

Belgian HOWTO

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This document describes how to configure Linux for Belgian users and lists Linux user groups, businesses and other resources in Belgium.

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1. Introduction

1.1. Why this document?

Since there was no information anywhere on the net for Belgian Linux users around 1998, we started to collect stuff that we thought could be important. This HOWTO aims to be the definitive list of all Belgian-related Linux information. If you think not, you have no excuse to complain and certainly not to not contribute. ;)

1.2. New versions of this document

If you need to know more about the Linux Documentation Project or about Linux HOWTO's, feel free to contact the supervisor Tim Bynum <linux-howto@sunsite.unc.edu>.

Tim Bynum will post the listing to several national and international newsgroups on a monthly basis. In addition, the Belgian HOWTO can be found on the World Wide Web at <http://dag.wieers.com/howto/>. New versions of the Belgian HOWTO are always placed at this site first, so please be sure to check if the copy you are reading is still up to date!

1.3. Translated versions

This document is currently translated in 3 languages (English, Dutch and French), we're trying to keep all three of them in sync, but the English version is the source-document!

The English and Dutch version are maintained by Dag Wieërs <dag@wieers.com> and is found at: <http://dag.wieers.com/howto/>.

The French version is maintained by Dany Vanderroost <danyv@euronet.be> and is found at: <http://club.euronet.be/dany.vanderroost/howto.html>.

1.4. Contributions

A few people mailed us their suggestions and improvements, thanks go to:

- Wim Vandeputte <wvdputte@reptile.ruq.ac.be>
- Pablo Saratxaga <srtxg@ping.be>
- Christophe Lambin <clambin@skynet.be>
- Geert Uytterhoeven <geert@linux-m68k.org>
- Herman Bruyninckx <Herman.Bruyninckx@mech.kuleuven.ac.be>

Many thanks go to Ivo Clarysse <soggie@iguana.be> who started something similar earlier (LinBel) and his project helped us a lot to get this document online.

1.5. The Linux.be–domain debacle

As you might have heard, Belgium also has its problem with the Linux.be domain. Similar to the Linux.nl case. Around March 1999, someone tricked the DNS administration about the trademark 'Linux' in Belgium by using 'Linux' as a commercial representation of the company ('uithangbord') which was according to the rules of the DNS administration at that time. The company in fact was one that sold motor–parts and the registration was done with a fake fax containing a penguin.

It is sad that the person who registered the Linux.be–domain name (Matthias Barremaecker), did this behind the back of some Open Source volunteers who were planning to register a not–for–profit organisation to hold the domain name to prevent any abuse.

Afterwards there were several meetings with this person to work out an agreement so that the domain was not used for commercial purposes and handed over to a neutral organisation. But after several attempts it was very clear that the owner wanted full control over the domain, which he later emphasized by 'handing it over' to his own not–for–profit organisation. He stated several times he wanted to keep the right to add advertisements to the website, but wouldn't mind that volunteers added content to the site (that was empty at the time). After this, no one was willing to work voluntarily for the content of the site. Sadly he managed to get some people volunteer for it after all.

1.6. Feedback

If some information seems to be wrong, deceptive or missing, we'd appreciate if you mailed us the improvements. Since we're just human this document isn't bug–free, but your contribution can and will make a difference.

To add yourself to the Linux user groups or businesses, collect all necessary information and mail it to us.

1.7. Copyright information

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Although the information given in this document is believed to be correct, the author will accept no liability for the content of this document. Use the tips and examples given herein at your own risk.

1.8. Todo

There are some things I'm planning to add to this document, if you're interested be sure you're reading the most current version of this document. (This todo-list is only a reminder to myself, it is not in the translated documents!)

- Integrate LinBel some more (should have done this a long time ago)
 - Add more information about ADSL
 - Update the locale-section, preferably link to a related document.
-

2. Configuration

2.1. Keyboard setup

Linux provides 2 ways to set up your keyboard. At the console you can use **loadkeys** and under XFree86 you can use **xmodmap**.

2.1.1. Console

To use the keytable for a Belgian keyboard you can use **loadkeys be2-latin1** or **loadkeys be-latin1**. The only difference between the two is that be2-*latin1* adds support for twosuperior and threesuperior (keycode 41) and grave (keycode 43).

Usually **loadkeys** is started at boottime from the scripts located somewhere in `/etc/rc.d`. Different distributions handle it differently. Most distributions have a simple program (like **kbdconfig** in Red Hat, **install-keymap** in Debian or **yast** in SuSE) to change the behaviour of these scripts.

2.1.2. XFree86

To set your keyboard properly under XFree86 you've got more choices. By running **Xconfigurator** (or a similar program) a config-file for XFree86 is created (with some standard behaviour). This file is called `XF86Config-4` or `XF86Config` and is usually located in `/etc/X11` or `/etc`

Make sure (and change otherwise) that something similar to this is given under the *Keyboard Section*.

```
Section "Keyboard"
    Protocol      "Standard"
    XkbRules      "xfree86"
    XkbModel      "pc101"
    XkbLayout     "be"
EndSection
```

If you own a 'microsoft' keyboard (or the less-known penguin keyboards ;p) you can enable those extra 3 keys by changing the *"pc101"* into *"pc104"*. (I use the extra keys as meta-keys in my windowmanager so some shortcuts don't conflict with the internal ones of my wm).

To get the AltGr key to work under XFree86 simply add in the *Keyboard Section*:

```
RightAlt      ModeShift
```

2.1.3. Compose key

Some people prefer to use a 'Compose'-key to enter their special characters, like:

```
Compose-` e   =>  é
Compose-/ o   =>  ø
```

```
Compose-c , => ç
Compose-c o => ©
Compose-s s => ß
```

For XFree86, the solution is to enter `xmodmap -e "keycode xx = Multi_key"` or `xmodmap -e "keysym yy = Multi_key"` where 'xx' is the keycode or 'yy' the keysym of the key you choose to be the 'Compose'-key. (use `xev` to get these values)

Alternatively you can add `keycode xx = Multi_key` to your `~/ .xmodmaprc`. This way it happens automatically.

For the console, you could do something similar with `loadkeys`. `echo "altgr keycode 52 = Compose" | loadkeys` to use `AltGr-/` as a 'Compose'-key.

2.2. Display and applications

Some applications have to be compiled as 8-bit clean to work well with the European character set. Others like to be told in advance.

