



## Avaya Solution & Interoperability Test Lab

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# Application Notes for InGenius Connector Enterprise with Avaya IP Office using Microsoft Dynamics 365 – Issue 1.0

### Abstract

These Application Notes describe the configuration steps required for InGenius Connector Enterprise to interoperate with Avaya IP Office using Microsoft Dynamics 365. InGenius Connector Enterprise is a CRM-VoIP integration tool that sits between the customer's phone system and a CRM application.

In the compliance testing, InGenius Connector Enterprise used the TAPI interface from Avaya IP Office to monitor contact center agents on Avaya IP Office to provide screen pop, call control, and click-to-dial features from the agent desktops connected to Microsoft Dynamics 365.

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 InGenius Connector Enterprise (ICE) to interoperate with Avaya IP Office using Microsoft Dynamics 365 (Microsoft Dynamics). ICE is a CRM-VoIP integration tool that sits between the customer's phone system and a CRM application.

In the compliance testing, ICE used the TAPI 2 interface in third party mode from IP Office to monitor contact center agents on IP Office to provide screen pop, call control, and click-to-dial features from the agent desktops connected to Microsoft Dynamics.

Each agent desktop had a web browser connection to the ICE server and to the InGenius Solution Plugin that was running on the Microsoft Dynamics cloud.

## 2. General Test Approach and Test Results

The feature test cases were performed manually. Incoming group calls were placed with available agents that have web browser connections to Microsoft Dynamics. All necessary call actions were initiated from the agent desktops and/or telephones. The click-to-dial calls were initiated by clicking on the contact phone number displayed on the agent desktops.

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

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

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

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

For the testing associated with these Application Notes, the interface between IP Office and ICE did not include use of any specific encryption features as requested by InGenius.

## 2.1. Interoperability Compliance Testing

The compliance testing included feature and serviceability areas. The feature testing focused on verifying the following on ICE:

- Use of TAPI events and functions to monitor agent users, and support of agent states and call control via agent desktops. Agents are reflected as Ready when do not disturb is disabled, and Not Ready when do not disturb is enabled.
- Proper handling of call scenarios involving inbound, outbound, internal, external, group, non-group, screen pop, drop, hold/resume, multiple calls, multiple agents, conference, transfer, long duration, send DTMF, hot desking, park/unpark, supervisor monitor, and click-to-dial from contact phone number.

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

## 2.2. Test Results

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

- By design, the agent desktop does not support display of DNIS information, and calls are reflected as “Talking” upon ringing at the agent.
- By design, “this call was transferred by x” information is displayed on the transferred-to agent desktop for attended transfer scenarios, and on the conference-to agent desktop for blind conference scenarios.
- By design, the conference-to agent desktop does not get updates to reflect other parties dropping from the conference.
- The last party in the conference is required to perform an explicit drop. In the case of the conference-from agent being the last party, the explicit drop needs to be performed from the telephone since the call would have been cleared on the desktop.
- In general, mixed use of agent desktop and telephone to perform call control actions are supported. For the transfer and conference features, however, all actions need to start and complete from the same source.

## 2.3. Support

Technical support on ICE can be obtained through the following:

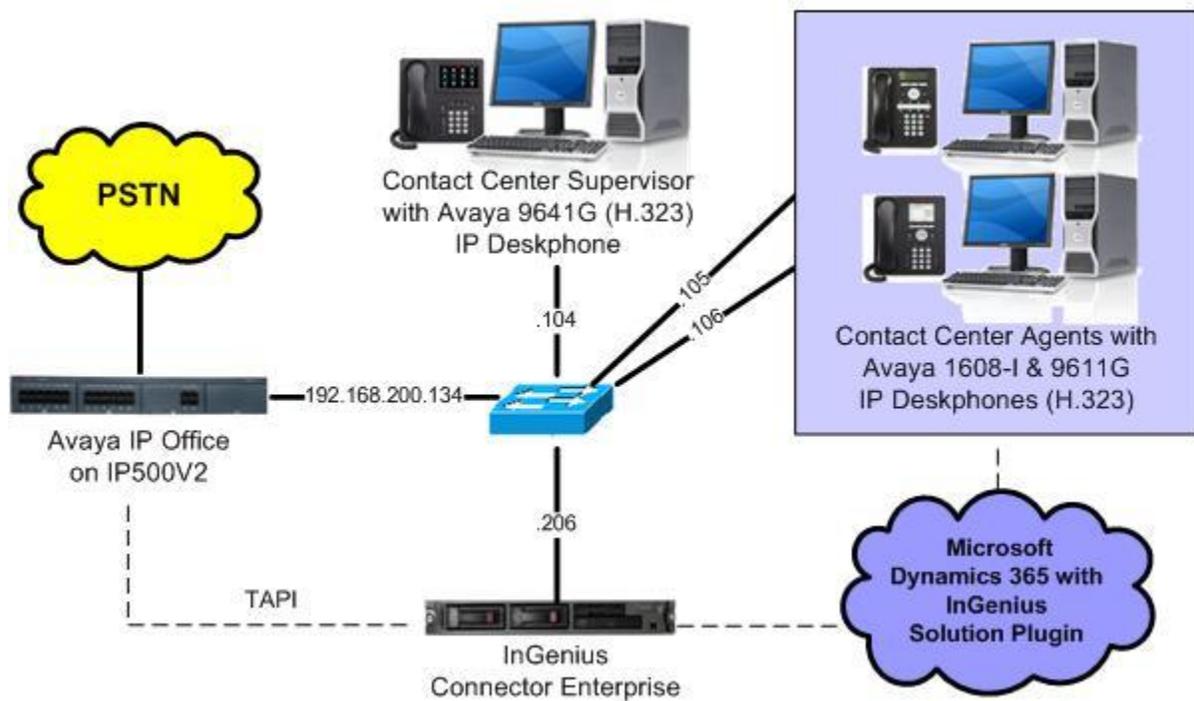
- **Phone:** (613) 591-9002
- **Email:** [icesupport@ingenius.com](mailto:icesupport@ingenius.com)
- **Web :** <http://ingenius.com/resources/support/>

### 3. Reference Configuration

The configuration used for the compliance testing is shown in **Figure 1**.

