

Navit on Eee PC 901 20G (Xandros Linux 1.6.1)

Preamble



Der nachfolgende Artikel ist in English geschrieben, da der ASUS Eee PC 901 20G mit Xandros Linux in Deutschland eher selten ist. - This Article deals with configuring, compiling and installing Navit (<http://www.navit-project.org>) (a car navigation system with routing engine) on an ASUS Eee PC 901 20G with Xandros Linux (1.6.1 DE). It includes step-by-step guidelines to compile Navit from source.

This article was created as a kind of blog for all the steps which were needed to compile navit on an Eee PC 901. One may follow those steps or just install the resulting binary packages for Xandros Linux 1.6.1 which are linked below (without any warranty :-).

Installation of essential development tools

Add debian sources

You could either do it manually or use the "Synaptic Package Manager". Just open a terminal by pressing "Ctrl + Alt + T". Open Synaptic as super user (root):

```
sudo synaptic
```

Add the following repository (or any similar mirror):

```
http://http.us.debian.org/ stable main contrib non-free
```

Install basic development tools

Install "build-essential", "glib2.0-dev", "zlib1g-dev" with Synaptic.

Alternatively one could use the command line instead of the GUI (Synaptic). Therefore just type in a terminal / console:

```
sudo apt-get install packetname
```

Install GTK 2.0 development libraries

For installing of "libgtk2.0-dev" (version 2.8.20-7), a lot of packages need to be installed from alternative sources manually, because they are either not available in the standard repositories or a very specific version is needed.

This may have been changed recently, because ASUS just updated the "libgtk2.0-dev" (to version 2.12.1xandros2) in December 2008. So the following steps may be obsolete. However they have been proven to work on a "standard" Eee PC 901 with Xandros Linux 1.6.1 DE.

The following Debian packages have to be installed with:

```
sudo apt-get install packetname
```

partly after solving missing dependencies by manual download of Debian packages from alternative sources and manual installation with:

```
sudo dpkg -i packetname.deb
```

Sources of missing packages are given in brackets. The order is "bottom-up":

```
libpango1.0-dev
libcairo2-dev
libfontconfig1-dev_2.4.2-1.2asus2_i386.deb (from "http://update.eeepc.asus.com/p701/pool/")
libexpat1-dev_1.95.8-3.4_i386.deb (from "http://update.eeepc.asus.com/p701/pool/")
libfreetype6-dev_2.2.1-5_i386.deb (from "http://update.eeepc.asus.com/p701/pool/")
libfontconfig1_2.4.2-1.2asus2_i386.deb (from „http://update.eeepc.asus.com/p701/pool/")
fontconfig-config_2.4.2-1.2asus2_all.deb - (from "http://update.eeepc.asus.com/p701/pool/")
libxi-dev_1.1.3-1_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libxrandr-dev_1.2.2-1_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libxext-dev
x11proto-randr-dev_1.2.1-2_all.deb (from „http://luna.gui.uva.es/debian/pool/main/")
libxrender-dev
x11proto-render-dev
libxfixes-dev
libx11-dev_1.1.3-1_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libxcb-xlib0-dev_1.1-1_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libxcb1-dev_1.1-1_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libpthread-stubs0-dev_0.1-2_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libpthread-stubs0_0.1-2_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
libxdmcp-dev
libxdmcp6
x11proto-kb-dev
xtrans-dev
x11proto-fixes-dev
x11proto-xext-dev
libxau-dev_1.0.3-2_i386.deb (from "http://luna.gui.uva.es/debian/pool/main/")
x11proto-core-dev
```

Install "Checkinstall"

In order to create a nice Debian package (*.deb file) later on, "checkinstall_1.6.1-5~bpo40+1_i386.deb" may be installed from: (<http://micha.lenk.info/debian/etch-backports/>).

This allows us to "track" installed programs and even uninstall programs later on easily.

Compile gpsd

Download gpsd

Because the available GPS Daemons (below versions 2.37) created some start-up problems, I decided to download and compile gpsd by myself from source. - So download gpsd-2.37 from (<http://gpsd.berlios.de/>).

