



X-PRO User's Guide

Operations and Configuration Guide to X-PRO

Xten's Full-Featured Softphone

Xten Networks, Inc.
Suite 188, 4664 Lougheed Highway
Burnaby, BC Canada V5C 5T5
Tel: 1.604.878.0440
sales@xten.com www.xten.com
Copyright © 2004 Xten Networks, Inc.

Revision History

Date	Revision	Description
May 2004	1.0	First Draft



Table of Contents

List of Figures	iii
List of Tables	iv
1 Introduction.....	1
1.1 What is X-PRO?	1
1.2 How does it Work?	2
2 Installation and Setup.....	3
2.1 Before You Install.....	3
2.1.1 Finding a Service Provider	3
2.1.2 Getting the Right Information from Your Provider	3
2.2 Minimum System Requirements.....	3
2.2.1 X-PRO for Windows	3
2.2.2 X-PRO for Macintosh.....	3
2.3 Audio Device Requirements	4
2.4 Installing X-PRO	4
2.4.1 Windows Installation	4
2.4.2 Macintosh Installation.....	4
2.5 Uninstalling X-PRO.....	5
2.5.1 Uninstalling the Windows Version.....	5
2.5.2 Uninstalling the Macintosh Version	5
2.6 Starting X-PRO.....	5
2.6.1 Starting X-PRO for Windows.....	5
2.6.2 Starting X-PRO for Macintosh	5
2.7 The Audio Tuning Wizard.....	5
3 Using the Softphone	7
3.1 The Dial Pad	7
3.2 Before You Can Call.....	7
3.2.1 Things to Keep in Mind.....	7
3.2.2 Logging in to Your Provider.....	8
3.3 Placing a Call.....	10
3.4 Ending a Call.....	11
3.5 Redial	11
3.6 Answering a Call.....	11
3.7 Placing a Call on Hold	12
3.8 Dial Pad Controls.....	12
3.8.1 Microphone and Speaker Adjustment.....	12
3.8.2 Codec Selection	12
3.9 Context Menu.....	12
3.10 Window Controls.....	13
3.10.1 Window Controls for X-PRO for Windows	13
3.10.2 Window Controls for X-PRO for Mac.....	14
3.11 Help.....	14
3.12 Obtaining Software Upgrades.....	14



4	Extended Calling Features	15
4.1	Call Conferencing	15
4.1.1	Starting a Conference Call	15
4.1.2	Adding another Party to the Conference	15
4.1.3	Removing a Party from the Conference	15
4.1.4	Multiple Conference Hosts	16
4.2	Call Transfer	16
4.2.1	Unattended Call Transfer	16
4.2.2	Attended Call Transfer	16
4.3	Do Not Disturb	17
4.4	Auto-Answer	17
4.5	Auto-Conference	17
5	Phonebook and Menu	18
5.1	The Phonebook	18
5.2	The X-PRO Menu	19
5.3	Recent Calls	20
5.4	User Settings	20
5.4.1	Phone Status	20
5.4.2	Features	21
5.4.3	Import to Phonebook	21
5.4.4	Export Phonebook	22
5.5	Configuring for Multiple Providers	22
5.5.1	SIP Proxy Settings	22
5.5.2	Selecting your Proxy	23
5.5.3	Dialing Prefixes	24
6	Advanced Softphone Settings	25
6.1	System Settings	25
6.1.1	Network Settings	25
6.1.2	X-Tunnels Settings	25
6.1.3	X-Vox Settings	26
6.1.4	Audio Device Selection	26
6.2	Advanced System Settings	26
7	Application Hot Keys	28
	Appendix A: X-PRO Troubleshooting	29



List of Figures

Figure 1 - X-PRO Installation for Mac	4
Figure 2 - Audio Device Selection.....	6
Figure 3 - The X-PRO Dial Pad.....	7
Figure 4 - VoIP Service Provider Information	8
Figure 5 - Login Dialog	9
Figure 6 - Dialing a Number.....	10
Figure 7 - Incoming Call.....	11
Figure 8 - Dial Pad Context Menu.....	13
Figure 9 - Minimize Usage Tip.....	13
Figure 10 - Do Not Disturb.....	17
Figure 11 - The Phone Book.....	18
Figure 12 - The Menu Window	19
Figure 13 - Recent Calls	20
Figure 14 - Import to Phonebook.....	21
Figure 15 - SIP Proxy Settings.....	22
Figure 16 - The Diagnostic Log.....	32



List of Tables

Table 1 - Conference Management.....	17
Table 2 - Application Hot Keys.....	28
Table 3 - Relevant Network Hosts.....	29
Table 4 - Required Ports.....	30



1 Introduction

1.1 What is X-PRO?

Thank you for choosing X-PRO. X-PRO is a software telephone (also called a *softphone*). It has all of the features of a traditional business telephone, including call hold, call transfer, and call conferencing.

Also available from Xten for evaluation purposes is the free version of the software, *X-Lite*. This evaluation version has the same look and feel as the full-featured one, however many of the extended features such as call transfer and call conferencing are not available.

The following is a list of features included in the X-Pro softphone along with special note of what is (or is not) available in X-Lite:

- 6 Lines (*3 Lines for X-Lite*)
- Line Hold
- Supervised and Blind Call Transfer (*not available in X-Lite*)
- Call Conferencing (*not available in X-Lite*)
- Do Not Disturb (DND) (*not available in X-Lite*)
- Call Ignore and Send to Voicemail (*not available in X-Lite*)
- Call Forwarding URI/URL (*not available in X-Lite*)
- Voicemail URL specification (*not available in X-Lite*)
- Auto-conference/Auto-answer (*not available in X-Lite*)
- Redial
- Multiple SIP proxy registration
- Dynamic codec selection
- Caller ID and call timer
- Mute functionality
- Microphone and speaker calibration and adjustment
- Speakerphone capability (echo cancellation)
- Recent calls list
- Phonebook and easy-to-use menu system
- Key-stroke shortcuts for most major functions
- Touch-tone generation (RFC 2833)
- SIP Compliant (RFC 3261)
- G.711u, G.711a, GSM, G.729 (*not available in X-Lite*), iLBC, and Speex codecs
- STUN firewall discovery
- NAT/Firewall traversal intelligence
- *X-Tunnels** server specification
- Access to advanced network and system settings
- Encrypted voice option available**

* Requires access to X-Tunnels NAT Traversal service – contact your service provider for details

** Special version of X-PRO called *X-Cipher* (sold separately) can provide fully encrypted voice conversations using the latest encryption technology



1.2 How does it Work?

Instead of making calls over the regular telephone network, calls are made over computer networks, either through your Internet Service Provider's connection or through your local network. This is called Voice over Internet Protocol – VoIP.

Calls made to another Internet telephone, anywhere in the world, are generally free, while calls made to a regular telephone are generally much cheaper than traditional long distance calls. Xten Networks, Inc. does not provide telephone service, only the software to use such services. See the next section on where to find a service provider.

X-PRO uses the open standard Session Initiation Protocol – SIP.



2 Installation and Setup

2.1 Before You Install

This section covers some of the things you should be aware of before you install the X-PRO softphone.