The contact center devices used in the compliance testing are shown in the table below.

Device Type	Device Number/Extension
Extensions	20031, 20035, 20051
Agent Users	20031, 20032
Supervisor User	20035



**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 on IP500V2	10.1.0.0.0
Avaya 1608-I IP Deskphone (H.323)	1.3808
Avaya 9611G & 9641G IP Deskphones (H.323)	6.6506
InGenius Connector Enterprise on Windows 2012 <ul style="list-style-type: none"><li>Avaya IP Office TAPI2 Driver (tspi2w_64)</li></ul>	6.0.0.23397 R2 Standard 1.0.0.44
InGenius Solution Plugin on Microsoft Dynamics 365	6.0.0 1612 (8.2.2.160)

*Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office IP500 V2 only.*

## 5. Configure Avaya IP Office

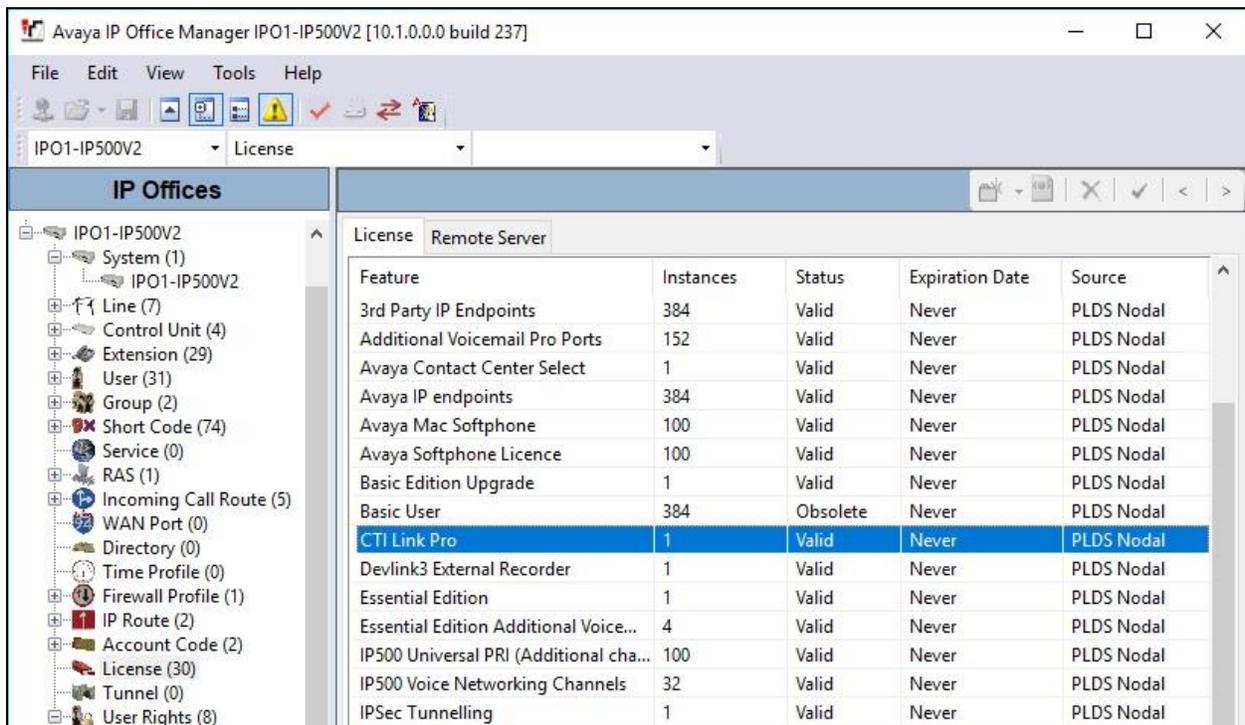
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Administer security settings

### 5.1. Verify License

From a PC running the IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the application. Select the proper IP Office system, and log in with the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License** to display the licenses in the right pane. Verify that the license status for **CTI Link Pro** is “Valid”, as shown below.



Feature	Instances	Status	Expiration Date	Source
3rd Party IP Endpoints	384	Valid	Never	PLDS Nodal
Additional Voicemail Pro Ports	152	Valid	Never	PLDS Nodal
Avaya Contact Center Select	1	Valid	Never	PLDS Nodal
Avaya IP endpoints	384	Valid	Never	PLDS Nodal
Avaya Mac Softphone	100	Valid	Never	PLDS Nodal
Avaya Softphone Licence	100	Valid	Never	PLDS Nodal
Basic Edition Upgrade	1	Valid	Never	PLDS Nodal
Basic User	384	Obsolete	Never	PLDS Nodal
<b>CTI Link Pro</b>	<b>1</b>	<b>Valid</b>	<b>Never</b>	<b>PLDS Nodal</b>
Devlink3 External Recorder	1	Valid	Never	PLDS Nodal
Essential Edition	1	Valid	Never	PLDS Nodal
Essential Edition Additional Voice...	4	Valid	Never	PLDS Nodal
IP500 Universal PRI (Additional cha...	100	Valid	Never	PLDS Nodal
IP500 Voice Networking Channels	32	Valid	Never	PLDS Nodal
IPSec Tunnelling	1	Valid	Never	PLDS Nodal

## 5.2. Administer Security Settings

From the configuration tree in the left pane, select **File** → **Advanced** → **Security Settings** from the top menu.

