

Ekiga FAQ

Damien Sandras

1. General

1.1. About Ekiga

1.1.1. What is Ekiga?

Ekiga is a SIP and H.323 compatible VoIP, IP Telephony, and Video Conferencing application that allows you to make audio and video calls to remote users with SIP or H.323 hardware and software. It supports all modern VoIP features for both SIP and H.323. Ekiga is the first Open Source application to support both H.323 and SIP, as well as audio and video. Ekiga was formerly known as GnomeMeeting.

1.1.2. Is it Free Software?

Yes, it is free as in free speech and in free beer. It is licensed under the GNU/GPL.

1.1.3. What is the License?

Ekiga is licensed under the GPL license and as a special exception, you have permission to link or otherwise combine this program with the programs OPAL, OpenH323 and PWLIB, and distribute the combination, without applying the requirements of the GNU GPL to the OPAL, OpenH323 and PWLIB programs, as long as you do follow the requirements of the GNU GPL for all the rest of the software thus combined.

1.1.4. What is it compatible with?

Ekiga is compatible with any software, device or router supporting SIP or H.323. It includes SwissVoice, CISCO, SNOM, ... IP Phones, but also software like Windows Messenger, Netmeeting, SJPhone, Eyebeam, X-Lite, ... or also the Asterisk popular IPBX, as well as any other commercial or Open Source IPBX. Ekiga is not compatible with Skype and will never be as long as their protocol will stay proprietary. We do not think using closed protocols for communications is a good thing.

1.1.5. What are the minimum requirements?

You need :

- A correctly configured firewall and NAT router/gateway (see this FAQ for more information).
- You *don't* need a webcam. Ekiga is primarily VoIP software.
- Having a headset is recommended if you want to prevent echo. However, a webcam with an internal microphone or a separate microphone will also work.

1.2. People

1.2.1. Who created it?

The creator of the project, Damien Sandras <dsandras_at_seconix.com>, initiated the project on December 25, 2000, as a master thesis at the "Université Catholique de Louvain" in Belgium (<http://www.ucl.ac.be>).

1.2.2. Who drew the the logo and made the graphic art?

Andreas Kwiatkowski. You can visit his website at: <http://www.kwiat.org>

1.2.3. Who drew the the mascot?

Carlos Pardo. The mascot is named Lumi. You can visit Carlos' website at: <http://www.m4de.com>

1.2.4. Who designed the website?

The code of the new website was written by Fabian Deutsch. The design of the website was created by Fabian Deutsch. The graphic art was done by Andreas Kwiatkowski. The old websites until now were done by Cédric Valcke.

1.2.5. Who designed the icon and the logo for Ekiga?

The graphic art has been done by Andreas Kwiatkowski.

1.3. How can I contribute translations?

Ekiga is using the GNOME Translation Project (or GTP for short) for translations. The GTP web page is at <http://developer.gnome.org/projects/gtp/>.

The GTP is a large team of volunteering translators (probably a lot like you) that translate the GNOME applications that they like into their native language. The GTP is divided into many language teams, all with their own team coordinator, and some with their own mailing list and website. To help us with Ekiga translations, we'd really like you to join the GTP and join your respective language team. Joining is easy, what it takes is more or less just subscribing to some mailing lists. More on that below.

There are a lot of reasons why we want you to do this. First of all, you will not be required to translate anything - it's all up to you, even if you join the GTP. Second, it would be a waste of time if someone had done duplicate work - there might already be someone working on a Ekiga translation for your language, but there's no way to know until you have contacted your language team and asked if someone is already working on a translation. Third, your translation team has people who probably have translated a lot of applications into your language before, and they can usually help you with any translation question (technical or linguistic) that you might have. Fourth, every translation team usually has at least one person with access to the GNOME CVS repository (where Ekiga development takes place), and he/she can commit your finished translation directly into this CVS repository.

Instructions on how to join the GTP are on the GTP web site, mentioned above.

