



Avaya Solution & Interoperability Test Lab

Application Notes for T-Metrics Contact Center with Avaya IP Office Server Edition – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for T-Metrics Contact Center to interoperate with Avaya IP Office Server Edition.

T-Metrics Contact Center is a multi-channel contact center solution that can handle voice, email, web chat, video, social media, and SMS contacts. The compliance testing focused on the voice integration with Avaya IP Office Server Edition using the SIP user interface.

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 T-Metrics Contact Center to interoperate with Avaya IP Office Server Edition. Contact Center is a multi-channel contact center solution that can handle voice, email, web chat, video, social media, and SMS contacts. The compliance testing focused on the voice integration with IP Office Server Edition using the SIP user interface.

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) trunks.

The Contact Center solution consisted of the Contact Center server, ACD Agent Module and SIP Softphone client applications running on the agent and supervisor desktops.

The Contact Center server integrated with the primary IP Office system with virtual SIP users, and the SIP Softphone on each agent and supervisor desktop integrated with the local IP Office system as a SIP user. The agent used the ACD Agent Module application to log into Contact Center and to set agent status, with ACD functionality provided by Contact Center.

Incoming calls from PSTN to a group on IP Office were routed over an available virtual SIP user group member to the Contact Center server. Contact Center played a greeting announcement, collected DTMF for menu navigation, and used SIP REFER to transfer calls to available agents. Agents used the SIP Softphone application to answer and control calls at the desktops.

The conference feature was accomplished via the SIP Softphone application by local bridge of talk paths for active calls at the agent desktop. The supervisor monitor feature was accomplished by the ACD Agent Module application with proprietary implementation that does not involve IP Office.

2. General Test Approach and Test Results

The feature test cases were performed manually. Upon start of the Contact Center application, the server automatically registered virtual SIP users with the primary IP Office system. For the Contact Center agents and supervisor, the SIP Softphone client application automatically registered as a SIP user with the local IP Office system as part of application launch.

For the manual part of testing, incoming calls were made to the groups configured on the primary IP Office system that terminated to Contact Center and transferred by Contact Center to available agents. Manual call controls from the SIP Softphone client application were exercised to verify remaining features such as answering and transferring of calls.

The serviceability test cases were performed manually such as disconnecting/reconnecting the Ethernet connection to the Contact Center server and/or client.

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 this Application Note, the interface between Avaya systems and Contact Center did not include use of any specific encryption features as requested by T-Metrics.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Contact Center:

- Proper handling of SIP exchanges including registration, DTMF, OPTIONS, G.711MU, codec negotiation, and media shuffling.
- Proper handling of call scenarios including incoming calls to different groups, screen pop, answer, decline, hold/resume, mute/unmute, drop, abort, blind/supervised transfer, supervised conference, non-ACD call, queuing, outgoing call, multiple skills, multiple calls, multiple agents, long duration, park/unpark, do not disturb setting at the softphone, and recording of basic calls.

The feature testing call flows included calls within a single IP Office system, as well as calls between the two IP Office systems.

The serviceability testing focused on verifying the ability of Contact Center to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection to the Contact Center server and client.

2.2. Test Results

All test cases were executed, and the following were observations on Contact Center:

- By design, the ACD Agent Module is only populated for ACD calls. An ACD call that has been transferred or conferenced is no longer considered ACD by Contact Center, and therefore the data from the original agent's ACD Agent Module is not populated on the transferred-to and conference-to agent desktop.
- Voicemail and MWI features are not supported for the Contact Center agents and supervisors.
- The special character “#” is not supported by SIP Softphone as part of short code dial string.
- Should the registration fail for the first virtual SIP user, no attempt is made to register subsequent virtual SIP users. Contact Center can be configured to auto generate and upload history files upon specific SIP error types for T-Metrics Support to review and become aware of such issues.
- Should the agent desktop experience a 60 seconds Ethernet disruption with an active call that was dropped post recovery, the SIP Softphone may continue to reflect an active call. The agent can restart the ACD Agent Module and SIP Softphone applications to resolve the problem and reboot the desktop and reach out to T-Metrics Support should problem continue to linger.

2.3. Support

Technical support on Contact Center can be obtained through the following:

- **Phone:** +1 (704) 525-5551 opt 2
- **Email:** support@tmetrics.com
- **Web :** <http://service.tmetrics.com/servicedesk/customer/user/login>

3. Reference Configuration

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

As shown in **Figure 1**, SIP users were used between the Contact Center server with the primary IP Office system, and between each SIP Softphone client application with the local IP Office system. There is also connectivity between each ACD Agent Module client application with the Contact Center server.

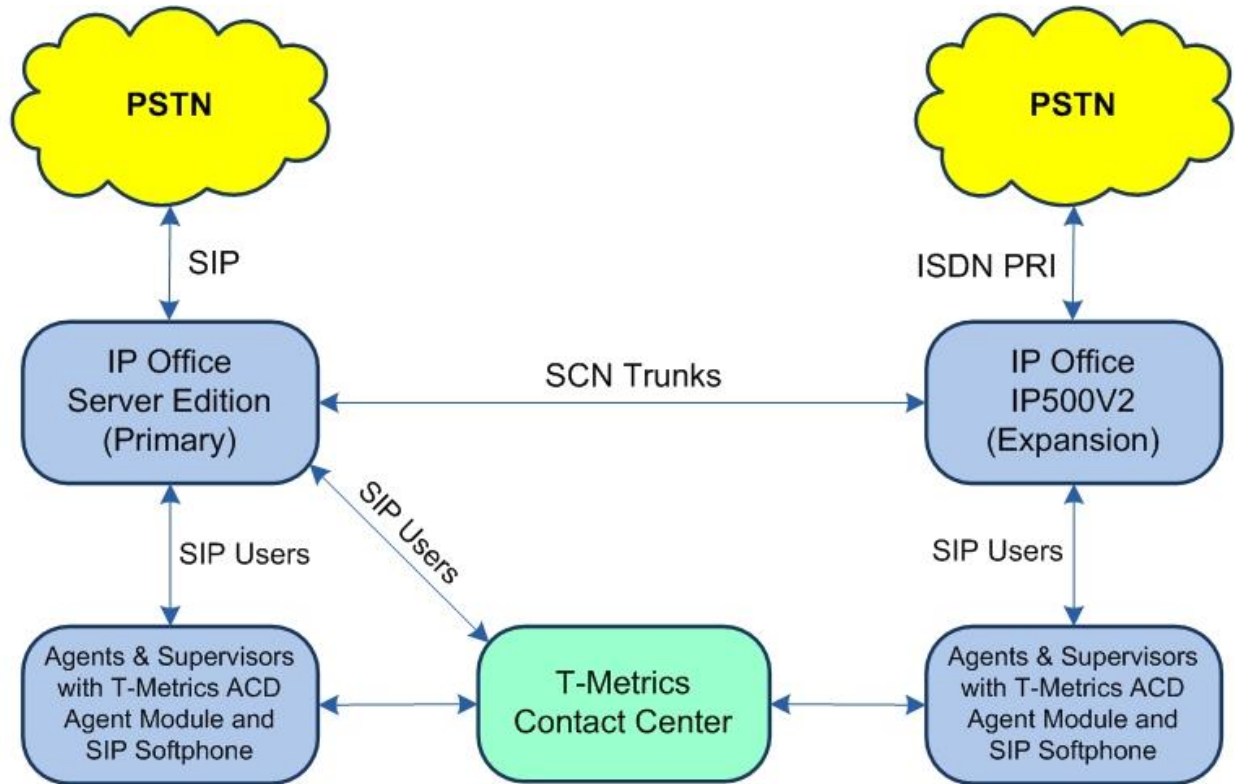


Figure 1: Compliance Testing Configuration

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	11.0.4.1.0
Avaya IP Office on IP500V2 (Expansion)	11.0.4.1.0
T-Metrics Contact Center on Windows Server 2016 <ul style="list-style-type: none">• ACD Controller Module• DigiSIP Module	Standard 5.0 4.0
T-Metrics ACD Agent Module and T-Metrics SIP Softphone on Windows 10 Pro	19 Aug 19 n04 Sep 19

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 the IP Office systems. The procedures include the following area:

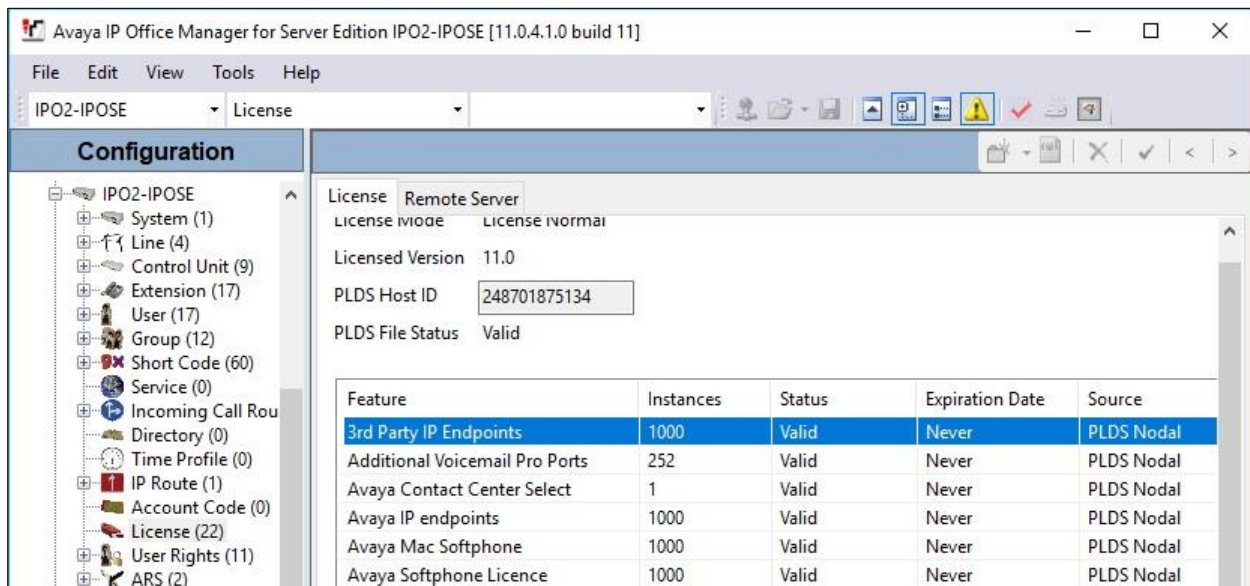
- Verify license
- Administer system
- Administer extension
- Administer user
- Administer group

5.1. Verify License

From a PC running the IP Office Manager application, select **Start → Programs → IP Office → 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** under the IP Office system, in this case “IPO2-IPOSE”, followed by **License** to display licenses in the right pane. Verify that there is sufficient license for **3rd Party IP Endpoints** as shown below.

