

Evolution PBX Administrator Guide



Version 3.0

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Introduction

This guide is an overview of installing and configuring Evolution PBX 3.0 as a basic PBX using standard trunks (analog, T-1, or VoIP over broadband) and standard SIP compatible, VoIP telephones and analog terminal adapters (ATAs).

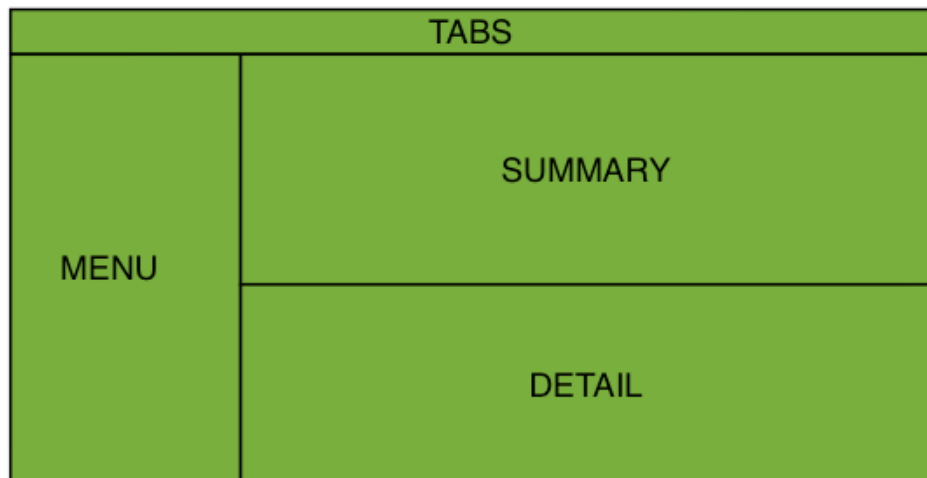
System Requirements

Evolution PBX requires a dedicated personal computer or server with the following minimum requirements:

- x86 Intel Pentium compatible Computer
- 600 MHz minimum, 1 GHz or better recommended
- 512 MB RAM minimum 1 GB or better recommended
- 4 GB Hard Drive minimum, 10 GB or more recommended
- CD-ROM or DVD-ROM Drive for software installation (a CD burner is also required if you elect to download and create your own installation disk)
- Internet Access
- Other telephony devices such as phones and phone line hardware are required for many features but are not required to install and setup a basic system.

Evolution PBX Graphical Interface Terminology

The Evolution PBX graphical user interface (GUI) is organized into four general sections. Across the top are tab-like links with titles like Resources, Call Routing, Administration, and Reporting. These will be referred to as tabs and named according to their titles (e.g. the Resources tab). The second section is the menu located on the left side of the screen. This menu will change color and text depending on which tab you click on at the top of the screen. Clicking on any one of these menu items will display a specific PBX resource in the main body of the web page. This main body composes the last two sections of the Evolution GUI: the summary section and the detail section. Each of these sections display different information dependent on the tab and menu item that you have selected and according to the whether or not you have existing items configured. The following graphic highlights where each of these sections are found on the GUI screen.

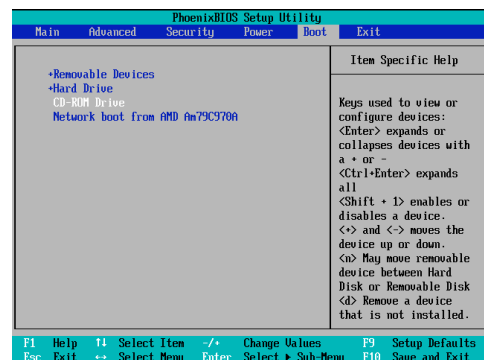


Installation of Evolution

Evolution PBX is typically shipped pre-installed on servers that are purchased from Intuitive Voice Technology. A CD-ROM may be downloaded or shipped you for trial or for purchase. Contact pbxsales@intuitivevoice.com for more information.

If you install Evolution yourself the Evolution PBX installation CD-ROM is used to boot your server and begin the installation process. The installation process will completely format the servers hard drives and convert it to a PBX appliance. The installation process is as follows:

1. Verify that your computer BIOS is setup to boot first to the CD or DVD drive that you will be installing from. Refer to your computer or motherboard documentation for information about setting your computers boot order. An example of a BIOS setup screen is to the right.
2. Insert the Evolution PBX installation CD-ROM into your CD or DVD drive.

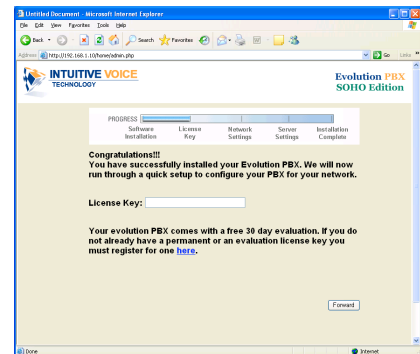


- netconfig - reset the server's IP network information (IP address, network mask, default gateway, DNS server IP address, domain name).
- password - resets the web admin password to Password!.
- yourout - escapes out of the Evolution terminal screen to allow you to log in to the command line interface.

First Run Wizard

The first time that you attempt to log in to Evolution PBX from a Web browser you will be confronted with a first run wizard. Following are the steps:

1. Open a Web browser on a computer other than the Evolution server but that is connected to the same network. In the address bar enter <http://X.X.X.X/home/admin.php> (where X.X.X.X is the IP address that you wrote down at the end of the installation process).
2. Enter your license number. Click the Forward button.
3. On the next screen configure the network settings for your Evolution PBX and change the Admin password. By default when Evolution is first installed it acquires its network information from your network via DHCP (Dynamic Host Configuration Protocol). You should assign your own password and assign a static IP address in the IP Address (a static IP address is one that does not change). Modify the Default Gateway, Subnet Mask, DNS Servers, and Behind NAT settings as needed for your network.



Note: The IP Address, Default Gateway, Subnet Mask, and DNS Server settings must be correct for your Local Area Network (LAN). Please contact your network company or Intuitive Voice Support if you have questions about your LAN. The Behind NAT setting configures Evolution for a private IP address with access to the Internet through a NAT (Behind NAT Yes) or for a public IP address with direct access to the Internet (Behind NAT No).

4. Click the Forward button.
5. Select the extension length and starting number for your desired extension range.
6. Choose whether you want to disable or enable the DHCP server built into Evolution and set the time zone that you want Evolution (and any connected telephones) to display. If in doubt regarding the DHCP server, leave it disabled. If you enable the DHCP server configure the following per you network:
 - a) Domain Name - the domain name that Evolution will hand out for DHCP service.
 - b) DHCP Starting IP - the lowest IP address that will be handed out to clients.
 - c) DHCP Ending IP - the highest IP address that will be handed out to clients.

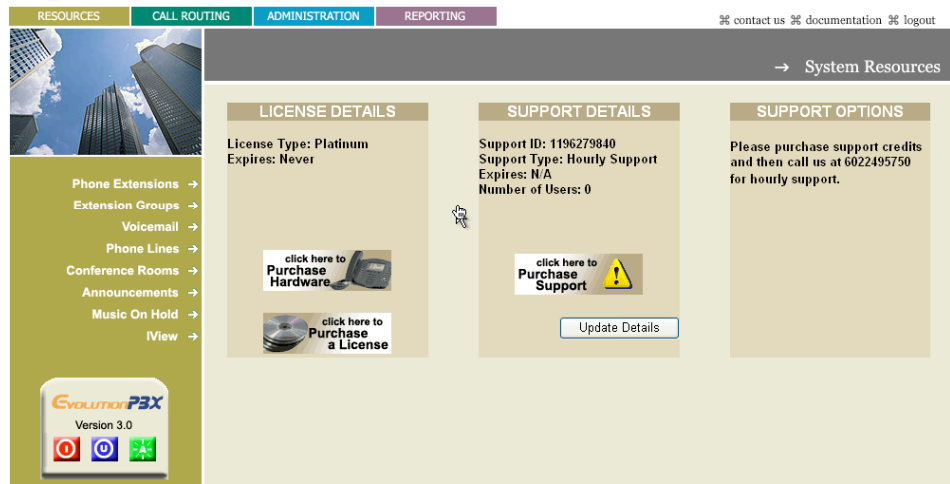
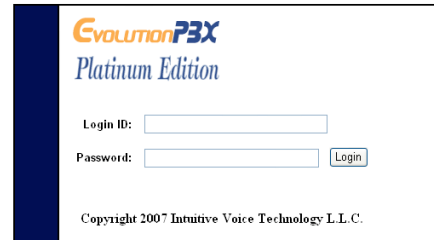
Note: You can have only one DHCP server on your LAN. Full auto discovery and auto provisioning of some telephones require Evolution to be configured as the telephones DHCP server.

7. Set the time zone of the server. Individual time zones for each telephone can be set later.
8. Click the Forward button. Click the Reboot Evolution button and wait for the server to restart.
9. After Evolution is running again return to your Web browser and click on the link provided by Evolution after the last step or open a new browser (pointed at

<http://X.X.X.X/home/admin.php>, where X.X.X.X is the IP address that you set in the first run wizard).

Note: You must change the URL in your address bar to reflect the new IP address of Evolution if you changed it during the first run wizard.


10. You will see a login screen like that on the right:
11. Log in using the Login ID Admin and the password that you set up in the first run wizard. If you left it as the default password it is Password1! (that is, the word Password with a capital P followed by a number one and then an exclamation point).
12. Success! You can begin using Evolution PBX. Following is a screen shot of the first page you will see after you log in:

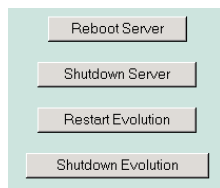


The Resources screen provides information about your license and support for Evolution PBX. When this page initially loads it contacts the Intuitive Voice Technology server to synchronize the license and support details. Click the Update Details button to force Evolution to re-synchronize with the Intuitive Voice Technology server. The Number of Users in the Support Details box is calculated automatically by Evolution as the number of Phone Extensions configured.

Server Control Panel


On the left side of the screen under the menu items is the server control panel. The control panel provides three buttons to control your server and also displays the


current version of your Evolution software. Click on the red button  to open a pop up screen that provides four buttons to reboot the server, shut down the server, restart Evolution, and shut down Evolution. Rebooting the server means that the operating system and all components will be shut down and restarted.



Shutting down the server means that the operating system and all components will be shut down. Restarting Evolution means that only the telephony core will be shut down and restarted (the operating system and other server components will not be restarted). Shutting down Evolution means that only the telephony core will be shut down (the operating system and other server components will not be shut down).

If the telephony core is not running then only three buttons will be displayed: Reboot Server, Shutdown Server, and Start Evolution. The Start Evolution button will start the telephony core of Evolution.

The blue button  uses the Internet to check with Intuitive Voice Technology

for available upgrades to the software. The green button  activates all changes that have been made with the Evolution PBX web interface. Evolution normally activates changes automatically.




Phone Extensions

Evolution supports telephones and other telephony devices that use the SIP protocol. There are two categories of supported devices: specific devices and generic devices. Specific devices include Polycom SoundPoint IP telephones, Linksys SPA and PAP telephones and adapters, and Cisco 7960 and 7940 telephones. Many other SIP device may be configured as a generic device. Evolution can provide automatic configuration of supported telephone. Auto configuration requires that you set the MAC address of the telephone in Evolution and set the Evolution IP address in the phone as its TFTP server address. When you configure a generic device Evolution provides configuration parameters that you must use to manually set up your generic device (any SIP device that is not listed specifically in the New Device drop down menu on the Phone Extensions screen). Firmware and configuration files are not provided automatically for a generic device.

instructions for configuring extensions, telephones, and VoIP adapters.

SIP Global Settings

SIP global settings (same as Global Settings under the Administration tab) are parameters that apply to all devices that are registered with Evolution. SIP global settings can be accessed by clicking on the globe icon next to the Save and Delete buttons on every extension detail screen (Resources tab > Phone Extensions > pencil to edit extension > global icon) or by clicking on the Administration tab and

then the SIP Global Settings menu item.    See the SIP Global Settings section of this document for more information.

Cisco 7960 and 7940

Note: Cisco 7960 and 7940 VoIP telephones must run the SIP protocol to work with Evolution PBX (available protocols include SIP, SCCP (also known as Skinny), and MGCP). New 79xx telephones usually ship with SCCP and must be converted to SIP. The conversion process requires the phone to be converted to an old version of SIP firmware and then progressively upgrade to new versions of SIP.

If you phone is not new or is from an unknown source you must verify your current firmware type and version. You may be able to skip some of the steps below or you

may have a firmware type that is not compatible and can NOT be upgraded using this process. Please contact Intuitive Voice for additional information.

