (Woodwit) | 9009 | 44 | | 3.30 | | | | | |
| | H A Voice Researces | 297 | | Container | Genera | | | | | | | | |
| | # A HICP | 394 | | container | Generic. | | | | | | | | |
| | # # CPH Convector | | | Convector | Carifiguration Mena | | | tooelhust;9003 | | | | | |
| | n e DM Connector | | | Connector | Leg | | .8 | locelhast;7001 | | | | | |
| | - # # OHIDapatore | 30 | 1 | Event Digsett | Carifigunian : | 8 | .0 | | | | | | |
| | - 8 # CHDepatcher | 11 | 1 | Event Dispetz | Deloge. | | | 10t12 | | | | | |
| | - e e Chlaterer | 12 | | Laterar | Telephony Manage | 4 | 8 | 7040 | | | | | |
| | A # Restate Grad | 280 | | Assocration Group | Standard | 1 | | 2.0 | | | | | |

• Configure Telephony Manager SIP voice/media devices by setting up the IP interface for SIP as below

| Committees - Internet Capitary | | | LogMidur, Linesco J | 4.800.04 | | | | | |
|---|--|---|----------------------------------|------------------------|--|---------|------------|--|---|
| The Salt New Tools Window Indo | P (P neciveration and an and | Cretter # | = <u>(75</u> | | | | | | |
| 日間日日の三年日 | a # 1 4 4 0 | D-N/W | ●小目目間:1 | 論作用。 | (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | 0.0.1 | 82 | 1 | |
| Generation Administrator | Start Page Testilvayalinbound.ami R | over table and | Unillook_SIP_Avaya_Tes | # 345 Application | Server - Etterface Honour | 346 Apr | skonten (e | ever -comeritierager | |
| APEX SOP Certification (Southers) | Aure | Omia ID | Native Neme | Type | Subtraper | Resor. | -Om | Fecenetars | E |
| Application Servers | | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | | Server Server | Canfiguration Hanage Telephony Hanager General | 0 | 0 0 | <pre>variant="L0"encoding="cdf-dft==Cen</pre> | |
| Accitations | H A L KOP Interface 1 | 232 297 | 0,0818,9 | Siterfais Container | XOP Genera | - | 8 | C) (Program Ples (x88)"/APEX(3DP)Centro014(-), | l |
| 10 - Cal Application thes | A Motor Meterface 1 | 24 | (| 3vterfact | Germen | | a . | 1 | |
| H - A - Reactive Tables H - A - SIP Servers Apps - V - Tastikosyabistournit onl | A ● Votor 3-3 A ● Potor 3-3 B ● Potor 3-3 | 200 300 201 | dentEIC1 dentEIC2 dentEIC2 | Media Media | Vice Vice Vice | 1 | 0 | | |
| it gid ware übrahen it gid web Servicas | 1 0 Voter 1-4 | 302 303 | donB1C4 dondB1C1 foodB1C1 | Media Neda | Yoka Xoka | 1 | 0 | | |
| | 000 Marc 1-7 | 305 | decelación decelación | Media Media | Your Voue | 8 | 0 0 | | |
| | 10 Vace 1-0 | 307 | dood3C1 dood0C3 | Heda Heda | Vielate Vielate | 1 | 0 | | |
| | 100 Years 3-12 100 Years 3-12 100 Years 3-12 | 309 | 2008004 000840 | Note | Vola Vola | L L | 0 | | |
| | 110 Yoka 3-14 500 Yoka 3-18 | 112 113 | doodHC3 (codHC3 | Node Node | Voca Voca | 1 | 6 8 | | |
| | 7/00 Yoke 1-10. 1.00 Yoke 2-57 | 314 315 | poogaC4 | Nette | Webe Webe | 1 | 0 | | |

5.3. SIP Endpoint Configuration

The SIP Endpoints configuration is done using an XML config file named TM IPInterfaceConfiguration.xml, located at

