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Avaya Solution & Interoperability Test Lab

Application Notes for configuring Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud with Avaya IP Office R10.1 using Avaya IP Office TAPI Service Provider - Issue 1.0

Abstract

These Application Notes describe the configuration steps for Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud to interoperate with Avaya IP Office R10.1. Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud integrates with Avaya IP Office using the Avaya IP Office TAPI Service Provider connection for call control.

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.

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1. Introduction

These Application Notes describe the configuration steps for Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud to interoperate with Avaya IP Office R10.1. Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud integrates with Avaya IP Office using the Avaya IP Office TAPI Service Provider connection for call control.

Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud are on-premise and off-premise solutions respectively. Microsoft Dynamics CRM (hereby refer to as MSCRM for short) presents to the user, information such as caller name and company information retrieved from the CRM Database and offers "click to open" for CRM records related to a Caller ID, such as a contact record, opportunities/orders list or a notes/activity record containing information from previous calls with the customer. It provides call handling options including answer incoming call, release call before or after answering, initiate call, place call on hold, retrieve held call, transfer call to another contact or telephone number, view call history and list of missed calls.

Imperium CRM Connect (hereby refer to as IMCC in short) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud uses the Avaya IP Office TAPI Service Provider driver installed on each Agent Desktop. This allow businesses client based agent desktop program that works alongside existing systems, or a fully integrated CTI solution that combines existing systems into one unified desktop interface and extracts and updates caller information. The CTI application helps ensure customers are served effectively and efficiently.

2. General Test Approach and Test Results

This section describes the compliance testing used to verify interoperability of IMCC for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud with IP Office and covers the general test approach and the test results.

Feature testing covered the ability of IMCC for MSCRM Agent Desktop to gain control of existing IP Office endpoints and focused on the handling of calls offered to IP Office.

The serviceability testing focused on the ability of IMCC for MSCRM Agent Desktop to recover from adverse conditions such as loss of network connectivity.

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 this DevConnect Application Note 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 the Imperium CRM Connect for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud did not include use of any specific encryption features as requested by Imperium Software Technologies FZCO.

This test was conducted in a lab environment simulating a basic customer enterprise network environment. The testing focused on the standards-based interface between the Avaya solution and the third party solution. The results of testing are therefore considered to be applicable to either a premise-based deployment or to a hosted or cloud deployment where some elements of the third party solution may reside beyond the boundaries of the enterprise network, or at a different physical location from the Avaya components.

Readers should be aware that network behaviors (e.g. jitter, packet loss, delay, speed, etc.) can vary significantly from one location to another, and may affect the reliability or performance of the overall solution. Different network elements (e.g. session border controllers, soft switches, firewalls, NAT appliances, etc.) can also affect how the solution performs.

If a customer is considering implementation of this solution in a cloud environment, the customer should evaluate and discuss the network characteristics with their cloud service provider and network organizations, and evaluate if the solution is viable to be deployed in the cloud.

The network characteristics required to support this solution are outside the scope of these Application Notes. Readers should consult the appropriate Avaya and third party documentation for the product network requirements. Avaya makes no guarantee that this solution will work in all potential deployment configurations.

2.1 Interoperability Compliance Testing

The interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on manually making and receiving calls to IP Office using IMCC for MSCRM Agent Desktop. The tests included:

- Handling of incoming and outgoing calls.
- Holding and resuming of calls.
- Blind transfers calls.
- Call Forwarding Unconditional/No Answer
- Call Park and Unpark
- Call Pickup
- Call Abandonment

The serviceability testing focused on verifying the ability of IMCC for Microsoft Dynamics 365 Cloud to recover from adverse conditions such as disconnecting the Ethernet cable to the Agent Desktop. In the case of Microsoft Dynamics CRM 2016 which is an on-premise solution, disconnecting the Ethernet cable to the Server was also tested.

2.2 Test Results

All functionality and serviceability test cases were completed successfully. The following observation was noted during the compliance testing.

- Inconsistency of desktop display with phone for outbound transfer number.

2.3 Support

Technical support can be obtained for Imperium CRM Connect (IMCC) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud from the website http://imperiumapp.com/contact.aspx or from the following:

Imperium Software Technologies FZCO
P.O. Box No: 342055, Dubai Silicon Oasis,
Tech Hub 2-240,
Dubai, UAE.
Tel: +9714 3202737
Fax: +9714 3202747
Email: sales@imperiumapp.com