2.2.1. Using the ISO-8859-1 font in console

You can load the ISO-8859-1 font by typing the following in console:

```
setfont latlu-16.psf
mapscrn trivial
echo -ne '\033(K'
```

To be able to use `ë`, `è`, `é` or `ç` in console, you might want to add these to your `~/ .inputrc`:

```
set meta-flag on
set convert-meta off
set output-meta on
```

(This must be done for every user, if you want this to be default for all users you can either add this file to `/etc/skel/` or you could add these lines to `/etc/inputrc` and add the following to `/etc/bashrc`, `export INPUTRC=/etc/inputrc`)



Note!

This is only useful to programs that use `readline` (like `bash`)

Also set the following environment variables:

```
LC_CTYPE=iso-8859-1
SYSFONT=latlu-16.psf
SYSTEM=linux
```

2.2.2. Support for the Euro symbol

Since Europe had to invent a new character, the Euro, there's a new standard. It's called ISO-8859-15 (aka Latin-9 or Latin-0). To add support you need both a new font and new keymaps. This is part of every major distribution nowadays, if you have an older distributions you probably need a newer *console-tools* package.

There's more information in the [Euro Character Support mini HOWTO](#)

2.3. Time zone

Since Belgium is located in the Central European Time zone (aka MET) which (in the winter) is equivalent to the Greenwich Mean Time plus 1 (GMT+1), you can simply link

`/usr/lib/zoneinfo/localtime/MET` to `/etc/localtime` symbolically like:

```
ln -sf /usr/lib/zoneinfo/MET /etc/localtime
```

or

```
ln -sf /usr/lib/zoneinfo/Europe/Brussels /etc/localtime
```

This automatically sets Daylight Savings (which is GMT+2 in the summer).



Note!

Different distributions have different paths, zoneinfo can be located in `/usr/share` or such...



Another note!

Red Hat uses a tool called **timeconfig**, SuSE uses **yast**

To change the CMOS clock and then synchronize the system time with the CMOS clock, do something like this:

```
hwclock --set --date="Feb 25 03:38"
clock -u -s
```

If your clock is set to local time (which is discouraged but if you also run broken OS's, you must), you can do:

```
hwclock --set --date="Feb 25 04:38"
clock -s
```

[Noticed the 1 hour difference ? ;p]

If your computer has Internet-access you can use NTP (Network Time Protocol) to keep your system clock in sync. One way of doing this is by starting ntpdate from cron by adding

```
05 0 * * * root /usr/sbin/ntpdate -s ntp.belnet.be > /dev/null 2>&1
```

to your `/etc/crontab`. Check the ISP-information below to see if your ISP has a NTP-server available.

2.4. Locale support

Not much programs support locale yet, if you want to know more about locale or how to write your own programs to support it, check: [put the damn url here ;p]

Be aware that locale makes it harder to resolve problems as less people can help you !! You might understand a problem when it's in technical English, but what if it's translated in some obscure Dutch ?

2.4.1. Dutch

To enable support for the Dutch locale in Belgium on a system with locale support you just have to set the following environment variables:

```
LANG=nl
LANGUAGE=nl_BE
```

Try nl_BE.ISO_8859-1 if nl_BE does not work.

2.4.2. French

If you want French locale support in Belgium, set the following environment variables:

```
LANG=fr
LANGUAGE=fr_BE
```

Try fr_BE.ISO_8859-1 if fr_BE does not work.

2.4.3. German

If you want instead German locale support in Belgium, set the following environment variables:

```
LANG=de
LANGUAGE=de_BE
```

Try de_BE.ISO_8859-1 if de_BE does not work.

2.4.4. Walloon

For Walloon locale support you can find files and information at: <http://www.linux18n.org/locales/walon/>.

To use it set:

```
LANG=wa
LANGUAGE=wa_BE:fr_BE
```

Try wa_BE.ISO_8859-1 if wa_BE does not work.

2.5. Native language support and codepages

These options add support for the Belgian character set and codepages. If you'd like to have these, compile a kernel with these options put on. They only apply to some filesystems (FAT-based, ISO9660, ...).

```
< > Codepage 850 (Europe)
< > NLS ISO 8859-1 (Latin 1; Western European Languages)
< > NLS ISO 8859-15 (Latin 9; Western European Languages with Euro)
```

Located in *Filesystems > Native Language Support*

If your kernel is a modular kernel that came with your distribution (=you never compiled a kernel before), then you might want to type:

```
insmod nls_cp850
insmod nls_iso8859_1
insmod nls_iso8859_15
```

2.6. Ispell

Contributed by Dany Vanderroost <danyv@euronet.be>

2.6.1. Install and setup

Ispell is composed of different components: the main software and one or more dictionaries. The default dictionary is `/usr/lib/ispell/english.hash`. To override this default you have 2 options. Either you can set the `DICTIONARY`-variable or launch it with the `"-d"` option.

You can create custom dictionaries in your home-directory like `~/ispell_english`.

2.6.2. Dutch

```
export DICTIONARY=nederlands
```

or

```
ispell -d nederlands file_name
```

2.6.3. French

```
export DICTIONARY=français
```

or

```
ispell -d français file_name
```



Ispell doesn't work with Walloon which is a phonetic dialect and not a lexical structured language.

2.6.4. German

```
export DICTIONARY=deutsch
```

or

```
ispell -d deutsch file_name
```

2.6.5. Multilanguage spelling

By default Ispell will not work with multiple dictionaries but the solution is to work with the `~/.ispell_words` file.

If you don't want to make multi instance with Ispell, You can build `~/.ispell_words` with the words package by `cp /usr/dict/words ~/.ispell_words; chmod +w ~/.ispell_words`.

2.7. Setting up Internet

2.7.1. Dialing in with your modem (PPP)

To configure PPP correctly, you should check the [PPP-HOWTO](#). I try to explain it briefly, but if you have any questions or problems, read the HOWTO very carefully.

2.7.1.1. Configuring the modem

To configure your modem, you can alter the initstring of your modem. To learn more about your modem, check [Ask Mr. Modem](#).



If you have a winmodem you will probably not get it to work. More information about winmodems is at: <http://linmodems.org/>. Work is underway, but winmodems are not as good as *real* modems.