2. Ekiga Features

2.1. What are the Ekiga features?

Ekiga's features are growing fast, please check the features page (<http://www.ekiga.org/index.php?rub=2>) for up-to-date information about the features.

2.2. Is there a manual?

Yes, that FAQ is about the problems and their solutions. If you want to know how to use the software, please read the manual. The manual is accessible through the F1 key when running Ekiga, or through the help menu.

2.3. Does it work under KDE?

Yes, Ekiga has been designed for the GNOME desktop but it works very well with the KDE desktop too. Ekiga provides for example an animated icon automatically added in the KDE system tray.

2.4. You are talking about SIP and H.323. I do not know what it is, which one should I choose?

If you want to call Windows Messenger users, use SIP. If you want to call Netmeeting users, use H.323. If you do not know what protocol to use, use SIP. The URL prefix determines what protocol will be used, e.g. sip: or h323: (or callto:).

2.5. Is it possible to do PC-To-Phone calls using Ekiga?

Yes, you can do PC-to-Phone calls with Ekiga. You simply have to register an account to the Ekiga provider from the PC-To-Phone configuration window accessible from the Tools menu. You do not need any specific hardware to be able to do PC-To-Phone calls, a simple soundcard is enough. Using a headset to avoid echo problems is however highly recommended. Please see the appropriate section of this FAQ to know how to get an account.

2.6. Does it support Text Chat?

Yes, it supports text chat, you can thus do some cut and paste while continuing to talk. H.323 text chat only works from Ekiga to Ekiga and during calls. However, you can send text messages to any SIP address, even if you are not in a call with that specific person, just like with any instant messenger.

2.7. What is a SIP address and how can I get one?

A SIP address is a way to be reachable and to reach people. You can compare it to an e-mail address. You can sign up for a free account on Ekiga.net (<http://www.ekiga.net>). It will give you a unique SIP address that you can give to your friends so that they can contact you. An example of SIP address is sip:dsandras@ekiga.net.

2.8. How can I test if it is working?

Simply get a free account at Ekiga.net (<http://www.ekiga.net>) and call the echo text at sip:500@ekiga.net. If you can hear and see yourself back, then your setup is working.

2.9. Does it support NAT?

Yes, please see the dedicated section of this FAQ for more information about NAT support.

2.10. What is ENUM support?

ENUM support will allow you to associate your real phone number to a SIP or H.323 address and to be callable by other users using that phone number. Please see the manual for more information about ENUM support.

2.11. What is Rendez-Vous support?

Rendez-Vous support will allow you to publish your presence on the LAN on which Ekiga is running. You will then be able to search the LAN for other Ekiga users using the address book and directly call them.

3. Hardware compatibility

3.1. Do I need a webcam to run Ekiga?

No, a working soundcard is enough.

3.2. What type of camera can I use with Ekiga?

Every camera supported by the Linux kernel and compatible with the Video4Linux/Video4Linux2 APIs (Philips webcams, Creative webcams, and many others...), or any Firewire camera provided that you are using the appropriate plugin.

3.3. What type of soundcard can I use with Ekiga?

You can use any full-duplex soundcard supported by the Linux kernel and compatible with the OSS or ALSA APIs. Pay attention to use a full-duplex driver too.

3.4. Can I ask questions about soundcard or webcam configuration to the Ekiga mailing-list?

The configuration of soundcards and webcams is related to your distribution vendor, or to the respective mailing lists of the drivers you are using. However, if your soundcard or webcam works well with all applications except Ekiga, you are welcome to mail us.

4. Software installation

4.1. Which libraries do I need to run it?

You will need :

- the standard GNOME libraries (<http://www.gnome.org>) (they are now optional, but we recommend using them to have the full-featured Ekiga).
- the OPAL and PWLIB libraries (<http://www.ekiga.org/index.php?rub=5>) (See download section of this website).
- the OpenLDAP library (<http://www.openldap.org>) (Included in your distribution)
- the SDL library (<http://www.libsdl.org>) (Included in your distribution). Having SDL is optional, but if you compile Ekiga without SDL, the fullscreen feature will be unavailable.

