

Avaya Solution & Interoperability Test Lab

Application Notes for Empix evolve v3.1 Skypetophone with Avaya IP Office 7.0 – Issue 1.0

Abstract

These Application Notes describe the compliance testing configuration of Empix evolve Skypetophone with Avaya IP Office. Empix evolve Skypetophone is a Skype connectivity program which provides Skype access to local IP Office extensions, allowing them to make calls to and receive calls from Skype endpoints.

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

Empix evolve Skypetophone is a member of the xtension evolve program suite. Empix evolve Skypetophone can be used alone, or together with the other xtension evolve components. Empix evolve Skypetophone is a PC-resident program which provides Skype access to local IP Office extensions, allowing them to make calls to and receive calls from Skype client endpoints.

2. General Test Approach and Test Results

All tests were performed manually. Only functional testing and serviceability testing were performed. No performance testing was done.

2.1. Interoperability Compliance Testing

The following functional tests were performed as part of the compliance testing:

- Incoming call from Skype client to local extension for basic call, call to busy device, and no answer
- Outgoing call to Skype client from local extension for basic call, call to busy device, and no answer.
- Hold / Retrieve for Skype call.
- Transfer Skype call via local extension to local, PSTN, and Skype endpoint.
- Conference with local extensions and Skype endpoint.
- Call forwading from local extension to Skype endpoint for calls from local extension, PSTN endpoint, and a second Skype endpoint.
- Simultaneous calls from multiple local extensions to Skype endpoints.

The following serviceability tests were performed:

- Recovery from power failure.
- Recovery from network interruptions.

2.2. Test Results

All basic tests produced the expected result.

Since Empix evolve Skypetophone runs as an application and not as a Windows service, it can only recover automatically after interruption due to power failure by dispensing with Windows login security.

2.3. Support

Support is available from Empix evolve at:

Empix evolve srl +39 0733 866 870 support@empixevolve.com http://www.empixevolve.com

3. Reference Configuration

Figure 1 illustrates the configuration which was used for testing.

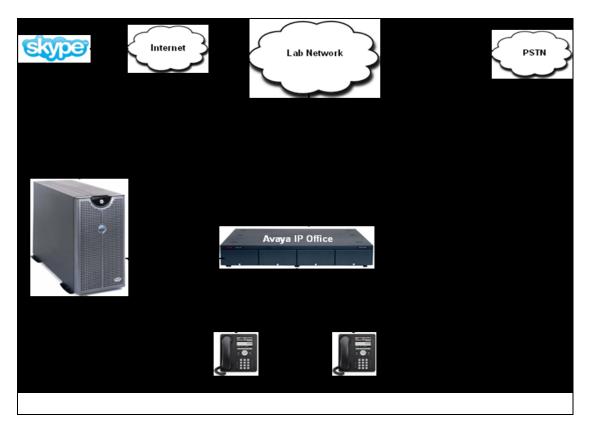


Figure 1: Empix evolve Skypetophone Lab Configuration

4. Equipment and Software Validated

Software Component	Version
Avaya IP Office	7.0
Avaya 9608	6.1(S9608_11HALBR6_1r28_V4r52)
Skype Client	5.3.32.120
Empix evolve Skypetophone Server	XTENSION EVOLVE 3.1 BUILD 20100802.013
Evolve Server platform OS	Win XP SP3

5. Configure IP Office

The configuration and verification operations illustrated in this section were performed using the Avaya IP Office Manager program. When this program is started, a tree structure consisting of icons representing the configurable components of the system is displayed as shown in **Figure 2**. When one of these icons is selected, the corresponding system component can be configured.

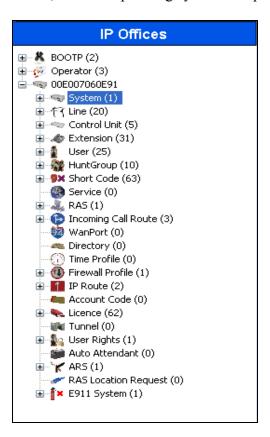


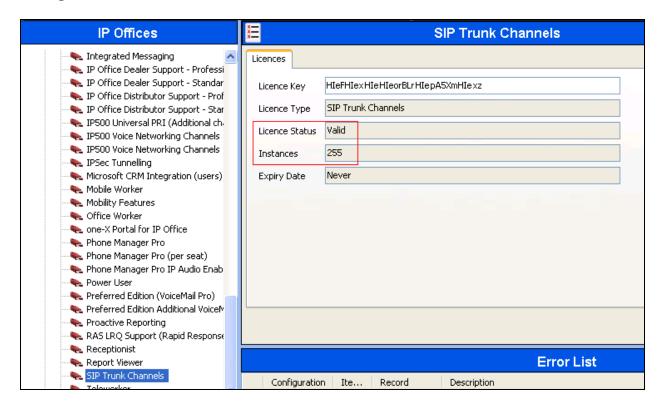
Figure 2: IPO Manager Component Tree

This section explains the configuration of the following components of IP Office that is required for the compliance testing:

- Licensing.
- System Configuration.
- Extension Configuration.
- User Configuration.
- Line Configuration.
- Short Code Configuration.
- Incoming Call Route Configuration.