2.1.1 Finding a Service Provider

If you received your version of X-PRO as part of a VoIP service package, then this section will not apply to you. For the retail version of X-PRO, however, you must choose a VoIP provider before you can start using the softphone.

The first step is choosing a provider. There are many VoIP service providers available. Some are listed on Xten's corporate site at: <http://www.xten.com/providers/>

It is up to you to decide which service provider is best for you.

2.1.2 Getting the Right Information from Your Provider

After choosing a VoIP service provider, you will need the following information regarding your account:

User Name	_____
Password	_____
Authorization User [optional]	_____
Domain / Realm	_____
SIP Proxy address and port	_____
Outbound SIP Proxy address and port [optional]	_____

2.2 Minimum System Requirements

The following section outlines the hardware and software requirements for an installation of X-PRO.

2.2.1 X-PRO for Windows

- Processor: Pentium II 300 (or equivalent)
- Memory: 128 MB RAM
- Operating System: Windows 98SE, ME, 2000, or XP
- Connection: Wired or wireless Internet connection (including dial-up)

2.2.2 X-PRO for Macintosh

- Hardware: Suggested configuration* for Mac OS X version 10.2
- Operating System: Mac OS X version 10.2 or later
- Connection: Wired or wireless Internet connection (preferably broadband)

*Contact apple.com for details

2.3 Audio Device Requirements

Since X-PRO is a software telephone application, you will require both speaker and microphone devices to make calls. Any of the following configurations are acceptable:

- External speakers and microphone (*requires a full-duplex sound adapter*)
- Dual-jack multimedia headset (*requires a full-duplex sound adapter*)
- Built in microphone and speakers (*requires a full-duplex sound adapter*)
- USB multimedia headset
- USB phone

2.4 Installing X-PRO

Installing X-PRO is straightforward and follows familiar software installation procedure.

2.4.1 Windows Installation

Follow the instructions below for installation of X-PRO on a Windows machine:

1. Exit any software applications that use sound such as CD and media players.
2. Run the setup executable file. This will typically be the *X-PRO_Install.exe* file or something similarly. *Note: If you have a version of an Xten softphone already running you will be asked to shut it down.*
3. Follow the prompts offered by the install wizard. *Note: You must accept the license agreement to install X-PRO.*
4. Select *Launch X-PRO* at the final step of the wizard to start using the softphone.
5. Click **Finish** to complete the installation.

2.4.2 Macintosh Installation

Follow the instructions below for a Macintosh installation of X-PRO:

1. The download file is an internet-enabled disk image; therefore most browsers should mount it automatically. However, if this is not the case, locate the *.dmg* file after download and double-click on it.
1. Read the license agreement and click "Agree" to proceed. *Note that you must agree to the terms of the license agreement to install X-PRO for Macintosh.*
2. Simply drag the application icon to the folder in which you wish to install. *This will normally be your Applications folder. If you do not have permission to install to the Applications folder you will most likely want to install to your home folder instead.*



Figure 1 - X-PRO Installation for Mac



2.5 Uninstalling X-PRO

If for some reason you need to uninstall your version of X-PRO at some point, follow the steps given below:

2.5.1 Uninstalling the Windows Version

1. Launch the Windows *Control Panel*
2. Select *Add or Remove Programs*
3. Select your version of X-PRO and click ***Change/Remove*** (or ***Add/Remove***)

2.5.2 Uninstalling the Macintosh Version

1. Click on the X-PRO icon and hold it down
2. Drag the icon to the Trash.

2.6 Starting X-PRO

You can start X-PRO in the familiar ways for Windows and Macintosh as described below.

2.6.1 Starting X-PRO for Windows

1. Click the ***Start*** button.
2. Select *Programs*.
3. Select the X-PRO folder (or the folder specified upon install).
4. Click the X-PRO icon.

You can also launch X-PRO by double-clicking on the short-cut icon on your desktop.



2.6.2 Starting X-PRO for Macintosh

1. Open the folder where you installed your version of X-PRO.
2. Double-click the X-PRO icon.

2.7 The Audio Tuning Wizard

The X-PRO softphone includes an *Audio Tuning Wizard* which allows you to select an available audio device (or devices) to be used for calling. For example, if you have a USB phone connected to your computer, the Audio Tuning Wizard will make sure that this is the device used by X-PRO for your calls.

The Audio Tuning Wizard will automatically appear the first time you run X-PRO. It is strongly advised that you complete the wizard to make sure that your audio devices are working properly and are set at the right level. Follow the steps below to complete the Audio Tuning Wizard:

1. Click ***Next*** to begin the wizard.
2. Choose the appropriate audio devices (speaker and microphone). (see Figure 2)
3. Choose the speaker and microphone mixers – these will typically be either your sound adapter or USB device, depending on what you choose in step 2. Click ***Next*** to advance.
4. Adjust the speaker volume to a comfortable level. Click ***Next*** to advance.

Continued on next page ...

Continued from previous page ...

5. Adjust the microphone volume; listen to the playback of the recorded sample and make changes if necessary. Click **Next** to advance.
6. Perform the microphone calibration as instructed. Click **Next** to advance.
7. Choose your connection speed, either **Dial-up** or **Cable/DSL/LAN**. Click **Next** to advance.
8. Click **Finish** to complete the wizard.

Note: The Audio Tuning Wizard will automatically appear the first time you start X-PRO. You will have to launch the wizard manually each time after that. Details on how to do this are included in Section 3.9 later on in the guide.



Figure 2 - Audio Device Selection

3 Using the Softphone

3.1 The Dial Pad

The X-PRO softphone provides an easy-to-use dial pad as the user interface allowing for quick access to both basic and advanced calling features.

Refer to Figure 3 below for an illustration of the X-PRO dial pad.



Figure 3 - The X-PRO Dial Pad

3.2 Before You Can Call

3.2.1 Things to Keep in Mind

Making calls with X-PRO is simple; however, there are some differences between using a softphone and a traditional telephone that you should be aware of.

1. A softphone is a computer application so it must be running for you to make or receive calls.
2. The softphone must login to the network before you can make or receive a call. This will typically require a few seconds as the softphone contacts your provider's network. The call status will read *Logged in – Enter Phone Number* to indicate that you are ready to make a call.
3. Calls travel over the Internet meaning sometimes service quality will drop due to network congestion, of which is no fault of the softphone. Typically a broadband connection will

provide more than enough bandwidth needed for high voice quality. If you are experiencing poor call quality refer to *Appendix A: X-PRO Troubleshooting*.

3.2.2 Logging in to Your Provider

Upon start-up, when the dial pad first appears you should see *Discovering Firewall...* in the call status. This is normal behavior and indicates that the softphone is discovering your network environment.

After this, you may see the message *Awaiting proxy login information*. This indicates that you have to enter your VoIP Service Provider information (mentioned in section 2.1.2 earlier) so that the softphone can login to the network. You will also see the X-PRO menu as shown below in Figure 4 which will prompt you for that information.