Install python-dev

In order to solve missing dependencies for compiling of gpsd, "python-dev" and some minor dependent packages need to be installed with Synaptic.

Compile gpsd

Extract gpsd-2.37.tar.gz to a directory and open a terminal in that directory and type:

```
sudo ./configure --prefix=/usr
sudo make
```

Now use checkinstall to create and install a *.deb package (-D Option), instead of just installing the software via "make install". Type:

```
sudo checkinstall -D make install
```

Fine! The result should be an easy-to-install Debian package: gpsd_2.37-2_i386.deb.

Compile Navit

Download Navit

Download Navit from (<http://www.navit-project.org>).

Compile Navit

Extract navit-0.1.0.tar.gz to a directory and open a terminal in that directory and type:

```
sudo ./configure --prefix=/usr
sudo make
```

Now use checkinstall to create and install a *.deb package (-D Option), instead of just installing the software via "make install". Type:

```
sudo checkinstall -D make install
```

Congratulations! The result should be an easy-to-install Debian package as well: navit_0.1.0-6_i386.deb.

First start of Navit

Solve USB GPS receiver issue

If you have a serial USB GPS receiver. This receiver usually needs the pl2303 kernel driver. Unfortunately Xandros 1.6.1 does have an issue of a very "special naming" of the desired kernel module. This prevents the module from being loaded automatically after plugging in the USB GPS receiver.

This can be corrected manually by simply copying the driver in `/lib/modules/2.6.../kernel/drivers/usb/serial/pl2303.ko.huawei` to `/lib/modules/2.6.../kernel/drivers/usb/serial/pl2303.ko`. This must be done as super user. After that the modules can be loaded with:

```
modprobe usbserial
modprobe pl2303
depmod -a
```

Now after typing:

```
dmesg
```

in a terminal you should read about a device which is being attached to `/dev/ttyUSB0`. This will now be done automatically.

Start GPS daemon

Open a terminal and start the GPS daemon with:

```
/usr/sbin/gpsd /dev/ttyUSB0
```

If you are unsure whether the GPS daemon is working you may try:

```
sudo /usr/sbin/gpsd -N -D8 /dev/ttyUSB0
```

This should lead to some coordinate writing followed by a lot of characters and "garbage" in the terminal window. If there is no output at all, deeper analysis of the GPS configuration may become necessary. See documentation of gpsd (<http://gpsd.berlios.de/>)

Start navigation

Open a terminal and start the Navit with:

```
navit
```

If this already works, you may skip the next step.

Solve LOCALE issue

If there is no correct position displayed in Navit (e.g. 05200,0000N 01300,0000E instead of 52,54807N 13,42338E), this may be caused by a wrong LOCALE setting. Watch for the following note in the terminal output:

```
"navit:main_init:Warning: LC_ALL is set, this might lead to problems"
```

If so, this may be corrected by forcing to load the en_US LOCALE settings. Open a terminal by pressing "Ctrl + Alt + T", and start the Navit with:

```
export LC_ALL=en_US.utf8
/usr/bin/navit
```

Congratulations, if that works for you!

Optional: Install Navit from SVN - get the latest and "freshest code"

Install subversion

Install "subversion", "libtool", "automake" and "cvs" with Synaptic.

Download Navit via SVN

Open a terminal and grab the latest SVN code (0.1.0-081209), by typing:

```
svn co https://navit.svn.sourceforge.net/svnroot/navit/trunk/navit/ navit
```

Compile Navit

Move to the newly created directory "navit" and type in a terminal:

```
sudo ./autogen.sh
sudo ./configure --prefix=/usr
sudo make
sudo checkinstall -D make install
```

Congratulations! The result should be an easy-to-install and "very fresh" Debian package: navit_0.1.0-081209_i386.deb.

Install festival for speech output

Install festival

Install "festival" with Synaptic.