The **Avaya IP Office Manager – Security Administration** screen is displayed. Select **Security** → **System** to display the **System** screen in the right pane. Select the **Unsecured Interfaces** tab, and check **TAPI/DevLink3** as shown below.

The screenshot shows the Avaya IP Office Manager Security Administration interface for system IPO1-IP500V2. The left pane shows the Security Settings tree with 'System (1)' selected. The main pane is titled 'System: IPO1-IP500V2' and has three tabs: 'System Details', 'Unsecured Interfaces', and 'Certificates'. The 'Unsecured Interfaces' tab is active, showing password fields for System, Voicemail, and Monitor, each with a 'Change' button. Below these are 'Application Controls' with checkboxes for TFTP Server, TFTP Directory Read, TFTP Voicemail, Program Code, DevLink, TAPI/DevLink3, HTTP Directory Read, and HTTP Directory Write. The 'Application Support' section contains a table with columns for Application, Active, and Limitations.

Application	Active	Limitations
Legacy Voicemail	✗	
Voicemail Lite	✗	
Upgrade wizard	✓	
TAPI	✓	
one-X Portal Client	✓	
IP Office Directory Services	✓	
DevLink	✗	
IP DECT	✓	
Network Viewer	✗	

## 6. Configure InGenius Connector Enterprise

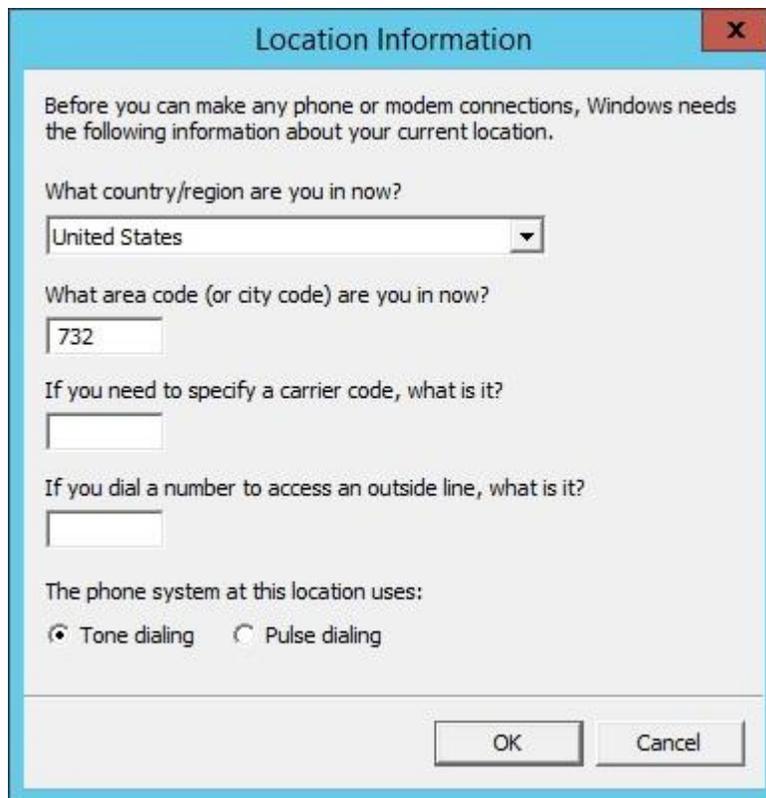
This section provides the procedures for configuring ICE. The procedures include the following areas:

- Administer TAPI driver
- Launch configuration tool
- Verify license
- Administer dialing and number formatting
- Start service

This section assumes the InGenius Security Role has been created, along with installed license and certificate. Refer to reference [2] for more details.

### 6.1. Administer TAPI Driver

From the ICE server, select **Start → Control Panel → Phone and Modem**, to display the **Location Information** screen. Enter the appropriate area code as shown below.



Location Information

Before you can make any phone or modem connections, Windows needs the following information about your current location.

What country/region are you in now?  
United States

What area code (or city code) are you in now?  
732

If you need to specify a carrier code, what is it?  
[ ]

If you dial a number to access an outside line, what is it?  
[ ]

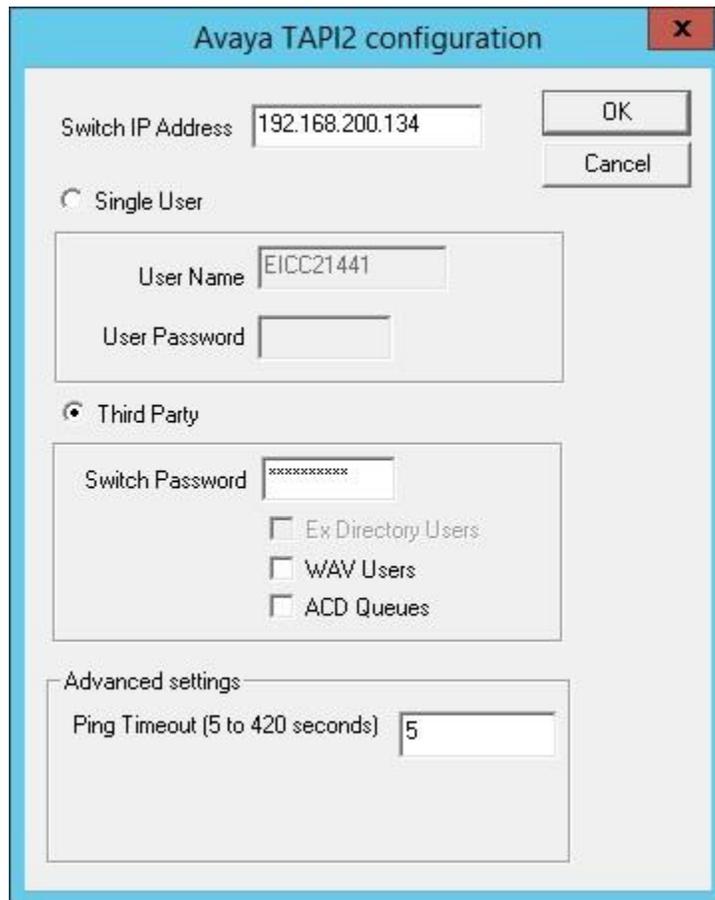
The phone system at this location uses:  
 Tone dialing  Pulse dialing

