



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office IP500 R8.0 with 2Ring IP Phone Services v5.0 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for 2Ring IP Phone Services to successfully interoperate with Avaya IP Office IP500. The 2Ring IP Phone Services product provides users with an enhanced telephony interface.

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

2Ring IP Phone Services (IPPS) provides users with an extended suite of communication tools to aid and enhance the user experience. 2Ring IPPS can be accessed through IP Hardphones using the built-in WML browser, IP Softphones and through a web interface, or a combination of all of these. 2Ring IPPS provides users with corporate-wide and personal address books (directories), caller identification based on corporate and personal contacts, fast phone number lookup, text messaging to IP Phones and Cell Phones and the ability to make public announcements/page calls.

2. General Test Approach and Test Results

The interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on verification that the extended features provided by IPPS interoperated successfully with the endpoint and confirmed that required effect was observed. The serviceability testing focused on verifying the ability of the IPPS server to recover from disconnection and reconnection to the Avaya solution.

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 principle objective of Interoperability Compliance testing is to provide assurance to the potential customers that the tested products operate as specified and can interoperate in an environment similar to the one that will be encountered at a customer's premises. Performance and load testing is outside the scope of the compliance testing. 96x1 H323, IP Softphone and SIP Phones were not tested.

The following test cases were verified with 96xx H323 phones:

- TAPI Call Control (Answer, Hold, Retrieve, Release)
- Directory Add/Lookup/Dial
- Contact Synchronization
- Address Book Add/Lookup/Dial
- AIM (Auto Key Input Method) Search
- Voice Paging
- IP Messaging
- PSTN Caller Identification
- Placing Calls via IPPS Website
- Access to Sample WML Sites
- Reboot of IPO/IPPS

2.2. Test Results

All tests were completed successfully

2.3. Support

Technical Support can be obtained for the 2Ring IPPS product as follows:

- Email: support@2ring.com
- Phone: +421 2 58224097

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office IP500 running version 8.0 (18) firmware. The IPPS application was hosted on a server running Microsoft Windows Server 2008R2 in a VMWare environment. PSTN Connectivity was provided over PRI to the IP Office. WML capable Avaya 9600 Series IP Deskphones provide the endpoints. Microsoft Windows based PCs provide access to the IPPS web interface for the user. The 46xx Settings file containing configuration referencing the IPPS solution was hosted on a generic web server, not shown.

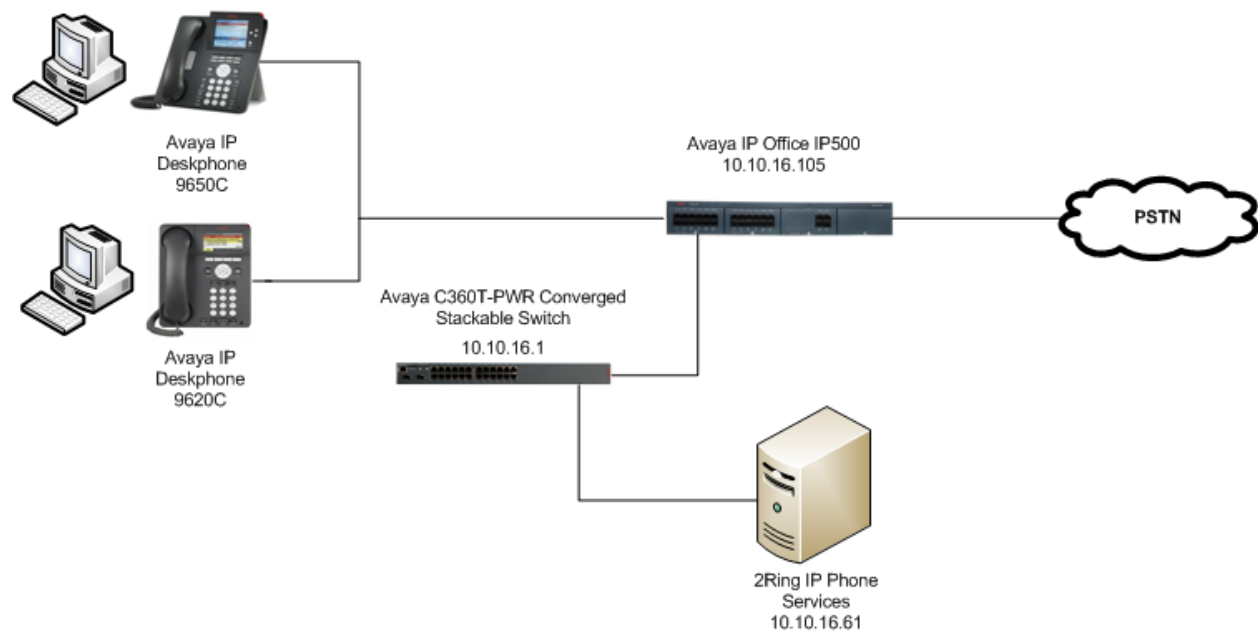


Figure 1: Avaya IP Office 500 with 2Ring IP Phone Services configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office IP500	R8.0 (18)
Generic Administrator PC Avaya IP Office Manager	10.0 (18)
Generic Desktop PC Avaya IP Office TAPI2 Service Provider 2Ring DesktopClid	v2.0
Avaya 9600 Series IP Deskphone <ul style="list-style-type: none">• 9620C• 9650C	H323 v3.1 SP3 one-X Deskphone Edition
Generic VMWare Server Microsoft Windows 2008 Server 2Ring IP Phone Services TwoRing.Ipps.Dir.dll	R2 Enterprise SP1 v5.0 v5.0.3.1