2.7.1.2. Installing pppd

Now, you need to have the ppp-package installed (check this by typing `pppd --version`), make sure you have a recent one. Then you have to make sure you've got these files:

```
/usr/local/bin/ppp
```

```
#!/bin/sh

case $1 in
  (on|start)
```

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```
TELEPHONE='555-1212'      # The telephone number for the connection
ACCOUNT='your_login'      # The account name for logon (as in 'George B
    PASSWORD='your_pass'  # The password for this account (and
INITSTRING='AT&F&C1&D2Z'# Modem initstring
IPLOCAL=0.0.0.0           # Local IP address if known. Dynamic = 0.0.0
IPREMOTE=0.0.0.0         # Remote IP address if desired. Normally 0.0
DEVICE=/dev/ttyS1        # Serial Device com1=ttyS0, com2=ttyS1,...
SPEED=57600              # 19200, 38400 or 57600 (don't try something
export TELEPHONE ACCOUNT PASSWORD INITSTRING
exec /usr/sbin/pppd $DEVICE $SPEED $IPLOCAL:$IPREMOTE \
user $ACCOUNT connect /etc/ppp/ppp-on-dialer
;;
(off|stop)
if [ -r /var/run/ppp0.pid ]; then
    kill -INT `cat /var/run/ppp0.pid`
    if [ ! "$?" = "0" ]; then
        rm -f /var/run/ppp0.pid
        echo "ERROR: Removed stale pid file"
        exit 1
    fi
fi
exit 0

fi
echo "ERROR: PPP link is not active on ppp0"
exit 1
;;
(info|status)
/usr/sbin/pppstats
;;
(*)
echo "Usage: ppp on|off|info|start|stop|status";
esac
```

/etc/ppp/ppp-on-dialer

```
#!/bin/sh

exec /usr/sbin/chat -v \
    REPORT CONNECTION \
    REPORT CARRIER \
    TIMEOUT 10 \
    ABORT '\nBUSY\r' \
    ABORT '\nNO ANSWER\r' \
    ABORT '\nNO CARRIER\r' \
    ABORT '\nNO DIALTONE\r' \
    ABORT '\nRINGING\r\n\r\nRINGING\r' \
    ABORT 'Invalid Login' \
    ABORT 'Login incorrect' \
    '' '\r$INITSTRING\r' \
    'OK-+++ \c-OK' 'ATH0' \
    TIMEOUT 45 \
    OK "ATDT$TELEPHONE" \
    CONNECT '\d \c' \
    ogin:--ogin: "$ACCOUNT" \
    ord: "$PASSWORD"
```

You can remove the `-v` once everything looks normal.

The `pppd` command uses `/etc/ppp/options` to list its options, change these options to whatever fits. These defaults normally work in most cases.

```

asynmap 20a0000
crtsets
debug
default-mru
defaultroute
detach
escape 11,13,ff
hide-password
ipcp-accept-local
ipcp-accept-remote
lcp-echo-failure 4
lcp-echo-interval 400
lock
modem
mtu 1500
netmask 255.255.255.0
noipdefault
passive

#idle 300
#kdebug 0
#-vj

```

Once dialing in works like a charm, you can leave debug out.



It is important to emphasize that every special character, thus every character that is not [a-ZA-Z0-9] and '_', should be escaped by preceding it with a '\'-character. Thus "e!b\$I+" would become "e!\b\!\$I+". Try it if you are having troubles !

2.7.1.3. pap-secrets / chap-secrets

If your ISP requires CHAP or PAP, you need one of these files with their proper username and password:

/etc/ppp/pap-secrets or /etc/ppp/chap-secrets

#client	server	secret	IP
your_login	*	your_pass	*

2.7.1.4. Network

To configure your nameservers, change /etc/resolv.conf. If dialing in is succesful, but you can't get it to connect to URL's: this is probably the cause.

```

domain domain_of_your_isp
nameserver your_primary_nameserver
nameserver your_secondary_nameserver

```

2.7.1.5. File permissions

Before you can run a (shell)script, it must be set executable. Be sure that you set the permissions so that other users cannot see the passwords stored in the files. If you want other users to be able to dial in, you might want to consider using **sudo**. You might want to do the following:

```
chmod u+rw og-rwx -R /etc/ppp
chmod u+x /etc/ppp/ppp-on-dialer /usr/local/bin/ppp
```

2.7.1.6. Dial + Hangup

Then if `/usr/local/bin` is in your `PATH`, you can easily dial in with `ppp on`, hangup with `ppp off` and to get some statistics, you do: `ppp status`.

2.7.2. Dialing in with your ISDN-modem

Contributed by Christophe Lambin <clambin@skynet.be>

This section does not aim to be a definitive guide on ISDN for Linux. For a more detailed discussion on the topic, see [Paul Slotman's ISDN4Linux HOWTO](#) and [ISDN4Linux-FAQ](#).

2.7.2.1. Updating the kernel

If you're using a 2.2 kernel, it's recommended to get an updated version of the ISDN code. You can retrieve it from CVS at <ftp://ftp.suse.com/pub/isdn4linux/>. For more information, check: <http://www.brisse.dk/site/linux/docs/isdn.htm>



If you've recently purchased an Eicon Diva 2.0 PCI (eg, via Belgacom), there's a good chance you've actually got a Diva 2.01. In this case, you must get a version dated 1 July 1999 or later !

Once the ISDN is in place, you can start up the driver. Eg: `modprobe hisax type=11 protocol=2` Refer to the Readme's for the right parameters and values for your card.

2.7.2.2. ISDN4Linux toolkit

Next, you'll need the ISDN4Linux toolkit. You can retrieve the latest version of the toolkit at: <ftp://ftp.suse.com/pub/isdn4linux/>

2.7.2.3. Configuring the interface

With the tools installed and configured, write a script to configure the interface, to be used for the ISDN connection. As always in Linux, there's no one correct way of doing this. I've put these in a script

/etc/rc.d/rc.isdn:

```
#!/bin/sh

MSNREMOTE='555-1212'    # Phone number of ISP
MSNLOCAL='555-1313'    # my number, without 0, with areacode
ACCOUNT='george'      # The account for logon (as 'George Burns')
IPLOCAL=10.0.0.2       # my fixed IP (use 10.0.0.2 if no fixed)
IPREMOTE=0.0.0.0      # IP number of ISP
INTERFACE=ipp0
/sbin/modprobe hisax type=11 protocol=2
/sbin/isdnctrl verbose 3 system on
/sbin/isdnctrl addif $IF
/sbin/isdnctrl secure $IF on
/sbin/isdnctrl addphone $IF out $MSNREMOTE
/sbin/isdnctrl eaz $IF $MSNLOCAL
/sbin/isdnctrl huptimeout $IF 300
/sbin/isdnctrl l2_prot $IF hdlc
/sbin/isdnctrl l3_prot $IF trans
/sbin/isdnctrl encap $IF syncppp
/sbin/isdnctrl dialmode $IF auto
/sbin/ifconfig $IF $IPLOCAL pointopoint $IPREMOTE -arp -broadcast
/sbin/ippd /dev/ipp0 user $ACCOUNT $IPLOCAL:$IPREMOTE
```

To start this at boot time, make it executable and append the following to /etc/rc.d/rc.local:

```
if [ -x /etc/rc.d/rc.isdn ]; then
    . /etc/rc.d/rc.isdn
fi
```

The **ippd** command gets its parameters passed through a file, /etc/ppp/options:

```
-ac
-bsdcomp
debug
defaultroute
ipcp-accept-local
ipcp-accept-remote
mru 1524
mtu 1500
noipdefault
-ppp
useifip
-vj
-vjccomp

#idle 360
#persistent
```



Do NOT specify +pap or +chap in this file. This specifies the authentication that ippd should use for an INCOMING

client. If you were to use this to connect to your ISP, `ipppd` would wait for the ISP to authenticate itself using the specified protocol.



It is important to emphasize that every special character, thus every character that is not `[a-ZA-Z0-9]` and `'_'` should be escaped by preceding it with a `'\'`-character. Thus `'e!b$l+'` would become `'e!b$l\+'`. Try it if you are having troubles !

Finally, create `/etc/ppp/ip-down.local` to handle the shutdown of the interface:

```
#!/bin/sh

/sbin/ifconfig $1 down
sleep 1
/sbin/ifconfig $1 10.0.0.2 pointopoint
```



Note!

This is to handle some problems with routes on shutdowns. Anyone know of a clean(er) solution ?

2.7.2.4. pap-secrets / chap-secrets

If your ISP uses PAP or CHAP, create a file `/etc/ppp/pap-secrets` or `/etc/ppp/chap-secrets`. Its format is:

```
#client      server  secret      IP
your_login   *      your_pass   *
```

2.7.2.5. Network

Not really related to ISDN, but a lot of people forget this step (too eager to try out all the stuff they typed in above ? :-)).

Anyway, you need to configure the DNS, by creating a file `/etc/resolv.conf`:

```
domain your_domain_of_your_isp
nameserver your_primary_nameserver
nameserver your_secondary_nameserver
```

2.7.2.6. File permissions

Before you can run a (shell)script, it must be set executable. Be sure that you set the permissions so that other users cannot see the passwords stored in the files. If you want other users to be able to dial in, you might want

to consider using **sudo**. You might want to do the following:

```
chmod u+rw og-rwx -r /etc/ppp
chmod u+x /etc/rc.d/rc.isdn /etc/ppp/ip.down-local /usr/local/bin/isdn
```

2.7.2.7. Dial + Hangup

Finally, you can write a little wrapper to start and stop the ISDN connection. I've put this as **/usr/local/bin/isdn**:

```
#!/bin/bash

case $1 in
    (on|start)
        /sbin/isdnctrl dial ippp0
        ;;
    (off|stop)
        /sbin/isdnctrl hangup ippp0
        ;;
    (info|status)
        /sbin/isdnctrl list ippp0
        ;;
    (*)
        echo "Usage: isdn on|off|info|start|stop|status"
esac
```

Then if **/usr/local/bin** is in your **PATH**, you can easily dial in with **isdn on** and hangup with **isdn off**.

3. Belgian ISP information

3.1. PPP/ISDN

3.1.1. Brutélé

Web

<http://www.brutele.be/>

Support

no official Linux support yet

3.1.2. Cable&Wireless (Online, TijdNet)

Authentication

text-based / PAP

Extra options

noccp

Nameservers

62.112.0.7, 194.88.127.7

NTP-server

ntp.antw.online.be, ntp.brus.online.be, ntp.gent.online.be

Web

<http://www.online.be/>

Support

no official Linux support yet

3.1.3. KPN Belgium (Eunet)

Authentication

text-based

Extra options

proxyarp

Nameservers

193.74.208.135, 193.74.208.65, 193.121.171.135

Web

<http://www.eunet.be/>

Support

<http://support.eunet.be/>

3.1.4. Planet Internet (Ping)

Authentication

CHAP

Nameservers

194.119.232.3, 194.119.232.2

NTP-server

ntp.pi.be

Web

<http://www.planetinternet.be/>

Support

<http://www.ping.be/Support/redhat.shtml> (Ping)

3.1.5. Skynet (Belgacom)

Authentication

PAP

Extra options

defaultroute

Nameservers

195.238.2.21, 195.238.2.22

NTP-server

ntp.skynet.be

Web

<http://www.skynet.be/>

Support

<http://help.skynet.be/linux/indexen.html>

3.1.6. Tiscalinet (Freegates, FreeBel)

Authentication

text-based ?

Nameservers

212.35.2.1, 212.35.2.2

NTP-server

ntp.tiscalinet.be

Web

<http://www.tiscalinet.be/>

Support

no official Linux support yet

3.1.7. UUNet (VT4)

Authentication

PAP

Nameservers

194.7.1.4, 194.7.15.70

Web

<http://www.uunet.be/>, <http://www.vt4.net/>

Support

no official support yet

3.1.8. Wanadoo (Euronet)

Authentication

text-based / PAP

Nameservers

195.74.193.12, 194.134.0.12

Web

<http://www.wanadoo.be/>

Support

no official Linux support yet

3.1.9. World Online

Authentication

CHAP

Nameservers

212.233.1.34, 212.233.2.34

Web

<http://www.worldonline.be/>

Support

<http://help.worldonline.be/en/linux/index.htm>

3.1.10. XS4ALL

Authentication

PAP

Nameservers

194.109.6.66, 194.109.9.99

NTP-server

ntp.xs4all.be

Web

<http://www.xs4all.be/>

Support

<http://helpdesk.xs4all.be/ned/linux/index.html>

3.1.11. Yucom (DMA)

Authentication

CHAP

Nameservers

212.8.180.122, 212.8.180.126

NTP-server

ntp.yucom.be

Web

<http://www.yucom.be/>

Support

no official Linux support yet

3.2. Cable

DHCP was designed to make life easier, and most of the times it does ;) More information to set up your

DHCP client can be found at: <http://www.oswg.org/oswg-nightly/DHCP.html> and a [list of Frequently Asked Questions](#) from the infamous document of John Wobus at <http://www.dhcp.org/> which describes everything you need to know. Along with the information in the Cable-Modem HOWTO (<http://www.oswg.org/oswg-nightly/Cable-Modem.html>).

Lots of people want to connect a whole network to their cablemodem, that's not a problem. You'll need [IP-Masquerading](#) and make sure the interface (that speaks to the cablemodem) has the right MAC-address !! Another solution (in case of problems) is to reset your cablemodem.

3.2.1. UPC Belgium (Chello, TVD)

NTP-server

time.chello.be

Web

<http://www.upcbelgium.be/>

Support

no official support yet

More information

http://foobar.starlab.net/~soggie/tvd_linux/

3.2.2. Pandora (Telenet)

Automatic proxy

http://pac.pandora.be:8080

HTTP proxy

export http_proxy="http://proxy.pandora.be:8080/"

NTP-server

ntp.pandora.be

Web

<http://www.pandora.be/>

Support

no official support yet

More information

<http://users.pandora.be/de.boeve/pandora.html>

3.3. ADSL

3.3.1. Easynet

Web

<http://www.easynet.be/>

Support

<http://support.easynet.be/>

3.3.2. KPN Belgium (Eunet)

Web

<http://www.eudsl.be/>

Support

<http://support.eunet.be/>

3.3.3. Turboline (Belgacom)

Web

<http://www.turboline.be/>

Support

no official support yet

More information

<http://minf.vub.ac.be/~fquestie/turbo/>

4. Belgian Linux user groups

More information can be found in the [User Group HOWTO](#). A complete list of Linux User Groups is at: <http://www.ssc.com/linux/glue/> and at: <http://lugww.counter.li.org/>

4.1. ALLIN Linux User Group [BEGIJNENDIJK]

Address

Mechelbaan 260
B-3130 Begijnendijk

Email

<allin@linuxfreak.com>

Web

<http://come.to/allin/>

Contact

Paul Terweduwe <paul@faes.be>

4.2. Antwerp Linux User Group – ALUG [ANTWERP]

Address

Van Luppenstraat 70
B-2018 Antwerp

Phone

+32 (0)3 218 63 54

Email

<alug@pandora.be>

Web

<http://sunsite.belnet.be/alug/>

Meetings

In [ACCB \(HVR\), Herentalsebaan 212 te Deurne](#)

Contact

Armand Verachtert <alug@pandora.be>

4.3. Brussels Linux User Group – BeLUGa [BRUSSELS]

Address

Building F, room 218
Vrije Universiteit Brussel
Pleinlaan 2
B-1050 Brussel

Email

<info@linux.rave.org>

Web

<http://linux.rave.org/>

Mailinglist

<http://linux.rave.org/mlist.html>

4.4. Charleroi LUG [CHARLEROI]

Email

<lug_charleroi@caramail.com>

Web

<http://charleroi.linuxbe.org/>

Mailinglist

<http://charleroi.linuxbe.org/mailling/mail.html>

4.5. Computer Forum KaHo – CFK

Email

<cfk@kahosl.be>

Web

<http://eduserv.kahosl.be/cfk/>

4.6. HCC Limburgse Linux Gebruikers Groep – HLLGG

Email

<Linuxgg@hotmail.com>

Web

<http://www.uunet.be/hcc/Limburg/>

Contact

Andy Peeters & Bruno Tony

4.7. HCC Linux Gebruikers Groep Leuven [LEUVEN]