OK Cancel

The **Phone and Modem** screen is displayed next. Select the **Advanced** tab, followed by **Avaya IP Office TAPI2 Service Provider**, as shown below. Click **Configure** (not shown).

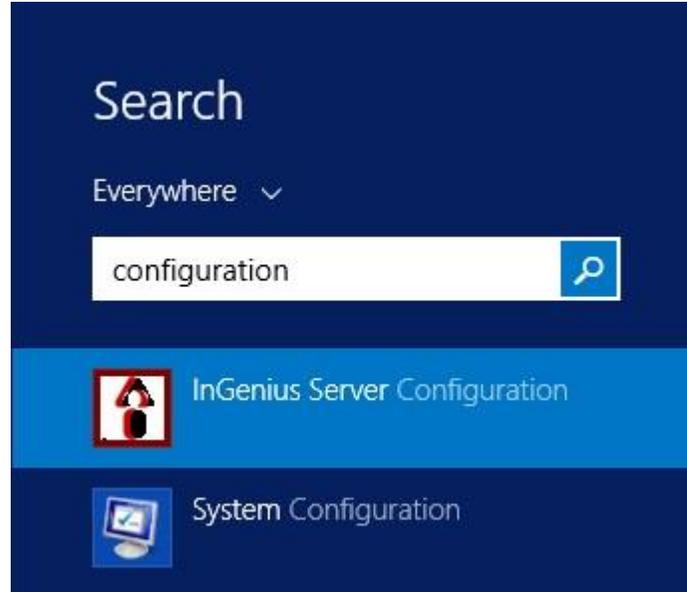


The **Avaya TAPI2 configuration** screen is displayed. For **Switch IP Address**, enter the IP address of IP Office. Select the radio button for **Third Party**, and enter the IP Office system password into the **Switch Password** field.

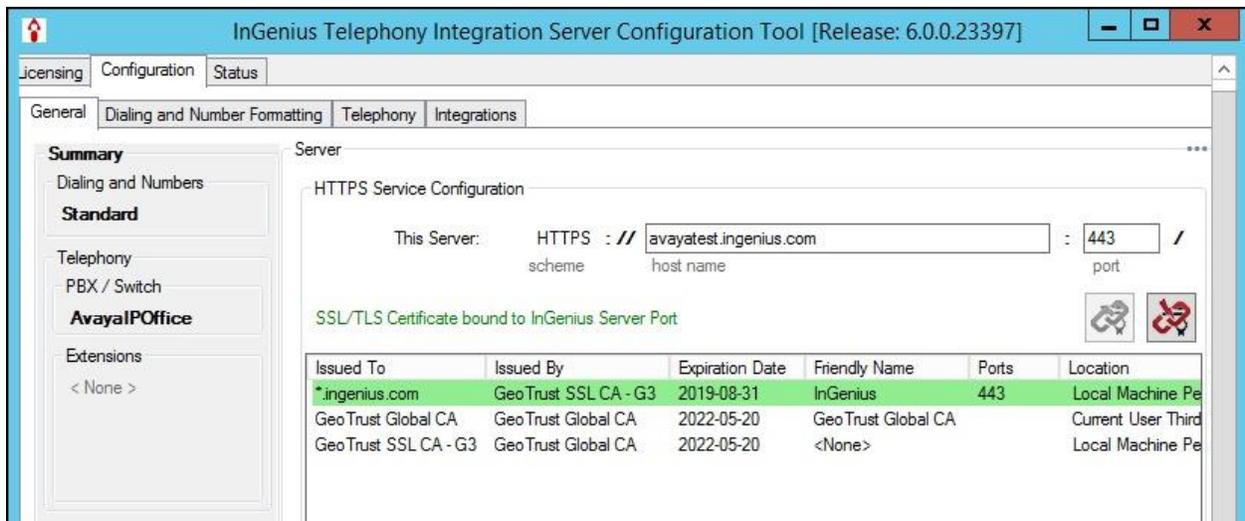


## 6.2. Launch Configuration Tool

From the ICE server system tray, select the Windows icon (not shown) and enter “configuration” anywhere on the desktop to locate the **InGenius Server Configuration** application. Click on the pertinent entry from the result to launch the application.