3. Reference Configuration

The configuration in **Figure 1** is used to compliance test Imperium CRM Connect (IMCC) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud with Avaya IP Office to gain call control of the various Avaya endpoints as shown below. Microsoft Dynamics 365 Cloud is a cloud Customer Relationship Management software whereas Microsoft Dynamics CRM 2016 is on-premise Customer Relationship Management software installed on Microsoft Windows 2012 R2 Server. The client component consists of IMCC for MSCRM Agent Desktop software running on each user/agent that will have a unique connection to IP Office using the Avaya IP Office TAPI Service Provider driver. In the case of on-premises solution, IMCC for MSCRM Agent Desktop will connect to the IMCC for MSCRM server in order to obtain information on each caller from a central database. As for cloud solution, IMCC for MSCRM Agent Desktop will obtain information from the web URL link.
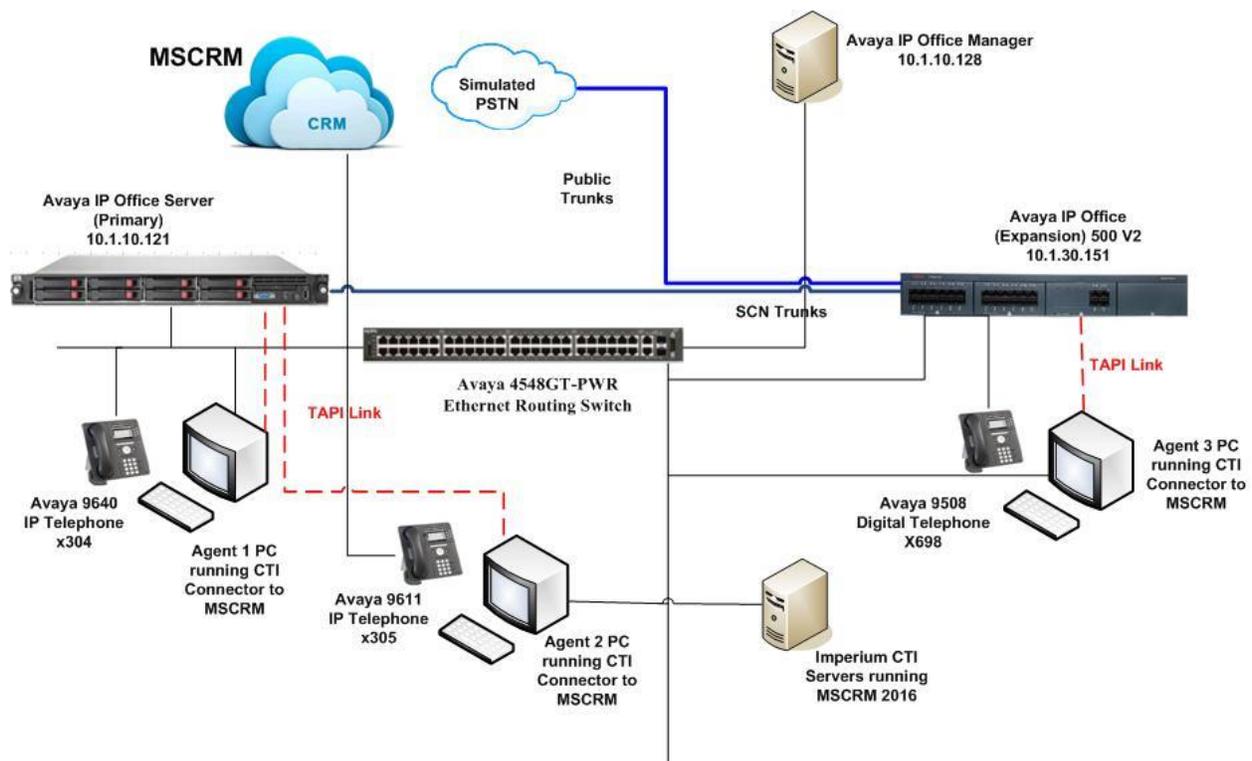
Figure 1: Connection of Imperium CRM Connect (IMCC) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud with Avaya IP Office R10.1 Server Edition.

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 Server Expansion Server IP500V2	 R10.1.0.0.0 build 237 R10.1.0.0.0 build 237
Avaya 96x1 H323 Deskphone	6.6401
Avaya 96x0 H323 Deskphone	3.27B
Avaya 9508 Digital	R55
Windows Virtual Server Imperium CRM Connect for Microsoft Dynamics CRM 2016	Windows 2012 R2 CRM On-Premise
Microsoft Dynamics CRM	365 Cloud
Windows 10 Client PC Imperium CRM Connect for Microsoft Dynamics CRM Agent Desktop TAPI3 Driver	Windows 10 Pro V2.0 4.2.88

Note: *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.*

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5. Configuration of Avaya IP Office

Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Web Manager. The information provided in this section describes the configuration of the Avaya IP Office for this solution. It is implied a working system is already in place. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 10**. The configuration operations described in this section can be summarized as follows:

- Launch Avaya IP Office Manager
- Display LAN Configuration
- Configuration of an Avaya IP Office User

5.1 Launch Avaya IP Office Manager

From the Avaya IP Office Manager PC, open a browser and browse to https://<IP Office Primary Server Address:7070. Log in to Avaya IP Office Web Manager as below using the appropriate credentials to administer configuration.

5.2 Display LAN Configuration

In the home screen, the Primary and Expansion Systems are displayed. During compliance testing, the Primary Server is named as **IPOPRI** and Expansion System is **IPOEXP**. The IP address is displayed in the same row as the server name. These are required for configuration in a later section for the configuration of the TAPI Driver.