Note that you will be asked to enter the information for your *default* provider. This is normally the provider that you are most likely to use when placing a call. X-PRO allows you to configure the softphone to use more than one provider. Setting up the softphone for multiple providers is covered in section 5.5.

Shown to the right is the X-PRO menu window which allows you to enter and/or edit the settings for your softphone.

The menu can be launched at any time by clicking on the menu button on the dial pad.

Use your up and down keys on your keyboard to move from one item to the next.

You can also click on the arrows at the bottom left of the menu window to move between items.

Double-click on an item or highlight the item and click on SELECT to reveal the list of choices. Click BACK to return to the previous menu.

The flashing cursor next to the item indicates that you can enter text for that item. Some items contain a list of choices such as "Yes" or "No. Double-click on your choice and click BACK to return to the previous menu.

When finished entering a group of settings, click BACK to save them.



Figure 4 - VoIP Service Provider Information



Fill in the following items needed to login to your provider's network. *As noted, not all of the items need to be filled in, depending on your provider.*

- Enabled ▶ Yes
- Display Name ▶ *your name*
- Username ▶ [from your VoIP Provider] (*often your "phone number"*)
- Authorization User ▶ [from your VoIP Provider] (*may not be needed*)
- Password ▶ [from your VoIP Provider]
- Domain/Realm ▶ [from your VoIP Provider]
- SIP Proxy ▶ [from your VoIP Provider]
- Out Bound Proxy ▶ [from your VoIP Provider] (*may not be needed*)

When finished entering all of the information, click BACK to save the settings. If you have entered all of the required information, the softphone will attempt to login to the provider's network. This will be indicated by a *Logging in ...* message in the call status.

Important: When you see the message *Logged in – Enter Phone Number* in the call status then you are ready to make and receive calls. If you see the message *Login failed! Contact Network Admin* then you have not logged in successfully and will not be able to make a call. If this is the case refer to Appendix A which includes troubleshooting tips for problems like this and various other issues.

Some versions of X-PRO come preconfigured with your provider's network information. For these versions, you will see a login dialog upon start-up which will prompt you for your *username* (or *phone number*) and *password*.

The login dialog included with some versions of X-PRO allows you to login to your provider's network by entering your username (or phone number) and password.

Click the Remember check boxes so that you do not have to re-enter the information each time that you start X-PRO.

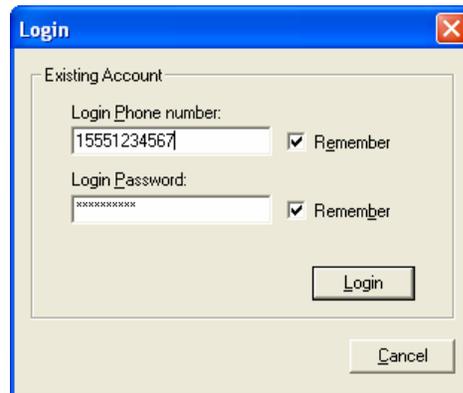


Figure 5 - Login Dialog

3.3 Placing a Call

As mentioned in the previous section, once you see the message *Logged in – Enter Phone Number*, you are ready to make or receive calls.

There are a couple of different ways to enter a number in X-PRO. You can either click on the digits of X-PRO's numeric keypad or you can enter the numbers (or letters) directly from your computer keyboard.

Notice that as you begin entering a number, line 1 is automatically selected as the line for that call as shown in Figure 6 to the right.

*If at any point you enter an erroneous digit, click the **Clear** button on the dial pad or press **Backspace** on your keyboard.*

*Note that as you enter a number you may see a suggested completion for that number (as seen in Figure 6). To enter the rest of the number as suggested, simply hit the **Tab** key on your keyboard to automatically fill in the remaining digits.*



Figure 6 - Dialing a Number

When finished entering your number, click the **Dial** button on the dial pad or press **Enter** on your keyboard.

Like a traditional telephone, you will hear ringing in your speaker device as you try the remote party. You will also see the message “Ringing” in the call status. When the remote party answers, you will see the message “Connected” in the call status.

You can also dial a number by clicking on an available line button (for example with a call already on the other line) and entering the number. *Conference calling will be covered in section 4.1.*

Important: When you place a call by simply dialing the number of the other party you will most likely be using your default service provider for the call. As mentioned earlier, X-PRO allows you to have multiple service providers configured so that you can call place a call over a variety of networks.

If you would like to place a call via a provider other than the default, you would have to choose the provider (also called the *proxy*) before entering the number. Calling using multiple providers is covered in section 5.5.

You can also dial a number by entering the SIP URL in the form of *sipuser@sipdomain*.

3.4 Ending a Call

As with traditional phones, a call is brought to a close when either you or the person you are talking to actively ends the call.

You can end an active call by clicking on the **Hang-up** button on the dial pad. When the call has ended you will see the message *Hung up* in the call status.

After the call has ended, the details of the call (such as the length of the call and the caller ID) will remain in the call display. To clear the display, click on the **Clear** button in the middle of the dial pad.

3.5 Redial

To redial a number, simply click on the last dialed number shown in the call display. If you have cleared the display click on the “*Your number is ...*” area to call the last number dialed.

3.6 Answering a Call

As mentioned earlier, you must have X-PRO running to answer an incoming call. As you receive the call, you will hear ringing in your configured speaker device.

You will normally hear the phone ringing in the device (i.e. headset/USB phone) that you configured in as your speakers from the Audio Tuning Wizard. If you have a headset or USB phone configured as your speaker device, you can also have the phone ring through your PC or Mac speakers. To configure a separate ring device, refer to section 6.1.4 later on.

If the softphone is hidden behind another window or minimized to the system tray, the application will come into focus as the incoming call arrives.

The incoming call will be indicated in the call display as shown in Figure 7 to the right.

The call will come in on the highest line by default. This is indicated by the flashing “light” on the line button.

You can choose to ignore the call by clicking on the “Ignore” found below the caller ID of the incoming call.



Figure 7 - Incoming Call

As the call arrives simply click on the **Dial** button (or press Enter) to answer it. You can also click on the appropriate line button to answer the call.



3.7 Placing a Call on Hold

While you're on a call in progress, you can place that call on hold by either clicking on the corresponding line button or by selecting another line. The appropriate line button will “flash” to indicate that its corresponding call has been placed on hold. To resume a call that is on hold, simply select its line again (by clicking on its line button).

3.8 Dial Pad Controls

The X-PRO dial pad includes several controls which allow you to make adjustments to customize your calling experience.

3.8.1 Microphone and Speaker Adjustment

The X-PRO dial pad includes microphone and speaker sliders as shown in Figure 3. Simply click on the slider and drag it up or down to increase or decrease the level.

This can also be done by the up/down and left/right arrow keys on your keyboard. The up/down keys control the speaker level adjustment and the left/right keys control the microphone level adjustment.

You may also mute your softphone so that the other party cannot hear you. Press the **MUTE** button at the bottom of the dial pad to mute the phone. Press the button once more to take it off mute.

3.8.2 Codec Selection

X-PRO allows you to select which audio codec(s) you would like to use for calling. Audio codecs describe the format in which the audio stream is compressed for transmission over the network. Some codecs require less bandwidth than others, however, usually with less bandwidth comes lower voice quality.