5.1. Licensing

Sufficient IP Office **SIP Trunk Channels** license instances are required to cover the maximum number of simultaneous active Empix evolve Skypetophone calls which are to be handled by IP Office. To verify the proper license exists, navigate to **License > SIP Trunk Channels** in the Navigation and Group Panes. In the Details Pane, verify the **License Status** is *Valid* as shown in the **Figure** below.



SIP Trunk Channels Licenses

5.2. System Configuration

Select the **System** icon shown in **Figure 2** and enter the parameters shown in the **Table 1**. Select the tab(s) shown in the "Item" column to configure the parameters for that tab. Refer to **Figures 3** and **4**.

Item	Parameter	Usage
LAN1	IP Address	Specify the IP address to be assigned to IP Office.
LAN Settings	IP Mask	Enter the IP mask to be used by the LAN.
Telephony Telephony	Inhibit Off-Switch Forward / Transfer	Uncheck this box.

Table 1: System Configuration Parameters

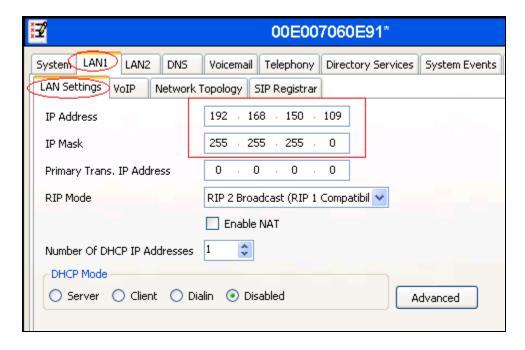


Figure 3: System Parameters: LAN1

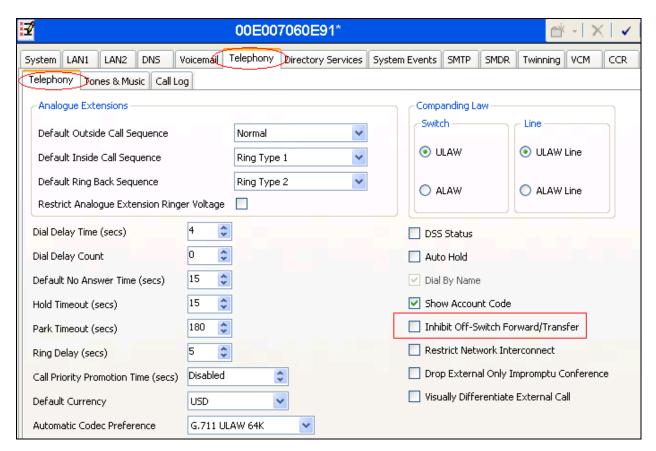


Figure 4: System Parameters: Telephony

5.3. Extension Configuration

To add a new extension, right-click the Extension icon shown in Figure 2 and select New H.323 Extension (not shown). Select the Extn tab. Set the Base Extension parameter to the extension to be assigned, and accept the default values for the remaining parameters as shown in Figure 5 below. Repeat for any number of extensions that will be required.



Figure 5: Extension Screen

5.4. User Configuration

Right-click the User icon shown in Figure 2 and select New (not shown) to create a user for each of the extension created using the parameters shown in Table 2. Refer to Figure 6.

Item	Parameter	Usage
User	Name	Enter a descriptive name to identify the user.
	Password	Enter a password.
	Confirm Password	Confirm the password entered above.
	Full Name	Enter a descriptive name to identify the user.
		Enter the telephone extension to be assigned
	Extension	to the endpoint (which was allocated in
		Figure 5).