5.3 Configure an Avaya IP Office User

Select from the top menu **Call Management → Extensions** and click +**Add Extension** followed by the primary or secondary server where the user will be configured. Click **OK** to confirm. Enter the extension number into the **Base Extension** highlighted below. Note that the Extension ID will be automatically filled in by the IP Office.

Shown below is an example of an existing extension **302**.

Select from the top menu **Call Management →Users** and click **+Add User** followed by the primary or secondary server where the user will be configured. Click **OK** to confirm. A new window will appear.
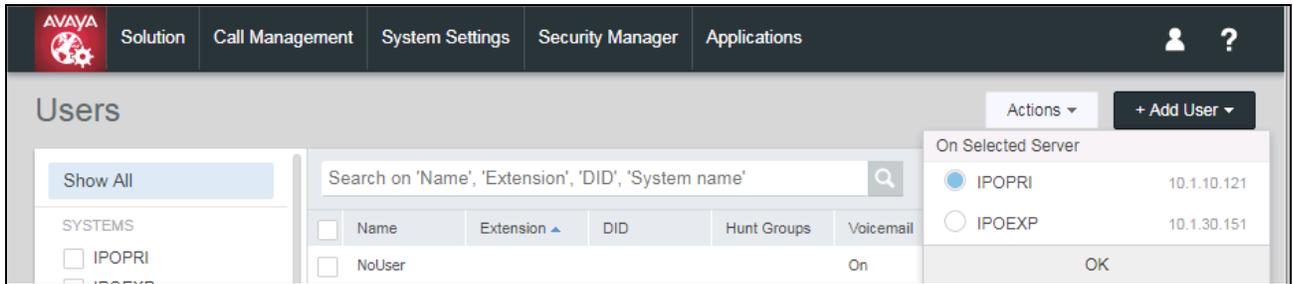
Select User on the left pane and shown below is an example of an existing user **302**. Information such as the **Name**, **Full Name**, **Password, Login Code** and **Extension** are filled in or noted. Note that the example below is setup as a **Basic User**.

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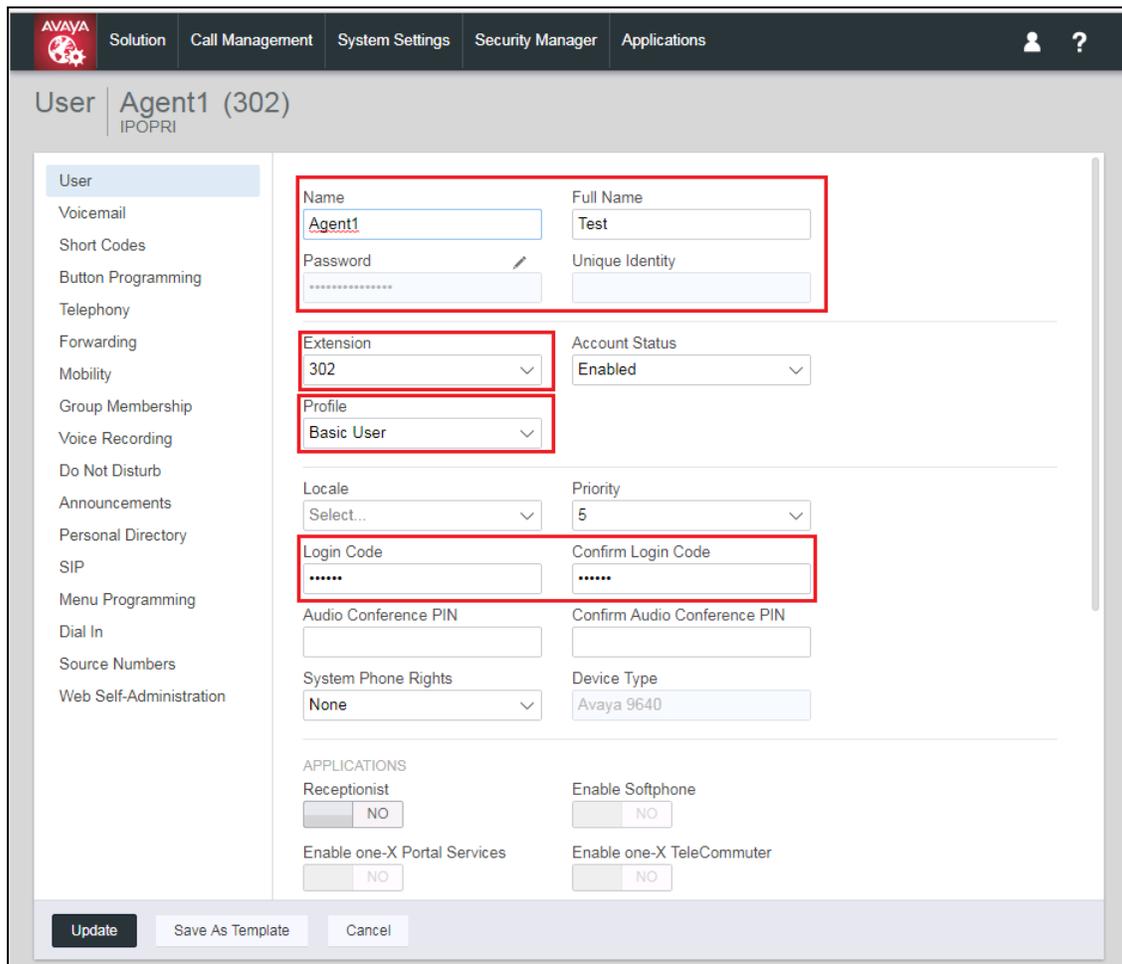
On the same left pane, select **Telephony** and click on **Call Settings** tab to change or note call settings such as **Call Waiting**.