4.2. How can I compile Ekiga?

Simply use the binaries from your distribution, the ones in the downloads section (<http://www.ekiga.org/index.php?rub=5>), or compile that way:

As root, follow the steps :

```
PWLIB: $ ./configure --prefix=/usr --enable-plugins --disable-oss --enable-v4l2 && make && make install
```

```
OPAL: $ ./configure --prefix=/usr && make && make install
```

```
Ekiga: $ ./configure --prefix=/usr --sysconfdir=/etc && make && make install
```

4.3. Can I use another version of OpenH323 and PWlib than the versions provided in the download section?

Yes, if those versions are newer. Don't use old versions of the libraries. However, there is absolutely no guarantee that new versions of the OpenH323 and PWlib libraries will work perfectly with non-CVS Ekiga versions. The best is to use the libraries versions provided on the Ekiga website.

4.4. Is there a CVS?

Yes. Ekiga is available in the GNOME CVS (<http://cvs.gnome.org>). The nightly snapshots of Ekiga are available on <http://snapshots.seconix.com> and on its mirror on <http://snapshots.voxgratia.org>. Those snapshots are generated automatically each night from the Master CVS. Notice that we are building nightly binaries for various distributions. That means that you don't have to recompile Ekiga every night, you can directly use our packages and enjoy the new features of the bleeding-edge Ekiga.

5. Using Ekiga to do PC-To-Phone calls

- Step 1: Open the PC-To-Phone configuration window from the Tools menu and purchase an account. *You absolutely need to purchase the account from the PC-To-Phone configuration window or it won't work.*
- Step 2: Wait for the mail that will give you a login and a PIN.
- Step 3: Enter that login and PIN in the appropriate fields in the window and enable the PC-To-Phone service.

You are now ready to do PC-To-Phone calls at interesting rates all over the world. To dial a number, simply add "00" followed by the country code, and by your number. For example, sip:003210111111 to call number 10111111 in Belgium. If Ekiga.NET or the PC-To-Phone account are not your default account, you will have to enter the full URL to be able to dial, without the leading "00":
sip:3210111111@eugw.ast.diamondcard.us .

6. Getting it to work behind a NAT router

6.1. How can I easily use Ekiga behind a NAT/PAT gateway?

Ekiga has extensive and improved NAT support thanks to STUN. In 99% of the cases, you do not have

any configuration to do, and you can even be reachable from the outside without any port forwarding.

SIP only: The following explanation is valid only for SIP. Please read below for H.323. The first thing to do is to run the configuration assistant NAT test:

- If it reports "Cone NAT" or "Port Restricted NAT" you just have to answer "yes" to the dialog asking you to activate STUN support. You do not have to do anything else. You will be reachable from the outside.
- If it reports "Symmetric NAT" and that you are using GNU/Linux, please use the script (or a variation of it) given below. You can run the NAT test again, you will notice that your NAT will behave as a "Cone NAT" or "Port Restricted NAT" as in case 1). That script is safe, it does not forward any port and the default POLICY is to DROP everything.
- If it reports "Symmetric NAT" and that you are not using GNU/Linux, then you are not part of the 99% of lucky users. You will have to forward UDP ports 5000 to 5100 to your internal machine. Run the test again, it should report "Cone NAT" or "Port Restricted NAT" and it will work.