Following is the process to upgrade Cisco 7960s and 7940s from the SCCP firmware (as shipped standard) to SIP:

1. Log in to the Evolution server as root (see Option to Reset Root Password in this document for more information about root access).
2. Modify the image_version setting in the following file to reflect the firmware image that you want (according to the versions listed in **step 10** below):
 - cd /evo/tftp
 - vi SIPDefault.cnf (i to insert, escape to exit insert mode, :wq to quit, :q! to quit without saving)
3. Modify the firmware version listed in the following file to reflect the firmware image that you want (the same as in step two of this how-to):
 - You should be in /evo/tftp (pwd will print working directory, i.e. tell you where you are in Linux). If you are not then: cd /evo/tftp
 - vi OS79XX.TXT (i to insert, escape to exit insert mode, :wq to quit, :q! to quit without saving)
4. Plug in and power up the Cisco phone(s)
5. Set the phone's Alternate TFTP setting to YES and set the TFTP Server setting to the IP address of your Evolution server (step five may be skipped if you use DHCP to set your phones TFTP information)
6. The phone(s) will load the image that you specified in the steps 2 and 3 above
7. Modify each of the files above with the next version you want (according to the versions listed in **step 10** below)
8. Reboot the phone(s)
9. Repeat until you have upgraded through all firmware versions
10. Use the following versions in the following order (unless you are already running one of the more recent versions. In that case start with the next available version):
 - PoS30201 (you may need to reset the phone's TFTP settings as you did in step five above)
 - PoS30203
 - PoS3-06-3-00
 - P003-07-4-00
 - PoS3-07-5-00 (the final firmware version as displayed under the phones [Settings > Status > Firmware Version > Application Load ID] should display either PoS3-07-5-00 or PoS3-07-4-00, note the S in both of these load IDs)

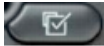
Please contact support@intuitivevoice.com if you questions or to purchase Intuitive Voice professional services for Cisco firmware issues.

Use the steps that follow to configure a basic extension in Evolution for a Cisco 7960 or 7940 VoIP telephone. A description of each setting available for the Cisco telephones is provided below at the end of this section.

1. Log on to Evolution and click the Resources tab at the top of the screen.
2. Click Phone Extensions in the menu on the left side of the screen.

- At the bottom of the screen there is a drop-down menu titled New Device, Select VoIP-Cisco-7960 or VoIP-Cisco-7940.

General		Phone Settings		Settings	
Extension	4000	Phone Type	Cisco-7960	Remote Phone	No
Caller ID Name	Name	MAC Address	entermac	IP Address	For Future Use
Caller ID Number	5551231234	Mailbox	Personal	Heartbeat	2000
Record Calls	No	Time Zone	Pacific	Outbound	Internal-Local-Toll
Parent Extension	Master	Paging	Disabled	Codec	G711 (USA)

- The Modify Phones detail frame will appear. Edit the following:
 - Select the extension number that you want using the Extension drop-down menu.
 - Edit the Caller ID Name field to reflect the name you want to be passed as this extension's Caller ID text.
 - Edit the Caller ID Number field to reflect the number you want to be passed as this extension's Caller ID number.
 - Enter the MAC address from the back of the phone into the MAC Address field (the address is twelve, hexadecimal digits).
 - Select the appropriate time zone for the time zone where the phone will be located.
 - Select yes or no using the Remote Phone drop-down menu. Select yes if the phone will not be on the same subnet as the Evolution server (for example, if the phone belongs to a user that is located at a remote location). Otherwise select no.
 - The other options on the Modify Phones frame are optional or advanced.
- Click the Save button on the middle, right side of the screen.
- Ensure that the telephone is running SIP firmware.
- Plug in the Ethernet cable to the Cisco phone (and the power cable too if you are not using power over Ethernet).
- Press the Settings button on the Cisco phone. 
- Scroll down and select Unlock.
- Enter the password (**# or cisco by default from Cisco, Johnny by default from Intuitive Voice Technology).
- Scroll to Network and look for TFTP Server and Alternate TFTP Server.
- Set Alternate TFTP Server to yes and set TFTP Server to the IP address of your Evolution server.
- Press Validate and Save.

The phone will reboot, automatically update its firmware (if necessary), and download its configuration from Evolution. Once complete it will be ready to use. The following table describes each of the Evolution settings for the extension.

Cisco Telephone Settings	
Setting	Description
Caller ID Name	Text Evolution will send as caller ID name for all calls that this extension makes internal and external.
Caller ID Number	Text Evolution will send as caller ID number for all calls that this extension makes internal and external.
Record Calls	Yes will record calls made directly to this extension, No will not record calls for this extension.
MAC Address	12 character MAC address of the telephone configured with this extension.
Mailbox	Personal creates a voicemail account with the same number as this extension. Selecting a number will assign that voicemail account to be this extension's voicemail account.

Time Zone	The time zone of the telephone (Hawaii, Alaska, Pacific, Arizona, Mountain, Indiana, Central, Eastern, Atlantic). Auto configured telephones will use this setting to automatically calculate the correct time and date.
Paging	Enabled will include this extension in the permission to be paged. Disabled will prevent this extension from being paged.
Remote Phone	Yes configures Evolution and telephone auto configurations for remote use (a telephone at a different location). No configures Evolution and telephone auto configuration files for local use (default).
IP Address	For Future Use
Heartbeat	Advanced. The duration for keep-alive messages between Evolution and the telephone (options = No, 1000, 2000, 3000, 4000, 5000).
Outbound	Internal Only permits this extension to only make internal calls (extension to extension), Internal-Local permits this extension to make internal and local calls (per the Outbound Dial Map route Local), Internal-Local-Toll permits this extension to make any type of call that Evolution is configured to allow (default).
Codec	Set the CODEC to use for this extension (G711 (USA), G729 (Licensed ¹ **)). ** requires the purchase of a license, contact Intuitive Voice.

Go to http://www.cisco.com/en/US/products/sw/voicesw/ps2156/products_user_guide_chapter09186a008008700c.html for information on how to use the Cisco 7960 and 7940 telephones.

Polycom SoundPoint IP Telephones

The Polycom SoundPoint IP telephones may be purchased with SIP or MGCP firmware. Evolution PBX requires SIP firmware. The following steps describe the set up of a Polycom IP601 but the steps are similar for each of the Polycom SoundPoint IP models. Use the following steps to set up an extension in Evolution for a Polycom SoundPoint IP telephones. Models supported include IP650, IP601, IP600, IP550, IP501, IP500, IP430, IP330, IP320, IP301, IP300, and the SoundStation IP 4000.

1. Log on to Evolution and click the Resources tab at the top of the screen.
2. Click Phone Extensions in the menu on the left side of the screen.
3. At the bottom of the screen there is a drop-down menu titled New Device, Select VoIP-Polycom-60X if you have either an IP600 or an IP601 (if you are configuring a different model then select the appropriate Evolution device).

General		Phone Settings		Settings	
Extension	4000	Phone Type	Polycom-60X	Remote Phone	No
Caller ID Name	Name	MAC Address	entermac	IP Address	AutoPopulated
Caller ID Number	5551231234	Mailbox	Personal	Heartbeat	2000
Record Calls	No	Time Zone	Pacific	Outbound	Internal-Local-Toll
Parent Extension	Master	Paging	Enabled	Codec	G711 (USA)

4. The Modify Phones detail frame will appear. Edit the following:
 - Select the extension number that you want using the Extension drop-down menu.
 - Edit the Caller ID Name field to reflect what name you want to be passed as this extension's Caller ID text.
 - Edit the Caller ID Number field to reflect what number you want to be passed as this extension's Caller ID number.
 - Enter the MAC address from the back of the phone into the MAC Address field (the address is twelve, hexadecimal digits).
 - Select the appropriate time zone for the time zone where the phone will be located.
 - Select yes or no using the Remote Phone drop-down menu. Select yes if the phone will not be on the same subnet as the Evolution server (for

example, if the phone belongs to a user that is located at a remote location). Otherwise select no.

- The other options on the Modify Phones frame are optional or advanced.
5. Click the Save button on the middle, right side of the screen.
 6. Plug in the Ethernet cable to the Polycom phone (and the power cable too if you are not using power over Ethernet).
 7. Before the phone begins to boot it will give you the option to press a key under the word Setup on the LCD screen. Press Setup now. If the phone has already finished booting up press the Menu button located on the phone. Then select Settings... Select Advanced. Enter the password: 456.
 8. Once in the Advanced settings select Admin Settings and then Network Configuration.
 9. Scroll to and select Server Menu.
 10. Set Server Type to Trivial FTP and set Server Address to the IP address of your Evolution server (press Ok to accept).
 11. Press Exit twice or until you are asked if you want to Exit w/o Save or Save Config.
 12. Select Save Config.
 13. Press Exit and then Restart Phone... When asked "Are you sure?" press Yes.

The phone will reboot, automatically update its firmware (if necessary), and download its configuration from Evolution. Once complete it will be ready to use. The following table describes each of the Evolution settings for the extension.

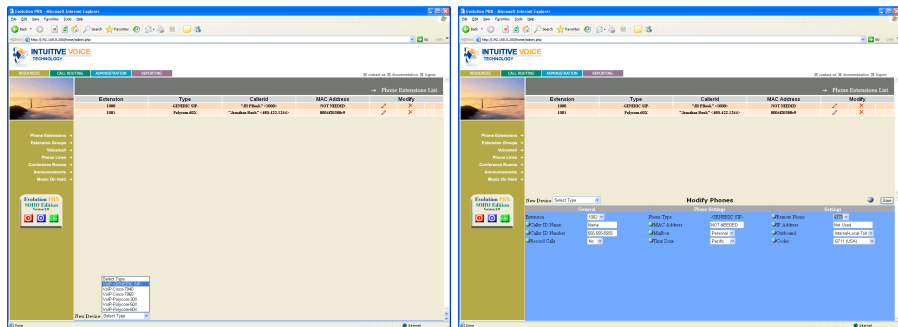
Polycom Telephone Settings	
Setting	Description
Caller ID Name	Text Evolution will send as caller ID name for all calls that this extension makes internal and external.
Caller ID Number	Text Evolution will send as caller ID number for all calls that this extension makes internal and external.
Record Calls	Yes will record calls made directly to this extension, No will not record calls for this extension.
MAC Address	12 character MAC address of the telephone configured with this extension.
Mailbox	Personal creates a voicemail account with the same number as this extension. Selecting a number will assign that voicemail account to be this extension's voicemail account.
Time Zone	The time zone of the telephone (Hawaii, Alaska, Pacific, Arizona, Mountain, Indiana, Central, Eastern, Atlantic). Auto configured telephones will use this setting to automatically calculate the correct time and date.
Paging	Enabled will include this extension in the permission to be paged. Disabled will prevent this extension from being paged.
Remote Phone	Yes configures Evolution and telephone auto configurations for remote use (a telephone at a different location). No configures Evolution and telephone auto configuration files for local use (default).
IP Address	For Future Use
Heartbeat	Advanced. The duration for keep-alive messages between Evolution and the telephone (options = No, 1000, 2000, 3000, 4000, 5000).
Outbound	Internal Only permits this extension to only make internal calls (extension to extension), Internal-Local permits this extension to make internal and local calls (per the Outbound Dial Map route Local), Internal-Local-Toll permits this extension to make any type of call that Evolution is configured to allow (default).
Codec	Set the CODEC to use for this extension (G711 (USA), G729 (Licensed ^{1**})). ^{**} requires the purchase of a license, contact Intuitive Voice.

Go to <http://www.intuitivevoice.com/support.php> and download the “Evolution PBX User Guide for Polycom Telephones” for information on how to use the Polycom telephones. Polycom literature is available at http://www.polycom.com/products_services/1,1443,pw-34-182,00.html.

CounterPath X-Lite and EyeBeam

CounterPath X-Lite and EyeBeam software telephones (softphones) may be configured for Evolution as SIP Generic devices. Use the following steps to set up an extension in Evolution for a CounterPath softphone (X-Lite is shown but configuration is similar for EyeBeam):

1. Log on to Evolution and click the Resources tab at the top of the screen
2. Click Phone Extensions in the menu on the left side of the screen
3. At the bottom of the screen there is a drop-down menu titled New Device, Select VoIP--GENERIC SIP-



4. The Modify Phones detail frame will appear. Edit the following:
 - Select the extension number that you want using the Extension drop-down menu
 - Edit the Caller ID Name field to reflect what name you want to be passed as this extension’s Caller ID text
 - Edit the Caller ID Number field to reflect what number you want to be passed as this extension’s Caller ID number
 - Select the appropriate time zone for the time zone where the phone will be located
 - Select yes or no using the Remote Phone drop-down menu. Select yes if the phone will not be on the same subnet as the Evolution server (for example, if the phone belongs to a user that is located at a remote location). Otherwise select no
 - The other options on the Modify Phones frame are optional or advanced
5. Click the Save button on the middle, right side of the screen
6. Write down the device settings for your new extension that are displayed on the screen.
7. Use the device settings to configure your X-Lite or EyeBeam softphone in the next section.

Device Settings For 1002


```
Register Address: 192.168.0.200
Proxy Address: 192.168.0.200
Port: 5060
Outbound Address: 192.168.0.200
Username: 1002
Password: #298561
Voicemail Keys: *97
DTMF Mode: rfc2833
Codec: ulaw
NAT: Enabled
```

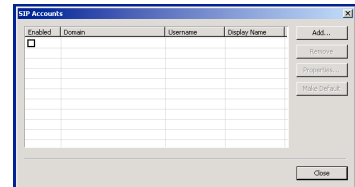
Generic Telephone Settings	
Setting	Description
Caller ID Name	Text Evolution will send as caller ID name for all calls that this extension makes internal and external.
Caller ID Number	Text Evolution will send as caller ID number for all calls that this extension makes internal and external.

Record Calls	Yes will record calls made directly to this extension, No will not record calls for this extension.
MAC Address	12 character MAC address of the telephone configured with this extension.
Mailbox	Personal creates a voicemail account with the same number as this extension. Selecting a number will assign that voicemail account to be this extension's voicemail account.
Time Zone	The time zone of the telephone (Hawaii, Alaska, Pacific, Arizona, Mountain, Indiana, Central, Eastern, Atlantic). Auto configured telephones will use this setting to automatically calculate the correct time and date.
Paging	Enabled will include this extension in the permission to be paged. Disabled will prevent this extension from being paged.
Remote Phone	Yes configures Evolution and telephone auto configurations for remote use (a telephone at a different location). No configures Evolution and telephone auto configuration files for local use (default).
IP Address	For Future Use
Heartbeat	Advanced. The duration for keep-alive messages between Evolution and the telephone (options = No, 1000, 2000, 3000, 4000, 5000).
Outbound	Internal Only permits this extension to only make internal calls (extension to extension), Internal-Local permits this extension to make internal and local calls (per the Outbound Dial Map route Local), Internal-Local-Toll permits this extension to make any type of call that Evolution is configured to allow (default).
Codec	Set the CODEC to use for this extension (G711 (USA), G729 (Licensed**)). ** requires the purchase of a license, contact Intuitive Voice.

