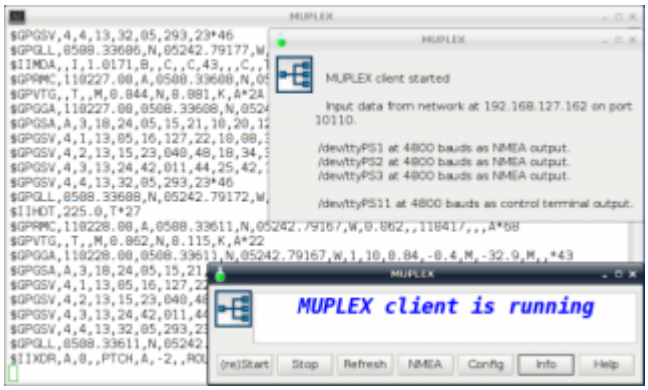
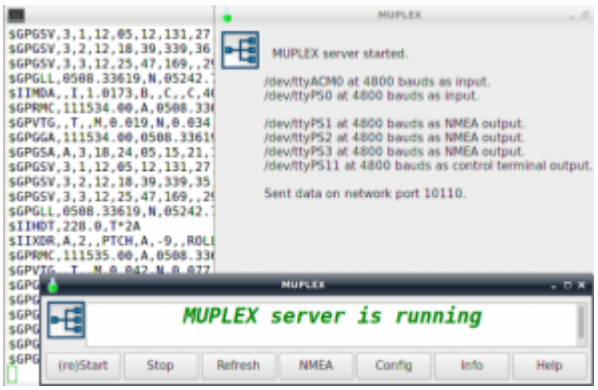
NMEA

NMEA Input/Output/Multiplexing

Linux / OS X

- **kplex** : Open source (GPLv3) software NMEA 0183 multiplexer for Linux, OS X and FreeBSD. Handles serial, pty, TCP/IPv4, TCP/IPv6, IPv4/IPv6 UDP multicast, IPv4 broadcast UDP and file inputs and outputs and performs optional sentence filtering, checksumming and data source prioritisation/failover.
- **MUPLEX**Open source under GPL, a Linux soft multiplexer that can mix different input flows of real or emulate serial (USB, bluetooth) NMEA datas and share it between multiple applications, creating virtual serial port and TCP/IP local loop or network, as VSPE for windows.



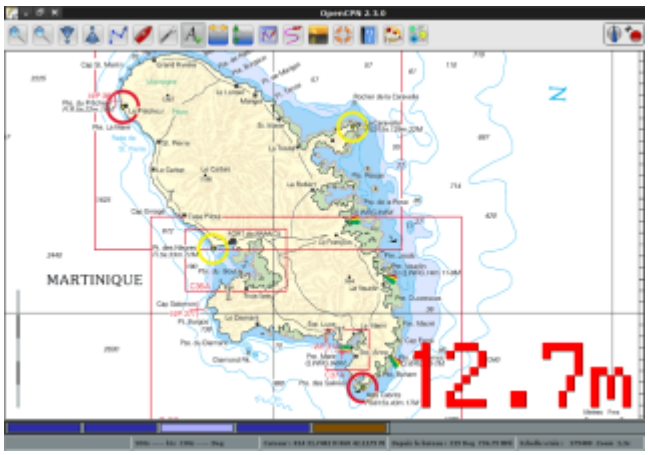


Windows

- **AIS/NMEA Router and Decoder by Neal Arundale**: Routes AIS and other NMEA sentences between Serial, UDP, TCP, USB, Internet, Log files, TTY Display, and TTY Display Windows. Free Windows program. AIS Guides. Website with detailed AIS information. PDF showing operation with Opencpn. AIS Decoding webpage
- **VSPE**: Closed source freeware, windows only, **Virtual Serial Port Emulator** enables you to use data from one serialport (such as GPS or NMEA data) simultaneously with several programs. You can run PolarCom, NavMonPC, OpenCPN and other navigation programs at the same time without COMport conflict.
- **GeolocationTCP**: The sole purpose of this program is to fill a gap for Windows 8 users unable to use OpenCPN with the internal GNSS sensor. The program creates a server which serves NMEA location information based on the status of GNSS sensor. OS/Hardware required: Windows 8 with GNSS sensor. For program download, installation, startup and Opencpn connection instructions, see https://bitbucket.org/petrsimon/geol...ntcp/wiki/Home
- **NMEA MTK checksum calculator:** http://www.hhhh.org/wiml/proj/nmeaxor.html