Table 2: User Configuration Parameters

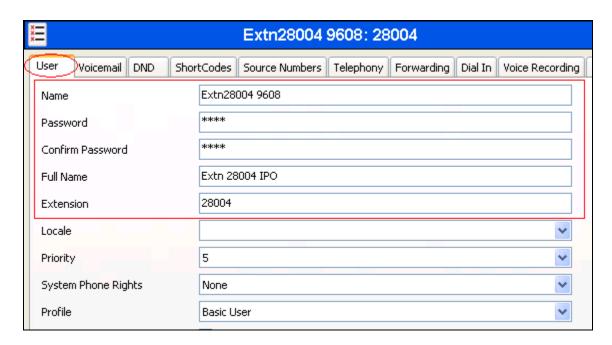


Figure 6: User Screen

5.5. Line Configuration

This section contains a description of the configuration of the SIP trunk between IP Office and Empix evolve Skypetophone Server. Right click the Line icon shown in Figure 2, select SIP Line (not shown) to be configured, and enter the parameters shown in Table 3. Refer to Figures 7, 8, 9 and 10.

Item	Parameter	Usage	
SIP Line Number STR Demain Name	Assign an available Line from the drop down box.		
	ITSP Domain Name	Enter the IP address of the Empix evolve Skypetophone	
		Server.	
	ITSP Proxy	Enter the IP address of the Empix evolve Skypetophone	
Transport	Address	Server.	
Transport	Send Port	Enter the port number to communicate with the Empix	
	Selia Port	evolve Skypetophone Server.	
	Local URI	Enter "*".	
	Contact	Select "Use Internal Data" from the drop-down menu.	
SIP URI	Display Name	Select "Use Internal Data" from the drop-down menu.	
SIPUKI	Registration	Select "0: <none>" from the drop-down menu.</none>	
	Incoming Group	Enter the line number assigned.	
	Outgoing Group	Enter the line number assigned.	
VoIP	Compression Mode	Check the "G.711 ALAW 64K" box, and uncheck the	
	Compression wode	others.	

Table 3: SIP Line Configuration Parameters

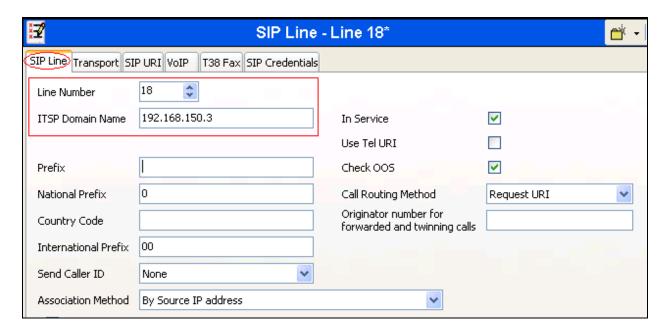


Figure 7: SIP Line Configuration Screen

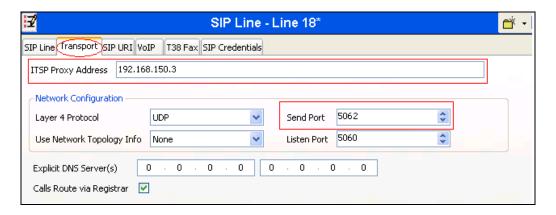


Figure 8: Line Configuration: Transport

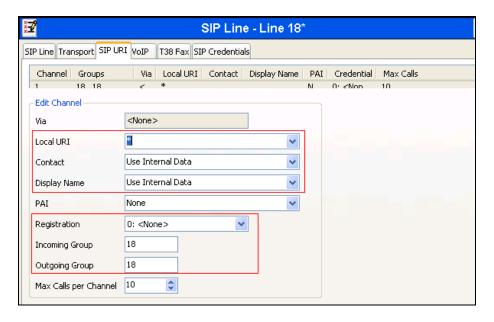


Figure 9: SIP: SIP URI Configuration Screen

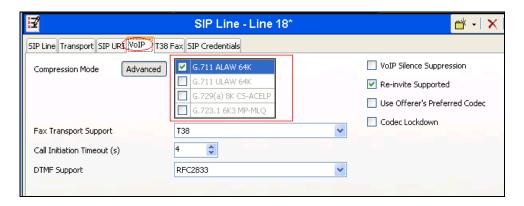


Figure 10: SIP: VoIP Configuration Screen

5.6. Short Codes

Right-click the **Short Code** icon shown in **Figure 2** and click **New** (not shown) to allocate a short code to provide access to the Empix evolve Skypetophone Server via the SIP interface, using parameters as shown in **Table 4**. Refer to **Figure 11**.

Item	Parameter	Usage
	Code	Enter 56N ; Since DN assigned on Empix evolve Skypetophone Server used during compliance testing is 56xxx.
Short Code	Telephone Number	Enter 56N"@192.168.150.3" where 192.168.150.3 is the IP address of the Empix evolve Skypetophone Server.
	Line Group ID	Enter the line number which was assigned to the interface in Figure 7 .