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6. Installation and Configuration of Avaya IP Office TAPI3 Service Provider

TAPI3 Service Provider is included in the Product & Resources link located on the DevConnect website for the product name IP Office™ Platform (classified under Unified Communications & Collaboration → Platform & Infrastructure). Select the latest release which in this Compliance Testing, which is version 4.2.88. Once downloaded, the install is initiated by running **tapiSetup.exe** as shown below under **tapi3** directory.
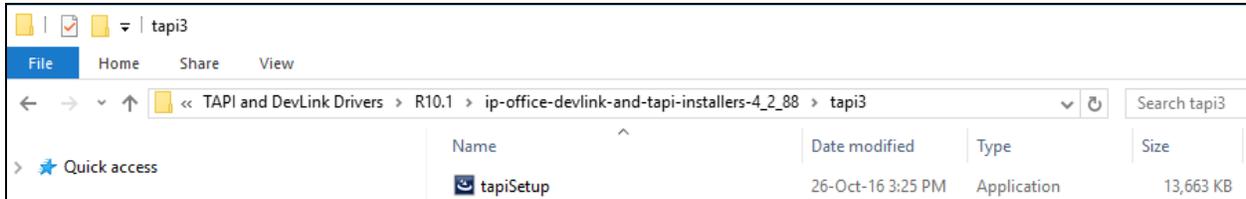
To configure the TAPI Service Provider navigate to **Control Panel** and right click on **Phone and Modem Options** and **Open** as highlighted below.

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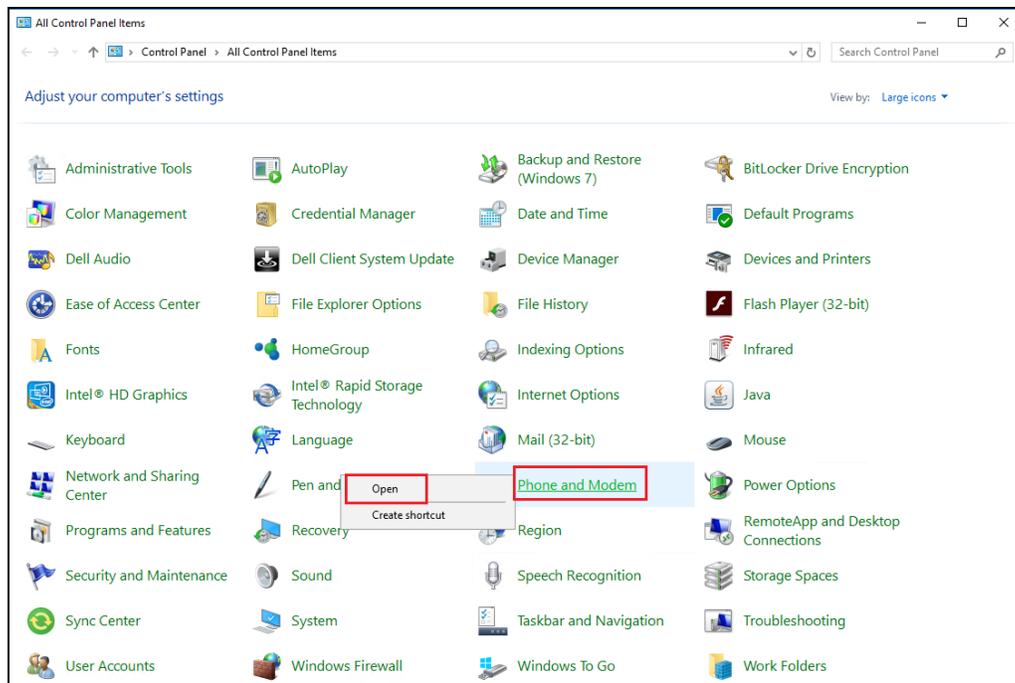
Click on the **Advanced** tab and highlight **Avaya IP Office TAPI3 Service Provider** and click **Configure**.
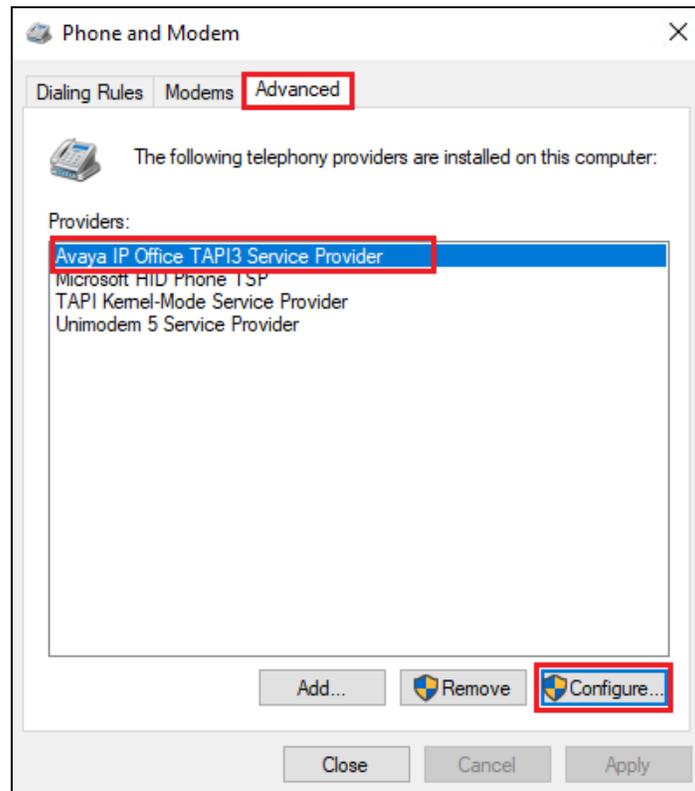
Enter the IP Office IP address into the **Switch IP Address** box. Below are the setup for client using TAPI connection for both primary and expansion server which have different IP Addresses as indicated in **Section 5.2**. Select **Third Party** and enter the IP Office Administrators password into the **Switch Password** box. Ensure **WAV Users** and **ACD Queues** are ticked as shown below.