NMEA virtual instrumentation

- **NavMonPC** : Closed source, windows only, but reportedly excellent gauges for wind instruments, GPS, AIS display, anchor alarm, etc.
- **PolarCOM**: Closed source, windows, linux, mac; visually appealing gauges for wind instruments, GPS, anchor alarm, etc.
- **CapCode**: Free software, Java-based navigation programme with sailing/regatta focus, supports wind instruments, polars, VMG etc.
- **Matrix Mariner GPS**: Free software, Windows and Linux, visually appealing GPS display, some features for GPS handling including live gps output to Google Earth. (Windows version includes VSPE kernel mode virtual serial driver).
- **gpsview**:Tool for analyse NMEA textual data, allows to load NMEA log files and view data in table, graph and track forms.
- **OSD_Depth**: Open source under GPL, a Linux echo-sounder repeater which uses the OSD technique (On Screen Display, always on top of all applications, using big digits) to display the water depth from NMEA sentences 'DBT' or 'DPT' in meters, feet, or fathoms.



Nmea Server for Tests

Nmea Server using Python Script & Launcher_pi

Contributed by Transmitter Dan, reported by R. Gleason

From the Command Line - Once everything is set up:

from command prompt cd C:/python27
Command: > python VDRServer1.py Hakefjord-Sweden.txt 127.0.0.1 2947 .033
Command: > python VDRServer1.py Hartmut-Netherlands.txt 127.0.0.1 2947 .033

Another way to start the Nmea server is to define all the paths to the various files so you don't have to change directory to C:\python\. This example has the Nmea files under C:\Data-Dart\Nmea\ for example:
Command: > c:\python27\python c:\python27\VDRServer1.py C:\Data-Dart\Nmea\Hakefjord-Sweden.txt 127.0.0.1 2947 .033
Command: > c:\python27\python c:\python27\VDRServer1.py C:\Data-Dart\Nmea\Hartmut-Netherlands.txt 127.0.0.1 2947 .033