Test festival

You may want to test the "text-to-speech" synthesis by typing in a terminal:

```
festival --tts /data/test.txt
```

If you hear the content of the text file (standard is English), then everything will work fine.

Install maps

Just follow the instructions from (http://wiki.navit-project.org/index.php/European_maps)

Modify configuration file "navit.xml"



First step

Create a directory `.navit` in your home folder and copy the file `/usr/share/navit.xml` to `~/.navit`

Home position

If wanted, one may change the start position by changing the coordinates here:

```
<navit center="5233 N 1325 E" zoom="64" tracking="1" cursor="1" orientation="-1"
recent_dest="10">
```

Internal GUI

To use the built-in GUI ("internal") on Eee PC, the following entry may be used:

```
<gui type="internal" font_size="350" icons_xs="60" icon_s="70" icon_l="70" />
```

However, one may also choose `gui type="gtk"`. The `gui type="cegui"` (which includes also 3D) has not been tested (not compiled in).

OSD

The following entries may be used to display useful menu icons:

```
<osd type="button" x="-96" y="-96" command="zoom_in" src="zoom_in.xpm" />
<osd type="button" x="66" y="-96" command="zoom_out" src="zoom_out.xpm" />
<osd type="button" x="-160" y="0" command="gui_internal_fullscreen" src="toggle_
gle_fullscreen.xpm" />
```

Map sources

An essential requirement is to specify the map directory (SD card in my case). Of course this may vary due to different map sources (see above).

```
<mapset enabled="yes">
  <map type="mg" enabled="yes" data="/media/D:/polo/DIRLAN_GER/DEM.map" />
  <map type="mg" enabled="yes" data="/media/D:/polo/DIR-
LAN_GER/DEM.map/smp1.smp" />
  <map type="mg" enabled="yes" data="/media/D:/polo/DIR-
LAN_GER/DEM.map/smp2.smp" />
  <map type="mg" enabled="yes" data="/media/D:/polo/DIR-
LAN_GER/DEM.map/smp3.smp" />
  <map type="mg" enabled="yes" data="/media/D:/polo/DIR-
LAN_GER/DEM.map/smp4.smp" />
  <map type="mg" enabled="yes" data="/media/D:/polo/DIR-
LAN_GER/DEM.map/smp5.smp" />
</mapset>
```

Easy start-up

Start script

Use kwrite to create a small start script, and save under `~/navit-start-0.1-1/usr/bin/navit-start`:

```
#!/bin/sh
# Script to start gps daemon, set locales, and start navit
# Version 0.1-1
# e-mail address
/usr/sbin/gpsd /dev/ttyUSB0;
export LC_ALL=en_US.utf8;
/usr/bin/navit;
exit 0
```

Prepare a debian package

Create debian control file, and save under `~/navit-start-0.1-1/DEBIAN/control`:

```
Package: navit-start
Version: 0.1-1
Section: base
Priority: optional
Architecture: all
Depends: navit (>=0.0.4)
Maintainer: Uwe Fischer <e-mail address>
Description: Start script for navit on Eee PC
```

This script provides a start of the gps daemon, sets the correct locales and starts navit. Navit is a car navigation system with routing engine.

Create debian package by opening a terminal in your home folder and typing:

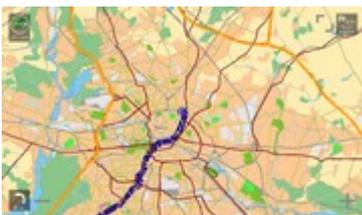
```
find ./navit-start-0.1-1 -type d | xargs chmod 755
dpkg-deb --build navit-start-0.1-1
```

Get an easy mode icon

Just use the Xandros software management tool to install the self-made file `navit-start-0.1-1.deb`.

This will result in a nice new easy mode icon which will now handle the start of the gps daemon, set the correct locales and start navit.

Happy navigation



Now have fun with Navit on Eee PC 901 20G and the "off-the-shelf" Xandros Linux 1.6.1. Of course all hints are given without any warranty or guarantee. So it's on your own risk. But no risk no fun ;-)