Configuration of X-Lite version 3.0 for Evolution

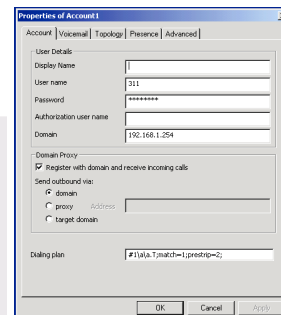
CounterPath X-Lite version 3.0 for Windows may be configured for Evolution as follows:

1. Open X-Lite and click on the Menu button  and select Sip Account Settings... A new window will open called SIP Accounts.
2. Click on the Add... button. Another new window will open called Properties of Account.
3. In the User name field enter the extension number that you are configuring. This number will be listed as the Username on the popup window called Generic Device Settings that Evolution provides after you click the Save button when configuring a SIP-Generic-Device.
4. Enter the password in the Password field.



Device Settings For 1002

Register Address: 192.168.0.200
Proxy Address: 192.168.0.200
Port: 5060
Outbound Address: 192.168.0.200
Username: 1002
Password: fba9d881
Voicemail Keys: *97
DTMF Mode: rfc2833
Codec: ulaw
NAT: Enabled




5. Enter the IP address of your Evolution server in the Domain field. This IP address is also listed on the Evolution popup window as the SIP Address, Proxy Address, and Outbound Address.
6. Check the checkbox for Register with domain and receive incoming calls.
7. Set Send outbound via: to domain.

8. Other settings are optional. Click the OK button on the Properties of Account screen.
9. Click the close button on the SIP Accounts screen.
10. The phone should automatically register with Evolution.

Linksys SPA Telephones

The Linksys SPA telephones are SIP telephones that are compatible with Evolution. Current supported models include the SPA962 (pictured right), SPA942, SPA941, SPA922, SPA921, and the SP901. Use the following steps to configure any Linksys SPA model for basic service with Evolution:

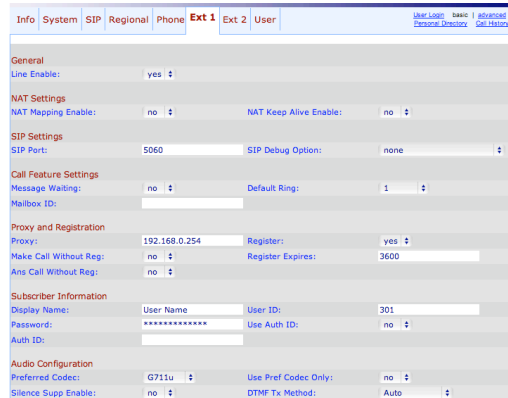


1. Log on to Evolution and click the Resources tab at the top of the screen
2. Click Phone Extensions in the menu on the left side of the screen
3. At the bottom of the screen there is a drop-down menu titled New Device, Select VoIP--GENERIC SIP-
4. The Modify Phones detail frame will appear. Edit the following:
 - Select the extension number that you want using the Extension drop-down menu
 - Edit the Caller ID Name field to reflect what name you want to be passed as this extension's Caller ID text
 - Edit the Caller ID Number field to reflect what number you want to be passed as this extension's Caller ID number
 - Select the appropriate time zone for the time zone where the phone will be located
 - Select yes or no using the Remote Phone drop-down menu. Select yes if the phone will not be on the same subnet as the Evolution server (for example, if the phone belongs to a user that is located at a remote location). Otherwise select no
 - The other options on the Modify Phones frame are optional or advanced
5. Click the Save button on the middle, right side of the screen
6. Write down the device settings for your new extension that are displayed on the screen.
7. Use the device settings to configure your X-Lite or EyeBeam softphone in the next section.
8. Use the Linksys telephone web configuration tool to enter the device settings that you wrote down above. Use the following steps as a guideline:
 - a) Determine the IP address of the telephone. Connect the telephone to your Ethernet network and if you do not have Power over Ethernet (PoE) then plug in the power cord for your telephone.
 - b) Press the Settings button.  Scroll down and select the Network category. Write down the IP address that your telephone acquired from your network.
 - c) Log into the telephone web interface: open a web browser and enter the IP address that you wrote down in the prior step (for example, <http://192.168.1.104>).

Note: You may need to click the Admin Login or the “switch to advanced view” links in the PAP2T-NA web configuration screen to access all of the settings described below.

d) Click Admin Login and then click on the Ext 1 tab to configure the SIP settings. The minimum information required for registration with Evolution PBX is as follows:

- ▶ Line Enable: Yes
- ▶ SIP Port: 5060
- ▶ Proxy: Evolution's IP address (for example 192.168.165.100)
- ▶ Register: Yes
- ▶ User ID: extension number (for example 1020)
- ▶ Password: password provided by Evolution (see step 6 above)
- ▶ Use Auth ID: No



- Click the Save Settings Button. The telephone will save, reboot, and register automatically with Evolution.

<h2 style="color: #0070C0;">Generic Telephone Settings</h2>	
Setting	Description
Caller ID Name	Text Evolution will send as caller ID name for all calls that this extension makes internal and external.
Caller ID Number	Text Evolution will send as caller ID number for all calls that this extension makes internal and external.
Record Calls	Yes will record calls made directly to this extension, No will not record calls for this extension.
MAC Address	12 character MAC address of the telephone configured with this extension.
Mailbox	Personal creates a voicemail account with the same number as this extension. Selecting a number will assign that voicemail account to be this extension's voicemail account.
Time Zone	The time zone of the telephone (Hawaii, Alaska, Pacific, Arizona, Mountain, Indiana, Central, Eastern, Atlantic). Auto configured telephones will use this setting to automatically calculate the correct time and date.
Paging	Enabled will include this extension in the permission to be paged. Disabled will prevent this extension from being paged.
Remote Phone	Yes configures Evolution and telephone auto configurations for remote use (a telephone at a different location). No configures Evolution and telephone auto configuration files for local use (default).
IP Address	For Future Use
Heartbeat	Advanced. The duration for keep-alive messages between Evolution and the telephone (options = No, 1000, 2000, 3000, 4000, 5000).
Outbound	Internal Only permits this extension to only make internal calls (extension to extension), Internal-Local permits this extension to make internal and local calls (per the Outbound Dial Map route Local), Internal-Local-Toll permits this extension to make any type of call that Evolution is configured to allow (default).
Codec	Set the CODEC to use for this extension (G711 (USA), G729 (Licensed ¹ **)). ** requires the purchase of a license, contact Intuitive Voice.

Linksys PAP2T-NA

The Linksys PAP2T-NA is a SIP analog terminal adapter. It has one RJ45 Ethernet interface to connect to your data network and two RJ11 FXS interfaces to connect to analog devices such as analog telephones or fax machines. Each analog port on the PAP2T-NA must be configured as an individual extension in Evolution. Use the following steps to configure each line of your analog terminal adapter:



1. Log on to Evolution and click the Resources tab at the top of the screen
2. Click Phone Extensions in the menu on the left side of the screen
3. At the bottom of the screen there is a drop-down menu titled New Device, Select VoIP--GENERIC SIP-
4. The Modify Phones detail frame will appear. Edit the following:
 - Select the extension number that you want using the Extension drop-down menu
 - Edit the Caller ID Name field to reflect what name you want to be passed as this extension's Caller ID text
 - Edit the Caller ID Number field to reflect what number you want to be passed as this extension's Caller ID number
 - Select the appropriate time zone for the time zone where the phone will be located
 - Select yes or no using the Remote Phone drop-down menu. Select yes if the phone will not be on the same subnet as the Evolution server (for example, if the phone belongs to a user that is located at a remote location). Otherwise select no
 - The other options on the Modify Phones frame are optional or advanced
5. Click the Save button on the middle, right side of the screen

Note: The Evolution PBX web configuration interface requires that your browser's popup blocker be turned off or disabled so that the Device Settings screen can be seen.

6. Write down the device settings for your new extension that are listed on the Device Settings box.
7. Use the Linksys PAP2T-NA web configuration tool to enter the device settings that you wrote down above. Use the following steps as a guideline:
 - Determine the IP address of the PAP2T-NA. Connect the PAP2T-NA to your Ethernet network and connect an analog telephone to one of the ports labeled PHONE1 or PHONE2.
 - Dial **** (star key four times) and then dial 110#. The PAP2T-NA will read you the IP address that it acquired through DHCP on your network. Write down the IP address.
 - Log into the PAP2T-NA: open a web browser and enter the IP address that you wrote down in the prior step (for example, <http://192.168.1.104>).

```
Device Settings For 1002
Register Address: 192.168.0.200
Proxy Address: 192.168.0.200
Port: 5060
Outbound Address: 192.168.0.200
Username: 1002
Password: 8a04881
Voicemail Keys: *97
DTMF Mode: rfc2833
Codec: ulaw
NAT: Enabled
```

Note: You may need to click the Admin Login or the “switch to advanced view” links in the PAP2T-NA web configuration screen to access all of the settings described below.

If needed, the PAP2T-NA can be reset to factory default settings as follows:

- a) connect an analog telephone to one of the ports labeled PHONE₁ or PHONE₂
- b) Dial **** (star key four times)
- c) Dial 73738# and the PAP₂T-NA will be reset

- You may continue using your PAP₂T-NA with DHCP or you may assign a static IP address. Click on the System tab and modify the settings per your network. Following is a screen shot that shows the default settings:

The screenshot shows the Linksys web interface for a Phone Adapter with 2 Ports for Voice-Over-IP. The page is titled "Voice" and has a navigation menu with tabs for "Info", "System", "SIP", "Regional", "Line 1", "Line 2", "User 1", and "User 2". The "System" tab is selected, and the "Basic View" is active. The "System Configuration" section includes the following settings:

- Enable Web Server: yes
- User Password:
- Internet Connection Type:
 - DHCP: yes
 - Static IP:
 - NetMask:
 - Gateway:
- Optional Network Configuration:
 - HostName:
 - Domain:
 - Primary DNS:
 - Secondary DNS:
 - DNS Query Mode: Parallel
 - Syslog Server:
 - Debug Server:
 - Debug Level: 0

Buttons for "Save Settings" and "Cancel Settings" are located at the bottom of the configuration area.

- Click on the Line 1 tab to configure the SIP settings. The minimum information required for registration with Evolution PBX is as follows:
 - ▶ Line Enable: Yes
 - ▶ SIP Port: 5060
 - ▶ Proxy: Evolution's IP address (for example 192.168.165.100)
 - ▶ Register: Yes
 - ▶ User ID: extension number (for example 1020)
 - ▶ Password: password provided by Evolution (see step 6 above)
 - ▶ Use Auth ID: No

The screenshot shows the Linksys web interface for a Phone Adapter with 2 Ports for Voice-Over-IP. The page is titled "Voice" and has a navigation menu with tabs for "Info", "System", "SIP", "Regional", "Line 1", "Line 2", "User 1", and "User 2". The "Line 1" tab is selected, and the "Basic View" is active. The "SIP Settings" section includes the following settings:

- Line Enable: yes
- SIP Port: 5060
- Proxy: 192.168.165.100
- Register: yes
- Make Call Without Reg: no
- Register Expires: 3600
- Ans Call Without Reg: no
- Subscriber Information:
 - Display Name:
 - User ID: 1020
 - Password: *****
 - Use Auth ID: no
 - Auth ID:

Buttons for "Save Settings" and "Cancel Settings" are located at the bottom of the configuration area.

- Click the Save Settings Button. The PAP₂T-NA will register automatically with Evolution. Connect an analog phone to line one and make a call.

Generic Telephone Settings

Setting	Description
Caller ID Name	Text Evolution will send as caller ID name for all calls that this extension makes internal and external.
Caller ID Number	Text Evolution will send as caller ID number for all calls that this extension makes internal and external.
Record Calls	Yes will record calls made directly to this extension, No will not record calls for this extension.
MAC Address	12 character MAC address of the telephone configured with this extension.
Mailbox	Personal creates a voicemail account with the same number as this extension. Selecting a number will assign that voicemail account to be this extension's voicemail account.
Time Zone	The time zone of the telephone (Hawaii, Alaska, Pacific, Arizona, Mountain, Indiana, Central, Eastern, Atlantic). Auto configured telephones will use this setting to automatically calculate the correct time and date.
Paging	Enabled will include this extension in the permission to be paged. Disabled will prevent this extension from being paged.
Remote Phone	Yes configures Evolution and telephone auto configurations for remote use (a telephone at a different location). No configures Evolution and telephone auto configuration files for local use (default).
IP Address	For Future Use
Heartbeat	Advanced. The duration for keep-alive messages between Evolution and the telephone (options = No, 1000, 2000, 3000, 4000, 5000).
Outbound	Internal Only permits this extension to only make internal calls (extension to extension), Internal-Local permits this extension to make internal and local calls (per the Outbound Dial Map route Local), Internal-Local-Toll permits this extension to make any type of call that Evolution is configured to allow (default).
Codec	Set the CODEC to use for this extension (G711 (USA), G729 (Licensed ^{**})). ^{**} requires the purchase of a license, contact Intuitive Voice.