By default, all codecs come enabled. This is indicated by displaying the codec name in a black font at the bottom of the call display (see Figure 3). To disable a codec, click on its name in the call display. The codec name will become grayed when it is disabled. Click on the name once more to enable the codec again.

If you have only one codec enabled, this will ensure that the calls you make will use that audio compression format. The G.729 codec consumes the lowest bandwidth whereas the G.711 codecs require the most bandwidth but provide the best voice quality.

3.9 Context Menu

X-PRO includes a context menu which allows you quick access to the following features:

- A list of all configured service providers (or proxies) and their status,
- access to the Audio Tuning Wizard, and
- access to the Diagnostic Log.

To launch the dial pad context menu, simply right-click (or Control-click for Mac users) anywhere over the dial pad.

A check mark next to the proxy indicates that it is enabled.

“Registered” will appear after the proxy domain indicating that you are ready to use that network.

“Registering...” indicates that the softphone is still logging into that network and is not yet ready for calling.

If you have multiple service providers (proxies) configured with your softphone, you may specify which provider you like to use for the call by selecting that proxy from this menu. By selecting a proxy that is disabled, you will also automatically enable it for calling. Using multiple proxies is covered in more detail in section 5.5.

The *Diagnostic Log* contains important network and protocol information which may be useful for trouble-shooting a variety of issues. For more on this see *Appendix A: X-PRO Troubleshooting*.



Figure 8 - Dial Pad Context Menu

3.10 Window Controls

At the top of the dial pad are the minimize and close buttons (see Figure 3). Depending on the version you are running, the behavior of these buttons will vary.

3.10.1 Window Controls for X-PRO for Windows

As expected, the minimize button will send the application to the Windows task bar. The first time you minimize the phone, you will see the usage tip as shown in Figure 9 below.

To hide to the system tray, click the close button. When the application is hidden in the system tray, you will still be able to receive calls.

With the phone hidden, the dial pad pops up to alert you of an incoming call. You can also click on the icon in the system tray to show the phone again.

Click the check box marked “Don’t show this tip again” to prevent the tip from showing up the next time you minimize the dial pad.

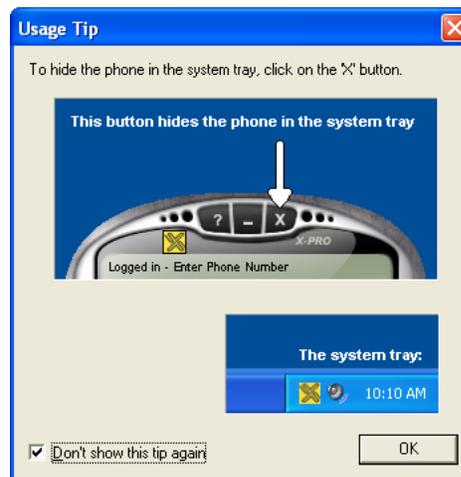


Figure 9 - Minimize Usage Tip



Normally, the close button simply hides the phone in the system tray as explained by the usage tip. To shut down the softphone you must:

1. Click close to hide the phone to the system tray.
2. Right-click over the icon in the system tray and select *Exit*.

You can also change this behavior so that the close button shuts down the softphone in one step. This can be set in the Advanced System Settings found in the menu (see section 6.2).

3.10.2 Window Controls for X-PRO for Mac

As with other Mac OS X applications, the minimize button will send the phone to the Dock. Unlike the Windows version, the close button shuts down the application in one step.

To hide the Mac version of X-PRO, select *Hide X-PRO* from the Application menu item (labeled *X-PRO*) found in the familiar Mac OS X menu bar. X-PRO and all of its windows will become invisible although its icon will remain in the Dock. Click on the icon in the dock to reveal X-PRO once again.

Note: When the phone is hidden, the Dock icon will “bounce” with the caption “RING!” superimposed to signal an incoming call.

3.11 Help

A click on the help button found at the top of the dial pad will bring you to the Xten Softphone Support Forum. Here you will be able to post an issue regarding the use of the softphone and receive useful help from other users and members of Xten support.

Note that co-branded versions of X-PRO may link to the provider's help site.

3.12 Obtaining Software Upgrades

X-PRO allows you to obtain software upgrades which contain fixes to known issues. With the dial pad as the active window, simply press the Ctrl + g keyboard shortcut. This will automatically launch your default web browser and bring you to Xten's upgrade site. From here you will be allowed to download available upgrades as they become available.

The Mac version of X-PRO allows you to check for upgrades from the *Check for Upgrade ...* menu item found on the Tools menu.



4 Extended Calling Features

Along with basic calling functionality, X-PRO also includes many advanced calling features normally found in business phones. Among these include call transfer and call conferencing which will be covered in the sections to follow.

4.1 Call Conferencing

X-PRO allows you to establish a conference call which will let you talk with more than one other party at once. Each party in the conference will be able to hear and speak to every other party.

4.1.1 Starting a Conference Call

You may host a conference by calling the other parties involved, or you may allow them to call you. For example, you can create a simple three-way call by following the steps below:

1. With an active call on one of the lines, place the call on hold by either
 - a) selecting another line and dialing a third party, or
 - b) accepting an incoming call from a third party by clicking on the line that they arrive on.

Either operation places the original party on hold.

2. After informing the third party of the three-way call, click the **Conference** (see Figure 3) button to include all parties in the conversation.
3. To end the three-way call, simply click the **Conference** button again to place both parties on hold. *At this point you can speaker to neither party and neither party can speak to one another.*
4. You can then talk to each party individually by selecting its respective line.

4.1.2 Adding another Party to the Conference

To add another party to an existing conference perform the following:

1. Place conference on hold by clicking the **Conference** button.
2. Invite another party to the conference by
 - a) selecting the line of an incoming call, or
 - b) selecting an available line to initiate a call to an outside party.

You will now be speaking to the outside party while the conference is on hold.
3. After advising the outside party that they will soon be part of the conference, click the **Conference** button once more to re-establish the conference.

4.1.3 Removing a Party from the Conference

To remove a party form an existing conference, perform the following:

1. Place conference on hold by clicking the **Conference** button.
2. Select the line of the party who wishes to leave the conference.
3. Say goodbye to the party and click the **Hang up** button.
4. Click the **Conference** button once more to re-establish the conference.

Note that a party may leave the conference on their own by simply hanging-up. Their line will then be indicated as inactive and the rest of the conference will be unaffected.



4.1.4 Multiple Conference Hosts

A conference may include up to 7 individuals – the conference host plus a participant on each of the 6 lines. If you would like to increase the number of parties in a conference you may do so by having more than one conference host.

For example, one person may host 6 other parties (to occupy all of its available lines) with one of those parties being a conference of their own containing 6 other parties. This would bring the total number in the conference to 12.

In theory this would allow for any number of parties in the conference, however, in a real situation, the number of participants would be limited by bandwidth constraints at each of the conference host's machines causing audio quality to degrade. For this reason, conference participants would be advised to select a lower bandwidth codec such as G.729 to preserve audio quality in such situations.