Address

Diegemstraat 61
B-1930 Zaventem

Email

<Yvo.Dries@village.uunet.be>

Web

<http://www.uunet.be/hcc/Leuven/linux.html>

Contact

Yvo Dries <Yvo.Dries@village.uunet.be>

4.8. Independent Group of Unix-Alikes and Network Activists – IGUANA

Address

Milcampsiaan 101
B-1040 Schaarbeek

Phone

+32 (0)2 582 66 50

Fax

+32 (0)2 582 66 50

Email

<info@iguana.be>

Web

<http://www.iguana.be/>

4.9. Infogroep – IGWE [BRUSSELS]

Address

5F218 (building F)
Pleinlaan 2
B-1050 Brussels

Phone

+32 (0)2 629 33 56

Fax

+32 (0)2 629 33 89

Email

<ig@igwe.vub.ac.be>

Web

<http://igwe.vub.ac.be/>

4.10. Leuvense Linux Users – L2U [LEUVEN]

Email

<info@l2u.iguana.be>

Web

<http://l2u.iguana.be/>

Meetings

First and third thursday every month in [Freinetschool De Zevensprong](#), Vital Decosterstraat 67,
B-3000 Leuven

Mailinglist

<http://l2u.iguana.be/mailman/listinfo/members>

4.11. Liège Linux Team – LiLiT [LIEGE]

Email

<f.berger@student.ulg.ac.be>

Web

<http://www.lilit.be/>

4.12. Linux User Group De Bruxelles – BxLUG [BRUSSELS]

Email

<information@bxlug.org>

Web

<http://www.bxlug.org/>

Contact

Raphael Bauduin <information@bxlug.org>

4.13. Linux User Group Heist op den Berg [HEIST OP DEN BERG]

Address

Bergstraat 89
B-2220 Heist op den Berg

Phone

+32 (0)495 925 931

Email

<info_heistselinuxclub@yahoo.co.uk>

Web

http://uk.geocities.com/info_heistselinuxclub/

4.14. Linux User Movement Underground Mad Belgian Aliens – LUMUMBA [DIEPENBEEK]

Address

Filii Lamberti
Universiteitslaan 1
B-3590 Diepenbeek

Email

<helpdesk@lumumba.luc.ac.be>

Web

<http://lumumba.luc.ac.be/>

Mailinglist

<minordomo@lumumba.luc.ac.be>

4.15. LinuxBe.Org A.S.B.L

Address

Boulevard de la Meuse, 23
B-5100 Jambes

Email

<team@linuxbe.org>

Web

<http://linuxbe.org/>

Contact

Cedric Gavage <niddle@linuxbe.org>

4.16. Louvain-Li-nux – LLN [LOUVAIN-LA-NEUVE]

Address

Louvain-la-neuve Linux User Group
Place des paniers 5/014
B-1348 Louvain-La-neuve

Phone

+32 (0)10 454 761

Email

<lln@udev.org>

Web

<http://lln.udev.org/>

Contact

Benjamin Henrion <benjamin.henrion@linuxbe.org>

4.17. Mons LUG [MONS]

Email

<stephane.wirtel@belgacom.net>

Web

<http://mons.linuxbe.org/>

4.18. Namur LUG [NAMUR]

Email

<info@namurlug.org>

Web

<http://namurlug.org/>

4.19. Open Source Blanc Blue Belge – OS3B [CHARLEROI]

Address

Rue Joseph Wauters 48
B-6043 Charleroi (Ransart)

Email

<info@os3b.org>

Web

<http://www.os3b.org/>

Meetings

Every thursday evening and saturday afternoon.

Mailinglist

<http://carolo.net/mailman/listinfo/os3b>

4.20. Open Technology Assembly Linux Special Interest Group [BRUSSELS]

Address

Kruipstraat 14
B-1850 Grimbergen

Phone

+32 (0)11 275 898

Fax

+32 (0)11 270 389

Email

<info@ota.be>

Web

<http://www.ota.be/>

Contact

Jan Vanhercke <jan.vanhercke@c-cure.be>

4.21. PC Aktief Computerclub [SINT-NIKLAAS]

Address

PC Aktief Computerclub

Web

<http://www.pcaktief.be/>

Meetings

Fourth tuesday every month in 't Hoveken van Belsele, Nieuwe Baan 130, B-9111 Belsele (Sint-Niklaas)

Contact

Johan De Baere <debaerej@hotmail.com>

4.22. Student Information Networking – SIN [GEEL]

Address

Kleinhoefstraat 4
B-2440 Geel

Email

<sin@sin.khk.be>

Web

<http://www.sin.khk.be/>

4.23. There Is No Alternative – TINA [ANTWERP]

Contact

Tina gebruikers <vraagtina@digibel.org>

Web

<http://tina.kangaroot.net/>

Meetings

[Hof van Rieth, Molenlei 68, B-2640 Mortsel](#)

Mailinglist

[<mailinglist@tina.kangaroot.net>](mailto:mailinglist@tina.kangaroot.net)

4.24. Unix Lovers Yield Student Services & Internet Support – ULYSSIS [LEUVEN]

Address

Holleberg
Schapenstraat 37, lokaal 91 97
B-3000 Leuven

Mail-address

Residentie Vinckenbosch
Parkstraat 137-139, flat 305
B-3000 Leuven

Email

[<ulyssis@ulyssis.org>](mailto:ulyssis@ulyssis.org)

Web

<http://www.ulyssis.org/>

Extra

Only for KULeuven students and KULeuven personnel

4.25. West-Vlaamse Linux User Group – Lug-WV [BRUGGE]

Email

[<info@lugwv.be>](mailto:info@lugwv.be)

Web

<http://www.lugwv.be/>

4.26. Workgroup of Linux Fanatics – WOLF [MECHELEN]

Email

<TeeCee@WOLF-Mechelen.be>

Web

<http://www.wolf-mechelen.be/>

4.27. Zeus WPI – Werkgroep Informatica RUG [GENT]

Address

Krijgslaan 281 S9
B-9000 Gent

Phone

+32 (0)9 264 47 51

Email

<info@zeus.rug.ac.be>

Web

<http://www.zeus.rug.ac.be/>

Comment

Restricted to RUG students

5. Belgian Linux businesses

The Linux Documentation Project contains worldwide lists of Linux businesses, Linux Consultants HOWTO and V.A.R. HOWTO, and can be found at: <http://www.linuxports.com/>.

5.1. aDOC Services

Address

Avenue du Pesage, 31-33
B-1050 Brussels

Phone

+32 (0)2 646 00 76

Email

<sales@adoc-services.com>

Web

<http://www.adoc-services.com/>

5.2. Arafox

Address

Avenue Joseph Wybranlaan 40
B-1070 Brussels

Phone

+32 (0)2 529 59 91

Fax

+32 (0)2 529 59 92

Email

<info@arafox.com>

Web

<http://www.arafox.com/>

5.3. Aragne

Address

Boulevard Général Michel 1E
B-6000 Charleroi

Phone

+32 (0)71 270 389

Email

<info@aragne.com>

Web

<http://www.aragne.com/>

Contact

Denis Frère <denis.frere@aragne.com>

Special expertise

GNU/Linux services, specially Python and Zope solutions (websites, intranet, Internet connectivity, ...)

5.4. Better Access nv

Address

Geldenaakse Vest 6
B-3000 Leuven

Phone

+32 (0)16 298 045

Fax

+32 (0)16 298 046

Email

<info@ba.be>

Web

<http://www.ba.be/>

Type of support

