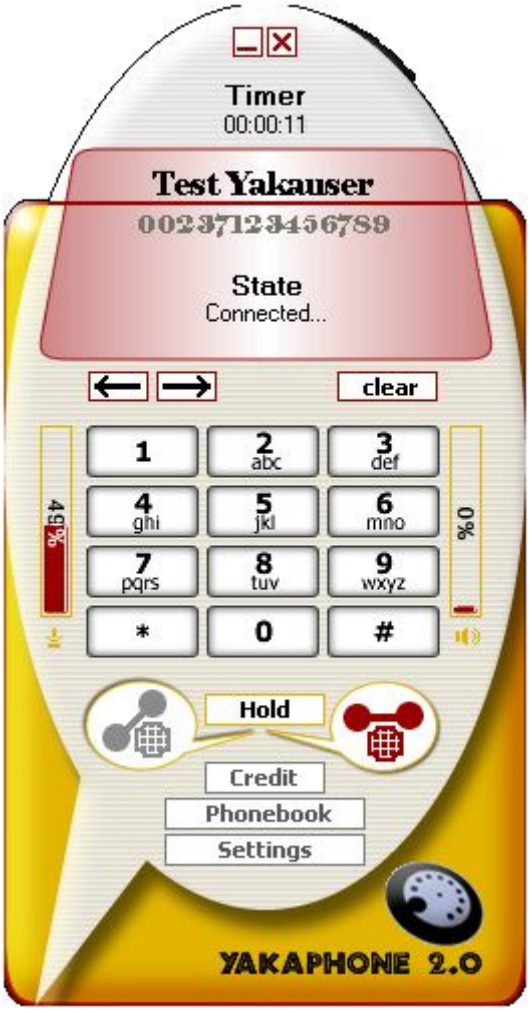
YakaPhone

Simple IAX Softphone for Crystal Clear VOIP Telephony.



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http://www.yakasoftware.com

http://www.yakacall.com

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1. Introduction

Welcome to the user documentation for YakaPhone; a simple IAX based softphone for VOIP telephony. This document is supposed to help you get started with YakaPhone even if you are new to internet telephony.

A softphone is the short term for software telephone. It is also known as an internet telephone and is a piece of software that assumes all the functions of a normal telephone. Analogous to standard phones, which transfer calls through a local exchange, a softphone sends voice from your computer to an internet-based telephony provider which transfers the voice to the receiving party. The telephony service provider is also responsible for sending the remote party's voice through to your computer so you can carry out a "normal" conversation on your computer with a headset (microphone and speakers).

YakaPhone was developed by Bits Valley Ltd. along it's line of YakaSoftware products for use with its telephony service, YakaCall (http://www.yakacall.com). You can, however, use it for **FREE** with any suitable telephony provider you wish. It is Open Source and may be modified but any pre or post modification commercial usage requires prior authorization. See License Agreement for further details.

Yakaphone can also be extended or customized to fit your Cooperate Design (Look & Feel) starting as low as €499,-.

1.1 System Requirements

Listed below is the minimum hardware you will need to use YakaPhone

- Processor: Pentium II 300 or faster
- Memory: 128 MB RAM or better
- Operating Systems: Windows 98SE, NT 4.0, ME, 2000, XP,
- Online Capability: Wired or wireless broadband Internet connection
- Sound Card: 16 bit sound card (SoundBlaster or equivalent)
- Color Setting: 16 bit (High Color)

***Unix and MacOS Versions can be made available on demand.**

1.2 License Agreement

A summary of the license issues you have to respect if you use YakaPhone

- YakaPhone is completely FREE to use with any suitable VOIP provider. i.e Any VOIP Provider that suppoprts the IAX2 protocol.
  ***You are welcome to make a small donation to support work on YakaPhone under http//:www.yakasoftware.com if you are pleased with YakaPhone.**
- YakaPhone source code is available and can be modified by you to meet any special needs. You, however, need our consent if you wish to commercialise the end-product. E.g. In cases where you want YakaPhone as part of a delivered business solution.
  We provide support in extending and branding/skinning YakaPhone. Basic skinning starts as low as €499,-.
- The origin of YakaPhone software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product,

an acknowledgment in the product documentation would be appreciated but is not required.