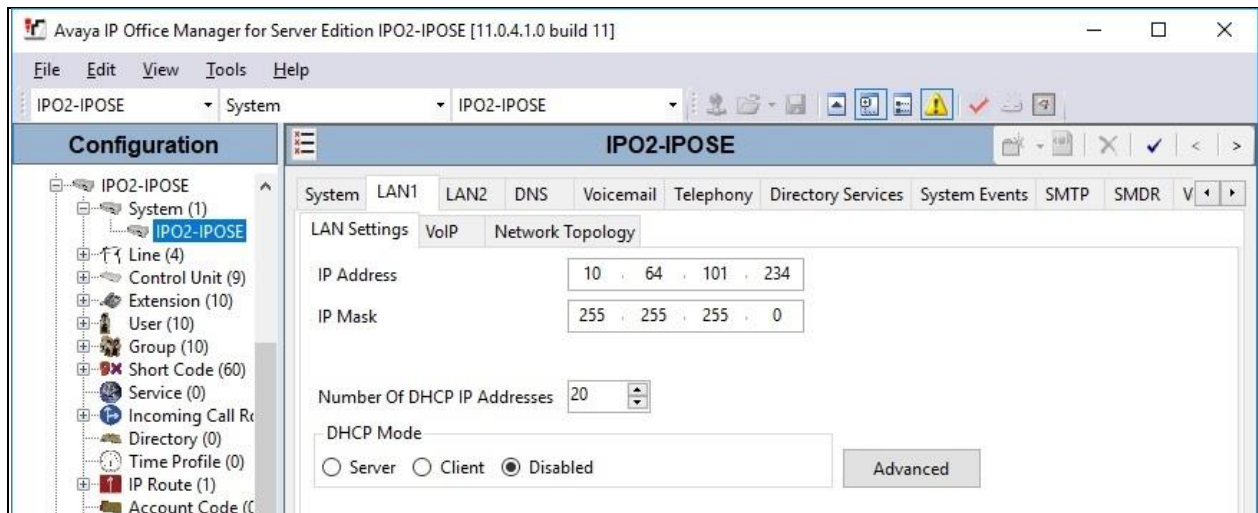


Feature	Instances	Status	Expiration Date	Source
3rd Party IP Endpoints	1000	Valid	Never	PLDS Nodal
Additional Voicemail Pro Ports	252	Valid	Never	PLDS Nodal
Avaya Contact Center Select	1	Valid	Never	PLDS Nodal
Avaya IP endpoints	1000	Valid	Never	PLDS Nodal
Avaya Mac Softphone	1000	Valid	Never	PLDS Nodal
Avaya Softphone Licence	1000	Valid	Never	PLDS Nodal

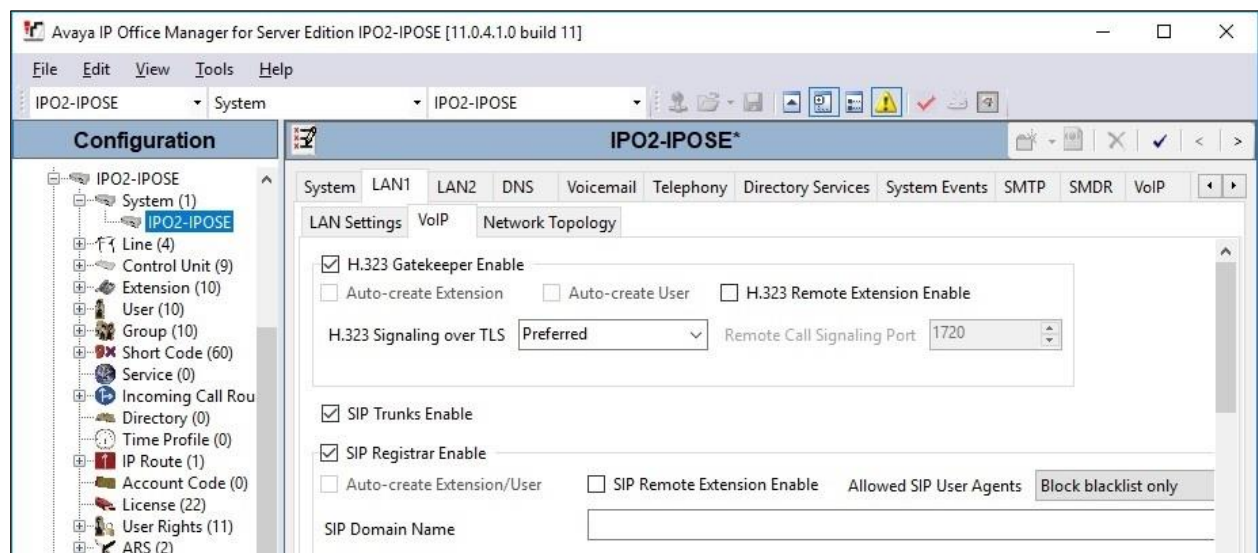
5.2. Administer System

From the configuration tree in the left pane, select **System** under the primary IP Office system to display the system screen in the right pane.

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 Contact Center. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked as shown below. Retain the default values in the remaining fields.



5.3. Administer Extension

From the configuration tree in the left pane, right-click on **Extension** under the primary IP Office system, and select **New → SIP Extension** from the pop-up list to add a new SIP extension.

For **Base Extension**, enter an available extension number for the first virtual SIP, in this case “21991”.

Enter desired password for **Phone Password** and **Confirm Phone Password**.

Avaya IP Office Manager for Server Edition IPO2-IPOSE [11.0.4.1.0 build 11]

File Edit View Tools Help

IPO2-IPOSE Extension 11200 21041

Configuration

- BOOTP (5)
- Operator (3)
- Solution
 - User(18)
 - Group(12)
 - Short Code(51)
 - Directory(0)
 - Time Profile(0)
 - Account Code(0)
 - User Rights(10)
 - Location(1)
 - IPO2-IPOSE
 - System (1)
 - Line (4)
 - Control Unit (9)
 - Extension (10)**
 - User (10)
 - Group (10)
 - Short Code (60)
 - Service (0)
 - Incoming Call Route
 - Directory (0)
 - Time Profile (0)
 - IP Route (1)
 - Account Code (0)
 - License (22)

SIP Extension: 8000 *

Extension VoIP

Extension ID: 8000

Base Extension: 21991

Phone Password:

Confirm Phone Password:

Caller Display Type: On

Reset Volume After Calls: ☐

Device Type: Unknown SIP device

Location: Automatic

Fallback As Remote Worker: Auto

Module: 0

Port: 0

Disable Speakerphone: ☐

Select the **VoIP** tab. If **Requires DTMF** is shown, then check the parameter. Note that this parameter appears only when the associated parameter **Ignore DTMF Mismatch for Phones** is enabled for the system.

For **Codec Selection**, select “Custom”. Retain only the **G.711 ULAW 64K** codec in the **Selected** column, which is the only codec supported by Contact Center.

Retain the default values in the remaining fields.