7. Configuration of Imperium CRM Connect (IMCC) for MSCRM Agent Desktop

This section provides the procedures for configuring IMCC for MSCRM Agent Desktop. The configuration of IMCC for MSCRM and On-Premise MSCRM 2016 is typically performed by engineers from Imperium Software Technologies FZCO including the license and is therefore outside the scope of these Application Notes. However, a quick outline of the procedure of the Agent Desktop is included in this section. The procedural steps are presented in these Application Notes for informational purposes.

7.1 Configure Imperium CRM Connect (IMCC) for MSCRM Agent Desktop connection to Avaya IP Office

Each agent that is running IMCC for MSCRM Agent desktop will have a unique connection to the IP Office using the Avaya IP Office TAPI Service Provider for call control and to monitor the caller's information. The connection for the IMCC for MSCRM Agent Desktop running on the client PC is configured as follows. Run the **Imperium CRM Connect (IMCC)** shortcut on the desktop. This will open the IMCC for MSCRM Agent Desktop window as shown. Click on the setting icon at the top of the window and select **Settings** as shown.
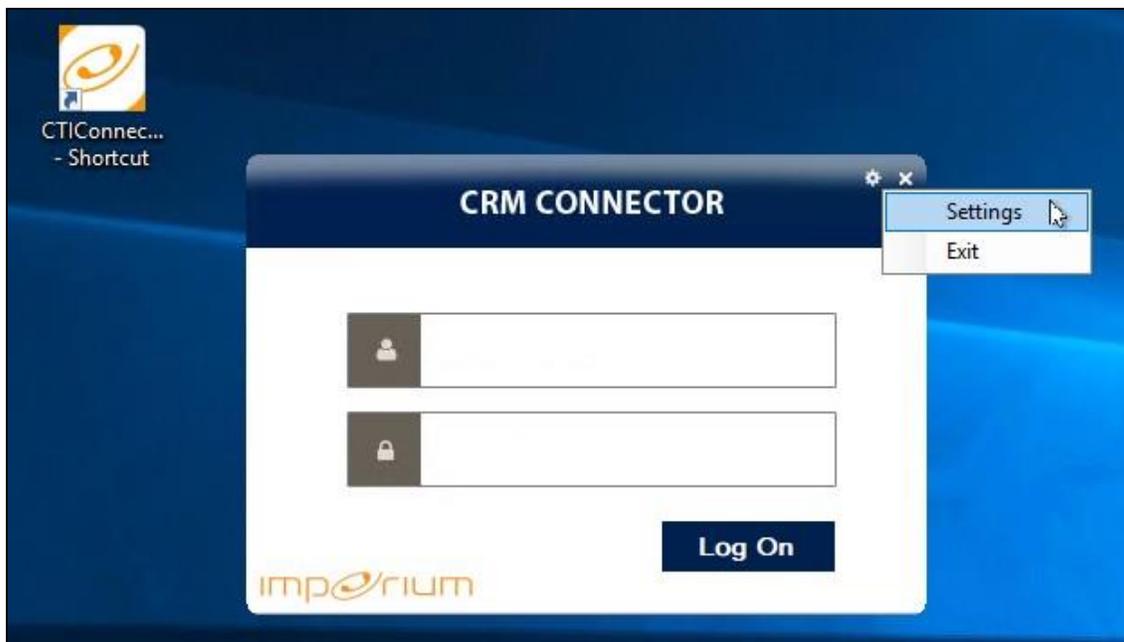
Enter the following information for MSCRM 2016 setup.