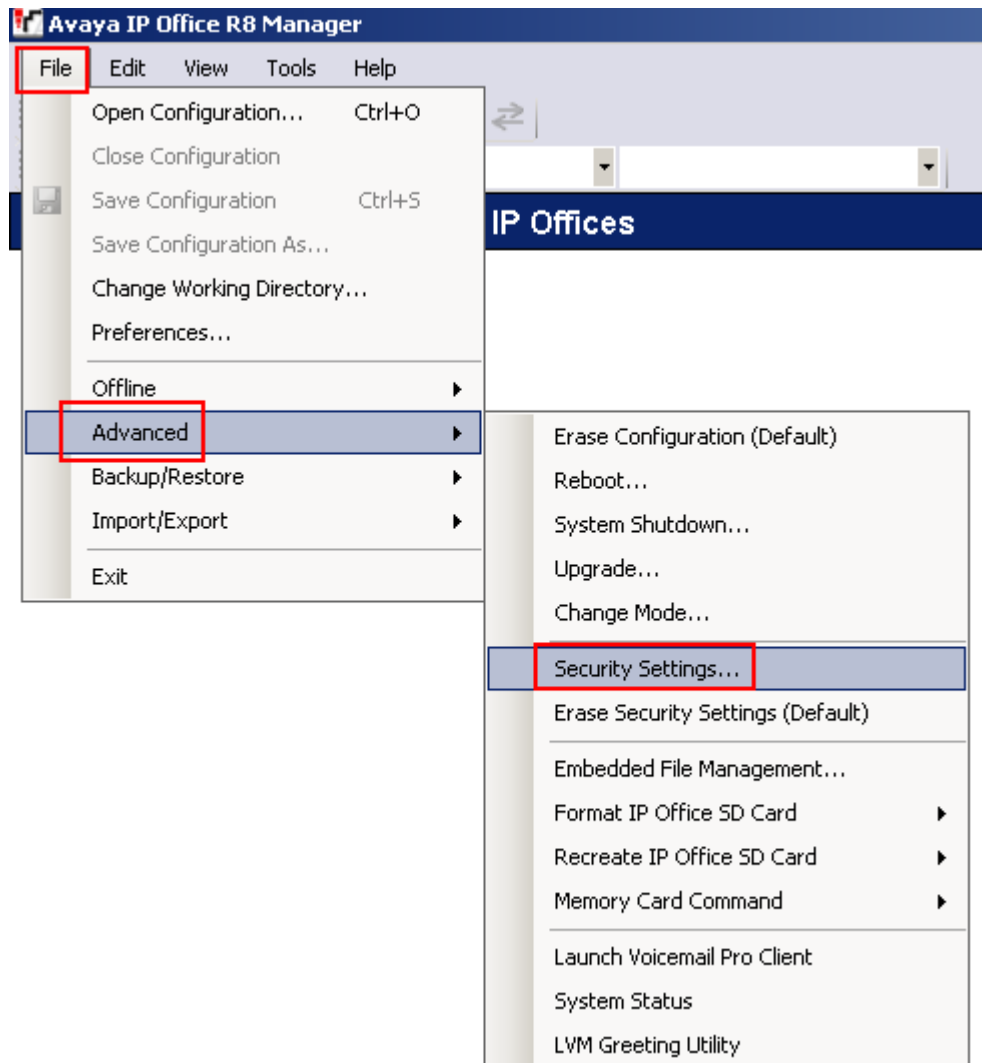
5. Configuration of Avaya IP Office IP500

The configuration and verification operations illustrated in this section were all performed using the IP Office Manager application. For all other provisioning information such as initial installation and configuration, please refer to the product documentation as referenced in **Section 11**. The application note assumes an IP address has been assigned to the IP500 and a PRI circuit to the PSTN configured and familiarity with navigation of the Manager application and saving of configuration. The successful administration of two H.323 users is also assumed. The configuration required for interoperability with IPPS can be summarized as follows:

- Configure Security Parameters
- Configure User Details

5.1. Configure Security Parameters

IP Office security parameters must be configured in order for IPPS to successfully connect and obtain user information. Using the Manager application, click **File** → **Advanced** → **Security Settings**.



Select the relevant IP Office in the presented screen, Click **OK** and enter the appropriate login credentials. Click **OK** when done.

The screenshot shows a 'Select IP Office' window. At the top, there is a table with columns: Name, IP Address, Type, Version, and Edition. Below the table, the text 'Release 8.0' is displayed. A table lists available IP Offices, with the first entry selected:

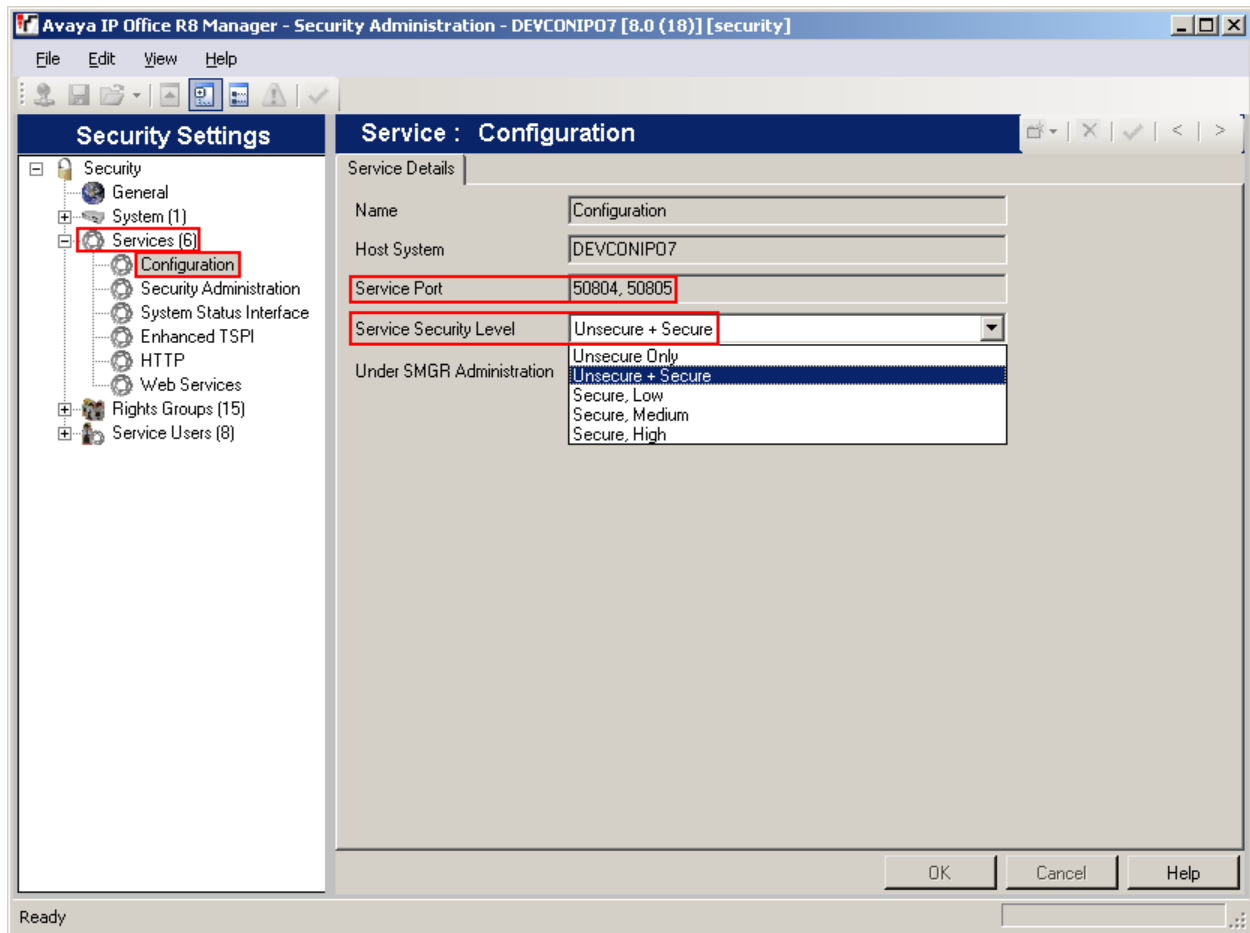
Name	IP Address	Type	Version	Edition
DEVCONIPO7	10.10.16.105	IP 500	8.0 (18)	IP Office

Below the table, a 'Security Service User Login' dialog box is open. It contains the following fields and buttons:

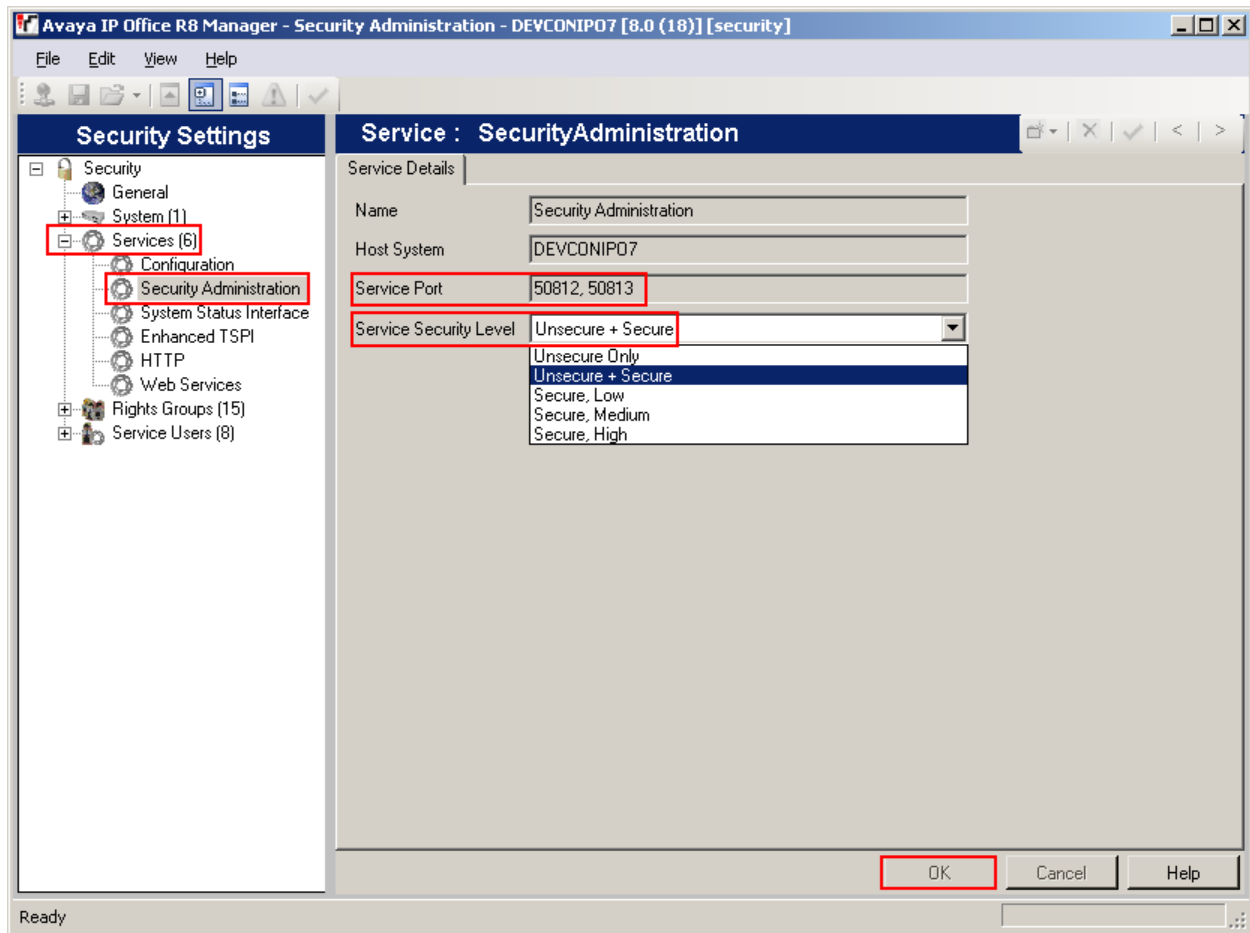
- IP Office : DEVCONIPO7 - IP 500
- Service User Name: security
- Service User Password: (masked with dots)
- Buttons: OK, Cancel, Help

At the bottom of the 'Select IP Office' window, there is a 'TCP Discovery Progress' section with a progress bar. Below it, a 'Unit/Broadcast Address' dropdown menu is set to '10.10.16.105', with a 'Refresh' button next to it. At the bottom right, there are 'OK' and 'Cancel' buttons.

The screen below will appear, click **Services** → **Configuration** from the tree in the left pane and select **Unsecure + Secure** from the **Service Security Level** drop-down box. Note the **Service Port** details.



Click **Services** → **Security Administration** from the tree in the left pane and select **Unsecure + Secure** from the **Service Security Level** drop-down box. Click **OK** when done. Note the **Service Port** details.



5.2. Configure User Details

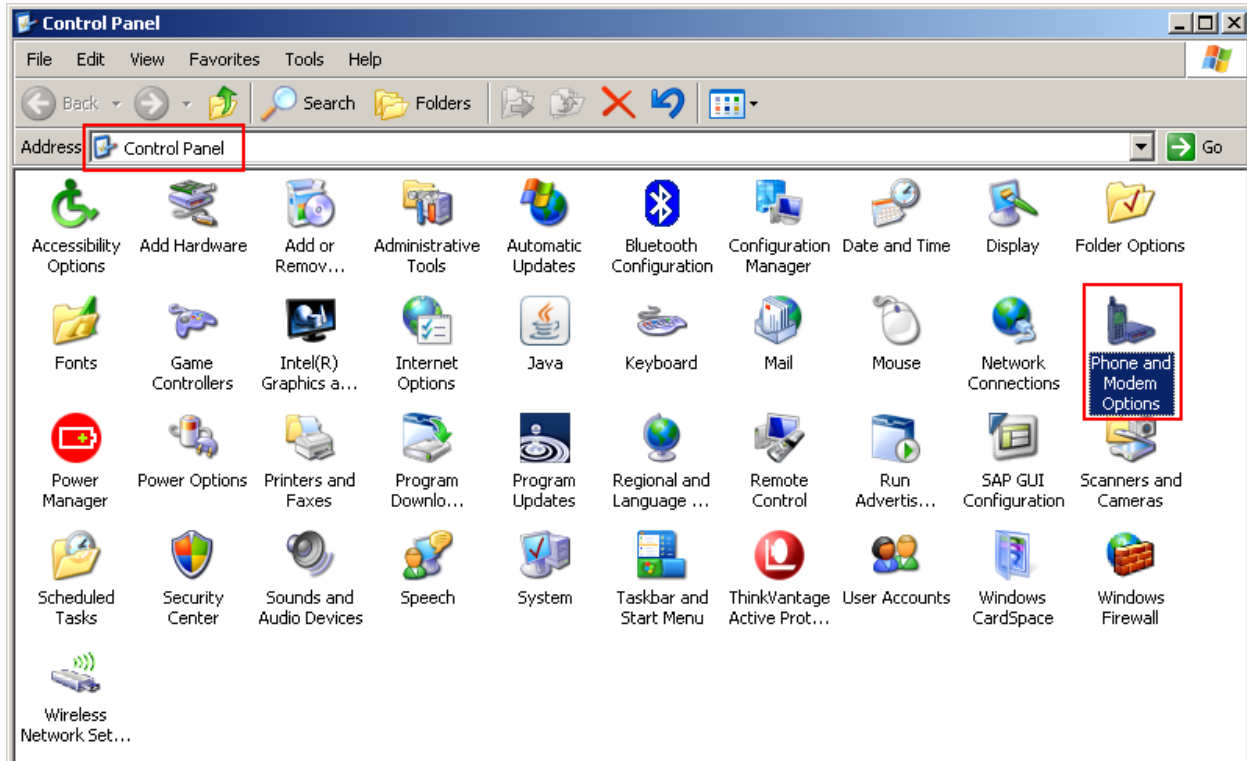
Users of IPPS must be configured on the IP Office, for the purposes of the compliance test two H323 users are setup named Extn211 and Extn212. Using the Manager application login to the IP Office Configuration, click on **User** in the left pane, and select the relevant user. Verify the **Name**, **Password** and **Confirm Password** are each configured and click **OK**. These details will be used by the user to login to the IPPS web interface. The password administered on this page, is not used to register the IP endpoint itself.

