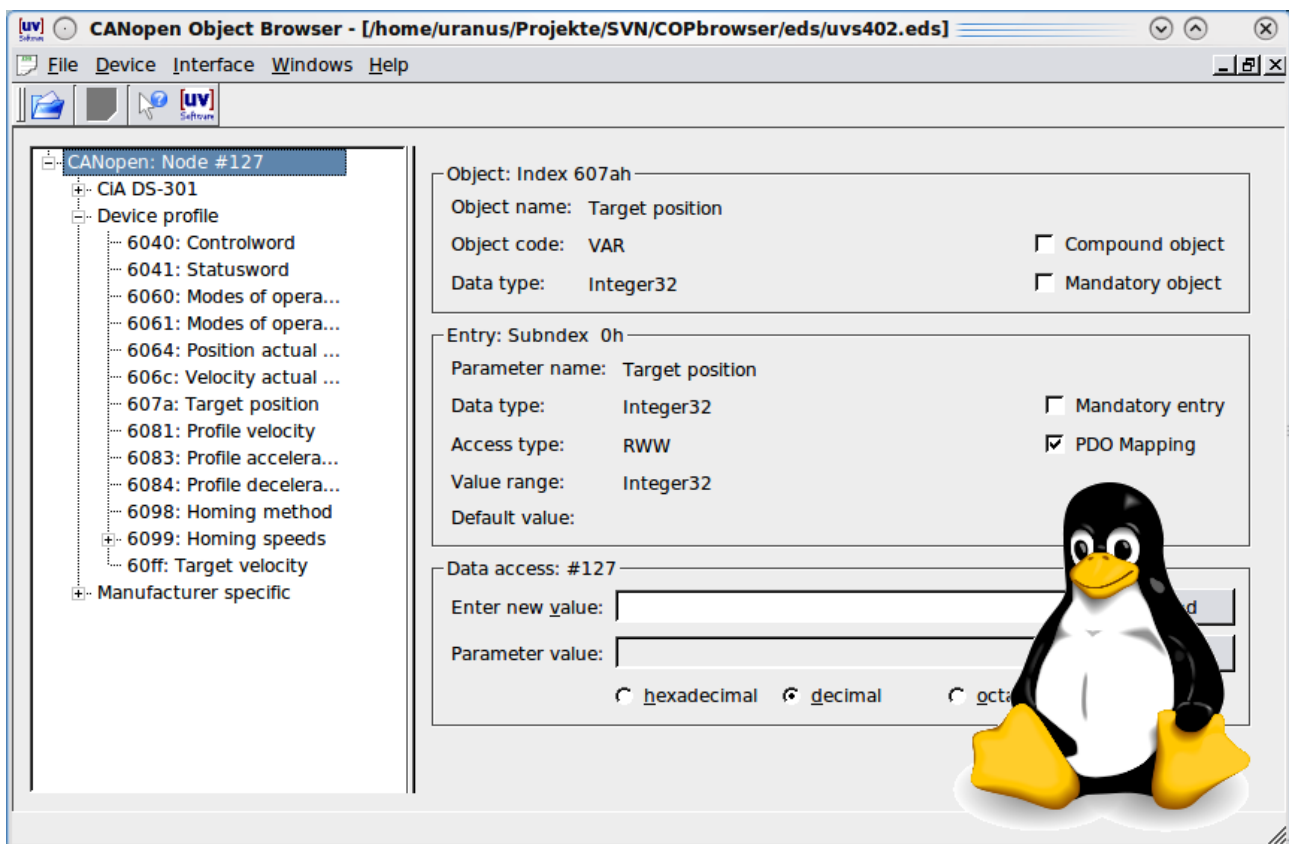


# CANopen Object Browser, Version 0.2

## CANopen Object Browser for Linux

The CANopen Object Browser is a tool to display and browse through a CANopen Object Dictionary based on EDS-Files. The program allows an online access to any connected CANopen device. This means to read and to write individual parameter values of a connected device.



Please note: Do not connect the program to a real application with a running CANopen Master (e.g. on a PLC). This can damage your application.

This software is FREEWARE, without any warranty or support (see End-User License Agree).

# CANopen Object Browser for Linux

## Getting started

### Installation

The **CANopen Object Browser for Linux** application is a Qt3 GUI application (see <http://www.trolltech.com/qt/>) running on Linux systems (Kernel 2.6) and uses BerliOS socketCAN to access the CAN-Bus (see <http://socketcan.berlios.de/>).