 $\label{eq:c:Program Files(x86)APEXSDPOmniVoXMLTMConfiguration. During the startup of SIP client (Telephony Manager) the registration events are sent from IVR to IP Office and upon authentication the IVR SIP Endpoints are registered.$

```
<Configuration>
<!--
                  To use this configuration file, specify the path name for this file in the parameters field of the Interface/VOIP devices in
       тм
       Normally, the path name should be set to
       .. \ Configuration \ TM\_IPInterface Configuration. xml
                  Registration Protocol:
                  SIP
                  H323
                  Alias Type
                  Transparent
                  DotNotation
                  H323_ID
                  eMail
                  Phone
                  URL
        -->
                  <TimerForServiceUnavailable>20</TimerForServiceUnavailable>
                  <RegistrationOptions>1</RegistrationOptions>
                  <Registration>
                            <Protocol>SIP</Protocol>
                            <Server>10.80.130.58</Server>
                            <Client>sip:530@10.80.130.58:5060</Client>
                            <MaxMulticastHops>16</MaxMulticastHops>
                            <TimeToLive>300</TimeToLive>
                            <Alias>
                                       <Type>Transparent</Type>
                                       <Data>sip:530@10.80.130.200:5060</Data>
                            </Alias>
                  </Registration>
```

```
<Registration>
                    <Protocol>SIP</Protocol>
                    <Server>10.80.130.58</Server>
                    <Client>sip:531@10.80.130.58:5060</Client>
                    <MaxMulticastHops>16</MaxMulticastHops>
                    <TimeToLive>300</TimeToLive>
                    <Alias>
                              <Type>Transparent</Type>
                              <Data>sip:531@10.80.130.200:5060</Data>
                    </Alias>
          </Registration>
          <Registration>
                    <Protocol>SIP</Protocol>
                    <Server>10.80.130.55</Server>
                    <Client>sip:630@10.80.130.55:5060</Client>
                    <MaxMulticastHops>16</MaxMulticastHops>
                    <TimeToLive>300</TimeToLive>
                    <Alias>
                              <Type>Transparent</Type>
                              <Data>sip:630@10.80.130.200:5060</Data>
                    </Alias>
          </Registration>
          <Registration>
                    <Protocol>SIP</Protocol>
                    <Server>10.80.130.55</Server>
                    <Client>sip:631@10.80.130.55:5060</Client>
                    <MaxMulticastHops>16</MaxMulticastHops>
                    <TimeToLive>300</TimeToLive>
                    <Alias>
                              <Type>Transparent</Type>
<Data>sip:631@10.80.130.200:5060</Data>
                    </Alias>
          </Registration>
          <Authentications>
                    <Authentication>
                              <Realm>ipoffice</Realm>
                              <Identity>sip:530@10.80.130.58:5060</Identity>
                              <UserName>530</UserName>
                              <Password>1234</Password>
                    </Authentication>
                    <Authentication>
                              <Realm>ipoffice</Realm>
                              <Identity>sip:531@10.80.130.58:5060</Identity>
                              <UserName>531</UserName>
                              <Password>1234</Password>
                    </Authentication>
          <Authentication>
                              <Realm>ipoffice</Realm>
                              <Identity>sip:630@10.80.130.55:5060</Identity>
                              <UserName>630</UserName>
                              <Password>1234</Password>
                    </Authentication>
                    <Authentication>
                              <Realm>ipoffice</Realm>
                              <Identity>sip:631@10.80.130.55:5060</Identity>
                              <UserName>631</UserName>
                              <Password>1234</Password>
                    </Authentication>
          </Authentications>
          <Coders>
Options:
Capability
                    FramesPerPacke
                                        VAD
                                                  FrameSize
                             5, 10, 20, 30
                                                            // milliseconds
G711_ALaw_64K
G711_ALaw_56K
                              5, 10, 20, 30
                                                            // milliseconds
G711_ULaw_64K
                              5, 10, 20, 30
                                                            // milliseconds
G711_ULaw_56K
                              5, 10, 20, 30
                                                            // milliseconds
                    <Coder>
```

AT; Reviewed: SPOC 5/23/2016

-->

<!--

<Capability>G711_ALaw_64K</Capability> <Direction>Transmit</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ALaw_64K</Capability> <Direction>Receive</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ALaw_56K</Capability> <Direction>Transmit</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ALaw_56K</Capability> <Direction>Receive</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ULaw_64K</Capability> <Direction>Transmit</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ULaw_64K</Capability> <Direction>Receive</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ULaw_56K</Capability> <Direction>Transmit</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <Coder> <Capability>G711_ULaw_56K</Capability> <Direction>Receive</Direction> <Type>Audio</Type> <FramesPerPacket>20</FramesPerPacket> <VoiceActivityDetection>OFF</VoiceActivityDetection> <PayloadType>Data</PayloadType> </Coder> <!-- T38 fax codec --> <Coder> <Capability>T.38UDP</Capability> <Direction>Both</Direction> <Type>RawData</Type>