Table 4: Shortcode Configuration Parameters: Empix evolve Skypetophone Server

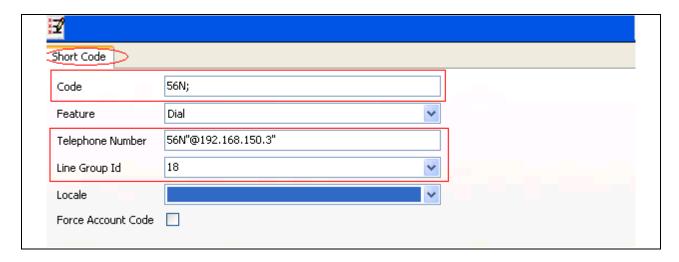


Figure 11: Empix evolve Skypetophone Server Access Short Code

5.7. Incoming Call Route

Right-click the **Incoming Call Route** icon shown in **Figure 2** and click **New** (not shown) to create an Incoming Call Route for the SIP trunk to local extensions. Assign parameters to this call route as shown in **Table 5**. Refer to **Figures 12** and **13**.

Tab	Parameter	Usage
Standard	Line Group Id	Enter the Group Id of the SIP line, as shown in Figure 7 .
Destinations	Destination	Enter ".".

Table 5: Parameters for Incoming Call Routes

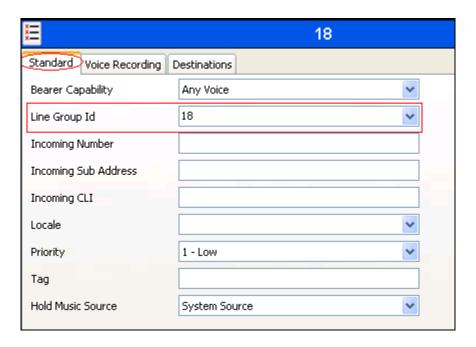


Figure 12: SIP Incoming Call Route - Standard Parameters

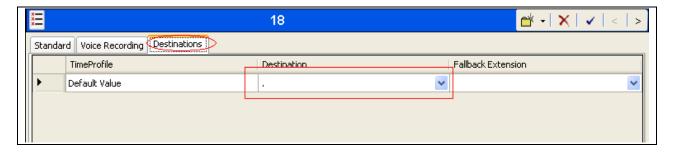


Figure 13: SIP Incoming Call Route - Destinations Screen

6. Configure Windows XP

The procedure described in this section is optional. However, if this procedure is not performed, the Empix evolve Skypetophone program will not restart automatically after recovery from a power failure, and the Empix evolve Skypetophone application will have to be restarted manually.

However, this procedure has the disadvantage of disabling Windows XP login security. A designated user is logged in automatically, without entering a password, each time Windows starts and thus may pose too high a risk for some operational environments.

This procedure was configured for the server PC which was used for DevConnect compliance testing. This has been tested only with Windows XP.

Since the Empix evolve Skypetophone service runs on the server PC as an application and not a system service, steps must be taken if it is required that the service start automatically after recovery from a power failure. This procedure causes the Windows user from which the Empix evolve Skypetophone application is run to be logged into Windows automatically when the server PC is started, and to auto-start the Empix evolve Skypetophone application at user login.

Start the Windows user account administration by starting the Run"dialog from the Windows Start"control, entering control userpasswords2, and clicking OK as shown in Figure 14 below

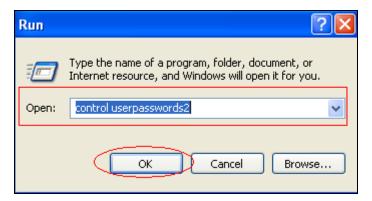


Figure 14: Dialog to Start User Administration

The User Accounts window is displayed. Select the Users tab. Uncheck the Users must enter a user name and password to use this computer, and click OK as seen in Figure 15 below.



Figure 15: User Account List Screen

The **Automatically Log On** window is displayed. Enter the credentials for the user to be automatically logged in when the system starts, and click **OK** to continue as shown in **Figure 16** below.

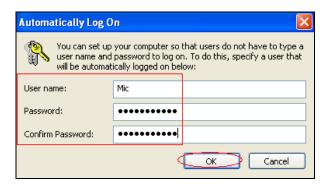


Figure 16: Auto-login User Selection Screen

Select the **Advanced** tab and uncheck the **Require users to press Ctrl+Alt+Delete**, and click **OK** as shown on **Figure 17** below.