The screenshot shows the Avaya IP Office R8 Manager configuration window. The title bar reads "Avaya IP Office R8 Manager DEVCONIPO7 [8.0(18)] [Administrator/Administrator]". The left pane shows a tree view of the system configuration, with "User (18)" expanded and "211 Extn211" selected. The right pane shows the configuration for "Extn211: 211". The "User" tab is active, showing fields for Name, Password, Confirm Password, Full Name, Extension, Locale, Priority, System Phone Rights, Profile, Device Type, User Rights view, and Working hours time profile. The "Name" field is set to "Extn211", "Password" and "Confirm Password" are masked with "****", "Full Name" is "H323211", "Extension" is "211", "Priority" is "5", "System Phone Rights" is "None", "Profile" is "Basic User", "Device Type" is "Unknown IP handset", "User Rights view" is "User data", and "Working hours time profile" is "<None>". The "OK" button is highlighted with a red box.

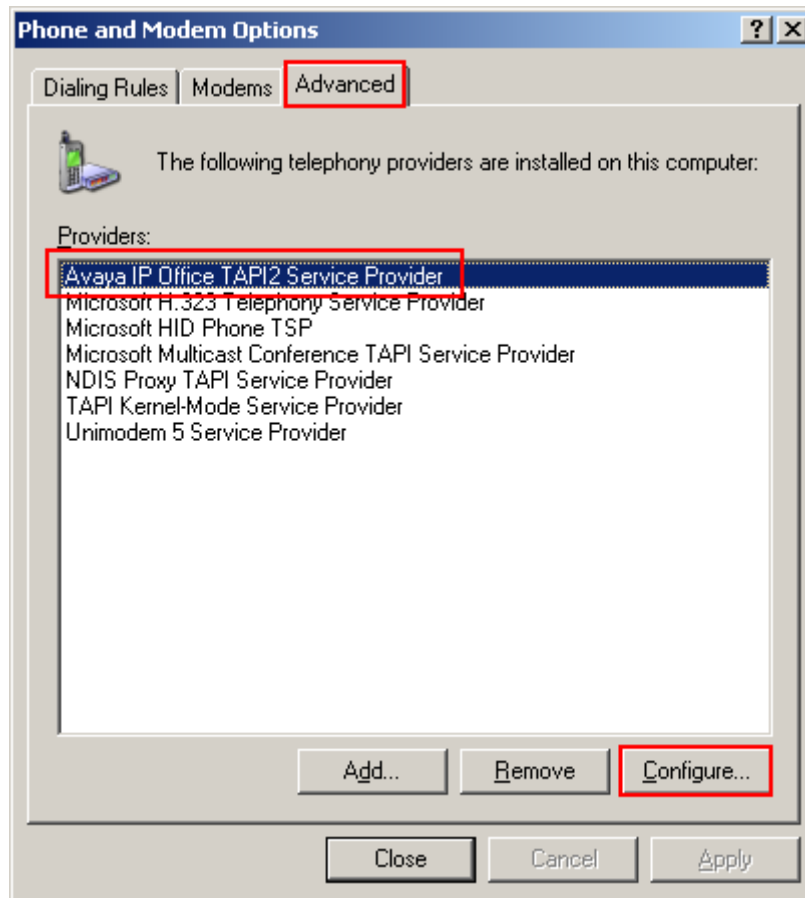
Field	Value
Name	Extn211
Password	****
Confirm Password	****
Full Name	H323211
Extension	211
Locale	
Priority	5
System Phone Rights	None
Profile	Basic User
Device Type	Unknown IP handset
User Rights view	User data
Working hours time profile	<None>

5.3. Configure TAPI Connection

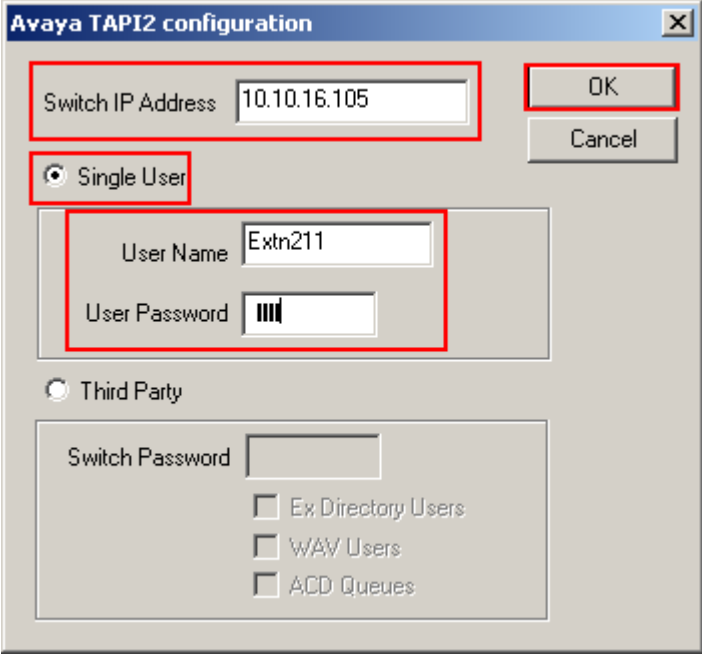
The Desktop Clid application required the IP Office TAPI2 Service Provider to be installed on each workstation. This provides Desktop Clid connectivity to IP Office. The IP Office TAPI2 Service Provider is obtained from the IP Office User CD or DevConnect site, the setup file is named tapiQ4Maint2011.exe. The Application Notes assume that the basic TAPI installation is complete using default parameters. On the workstation PC, navigate to the **Control Panel** and double click **Phone and Modem Options**.



Click **Advanced** → **Avaya IP Office TAPI2 Service Provider** → **Configure**.



Enter the **Switch IP Address** assigned to the IP Office, click the **Single User** radio button and enter the **User Name** and **User Password** as configured in **Section 5.2**. Click **OK** when done.



