

P25Reflector Installation Script

Saturday, August 10, 2024

install.sh captured while running on a DEBIAN 12 bookworm Rpi 4.

BEGIN CAPTURE

```
root@w4noc3x:/tmp# bash install.sh
```

Checking prerequisites. Packages build-essentials and git must already be installed.

Package git is installed!

Package build-essential is installed!

Cloning repository from github

Cloning into 'DVReflectors'...

remote: Enumerating objects: 91, done.

remote: Counting objects: 100% (11/11), done.

remote: Compressing objects: 100% (6/6), done.

remote: Total 91 (delta 6), reused 5 (delta 5), pack-reused 80

Receiving objects: 100% (91/91), 1.02 MiB | 979.00 KiB/s, done.

Resolving deltas: 100% (44/44), done.

compiling

```
rm -f P25Reflector *.o *.d *.bak *~
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Conf.o Conf.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o DMRLookup.o DMRLookup.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Log.o Log.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Mutex.o Mutex.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Network.o Network.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o P25Reflector.o P25Reflector.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o StopWatch.o StopWatch.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Thread.o Thread.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Timer.o Timer.cpp
```

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o UDPSocket.o UDPSocket.cpp
```

P25Reflector Installation Script

```
c++ -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -c -o Utils.o Utils.cpp
c++ Conf.o DMRLookup.o Log.o Mutex.o Network.o P25Reflector.o StopWatch.o Thread.o Timer.o UDPSocket.o Utils.o -g -O3 -Wall -DHAVE_LOG_H -DUDP_SOCKET_MAX=2 -std=c++0x -pthread -lpthread -o P25Reflector
```

Creating path for application, ini, log, and DMRIds.dat

The next 4 lines may fail if dvswitch-server is already installed since the path exists. Not a problem.

Copying ini-file to /opt/P25Reflector

The next two lines may fail if group mmdvm already exists. It's not a problem.

groupadd: group 'mmdvm' already exists

useradd: user 'mmdvm' already exists

READ THESE MESSAGES ABOUT editing the ini and ensuring the DMRIds.dat is present.

echo Verify /opt/P25Reflector.ini is present and edit Daemon=0,

echo Name=/var/lib/mmdvm/DMRIds.dat, FilePath=/var/log/mmdvm, and Port.

echo Verify /var/log/mmdvm/DMRIds.dat is present.

Then you can start your reflector with

sudo /etc/init.d/P25Reflector.sh start

OR, install a service unit 'p25reflector.service' under /lib/systemd/system

and control with systemctl start|stop|status|enable|disable p25reflector

If you use systemctl, rm /etc/init.d/P25Reflector.sh

That's all.. W4NOC

END OF CAPTURE

P25Reflector Installation Script

IF you are not going to run /etc/init.d/P25Reflectgor.sh, then remove or rename that file and run as a service unit. Create this file in /lib/systemd/system by copying and pasting this into your editor (I'm not using netcheck):
'p25reflector.service'

```
[Unit]
Description=P25 Reflector Service
# Description=Place this file in /lib/systemd/system
# Comment the next 2 lines if you are not using netcheck.
#After=netcheck.service
#Requires=netcheck.service

[Service]
Type=simple
Restart=on-failure
RestartPreventExitStatus=SEGV
RestartSec=3
StandardOutput=null
WorkingDirectory=/opt/P25Reflector
ExecStartPre = /bin/sh -c 'echo "Starting P25Reflector: [`date +%T.%3N`]" >> /var/log/netcheck'
ExecStart=/opt/P25Reflector/P25Reflector /opt/P25Reflector/P25Reflector.ini
ExecReload=/bin/kill -HUP $MAINPID
KillMode=process

[Install]
WantedBy=multi-user.target
```

To 'start, stop, restart or get status' use these commands: systemctl start(stop, status, restart) p25reflector
To have it run automatically, systemctl enable p25reflector

P25Reflector Installation Script

**Example of my /opt/P25Reflector/P25Reflector.ini
EDITED after running the install.sh**

[General]

Daemon=0

[Id Lookup]

Name=/var/lib/mmdvm/DMRIds.dat

Time=24

[Log]

Logging levels, 0=No logging

DisplayLevel=1

FileLevel=1

FilePath=/var/log/mmdvm

FileRoot=P25Reflector

FileRotate=1

[Network]

Port=41000

Debug=0

P25Reflector Installation Script

Don't forget to you need a DMRIds.dat lookup location. In the ini above we put it here. But you can name or store the file elsewhere and specify it in the ini file.

```
# ls -l /var/lib/mmdvm  
total 5660  
-rw-r--r-- 1 root root 5795719 Aug 10 14:02 DMRIds.dat
```

P25Reflector Installation Script

Checking to see if it's running with netstat -unap:

```
# netstat -unap
```

Active Internet connections (servers and established)

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State	PID/Program name
udp	0	0	0.0.0.0:5353	0.0.0.0:*		538/avahi-daemon: r
udp	0	0	127.0.0.1:32001	0.0.0.0:*		2541/asterisk
udp	0	0	0.0.0.0:35213	0.0.0.0:*		538/avahi-daemon: r
udp	0	0	0.0.0.0:4569	0.0.0.0:*		2541/asterisk
udp	0	0	0.0.0.0:41000	0.0.0.0:*		117257/P25Reflector
udp	0	0	192.168.0.234:68	192.168.0.1:67	ESTABLISHED	691/NetworkManager
udp6	0	0	:::5353	:::*		538/avahi-daemon: r
udp6	0	0	fe80::4e4d:97ea:911:546	:::*		691/NetworkManager
udp6	0	0	:::45784	:::*		538/avahi-daemon: r

Check to see the process and PID associated with the p25reflector.service:

```
# ps -ax
```

```
117257 ?      Ssl  0:03 /opt/P25Reflector/P25Reflector /opt/P25Reflector/P25Reflector.ini
```

Your log is under /var/log/mmdvm as specified in P25Reflector.ini. Log rotation and management of logs is outside the scope of my script. It can consume a lot of space if you don't watch it.

```
/var/log/mmdvm# ls -l
```

```
total 4
```

```
-rw-r--r-- 1 root root 639 Aug 10 14:17 P25Reflector-2024-08-10.log
```