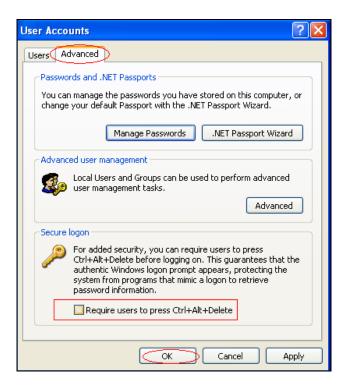


Figure 17: User Account Advanced Tab Screen

Insert a shortcut to the **xtension skypetophone** application in the Windows autostart directory as shown in **Figure 18** below.

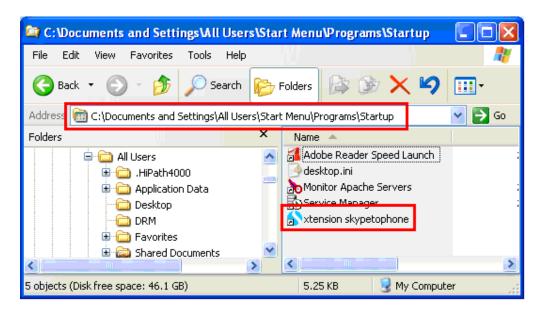


Figure 18: Windows XP Autostart Directory

7. Configure Skype

Skype users are created via the Internet using a web browser by browsing to http://www.skype.com and clicking **Get Skype** at the main screen as shown in **Figure 19** below. The procedure described in this section must be repeated for each extension which requires Skype access. During compliance testing the Empix evolve Skypetophone Server was loaded with the Skype application too.

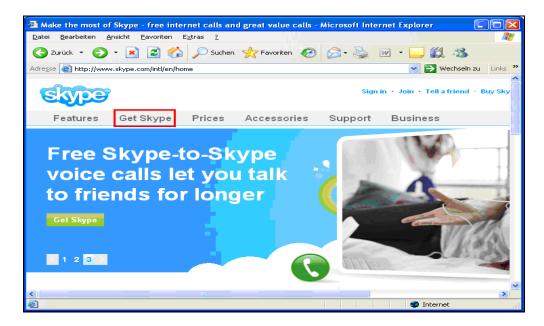


Figure 19: Skype Introductory Screen

Click on Get Skype for Windows as shown in Figure 20 below.

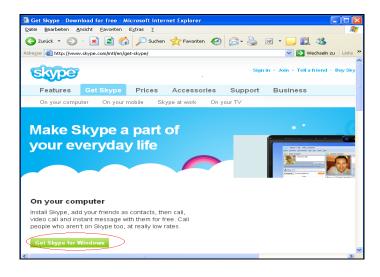


Figure 20: Skype Platform Choice Screen

Click on **Download now** as shown in **Figure 21** below.



Figure 21: Skype Download Confirmation Screen

Click on Run as shown in Figure 22 below.



Figure 22: Skype Download Dialog

Click on **Run** as shown in **Figure 23** below.



Figure 23: Skype Security Warning

Click on Run as shown in Figure 24 below.



Figure 24: Skype Security Confirmation Screen

Select the required language and click on I agree – install as shown in Figure 25 below.



Figure 25: Skype License Screen

Uncheck the Sign me in when Skype starts box and click on Don't have a Skype Name as shown in Figure 26 below.



Figure 26: Skype Welcome Screen

Enter the parameters shown in **Table 6** and click on **I agree – create account** as shown in **Figure 27** below.

Parameter	Usage
Full Name	Enter a descriptive name to identify the user.
Create Skype Name	Enter the Skype user ID. This must match the value entered in Figure 34.
Password	Enter an appropriate password. This must match the value entered in Figure 34.
Email	Enter the email address at which the user can be reached.
Send Promotions	Uncheck this box if you do not require promotional material.

Table 6: User Configuration Parameters

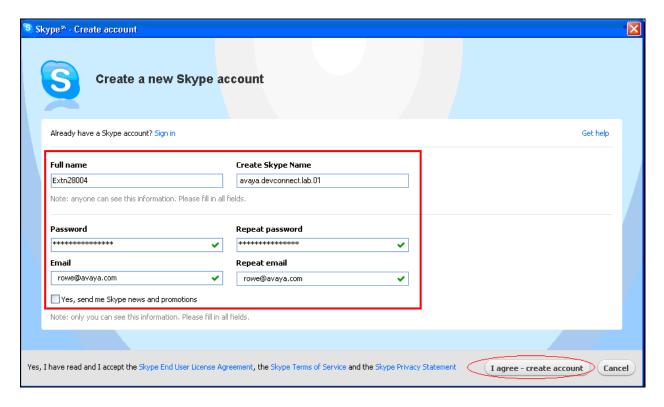


Figure 27: Skype Account Dialog

Additional user information can optionally be entered into this dialog. Uncheck the **Sign me in when Skype starts** box and click on **OK** as shown in **Figure 28** below.