- This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

YakaPhone makes use of 3rd party libraries which are bound by proprietary licences described below:

- IAXClient for IAX communication available at sourceforge under the GNU General Public License (GPL). Consult website for a list of sub-libraries.
- Qt Application Framework for the GUI available at http://www.trolltech.com. Consult website for license agreement.

2. Features and Technical Details

2.1 Technical Details

Feature	Description
Supported Protocols	IAX/IAX2 (Inter-Asterisk Exchange Protocol)
Supported Codecs	iLBC, GSM, G.711u, G.711a, Speex (g723, g726, adpcm, slinear, lpc10, g729 also available on demand)
Operating Systems	Windows 98SE, NT 4.0, ME, 2000, XP

2.2 Features

- Call Records
- Integrated Phonebook
- Noise Reduction
- Echo Cancellation
- Automatic Digital Gain Control
- Automatic Analog Gain Control
- Comfort Noise
- Silence Suppression
- Audio Devices Detection
- Microphone and Spreaker levels
- Multi Platform Support (Unix, Mac, Win2K)
- Skinnable Look-and-Feel / Branding
- Voice Activity Detection
- Adaptive jitter buffer
- DMTF touch tones

2.3 Sample Designs

Consult website http://www.yakasoftware.com for and ever increasing number of designs and OEM licensed versions of Yakaphone.

3. Installation and Usage

YakaPhone is an Open-Source product i.e. you can get the source code and use it as long as you abide by the license agreement.

3.1 Installation

Installation files are available from http://www.yakacall.com or http://www.yakasoftware.com. These can be downloaded and YakaPhone will be ready after a few installation steps:

1. Download and store the installation file at a suitable location on your local computer.
2. Double-Click on the installation file and follow the instructions provided by the installer.
3. Start YakaPhone and configure your telephony provider and your can start making and receiving calls.

Figure 1 YakaPhone Main Screen

3.1.1 Building from Source Code

You can alternatively build YakaPhone from the source code in a few simple steps after obtaining the source code. It should compile on Win2K, Linux and MacOS.

1. Unpack the source code into a folder of your choice on your local computer.
2. Download and install the Qt framework from Trolltech (http://www.trolltech.com/developer/downloads/qt/index).
3. Download and build the iaxclient library from: http://iaxclient.sourceforge.net/
4. Start the Qt command prompt and move to the folder were you stored your YakaPhone source files.

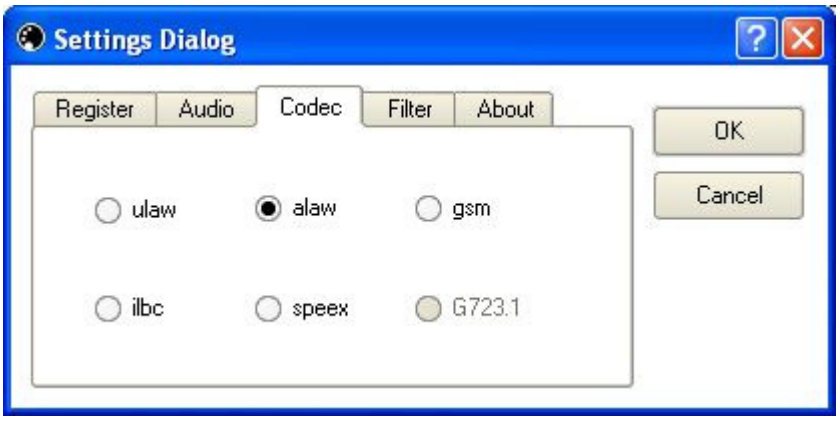
5. Run the following commands:
   "uic -o src\ui_contactsdialog.h src\ContactsDialog.ui"
   "uic -o src\ui_mainwindow.h src\MainWindow.ui"
   "uic -o src\ui_smsdialog.h src\SMSDialog.ui"
   "make release"
6. If everything goes well, you should find the generated "YakaPhone.exe" in the "release" folder.