After an onsite installation, we mainly support our customers with SSH remote administration. Most problems are reported by E-mail or by the inhouse-developped webbased supportsystem. This doesn't mean that once in a while a supportcall comes in.

Special expertise

Security, systemadministration and setups, security (firewalling, tigerteaming, VPN, etc.)
Networkdesign, wireless networking, Troubleshooting, product development, etc. Please visit <http://www.ba.be> for more info.

5.5. Consultux

Address

Alfons Jeurissenstraat 53
B-3500 Hasselt

Phone

+32 (0)474 91 55 61

Email

<info@consultux.be>

Web

<http://www.consultux.be/>

5.6. CoreSequence Consultancy & Training

Address

Tiensestraat 243/3
B-3000 Leuven

Phone

+32 (0)472 689 497

Fax

+32 (0)16 29 99 32

Email

<info@coresequence.com>

Web

<http://www.coresequence.com/>

Contact

Machtelt Garrels <sales@coresequence.com>

Special expertise

Consultancy: disaster recovery, troubleshooting. Training: Dutch/French/English speaking trainers.

5.7. CSS nv

Address

Henneaulaan 366
B-1930 Zaventem

Phone

+32 (0)2 718 53 33

Fax

+32 (0)706 53 306

Type of support

support on networking, installation, hardware maintenance, Red Hat certified reseller

Special expertise

Red Hat RHCE

5.8. D. Connect

Address

Av. Van Goidtsnoven 33
B-1180 Uccle

Email

<webmaster@dconnect.be>

Web

<http://www.dconnect.be/>

5.9. Dolmen

Address

Industriepark Zenneveld
Vaucampsiaan 42
B-1654 Huizingen

Phone

+32 (0)2 362 55 55

Fax

+32 (0)2 362 55 99

Email

<info@dolmen.be>

Web

<http://www.dolmen.be/>

5.10. DS Improve bvba

Address

European Erasmus Business & Innovation Center
Joseph Wybranlaan 40
B-1070 Brussels

Phone

+32 (0)2 529 59 41

Fax

+32 (0)2 529 59 54

Email

<info@dsimprove.be>

Web

<http://www.dsimprove.be/>

5.11. EMMO Service

Address

Jan Van Harcourtlaan 7
B-3200 Aarschot

Phone

+32 (0)16 565 708

Fax

+32 (0)16 569 963

Email

<info@emmo.be>

Web

<http://www.emmo.be/>

5.12. FKS bvba

Address

Luikersteenweg 65
B-3500 Hasselt

Phone

+32 (0)11 214 911

Fax

+32 (0)11 220 419

Email

<info@fks.be>

Web

<http://www.fks.be/>

5.13. Glasshouse Business Networks bvba

Address

Hessenstraatje 20 loft 1.1
B-2000 Antwerp

Phone

+32 (0)3 234 96 96

Fax

+32 (0)3 234 96 97

Email

<info@glasshouse.be>

Web

<http://www.glasshouse.be/>

5.14. Grmbl productions

Address

Korte Vuldersstraat 30
B-8000 Brugge

Phone

+32 (0)50 674 512

Fax

+32 (0)50 342 623

Email

<info@grmbl.com>

Web

<http://www.grmbl.com/>

5.15. IBM Belgium sa/nv

Address

Square Victoria Regina 1
B-1210 Brussels

Phone

+32 (0)2 225 33 33

Fax

+32 (0)2 225 24 73

Email

<blue@be.ibm.com>

Web

<http://www.ibm.com/be/>

Contact

Sam Versluys <sam_versluys@be.ibm.com>

5.16. IP Net generation

Address

Cyriel Verschaevelaan 12
B-2980 Zoersel

Phone

+32 (0)477 513 987

Email

<info@ipng.be>

Web

<http://www.ipng.be/>

Special expertise

IPnG focuses on Open Source software development.

5.17. Kangaroot Linux Solutions

Address

Grote Steenweg 91
B-2600 Berchem (Antwerp)

Phone

+32 (0)3 286 17 17

Fax

+32 (0)3 281 23 49

Email

<info@kangaroot.net>

Web

<http://www.kangaroot.net/>

Contact

Peter Dens <peter@kangaroot.net>

5.18. Life nv

Address

Greenhill Campus
Interleuvenlaan 15A
B-3001 Haasrode

Phone

+32 (0)16 208 961

Fax

+32 (0)16 207 973

Email

<info@life.be>

Web

<http://www.life.be/>

Contact

Erik Goven <egoven@life.be>

5.19. Linugen bvba

Address

Borkelstraat 2/4
B-2900 Schoten

Phone

+32 (0)475 604 106

Fax

+32 (0)3 293 343

Email

<info@linugen.com>

Web

<http://www.linugen.com/>

Contact

Tom Schouteden <tom@linugen.com>

5.20. LinuxIdee

Address

Prins Albertstraat 35
B-8310 Brugge

Phone

+32 (0)494 607 037

Fax

+32 (0)50 364 341

Web

<http://www.linuxidee.com/>

Contact

Jurgen Defurne <jurgen.defurne@pandora.be>

5.21. M-TEC SERVICE

Address

Kleine Nieuwendijk 40
B-2800 Mechelen

Phone

+32 (0)15 330 769

Fax

+32 (0)15 330 768

Email

<info@mtecservice.com>

Web

<http://www.mtecservice.com/>

Contact

Jeff Verheyen <jeff.verheyen@mtecservice.com>

5.22. Mind Linux Solutions

Address

Vaartkom 11
B-3000 Leuven

Phone

+32 (0)478 274 069

Fax

+32 (0)16 309 644

Email

<info@mind.be>

Web

<http://mind.be/>

Contact

Peter Vandenabeele <peter@mind.be>

Type of support

Installation & configuration, auditing & consultancy, support & maintenance, training & education, research & development.

Special expertise

We are specialised in installing Linux servers for various purposes (Web-, File-, Print- or Mailservers, Routers, Firewalls, VPN, ...) in heterogenous networks. We provide support and training for Linux and Open Source products and we develop custom Linux solutions for our customers.

5.23. Neolabs

Address

Zwarte Zusterstraat 16
B-3000 Leuven

Phone

+32 (0)16 236 342

Fax

+32 (0)16 650 497

Email

<info@neolabs.be>

Web

<http://www.neolabs.be/>

Contact

Maarten Slaets <maarten.slaets@neolabs.be>

5.24. Phidani Software sprl

Address

Rue de l'autonomie 1
B-1070 Brussels

Email

<info@phidani.be>

Phone

+32 (0)2 552 06 63

Fax

+32 (0)2 522 09 30

Web

<http://www.phidani.be/>

5.25. Qbian Linux Systems

Address

Bischoppenhoflaan 289
B-2100 Antwerp

Email

<info@qbian.com>

Phone

+32 (0)9 328 93 28

Fax

+32 (0)9 326 08 88

Web

<http://www.qbian.com/>

5.26. Si-Lab

Email

<toon@si-lab.com>

Phone

+32 (0)486 149 048

Web

<http://www.si-lab.com/>

Contact

Toon Knapen <toon@si-lab.com>

5.27. Spier bvba

Address

Knaptandstraat 96-98
B-9100 Sint-Niklaas

Email

<info@spier.be>

Phone

+32 (0)3 765 90 61

Fax

+32 (0)3 765 90 62