H.323 only: For H.323, things are a bit more complex. The first thing to do is to run the configuration assistant NAT test:

- If it reports "Cone NAT" or "Port Restricted NAT" you just have to answer "yes" to the dialog asking you to activate STUN support. You may also need to forward a few other TCP ports, see below.
- If it reports "Symmetric NAT" and that you are using GNU/Linux, please use the script (or a variation of it) given below. You can run the NAT test again, you will notice that your NAT will behave as a "Cone NAT" or "Port Restricted NAT". You may also need to forward a few other TCP ports, see below.
- If it reports "Symmetric NAT" and that you are not using GNU/Linux, then you will have to forward ports 5000 to 5100 to your internal machine. You may also need to forward a few other TCP ports, see below.
- If you want to be reachable from the outside, you will need to forward TCP port 1720 from your router to the internal machine running Ekiga. If you want to be able to do calls with Netmeeting users, you will need to forward TCP ports 30000 to 30010 from the NAT router to the machine running Ekiga. This last step is only necessary when calling H.323 software that does not support H.245 Tunnelling (the H.323 part of Ekiga supports H.245 Tunnelling, forwarding that TCP port range is thus not required when calling them using H.323).

H.323 and SIP: You can apply individually the reasoning for SIP and for H.323. The UDP and TCP ports used by both protocols belong to the same ranges.

6.2. What iptables rules could I use for GNU/Linux?

Here are some rules you can use for GNU/Linux with iptables. It doesn't forward any port. Forwarding a few additional ports might be required for H.323, but not for SIP.

```
#!/bin/sh
echo "Setting up IPTables rules"
IPTABLES=/sbin/iptables # where iptables binary lies
# Setting up Forwarding
echo 1 > /proc/sys/net/ipv4/ip_forward
# Setting up Dynamic IP for diald/masquerading
echo 1 > /proc/sys/net/ipv4/ip_dynaddr
# Increase the binding time
echo 3600 > /proc/sys/net/ipv4/netfilter/ip_conntrack_udp_timeout
# Setting up IP spoofing protection
if [ -e /proc/sys/net/ipv4/conf/all/rp_filter ]
then
    for f in /proc/sys/net/ipv4/conf/*/rp_filter
    do
        echo 1 > $f
    done
fi
# Devices
LOCAL_DEVICE="lo" # device for localhost
EXTERNAL_DEVICE="ppp0" # device for Internet
INTERNAL_DEVICE="eth1" # device for Intranet
HALFTRUST_NETS="192.168.1.0/8"
KEEPSTATE="-m state --state ESTABLISHED,RELATED"
# Flush all Rules
$IPTABLES -F
$IPTABLES -X
$IPTABLES -t nat -F
$IPTABLES -t nat -X
$IPTABLES -t mangle -F
$IPTABLES -t mangle -X
# Deny all by default
$IPTABLES -P INPUT DROP
$IPTABLES -P OUTPUT DROP
$IPTABLES -P FORWARD ACCEPT
$IPTABLES -N ALLOW_PORTS
$IPTABLES -F ALLOW_PORTS
##### TCP and UDP ports #####
TCP_PORTS=""
for PORT in $TCP_PORTS; do
$IPTABLES -A ALLOW_PORTS -m state --state NEW -p tcp --dport $PORT -j ACCEPT
done
UDP_PORTS=""
for PORT in $UDP_PORTS; do
$IPTABLES -A ALLOW_PORTS -m state --state NEW -p udp --dport $PORT -j ACCEPT
done
##### MASQUERADE #####
$IPTABLES -t nat -A POSTROUTING -d ! 192.168.1.0/24 -o $EXTERNAL_DEVICE -j MASQUERADE
```

```

##### LOCALHOST #####
$IPTABLES -A INPUT -p ALL -i $LOCAL_DEVICE -j ACCEPT
$IPTABLES -A OUTPUT -p ALL -o $LOCAL_DEVICE -j ACCEPT
$IPTABLES -A FORWARD -p ALL -i $LOCAL_DEVICE -j ACCEPT
##### FROM INTRANET #####
$IPTABLES -A INPUT -p ALL -i $INTERNAL_DEVICE -j ACCEPT
$IPTABLES -A OUTPUT -p ALL -o $INTERNAL_DEVICE -j ACCEPT
##### ICMP #####
$IPTABLES -A INPUT -p ICMP -i $EXTERNAL_DEVICE -j ACCEPT
$IPTABLES -A OUTPUT -p ICMP -o $EXTERNAL_DEVICE -j ACCEPT
$IPTABLES -A INPUT -p ICMP -s $HALFTRUST_NETS -j ACCEPT
$IPTABLES -A OUTPUT -p ICMP -d $HALFTRUST_NETS -j ACCEPT
##### ALLOWED PORTS #####
$IPTABLES -A INPUT -i $EXTERNAL_DEVICE -s "0.0.0.0/0" -j ALLOW_PORTS
##### ESTABLISHED MODE #####
$IPTABLES -A OUTPUT -o $EXTERNAL_DEVICE -p TCP $KEEPSTATE -j ACCEPT
$IPTABLES -A INPUT -i $EXTERNAL_DEVICE -p TCP $KEEPSTATE -j ACCEPT
$IPTABLES -A OUTPUT -o $EXTERNAL_DEVICE -p UDP $KEEPSTATE -j ACCEPT
$IPTABLES -A INPUT -i $EXTERNAL_DEVICE -p UDP $KEEPSTATE -j ACCEPT
##### OUTPUT #####
$IPTABLES -A OUTPUT -o $EXTERNAL_DEVICE -p ALL -j ACCEPT