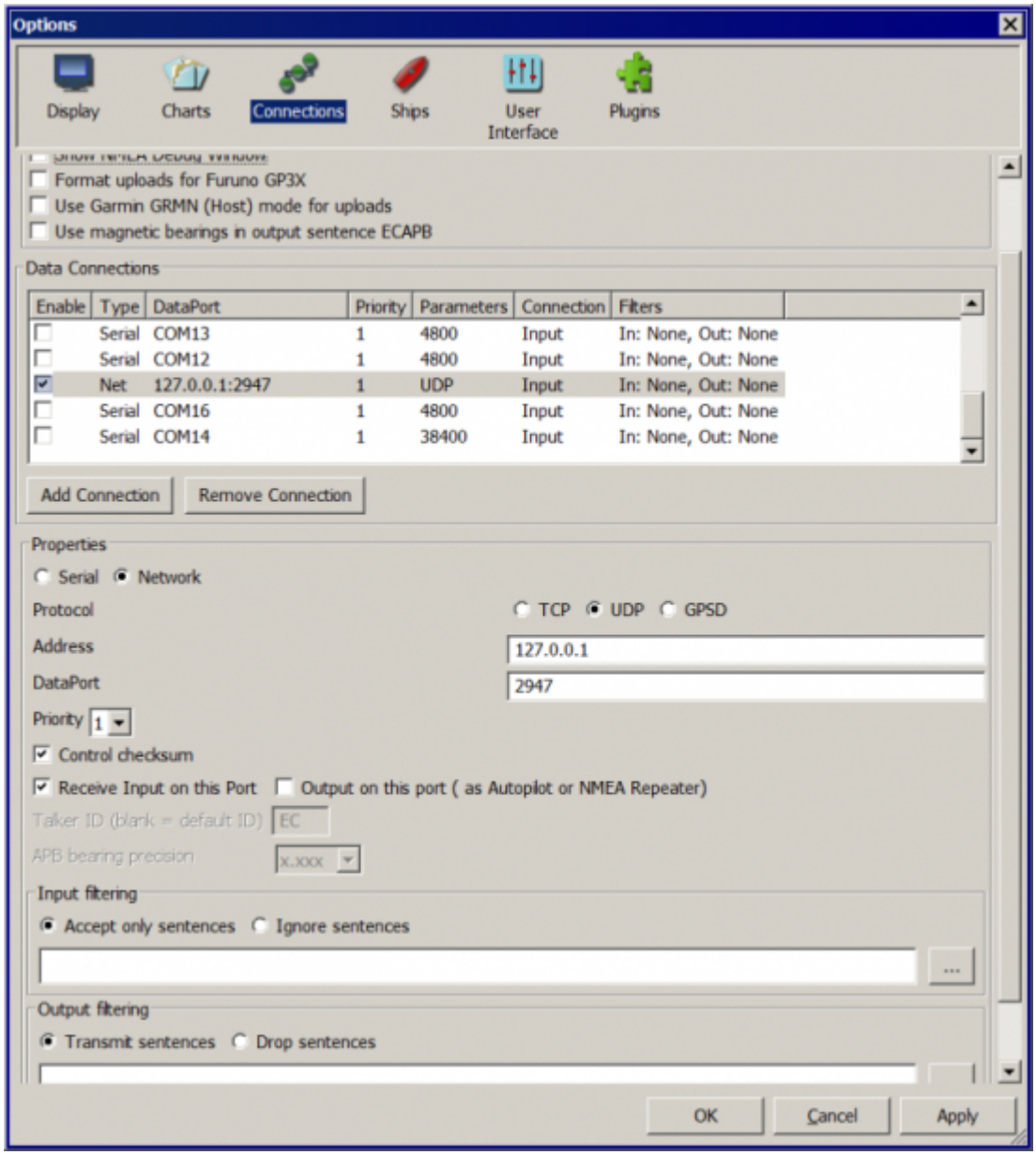
Download Attached Files

Nmea-Server-Python-Script-README.txt
VDRServer1.py
Hakefjord.txt
Hartmut-Netherlands.txt
These are available at
https://github.com/transmitterdan/VDRplayer
Opencpn Beta File Thingie (Please login with username=rguser, password=rgpass)
Download from the Nmea-Server folder. PLEASE Remove ".TXT" from VDRServer1.py.TXT

Install and Setup:

1. Download and install Python27 Python is a platform independent scripting language interpreter.
2. You can Download Python for Windows here: https://www.python.org/downloads/ "Download Python 2.7.10
3. Execute the python-2-7-10.msi file and install to c:\python27 by default, it will require 95 mb.
4. Copy the file "VDRServer1.py" file into c:\python27
5. Copy the NMEA file Hakefjord-Sweden.txt into into c:\python27
6. Copy the NMEA file Harmut-Netherlands.txt into c:\python27
7. Open a command prompt Start > Run > enter CMD at the prompt type "CD C:\python27"
8. Then enter either command:
Command: python VDRServer1.py Hakefjord-Sweden.txt 127.0.0.1 2947 .033
Command: python VDRServer1.py Harmut-Netherlands.txt 127.0.0.1 2947 .033
9. Leave the command prompt window open to keep the Pyton Server program running.
10. In Opencpn, set up a communications channel for network UDP. This is what the setup screen in O looks like for Windows: In Opencpn Options > Connections > Add connection

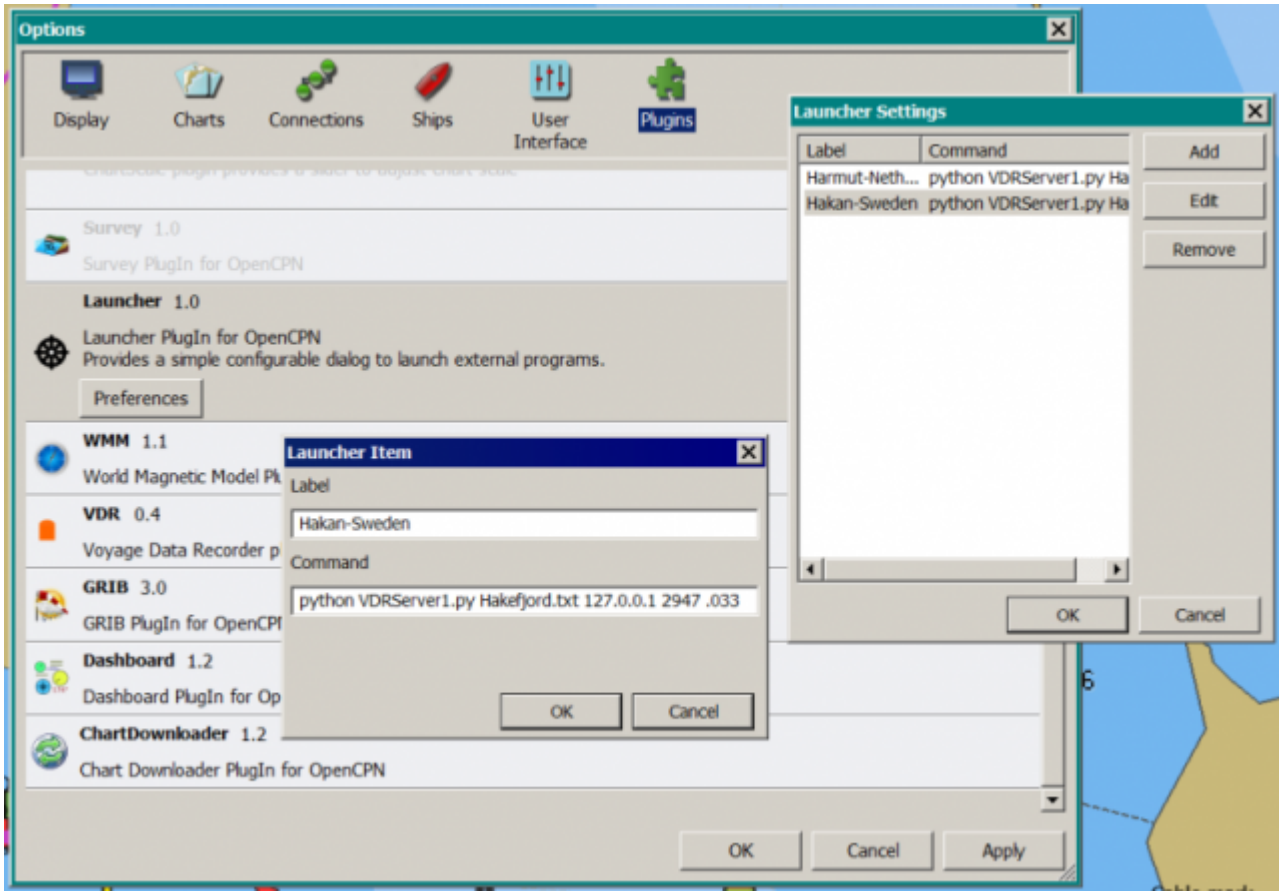
```
Connection Type: Network\\
Protocol: UDP\\
Address: 127.0.0.1\\
Dataport: 2947\\
Priority: 1\\
Control Checksum checked\\
Receive Input checked\\
Output on this port not checked\\
Input Filtering:  Sentences only button\\
```