*To build / to execute the program make sure to satisfy these system requirements.*

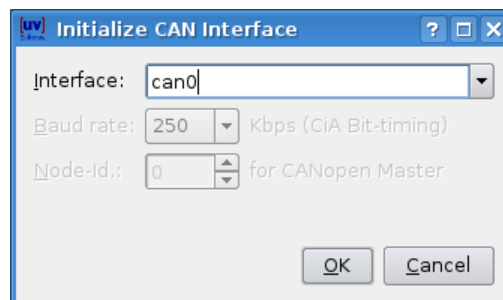
For installation download the tarball **COPbrowser\_linux\_v<version>.tar.gz** and unpack its content to any directory and start compilation and installation:

```
saturn@uv-pc006etch:~$ cd COPbrowser/  
saturn@uv-pc006etch:~/COPbrowser$ make  
saturn@uv-pc006etch:~/COPbrowser$ sudo make install
```

That's all folks.

### First Usage

After starting the program the **Initialize CAN-Interface** dialog box will be displayed to select a CAN interface:



To initialize a CAN interface for usage with this program enter the **Interface** name of the socketCAN device to use. The active socketCAN interfaces can be listed by the command **ifconfig**:

```
root@phyCORE-MPC5200B-tiny:~# ifconfig  
can0    Link encap:UNSPEC HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00  
        inet addr:127.42.23.180  Mask:255.255.255.0  
        UP RUNNING NOARP  MTU:16  Metric:1  
        RX packets:68 errors:0 dropped:0 overruns:0 frame:0  
        TX packets:63 errors:0 dropped:0 overruns:0 carrier:0  
        collisions:0 txqueuelen:10000  
        RX bytes:522 (522.0 B)  TX bytes:504 (504.0 B)  
        Interrupt:145 Base address:0xa900  
  
can1    Link encap:UNSPEC HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00
```

```

inet addr:127.42.23.181 Mask:255.255.255.0
UP RUNNING NOARP MTU:16 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:10000
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
Interrupt:146 Base address:0x2980

eth0    Link encap:Ethernet HWaddr DE:AD:BE:EF:00:05
        inet addr:192.168.3.109 Bcast:192.168.3.255 Mask:255.255.255.0
        UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
        RX packets:4690 errors:0 dropped:0 overruns:0 frame:0
        TX packets:3954 errors:0 dropped:0 overruns:0 carrier:1
        collisions:0 txqueuelen:1000
        RX bytes:4954354 (4.7 MiB) TX bytes:529544 (517.1 KiB)
        Interrupt:133 Base address:0x3000

lo      Link encap:Local Loopback
        inet addr:127.0.0.1 Mask:255.0.0.0
        UP LOOPBACK RUNNING MTU:16436 Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:0
        RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

root@phyCORE-MPC5200B-tiny:~
  
```

It is also possible to connect to a remote CAN interface in your local area network by using the CANopen-over-TCP/IP protocol according CiA specification DS-309/3; e.g the CANopen-over-TCP/IP gateway by UV Software. Simply enter the IP address and port of the remote CAN interface.

Example (UV Software's CANopen-over-TCP/IP gateway):

```

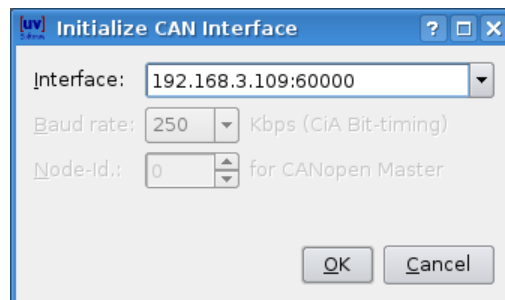
root@phyCORE-MPC5200B-tiny:~ can_open can0 -g 60000 --echo
Interfacing CANopen with TCP/IP acc. DS-309/3: port=60000
Hardware: interface="can0", family=29, type=3, protocol=1
Firmware: berliOS socketCAN (http://socketcan.berlios.de/)
Software: $Id: cop_api.c 18 2009-02-07 14:53:44Z mars $
Copyright (C) 2008-2009 UV Software, Friedrichshafen.
  
```

Press ^C to abort.

```

[1] info hardware
[1] "interface="can0", family=29, type=3, protocol=1"
[2] info software
[2] "$Id: cop_api.c 18 2009-02-07 14:53:44Z mars $"
[3] 127 read 0x1000 0x0 u32
[3] 0x20192
  
```

Then enter the IP address and port as shown:



After the CAN interface has been successfully initialized your selection will be

stored and can be picked from the dropdown list in the **Initialize CAN-Interface** dialog box.