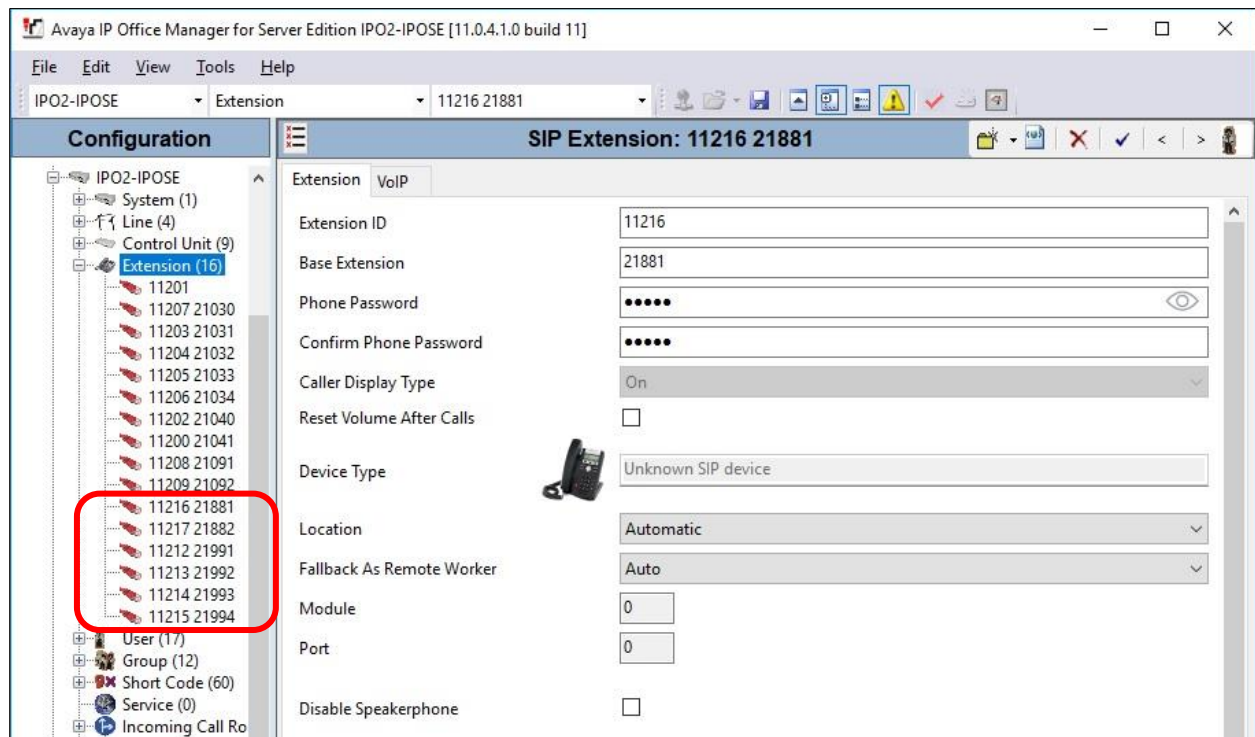
The screenshot displays the Avaya IP Office Manager for Server Edition IPO2-IPOSE [11.0.4.1.0 build 11] configuration window. The window is titled "SIP Extension: 8000 *". The left sidebar shows a tree view of the configuration hierarchy, including BOOTP (5), Operator (3), Solution, User(28), Group(14), Short Code(51), Directory(0), Time Profile(0), Account Code(0), User Rights(10), Location(1), IPO2-IPOSE, System (1), Line (4), Control Unit (9), Extension (10), User (17), Group (12), Short Code (60), Service (0), Incoming Call Route, Directory (0), Time Profile (0), IP Route (1), Account Code (0), License (22), User Rights (11), ARS (2), Location (2), Authorization Code, IPO2-IP500V2, and System (1). The main configuration area is divided into two tabs: "Extension" and "VoIP". The "VoIP" tab is selected, showing the following configuration options:

- IP Address:** 0 . 0 . 0 . 0
- Codec Selection:** Custom
 - Unused:** G.711 ALAW 64K, G.729(a) 8K CS-ACELP
 - Selected:** G.711 ULAW 64K
- Requires DTMF:** ☒
- Local Hold Music:** ☐
- Re-invite Supported:** ☒
- Codec Lockdown:** ☐
- Allow Direct Media:** ☒
- Reserve License:** None
- Fax Transport Support:** None
- DTMF Support:** RFC2833/RFC4733
- 3rd Party Auto Answer:** None
- Media Security:** Same as System (Preferred)
- Advanced Media Security Options:** ☒ Same As System

Repeat this section to add all virtual SIP extensions on the primary IP Office system. In the compliance testing, four extensions “21991-4” were configured as shown below.

Repeat this section to add all agent and supervisor extensions on the primary IP Office and leave the **Requires DTMF** parameter at the default value if appears. In the compliance testing, two extensions “21881” and “21882” were configured as shown below. The same two agent extensions also doubled up as supervisors in the testing with supervisor permissions assigned on Contact Center.

Repeat this section to add all agent and supervisor extensions on the expansion IP Office and leave the **Requires DTMF** parameter at the default value if appears. In the compliance testing, two extensions “22881” and “22882” were configured (not shown). The same two agent extensions also doubled up as supervisors in the testing with supervisor permissions assigned on Contact Center.



5.4. Administer User

From the configuration tree in the left pane, right-click on **User** under the primary IP Office system, and select **New** from the pop-up list. For **Name** and **Full Name**, enter desired values for the first virtual SIP. For **Extension**, enter the first virtual SIP base extension from **Section 5.3**.

Avaya IP Office Manager for Server Edition IPO2-IPOSE [11.0.4.1.0 build 11]

File Edit View Tools Help

IPO2-IPOSE User 21041 SIP-2 Primary

Configuration

User Voicemail DND Short Codes Source Numbers Telephony Forwarding Dial In Voice Recording Button Program

Name Queue-1

Password

Confirm Password

Unique Identity

Conference PIN

Confirm Audio Conference PIN

Account Status Enabled

Full Name Queue-1

Extension 21991

Email Address

Locale

Priority 5

System Phone Rights None

Profile Basic User

☐ Receptionist

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

Avaya IP Office Manager for Server Edition IPO2-IPOSE [11.0.4.1.0 build 11]

File Edit View Tools Help

IPO2-IPOSE User 21041 SIP-2 Primary

Configuration

User Voicemail DND Short Codes Source Numbers Telephony Forwarding Dial In Voice Recording Button Program

Voicemail Code

Confirm Voicemail Code

Voicemail Email

☐ Voicemail On

☐ Voicemail Help

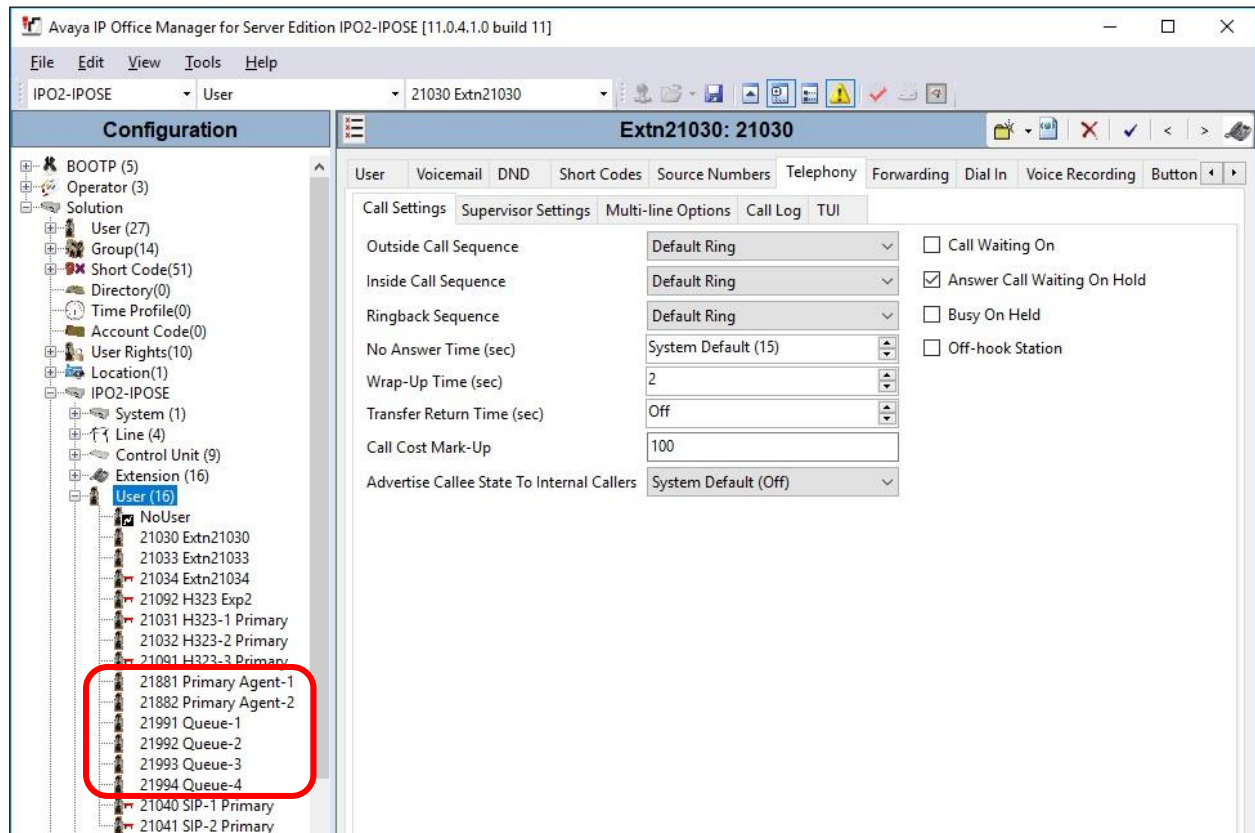
☐ Voicemail Ringback

☐ Voicemail Email Reading

☐ UMS Web Services

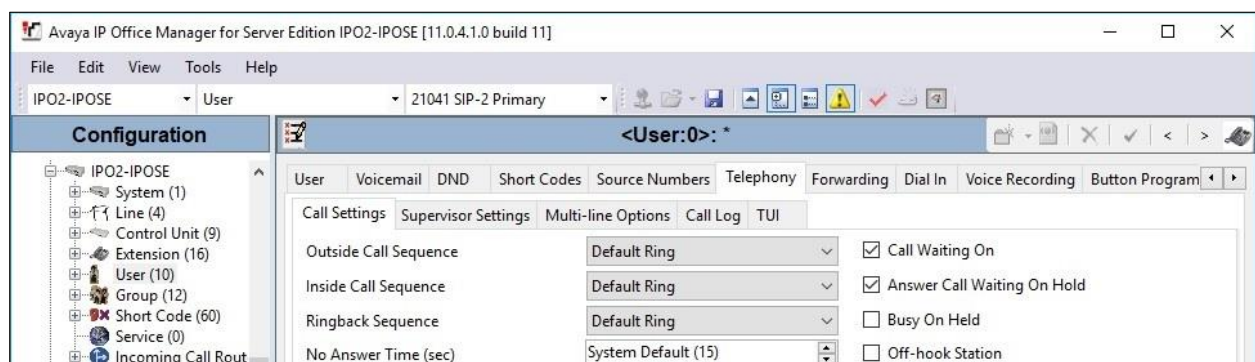
☐ Enable GMAIL API

Repeat this section to add all virtual SIP users on the primary IP Office system. In the compliance testing, four users with base extensions “21991-4” were configured as shown below.