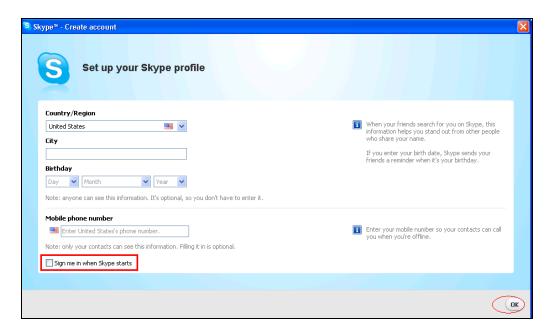


Figure 28: Skype Profile Screen

Uncheck the **Show welcome screen at startup** box and click the **right arrow** button as shown in **Figure 29** below.

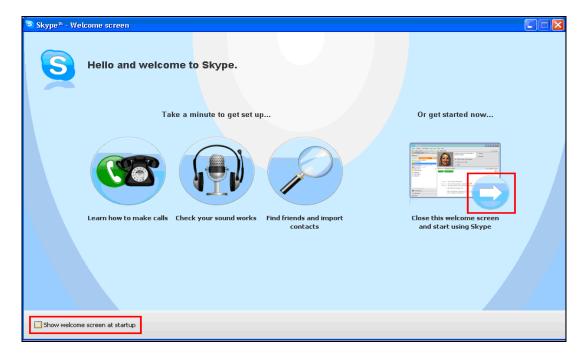


Figure 29: Skype Startup Screen

Click the red X in the upper right corner to exit the program. Refer to Figure 30 below.

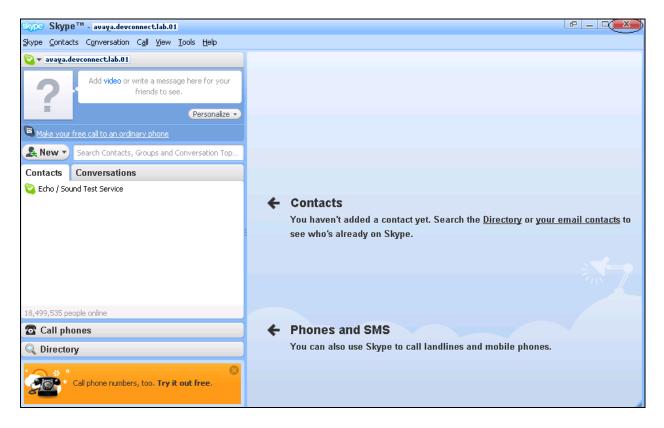


Figure 30: Skype Program Screen

8. Configure Empix evolve Skypetophone

The Empix evolve Skypetonphone Server installation process also installs MySQL and the Apache server. The installation procedure is beyond the scope of this document. Refer to **Section 11[2]** for further information on complete installation and configurations of the Empix evolve Skypetophone Server.

Empix evolve Skypetonphone Server uses a Web-based tool for configuration, which can be accessed from the server via http://localhost:20080/login.php. The initial login credentials are for Username "administrator" with Password "1234" as shown in Figure 31 below. These values should be changed subsequently for security reasons.

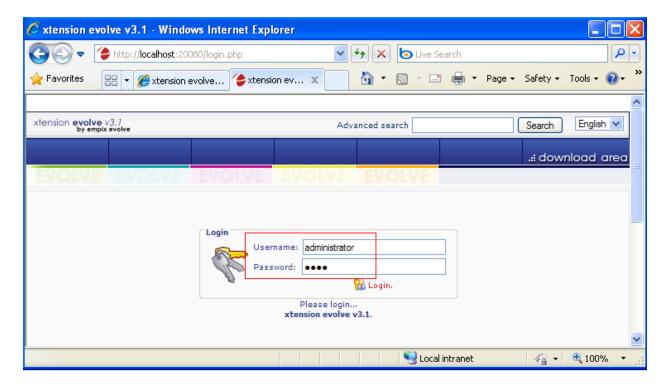


Figure 31: Empix evolve Skypetophone Server Login Screen

This section explains the configuration of the following components of Empix evolve Skypetophone Server that is required for the compliance testing:

- Configure Routing Table.
- Configure System Parameters.
- Adding Skypetophone users.
- Starting Service.

8.1. Configure Routing Table

Navigate to **Administrative tools > Routing Table** and enter the parameters shown in **Table 7**. Refer to **Figure 32** below.