11. Now you should see the Nmea data being run in Sweden or Netherlands
12. See TransmitterDan's Python script “VDRServer1.py”, which is also below.

Using Launcher_pi to make it easy

If you want to make this even easier, you can download the Launcher_pi plugin and install it. Then under Options > Plugins > Launcher, Enable the plugin.

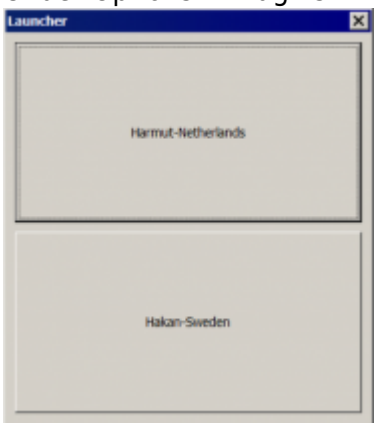


Then use Launcher > Preferences to make appropriate entries to run various nmea files for testing, eg:

Name : Haken-Sweden
Command: c:\python27\python c:\python27\VDRServer1.py C:\Data-Dart\Nmea\Hakefjord-Sweden.txt 127.0.0.1 2947 .033

Name: Hartmut-Netherlands
Command: c:\python27\python c:\python27\VDRServer1.py C:\Data-Dart\Nmea\Hartmut-Netherlands.txt 127.0.0.1 2947 .033

Under Options > Plugins hit Apply, Ok and then in the main Opencpn screen bring up the Launcher menu.



You should see Hakefjord-Sweden and Hartmut-Netherlands to select. Try one of them. Don't close the command prompt or the nmea file will stop running. Now go setup Opencpn > Options > Connections as

in item #10 above.

OpenCPN Connections should have a NET Connection for:

Type: Net **Dataport:** 127.0.0.1 2947 .033 **Parameters:** UDP **Connection:** In/out **Filters:** none

VDRServer1.py

==========

```
import socket
import sys
import time

if len(sys.argv) < 4:
print(“USAGE:”)
print(”[python] VDRServer1.py InputFile IP_Address Port# [Sleep time]“)
print(“Sleep time is the delay in seconds between UDP messages sent.”)
print(“Sleep time defaults to 0.1 seconds”)
sys.exit()

UDP_IP = sys.argv[2]
UDP_PORT = int(sys.argv[3])
filename = sys.argv[1]

if len(sys.argv) > 4:
delay = float(sys.argv[4])
else:
delay = 0.1

print(['UDP target IP:', UDP_IP])
print(['UDP target port:', str(UDP_PORT)])

sock = socket.socket(socket.AF_INET, # Internet
socket.SOCK_DGRAM) # UDP
f = open(filename, 'r')

while True :
mess = f.readline()
if len(mess) < 1:
f.close()
sys.exit()
```

```
# print(mess)
mess = mess.strip()
sock.sendto(mess.encode(“utf-8”),(UDP_IP, UDP_PORT))
time.sleep(delay)
```