Extension Groups

An extension group is a collection of extensions that will follow a specified ring strategy when a call is directed at that extension group. For example, if you have an office with five extensions and one main number and you want incoming calls to ring all five extensions and allow any one of the five users to answer the call then you could configure an extension group to allow this behavior. The follow two tables, Extension Group Settings and Extension Group Strategy, describe the options for configuring Extension Groups.

Extension Group Settings	
Setting	Description
Number	The unique number for this extension group.
Name	The name to describe this extension group.
Mailbox	A voicemail box that will receive a call that is not answered by an extension group (pending the value of other settings below).
Record	Enable or disable recording of all calls to this extension group.
Playing	The audio to play when a caller is connected to this extension group while waiting to be answered. Ringing will play a standard ring-back to the caller. Selecting a music on hold source will play the music or audio files configured in that music on hold collection (see the Music on Hold section for information about music on hold).
Ring Time	The duration this extension group will ring until going to voicemail.

Strategy	The pattern that will be used will be used for this extension group. Strategy provides behavior such as ringing all extensions in the group or a queue that sends calls to just one extension in the group based on a specific logic. See the following table Extension Group Strategy for descriptions of each of the settings.
Priority	A number for this queue that determines its priority compared to another extension group. A lower number means a higher priority. If an extension receives a call from two extension groups the one with the higher priority will be preferred.
Position	Announces the callers position in the queue (when multiple callers are waiting to be answered) to the caller. Never disables this feature, Once announces once to the caller at 45 seconds, Once Every 45 Seconds announces every 45 seconds updating the position until the call is answered.
Hold Ann.	Plays an announcement to the caller every 45 seconds. The feature is enabled and plays the the chosen announcement when this setting is set to a specific announcement. None disables this feature.
Whisper	Plays an announcement to the extension that answers the call before the call is connected. The caller does not hear the announcement. The feature is enabled and plays the the chosen announcement when this setting is set to a specific announcement. None disables this feature.
Allow VM	Enables or disables the exit to voicemail for the extension group. If enabled the caller can press 8 to exit the queue and leave a voicemail message. You may announce this option to callers in your extension group announcement or a hold announcement.
Fast Pass	Enables or disables the Fast Pass feature. Fast Pass allows the caller to press 9 to leave a message and then be called back automatically when their position in the queue is reached. You may announce this option to callers in your extension group announcement or a hold announcement.
Logoff	If set to Auto then an extension will automatically be removed from the extension group (logged off) if a call to it is not answered. The user can enter *21 on their extension to be added back to the extension group (log in). If set to Manual then a missed call will not remove extensions from the extension group. The user can enter *20 to be manually removed from the extension group (logged off).
Wrapup	Wrapup is the amount of time in seconds that an extension that just got off of a queue call will have before another queue call can be delivered.

Extension Group Strategy	
Strategy	Description
Ring All (One)	All calls to this extension group will ring all extensions in this extension group and the first one to answer the call will get the call.
Longest Available	Rings the extension in this extension group that has been the longest since receiving a call from this extension group.
Fewest calls	Rings the extension in this extension group that has the fewest quantity of completed calls.
Random	Randomly rings any extension in the extension group.
Round Robin Mem	Round Robin with Memory. Takes turns ringing each available extension that belongs to the extension group and remembers which extension was the last to receive a call and sends the next call to the next extension.
Ring All (Many)	All calls to this extension group will ring all extensions in this extension group and the first one to answer the call will get the call.

- Following are the steps to configure an extension group as a basic ring-all group:
1. First configure all extensions that you want to be in the extension group. The extension must exist prior to using it in an extension group.
 2. Click on the Resources tab and then on the Extension Groups menu item.

3. Click New Record at the bottom of the screen. The detail section will expand and allow you to configure the new extension group.
4. Choose an extension group number.
5. In the Name field enter the name that you would like to use to describe this extension group.
6. Use the Mailbox setting to choose a mailbox for the extension group. If a call is not answered by one of the extensions in the extension group within the number of seconds set by the Ring Time it will be routed to the mailbox specified.
7. Select whether you want to record calls to this extension or not.
8. Set Playing to your music on hold collection. This will play music to the caller rather than playing a ringing sound.
9. Set Strategy to Ring All (Many). All calls will ring all of the extension in this group.
10. Set the Priority to one.
11. Set the Position to Never.
12. Set Hold Ann. to None.
13. Set Whisper to None.
14. Set Allow VM to Enabled.
15. Set Fast Pass to Disabled.
16. Add the extensions that you want to ring as part of this extension group.
17. Click the Save button.

Test the extension group. You may dial the extension group number from any telephone connected to Evolution and the call will be sent to the extension group.

VoiceMail

Evolution PBX includes a voicemail application. Click on the Resources tab and then on the Voicemail menu item to set up voicemail boxes and to edit preferences. When you configure an extension for a telephone or other device a matching voicemail box is automatically created. You can elect to not automatically create a voicemail box for a given extension by selecting None rather than Personal for the Mailbox field when you are setting up a new extension.

VoiceMail Configuration

Use the following steps to manually create a new voicemail box:

1. Click on the Resources tab and then on the Voicemail menu item.
2. The detail section will expand and allow you to configure the new voicemail box. Complete the fields according to the following descriptions:
 - Mailbox - voicemail box that will be used by users and the system to route calls and access the voicemail box.
 - Password - password for the user to access their voicemail box. By default it is set to be the same as the voicemail box.
 - Name - for easy system reference and to provide the user's name for the dial-by-name directory if it is enabled.
 - o Reaches Operator - Yes or no whether a caller will escape from voicemail to reach an operator.
 - Email Address - enter the email address that will be sent an email message for each new voicemail received. If the Attach Voicemail field is set to Yes then the email will include the digitally recorded message as a .wav file attachment. Leave this field blank if no email is desired.
 - Notification Email - enter the email address that will be sent an email message for notification only. No message will be attached regardless of the status of the Email Address and Attach Voicemail fields. Leave this field blank if no email is desired.

- Attach Voicemail - If set to Yes then a digitally recorded message will be sent to the email address provided in the Email Address field as a .wav file attachment.
- Auto Delete - If set to Yes then Evolution will automatically delete the voicemail after an email with the voicemail attached is sent to the user. If set to No then this feature is disabled.

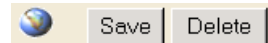
General		Email Settings	
Mailbox	11000	Email Address	
Password		Notification Email/Ph Num.	
Name		Attach Voicemail	Yes
Reaches Operator	Yes	Auto Delete	No

3. Click the Save button.

Not all of the voicemail box fields are populated when the voicemail box is automatically created as part of a new extension. Edit these fields after the addition of the new extension. In particular you may want to edit the Name and Email Address fields.

Voicemail Global Settings

Voicemail global settings are parameters that apply to all voicemail boxes that are configured on Evolution. Voicemail global settings can be accessed by clicking on the globe icon next to the Save and Delete buttons on every voicemail detail screen (Resources tab > Voicemail > pencil to edit voicemail > global icon). Following are the fields that may be configured:



Max Length - the maximum length of a voicemail that may be left on the system. Longer times require more hard drive space for storage.

Min Length - the minimum length that a voicemail must be to be saved. If a message is shorter it will be automatically deleted.

Max Greeting - the maximum time that the voicemail box owner is allowed to record a greeting for their mailbox.

Play Time - selecting yes forces the voicemail system to play to the owner the time that the message was left.

From String - text that will be used as the from field for emails that Evolution sends (for example, voicemail to email feature).

Play Next - selecting yes forces the voicemail system to automatically play the next message if the current message is deleted.

Notify Subject - text that will be used as the subject field for emails that Evolution sends (for example, voicemail to email feature).

Play CID - selecting yes forces the voicemail system to play the Caller ID to the owner at the beginning of each voicemail.

Silence Thresh - the sensitivity to silence that the voicemail system will use to determine if the call should be terminated due to no valid audio being received. This limits long, blank voicemail that the system did not receive a disconnect from the telephone line.

Phone Lines

Each device or account that is configured under the Phone Lines section is considered a provider, that is a telephone trunk service provider. A phone line provider can be a VoIP service provider account, analog telephone lines connected

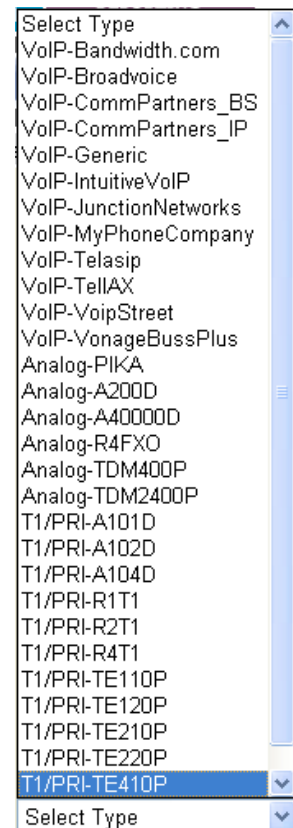
to an internal PCI card like the Sangoma A200, or one or more T-1 digital lines connected to an internal PCI card like the Digium TE110P.

Most VoIP providers have similar configurations. Most confusion typically stems from details such as terminology differences between Evolution and individual providers (e.g. VoIP server versus proxy server versus SIP server, etc.). Go to the section below titled VoIP Trunks over Broadband for VoIP-Generic and named provider accounts like VoIP-CommPartners_IP.

VoIP Trunks over Broadband

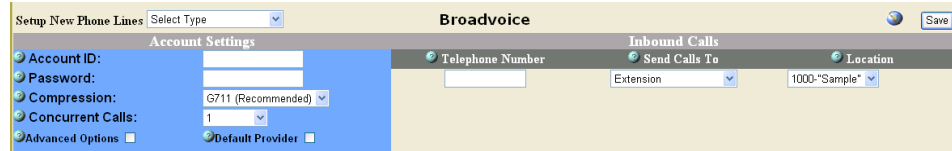
Evolution PBX supports VoIP trunks over broadband (VoIP lines from a VoIP service provider). Follow these steps to configure a VoIP service provider account:

1. Log in to the Evolution web interface.
2. Click on the Resources tab and then click on the Phone Lines menu item.
3. At the bottom of the screen is a drop-down menu titled Setup New Phone Lines (screenshot on the right). Select VoIP-Broadvoice or the service provider name that you would like to configure.
4. The detail section will expand and allow you to configure the service provider account. Most of these settings configure how Evolution will handle incoming calls. Outbound call settings are configured by clicking the Call Routing tab and then clicking on the Outbound Dial Map menu item. Here is a description of each field:
 - Account ID - enter the user name or account ID provided by the service provider. Your ID is often provided in a welcome email or by logging into a web portal.
 - Password - enter the account password provided by your service provider.
 - Codec - enter the codec type that your service provider recommends for your account. G.711 is common and recommended for good audio quality. Options: G.711, G.729, and GSM. Note that G.729 support is for Annex A only and requires that you purchase a license for each G.729 call. Contact pbxsales@intuitivevoice.com for more information.
 - Max Calls - the number of simultaneous calls that your service provider allows for this account. One account does not always mean one telephone number or call. Your provider may allow you more numbers and/or calls. Your service provider may or may not limit the number of calls that you can make using your account but you must have the Internet bandwidth to support all of the calls (for example, if your service provider allows to you to make 24 calls but you only have Internet bandwidth for 15 calls then more than 15 calls may not function correctly).
 - Advanced Options - displays the advanced options for this trunk group.
 - ▶ Auth Type - Credentials configures Evolution for providers that require a username and password for authentication with their service. IP Only is for providers that give you their IP address or domain name and require that you have a static, public IP address for your server (or that your server is behind).



- ▶ Proxy Address - the domain name or IP address of your provider's server.
- ▶ DTMF Mode - the Dual Tone Multi-Frequency (i.e. touch tone dialing) technology that your providers requires. The options are RFC2833, Inband, or Info.
- ▶ Caller ID Mode - If set to Account Evolution will send the Account ID as the outbound caller ID number (required by some providers). If set to Pass Thru Evolution will send the Caller ID of the extension making the call as the outbound caller ID number (refer to the Phone Extensions screen of Evolution to configure or view the caller ID settings for each extension).
- ▶ Heartbeat - sets the frequency in seconds for Evolution to send a SIP packet to your provider as a keep-alive function. This can help keep ports open through NATs or your provider may have a specific requirement for this setting. The default, 2 Seconds, is typically adequate.
- ▶ Outbound Number Translation - allows you to modify dialed numbers before they are sent to the provider (such as automatically adding a 1 before the number). In order to see the Number Dialed and Translate To option you must directly reference the trunk group in the outbound dial map. The actual trunk group name must be referenced and not DEFAULT-PROVIDER. Follow these steps to make the dial patterns visible under Advanced Options:
 - a) Complete the configuration of this VoIP account, click Save, and make the changes active (write down or remember the provider name)
 - b) Click on the Call Routing tab and then on the Outbound Dial Map menu item
 - c) Click on the pencil to edit one or more of the routes (for example LOCAL).
 - d) Change the Target setting to match the provider name of the VoIP account that you configured
 - e) Click Save and Ok to make the changes active
 - f) Modify each route to reflect the provider name of the VoIP account if you want that routes dial strings to be available under the VoIP account's Advanced Options list
 - g) Click the Resources tab and then the Phone Lines menu item
 - h) Click the pencil to edit your VoIP account
 - i) Check the Advanced Options checkbox and the dial strings will be displayed for you to edit as needed
- Default Provider - check this box to make this trunk group the default provider for outbound calls. The default provider is the trunk group (account or line(s) or T-1) that is used by default when an internal telephone attempts to place an outgoing call. There can only be one default provider.
- Description - text that will be prepended to the inbound caller ID field when a call is received on this number or line.
- Number - enter each telephone number that you get from your service provider. Select the destination for each number. Incoming calls will be sent to the destination you choose depending on which number the caller dialed.
- Send Calls To - select the type of destination that you would like to send incoming calls from each number of the VoIP account. Options: Extension, Extension Group, Auto Attendant, Custom Routing Rules.
- Location - choose the actual location or device that you would like to send incoming calls from each number of the VoIP account. Note that the

options that you can choose from in this field change according to the type of destination that you select in the Send Calls To field. For example, if you choose Extensions then Evolution will provide all of the extensions that you have configured as options in the Location field. Also note that you must configure your extension, extension group, auto attendant, or custom routing rule before you can select it as an option in the Location field.