- **Extension**   This is the IP Office extension number that is to be monitored.
- **Main Prefix**   This is the number used to dial out from the PBX.
- **Country Code**   This is the country code for example +**971** for UAE.
- **CRM Datasource**   This is IP Address/Hostname of MSCRM Database**.**
- **CRM DB User ID**   This is Database User ID.
- **CRM Db Password**   This is Database User Password.
- **CRM Db Name**   This is the Database Name
- **CRM Connection URL**   This is the MSCRM 2016 URL.
- **License Key**   This is the license key.

Click on **OK** at the bottom of the screen once the information is filled in correctly.
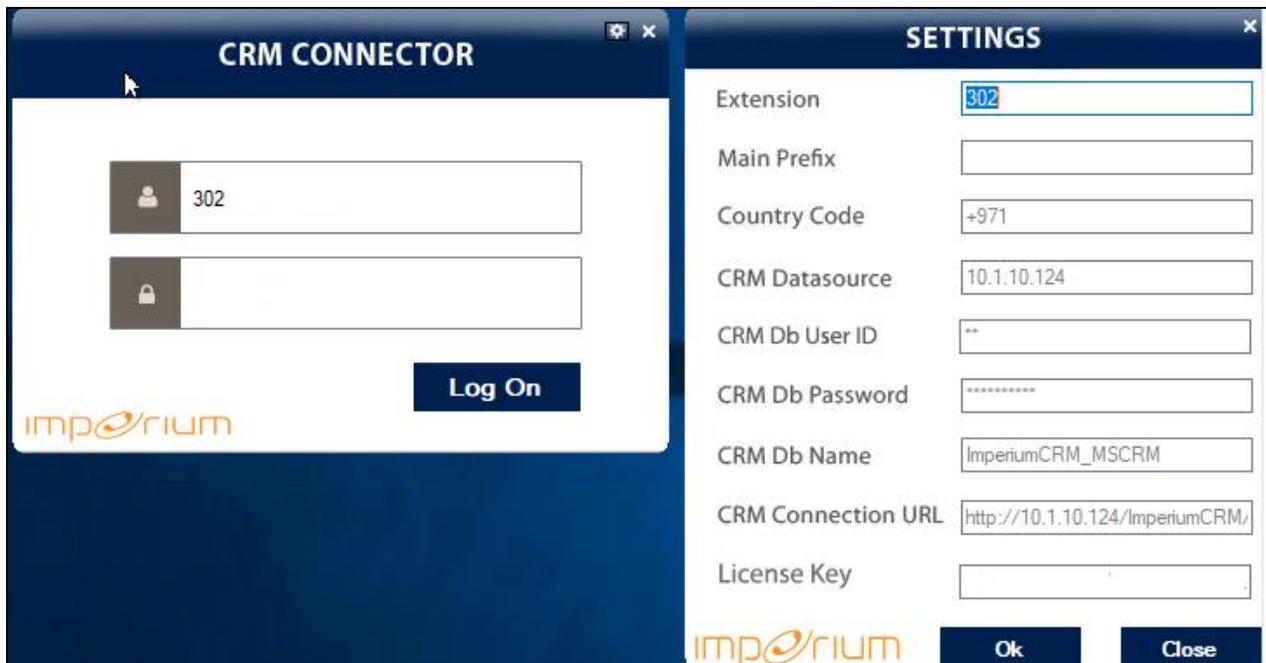
Enter the following information for MSCRM 365 Cloud setup.

- **Extension**   This is the IP Office extension number that is to be monitored.
- **Main Prefix**   This is the number used to dial out from the PBX.
- **Country Code**   This is the country code for example **+971** for UAE.
- **CRM Connection URL**   This is the MSCRM 365 Cloud URL.
- **User Name**   This is User name.
- **Password**   This is User Password.
- **License Key**   This is the license key.

Click on **OK** at the bottom of the screen once the information is filled in correctly.

8. Verification Steps

This section illustrates the steps necessary to verify that the Imperium Server is connected to the IP Office correctly in order to receive screen pop information.