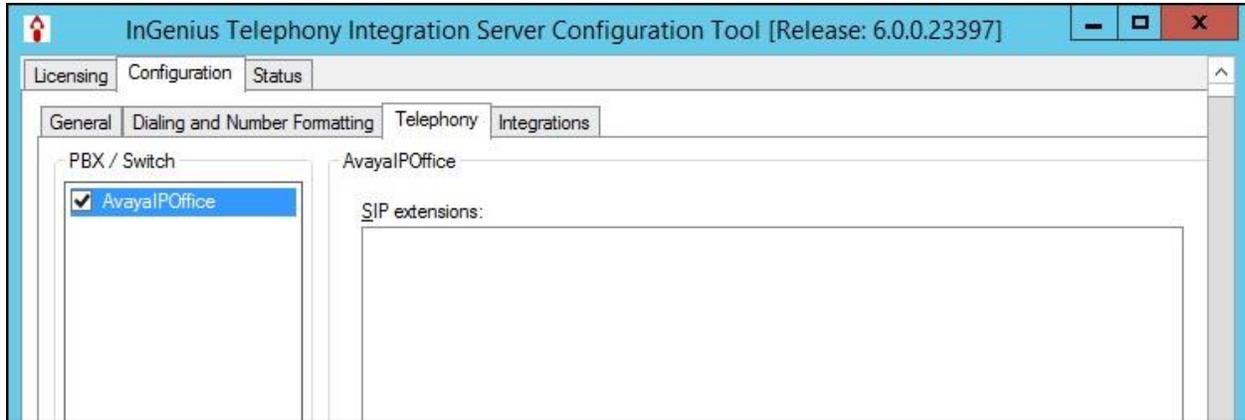


The **InGenius Telephony Integration Server Configuration Tool** screen is displayed.

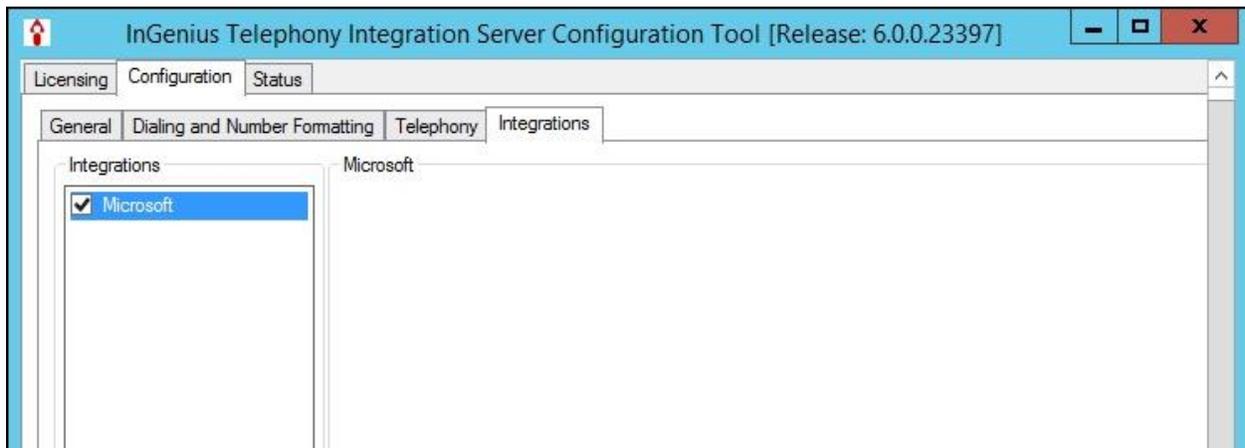


### 6.3. Verify License

Select **Configuration** → **Telephony** from the top menu. Under **PBX / Switch** in the left pane, verify that **AvayaIPOffice** is displayed and checked, which is controlled by license.

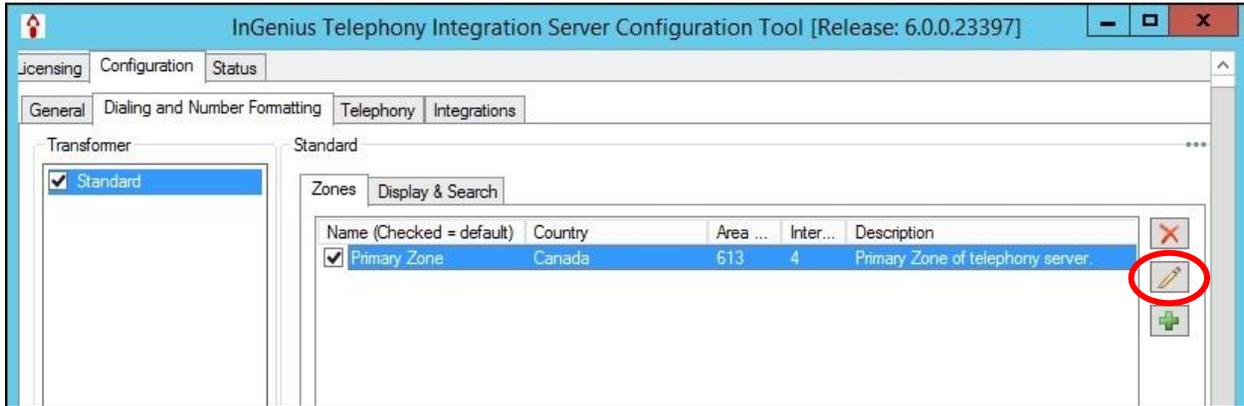


Select **Configuration** → **Integrations** from the top menu. Under **Integrations** in the left pane, verify that **Microsoft** is displayed and checked, which is also controlled by license.