Web

<http://www.spier.be/>

5.28. Stone-IT Belgium

Address

Minerva Office Brussels
Minervastraat 14b
B-1930 Zaventem

Email

<info@be.stone-it.com>

Phone

+32 (0)2 720 88 35

Fax

+32 (0)2 720 51 71

Web

<http://www.be.stone-it.com/>

Contact

Martijn Smit <smit@stone-it.com>

Type of support

Stone-IT is a 'one-stop' Linux provider for integrating business environments in which we offer: Linux Consulting, Linux Solutions, Linux Support and Linux Education.

Special expertise

Stone-IT offers high quality Linux expertise and can develop, test and implement Linux in several different business environments such as all kinds of servers (File-/Web-/Name-/Mail-/Print

servers), as well as Clustering, VPN, Storage, Firewalls & Routers. Our support consists of Pro Active Monitoring, 24 hours a day, 7 days a week. Besides having trainers being a Red Hat Certified Engineer we offer Distribution Independent Education.

5.29. Supporting Open Source cvba

Address

Zijpstraat 14
B-2570 Duffel

Email

<info@sos.be>

Phone

+32 (0)15 310 271

Fax

+32 (0)15 310 381

Web

<http://www.sos.be/>

5.30. Théridion sprlfs

Address

Rue de l'Aqueduc, 83
B-1050 Brussels

Email

<info@theridion.com>

Phone

+32 (0)2 539 32 28

Fax

+32 (0)2 539 19 54

Web

<http://www.theridion.com/>

Contact

Renaud Dans <renaud.dans@theridion.com>

5.31. VirgoPlus sprl

Address

Rue E. Solvay 29 A
B-4000 Liège

Phone

+32 (0)4 253 00 59

Fax

+32 (0)4 253 00 49

Email

<staff@virgoplus.com>

Web

<http://www.virgoplus.com/>

Contact

Bruno Mairlot <bruno@virgoplus.com>

Type of support

By phone, email, or remote networked administration, inhouse, onsite

Special expertise

Installation, configuration, administration of Linux, internet connection, intranet developpment, firewalls, samba, netatalk, firewalls, proxys, DNS, web server (Apache), mod_perl, MySQL, Gui interface developpment (GTK+). We have acquired a special expertise with the Red Hat distributions.

6. Belgian Linux resources

6.1. Websites

6.1.1. Linux in Belgium

- [Belgian HOWTO](#)
 - [be.comp.os.linux FAQ](#)
 - [Belgian LUGS](#)
 - [LinuxBelgium.net](#)
-

6.1.2. Dutch Linux–related sites

- [Nederlandstalige Linux homepage](#) _the_ Linux source for Flanders and the Netherlands
 - [Nederlandstalige Linux Documentatie Project](#) most Linux HOWTOs translated to Dutch
 - [Linux Support Website](#)
 - [EToS: Educatieve Toepassingen van Open Software](#)
 - [A Flemish website about Open Standards](#)
 - [Beginnen met Linux](#)
 - [Installatie Handleiding RedHat 5.2](#)
 - [Configure.help in het Nederlands](#)
 - [Cursus Linux voor Informaticabeheer](#)
-

6.1.3. French Linux–related sites

- [LinuxBe.Org](#)
 - [Association Electronique LIBRE](#)
 - [Belgian HOWTO in french](#)
 - [linux-france.org](#)
-

6.1.4. Mirrors in Belgium

- [Freshmeat at UPC Belgium \(Chello,TVD\)](#)
 - [Linuxberg at Wallonie Internet](#)
 - [Linuxberg at Online](#)
 - [Linuxberg at Pandora \(Telenet\)](#)
 - [Linux Gazette at Belnet](#)
 - [Linux Gazette at Linuxbe](#)
 - [LinuxFocus](#)
 - [Linux France](#)
-

6.2. HOWTO

The most important collection of Linux information on the net. Please if you encounter erroneous information in one of them, do contact the author. Only that way it will be corrected and we all stand together ;)

- [HOWTO's at K.U.Leuven](#)
 - [HOWTO's at Double-Barrel](#)
 - [HOWTO's at SIN](#)
 - [HOWTO's at Linuxbe.org](#)
-

6.3. HOWTO translations

As Dutch is less wide-spread, it is the least supported. But work is being done to resolve this ;) (and maybe *you* can help !!?) French and German translations obviously are already taken care of.

6.3.1. Dutch

A succesfull initiative is making progress, but there's still a lot to do. If you want to help, start translating and send it there. Check <http://nl.linux.org/doc/HOWTO/>.

6.3.2. French

French translations of HOWTO's can be found at:

<http://www.ibiblio.org/pub/Linux/docs/HOWTO/translations/fr/>

6.3.3. German

German translations of HOWTO's can be found at:

<http://www.ibiblio.org/pub/Linux/docs/HOWTO/translations/de/>

6.4. FTP

6.4.1. Kernel-source mirrors

- [Official Mirror kernel-sources at Belnet](#)
 - [Official Mirror kernel-sources at UPC Belgium \(Chello.TVD\)](#)
 - [Kernel-sources at Tiscalinet](#)
-

6.4.2. Distribution mirrors

- [Red Hat Mirrors](#)
 - ◆ [Official Mirror at Belnet](#)
 - ◆ [Official Mirror at Easynet](#)
 - ◆ [Mirror at Pandora \(Telenet\)](#)
 - ◆ [Mirror at UPC Belgium \(Chello,TVD\)](#)
 - [Debian](#)
 - ◆ [Official Mirror at Belnet](#)
 - ◆ [Official Mirror at KULeuven](#)
 - ◆ [Official Mirror at Pandora \(Telenet\)](#)
 - ◆ [Official Mirror at Easynet](#)
 - ◆ [Official Mirror at Tiscalinnet](#)
 - ◆ [Mirror at Skynet](#)
 - ◆ [Mirror at spnet](#)
 - Mandrake
 - ◆ [Mirror at Belnet](#)
 - ◆ [Mirror at UPC Belgium \(Chello,TVD\)](#)
 - SuSE
 - ◆ [Mirror at Belnet](#)
 - ◆ [Mirror at Pandora \(Telenet\)](#)
-

6.4.3. Mirrors in Belgium

- [Mirrors at Belnet](#)
 - [Mirrors at UPC Belgium \(Chello,TVD\)](#)
 - [Mirrors at Pandora \(Telenet\)](#)
-

6.5. Usenet/Newsgroups

- [be.comp.os.linux](#) at [Google](#)
-

6.6. IRC

The fastest medium to get support is IRC, but beware. Because IRC is rather anonymous it's also easy to deceive people.

On IRCnet there's a channel called #linux.be that is closely related to bcol and the Belgian Linux-scene. The channel is still small, but it surely will grow in time. To get help in English, there's only one place #linux.

Also Dalnet has a #linux.be channel.