<!--

```
<PayloadType>Data</PayloadType>
                                  <DataMaxBitRate>144</DataMaxBitRate>
                      </Coder>
-->
</Coders>
<Alarms>
<!--
QoS Alarm Type:
LostPackets
Jitter
-->
<!--
<Alarm>
           <Type>LostPackets</Type>
           <Threshold>20</Threshold>
           <DebounceOn>10000</DebounceOn>
           <DebounceOff>10000</DebounceOff>
           <Interval>1000</Interval>
           <PercentSuccess>60</PercentSuccess>
           <PercentFail>40</PercentFail>
</Alarm>
<Alarm>
           <Type>Jitter</Type>
           <Threshold>60</Threshold>
           <DebounceOn>20000</DebounceOn>
           <DebounceOff>60000</DebounceOff>
           <Interval>5000</Interval>
           <PercentSuccess>60</PercentSuccess>
           <PercentFail>40</PercentFail>
</Alarm>
-->
</Alarms>
<!--
Operating Mode:
           IP_T38_AUTOMATIC_MODE
           IP_T38_MANUAL_MODE
           IP_T38_MANUAL_MODIFY_MODE
-->
           <OperatingMode>IP_T38_MANUAL_MODIFY_MODE</OperatingMode>
           <StreamingStatus>No</StreamingStatus>
           <EnableEchoCancellation>No</EnableEchoCancellation>
<!--
SIP Extensions for Caller Identity and Privacy
rpi-token = rpi-screen | rpi-pty-type | rpi-id-type | rpi-privacy | other-rpi-token
rpi-screen = "screen" =" ("no" | "yes")
rpi-pty-type = "party" =" ("calling" | "called" | token )
rpi-id-type = "id-type" =" ("subscriber" | "user" | "alias" | "return" | "term" | token )
rpi-privacy = "privacy" "=" 1#(
                 ("full" | "name" | "uri" | "off" | token )
[ "-" ( "network" | token ) ] )
                 ["-" ( "network" | token ) ] )
other-rpi-token = token ["=" (token | quoted-string)]
other-user
               = token | "private"
-->
<!-- <RemotePartyID>party=calling;privacy=off</RemotePartyID>
 -->
```

```
</Configuration>
```

Avaya IP Office routes the calls to IVR based on DNIS as shown below in the routing table to the **TestAvayaInbound** sample application.

| oute | Table | | | | | |
|--------|--------------------|------------------------|------------------|------------------|---|-----------|
| me: F | RouteTable | | | | | |
| - 11 | _ | | | | | |
| etting | s | | | | | |
| Match | i against data in: | Digit Buffer 1 (DNIS1) | | | | |
| | | | | | | |
| oute 1 | Table | | | | | |
| # | Pattern Type | Pattern Data | Destination Type | Destination Data | 1 | Go To |
| 1 | Digit mask | 530@10.80.130.58 | IVR App | TestAvayaInbound | | |
| 2 | Digit mask | 531@10.80.130.58 | IVR App | TestAvayaInbound | | |
| 3 | Digit mask | 630@10.80.130.55 | IVR App | TestAvayaInbound | | |
| 4 | Digit mask | 631@10.80.130.55 | IVR App | TestAvayaInbound | | |
| 5 | Digit mask | 44@10.80.130.55 | IVR App | TestAvayaInbound | | |
| 6 | Digit mask | 44@10.80.130.58 | IVR App | TestAvayaInbound | Г | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | Г | |
| 10 | | | | | Г | |
| 11 | | | | | Г | |
| 12 | | | | | Г | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| | Default | End of table | | | | |
| | , | | Insert Dele | te | | |
| | | | | | | OK Cancel |

5.4. Develop and Deploy IVR Callflow

The following screenshot shows the sample IVR callflow developed on Unibook platform to test SIP trunking solution with IP Office.



6. Verification Steps

To verify a successful configuration of IVR SIP Endpoint and IP Office a call is placed from an IP Office telephone to IVR SIP Endpoint with the caller hearing the prompts from IVR.

6.1. IVR SIP Endpoint to IP Office

Log in to the IP Office Monitor application. From the left hand menu, navigate Status→SIP Phone Status

• Verify Status column is set to SIP:Registered for IVR SIP Endpoint

| The Million | egantui | - | | - | | | | | | | | | 1913 | 2 ; M |
|------------------------------|-------------------|-------------------------------|-----------------|--|-------------------|---|--|-------------|------------|---|---------|--------------------|-------------|-----------|
| Total Config Total Regist | and 4 ered 3 | | Heg | iotexed Status 🔳 | Waing | 2 secs for update | | | | | | | | |
| Estry Nam | Uner Nues | Securly | Behind NAT | PAddett | Traviport | Uner Agent | Licensed | SIF Options | SIP Events | Shalue | Lattiv. | Ladd ^D | Recent . | Fietery . |
| 622 630 631 | 622 630 631 | dostile dostile dustile | | 10.9613052 10.96130200 10.00130200 | UDP UDP UDP | Avaya P Phone 1230 (SIP12-004.0 APEX Omnives3D APEX Omnives3D | Avaya IP 3nd Party IP 3nd Party IP | R R N | тн | SP Repireed SP Repireed SP Repireed | 1/13/2 | 1/21/2. 1/21/2. | 0 0 0 | 0 0 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Display Op | tiona M (* Ra | ngistered | C Unflegistered | Page1 🚖 | Part P | ge Reset Phones Laicel | 1 | | | | | | | |