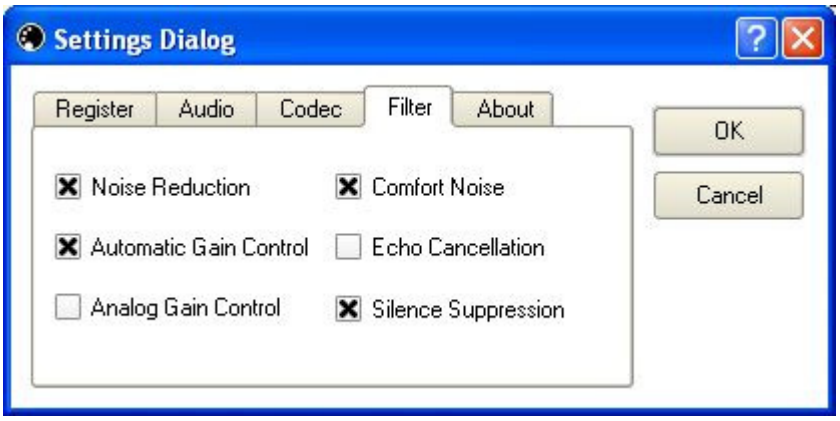
3.2 YakaPhone configuration

The YakaPhone confiiguration dialog can be opened by clicking on the settings[8] button. The dialog also opens automatically in case no user is configured for use e.g.when started after installation.

Setting	Description
Register	 **Figure 2 Settings - Account** You enter your user registration information here. Your user information is normally made available to you by your VOIP telephony provider – http://www.yakacall.com is such a VOIP provider that provides FREE calls and cheap rates. **Username**: Username provided by VOIP Provider is entered in the provided text field. **Password**: Password provided by VOIP Provider is entered in the provided text field. **Server Name**: VOIP Server name or IP address is entered in the provided text field.

Audio	 **Figure 3 Settings - Audio** Here you can select which devices to use for sound input and output. Avalaible devices are automatically detected by YakaPhone and made available in drop-down lists for selection. Leaving the default values should generally not be a problem. **Output**: Device to use for sound output **Input**: Device to use for sound input **Ring**: Device to use for ringtone output **Ring with Buzzer**: Ring with Buzzer

Codec	 **Figure 4 Settings - Codec** Codecs are generally understood to be various mathematical models used to digitally encode (and compress) analog audio information. Many of these models take into account the human brain's ability to form an impression from incomplete information. Like optical illusions, voice-compression algorithms take advantage of our tendency to interpret what we believe we should hear, rather than what we actually hear. The purpose of the various encoding algorithms is to strike a balance between efficiency and quality. ***Make sure you select a codec which is supported by your VOIP telephony provider**! **ulaw**: G711 Broadband codec which provides very good sound quality at the price of high network traffic. **alaw**: G711 Broadband codec which provides very good sound quality at the price of high network traffic. **gsm**: Offers outstanding performance with respect to the demand it places on the CPU. The sound quality is generally considered to be of a lesser grade than that produced by G.711, but much of this comes down to personal opinion. **ilbc**: The Internet Low Bitrate Codec (iLBC) provides an attractive mix of low bandwidth usage and quality. It is especially well suited to sustaining reasonable quality on lossy network links. **speex**: Speex is a Variable Bitrate (VBR) codec, which means that it is able to dynamically modify its bitrate to respond to changing network conditions. It is offered in both narrowband and wideband versions, depending on whether you want telephone quality or better compression. **G723.1, G729**: Avalaible on demand. These codecs are bound by a 3rd party licenses which has to be purchased proir to making available on telephony server systems.

Filter	 **Figure 5 Settings –Filter** These settings trigger processing that contribute to the perception of "more natural experience" during phone calls. **Noise Reduction**: Sound will be processed to reduce noise which might have been picked up along the transmission path. **Automatic Gain Control**: Digitally modify Input/Output levels to achieve the best, in terms of quality, from the Microphone/Speakers. **Analog Gain Control**: Analog modification of Input/Output levels to achieve the best in terms of quality, from the Microphone/Speakers. **Comfort Noise**: Send small voice packets so each party knows the line is still "alive" when silence is detected i.e. when no party is talking. **Echo Cancellation**: Digitally remove echoes that may be generated due to inappropriate equipment. Avoid having your microphone close to your speakers as this will lead to sound looping back and forth. **Silence suppression**: Analogous (incl. experimental enhancement) to Comfort Noise.

