

# EchoLink with Linux

**EchoLink is a voice over IP application for radio amateurs. Due the fact that there is no native linux version wine is required to run EchoLink unter Linux**

Echo Link: Communication for radio amateurs  
Michael Renner <michael.renner@gmx.de>  
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This document aims to describe how to execute EchoLink, a windows software for radio amateurs under Linux.

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## 1. Introduction

EchoLink [1] is software which allows Amateur Radio stations to communicate with one another over the Internet, using voice-over-IP (VoIP) technology. The program allows worldwide connections to be made between stations, from computer to station, or from computer to computer.

EchoLink is only available for Windows, but many radio amateurs prefer Linux; we therefore describe how to run the Windows version of EchoLink under Linux.

## 2. Hardware requirements

### 2.1 Network

First of all, you need a network connection to reach the EchoLink server and to connect to your communication partners. Remember that EchoLink uses a TCP/IP connection for communication, not a two way radio! It does not matter if the network connection is an ADSL, a modem- or an ISDN connection, as long as it is fast enough to transport your digitised data.

### 2.2 Audio

To digitise your voice and to hear what the radio amateur at the other side has to say, you need a soundcard supported by your linux system. It does not matter if you use the kernel modules, the alsa driver or anything else (like oss). It is likewise irrelevant whether your card is supported in duplex mode or not, because EchoLink only uses simplex mode, like in a real ham conversation on HF or VHF. Of course, you need a microphone and a loudspeaker.

## 3. Software requirements

### 3.1 Windows

It is not necessary to have a 'real' Windows installation on your linux box, but if you have this it makes things a little bit easier!

### 3.2 Wine

Wine [2] is an Open Source implementation of the Windows API on top of X and Unix. Install and setup Wine if not already done.

If you use one of the rpm based distributions go to

<http://rpmfind.net>

and search for the Wine packages suitable to your distribution.

If you use Debian be happy and install Wine from the network:

```
# apt-get install libwine wine winesetuptk
```

#### 3.2.1 Configure Wine if you have a Windows partition

Mount your windows partition read-only, e.g. with this entry in the `/etc/fstab`:

```
/dev/hda2 /mnt/C ntfs ro,umask=002,gid=100 0 0
```

Configure Wine to use this directory as drive `C:\` by making an entry in the `~/.wine/config` file

```
[Drive C]
"Type" = "hd"
"Path" = "/mnt/C"
"Label" = "/mnt/C"
"FS" = "win95"
```

It is a good idea to have a second writable drive, since you can use it to store configuration values and applications. We call this drive `'D:\'`. You can generate a directory `DOS` in your `HOME` and configure Wine to use this as drive `'D:\'` with an entry in the config file:

```
[Drive D]
"Type" = "hd"
"Path" = "/home/renner/DOS"
"Label" = "DOS"
"FS" = "win95"
```

Use the graphical configuration application `winesetuptk` to make configuration easier.

### 3.2.2 Configure Wine if you haven't have a Windows partition

If you don't have a Windows partition it is highly recommended to use `winesetup`, which generates a fake Windows infrastructure.

Choose the `winesetup` option `'install fake windows'`. This creates the directory `.wine/fake_windows` in your `HOME`. The directory will be used as drive `C:\`

You need to copy an original `WINSPOOL.DRV` from a 'real'

Windows system to your `Windows/System/winspool.drv` and modify your `.wine/config` file to replace the entry

```
"winspool.drv" = "builtin, native"
```

in the section `'[DllOverrides]'` with

```
"winspool.drv" = "nativ"
```

to use this file instead of the built in functions.

## 4. Installing Echo Link

Download EchoLink and execute the binarie file.

### 4.1 If you have Windows installed

If you have a Windows partition and want to use this application with Windows as well as under Linux, it is a good idea to install it under Windows and execute the same binary file under both operation systems. You save a litte bit space on your hard disk; more importantly, maintenance of your installation is not doubled! Just start the installation programme and install echolink to `'C:\Programme\K1RFD\EchoLink\'`, configure your call and name, and then choose a password. When the installation is complete,

boot your Linux and continue with point 5.

#### 4.2 If you haven't installed windows

Download the installation binary and execute it with wine:

```
$ wine EchoLinkSetup_1_6_848.exe
```

Wine will come up after a while (this first start may take some time, because many fonts have to be rendered). Then follow the installation instructions, choose 'C:\Programme\K1RFD\EchoLink\' as installation target, and so on.