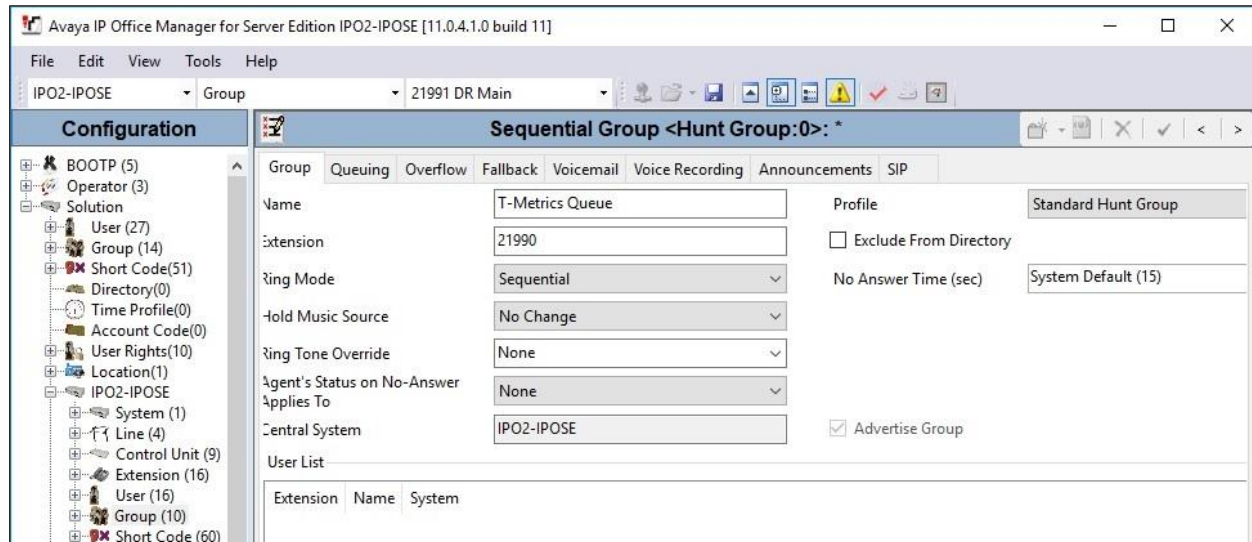
Repeat this section to add all agent and supervisor users on the primary IP Office system, and check **Call Waiting On** under **Telephony → Call Settings**. In the compliance testing, two users with base extensions “21881-2” were configured as shown above.

Repeat this section to add all agent and supervisor users on the expansion IP Office system, and check **Call Waiting On** under **Telephony → Call Settings**. In the compliance testing, two users with base extensions “22881-2” were configured (not shown).

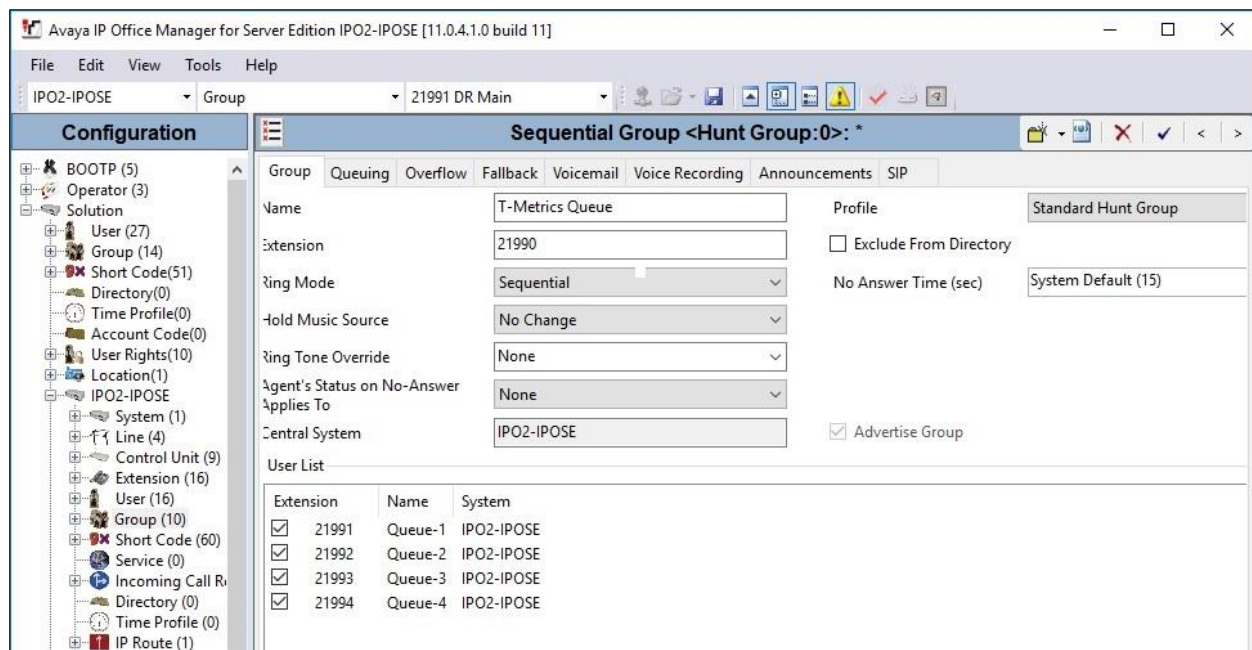


5.5. Administer Group

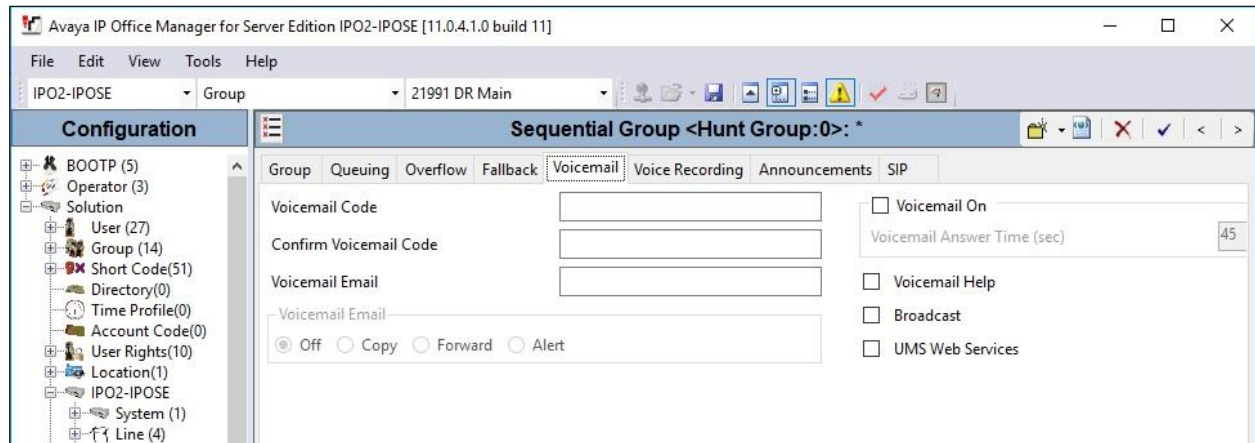
From the configuration tree in the left pane, right-click on **Group** under the primary IP Office system and select **New** from the pop-up list to add a new group. For **Name** and **Extension**, enter desired values.



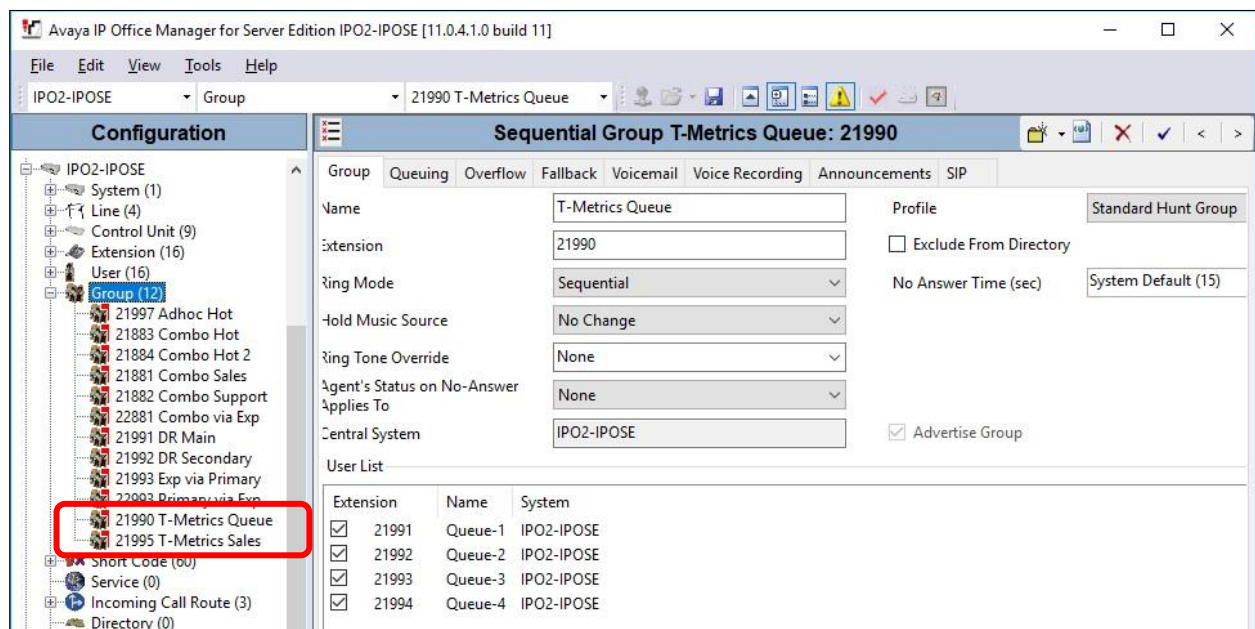
In the **User List** sub-section, click on **Edit** (not shown) to add members. In the next screen (not shown), select all virtual SIP users from **Section 5.4**. The resultant screen after the selection is shown below.