```

6.3. I have many Ekiga clients on my LAN. Is there a better way than STUN?

If you are using SIP, yes. You can use SIPROXD from <http://siproxd.sourceforge.net> as outbound proxy.

6.4. My router prevent Ekiga from working correctly, what can I do?

Please make sure you have read this FAQ correctly because it should work in all cases. The worst case is when you have to forward ports. If you can not forward ports, or if you do not want to do it, you have alternative solutions. For SIP, you can use SIPROXD (<http://siproxd.sourceforge.net/>) as outbound proxy. For H.323, please configure the GNU Gatekeeper (<http://www.gnugk.org>) as a proxy.

7. Troubleshooting

7.1. Video problems

7.1.1. My webcam doesn't work with Ekiga, what can I do?

The first thing to do is to use the Ekiga configuration assistant, it will help you testing your driver compatibility and testing the robustness of your driver. It will also give you interesting hints to help debugging your problems. Notice that there are two plugins for Video4Linux cameras (V4L and V4L2). Please try both as some drivers do not support VL42 yet.

Once you have tested your driver compatibility using the Ekiga configuration assistant, it is recommended to test the webcam again with xawtv. If it works with xawtv, you know the driver implements SOME of the V4L/V4L2 specification, but Ekiga uses different V4L calls than xawtv, for example, Ekiga requests a different screen size, and image format.

If it works with xawtv but not with Ekiga, you can try:

- a web/ mailing list search for Ekiga and the name of your camera to see what other people think of your camera with Ekiga,
- Don't blame Ekiga: Many video drivers are tested so that they work with xawtv, but not against the full V4L specification. The video grabber code in Ekiga was very carefully written to follow the V4L specification and no one has found code in video handling that is wrong.
- You can contact us through the mailing list to report any problem you will find.

7.1.2. Ekiga only displays a part of the real picture in the video window, what can I do?

If your driver doesn't natively support 176x144, Ekiga will try capturing at a larger size, and scale the picture down. If the picture isn't scaled, please report the problem to us on the mailing list.

7.1.3. I can see people, but they do not see me

The first thing to check is the "General History" (Tools->General History).

- If no channel is opened for video transmission (H.261), it means that you forgot to "enable video support" or that the remote user forgot to "enable video support" in the "Video Codecs" section.
- If a channel is opened for video transmission (H.261), but that the remote user doesn't see you, it means that he is behind a misconfigured NAT/PAT gateway.

7.1.4. People can see me, but I can't see them

The first thing to check is the "General History" (Tools->General History).

- If no channel is opened for video reception (H.261), it means that you forgot to "enable video support" or that the remote user forgot to "enable video support" in the "Video Codecs" section.
- If a channel is opened for video reception (H.261), but that you don't see the remote user, it means that you are behind a misconfigured NAT/PAT gateway.