4.2 Call Transfer

The X-PRO softphone allows you to transfer an active call to a third party. The softphone allows for two different types of call transfer, attended and unattended.

4.2.1 Unattended Call Transfer

Also called *blind* call transfer, this occurs when you initiate a transfer without informing the third party that you are sending a call their way. Follow the steps below to perform an unattended call transfer:

1. With an active call in progress, inform the other party that you are going to transfer them to a third party and click the **Transfer** (see Figure 3) button.
2. Dial the number you wish to transfer the call to.
3. Click the TRANSFER button again to send the original party to the third party.

When the transfer is complete, the other two parties will be speaking to each other and both of them will have automatically ended their call with you. Both lines corresponding to the other two parties will now be free.

4.2.2 Attended Call Transfer

Also known as *supervised* call transfer, this occurs when you call and inform the third party that you are sending a call their way before actually making the transfer. Follow the steps below to perform an attended call transfer:

1. With an active call in progress, select an available line and call the third party.
2. Inform the third party that you are about to send a call their way and press the **Transfer** button.
3. Select the line associated with the original party.

4.3 Do Not Disturb

X-PRO allows you to set your softphone to a *Do Not Disturb* mode. When the softphone is set to this all incoming calls will be sent to voicemail or given a “busy” indication. *How this feature reacts is dependent upon your provider network.*

Do Not Disturb is enabled by clicking on the small DND indicator at the bottom left of the call display.

The indicator will flash to show that the feature is enabled.

To disable the feature simply click on the indicator once more.



Figure 10 - Do Not Disturb

4.4 Auto-Answer

X-PRO also allows you to set your softphone to *Auto-Answer* mode. When the softphone is set to this mode X-PRO waits 6 seconds after a call arrives and then automatically answers the call. This wait time can be changed from the User Settings item found in the X-PRO menu. The X-PRO menu system is discussed in section 5.2.

This feature is set by clicking on the small *AA* indicator at the bottom left of the call display. As with the Do Not Disturb feature, the indicator will flash when Auto-Answer is enabled. Auto-Answer is turned off by clicking on the indicator once more.

This feature can be combined with the *Auto-Conference* feature as discussed below.

4.5 Auto-Conference

X-PRO includes an Auto-Conference feature which can be enabled or disabled by clicking on the small *AC* at the bottom left of the call display. Combined with the Auto-Answer feature discussed above, these two features can control the way participants are added to a conference. The different levels of control for managing a conference are shown in Table 1 below.

Table 1 - Conference Management

Level of Control	Conference Process
<i>AA off / AC off</i> Manual conference	Conference Host manually accepts calls and adds each to conference - <i>see section 4.1.2</i>
<i>AA on / AC off</i> Auto-answer, manual add to conference	X-PRO automatically answers calls and the conference host manually adds each to conference
<i>AA off / AC on</i> Individual answer, auto add to conference	Conference host answers each call and each is automatically added to conference
<i>AA on / AC on</i> Conference Server Mode	X-PRO acts as a fully automated conference server automatically answering each incoming call and adding them to the conference

5 Phonebook and Menu

Similar to a cell phone, X-PRO allows you to store a list of contacts in a phone book. The softphone also includes a menu system which provides access to a variety of settings.

5.1 The Phonebook

To bring up the X-PRO Phonebook click on the Phonebook button on the dial pad.

Double-click the New Entry item to create a new contact. Enter the following information for the contact:

- Name
- Phone Number or SIP URL
- Type (double-click to reveal a list of contact types, i.e. Work, Home, Mobile)
- Proxy ID
- Speed No.

Click Back to save the contact.

Click on a contact to highlight it, and then click on SELECT to edit its information. You can also double-click on the contact without having to click SELECT.

With a contact highlighted, click on DELETE to remove the contact from the phone book.

You may dial a number in the phone book by clicking the **Dial** button on the dial pad with a phone book entry hi-lighted. You may also dial the *Speed No.* of the contact to call that person.

To close the phone book window, click its close button (x) or click the phone book button on the dial pad.



Figure 11 - The Phone Book



5.2 The X-PRO Menu

Click on the menu button on the dial pad to bring up the menu window. From here you will reach the X-PRO main menu.

The main menu gives you access to the following menu items:

- *Recent Calls*
- *Phonebook*
- *User Settings*
- *System Settings*
- *Advanced System Settings*

Note that the phone book is actually an item part of the main menu and can be launched from here as well.

Double-click and item or click once to highlight and then click SELECT to drive into that item.

Click BACK to return to the previous menu.

The menu window, like the phone book is its own window separate from the dial pad. It can be minimized to the task bar (or to the Dock for the Mac version) by clicking on the minimize button.

To close the menu window, click on its close button or press the menu button on the dial pad. You can also re-size the menu window by moving your mouse to the lower-right corner to reveal a double headed arrow. When the arrow appears, click and drag the corner to give the desired size.

Click on the up and down arrows at the bottom left of the window to move between items. This can also be done with the scroll wheel on your mouse (if available).

Double click an item to select it, or click once to hi-light the item and then click on SELECT to accomplish the same thing. For items that contain a pick-list of choices, the check mark indicates the selected choice. Select the item in the pick-list that you want and click BACK.

The remainder of this section will cover the more commonly used items in the main menu. The more advanced (and less used) settings will be covered in section 6.



Figure 12 - The Menu Window

5.3 Recent Calls

As you make and receive phone calls, X-PRO stores them in a list of recent calls. Select this menu item from the main menu to view the list.

From the Recent Calls menu, select either Dialed (as shown in Figure 13) or Received Calls.

X-PRO stores up to 50 Dialed and 50 Received calls.

The check mark next to the name indicates that the call has been answered.

Select an entry to reveal the following details:

- *Name*
- *Phone number or SIP URL*
- *Proxy ID*
- *Start Time*
- *Duration*



Figure 13 - Recent Calls

You can add a contact from your list of recent calls to your phone book. To do this, hi-light the entry and click ADD. To delete an entry from the list of recent calls, hi-light the entry and click DELETE.

As the list of recent calls grows, older entries will be automatically removed to maintain a limit of 50 of each type.

5.4 User Settings

This group of menus includes access to the softphone registration details, various application settings, and phone book utilities.

5.4.1 Phone Status

This item provides information regarding the softphone including the software version and registered license key for your copy of X-PRO.

5.4.2 Features

The following configurable items are available from the Features menu:

- Ring Tone ► See your provider for availability of downloadable ring tones
- Launch the Application ... ► Choose *Yes* to start when Windows starts (*not applicable to Mac users*)
- Start the Application in hidden mode ► *Yes* indicates that the application will start up hidden as an icon in the system tray (Windows) or in the Dock (Mac)
- Main Window Always On Top ► Choose *Yes* and the dial pad will remain on top of all open windows even if it is not in focus
- Use Orange Background ► Choose *Yes* to give the call display and menu window an illuminated look
- Enable DND ► Enable Do Not Disturb (*covered in section 4.3*)
- Auto-Answer ► Enable auto-answer (*covered in section 4.4*)
- Auto-Answer Wait Time ► Set the delay (in seconds) before a call will be automatically answered
- Incoming Calls Start on Line 1 ► By default incoming calls start on line 6, select *Yes* to configure for the reverse
- Enable Auto-Conference ► Set to *Yes* to enable auto-conferencing (*covered in section 4.5*)

5.4.3 Import to Phonebook

Select this option to import a list of contacts from your e-mail client into the X-PRO phone book.