5. Click the Save button.

Analog Lines with PCI Cards

Evolution supports analog telephone lines using PCI cards. Each PCI card has a specific pre-configuration process to install the drivers for the card but afterwards configuration of each card type is similar. Evolution supports FXO ports and not FXS ports using PCI cards.

Analog PCI Cards		
Card	Hardware Echo?	Description
Analog-PIKA	Yes	PIKA Inline MM PCI card for up to 4 analog ports.
Analog-A200D	Yes	Sangoma A200D PCI card for up to 24 analog ports.
Analog-A4000D	Yes	Sangoma A400D PCI card for up to 48 analog ports.
Analog-R4FXO	Optional	Rhino R4FXO PCI card for up to 4 analog ports.
Analog-TDM400P	No	Digium TDM400P PCI card for up to 4 analog ports.
Analog-TDM2400P	Yes	Digium TDM2400P PCI card for up to 24 analog ports.

PCI card physical installation

Follow these steps if your PCI card is not already physically installed in your Evolution server.



Note: The Evolution web interface does not support FXS modules on PCI cards. Please use external Analog Terminal Adapters such as the Linksys PAP2T-NA for easy FXS support.

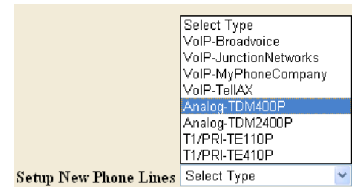
1. With the Evolution server powered down and the power cable disconnected, open the server's case and insert the PCI card into one of the available PCI slots. Refer to the card's manufacturer for additional installation and system requirements: <http://www.digium.com>, <http://www.pikatechnologies.com>, <http://www.rhinoequipment.com>, <http://www.sangoma.com>.
2. **Important:** if the card has a four-pin power connector (a hard-drive-type power cable commonly known as a Molex connector) connect it to an available Molex connector.
3. Close the server's case and reconnect the power cable.
4. Boot the server.
5. Follow the specific steps for your card below.

Digium TDM400P

The Digium TDM400P is an internal PCI card that offers from one to four analog ports. Using the FXO daughter modules the analog ports allow you to connect

analog telephone lines provided by a local telephone service provider. Follow these steps to configure the TDM400P:

1. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server.
2. Log in to the Evolution web interface.
3. Click on the Resources tab and then click on the Phone Lines menu item.
4. At the bottom of the screen is a drop-down menu titled Setup New Phone Lines. Select Analog-TDM400P.
5. The detail section will expand and allow you to configure the TDM400P. Most of these settings configure how Evolution will handle incoming calls. Outbound call settings are configured by clicking the Call Routing tab and then clicking on the Outbound Dial Map menu item. Here is a description of each field:



- PCI Slot - the PCI slot number refers to the first, second, third, or fourth TDM400P that you may have installed in your system. It does not refer to the physical slot that the card occupies on your motherboard. If you have one TDM400P in your server then this setting can be ignored.
- Lines Active - this is the number of telephone lines plugged into the TDM400P (note that the TDM400P must have one FXO daughter module for each telephone line).
- Trunk GRP - defines the trunk group number that Evolution will use to refer to all of the lines of this TDM400P.
- Echo Train - determines the number of milliseconds that will be taken from the beginning of each call to learn the echo. To eliminate echo begin with the smallest number and increase until you hear no echo. Use the smallest number you can and do not combine with the calibrate echo option (see below) and do not use if your card has hardware echo cancellation.
- Volume - The transmit and receive volume may be modified for the TDM400P. There are two fields for Volume Adjust: . The TX indicates transmit and the RX indicates receive. The transmit volume increases or decreases the volume that a caller from the PSTN hears and the receive volume increases or decreases the volume that the internal caller (or Evolution application such as voicemail) hears. Greater positive numbers increase the volume and greater negative numbers decrease the volume.
- Advanced Options - displays the advanced options for this trunk group. The outbound number translation allows you to modify dialed numbers before they are sent to the provider (such as automatically adding a 1 before the number). In order to see the Number Dialed and Translate To option you must directly reference the trunk group in the outbound dial map. The actual trunk group name must be referenced and not DEFAULT-PROVIDER. Follow these steps to make the dial patterns visible under Advanced Options:
 - ▶ Complete the configuration of this TDM400P and save (write down or remember the trunk group number)
 - ▶ Click on the Call Routing tab and then on the Outbound Dial Map menu item
 - ▶ Click on the pencil to edit one or more of the routes (for example LOCAL).
 - ▶ Change the Target setting to match the trunk group number of the TDM400P that you configured



- ▶ Click Save and Ok to make the changes active
 - ▶ Modify each route to reflect the trunk group number of the TDM400P if you want that routes dial strings to be available under the TDM400P's Advanced Options list
 - ▶ Click the Resources tab and then the Phone Lines menu item
 - ▶ Click the pencil to edit your TDM400P
 - ▶ Check the Advanced Options checkbox and the dial strings will be displayed for you to edit as needed
 - ▶ See the section Outbound Dial Map for information about dial strings and translation.
- Default Provider - check this box to make this trunk group the default provider for outbound calls. The default provider is the trunk group (account or line(s) or T-1) that is used by default when an internal telephone attempts to place an outgoing call. There can only be one default provider.
 - Line Number - each analog telephone line that is plugged into the TDM400P is referred to according to the jack position on the card. Select the destination for each line that you have plugged in to the TDM400P.
 - Line Desc. - text that will be prepended to the inbound caller ID field when a call is received on this number or line.
 - Send Calls To - select the type of destination that you would like to send incoming calls from each line of the trunk group. Options: Extension, Extension Group, Auto Attendant, Custom Routing Rules.
 - Location - choose the actual location or device that you would like to send incoming calls from each line of the trunk group. Note that the options that you can choose from in this field change according to the type of destination that you select in the Send Calls To field. For example, if you choose Extensions then Evolution will provide all of the extensions that you have configured as options in the Location field. Also note that you must configure your extension, extension group, auto attendant, or custom routing rule before you can select it as an option in the Location field.

Account Settings		Inbound Calls			
PCI Slot:	1 ● 2 ● 3 ● 4 ●	Line Number	Line Desc.	Send Calls To	Location
Lines Active:	1 ▼	Line 1		Extension ▼	4000-"Test" ▼
Trunk GRP:	Group 1 ▼	Line 2		Extension ▼	4000-"Test" ▼
Echo Train:	800 ▼	Line 3		Extension ▼	4000-"Test" ▼
Volume:	0 ▼ 0 ▼	Line 4		Extension ▼	4000-"Test" ▼
Advanced <input type="checkbox"/>	Default Prov. <input type="checkbox"/>				

6. Some PCI cards include hardware echo cancellation. If your card includes hardware echo cancellation do not use echo calibration or echo training. Echo Training listens to the beginning of all calls made through the PCI card and establishes an amount of echo cancellation for the duration of that call. Set Echo Training to a number that will be the number of milliseconds that Evolution will listen to the beginning of the call. Longer times allow for a better assessment of the required echo cancellation but may be more noticeable to the callers. Echo Training is preferred over Calibrate Echo as method of software echo cancellation. The Calibrate Echo checkbox forces Evolution to calibrate the echo on the next boot of the server. This only needs to be performed once. After the reboot the checkbox will no longer be checked. Evolution will use a set amount of echo reduction based on the results of the echo calibration.

Calibrate Echo
7. Reverse Order - by default Evolution assigns ports beginning with the last port and working down. Check the Reverse Order checkbox to assign ports beginning with the first port and working up.
8. Click the Save button.

Analog Trunks with Digium TDM2400P

The Digium TDM2400P offers up to 24 analog ports. It has six slots for daughter modules. Each daughter module provides four analog ports. Start with slot six (FXO port 24) and work down if you are installing fewer than 24 analog ports. For example, if you have twelve FXO ports using three daughter modules the modules should be in slots 4 through six and you should use ports 12 through 24. The TDM2400P is a full length PCI card so ensure that your server chassis has the space to accommodate it. The card uses a RJ-21 connector (often referred to as an Amphinol connector). This is a 25-pair telco connector that must be connected to a break-out panel or a punch-down block. Send an email to pbxsales@intuitivevoice.com to purchase a cable and breakout box. Configuration of the 2400P is similar to the TDM400P. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. Log in to the web interface and configure the card using the same information provided for the Digium TDM400P but select Analog-TDM2400P rather than Analog-TDM400P. Otherwise the settings are the similar.

PIKA InlineMM

The PIKA InlineMM includes four analog ports with echo cancelation. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installpika` to install the PIKA drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using the same information provided for the Digium TDM400P but select Analog-PIKA rather than Analog-TDM400P. Otherwise the settings are the similar.

Rhino R4FXO

The Rhino R4FXO card includes four analog ports. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installrhino` to install the Rhino drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using the same information provided for the Digium TDM400P but select Analog-R4FXO rather than Analog-TDM400P. Otherwise the settings are the similar.

Sangoma A200D

The Sangoma A200D card is modular and can accept up to 24 analog ports. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installsangoma` to install the Sangoma drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using the same information provided for the Digium TDM400P but select Analog-A200D rather than Analog-TDM400P. Otherwise the settings are the similar.

Sangoma A400D

The Sangoma A400D card is modular and can accept up to 24 analog ports. Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installsangoma` to install the Sangoma drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using

the same information provided for the Digium TDM400P but select Analog-A40000D rather than Analog-TDM400P. Otherwise the settings are the similar.

Digital T-1 Lines with PCI Cards

Evolution supports digital T-1 telephone lines using PCI cards. Each PCI card has a specific pre-configuration process to install the drivers for the card but afterwards configuration of each card type is similar.

Digital PCI Cards	
Card	Description
T1/PRI-A101D	Sangoma A101D PCI card for 1 T-1 digital port.
T1/PRI-A102D	Sangoma A102D PCI card for up to 2 T-1 digital ports.
T1/PRI-A104D	Sangoma A104D PCI card for up to 4 T-1 digital ports.
T1/PRI-R1T1	Rhino R1T1 PCI card for 1 T-1 digital port.
T1/PRI-R2T1	Rhino R2T1 PCI card for up to 2 T-1 digital ports.
T1/PRI-R4T1	Rhino R4T1 PCI card for up to 4 T-1 digital ports.
T1/PRI-TE110P	Digium TE110P PCI card for 1 T-1 digital port.
T1/PRI-TE120P	Digium TE120P PCI card for 1 T-1 digital port.
T1/PRI-TE220P	Digium TE220P PCI card for up to 2 T-1 digital ports.
T1/PRI-TE410P	Digium TE410P PCI card for up to 4 T-1 digital ports.
T1/PRI-TE420P	Digium TE420P PCI card for up to 4 T-1 digital ports.

PCI card physical installation

Follow these steps if your PCI card is not already physically installed in your Evolution server.

1. With the Evolution server powered down and the power cable disconnected, open the server's case and insert the PCI card into one of the available PCI slots. Refer to the card's manufacturer for additional installation and system requirements: <http://www.digium.com>, <http://www.rhinoequipment.com>, <http://www.sangoma.com>.
2. Close the server's case and reconnect the power cable.
3. Boot the server.
4. Follow the specific steps for your card below.

Digium TE110P

The Digium TE110P is an internal PCI card that offers one T-1 digital interface. It is compatible with standard service provider T-1 technologies that use either in band or out of band signaling. Examples include basic T-1s, line-side or trunk-side T-1s and ISDN Primary Rate Interface T-1s (PRI). Follow these steps to configure the TE110P:



1. Follow the steps above in the section "PCI card physical installation" if your PCI card is not already physically installed in your Evolution server.
2. Log in to the Evolution web interface.
3. Click on the Resources tab and then click on the Phone Lines menu item.
4. At the bottom of the screen is a drop-down menu titled Setup New Phone Lines. Select T1/PRI-TE110P.