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



Repeat this section to add all desired groups on the primary IP Office system. In the compliance testing, two groups with extensions “21990” and “21995” were configured as shown below.



6. Configure T-Metrics Contact Center

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

- Administer Digital Phone Module
- Administer ACD Controller
- Administer ACD Agent Module
- Administer SIP Softphone

The configuration of Contact Center is performed by T-Metrics installers. Screenshots of integration related configuration are shown in these Application Notes for information purposes only.

6.1. Administer Digital Phone Module

From the Contact Center server, launch the Digital Phone Module application. In the **Keys** table, create an entry for each virtual SIP extension from **Section 5.3** as shown below.

The screenshot shows the 'SIP T-Metrics Digital Phone Module DB Settings' window. Under 'Other Tables', the 'Keys' table is selected. The table has the following columns: Key, Phone#, FeatureCode, PseudoKey, LogonName, Password, FwdAddress, SIP_PhNumber, SwitchGroup, and DoNotRegister. The data rows are as follows:

Key	Phone#	FeatureCode	PseudoKey	LogonName	Password	FwdAddress	SIP_PhNumber	SwitchGroup	DoNotRegister
101	001-0101	Directory Number Key	<input type="checkbox"/>	21991	+++++		21991		<input type="checkbox"/>
201	001-0201	Directory Number Key	<input type="checkbox"/>	21992	+++++		21992		<input type="checkbox"/>
301	001-0301	Directory Number Key	<input type="checkbox"/>	21993	+++++		21993		<input type="checkbox"/>
401	001-0401	Directory Number Key	<input type="checkbox"/>	21994	+++++		21994		<input type="checkbox"/>
*			<input type="checkbox"/>						<input type="checkbox"/>

Below the table, a note states: 'The port 1 key numbers start at 101, the port 2 key numbers start at 201, etc. unless we have just one port.'

In the **PortSettings** table, configure the IP address of the primary IP Office system along with the pertinent transport protocol and port as shown below.

The screenshot shows the 'SIP T-Metrics Digital Phone Module DB Settings' window with the 'PortSettings' table selected. The table has columns: LocalAddress, RemoteAddress, RemotePort, Domain, Port_Under_Test, ConnectionNumber1, TLS, TCP, SRTP, CertificateSubject, and MachineCert. The first row is highlighted with LocalAddress set to 10.64.101.234, RemotePort to 5060, and TCP checked.

	LocalAddress	RemoteAddress	RemotePort	Domain	Port_Under_Test	ConnectionNumber1	TLS	TCP	SRTP	CertificateSubject	MachineCert
▶	10.64.101.234		5060	10.64.101.234	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
*					<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Scroll to the right and set **UserAgent_Override** to “T-Metrics_Digi” as shown below.

The screenshot shows the same 'SIP T-Metrics Digital Phone Module DB Settings' window, but the table is scrolled to the right. The 'UserAgent_Override' column is now visible and set to 'T-Metrics_Digi'.

	LocalAddress	RemoteAddress	cedOnHold	CompleteXferAfterAnswer	Presence_RingTimeBuffer_mSecs	UserAgent_Override	PlaceCallOnHoldBeforeXfer
▶		10.64.101.234		<input checked="" type="checkbox"/>	400	T-Metrics_Digi	<input type="checkbox"/>
*				<input type="checkbox"/>			<input type="checkbox"/>

In the **Settings** table, scroll as necessary and set **SwitchType** to “STD SIP Switch”.

The screenshot shows the 'SIP T-Metrics Digital Phone Module DB Settings' window with the 'Settings' table selected. The table has columns: ProgramName, ServerPort, Server, WavFileCompression, SwitchType, UseHoldForMOH, NumberOfRings, DropDestIfSourceDrops, and UseSpeechRec. The first row is highlighted with ProgramName set to SIP_TMI, ServerPort to 21, Server to 127.0.0.1, and SwitchType set to STD SIP Switch.

	ProgramName	ServerPort	Server	WavFileCompression	SwitchType	UseHoldForMOH	NumberOfRings	DropDestIfSourceDrops	UseSpeechRec
▶	SIP_TMI	21	127.0.0.1	<input type="checkbox"/>	STD SIP Switch	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*				<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

6.2. Administer ACD Controller

From the Contact Center server, launch the ACD Controller application. In the **Agents** table, create an entry for each agent and supervisor user from **Section 5.4**. For ease of compliance testing, all users were given administrative rights.

The screenshot shows the T-Metrics ACD Controller application window. The 'Database Settings' tab is selected. Under 'Choose Table', the 'Agents' radio button is selected. The table below lists agent and supervisor information.

	LogonName /	Administrator	UseThisNameToLogon	TotalWeightAllowed	Weight_Of_Emails	Weight_Of_WebChats
	Exp Agent1	<input checked="" type="checkbox"/>	PC30\slt3	1	0	0
	Exp Agent2	<input checked="" type="checkbox"/>	PC40\Bob	1	0	0
	Pri Agent1	<input checked="" type="checkbox"/>	PC20\slt2	1	0	0
	Pri Agent2	<input checked="" type="checkbox"/>	PC50\Chris	1	0	0
	ServerAdmin	<input checked="" type="checkbox"/>	WIN-04BJ0H03F1J\Administrator	1	0	0
▶*		<input type="checkbox"/>				

Expanded View

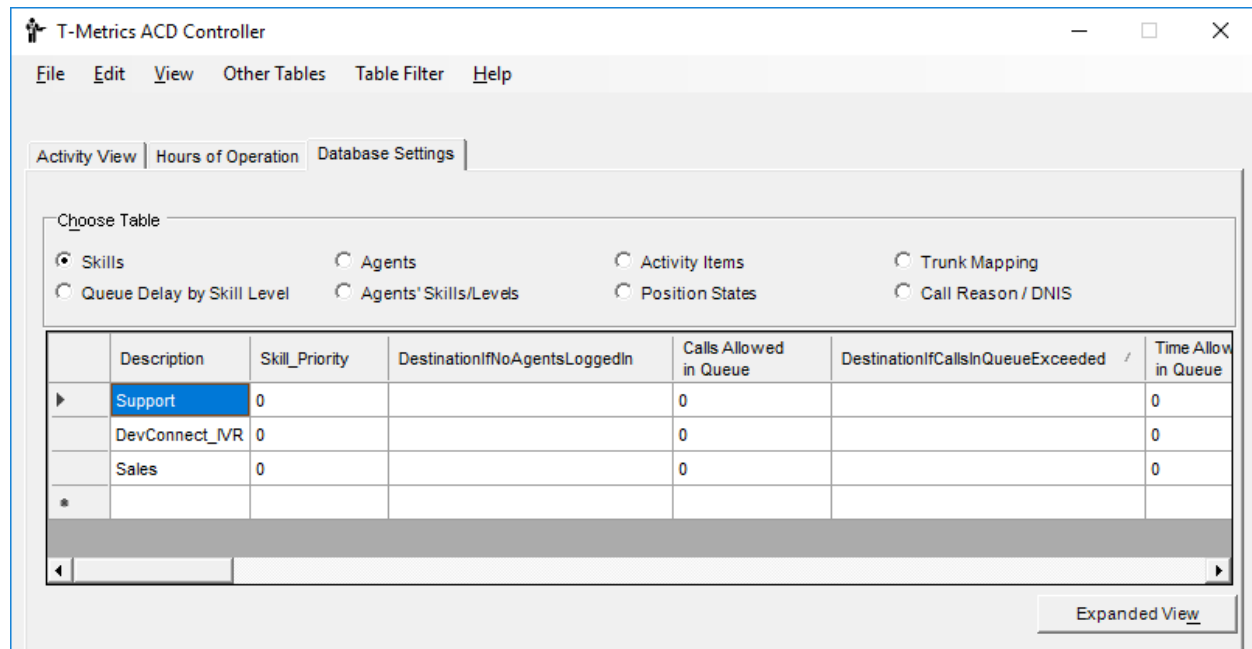
Connected to Server: 127.0.0.1

In the **Call Reason / DNIS** table, create an entry for each group number from **Section 5.5**.