Note: *You must first export your list of contacts from your email client to a CSV (Comma Separated Value) file. Please refer to your e-mail client documentation on how to do this.*

Select the proxy (provider) that you would like to have the contacts associated with.

Select either a dialing prefix or postfix for the numbers.

You may choose to import as either First Name, Last Name or Last Name, First Name.

Select the CSV (Comma Separated Value) file to import.

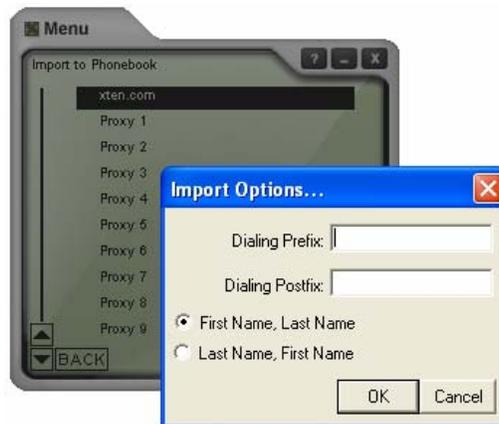


Figure 14 - Import to Phonebook



5.4.4 Export Phonebook

You may also export all of the contacts stored in your X-PRO phone book into a CSV file which can be later imported into your e-mail client.

To do this, choose the *Export Phonebook* menu item. After this you will be prompted to specify the filename and location of the CSV file containing your list of contacts.

Note: Refer to your e-mail client documentation for instructions on how to import a CSV file containing a list of contacts.

5.5 Configuring for Multiple Providers

X-PRO allows you to configure your softphone for calling using more than one provider. X-PRO connects to a provider's network via that provider's SIP proxy. Thus, X-PRO allows you to configure multiple SIP proxies.

5.5.1 SIP Proxy Settings

To configure for multiple proxies perform the following:

1. Bring up the main menu.
2. Select System Settings.
3. Select SIP Proxy.
4. Select a Proxy ID (*i.e. Proxy 1*)
5. Enter the information as explained below:

The SIP Proxy settings are shown in Figure 15 to the right.

When more than one proxy is configured, you must select which proxy you would like to use before calling. Selecting a proxy for calling is explained below in detail.



Figure 15 - SIP Proxy Settings



The following items can be configured for a given SIP proxy:

- Enabled ▶ Set to *Yes* if you would like to use this proxy
- Display Name ▶ Your caller ID
- Username ▶ SIP username *or phone number*
- Authorization User ▶ Sometimes required with username for authorization
- Password ▶ Password associated with your username
- Domain/Realm ▶ Domain of your provider's SIP proxy
- SIP Proxy ▶ URL of the SIP proxy (with port) *i.e. mysipdomain.com:5062 (port 5060 will be assumed if none is entered)*
- Out Bound Proxy ▶ Sometimes given by your provider along with the SIP proxy *i.e. nat.mysipdomain.com:5080*
- Use Out Bound Proxy ▶ *Default* - allows X-PRO to decide when it is needed
Always - force X-PRO to use configured O/B Proxy
Never - instruct X-PRO to not use O/B Proxy
- Send Internal IP ▶ Set to *Default* to allow X-PRO to decide when this is necessary
- Register ▶ Normally left at *Default*
- Voicemail SIP URL ▶ Allows you to configure a SIP URL for voicemail
- Forward SIP URL ▶ If this is configured, X-PRO will automatically forward all calls to this URL
- Use Voicemail ▶ Allows you to send voicemail to either the *Voicemail SIP URL* or the *Forward SIP URL*
- Direct Dial IP ▶ Set to *Yes* for direct dialing without having to use a SIP proxy
- Dial Prefix ▶ *Discussed below*
- Provider Website ▶ Double-click on this to launch your default browser pointed at your provider's home page (*if available*)
- Update Settings ▶ Double-click (and then confirm) to update proxy settings *-(if available)*
- Reset ▶ Select to clear all configured settings for this proxy

Once you have configured your proxy settings click **BACK** on the menu window to return to your list of proxies. You will now see your newly configured proxy in the list.

5.5.2 Selecting your Proxy

Now that you have multiple providers (proxies) configured, you have to specify through which provider you would like to make a call. You may choose a proxy for outbound calling in one of the following ways:

1. Simply enter the number. This will automatically choose your Default proxy for the outgoing call.
2. Right-click over the dial pad to select your proxy. This will display the dialing prefix associated with that proxy. Enter the number as normal and click the **Dial** button.
3. Use a configured dialing prefix as explained below.



5.5.3 Dialing Prefixes

As you will notice the default dialing prefix is given as #1 for *Proxy 1*, #2 for *Proxy 2*, etc. The Default proxy has no dialing prefix.

To call via a given proxy, enter the dialing prefix before your number. For example, enter the number #1251251 to dial 251251 through proxy 1 (where #1 is the dialing prefix for proxy 1).

You can enter a custom dialing prefix for each proxy. Each dial prefix takes the following form:

<Prefix>, <Prefix Replacement>, <Dial Length>; <Prefix2>, <Prefix Replacement2>, <Dial Length2>; ...

Each set of prefixes is separated by a semicolon allowing for more than one set. For example, if you would like to use proxy 1 for all numbers starting with 1604, you could configure a dialing prefix for proxy 1 as:

1604,604,11

This would also substitute the 1604 with 604 so as to make the calls local. In addition, the dial length specified makes sure that the number must be exactly 11 digits long before it will use that proxy. This would mean that 16045550001 would be dialed through that proxy whereas 1604555 would not.



6 Advanced Softphone Settings

The following settings are for advanced configuration only. Under normal circumstances these should be left as their default values.

6.1 System Settings

Select the System Settings item from the main menu to access these settings.

6.1.1 Network Settings

Select the Network Settings menu item found under the System Settings menu. The following network-related settings are available for configuration along with their suggested values:

- Auto Detect IP ► Set to *Yes* to allow X-PRO to auto discover your IP address.
- Listen on IP ► Leave blank to allow X-PRO to automatically choose listening IP.
- Use X-NAT to Choose... ► X-PRO will choose random ports to prevent conflicts between more than one user behind the same gateway.
- Listen SIP Port ► Default is 5060.
- Listen RTP Port ► Default is 8000.
- NAT Firewall IP ► Leave blank to allow X-PRO to choose your NAT IP.
- Out Bound SIP Proxy ► Specify here if you have an out bound SIP proxy residing on your LAN.
- Force Firewall Type ► Leave as (*do not force firewall type*) to let X-PRO use STUN to discover your firewall type.
- Primary STUN Server ► Enter a STUN server URL if you happen to have access to one.
- Secondary STUN Server ► Enter a backup STUN server URL if you have access to one.
- Primary DNS Server ► Enter your DNS server here.
- Secondary DNS Server ► Enter your secondary DNS server here.
- Provider DNS Server ► By default this is *dns.xten.net*.