6.2. Verify Unified Dispatch IVR Application

Verify the inbound calls are received and handled by checking the monitoring tool as shown below:

- IVR prompts are played and follow on the correct selections
- DTMF input is received and accepted
- Calls are transfered to an agent queue if requested
- Upon disconnect, the IVR resource is freed and ready to accept new call request.

| System Administrator X SDP Configuration [localhost] | StartPage IN | | | | 1 | | 17 2 0 | | | 31 | _ | | _ |
|---|---|-------------|------------|-----------|-----------|-----------|----------|-----------|-------------|-------------|-----------|---------------|----------|
| X SDP Configuration [localhost] | Startrage Into Application Server - Interiode Monitor | | | | | | | | | | | | |
| AND REPORT OF THE VERY STATES | 232 VOP | Interface 1 | Options | . Stop | Snapshot | | | | | | | | |
| A 51 IMS Application Server (1) | Device ID | Call ID | Alias | Icon Name | Icon Type | Direction | DNES | ANI | Destination | Eapsed Time | Connected | Call Attempts | Call Cou |
| Applications | 233 | 0 | a thee | | | Idle | | | | 00:00:00 | | 76 | 135 |
| Voice Libraries | 234 | 0 | 1 | | | Idie | | | 1 | 00:00:00 | | 68 | 116 |
| Web Services | 235 | 0 | | | | Idle | | - | | 00:00:00 | | 73 | 125 |
| | 236 | 21000005 | TestAvayaL | GetInput | Menu | Inbound | 44@10.80 | 626219080 | - | 00:00:01 | | 74 | 120 |
| | 237 | 0 | | | | Ide | | | - | 00:00:00 | | 0 | 0 |
| | 238 | 0 | | | 3 | Idie | | | | 00:00:00 | | 0 | 0 |
| | 239 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 240 | 0 | | | 3 | Idle | | | 1 | 00:00:00 | | 0 | 0 |
| | 241 | 0 | | | 1 | Ide | | | | 00:00:00 | | 0 | 0 |
| | 242 | 0 | | | 1 | Idle | | | | 00:00:00 | | 0 | 0 |
| | 243 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 244 | 0 | | | 1 | Idie | | | | 00:00:00 | | 0 | 0 |
| | 245 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 246 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 247 | 0 | | | | Ide | | | | 00:00:00 | | 0 | 0 |
| | 248 | 0 | | | 1 | Idle | | | | 00:00:00 | | 0 | 0 |
| | 249 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 250 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 251 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 252 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 253 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 254 | 0 | | | | Idie | | | | 00:00:00 | | 0 | 0 |
| | 255 | 0 | | | - | Idle | | | | 00:00:00 | | 0 | 0 |
| | 256 | 0 | | | | Idie | | | | 00:00:00 | | 0 | 0 |
| | 257 | 0 | | | | Ide | | | | 00:00:00 | | 0 | 0 |
| | 258 | 0 | | | | Ide | | | | 00:00:00 | | 0 | 0 |
| | 259 | 0 | | | | Idle | | | | 00:00:00 | | 0 | 0 |
| | 260 | 0 | | | | Idie | | - | | 00:00:00 | | 0 | 0 |
| | 261 | 0 | | | | Ide | | | | 00:00:00 | | 0 | 0 |
| | 262 | 0 | | | | Idle | | | 1 | 00:00:00 | | 0 | 0 |

7. Conclusion

These Application Notes describe the configuration steps required for Unified Dispatch Unibook IVR platform to successfully interoperate with Avaya IP Office Server with IP500V2 Expansion. All feature functionality and serviceability test cases were completed successfully with exceptions noted in **Section 2.2**.

8. Additional References

This section references the Avaya and Unified Dispatch documentation relevant to these Application Notes.

Product documentation for Avaya products may be found at <u>http://support.avaya.com</u>.

- [1] <u>Deploying IP Office Server Edition Solution, October 2015</u>
- [2] Administering Avaya IP Office Platform with Manager, November 2015
- [3] Using IP Office Platform System Status, August 2015

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