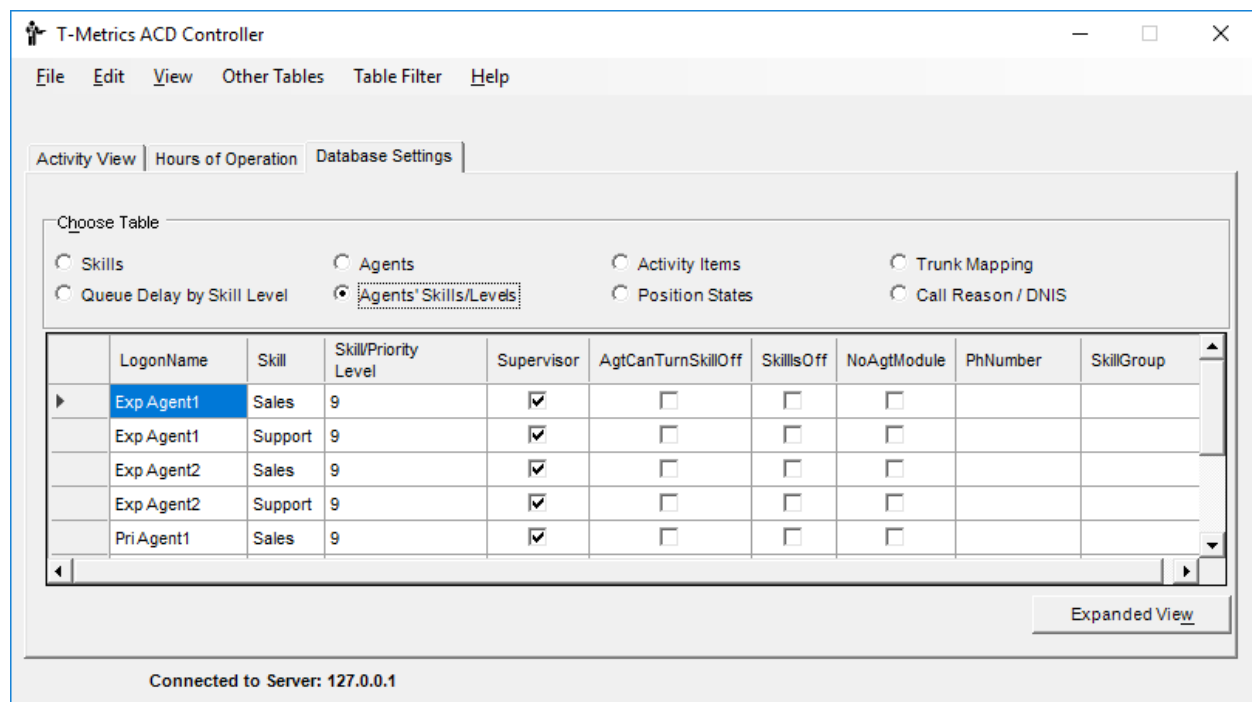
The screenshot shows the T-Metrics ACD Controller application window. The 'Database Settings' tab is selected. Under 'Choose Table', the 'Call Reason / DNIS' radio button is selected. The table below lists call reason and DNIS information.

	DisplayToMatch	ExcludeDigits	DefaultSkillset	InitialIVRState	JSON_CallTree	Order	Notes
▶	21990	0	DevConnect_IVR	5000		0	
	21995	0	DevConnect_IVR	6900		0	
	Default	0	DevConnect_IVR	5000		0	
*							

In the **Skills** table, create an entry for each pertinent skill. In the compliance testing, “Sales” and “Support” were used.



In the **Agents' Skills/Levels** table, create an entry for each skill supported by an agent as shown below. For ease of compliance testing, all agents were given supervisor permissions.

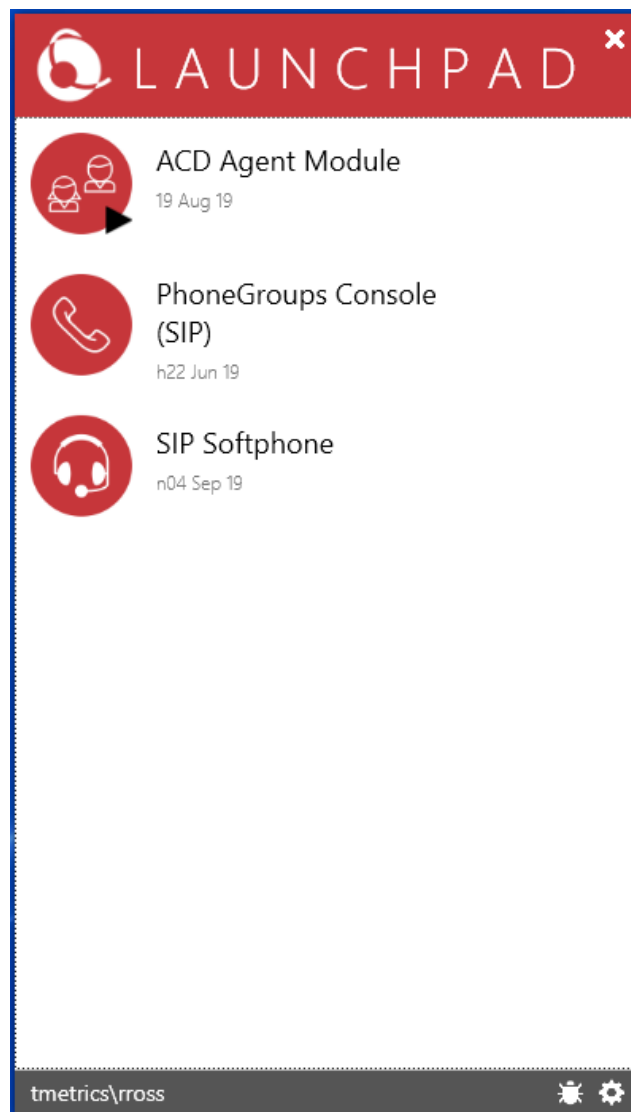


6.3. Administer ACD Agent Module

From the agent desktop, double-click on the Launchpad shortcut icon shown below, which was created as part of T-Metrics installation.



The **LAUNCHPAD** screen is displayed. Select **ACD Agent Module**.



For initial access, configure settings as shown below, where “10.64.101.205” is the IP address of the Contact Center server, and “21881” is the pertinent agent extension from **Section 5.3**, in this case the first agent extension on the primary IP Office system.

Options -- Contact Center Agent

Connections and Miscellaneous Settings

This screen allows you to setup connections to TM-2000 servers. These connections are shown in the order of their precedence and will allow you to log into the ACD Agent Module.

Available Connections

- Default Connection

Connection Description

Description	Default Connection
Server Address	10.64.101.205
Connection State	Active

Telephony Interface Details

Interface	T-Metrics Softphone/Console
Primary ACD DN	21881
ACD Redirects	Enabled
Auto-Answer	<input type="checkbox"/>
Switch Group	1

Buttons: New, Delete, Move Up, Move Down, Set Default Connections, Save, Cancel, Apply

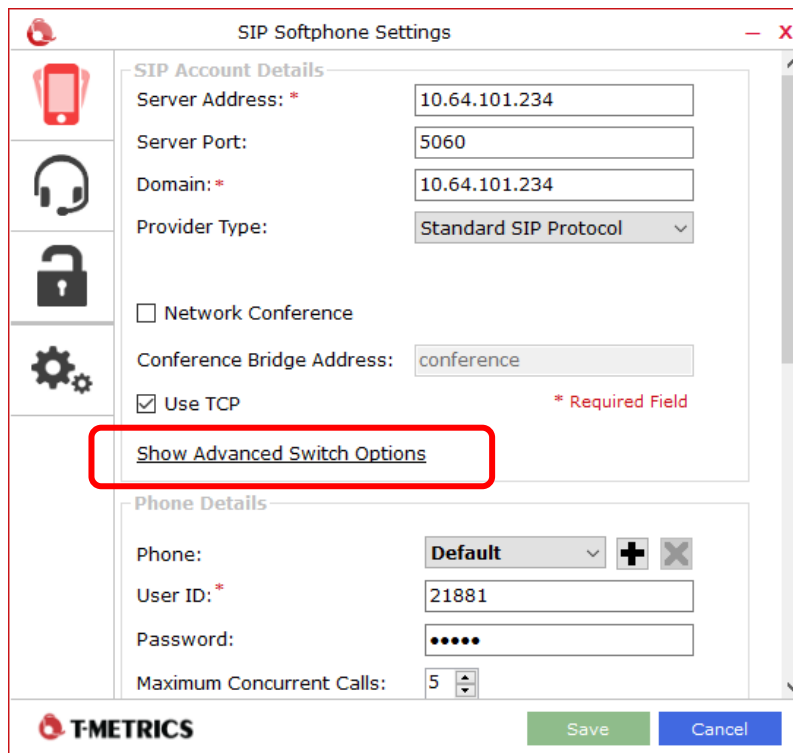
6.4. Administer SIP Softphone

From the agent desktop, select **SIP Softphone** from the **LAUNCHPAD** screen.



For initial access, configure settings as shown below, where “10.64.101.234” is the IP address of the pertinent IP Office system. For **User ID** and **Password**, use the pertinent agent extension credentials from **Section 5.3**.

In the compliance testing, “10.64.101.234” corresponded to the primary IP Office system, and “21881” is the first agent extension on the primary IP Office system. Click on **Show Advanced Switch Options**.



SIP Softphone Settings

SIP Account Details

Server Address: * 10.64.101.234

Server Port: 5060

Domain: * 10.64.101.234

Provider Type: Standard SIP Protocol

☐ Network Conference

Conference Bridge Address: conference

☒ Use TCP * Required Field

[Show Advanced Switch Options](#)

Phone Details

Phone: Default + X

User ID: * 21881

Password:

Maximum Concurrent Calls: 5

T-METRICS Save Cancel

Scroll down to the end of the **Advanced Switch Options** and set **User Agent** to “T-Metrics_Softphone” as shown below.