The image shows a Windows-style dialog box titled "Avaya TAPI2 configuration". It contains several input fields and radio buttons. The "Switch IP Address" field is set to "10.10.16.105". The "Single User" radio button is selected. The "User Name" field is set to "Extn211" and the "User Password" field is masked with "||||". The "Third Party" radio button is unselected. Below it, the "Switch Password" field is empty, and there are three unchecked checkboxes: "Ex Directory Users", "WAV Users", and "ACD Queues". "OK" and "Cancel" buttons are in the top right corner. Red rectangular boxes highlight the "Switch IP Address" field, the "Single User" radio button, and the "User Name" and "User Password" fields.

Avaya TAPI2 configuration

Switch IP Address: 10.10.16.105

OK

Cancel

☒ Single User

User Name: Extn211

User Password: ||||

☐ Third Party

Switch Password:

☐ Ex Directory Users

☐ WAV Users

☐ ACD Queues

6. Administer Endpoint Configuration Files

The configuration required to send the information relating to the IPPS solution, can be summarized as follows:


- Administer 46xxsettings.txt File
- Administer AvayaMenuAdmin.txt File

6.1. Administer 46xxsettings.txt File

The 46xxsettings.txt is used to send configuration information to an IP endpoint, in this case 9600 Series IP Deskphones. The Application Notes assume that the 46xxsettings.txt file is hosted on a webserver accessible by the endpoint, and the endpoint is configured with the address of the webserver. For the purposes of the compliance test, the following lines in the 46xxsettings.txt file are configured relevant to the IPPS solution, where **10.10.16.62** is the address of the webserver and **10.10.16.61** is the address of the IPPS server.

```
SET SUBSCRIBELIST http://10.10.16.61/ipps_dir/AvayaRegistrator.aspx
SET TPSLIST 10.10.16.61
SET WMLHOME http://support.avaya.com/elmodocs2/avayaip/9600/home.wml
SET AMADMIN http://10.10.16.62/
```

6.2. Administer AvayaMenuAdmin.txt File

Where the SET AMADMIN parameter is configured in the 46xxsettings.txt file, a file named AvayaMenuAdmin.txt must be hosted at the address specified. For the purposes of the compliance test, the AvayaMenuAdmin.txt file was provided by 2Ring, as shown below, and refers to sample applications accessible through IPPS. The information contained herein, relates what is presented to the user upon pushing the Menu or  button on the 9600 Series IP Deskphone.

```
AMTYPE01=1
AMLBL01=IPPS Cameras
AMDATA01=http://10.10.16.61/Ipps_Camera/GetCameras.aspx

AMTYPE02=1
AMLBL02=IPPS Messaging
AMDATA02=http://10.10.16.61/Ipps_Msg/Default.aspx

AMTYPE03=1
AMLBL03=IPPS ERates
AMDATA03=http://10.10.16.61/Ipps_eRates/Default.aspx

AMTYPE04=1
AMLBL04=IPPS Directories
AMDATA04=http://10.10.16.61/Ipps_Dir/Default.aspx
```

7. Configure 2Ring DesktopClid

The 2Ring Desktop Clid provides CTI and the presentation of directory information via the IP Office TAPI2 Service Provider with the IP Office and an HTTP connection with IPPS respectively. The IP Office TAPI2 Service Provider must be installed and configured prior to installing Desktop Clid.

Navigate to http://IP_Of_IPPS/IPPS in this case <http://10.10.16.61/IPPS> using Internet Explorer, click **Login** and enter the admin user credentials. Before proceeding, Desktop Clid must be enabled, click **System** → **Options** → **Edit** and place a tick in the **Enable DesktoClid** tick box, click **Submit** when done.

2RING IPPS
IP Phone Services

SYSTEM USERS DIRECTORY CLID MESSAGING EXCHANGE RATES CAMERA ACCOUNT

SK EN CZ PL WELCOME ADMIN Logout

Search Numbers Search Contact Cards Send Message

Edit System Options

Global Application Settings	Global Phone Settings
Intercity Prefix: <input type="text"/>	Cisco Phones User-Agent: <input type="text" value="^[allegro dalvik XSL-HTTPClient].*\$"/>
International Prefix: <input type="text"/>	Avaya Phones User-Agent: <input type="text" value="^.*avaya.*\$"/>
PSTN Access Code: <input type="text"/>	Where Refresh should be used instead of Redirect: <input type="text"/>
Local Area Code: <input type="text"/>	
Local Country Code: <input type="text"/>	
Language: <input type="text" value="english"/>	
<input type="checkbox"/> Set Selected Language to All IPPS Modules	
Log Level: <input type="text" value="DEBUG"/>	
<input type="checkbox"/> Convert Digits	
<input checked="" type="checkbox"/> Enable DesktoClid	
* DesktopClid URL: <input type="text" value="[ApplicationUrl]/DesktopClid/DesktopClid.application"/>	
<input type="checkbox"/> Use Proxy Server	
* Proxy's URL: <input type="text"/>	
Authentication Method: <input type="text" value="None"/>	
Username for Access to Proxy Server: <input type="text"/>	
User Password for Access to Proxy Server: <input type="text"/>	
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

* Required Field

Click **Account** → **Desktop Clid Installation**.

2RING IPPS
IP Phone Services

DIRECTORY MESSAGING **ACCOUNT**

DesktopClid Installation
Login

SK • EN • CZ • PL WELCOME GUEST Login

Search Numbers Search Contact Cards Send Message

Telephone Numbers

Company	Surname	Name	Number	Number Type	Address Book
				-- select --	-- select --

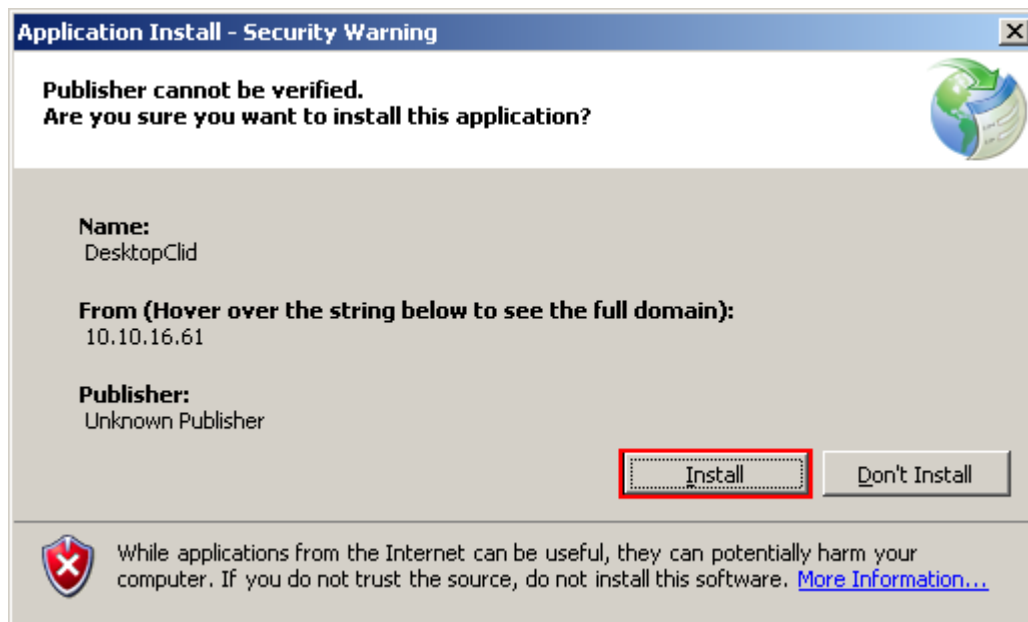
SEARCH

Company	Surname	Name	Number	Number Type	Address Book	Action
Avaya	Pope	Richard	123	Extension	Main AddressBook	