Parameter	Usage
skypetophone	Enter the leading digit which is used to route connect calls.
Connect2	If any of these services are used, this field should be set appropriately. If the
faxserver	service is not used, a digit should be entered which does not correspond to any
SIP gateway	numbers in the IP Office dialing plan, as none of these fields can be left blank.
Recorder	
Digits	Enter the number of digits to be used for Empix evolve Skypetophone Server
number	extensions.

Table 7: Routing Table Configuration Parameters

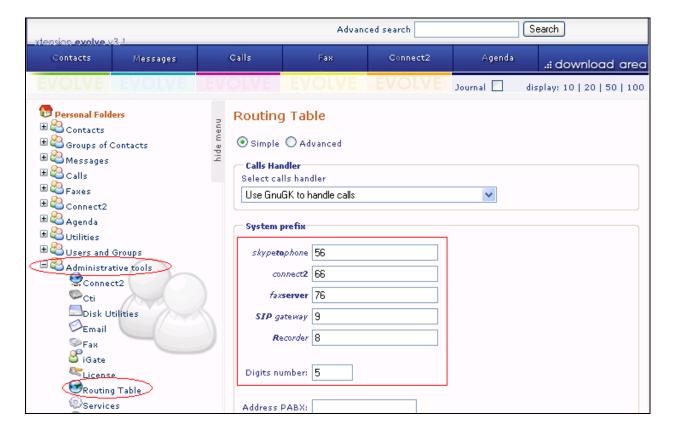


Figure 32: Xtension evolve Routing Table

8.2. Configure System Parameters

Navigate to **Administrative tools > Skypetophone** (not shown) and enter the parameters shown in **Table 8**. Refer to **Figure 33** below.

Parameter	Usage
	Prefix to be used to make calls using Skype minutes; by default it's set by
SkypeOut prefix	the system to Empix evolve Skypetophone's leading digit set on the
	routing table followed by a "0".
Country code	Enter the country dialing code preceded by a "+" character.
International prefix	Enter the prefix used to dial international numbers.
Skype path	This field should contain the path of the Empix evolve Skypetophone
	server. If this field is valid, a green check icon should appear to the right
	of the field.
	This value must be sufficient to supply one channel each for the maximum
Maximum number	number of simultaneous Skype calls, plus one channel each for the
of channels	maximum number of simultaneous call diversions or call transfers for
	Skype calls. This value should match the "Match Calls per Channel" field
	in Figure 9 .
Interface	Enter "*:" followed by the port number used to receive SIP messages. Set
Interrace	this value to match the "Send Port" parameter in Figure 8 .

Table 8: User Configuration Parameters

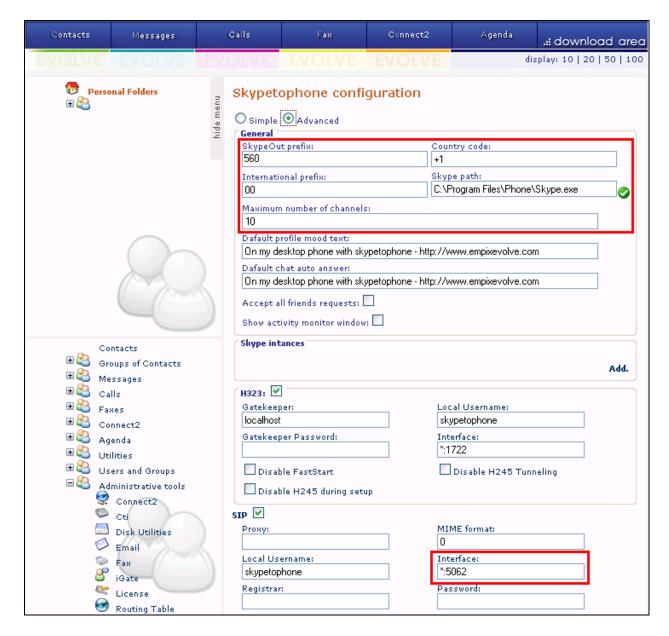


Figure 33: Empix evolve Skypetophone Configuration

8.3. Add Skypetophone Users

Click **Add** within the **Skype Instances** (see **Figure 33**) box to add a Skype user, and enter the parameters shown in **Table 9**. Refer to **Figure 34** below. Repeat this for each IP Office endpoint.

Parameter	Usage
Skype User	Enter the username for the Skype account. This must match the value from Figure 27 .
Skype Password	Enter the password for the Skype account. This must match the value from Figure 27 .
Forward to	Enter "sip:", the user's local extension, "@", IP address of IP Office SIP trunk configured in Figure 6 and Figure 3 .
Reserved for	Enter the user's local extension (optional field: if this is set, the Skype instance will be used only by the extension.).