3.3 Operating YakaPhone

3.3.1 Making Calls

You can make calls after successful registration with your telephony provider by typing in your destination number[2] and hitting the return button. You can alternatively use your mouse to compose youir destination number by clicking the corresponding digits on the dialpad[5] followed by the dial button.

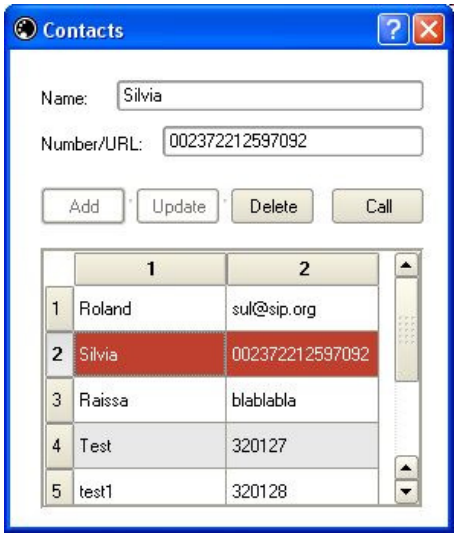
***Tip: Use your arrow keys to scroll through your call records and simply dial any number from your call records.**

The Call Timer[3] automatically starts and stops each time you start a new or hang up on an existing call. If the user currently being called is istored in the phonebook, the users name[2] is also displayed on the screen. This applies too for incoming calls with an available caller ID.

3.3.2 PhoneBook

Yakaphone has a simple and intuitive phonebook which can be accessed by clicking on the Phonebook[7] button. You can use it to store your contacts so you can easily call your contacts from the phonebook anytime. The contacts are stored in a table which can be sorted by "Name" or "Number" by clicking on the corresponding table header. Contact

"Name" and "Number" can be entered in the available text fields at the top of the dialog. There are 4 possible actions based on the content of the text fields which can be triggered by clicking on the available buttons (buttons are automatically enabled and disabled with respect to available actions):



Add: Add a new contact to the phonebook

Update: Update existing contact in the phonebook.

Delete: Delete existing contact from the phonebook.

Call: Call selected contact or number in the "Number" text field. *You can also call contacts by double-clicking on contact entry in the table.

Figure 6 Contacts PhoneBook

3.3.3 Credit Balance (Avalaible for http://www.yakacall.com)

You can find out your remaining credit, in case you use the YakaCall telephony service by clicking on the credit button whenever it is activated.

3.3.4 Phone/Call States

Registered: YakaPhone has sent out a request to the VOIP telephony provider to register the configured user. This state normally lasts as long as needed to get a reply from the VOIP provider; this generally lasts just a few milliseconds.

UnRegistered: YakaPhone has sent out a request to the VOIP telephony provider to unregister (log out) the configured user.

Logged In [username]: The user with the "username" is succesesfully registered with his/her telephony provider and can start placing calls.

Reg. Inactive: Current registered user is inactive. Calls can still be placed in this state.

Reg. Rejected: VOIP provider has rejected the registration request. Make sure the configured username and password combination is correct! Otherwise contact your VOIP provider for help.

Reg. Timeout: Registration process has timed out. This usually implies your VOIP Provider cannot be reached. Make sure you entered the right Server Name OR IP address in the configuration dialog.

Calling: The user has placed a call which is being put through.

Answered Call: YakaPhone has answered an incoming call. Normally by clicking on the "Answer" button on the control[6] pad.

Hold Call: YakaPhone has sent out a request to hold present call. Remote user will normally hear wait music (if available) if the request is successful. Call can be resumed by clicking on "Resume Call" on the control[6] pad.

Free: Current line is free to place and receicve calls

Busy...: Remote party is currently talking (busy line from standard telephony) and cannot take calls at the moment. This is normally accompanied with a characteristic busy tone generated by YakaPhone.

Transfer: YakaPhone is transferring current call.

Ringing: Ringing either locally (incoming calls) or at the remote party's location (outgoing).

Connnecting: Active connection is being initiated.

Connnected: YakaPhone has current active connection with the VOIP provider. This may, but not necessarily indicate there is an ongoing conversation or a call being routed.

Dropped: Current call has been dropped.