5. The detail section will expand and allow you to configure the TE110P. Most of these settings configure how Evolution will handle incoming calls. Outbound call settings are configured by clicking the Call Routing tab and then clicking on the Outbound Dial Map menu item. Here is a description of each field:
 - PCI Slot - the PCI slot number refers to the first, second, third, or fourth TE110P that you may have installed in your system. It does not refer to the physical slot that the card occupies on your motherboard. If you have one TE110P in your server then this setting can be ignored.
 - Port Settings - this refers to the T-1 port on the PCI card that you will configure. There is only one port on the TE110P so no modification is required. Other cards such as the TE410P have additional T-1 ports that utilize this field.
 - Framing/Coding - consult your T-1 provider and select the correct setting: ESF/B8ZS, D4/AMI, ESF/AMI, D4/B8ZS.
 - Signaling Type - consult your T-1 provider and select the correct setting: T1 E&M Wink Start, T1 E&M Immediate Start, ISDN PRI, ISDN PRI Network, T1 Feature Group-D, T1 Feature Group-B.
 - Active Channels - the number of channels that you purchased on your T-1. A full T-1 provides 24 channels (23 for a PRI). Select the correct setting.
 - Switch Type - consult your T-1 service provider and select the correct setting: National, National ISDN 1, DMS 100, AT&T 4ESS, Lucent 5ESS, Tie Line.
 - Trunk Group - defines the trunk group number that Evolution will use to refer to the lines of this TE110P.
 - Default Provider - check this box to make this trunk group the default provider for outbound calls. The default provider is the trunk group (account or line(s) or T-1) that is used by default when an internal telephone attempts to place an outgoing call. There can only be one default provider.
 - Advanced Options - displays the advanced options for this trunk group. The outbound number translation allows you to modify dialed numbers before they are sent to the provider (such as automatically adding a 1 before the number). In order to see the Number Dialed and Translate To option you must directly reference the trunk group in the outbound dial map. The actual trunk group name must be referenced and not DEFAULT-PROVIDER. Follow these steps to make the dial patterns visible under Advanced Options:
 - ▶ complete the configuration of this TE110P and save (write down or remember the trunk group number)
 - ▶ click on the Call Routing tab and then on the Outbound Dial Map menu item
 - ▶ click on the pencil to edit one or more of the routes (for example LOCAL).
 - ▶ change the Target setting to match the trunk group number of the TE110P that you configured
 - ▶ click Save and Ok to make the changes active

- ▶ Modify each route to reflect the trunk group number of the TE110P if you want that routes dial strings to be available under the TE110P's Advanced Options list
- ▶ Click the Resources tab and then the Phone Lines menu item
- ▶ Click the pencil to edit your TE110P
- ▶ Check the Advanced Options checkbox and the dial strings will be displayed for you to edit as needed
- Desc. - text that will be prepended to the inbound caller ID field when a call is received on this number or line.
- DNIS/DID - Dialed Number Identification System or Direct Inward Dialing - These are the telephone numbers that are given to you by your service provider. These might be local or toll free numbers for inbound calls on the T1.

Desc.	DNIS/DID

Send Calls To	Target
Extension	1000-"Sample"

- Send Calls To - select the type of destination that you would like to send incoming calls from each line of the trunk group. Options: Extension, Extension Group, Auto Attendant, Custom Routing Rules.
 - Target - choose the actual location or device that you would like to send incoming calls from each line of the trunk group. Note that the options that you can choose from in this field change according to the type of destination that you select in the Send Calls To field. For example, if you choose Extensions then Evolution will provide all of the extensions that you have configured as options in the Location field. Also note that you must configure your extension, extension group, auto attendant, or custom routing rule before you can select it as an option in the Location field.
6. Reverse Order - by default Evolution assigns ports beginning with the last port and working down. Check the Reverse Order checkbox to assign ports beginning with the first port and working up.
 7. Click the Save button.

Sangoma A101D, A102D, A104D

The Sangoma A101D, A102D, A104D are internal PCI cards that offer one, two, and four T1 digital interfaces respectively. Follow the steps above in the section "PCI card physical installation" if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installsangoma` to install the Sangoma drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using the same information provided for the Digium TE110P but select T1/PRI-A101D, T1/PRI-A102D, or T1/PRI-A104D rather than T1/PRI-TE110P. Otherwise the settings are the similar.

Rhino R1T1, R2T1, R4T1

The Rhino R1T1, R2T1, or R4T1 are internal PCI cards that offer one, two, or four T1 digital interfaces respectively. Follow the steps above in the section "PCI card physical installation" if your PCI card is not already physically installed in your Evolution server. At the Evolution server terminal screen type `installrhino` to install the Rhino drivers (note that there are no spaces). The server will automatically install the drivers and reboot the system. Once it is rebooted log in to the web interface and configure the card using the same information provided for the Digium TE110P but select T1/PRI-R1T1, T1/PRI-R2T1, or T1/PRI-R4T1 rather than T1/PRI-TE110P. Otherwise the settings are the similar.

Digium TE120P, TE210P, TE220P, TE410P, TE420P

The Digium TE120P, TE210P, TE220P, TE410P, or TE420P are internal PCI cards that offer one, two, two, four, or four T-1 digital interfaces respectively (the 120, 220, and 420 are newer versions of the 110, 210, and 410). Follow the steps above in the section “PCI card physical installation” if your PCI card is not already physically installed in your Evolution server. Log in to the web interface and configure the card using the same information provided for the Digium TE110P but select T1/PRI-TE120P, T1/PRI-TE210P, T1/PRI-TE220P, T1/PRI-TE410P, or T1/PRI-TE420P rather than T1/PRI-TE110P. Otherwise the settings are the similar.

Conference Rooms

Conference rooms allow multiple internal and/or external callers to talk together on the same bridged call. Once configured conference rooms may be accessed through an auto attendant (under Call Routing > Auto Attendant, edit your auto attendant, set Send Calls To equal to Auto Attendant, and then set Location equal to ConferenceAdmin), dialing the feature code *10, or by sending incoming calls directly to the conference system (under Resources > Phone Lines, edit your Provider, set Send Calls To equal to Auto Attendant, and then set Location equal to ConferenceAdmin). You can also access a conference room by dialing the conference room number (for example 14001).

Setting up a new conference:

1. Log on to Evolution and click on the Resources tab and then on the Conference Rooms menu item.
2. Click New Record at the bottom of the screen. The detail section will expand and allow you to configure the new conference room.

General	Name	Active
Conference Room 14001	Description	Disable No
Access Code		Secure Conference No
Admin Code		

3. Select an available number from the Conference Room drop-down menu. This number will be used to reference the specific conference room.
4. Enter a description to help you remember the purpose of this conference room.
5. Enter an access code. This is the password that callers will enter to gain access to this conference room.
6. Enter an admin code. This is the password that the conference room owner or administrator will use to control the conference room during the call.
7. Select yes or no to enable or disable this conference room. You may want to disable conference rooms that are not used frequently and enable them in time for the conference call. This prevents unauthorized use of the conference room.
8. Secure Conference - if set to No then you will be required to enter the conference room number and the access code when you dial *10 but you will automatically have access if you dial the conference room directly (for example 14001). If set to Yes then you will be required to enter the conference room number and the access code when you dial *10 and you will have to enter the access code (pin) but not the conference room number if you dial the conference room directly (14001).


Announcements

Announcements are played to callers either prompting them for information or giving them information. Announcements are referred to in Auto Attendants and Custom Routing Tables and must be referenced, recorded, and uploaded to Evolution. There are two methods to accomplish this: 1) through the Evolution web interface or 2) by dialing into the system from one of the extensions. Both methods are described below:

Use the web interface

1. Plan your announcement and then record it using your preferred method (for example on your personal computer).

Note: The digital file must be in .wav or .gsm format recorded in 8000Hz mono.

2. Log on to Evolution and click on the Resources tab and then on the Announcements menu item.
3. Click New Record at the bottom of the screen. The detail section will expand and allow you to configure the new announcement.
4. Select an available number from the Announcement drop-down menu. This number will be used to reference the specific recorded announcement.
5. Enter a description to help you remember the purpose and content of this announcement.
6. Click the Save button.
7. Look in the Announcements List and find the announcement number that you just created.
8. Click on the small page-like icon on the far right (not the pencil nor the X) to upload a file. 
9. Click the Browse... button and find your digitally recorded .wav or .gsm file that you recorded in step one.
10. Click the submit button.

Your announcement is now referenced, recorded, and uploaded. You may now use the announcement number in your auto attendant and custom routing tables.

Dial into the System

In addition to uploading your announcement files you can dial 5000 on any telephone connected to Evolution and record it over the phone. Follow these steps:



1. Dial 5000 from a telephone on your Evolution PBX.
2. Enter the announcement number that you want to record. Take care to not record over existing announcements unless you want to replace them. Also be aware of the number range that is designated for announcements. The default is 500 to 699. Goto the Numbering Plan on the Administration tab to edit the number range.
3. Press # to complete the recording.
4. Press 1 to replay the recording, press 2 to rerecord, press 3 to record a different announcement.
5. Hang up when you are finished.
6. Log on to the Evolution web-interface and click on the Resources tab and then on the Announcements menu item.
7. Click New Record at the bottom of the screen. The detail section will expand and allow you to configure the new announcement.
8. From the Announcement drop-down menu select the number of the recording that you just made by dialing into the system. This number will be used to reference the specific recorded announcement.

9. Enter a description to help you remember the purpose and content of this announcement.
10. Click the Save button.

Music on Hold

Evolution PBX provides internal music on hold for audio played when a caller is placed on hold and as an option for Extension Groups while a caller waits to be answered. The audio files must be MP3 format. Note that you may also play recorded messages rather than music. Music on hold may be referred to as MOH. There is no provision for other sources of music such as an external music player. Only one MOH ID is active at a time and music will be played exclusively from that play list (except for Extension Groups, which may use any of the configured MOH IDs). You may change the active MOH ID for standard hold audio. To do so click on the Administration tab and then click on the Global Settings menu item. Change the Hold Music ID listed under the General heading.

To add, delete, or change the music on hold:

1. Log on to Evolution and click on the Resources tab and then on the Music On Hold menu item.
2. Click on the pencil  to edit MOH ID 10 with Description Default. The detail section will expand and allow you to configure the Default music on hold.
3. Set the Order drop down menu to either Sequential or Random according to preference. This will control whether Evolution plays the songs in the Play List sequentially or randomly.
4. If desired you may modify the description of this MOH ID by editing the Description field.
5. Under the heading “Upload a .mp3 file:” click on the Browse button. This will open a file browser window on your local operating system. Navigate to the location of the file that you want to upload and select the file.
6. Click the Upload button and wait for the file to upload to the server.
7. You may delete a music file from the play list by clicking .
8. Click the Save button.

Auto Attendant

Evolution PBX includes an auto attendant to answer calls and present the caller with a customized script that allows the caller to select a resource or destination. The auto attendant then routes the call to the selected resource or destination. An auto attendant provides the familiar “Press one to talk to sales, press two to talk to support...”

Note: There are some specialized system auto attendants that are pre-configured in Evolution. They are as follows:

- ConferenceAdmin - allows a caller to access the internal conference room system.
- DialByFirstName - allows a caller to input the first three letters of a person’s first name as assigned under the Caller ID Name of an extension and be connected directly to that extension. Evolution automatically assumes that the first word listed in the Caller ID Name field is the first name. If only one word is listed it will use that word as the first name. Evolution will read the letters of the matched name to the caller. If there are multiple matches the first instance of the name alphabetically will be read and the caller can indicate that name is incorrect and

Evolution will proceed to the next name alphabetically until the first name is found.

- DialByLastName - allows a caller to input the first three letters of a person's last name as assigned under the Caller ID Name of an extension and be connected directly to that extension. Evolution automatically assumes that the second word listed in the Caller ID Name field is the last name. If only one word is listed it will use that word as the last name. Evolution will read the letters of the matched name to the caller. If there are multiple matches the first instance of the name alphabetically will be read and the caller can indicate that name is incorrect and Evolution will proceed to the next name alphabetically until the last name is found.
- VoiceMailAdmin - allows a caller to access the internal voicemail system. When prompted, enter the extension number and password of the mailbox that you would like to check or configure.

Use the following steps to set up a new auto attendant:

1. Plan how you would like your auto attendant to function and the announcements that will be required to implement the auto attendant. For example, where do you want to route callers when they press one, two, three, etc? And what is the script that you want to record that welcomes callers and presents to them the options?
2. Configure the announcements that you require for your new auto attendant (see the Configuration of Announcements section of this document).
3. Click on the Call Routing tab and then on the Auto Attendant menu item.
4. Click New Record at the bottom of the screen. The detail section will expand and allow you to configure the new auto attendant.

Menu Settings		Listen For Key Presses		
Menu Name:	Announcement:	If Caller Presses	Send Calls To	Location
	16071-ScreenAccept	1	Play Invalid Entry	
<input type="checkbox"/>	Zero Reaches Operator	2	Play Invalid Entry	
<input type="checkbox"/>	Allow Extension Numbers	3	Play Invalid Entry	
<input type="checkbox"/>	Time of Day routing	4	Play Invalid Entry	
		5	Play Invalid Entry	
		6	Play Invalid Entry	
		7	Play Invalid Entry	

5. Type the name that you want to call this auto attendant into the Menu Name field.
6. The Announcement drop-down menu allows you to assign a pre-configured announcement to this auto attendant. Select the announcement that you configured in the steps above.
7. Check the Zero Reaches Operator checkbox if you would like to allow callers to escape out of the auto attendant and be routed to the operator. The operator is an extension or custom routing table that has been designated as the operator. To assign an extension as the operator click the Administration tab and then click the System Settings menu item. Select the extension number that you want from the Operator drop-down menu.
8. Allow Extension Numbers sets Evolution to listen for digits that are dialed by the caller to escape from the auto attendant and connect directly to an extension.
9. Check the Time of Day routing checkbox if you would like Evolution to play a different announcement for different times of the day (for example after business hours). Checking this box expands the Menu Settings to include the following:
 - Start Time - this is the time of the day that your standard message will begin playing (for example your open hours message). Note that the time of the day that does not fall within the start and end times will play the

- message that you select in the “After Hours Route Calls To” drop-down menu.
 - End Time - this is the time of the day that your standard message will stop playing. Thus the message that you select in the “After Hours Route Calls To” drop-down menu will begin playing at this time and end the next day at the start time that you set above.
 - After Hours Route Calls To - select the message that you want to play outside of the hours that you set as start time and end time.
10. For each number that the caller presses select the location type and location under the Listen For Key Presses heading as follows:
 - Send Calls To - select the type of destination that you would like to send the call. Options: Extension, Extension Group, Auto Attendant, Custom Routing Rules. Note that you can send the call to another auto attendant. This allows you to build multiple tiered auto attendants.
 - Location - choose the actual location or device that you would like to send the call. Note that the options that you can choose from in this field change according to the type of destination that you select in the Send Calls To field. For example, if you choose Extensions then Evolution will provide all of the extensions that you have configured as options in the Location field. Also note that you must configure your extension, extension group, auto attendant, or custom routing rule before you can select it as an option in the Location field.
 11. Click the Save button.