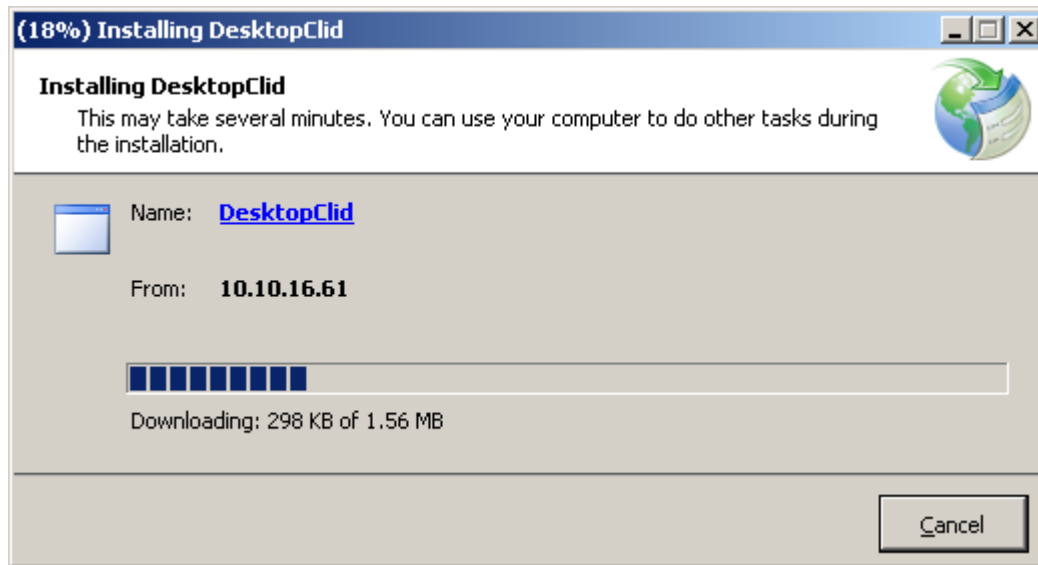
1

© 2003 - 2012 • 2Ring IPPS (IP Phone Services) v5.0.3 • 2 Ring spol. s r.o.

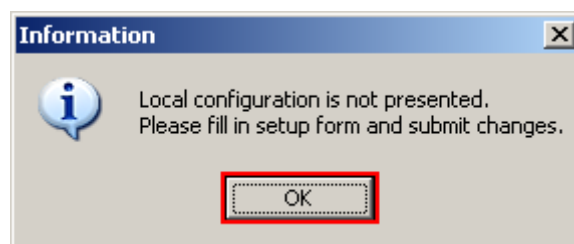
Depending on the security settings of the browser, the screen below may appear, click **Install**.



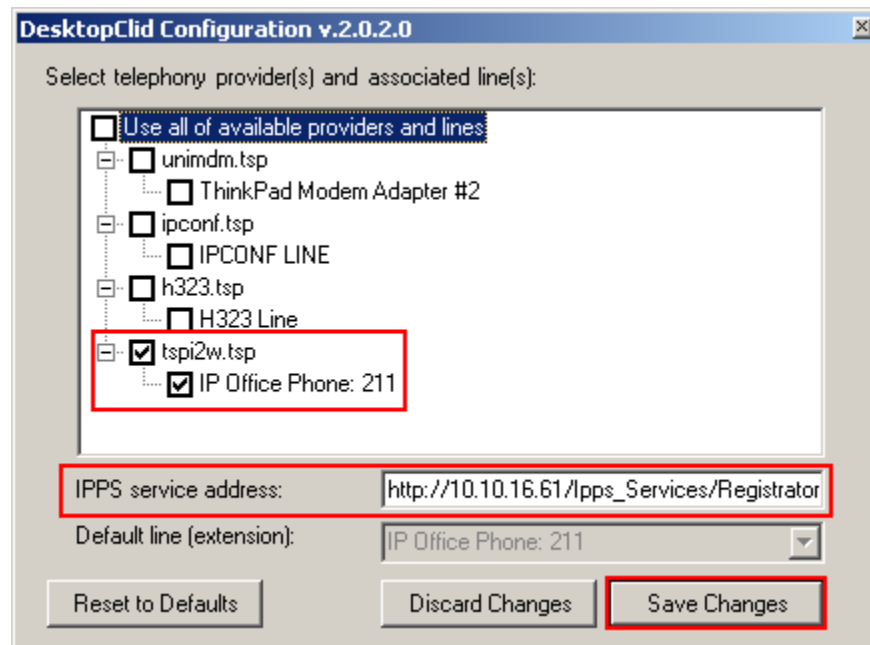
The screen shown below will appear displaying installation progress.



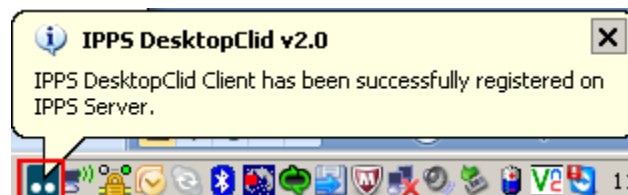
The following screen will appear, click **OK**.



The screen shown below will appear, select the **tspi2w.tsp** and **IP Office Phone: 211** tick boxes and click **Save Changes**. The **IPPS service address** field will be automatically populated.



The DesktopClid client will load in the task bar confirming successful registration to the IPPS server.