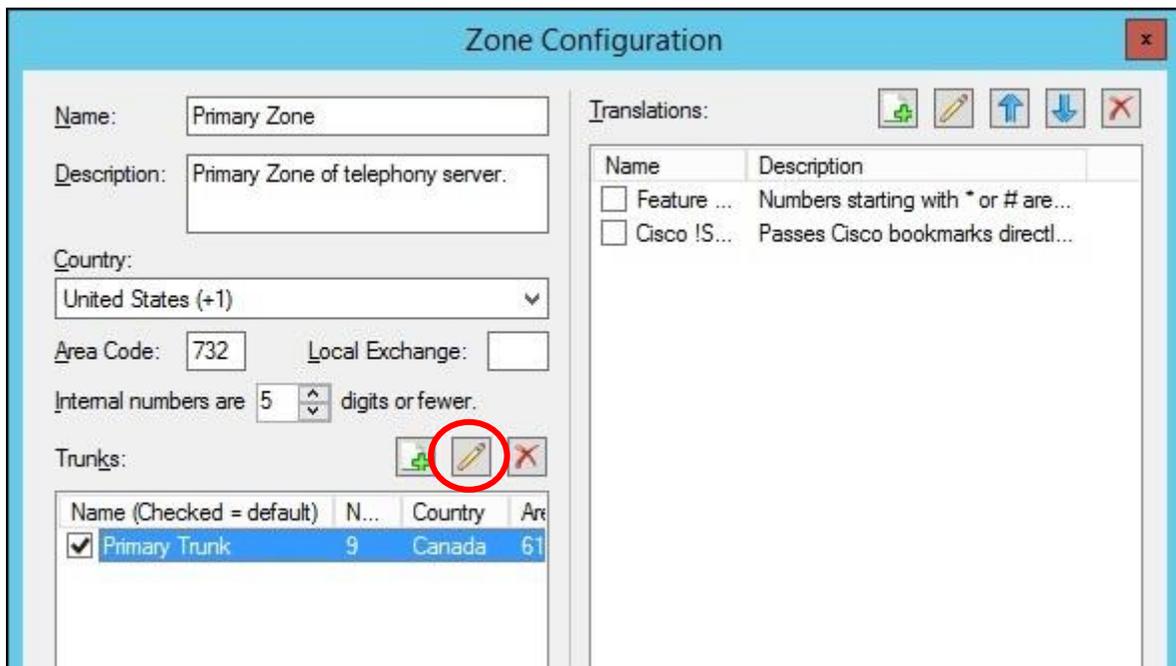
## 6.4. Administer Dialing and Number Formatting

Select **Configuration** → **Dialing and Number Formatting** from the top menu, followed by the **Zones** tab in the right pane. Select the default entry, and click the **Edit translation** icon shown below.



The **Zone Configuration** screen is displayed next. For **Country**, **Area Code**, and **Internal numbers are**, select and enter values to match the network configuration. Retain the default values in the remaining fields.

Select the default entry in the **Trunks** sub-section, and click on the **Edit Trunk** icon shown below.



The **Trunk** screen is displayed. Follow reference [2] to update trunk parameter values to match the network configuration. The values used in the compliance testing are shown below.

**Trunk**

Name: Primary Trunk

Description: Primary trunk of telephony server.

Prefix: 9

Country: United States (+1)

Area Code: 732 Local Exchange:

Allowed calls

- Local  Dial area code for local calls
- Long Distance
- International

Long distance carrier code:

International carrier code:

Test dialing

Enter number to dial:

Expanded to:

Dialable:

Translations to dialable:

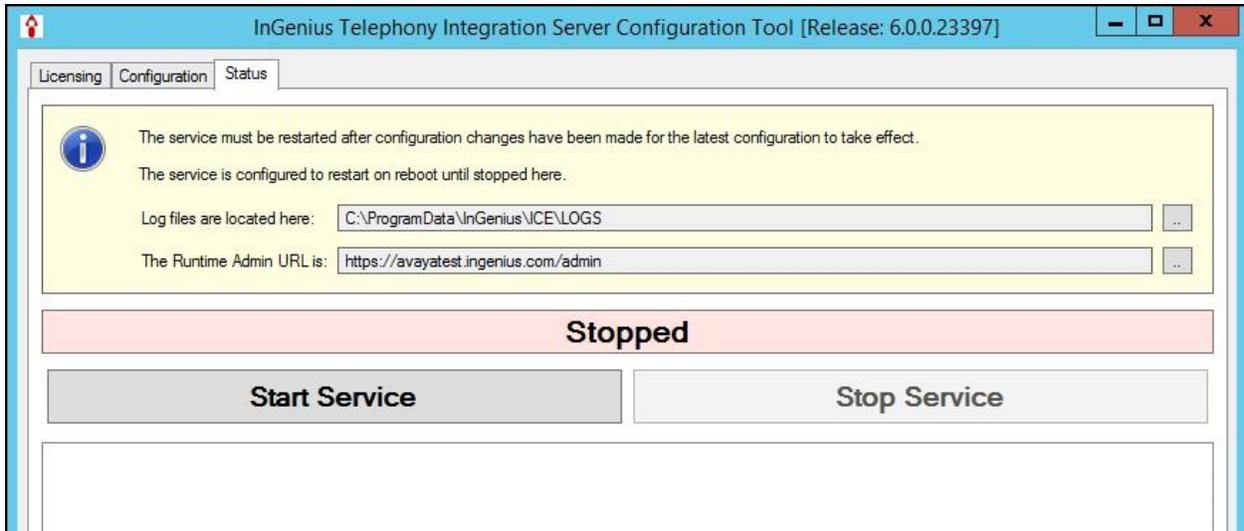
Name	Description
<input type="checkbox"/> Argentina ...	International call from North A...
<input type="checkbox"/> Mexican ...	International calls to Mexican ...