SIP Softphone Settings

☒ Identify the SIP user agent to use

User Agent T-Metrics_Softphone

Phone Details

Phone: Default + X

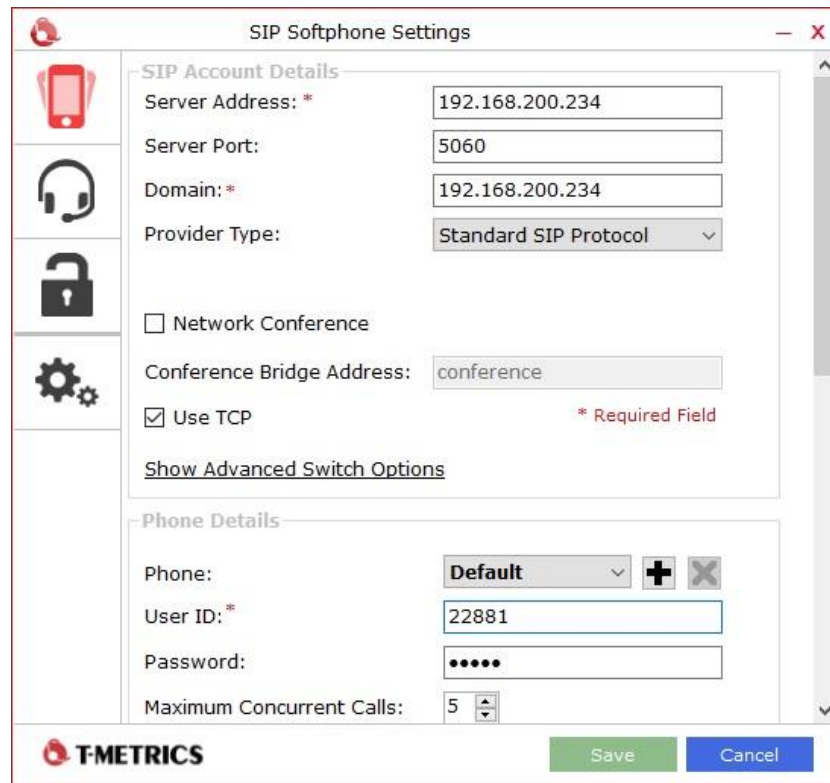
User ID: * 21881

Password:

Maximum Concurrent Calls: 5

☒ Report the state of this account to the contact center

For agents on the expansion IP Office system, use the IP address and agent extension credentials associated with the expansion IP Office system as shown below.



The screenshot displays the 'SIP Softphone Settings' window, which is divided into two main sections: 'SIP Account Details' and 'Phone Details'. The 'SIP Account Details' section includes fields for 'Server Address' (192.168.200.234), 'Server Port' (5060), 'Domain' (192.168.200.234), and 'Provider Type' (Standard SIP Protocol). It also features a checkbox for 'Network Conference' and a 'Conference Bridge Address' field (conference). The 'Use TCP' checkbox is checked, and a red asterisk indicates it is a required field. A link for 'Show Advanced Switch Options' is present. The 'Phone Details' section includes a 'Phone' dropdown (Default), 'User ID' (22881), 'Password' (masked with dots), and 'Maximum Concurrent Calls' (5). The window has a sidebar with icons for a phone, headset, lock, and settings. The T-METRICS logo is at the bottom left, and 'Save' and 'Cancel' buttons are at the bottom right.

SIP Account Details	
Server Address: *	192.168.200.234
Server Port:	5060
Domain: *	192.168.200.234
Provider Type:	Standard SIP Protocol
<input type="checkbox"/> Network Conference	
Conference Bridge Address:	conference
<input checked="" type="checkbox"/> Use TCP	* Required Field
Show Advanced Switch Options	

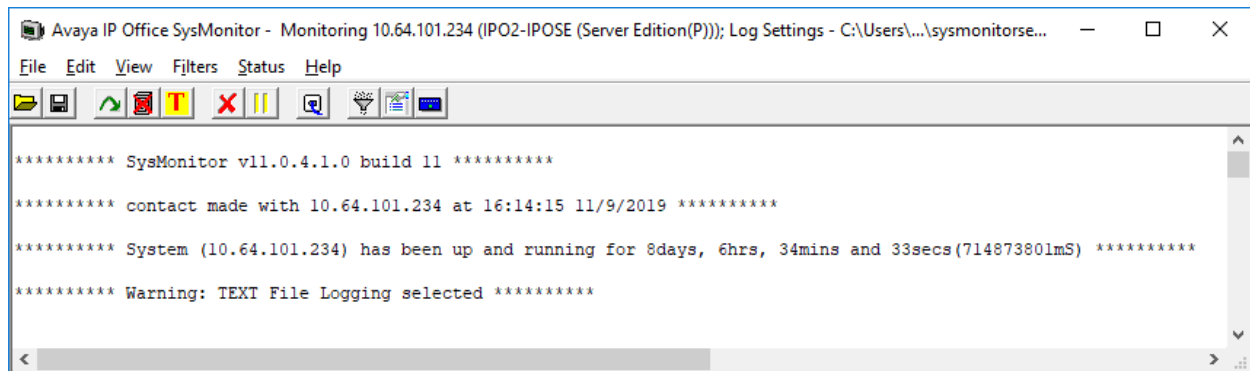
Phone Details	
Phone:	Default
User ID: *	22881
Password:
Maximum Concurrent Calls:	5

7. Verification Steps

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

7.1. Verify Avaya IP Office

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

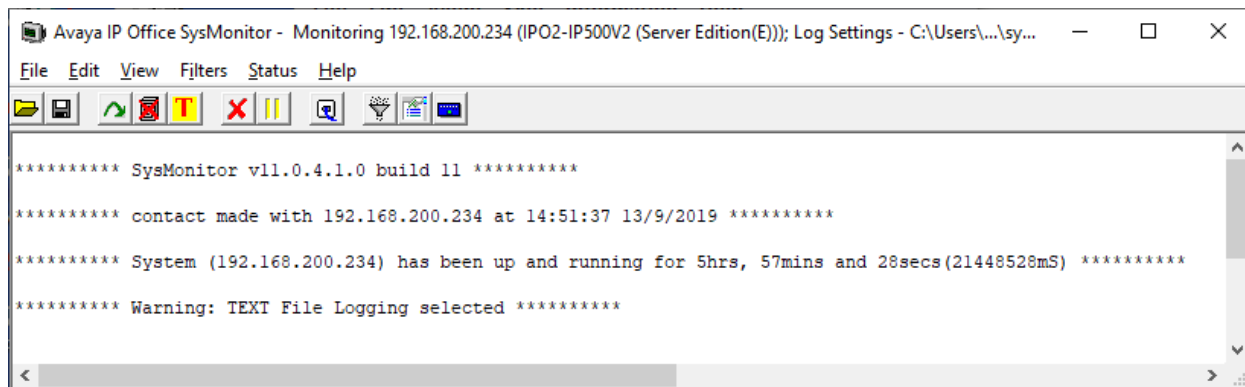


The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each virtual SIP extension from **Section 5.3** and that the **Status** is “SIP: Registered” as shown below.

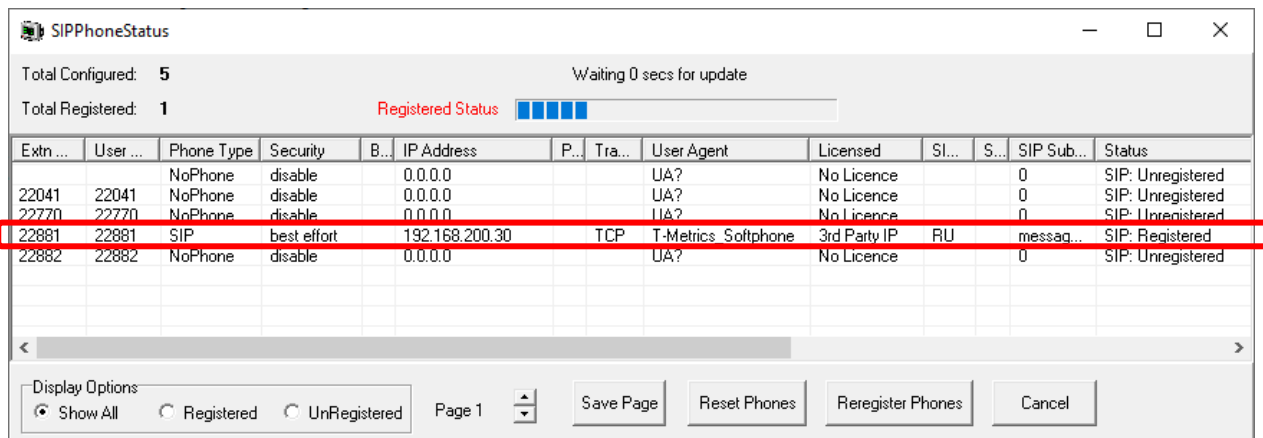
Also verify that there is an entry for each agent and supervisor extension from **Section 5.3** that have both ACD Agent Module and SIP Softphone launched on the desktop. Note that the SIP Softphone auto registers with IP Office upon launch.

Extn Num	User Num	Phone Type	Security	B.	IP Address	P.	Transport	User Agent	Licensed	SIP...	S	S.	Status
21041	21041	J129 SIP	best effort		192.168.200.1...		TLS	Avaya J129 IP Phone 4.0.0.0.21 (21)	Avaya IP	RU	a...		SIP: Registered
		NoPhone	disable		0.0.0.0			UA?	No Licence		0		SIP: Unregistered
21040	21040	NoPhone	disable		0.0.0.0			UA?	No Licence		0		SIP: Unregistered
21991	21991	SIP	best effort		10.64.101.205		TCP	T-Metrics_Digi	3rd Party IP	RU	0		SIP: Registered
21992	21992	SIP	best effort		10.64.101.205		TCP	T-Metrics_Digi	3rd Party IP	RU	0		SIP: Registered
21993	21993	SIP	best effort		10.64.101.205		TCP	T-Metrics_Digi	3rd Party IP	RU	0		SIP: Registered
21994	21994	SIP	best effort		10.64.101.205		TCP	T-Metrics_Digi	3rd Party IP	RU	0		SIP: Registered
21881	21881	SIP	best effort		192.168.200.20		TCP	T-Metrics_Softphone	3rd Party IP	RU	m...		SIP: Registered
21882	21882	SIP	best effort		192.168.200.30		TCP	T-Metrics_Softphone	3rd Party IP	RU	m...		SIP: Registered
21770	21770	NoPhone	disable		0.0.0.0			UA?	No Licence		0		SIP: Unregistered

Repeat the procedures in this section to verify the expansion IP Office system shown below.