### 5. Using EchoLink

#### 5.1 starting in the shell

Run the application by running EchoLink in the Wine environment

```
$ wine C:\Programme/K1RFD/EchoLink/EchoLink.exe
```

or

```
$ wine /mnt/C/Programme/K1RFD/EchoLink/EchoLink.exe
```

if you prefer this notation.

EchoLink should start and connect to the EchoLink server by itself if your network is up. As soon as you see the stations in the right frame, you can connect to other stations and they to you. In the lower right corner of the EchoLink window is a small text field for text (chat) conversation. To copy and paste text between your Linux desktop and the EchoLink window, use 'ctrl v' to insert text into your text line, and 'ctrl c' to copy text from the chat window.

#### 5.2 starting using an alias

If you want, you can define an alias in your ~/.bashrc or, if you prefer the csh, in your ~/.cshrc:

```
alias echolink='wine C:\Programme\K1RFD\EchoLink\EchoLink.exe'
```

#### 5.3 creating an entry in the KDE start menu

As a KDE user you may want to have an entry in your menu to start EchoLink direct. Therefore start the Menu Editor under 'Settings/Menu Editor'. Mark the 'Internet' entry and click to the 'New Item' button. You have to complete at least four fields.

Name -> EchoLink

Comment -> EchoLink DDOUL

Command -> wine C:\Programme\K1RFD\EchoLink\EchoLink.exe

Type -> Application

You can, if you want, choose an other icon, but it is not required.

If you have installed the EchoLink application into an other directory you have to specify your path of course. You have also to write your own call into the comment line, not mine ;-)

Press the 'Apply' botton when you have made your entries. After that you find EchoLink in the internet section of the KDE startmenu.

## 6. Linux just as firewall or router

If you use Linux at your firewall or router you have to forward two UDP ports to the machine where EchoLink should run. Assume you have only one IP-Address to the internet side and NAT is already configured just forward the ports 5198 and 5199 to the machine with EchoLink (no matter if this machine runs with Windows or with Linux).

You can do this by adding some commands to your firewall start script. In the following example are some variables used:

ECHOIP: the IP-Address of the internal machine with EchoLink installed  
 IPT: your iptables binary, e.g. /sbin/iptables  
 INT: internet interface, e.g. ppp0

```
# EchoLink to lyra
ECHOIP="192.168.2.92"
$IPT -t nat -A PREROUTING -p udp --dport 5198 -i $INT -j DNAT --to-destination $ECHOIP
$IPT -t nat -A PREROUTING -p udp --dport 5199 -i $INT -j DNAT --to-destination $ECHOIP
```

After a reload of the firewall rules every access from outside to the ports 5198 and 5199 are forwarded to the named destination machine. Please note that only one machine in your private (NAT) network can use EchoLink!

## 7. Open Source alternatives to EchoLink

There are less Open Source applications out there using the ilink/echolink protocol to be compatible with EchoLink and the EchoLink login server. This may be a result of the 'closed source' policy of the EchoLink developers.

### 7.1 echoLinux instead of EchoLink

echoLinux [4] is an Open Source application for the console. You can download and compile it without problems. Due echoLinux only supports a subset of the functions EchoLink has its usage is restricted to the main features. Because the GUI for echoLinux (echogui) bases on xforms you must be a real enthusiastic to use it.

### 7.2 KEchoLink instead of EchoLink

There is another project try to create a more handy EchoLink compatible application including a GUI: KEchoLink [5]. It is a KDE application depending on Qt. There are no files published now.

### 7.3 The Internet Radio Linking Project

The aim of the Internet Radio Linking Project (IRLP) is to provide a simple and easy system to link radio systems together using the Internet as the communications backbone. Although it runs under Linux it requires additional hardware. And it is not interoperable with EchoLink and its servers.

## 8. Download resources

[1] EchoLink: <http://www.synergenics.com/el>

[2] wine: <http://www.winehq.org>

[3] EchoLink Linux Howto: <http://hyaden.dyndns.org/HOWTO/>

[4] CQiNet: <http://cqinet.sourceforge.net/>

[5] KEchoLink: <http://sourceforge.net/projects/kecholink/>  
<http://kecholink.sourceforge.net/>

[6] The Internet Radio Linking Project: <http://www.irlp.net/>

## 9. Contact

### 9.1 Who wrote EchoLink?

EchoLink was written by Jonathan Taylor K1RFD <[k1rfd@kirfd.com](mailto:k1rfd@kirfd.com)>

### 9.2 Who is responsible for this HowTo?

Michael Renner is the author of this HowTo [3]. You can contact me by email:  
[michael.renner@gmx.de](mailto:michael.renner@gmx.de)