Auto configure local dialing

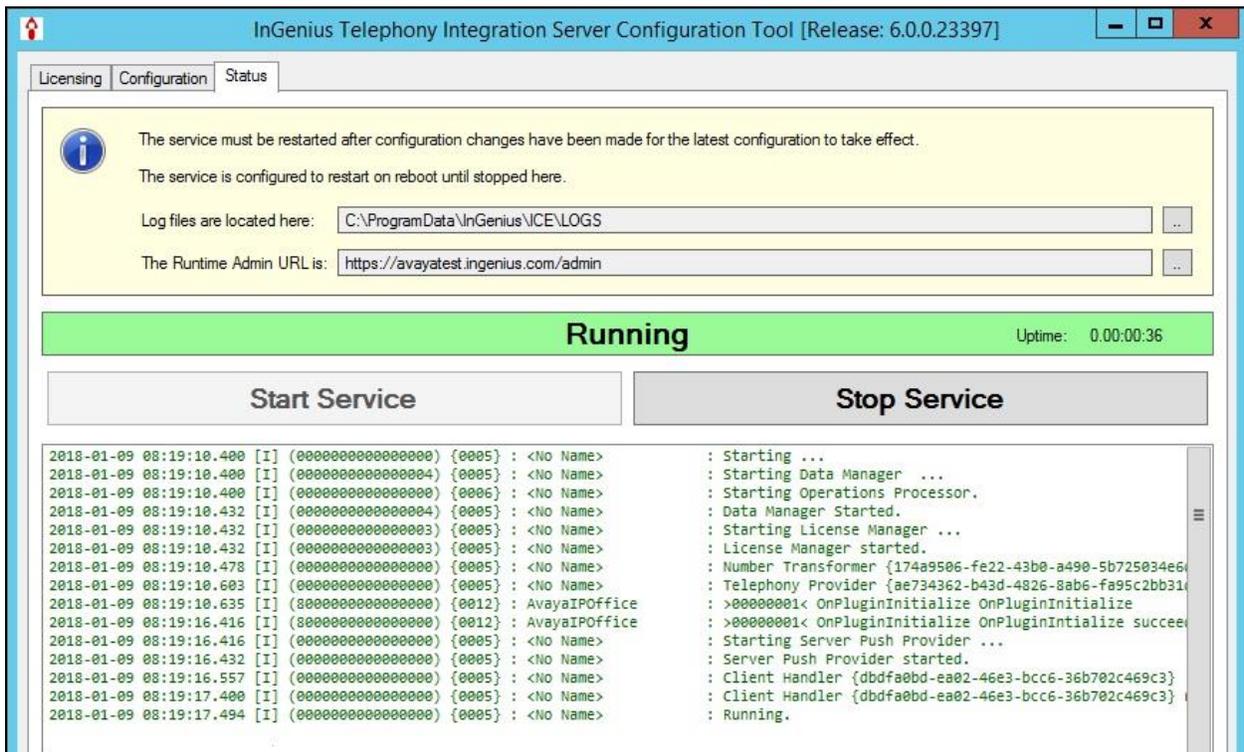
OK Cancel

## 6.5. Start Service

Select **Status** from the top menu to display the screen below, and click **Start Service**.



The screen is updated, as shown below.



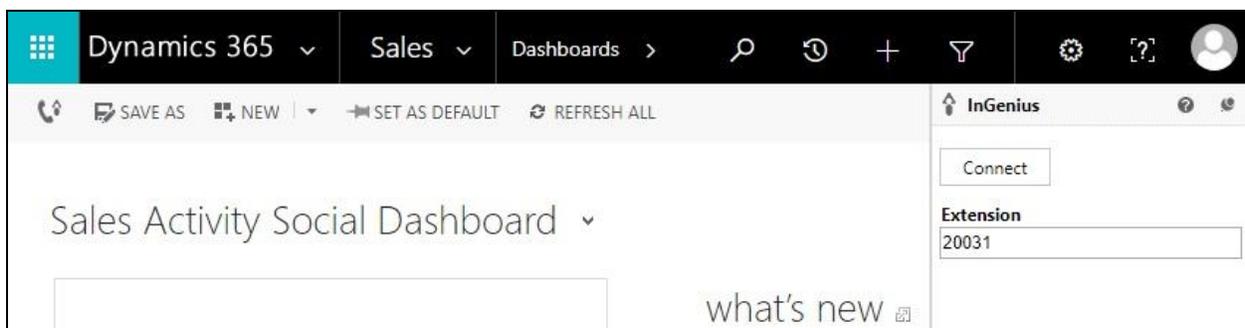
## 7. Verification Steps

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

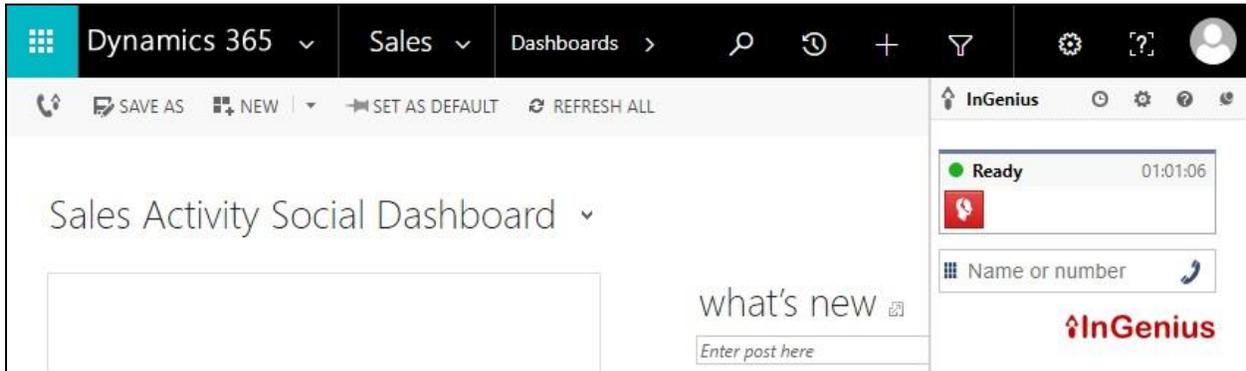
From an agent PC, launch an Internet browser window and enter the URL provided by the end customer for Microsoft Dynamics. Log in with the relevant user credentials provided by InGenius.