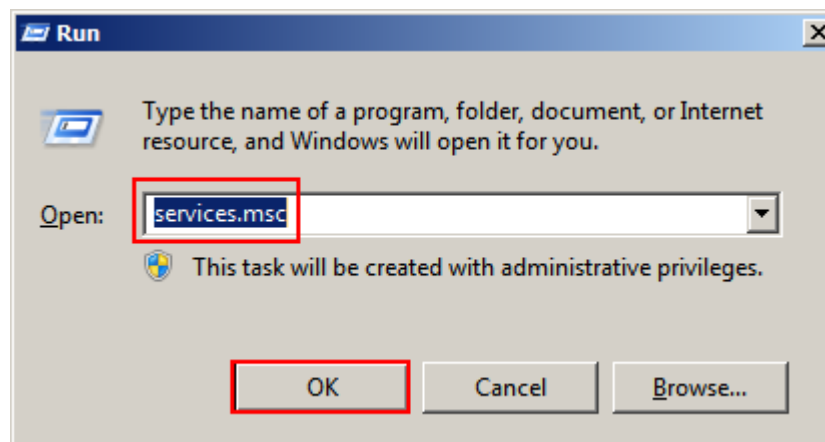
8. Configure 2Ring IP Phone Services

As part of the compliance test, IPPS was supplied by 2Ring preconfigured in accordance with the pre-requisite IP Office configuration displayed above. Details specific to the test scenario configuration can be summarized as follows:

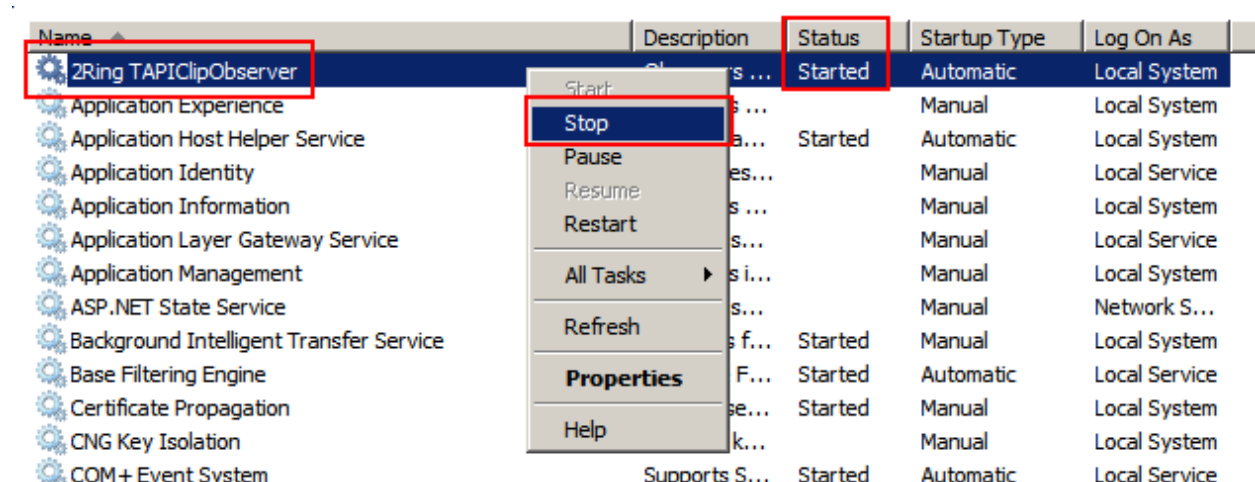
- Configure 2Ring TAPI Observer Windows Service
- Configure IP Office IP Address and Port (menu **Users** → **Users Synchronization**)

8.1. Configure 2Ring TAPI Observer Windows Service

Ensure that the TAPI Observer is stopped or not running. From the Windows machine upon which IPPS is installed, click **Start** → **Run** enter **services.msc** and click **OK**



The Services Console will appear, check the **Status** of **2Ring TAPIClipObserver**, right click on the service and click **Stop** if the status is **Running**.

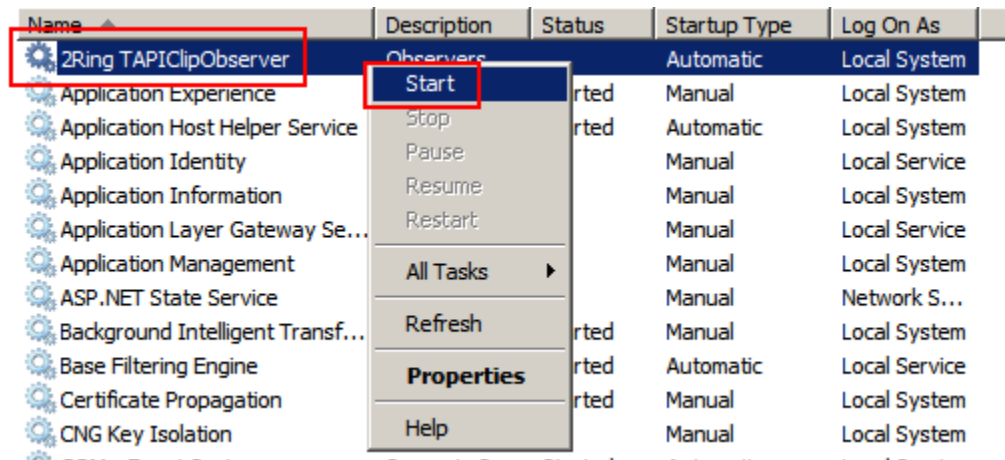


Using Windows Explorer, navigate to **c:\Program Files (x86)\2Ring\TAPIClidObserver** and open the **TAPIClidConfiguration.xml** file using an appropriate text editor. Edit the xml file so that the IP address of the IPPS server is contained within the **IPPSAddress** tags and the relevant TAPI service provider name is contained within the **ServiceProvideName** tags, in this case **tspi2w_64.tsp**.

```
<?xml version="1.0" encoding="utf-8" ?>
<TAPIClidConfiguration>
  <Debug>true</Debug>
  <IPPSAddress>http://10.10.16.61/ippes_clid/AvayaClidTAPI.aspx</IPPSAddress>

  <QueryString>event=resolveextension&amp;ani=[ANI]&amp;dnis=[DNIS]&amp;showimage=true</QueryString>
  <ServiceProviderName>tspi2w_64.tsp</ServiceProviderName>
</TAPIClidConfiguration>
```

Return to the Services Console, right click on the **TAPIClipObserver** service and click **Start**.



8.2. Configure IP Office IP Address and Port

From the IPPS web interface, click **Users → Users Synchronization → Edit** enter the correct **IP Address of Avaya IPO**, **Avaya IPO Port** configured in **Section 5.1**, **Username To Be Used for Synchronization With Avaya IPO** in this case the default IP Office administrator, **Admin Password To Be Used for Synchronization With Avaya IPO**, click **Submit** when done.

2RING IPPS
IP Phone Services

SYSTEM USERS DIRECTORY CLID MESSAGING EXCHANGE RATES CAMERA ACCOUNT

SK ** EN ** CZ ** PL WELCOME ADMIN Logout

Search Numbers Search Contact Cards Send Message

Edit Avaya IP Office User Synchronization Options

* Avaya Configuration Proxy Service URL: [?](#)
http://localhost/AvayaConfigurationProxy/IPOConfigurationService.svc

* IP Address of Avaya IPO: [?](#)
10.10.16.105

* Avaya IPO Port: [?](#)
50805

* Username To Be Used for Synchronization With Avaya IPO: [?](#)
Administrator

* Admin Password To Be Used for Synchronization With Avaya IPO: [?](#)

Default Group for New Users: [?](#)
None

* Required Field

Submit Reset

9. Verification Steps

The following steps verify the correct configuration and connection of the IPPS and IP Office solution.

9.1. Verify 2Ring IPPS TAPI Observer Service

From the machine on which IPPS is hosted, open the Services Console and verify that the status of **2Ring TAPIClipObserver** is **Started**.