Speed Dial Numbers

Speed dial codes are numbers that provide shortcuts to calling standard telephone numbers. These numbers are available to all extension configured on Evolution. Dial the speed dial number like you would dial any extension number and the number will be completed as though the entire number was dialed. Follow these steps to configure a new speed dial number:

1. Click on the Call Routing tab and then click on the Speed Dial Numbers menu item.
2. Click the New Record button at the bottom of the screen. The detail section will expand.
3. Enter the number that you would like to use as a speed dial code.
4. Enter the number that you would like to be called when this speed dial code is activated. Enter the number exactly as you would if dialing it from your telephone (for example include the 1 if it is a long distance number).
5. Click the Save button and then click OK to activate the changes.

Outbound Dial Map


Routes, Targets, and Dial Strings

The Outbound Dial Map controls how Evolution reacts to different dial patterns. There are three elements that you control: the route, the target, and the dial strings. Four routes are predefined: Local, Long Distance, International, Fax, and 911. Each route is designed to be used as its name suggests. The dial strings listed under each route determine the route’s action. Following is an example to explain the outbound call process:

An internal call is dialed and the digits are passed to Evolution. Evolution compares the digits to the digit strings. If a match is found Evolution associates the internal call with the route that the matched dial string belongs to. If 4221244 is dialed on a

default installation of Evolution the dialed digits will match the pattern `_XXXXXXX`. By default `_XXXXXXX` belongs to the route LOCAL. The call will be sent to the Target of the route LOCAL. If the route LOCAL is set to VoIP Provider / Trunk Group and the Target Trunk Group 1 then the call will be sent to Trunk Group 1 (trunk groups are set under Resources > Phone Lines > your specific provider). If you have analog lines with a TDM400P card then Trunk Group 1 may refer to the TDM400P. Thus the outgoing call flow is as follows:
 4221244 is dialed => matches `_XXXXXXX` in route LOCAL => route LOCAL targets Trunk Group 1 => Trunk Group 1 is set to TDM400P => call is connected to an available analog port on the TDM400P > the call is sent to your analog provider.

Assign a target trunk group for each route according to your preference. If you have one service provider then all four routes should point to the same target. If you have multiple service providers you may choose to prefer one for LOCAL and another for LONG DISTANCE, etc. One reason for this type of configuration is that different service providers may offer different rates for local versus long distance. You may also elect to have backup service providers or play a message to outbound callers that states all lines are busy when the first provider's lines are occupied.

Outbound dial strings can be modified by clicking on the pencil  to edit the route and then clicking the check box to view the dial strings: **Show Dial Strings** . Local dial rules may require you to add or modify the dial strings. Following are the descriptions of the characters that may be used in dial strings other than the numbers 0 through 9:

- `_` - indicates that a string includes wildcard characters (X, N, .). Otherwise a string is considered to be literal.
- X - any digit 0 through 9
- N - any digit 2 through 9
- `.` - any digit of any variable length (for example 123 or 45678 or 5551212, etc.)

Outbound Number Translation

Outbound routes that explicitly refer to a trunk group will supply their dial strings for manipulation under the trunk group's Advanced Options. Outbound number translation allows you to prepend or remove digits from a dialed number before it is sent to the service provider. For example if your provider requires eleven digits (a 1 plus the 3-digit area code and 7-digit local number) for all calls whether they are local or long distance but you do not want to dial a 1 for local calls then you can add that 1 using outbound number translation.

The column titled Number Dialed displays the dial strings that are associated with this trunk group. If an outbound number matches one of these strings it will be passed to this trunk group. Modify the text box to the immediate right of the dial string that you want to translate before sending to your provider.

The Translate To field contains the variable `#{DIALED}` that will be passed to the service provider. If left as `#{DIALED}` the number will be sent to the service provider as dialed. To add digits to the front or back simply add digits to the variable. For example to prepend a one to the dialed number enter `1#{DIALED}` or append a one to the number enter `#{DIALED}1`. To strip digits use this guide: `#{DIALED:offset:length}`.

Following are some examples of stripping digits:

`#{123456789:1}` returns 23456789

`#{123456789:-4}` returns 6789

`#{123456789:2:3}` returns 345

Insert a 'w' in front of the variable $\{DIALED\}$ to force a half-second pause before Evolution connects to the provider and sends the dialed (or translated) string. For example, ww $\{DIALED\}$ would force a one second delay before the call is attempted.

Telephone Dial Strings

SIP-based VoIP telephones have their own dial strings that impact when a call is sent to Evolution. Different telephone manufacturers use different methods of implementing dial strings but the strings are usually the same or similar to those used with Evolution PBX. The dial strings that are local to the telephone impact if and when a user must use the Send (or Dial) button to place a call as well as interactions such as dialing 9 to place an external call. For reference the default dial strings for Polycom and Cisco telephones provisioned with Evolution are as follows:

- **Polycom:** [2-9]11|0T|011xxx.T|1[2-9]xxxxxxxx|[2-9]xxxxxxxx|[2-9]xxxxxxT
 - [2-9]11: 911 rule (x11 are dialed immediately)
 - 0T: Local operator rule. After dialing 0 the phone waits T seconds and then completes the call automatically (pressing the Send button sends the call immediately)
 - T: the timeout which is 3 seconds by default
 - 011xxx.T: International rule without prefix (pressing the Send button sends the call immediately).
 - 1[2-9]xxxxxxxx: Long distance rule with prefix
 - [2-9]xxxxxxxx: Ten digit number (usually for areas that require ten-digit local calls)
 - [2-9]xxxxxxT: seven digit local number. After dialing the seven digits the phone waits T seconds and then completes the call automatically (pressing the Send button sends the call immediately)
- **Cisco:** "1....." Timeout="0" | "....." Timeout="0" | "*" Timeout="5"
 - 1..... Timeout="0": Long distance call rule. When 1 plus ten digits are dialed the phone immediately sends the call
 - Timeout="0": Local call rule. When ten digits are dialed the phone immediately sends the call
 - "*" Timeout="5": Any digits in any quantity that do not match the previous templates will be automatically sent after a 5 second timeout.

Note: The timeout is defined at the length of time that transpires since the last entry that the caller made. For example, if you enter 1 0 0 5 and then press no other buttons the timeout period begins after the 5 is entered. If the caller presses the Send or Dial key then the call is immediately sent without regard to the timeout or how many digits have been entered.

Advanced Feature Codes

Advanced feature codes are numbers that are dialed from an internal extension and provide access to telephony features. The following list describes features that are integrated into the standard installation of Evolution PBX:

- *10 - Conference Access - provides access to the conference system. Dial *10 and then follow the audible instructions to enter a conference.
- *11 - Page all extensions on Evolution that have been configured with their Paging setting set to Enabled (go to Resources, Phone Extensions and view the extension to determine this setting). Not all telephones are compatible with this feature.
- *15 - Barge In - allows a user to connect to an already established call and listen to the conversation. Dial *15. This will break into the most recent call in the system in

listen-only mode. To change to a different call dial a valid extension number on an active call and press pound (#) to connect to that extension's call.

***16** - Barge In and Talk - allows a user to connect to an already established call and listen and talk to the conversation. Dial *16. This will break into the **most recent** call in the system in listen and talk mode. To change to a different call dial a valid extension number on an active call and press pound (#) to connect to that extension's call.

***20** - Pause - allows an extension in an extension group to temporarily remove itself from the extension group so that it will no longer receive calls from the extension group. Valuable for breaks or additional time after a call to prepare for the next call. Use *21 to un-pause.

***21** - Un-pause - adds an extension back to an extension group to receive calls from the extension group once again after being paused. Use *20 to manually pause.

***96** - Voicemail Access (different extension) - dial *96 from any internal extension to access any voicemail box that is different than the one that you are calling from. You will be asked to enter the voicemail box number as well as the password. Once entered you will have full access to that mailbox.

***97** - Voicemail Access (local extension) - dial *97 from any internal extension to access the voicemail box for the extension that you are dialing from. You will not be prompted for an extension number nor a password as these will be assumed to be the extension that you are calling from. Most VoIP telephones can be programmed so that their messages button automatically dials *97. Telephones that are integrated into Evolution will be automatically configured for the messages button to dial *97.

5000 - Announcement Recording - dial extension 5000 to access the announcement recording application. See the section Configuration of Announcements in this document for additional information.

6*120XX - record a voicemail message to be delivered to all of the extension belonging to a specific extension group. For example, extensions 1001 through 1005 belong to extension group 12000 (and each extension is configured with a normal voicemail account, 1001 through 1005). Dial 6*12001 to access the voicemail system and record a voicemail message that will be delivered to all users 1001 through 1005.

6* <ext#> - Transfer directly to voicemail. Blind transfer your active call to * <ext#> where <ext#> is the extension number of the voicemail box that you want to transfer to.

8*120XX - page all the members of an extension group. For example, dial 8*12001 to page all of the extensions that belong to extension group 12001.

8* <ext#> - page a specific extension. For example, dial 8*1001 to page extension 1001.

9* <ext#> - pick up a call ringing on another extension (the call must be directly to the extension and not through an extension group. For example, you are using extension 1001 and someone directly calls extension 1002. Dial 9*1002 to pickup that call on your extension 1001.

In-call Feature Codes

The following feature codes are used during a call (the Advanced Feature Codes described above are only for dialing to initiate a call and are not used during a call):

***0** - Disconnect - disconnects the current call.

***1** - One Touch Record - initiates call recording.

***2** - Attended Transfer - transfers the call after you consult with the party that you are transferring to and after you press the transfer button.

***3** - Blind Transfer - transfers the call without consulting the party that you are transferring to (transfers immediately).

700 - Call Park - any active call can be transferred to 700 to park the call. A parked call is on hold inside of Evolution rather than on hold on the extension. A parked call can be picked up by the extension that parked it or any other extension. To park an active call transfer the call to extension 700. Evolution will audibly respond

with another number starting with 701. This number may be used to retrieve the parked call. Dial 701 or the number that Evolution gave you when you parked the call. Hit the send button on your phone if required. You will be connected to the parked call and thus will have picked up the parked call.

Custom Routing Rules

Custom Routing Rules (also known as Custom Routing tables or CRTs) allow the administrator to create advanced call routing steps. A call routed to a Call Routing Rule will begin at the top with the first step and continue down executing each subsequent step sequentially until there are no more steps (the call will be disconnected), the call is disconnected, or the call is answered (by an extension or an application such as voicemail).

Settings		Routing Rules			
CRT Number:	15001	Active	Send Calls To	Location	Duration
CRT Name:		Step 1 <input type="checkbox"/>	Extension	4000-"Test"	1

CRT Number: The unique identification number for the Custom Routing Rule.

CRT Name: A name for easy identification of the Custom Routing Rules or its function.

Active: Check to make this step active, to mark this step to be saved, and to display an additional blank step to edit.

Send Calls To: The category or target type for where the call is to be sent (Extension, Extension Group, Auto Attendant, Custom Routing Rules, Voicemail Box, Voicemail Group).




Location: The specific Extension, Extension Group, Auto Attendant, Custom Routing Rules, Voicemail Box, or Voicemail Group that the call should be sent to.

Duration: The length of time in seconds that the call should spend on this step before proceeding to the next step.


Send Calls To
Extension
Extension Group
Auto Attendant
Custom Routing Rules
Voicemail Box
Voicemail Group

Intuitive Voice Technology provides customization and advanced configuration of Evolution as a paid professional service. Please email pbxsales@intuitivevoice.com to discuss your application or to request a professional service quote.

Backups

By default Evolution PBX automatically runs backups of your configuration files hourly, daily, and monthly. Files such as voicemail and announcements are not backed up or restored with this utility. You may restore your configuration to any one of these points by clicking on the . Clicking on the  will permanently delete the backup and clicking on the  will bring up a detail screen that will allow you to enter an email address. Evolution will email the backup file to the email address as an attached file. Enter your email address and click the Send button. If the backup file is too large for Evolution to email then clicking on the email icon will allow you to download the backup file to your computer.

To upload a backup file that is on your local computer click the Upload File button:

This will open a detail screen. Click the Browse button and find the backup file on your local computer. Click the submit button to upload the file. Once uploaded you can find it in the list of backups and click the  to restore.


Storage settings for the automatic backups are modified on the Storage Settings screen: click the Administration tab and then the Storage Settings menu item.

Global Settings

The SIP global settings are parameters that all SIP devices connected to your Evolution server (or all devices of a particular type: Cisco, Polycom). Following is a description of each field:

Hold Music ID: sets the internal music source for the whole system (referred to by the MOH description name, see Resources tab > Music On Hold menu item).

Activate Changes: When set to Always Evolution will automatically activate changes that you make when you save anything in the web interface. Prompt will ask you if you want to activate changes every time you save anything in the web interface. Manual will never activate the changes you make when you save anything in the web interface. Press the Activate Changes button to manually activate


changes. 

* **Codes:** In-call star codes may disrupt some telephone interaction with other telephone systems. Set to Disabled to disable in-call star features. This does not affect Advanced Feature Codes.

User Recordings: Enable or disable user recordings from being visible to users when they log in to Evolution as a user (under Historical Reporting).