## 8.1 Verify that Avaya IP Office TAPI Service Provider is running correctly

Open **Phone Dialer** (Windows program installed on all Windows platforms) on the IMCC for MS CRM Agent Desktop where TAPI is installed. Click on the Tools menu and select **Connect Using…**
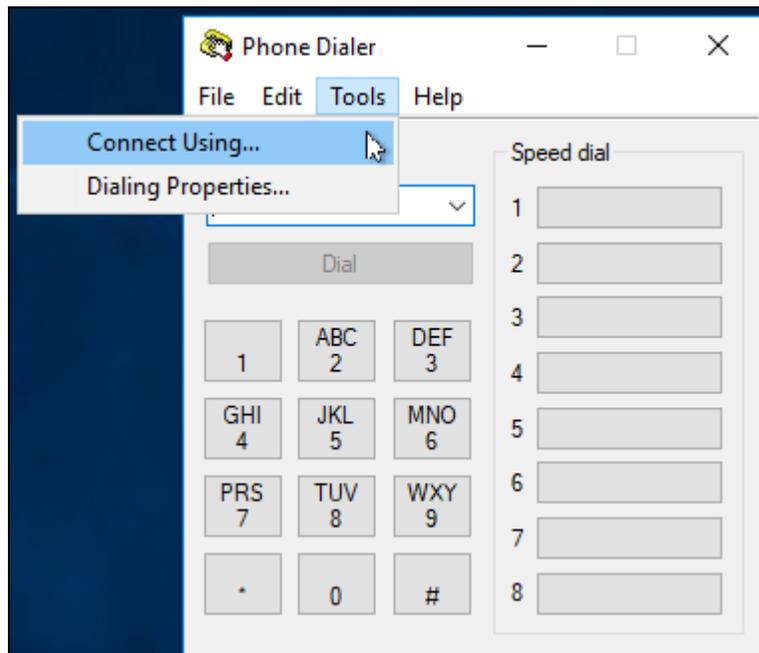
Another box opens as shown below. Open the **Line** dropdown box and all of the IP Office users should appear as an available line to use. Click **OK**.
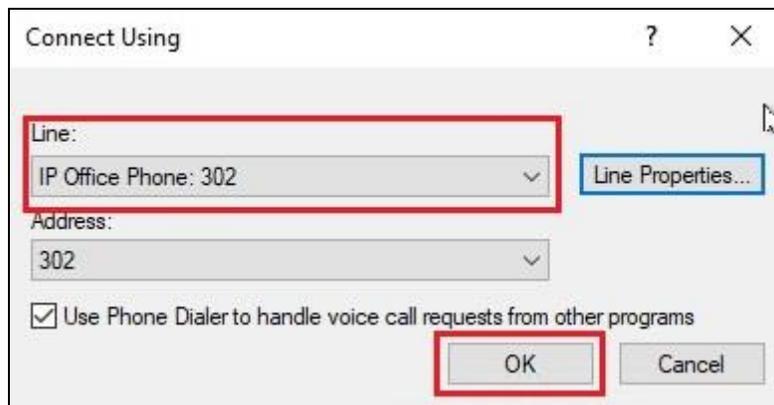
In the box **Number to dial** enter a valid IP Office extension number as shown below and click **Dial**. The **Phone Dialer** should successfully call the chosen extension number.
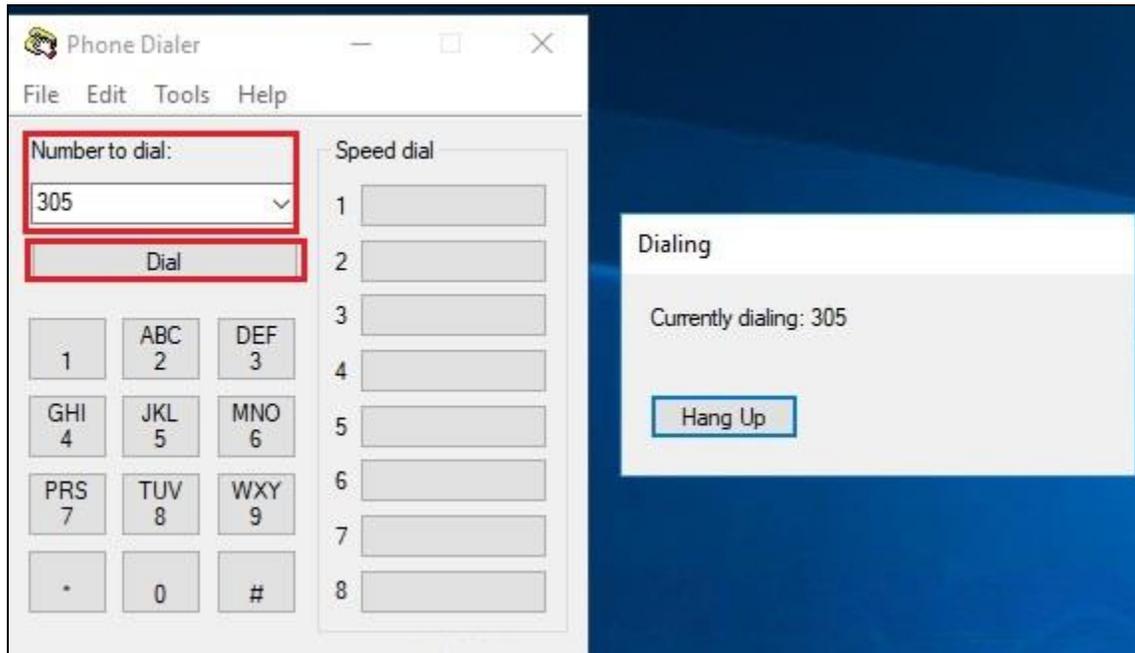
8.2 Verify 3rd Party Call Control using Imperium CRM Connect (IMCC) for MSCRM Agent Desktop

The section will show the full working solution by demonstrating a call being made and answered from the IMCC for MSCRM Agent Desktop.

8.2.1 Log in to the Imperium CRM Connect (IMCC) for MSCRM Agent Desktop

Run the **Imperium CRM Connect (IMCC)** shortcut on the desktop. This will open the IMCC for MSCRM Agent Desktop window as shown. Enter the correct username and password i.e., the IP Office station number and password, and click on **Log On**.