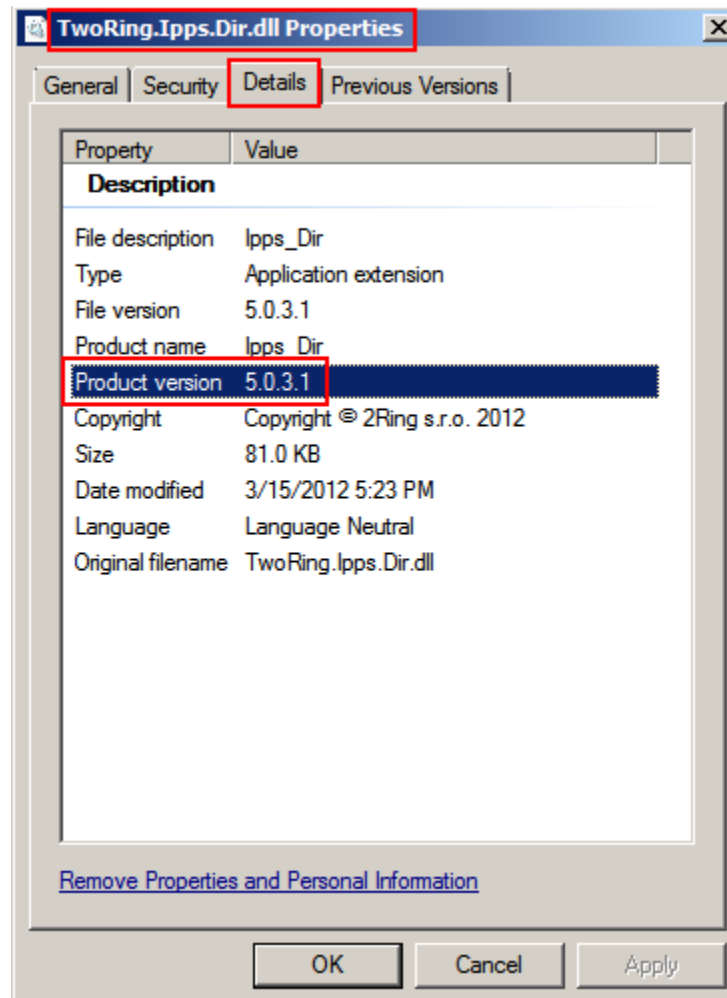
Name	Description	Status	Startup Type	Log On As
2Ring TAPIClipObserver	Observers ...	Started	Automatic	Local System
Application Experience	Processes ...		Manual	Local System
Application Host Helper Service	Provides a...	Started	Automatic	Local System

9.2. Verify 2Ring IPPS User Synchronisation

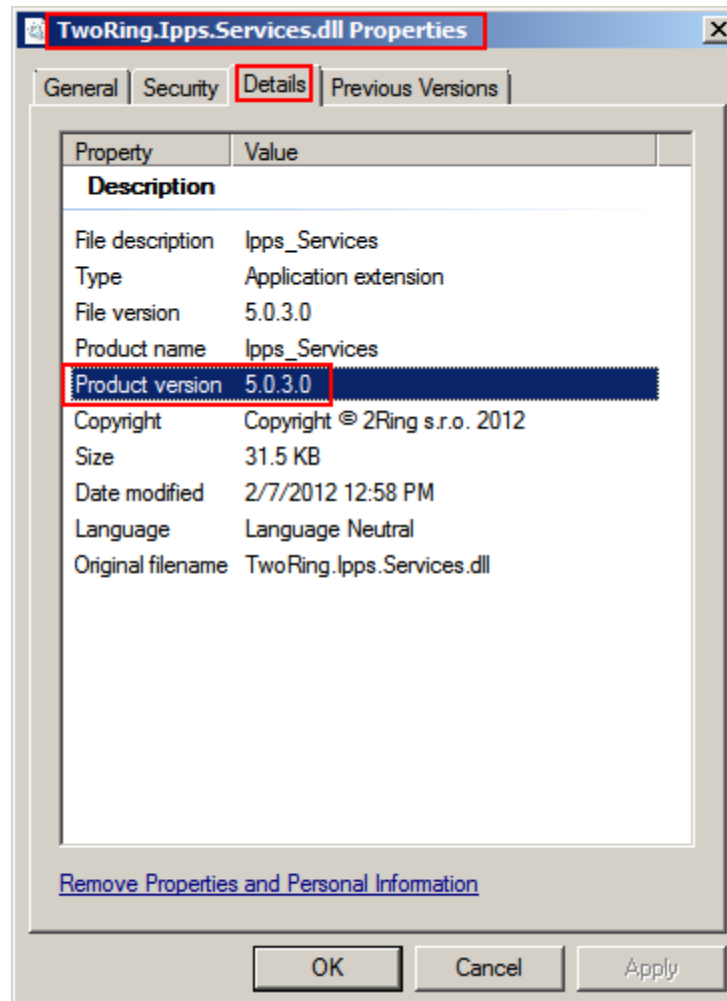
Add a new IP Office user using the Manager application. Navigate to the IPPS web interface and login with admin credentials. Click **Users → Users Synchronization → Update Users and Associated Devices**. Verify that the newly added user is synchronised with IPPS.

9.3. Verify 2Ring IPPS Version Information

From the machine hosting IPPS navigate to **c:\Program Files (x86)\2Ring\Ipps\Web\IPPS_Dir\bin** and right click on the **TwoRing.Ipps.Dir.dll** file, click **Properties** → **Details** to verify the **Product Version** is as expected.



Navigate to **c:\Program Files (x86)\2Ring\Ipps\Web\IPPS_Services\bin** and right click on the **TwoRing.Ipps.Servgices.dll** file, click **Properties → Details** to verify the **Product Version** is as expected.

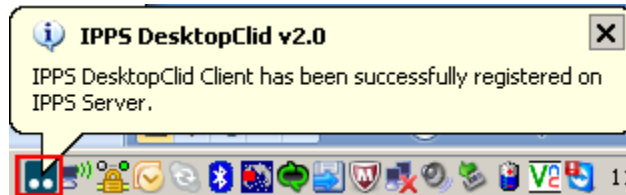


9.4. Verify IPPS Web Access from Avaya Endpoint

Using the one-X Deskphone, click the Menu button and verify that the administered IPPS application is available. Perform a search from the IPPS Directory and confirm that the administered numbers are available, the administered photo can be observed and the number dialled using the onscreen option.

9.5. Verify 2Ring DesktopClid Connectivity

From the user PC run the DesktopClid application, verify that a notification of successful registration to the IPPS Server appears.



10. Conclusion

These Application Notes describe the configuration steps required for 2Ring IPPS to successfully interoperate with Avaya IP Office IP500. All functionality and serviceability test cases were completed successfully.

11. Additional References

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

- [1] Avaya IP Office KnowledgeBase 8.0 Documentation CD (English Only)
- [2] Avaya IP Office Configuration Service Programmer's Guide - 15-601473 Issue 1b (18th October 2011)

Product documentation for 2Ring IPPS can be found at <http://www.2ring.sk>

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