Note that the default Network Settings configured with your softphone are appropriate for most situations. In some cases, however, one or more of these settings may have to be adjusted depending on your gateway configuration.

6.1.2 X-Tunnels Settings

X-Tunnels is a firewall traversal solution which allows X-PRO to traverse almost every type of firewall configuration.

Contact your provider to find out if they deploy an X-Tunnels solution; if so, you will need to configure as shown below.



X-Tunnels configuration (if available)

- X-Tunnels Host ► Enter the X-Tunnels hostname from your provider.
- X-Tunnels Username ► Enter your X-Tunnels username from your provider.
- X-Tunnels Password ► Enter your X-Tunnels password from your provider.
- Use X-Tunnels ► Leave as *Default* to allow X-PRO to decide when it's appropriate to use X-Tunnels.
- Force RTP through ... ► Leave as *Default* to allow X-PRO to decide when it's appropriate to stream the RTP audio stream through the X-Tunnels server.
- X-Tunnels Challenge ... ► Select between *MD5* and *SHA1* challenge algorithms for authentication to the X-Tunnels server. Default is *MD5*.
- X-Tunnels Encryption ► Select between *Triple DES*, *AES 128*, *192*, and *256 bit* encryption between the X-PRO user agent and the X-Tunnels server. Default is no encryption.

6.1.3 X-Vox Settings

These settings allow your X-PRO softphone to connect to an X-Vox-enabled media server. From there you will be allowed to download customized ring tones as well as receive announcements from your provider. Contact your provider to find out if this service is available to you.

You will have to enter the *X-Vox Host*, and you will have to set *Use X-Vox* to *Yes* to enable the service.

6.1.4 Audio Device Selection

Also available from the System Settings menu are the *Speaker Audio Device*, *Microphone Audio Device*, and *Ring Audio Device* items. The first two of these items provide an alternate place from the Audio Tuning Wizard to select your speaker and microphone devices.

The *Ring Audio Device* allows you to select a separate device through which you will hear the phone ring. For example, when an incoming call arrives you can have the ring tone sound through your PC (or Mac) speakers. This is useful for instances when you are not wearing your headset or are not near your USB phone.

Select the appropriate item from the System Settings menu (i.e. *Speaker*, *Microphone*, or *Ring Audio Device*) to reveal a list of available devices. Select your device of choice for that item and click BACK. You will see a check mark next to the device selected.

6.2 Advanced System Settings

These settings allow for tweaking of sensitive parameters including those associated with audio encoding and the SIP and RTP protocols. With a few exceptions, these settings should only be modified by your VoIP provider's support staff when advanced trouble-shooting is necessary.

Diagnostic: Select *Diagnostic Log* to launch the Diagnostics window to give you access to the SIP protocol messaging sent and received by the softphone.



Call Settings: Including *Default Letters-To-Digit Mode* which when set to *Yes* allows you to have the letters on your keyboard mapped to the appropriate numbers. (i.e. typing in *1800gofedex* would give you *18004633339*)

Audio Settings: These provide you access to advanced settings concerning the encoding and decoding of the audio stream.

DTMF Settings: Provide access to parameters that govern the way that tone dialing is generated.

RTP Settings: Provide access to parameters associated with the RTP media stream.

Codec Settings: Provide access to parameters associated with the audio compression-decompression formats.

Codec Order: Allows you to set the codec priority when establishing a call. *Codecs assigned a lower number receive higher priority.*

SIP Settings: Provide access to parameters associated with the SIP protocol.

STUN Settings: Allow you to configure STUN messaging and IP discovery server location.

Display Settings: A variety of settings to govern the way that the dial pad (and associated windows) behave, including

- **Inactive Greyness:** Allows you to set the way an inactive window (either the dial pad or the menu) appears. *The scale runs from 1 (darkest) to 255 (lightest). Setting the value to 0 disables the feature so that neither the dial pad nor the menu window will change appearance when inactive.*
- **Minimize button (_) hides the application:** Set to *Yes* to allow the minimize button to put the application in hidden mode. *The default is "No" which means the minimize button behaves as you would expect.*
- **Hide button (x) closes the application:** By default the behaviour of the Close button (see Figure 3) is to hide the application in the system tray. To change this behavior so that the application is shut down in one step, change this setting to *Yes*.



7 Application Hot Keys

X-PRO includes a number of keyboard shortcuts available for many of its functions. A list of these is shown in Table 2 below:

Table 2 - Application Hot Keys

Function	Keyboard Shortcut
Select Line 1	F1 or Ctrl + 1
Select Line 2	F2 or Ctrl + 2
Select Line 3	F3 or Ctrl + 3
Select Line 4	F4 or Ctrl + 4
Select Line 5	F5 or Ctrl + 5
Select Line 6	F6 or Ctrl + 6
Mute	F11 or Ctrl + u (Space bar for Mac)
Default SIP Proxy Settings	F8 or Ctrl + 8
Diagnostic Window	F9 or Ctrl + 9 (Command-D for Mac)
Audio Tuning Wizard	F7 or Ctrl + 7
Transfer	Ctrl + t
Conference	Ctrl + f
Phone book	Ctrl + b
Menu	Ctrl + m
Dial	Enter
Hang up	Ctrl + h
Help	Ctrl + F1
Clear	Backspace
Auto complete (number to dial)	Tab
Do Not Disturb (DND)	Ctrl + d
Auto-Answer (AA)	Ctrl + a
Auto-Conference (AC)	Ctrl + f (with no lines active)
Call Ignore	Ctrl + i
Default-Letters-to-Digits	Space bar (Windows only)
Inc/Dec Speaker Volume	Up/Down Arrows
Inc/Dec Microphone Volume	Right/Left Arrows
Check for Upgrades	Ctrl + g



Appendix A: X-PRO Troubleshooting

The following is a guide to troubleshooting various issues that may arise when using the X-PRO softphone. You may find that the problem you are experiencing is explained within.

Networking Problems

Note: This guide assumes that your Internet connection is working normally. If this is not the case, please contact your Internet Service Provider.

Login Timeout

If you are getting a “Login Timed Out” error message, you may have entered your username or password incorrectly. Double-check these values with your VoIP service provider. You also may have problems contacting your SIP proxy server. Make sure you can ping the following computers listed in Table 3 below. If you cannot contact any one of these computers, you may experience difficulties.

Table 3 - Relevant Network Hosts

Computer	X-PRO Menu Location (or ask your provider)
SIP Proxy	System Settings -> SIP Proxy -> [Your SIP Proxy] -> SIP Proxy
Outbound SIP Proxy (if applicable)	System Settings -> SIP Proxy -> [Your SIP Proxy] -> Outbound SIP Proxy
STUN Server	System Settings -> Network -> Primary/Secondary STUN Server
DNS Server	System Settings -> Network -> Primary/Secondary DNS Server
X-Tunnels Server (if applicable)	System Settings -> X-Tunnels -> X-Tunnels Host

Ping is network utility used to determine if your computer can reach another machine and if the remote machine is alive.