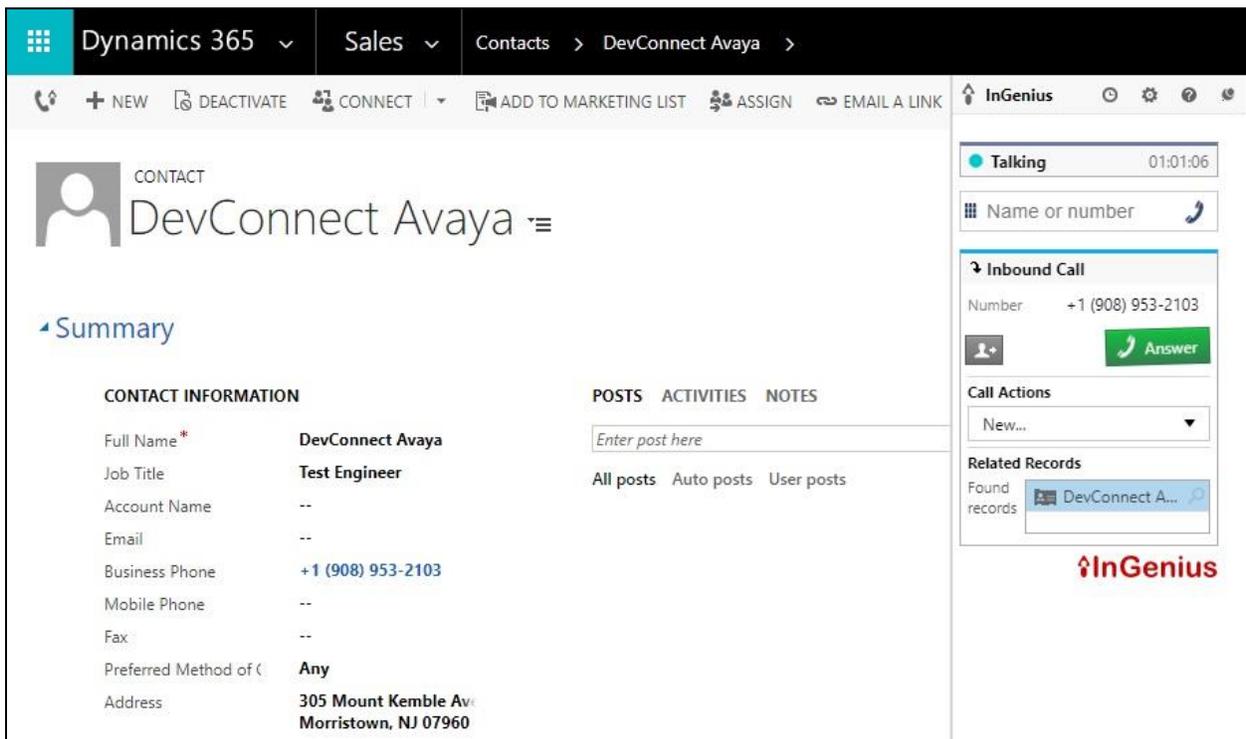
The screen below is displayed next. In the right pane, enter a relevant agent user number from **Section 3**, and click **Connect**.



Verify that the right pane is updated, showing the agent in the **Ready** state.



Make an incoming group call. Verify that the right pane is updated to reflect **Inbound Call**, along with the PSTN caller number. Also verify that the left pane is populated with the matching contact record associated with the PSTN caller number. Click **Answer** in the right pane.



Verify that the agent is connected to the PSTN caller with two-way talk path, and that the right pane is updated to reflect **Connected**, as shown below.

The screenshot displays the Dynamics 365 interface for a contact named 'DevConnect Avaya'. The breadcrumb navigation shows 'Sales > Contacts > DevConnect Avaya'. The top navigation bar includes options like '+ NEW', 'DEACTIVATE', 'CONNECT', 'ADD TO MARKETING LIST', 'ASSIGN', and 'EMAIL A LINK'. The main content area is divided into 'CONTACT INFORMATION' and 'POSTS ACTIVITIES NOTES'. The 'CONTACT INFORMATION' section lists fields such as Full Name (DevConnect Avaya), Job Title (Test Engineer), Business Phone (+1 (908) 953-2103), and Address (305 Mount Kemble Ave, Morristown, NJ 07960). The 'POSTS ACTIVITIES NOTES' section has a text input field with the placeholder 'Enter post here'. On the right side, the 'InGenius' panel shows a call log entry for a 'Talking' call (01:00:53) and a 'Connected' call (01:01:01). The 'Connected' call entry includes the number '+1 (908) 953-2103' and a 'Call Actions' dropdown menu. Below the call log, there is a 'Call Log' section with a search filter for 'DevConnect A...' and a subject line 'Call 1/16/2018 10:35 AM'. The number '+1 (908) 953-2103' is also displayed in the call log section. The InGenius logo is visible at the bottom right of the panel.

## 8. Conclusion

These Application Notes describe the configuration steps required for InGenius Connector Enterprise to successfully interoperate with Avaya IP Office using Microsoft Dynamics 365. 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 10.1, June 2017, available at <http://support.avaya.com>.
2. *Microsoft Dynamics Avaya IP Office Administrator Guide*, Version 6.0, available upon request to InGenius Support.
3. *Microsoft Dynamics Avaya IP Office User's Guide*, Version 6.0, available upon request to InGenius Support.

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