Table9: User Configuration Parameters

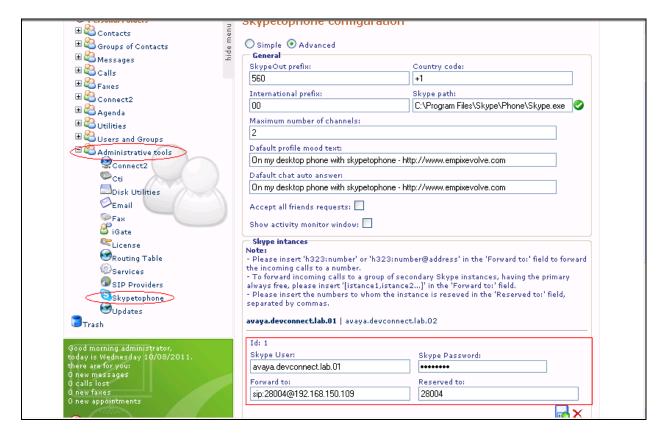


Figure 34: Empix evolve Skypetophone Simple Configuration

8.4. Start Service

Navigate to **Administrative tools > Services.** Check the box for **skypetophone** and click the **Start xtension evolve service** button as shown in **Figure 35** below. The Empix evolve Skypetophone application must subsequently be started manually. It can be found at **Start > Programs > xtension evolve** (not shown).

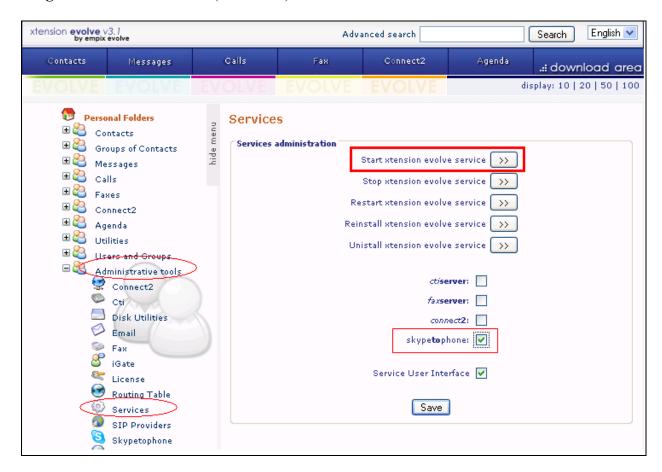


Figure 35: Services Screen

At this point a Skype instance will be started for each Skype client that has been configured and they will be automatically logged in by the system. This will appear only briefly, and disappear on its own. Refer to **Figure 36** below.



Figure 36: Skype Login Indication Screen

The first time that a client is logged into Skype the dialog screen as shown in **Figure 37** below appears on the server. Click **Allow access** to complete the Skype user registration.

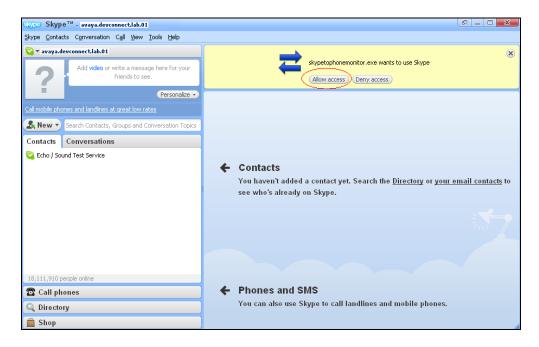


Figure 37: Skype Login Indication Screen

9. Verification Steps

Use the following steps to verify that the Skypetophone Server and Avaya IP Office are each configured correctly.

- Basic incoming call features between Skype client and local extension were verified.
- Basic outgoing call features between Skype client and local extension were verified.
- Simultaneous calls from multiple local extensions to Skype endpoints were verified.
- Recoveries from power and network interruptions were verified.
- Verified the status of the SIP trunk which connects IP Office to the Empix evolve Skypetophone application with the IP Office System Status utility, and verify that the allocated trunk members are in the "idle" state.

10. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 2** with the exception of the observation explained in **Section 2.2**. The Empix evolve Skypetophone Server application is considered compliant with Avaya IP Office Release 7.0.

11. Additional References

- [1] Product documentation for Avaya products may be found at: https://support.avaya.com/css/Products/
- [2] Product documentation for Empix evolve Skypetophone Server may be found at: http://www.empixevolve.com/downloads/

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