Also verify that there is an entry for each agent and supervisor extension from **Section 5.3** that have both ACD Agent Module and SIP Softphone launched on the desktop. In this case, only one agent had launched the applications.

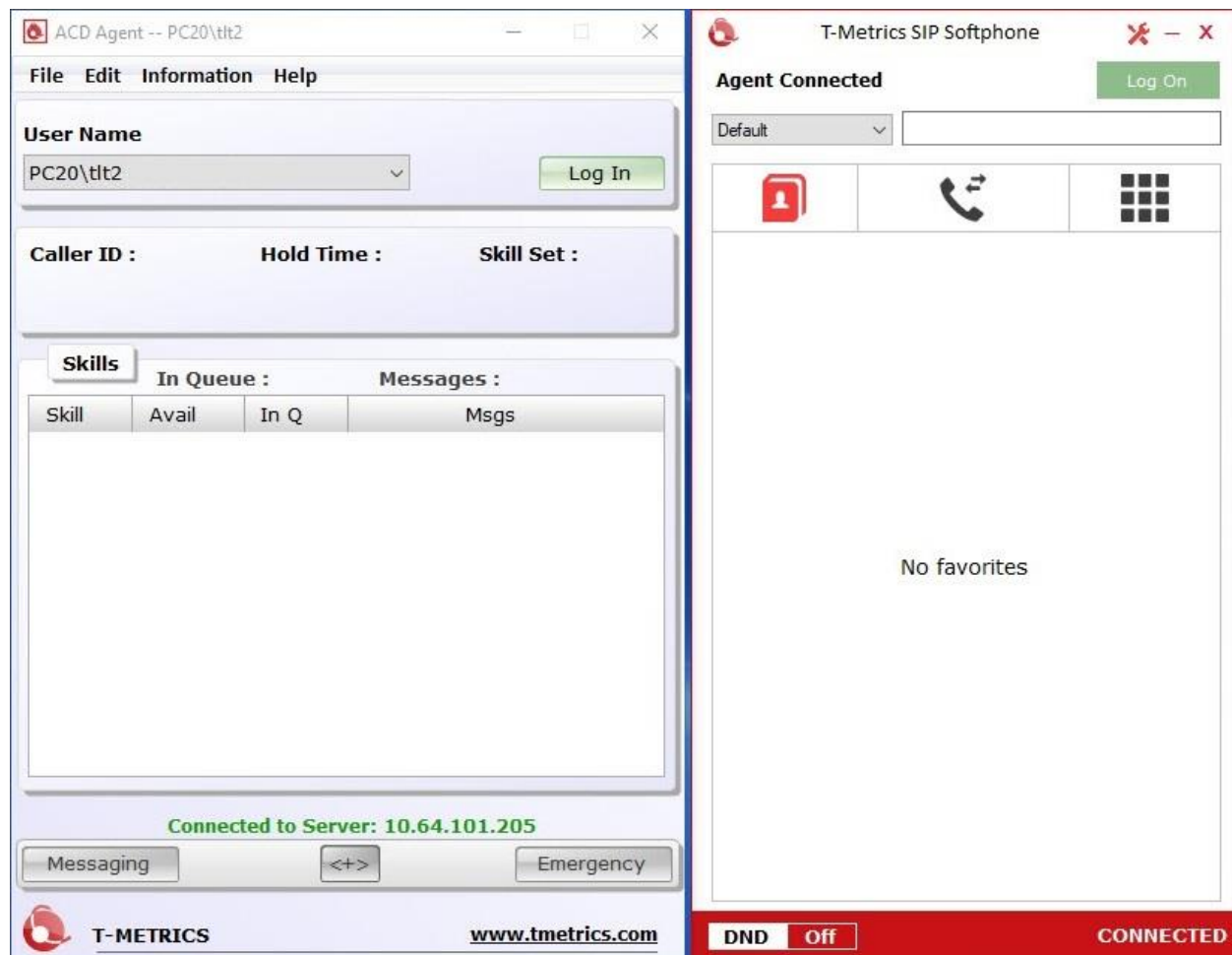


7.2. Verify T-Metrics Contact Center

From an agent on the primary IP Office system, follow the procedure in **Section 6.3** to launch the ACD Agent Module on the desktop, and the SIP Softphone application will be launched automatically as shown below.

Verify that the bottom of the **T-Metrics SIP Softphone** screen shows **CONNECTED**, which is an indication that the softphone has registered with IP Office.

From the **ACD Agent** screen, click **Log In**.



Verify that both the **ACD Agent** and **T-Metrics SIP Softphone** screens are updated to reflect the **Performing Admin Duties** status, as shown below.

From the **ACD Agent** screen, click the **Status** drop-down to select **Available** (not shown) followed by **Change**.

The screenshot shows two side-by-side application windows. The left window is titled 'ACD Agent -- PC20\slt2 @ 21881' and has a menu bar with 'File', 'Edit', 'Agent', 'Skill', 'Information', and 'Help'. The 'Status' is set to 'Performing Admin Duties' in orange text. Below it is a dropdown menu showing 'Performing Admin Duties' and a 'Change' button. There is also a text input field for status details. The right window is titled 'T-Metrics SIP Softphone' and shows 'Performing Admin Duties' in orange text. It has a dropdown menu set to 'Default' and a grid of icons below it.

ACD Agent Skills Table:

Skill	Avail	Rqd	Ready	In Q	Msgs
SALES	0**	--	0	0	0
SUPPORT	0**	--	0	0	0
TOTALS	--	--	--	0	0

Verify that both the **ACD Agent** and **T-Metrics SIP Softphone** screens are updated to reflect the **Available** status, as shown below.

The screenshot shows the same two application windows as before, but the status has changed to 'Available' in green text. In the ACD Agent window, the dropdown menu now shows 'Available' and the 'Change' button is still present. The Skills table is updated with new values. In the T-Metrics SIP Softphone window, the status is now 'Available' in green text.

ACD Agent Skills Table:

Skill	Avail	Rqd	Ready	In Q	Msgs
SALES	1**	--	1	0	0
SUPPORT	1**	--	1	0	0
TOTALS	--	--	--	0	0

Make a call from the PSTN to a group in **Section 5.5**, and use DTMF to select the narrated option associated with Sales. Verify that both screens below are updated to reflect an incoming call with “SALES” as **Skill Set**. From the **T-Metrics SIP Softphone** screen, click **Answer**.

The screenshot shows two side-by-side windows. The left window is titled "ACD Agent -- PC20\slt2 @ 21881" and has a menu bar with File, Edit, Agent, Skill, Information, and Help. It displays the agent's status as "Available" with a dropdown menu and a "Change" button. Below this, it shows "Caller ID : 19089532103", "Hold Time : 0 sec", and "Skill Set : SALES". A "Skills" tab is active, showing a table with columns: Skill, Avail, Rqd, Ready, In Q, and Msgs. The table has rows for SALES, SUPPORT, and TOTALS.

Skill	Avail	Rqd	Ready	In Q	Msgs
SALES	1**	--	1	0	0
SUPPORT	1**	--	1	0	0
TOTALS	--	--	--	0	0

The right window is titled "T-Metrics SIP Softphone" and shows a status of "Available". It has a red header "ACD Call Info" with "Hold Time" (0 sec) and "Skill Set" (SALES). Below this is a dropdown menu set to "Default". A call timer shows "00:00:01". A yellow bar contains an "Answer" button, a speaker icon, and a "Decline" button. At the bottom are icons for a contact list, a call log, and a grid of buttons.

Verify that the **T-Metrics SIP Softphone** screen is updated to reflect a connected call, and that the agent headset is connected to the PSTN caller with two-way talk paths.

The screenshot shows the same two windows as before, but the T-Metrics SIP Softphone window now reflects a connected call. The "ACD Call Info" section shows "Hold Time" (0 sec) and "Skill Set" (SALES). The call timer now shows "00:00:34". A blue bar contains a "Hold" button, a speaker icon, and an "End Call" button. The "In Queue" status in the ACD Agent window has updated to 0.

Skill	Avail	Rqd	Ready	In Q	Msgs
SALES	1**	--	0	0	0
SUPPORT	1**	--	0	0	0
TOTALS	--	--	--	0	0

Repeat the procedures in this section to verify an agent on the expansion IP Office system as shown below.

ACD Agent -- PC30\l3 @ 22881

File Edit Agent Skill Information Help

Status : Available

Available

Change

Enter details about your status here...

Caller ID :

17328883732

Hold Time :

0 sec

Skill Set :

SUPPORT

Skills

In Queue : 0

Messages : 0

Skill	Avail	Rqd	Ready	In Q	Msgs
SALES	1**	--	0	0	0
SUPPORT	1**	--	0	0	0
TOTALS	--	--	--	0	0

T-Metrics SIP Softphone

Available

ACD Call Info

Hold Time

0 sec

Skill Set

SUPPORT

Default

17328883732

00:00:17

Default 1

Hold

End Call

8. Conclusion

These Application Notes describe the configuration steps required for T-Metrics Contact Center to successfully interoperate with Avaya IP Office Server Edition. 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™ Platform with Manager*, Release 11.0, February 2019, available at <http://support.avaya.com>.
2. *Controller Module Manual*, available at <http://portal.tmetrics.com/OnlineSupport.aspx>.
3. *DigiSIP Manual*, available at <http://portal.tmetrics.com/OnlineSupport.aspx>.
4. *Agent Installation & Configuration Instructions*, available at <http://portal.tmetrics.com/OnlineSupport.aspx>.
5. *SIP Softphone Installation*, available at <http://portal.tmetrics.com/OnlineSupport.aspx>.

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