How to Ping A Computer (Windows):

1. Click the **Start** button
2. Click **Run...**
3. Type `command`
4. Click the **OK** button
5. The Windows Command Prompt will open
6. Type `ping computer address`, where *computer address* is the domain name or IP address of one of the computers in the above table.
7. If the result is “could not find host”, or “request timeout”, that computer is not available. Please contact your VoIP service provider for assistance.

How to Ping a Computer (Mac OS X):

1. Launch the *Network Utility* found in your *Applications/Utilities* folder.
2. Click on *Ping* from the list at the top.
3. Enter the address of the computer and click *Ping*.

**Firewall and NAT Issues**

If your computer is behind a firewall, certain ports must be open for X-PRO to be able to communicate with your VoIP service provider. The required ports are listed below in Table 4. Please see your firewall documentation for help on opening ports.

Table 4 - Required Ports

Port Type and Number	Service
UDP 3478	STUN
UDP 5060	SIP
UDP 8000	RTP
UDP 8001	RTCP

Two additional ports after 8001 are required for each additional line used. For example, if using a second line, UDP ports 8002-3 will be used.

If you are behind a firewall for which it is impossible to open such ports, contact your VoIP service provider regarding firewall traversal solutions, such as X-Tunnels.

Note: If your firewall restricts incoming connections, you may have to use an Outbound Proxy to properly receive audio. Ask your VoIP service provider for the Outbound Proxy address and port number, and enter it into X-PRO in the following location:

Menu -> System Settings -> SIP Proxy -> [Your SIP Proxy] -> <Outbound_Proxy>:<Port>

You must also set the *Use Outbound Proxy* field (found with the above setting) to *Always*.

Port forwarding is not required on your NAT.

Multiple X-PRO Clients behind Your NAT

X-PRO uses X-NAT to assign random ports to each client behind your NAT. If you are using X-Lite, you will have to manually assign different SIP and RTP listening ports for each client. To change listening ports:

Menu -> System Settings -> Network

From here, you must assign both a unique *Listen SIP Port* and a unique *Listen RTP Port* for each X-Lite client behind your gateway.

Multiple IP Addresses on the Same Computer

If your computer has more than one IP address X-PRO may have difficulty choosing the correct one. To manually set the correct IP address, configure the following settings as instructed below:

Menu -> System Settings -> Network -> Auto-Detect IP: *No*

Menu -> System Settings -> Network -> Listen On IP: *[Your Computer's IP]*

Another solution is to temporarily disable all but one network adapter before X-PRO starts.



RPort Attribute

Some VoIP providers do not support the “rport” signaling attribute. Check with your provider. To turn off “rport” configure the following setting as instructed below:

Menu -> Advanced System Settings -> SIP Settings -> Use SIP rport: *No*

Audio Problems

This guide assumes your computer's sound system is working normally, and that you have run the Audio Tuning Wizard. To run the Audio Tuning Wizard, right-click over the dial pad, and select *Audio Tuning Wizard*.

There are several factors that may affect sound quality when using X-PRO. These include the quality of the network connection, network device quality, and headset model. Some of the problems you may experience are given below along with some useful tips on how to minimize their effect.

Audio Contains Pops at Loud Points in Voice

Popping sound is a symptom of over-modulation. Ask the other party to decrease the microphone slider and/or adjust the microphone gain.

Audio Contains Bothersome Background Noise

Significant background noise can be due to the level of the silence threshold. Have the other party adjust their silence threshold. They can do so by running the Audio Tuning Wizard covered in Section 2.7 earlier.

Audio Sounds Choppy in a Conference

Poor conference audio may be caused by upload bandwidth limitations. For example, some sites have 1 Mbps download bandwidth, but only 128 kbps upload bandwidth. In these conditions, try multiple hosts for the conference, or have all participants disconnect and switch to a lesser bandwidth audio compression codec such as G.729.

Poor Sound

Poor or scratchy sound is a symptom of a problem with your network connection, or network card. The following issues could contribute to poor sound quality:

- There may be packet loss on the IP network. Check the network performance, latency, and throughput. A 200 millisecond round trip latency as determined from a ping should deliver good quality audio.
- Network devices may have performance problems. Make sure you are using the latest driver.

Audio Contains an Echo

The following tips may be useful for reducing echo heard during the conversation:

- Try using a headset with your sound card. Another suggestion is to use a USB-enabled headset, which bypasses system sounds as it acts as its own sound device.
- Are you using a boom type headset? It has been noted that some boom headsets that sit on the ear can create feedback between the boom microphone and the headset.



- The microphone balance is not muted in the playback section of Windows audio controls. When you are configuring sound, you may need to examine the volume control setting.
- You will hear echo if your microphone can pick up your speaker sounds, such as when not using a headset.
- Microphone level may be too high or amplifier is turned on in the generic Windows audio controls.

One-Way Audio

Some IP telephones do not obey “Reverse UDP Mapping Rules”, which can cause one-way audio in your conversation. Try your call with this setting:

Menu -> Advanced System Settings -> RTP Settings -> Obey Reverse UDP Mapping Rules: *No*

Also, if your firewall restricts incoming connections, you may get one-way audio. Configure X-PRO to use your provider's Outbound Proxy (if available) as explained under *Firewall and NAT Issues* earlier in this appendix.

Diagnostic Log

X-PRO writes diagnostic information to a log file. You can view this log file by pressing F9 on your keyboard. It is rather cryptic, but if you are having difficulties with X-PRO it may be necessary for you to e-mail it to your technical support representative.

```

Diagnostics
Log
-----
© 2004 Xten Networks, Inc. All rights reserved.
X-PRO release 1103a build stamp 13984
License key: 6BC40A776CC24AC2A61BDE316928D94E

Established SIP protocol listen on: 192.168.0.60:5060

Discovered Port Restricted Cone NAT Firewall

SIP: 192.168.0.60:8808
RTP: 192.168.0.60:8810
NAT: 64.180.205.133

Attempting SIP protocol listen on: 192.168.0.60:8808

Established SIP protocol listen on: 192.168.0.60:8808

PROXY#0: 192.246.69.223:5060

OUTBOUND-PROXY#0: 65.39.205.114:5082

SEND TIME: 21034437
SEND >> 65.39.205.114:5082
REGISTER sip: fwd.pulver.com SIP/2.0
Via: SIP/2.0/UDP 192.168.0.60:8808;rport;branch=z9hG4bK15BD6AA1E2D348B8BF529425344E040B
From: "Xten Networks, Inc." <sip:270073@fwd.pulver.com>;tag=1741188067
To: "Xten Networks, Inc." <sip:270073@fwd.pulver.com>
Contact: "Xten Networks, Inc." <sip:270073@192.168.0.60:8808>
Call-ID: 036E2FD80C534212B1620AAF104BB93E@fwd.pulver.com
CSeq: 6950 REGISTER
Expires: 1800
Max-Forwards: 70
User-Agent: X-PRO release 1103a
Content-Length: 0
```

Figure 16 - The Diagnostic Log