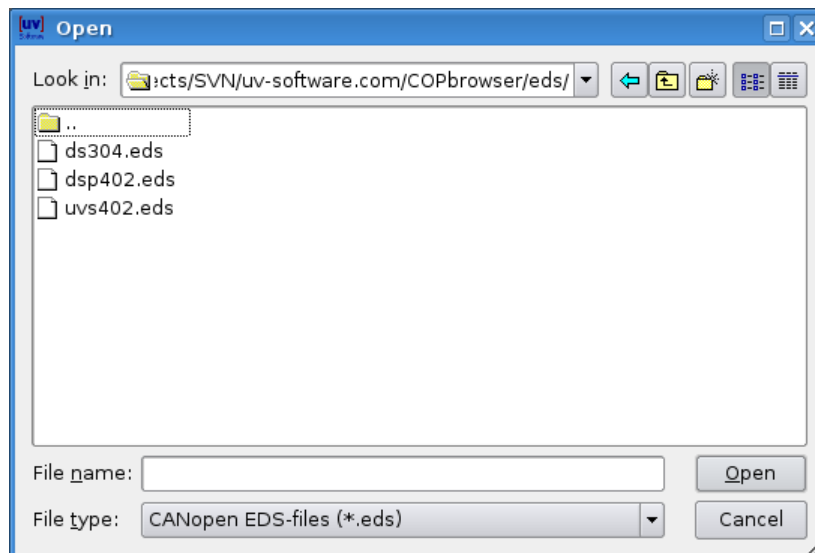
Now it is time to open the object dictionary of your present CANopen device and to connect to it.

### Open command (File menu)

Use the **Open** command from the **File** menu to open an object dictionary of a CANopen device from an EDS-file. An EDS-file is a formal description of a CANopen device according to CiA specification DSP-306: *Electronic Data Sheet Specification for CANopen*.

### File Open dialog box

Use the **File Open** dialog box to select an EDS-file. You can also use the most recent file list from the **File** menu to open an object dictionary of a CANopen device.

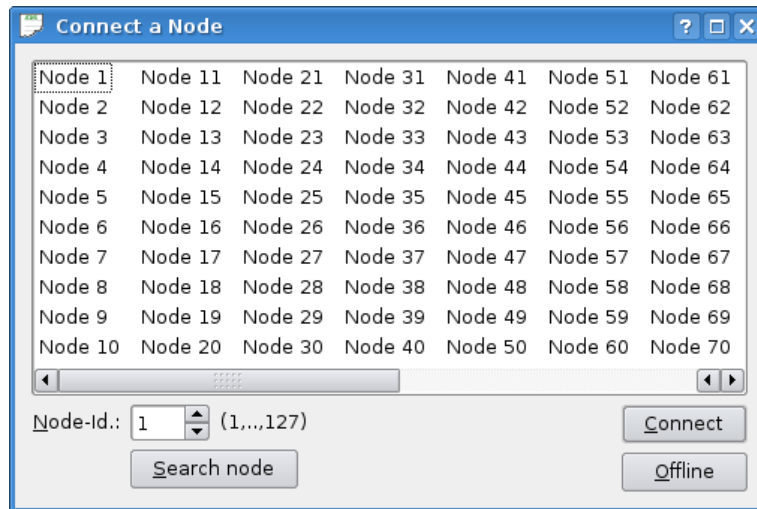


Select the desired file and press the **Open** button.

### Connect a Node dialog box

To have an “online” access to the parameters of the object dictionary you have to connect a CANopen device.

Make sure that the CAN cable is connected to your CAN-Interface board and power is supplied to your CANopen device. See the device manual for details.



Enter the node number of your device and press the **Connect** button. If you press the **Offline** button the object dictionary will be loaded in “off-line” mode. In this case data access to the parameters is not possible.

If you do not know the Node-Id. of your CANopen device you can let the program search for it by pressing the **Search Node** button. To use this function there should be only one “unconnected” node in the network.

Note: Your device must run with the same baud rate as the CAN-Interface board.

### **CANopen Object Dictionary**

See topic **Object Dictionary** window form the online help function for how to work with a CANopen object dictionary.

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Feel free to use. And send patches.

Have a lot of fun,  
- Uwe Vogt

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