8.2.2 Make an outgoing call using Imperium CRM Connect (IMCC) for MSCRM Agent Desktop

Once logged in, click on the phonebook icon at the top left to show the list of contacts and each of these contacts can be dialled by right clicking on the name and selecting **Call** as is shown.

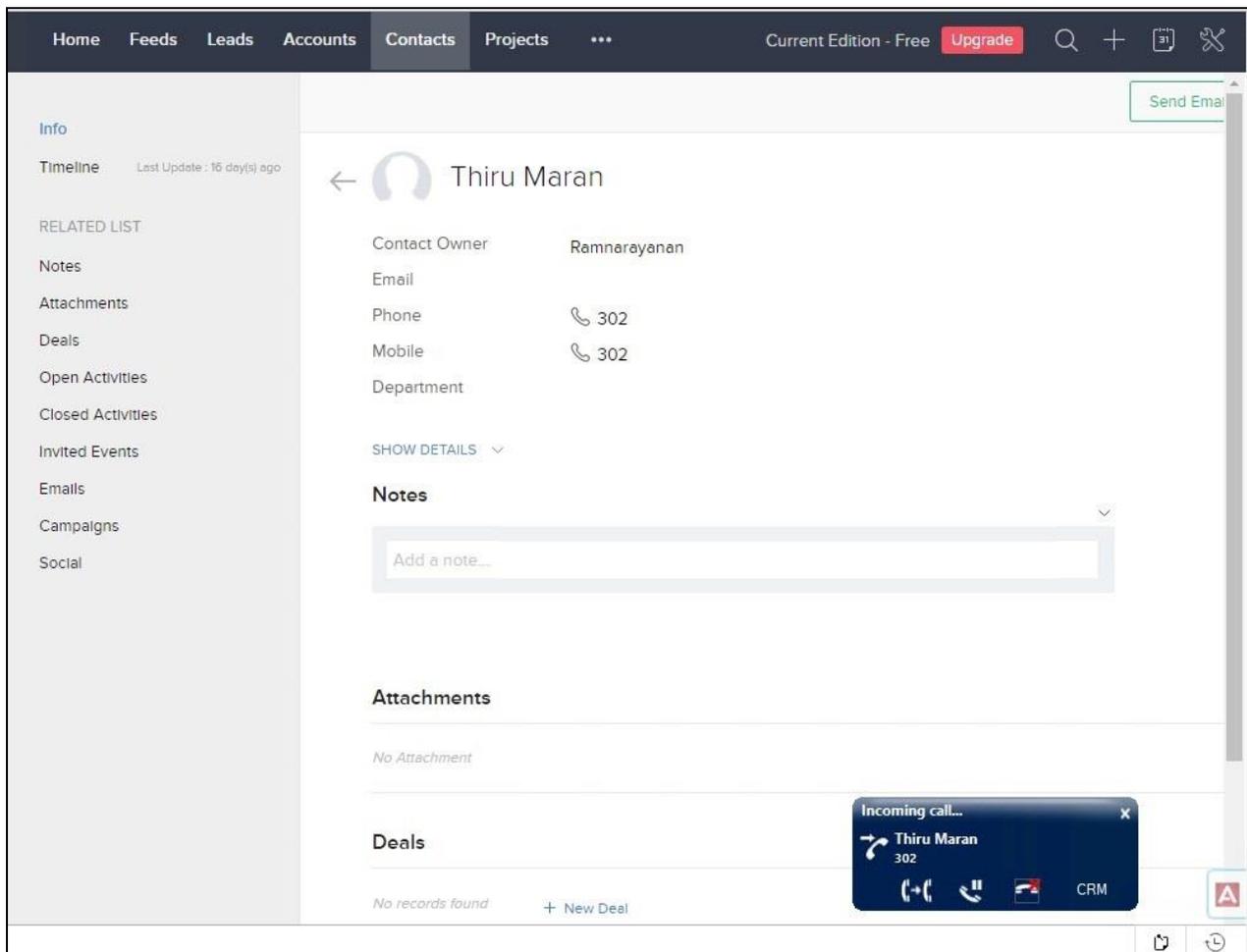On the second agents PC this can be seen as an **Incoming call**.

8.2.3 Answer with Activity an incoming call using Imperium CRM Connect (IMCC) for MSCRM Agent Desktop

An incoming call is presented to the agent as shown below. Hover over to the word CRM as shown below and the **Answer** prompt is displayed. Click on the CRM to answer the call.

A screen pop showing the customers information is displayed.

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9. Conclusion

These Application Notes describe the configuration steps required for Imperium CRM Connect (IMCC) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud to successfully interoperate with Avaya IP Office R10.1. All feature functionality and serviceability test cases were completed successfully with any issues and observations noted in **Section 2.2**.

10. Additional References

This section references the Avaya and Imperium Software Technologies product documentation that are relevant to these Application Notes.

Product documentation for Avaya products may be found at
http://marketingtools.avaya.com/knowledgebase/

Technical documentation can be obtained for Imperium CRM Connect (IMCC) for Microsoft Dynamics CRM 2016 & Microsoft Dynamics 365 Cloud from the website
http://imperiumapp.com/ or directly from the contacts.