Auto Complete: Select Yes to enable Cisco phones to attempt to predict the number from call history that most resembles the number you are trying to dial. Press # to complete the call displayed on the screen. (Cisco phones only)

Display Image: You may change the image displayed on your Cisco 79XX phones. For example you can display your company logo. Follow these steps:

1. Click the Help icon  that is to the right of the Display Image text.
2. Click the link Upload a file.
3. Click the Browse button to select the image file on your personal computer and then click the Submit button to upload the file.
4. Reboot your Cisco phones to load the new image.

Note: The Cisco image file has specific requirements. Create a bitmap file named ciscologo.bmp as follows:

- The image should be a Windows Bitmap form (.bmp) with 256 colors and 90 x 56 pixels in size. Only two colors are displayed, black or white. The image must be saved in grayscale format.
- The smaller the logo file, the quicker it will load. Typical logo files should be around 10k bytes.
- The 7940/7960 phones actually display two colors at 2-bit depth, or four solid colors. For best results creating images/logos that don't dither and degrade, use #000000 (black) and #FFFFFF (white or clear on the LCD display), then #404040 (dark grey) and #808080 (light gray) as your alternate solid colors (or as the antialiasing colors for excellent results).

Message Chirp: When enabled plays a audible chirp when there is a voicemail waiting.

Licensing

The Evolution license is bound to one physical server. The license key along with a fingerprint including your server's Ethernet MAC address are sent over the Internet to Intuitive Voice Technology for verification.

Evolution PBX License Key: Enter your Evolution PBX license key in this box.
iView Interactive Operator License Key: Enter your iView license key in this box (optional, contact pbxsales@intuitivevoice.com to purchase a license).

Storage Settings

Log Storage: Number of days to retain log files.

Evo Log Level: Defines the level of logging to be written to the Evolution log files. Each log level includes all the message types before it i.e. SQL log type includes entries of type SQL, Critical, and Warning.

Daily Backups: Number of daily backups to retain. Backups are run daily.

Monthly Backups: Defines the number of monthly backups to retain. This option is independent of the daily backups.

Remote Backup: You may email or FTP a daily backup to a remote location. You may specify as many email addresses or ftp servers as you would like separated by ; The FTP address is formatted like this. HOST^USER^PASS^DIRECTORY, Example: name@email.com;192.168.2.1^user^pass^dir

CDR Storage: Number of months to store Call Detail Records listed under historical reporting. A call detail record is required in order to retrieve a monitor.

Monitors: Number of days to retain the audio monitors. If you would like to keep one longer be sure to email to yourself and store it outside of Evolution.

System Settings

IP Settings		DHCP Server		General Settings	
Hostname	PBX.com	DHCP Server	Disabled	Admin Password	••••••••
Behind NAT	Yes	Starting IP	192.168.9.3	Security Level	Normal
External IP	68.230.99.159	Ending IP	192.168.9.199	Time Zone	Arizona
Local IP	192.168.1.253	Domain	voipnetwork.net	Operator	CRT <input type="radio"/> 4000 Ext. <input checked="" type="radio"/>
Local Network	192.168.1.0/255.255.	Discovery mode	Auto-Polycom	Nightly Reboot	Disabled
Gateway	192.168.1.1			Email Type	Direct
Network Mask	255.255.255.0			SMTP Server	
Primary DNS	192.168.1.1			SMTP Username	
Secondary DNS	4.2.2.2			SMTP Password	
Self Discovery	Enabled			Fax Email/Exten.	

IP Settings

Hostname: the host name of the Evolution server.

Behind NAT: Set to Yes if your Evolution server has a private IP address (usually begin with 10., 172.16., or 192.168.) and access the Internet using NAT. Yes is the default and typical setting. Set to No if your Evolution server has a public IP address and is not behind a NAT.

External IP: the public IP address of your Evolution server (from the viewpoint of the Internet). Typical small and medium business installations use a public IP address provided from an Internet Service Provider on their router or firewall and private address for devices on the Local Area Network including for Evolution. In this case the public IP address on the outside of the router/firewall will be used for Evolution's External IP address setting. This address is important for remote extensions that connect over the Internet. If you are not sure of this address set Self Discovery to Enabled and this address will automatically be set for you.

Note: Routers, firewalls, Internet access, and Local Area Networks differ greatly from one business to another. Your network may require you to forward TCP and

UDP ports to allow remote extensions and VoIP service providers to function correctly. Please see the section Networking, Quality of Service, and Firewalls for more information about port forwarding.

Local IP: the IP address for your Evolution Server on your Local Area Network.
Local Network: displays and sets the local network address and subnet mask of the Local Area Network that your Evolution server resides on. If Evolution is behind a NAT router this setting is used to determine which IP addresses are local and thus be allowed access to Evolution configurations. If you have several local networks that require access to Evolution set the Self Discovery option to Disabled and list all your local networks separated by a comma (for example, for the two subnets 192.168.0.0 and 192.168.1.0 enter the following:

192.168.0.0/255.255.255.0,192.168.1.0/255.255.255.0).

Gateway: the IP address of the default gateway for the Local Area Network.

Network Mask: the subnet mask for the Local Area Network.

Primary DNS: the IP address of the primary Domain Name Server to resolve Hostnames to IP addresses.

Secondary DNS: the IP address of the secondary Domain Name Server to resolve Hostnames to IP addresses.

Self Discovery: set to Enabled to allow Evolution to ping the Internet and learn its external IP address and allow Evolution to calculate your Local Network. Otherwise the external IP address must be manually configured. The external IP address is used for remote extensions (remote extensions are telephones that are connected through the Internet).

DHCP Server

DHCP Server: enables or disables the DHCP server feature built into Evolution. The built in DHCP Server assigns IP addresses to your network devices including VoIP telephones.

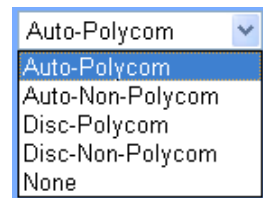
Note: Only one DHCP server is permitted on a Local Area Network. If the Evolution DHCP server is enabled then other DHCP Servers on your network will need to be disabled.

Starting IP: the lowest IP address that will be assigned to devices when DHCP server is enabled.

Ending IP: the highest IP address that will be assigned to devices when DHCP server is enabled.

Domain: the domain name that will be assigned to network devices when DHCP server is enabled.

Discovery Mode: Configures Evolution and the DHCP server for a specific discovery type. The Auto settings (Auto-Polycom and Auto-Non-Polycom) discover new telephones that are plugged in to your network and automatically provision the telephones as an extension. The Disc settings (Disc-Polycom and Disc-Non-Polycom) discover new telephones that are plugged in to your network and inform the administrator in the web interface under Resources, Phone Extensions but the telephones are not automatically provisioned. The Polycom settings (Auto-Polycom and Disc-Polycom) are compatible with only Polycom telephones. The Non-Polycom settings (Auto-Non-Polycom and Disc-Non-Polycom) are not compatible with Polycom telephones and are compatible with Cisco and Linksys telephones. The setting None disables the automatic provisioning and discovery modes of Evolution.



General Settings

Admin Password: the admin password used to access the Evolution web interface.

Security Level: controls what devices can retrieve config files from Evolution's built in provisioning server. *Normal* - Allows devices on your local network and devices with the IP address as defined under the device configuration as (external IP). *Tight* - Allow only local network devices. *Insecure* - Allow any device.

Time Zone: sets the time zone of the server. Note that the time zone for each extension is configured under the settings for that extension. The system time zone is used for date stamps on call records, system backup, and other system time stamps. The extension time zone is used to show the correct time on telephones that are compatible with this feature.

Operator: sets the destination of calls to the operator (if routes to the operator are configured, for example pressing zero in an auto attendant). Select either a CRT or extension number as a target destination. Based on your selection your configured CRT and extensions will be available in the drop down menu. Select the number of the CRT or extension that you want.

Nightly Reboot: sets the server to restart every night at midnight. This is not required but could be useful if you are doing some custom routing that is not properly freeing server resources. Note that PCI cards used for terminating analog and T-1 lines may require human interaction during the boot up process on some server hardware. If the server reboots without human interaction the server may not complete the boot up process preventing the PBX from functioning. Disable nightly reboot to avoid unattended reboots.

Email Type: Direct or SMTP. If Direct then Evolution will send email directly to the email server for each email address. For example, if evolution is to send an email to user@domain.com then Evolution will attempt to send the email to the domain.com email server. If SMTP then Evolution will use the SMTP server information that is specified in the following settings (SMTP Server, Username, and Password) for all outbound email.

SMTP Server: The server name or IP address of your SMTP server.

SMTP Username: The username of the SMTP account on your SMTP server (if required).

SMTP Password: The password of the SMTP account on your SMTP server (if required).

Fax Email/Exten.: Specify the extension or email address to send inbound faxes when they are automatically detected. Requires the fax to email upgrade option.

Networking, Quality of Service, and Firewalls

This section describes important information for Evolution regarding networking, Quality of Service, and Firewalls.

Port Forwarding: Evolution, SIP, and VoIP use certain TCP and UDP ports for communication. Typical LANs do not interfere with these protocols but connecting devices over the Internet may require attention the ports defined below. Refer to your router or firewall manufacturer for information about how to forward ports on your device.

- **22** - TCP port 22 is used for SSH, a remote terminal configuration protocol. Intuitive Voice Technology uses this port for remote diagnostics and custom configuration requests. Forwarding this port from the Internet to Evolution is optional but may be required for many support and configuration requests.
- **69** - UDP port 69 is used for TFTP (Trivial File Transfer Protocol) configuration file loads. Remote VoIP telephones and devices that are automatically provisioned require this port to be open. Forwarding this port is required if

automatic configuration is desired for remote devices (devices must be supported by Evolution as a specific device. See the section Phone Extensions for more information about specific devices).

- **80** - TCP port 80 is used for standard web traffic (http). Forwarding port 80 allows access to the Evolution web interface. Intuitive Voice Technology uses this port for remote diagnostics and custom configuration requests. Forwarding this port from the Internet to Evolution is optional but may be required for many support and configuration requests.
- **5060-5061** - TCP and UDP ports 5060 and 5061 (sometimes 5062-5063 are referenced as well) are used for SIP (Session Initiation Protocol) to provide call signaling and registration information. 5060 must be forwarded from the Internet to Evolution for remote devices to register and make calls over the Internet (5061-5063 may be required). These ports are also mandatory for VoIP service provider accounts.
- **10000-20000** - UDP ports 10000 to 20000 are used for RTP traffic (Real-time Transport Protocol). RTP is the protocol that transmits the audio for a telephone call. 10000-20000 must be forwarded from the Internet to Evolution for remote devices to register and make calls over the Internet. The whole range may not be required depending on what type of telephone you are using and how many calls you will make over your Internet connection. These ports are also mandatory for VoIP service provider accounts. Check with you VoIP service provider to verify the ports that they require to be forwarded (some service providers may require 8000 to 10000 rather than 10000 to 20000).

Important Terms and Acronyms

Auto attendant - automatic menu system that answers incoming calls and allows the caller to choose the resource with which they want to connect (for example “press 1 to talk to sales, press 2 to talk to support...”)

Broadband Internet - high speed Internet access that offers download and uploads speeds of 256 kbps and greater. Examples include DSL, cable modem, and dedicated T-1 access. If you intend to use Evolution PBX with external extensions that are connected over the Internet or if you intend to configure VoIP service provider accounts you should have a static, public IP address from your Internet provider.

FXO - Foreign eXchange Office - analog ports that connect to telephone lines from a telephone service provider (standard telephone lines from your telephone company).

FXS - Foreign eXchange Station - analog ports that connect to telephone devices such as standard analog telephones and fax machines.

MAC Address - the hardware address of any device connected to a network. VoIP telephones and ATAs have MAC addresses. A MAC address is hexadecimal (it uses the numbers 0 through nine and A through F) and looks like this: 0000FFFF2222.

PBX - Private Branch eXchange - a telephone system local to an organization as opposed to a telephone system that provides public telephone service. Evolution is a software PBX that runs on standard personal computer equipment.

PSTN - Public Switched Telephone Network - the standard telephone system that allows domestic and foreign phone calls.

SIP - Session Initiation Protocol - standardized telephony signaling protocol used by Evolution and most VoIP equipment.

Softphone - VoIP telephone implemented as a computer software package. The eyeBeam softphone created by <http://www.counterpath.com> is an example of a softphone.

T-1 - High speed, digital line that can be used to carry 23 or 24 telephone calls or can be used as a data connection with 1.544 Mbps bidirectional speed. Also referred to as a DS-1. An ISDN PRI is a T-1 with specific protocols to allow 23 voice calls and efficient signaling on a 24th channel (often simply called a PRI).

Trunks - when used in this document and with Evolution refers to any telephone line or connection from Evolution to the PSTN.

VoIP - Voice over Internet Protocol - voice calls routed over the Internet or over any other Internet Protocol based network.

For Additional Help

General Support

If you have questions or need technical assistance with Evolution PBX call (888) 587-5750 or send an email to pbxsales@intuitivevoice.com.

If you have questions about third party hardware or software please visit the following websites:

Cisco VoIP Telephones: <http://www.cisco.com>.

CouterPath Software Telephones - <http://www.counterpath.com>.

Digium PCI Cards: <http://www.digium.com>.

Linksys Analog Terminal Adapters and VoIP telephones: <http://www.linksys.com>.

Polycom VoIP Telephones: <http://www.polycom.com>.

My Evolution Doesn't Do That!

Some features and configuration options in this document may only be available with a recent software upgrade available from Intuitive Voice Technology. Email pbxsales@intuitivevoice.com to learn more about Evolution upgrades (please explain the feature that you are interested in).

Errata

Please report errors or confusing descriptions by sending an email to support@intuitivevoice.com.