7.1.5. I have no webcam, can I send a picture to the remote client?

You can always select "Enable Video Support" with a plugin like "MovingLogo" or "StaticPicture". Doing so, a test picture will be transmitted to the remote endpoint during calls. You can also choose to send a picture of yourself to the remote endpoint in the "Video Device" section.

7.2. Audio problems

7.2.1. I'm testing my audio setup with the Ekiga configuration assistant, and I have problems, what can I do?

You have to analyse the error message given by the configuration assistant:

- The message indicating that the device can't be opened for reading or writing means that there was an error opening the device. If the device could be opened for playing, but that the error message complains that it couldn't be opened for recording, it means that you have full-duplex problems. The solution is to use a different device for playing and recording, or to install ALSA from <http://www.alsa-project.org>. If the first error message to appear mentions that the device can't be opened for playing, it can also mean that you have permissions problem.
- The message indicating that the device could be opened, but that it is impossible to read from or to write to this device means that another program is already using the device, preventing Ekiga from using it. You can check what program is using the device using "lsof". It can also mean that you have permissions problem.
- If you don't get any error message, but that you don't hear yourself with a 5 seconds delay while talking in your microphone, it means that you have full-duplex problems. You can test recording with another tool called "rec", if recording with this tool works, but that you don't hear yourself with the 4 seconds delay using the Ekiga configuration assistant, it proves the full-duplex problem. If recording with that tool doesn't work either, then you have to check your installation again, and possibly your cables.

7.2.2. I do not hear people, but they can hear me, or I can hear people but they don't hear me

The first thing to do is to use the Ekiga configuration assistant, it will help you to test your driver compatibility and to test the robustness of your driver. It will also give you interesting hints to help debugging your problems. Once you are sure that things are working correctly because you have tested your audio setup with the assistant, you can debug further.

The first thing to check is the "General History" (Tools->General History).

- If you are transmitting sound, you should see that Ekiga starts 2 channels, one for transmission, and one for reception. If no channels are opened for audio transmission and reception, it means that you have no common codec with the remote Endpoint.
- If audio channels are opened for transmission and reception, ie if there is a common codec, and if you have tested your audio configuration with the Ekiga configuration assistant and that it worked but you have no sound during calls, it means that you or your friend is behind a NAT/PAT router or firewall that drops the audio packets. Check that it is not the case. Also make sure that your friend has a correct audio setup.

7.3. SDL fullscreen is not of very good quality, is it normal?

Yes, because Ekiga is making a fullscreen image from a QCIF image (176x144).

7.4. I have GConf errors when I start Ekiga, what can I do?

First restart the GConf daemon by killing it with this command: `$ killall -9 gconfd-2` . If it doesn't work, try changing the permissions with:

```
$ chmod -R 4755 /etc/gconf/gconf.xml.defaults/
$ killall -9 gconfd-2
```

If it doesn't work, either GConf is not properly setup on your system, either you don't have compiled Ekiga with the right GConf flags. Not all distributions install GConf settings in `/etc/gconf`, but `gconftool-2 --get-default-source` should always give you the place where default GConf settings are installed.

When starting, Ekiga will test the value for a given key, and compares it to what it expected to receive. If what he receives doesn't match with what he expected, then there is a problem.

7.5. Ekiga is crashing all the time, is it normal?

No, Ekiga has been tested many times and since a long time by several users. No software is 100% perfect, that means that you can get one segmentation fault on several thousands of calls, but not regular segmentation faults. If you get regular segmentation faults, it can be because:

- you compiled new versions of the libraries without uninstalling the old libraries
- you installed an Ekiga version compiled with a given version of the OPAL libraries, but it is linking at runtime to an older or a newer version of those libraries
- your video driver doesn't support well the image format and size requested by Ekiga and is sending garbage data (see question related to video problems to find out how to fix that)