Online installation using Debian Linux

The G4KLX AnalogueRepeater package provides software for analogue repeaters for amateur radio.

The G4KLX AnalogueRepeater is available for Windows and Linux systems.
Source code is available from the SVN BerliOS (www.berlios.de , project “opendv”)

Beta versions are available in the files section of the Yahoo Group “PCRepeaterController”
http://groups.yahoo.com/group/PCRepeaterController

The Windows version is provided as a self installing executable, the Linux version is available in form of source code for self compilation and installation, CentOS and Debian packages for different hardware platforms.

A comfortable way to install the AnalogueRepeater software on Linux systems is to use package managers like YUM and APT for full automated online installation and updates.
You do not need any development tools, no additional libraries have to be searched and installed manually, no compilation of source code, no experience with development work, neither resources on your Linux system, nor a special development system.

This manual describes the package installation of the AnalogueRepeater on a Debian system.
Debian packages of the G4KLX Repeater are available for amd64 (PC 64bit), i386 (PC 32bit) and for ARM based platforms like RaspberryPi (armhf Raspbian), DVRPTR-Net (armel/amrhf Debian) and UDR56K.

Debian Linux is available from http://www.debian.org/

Step 1: Adding the openDV repository server

At first you have to run **one** of the following commands on your repeater system once.
There are 2 different platform options and 2 different network options.
Please select carefully what you need!
If you accidently chose the wrong command, execute the other, it will overwrite the former entry.

If your repeater has full internet access and you need standard Debian packages for one of the following platforms:

- amd64 (PCs running 64bit Debian Linux)
- i386 (PCs running 32bit Debian Linux)
- armel (ARM-based devices running Debian/armel (soft fpu))
- armhf (ARM-based devices running Debian/armhf (hard fpu))

execute this command at the command prompt:

```
# sudo curl ftp://141.75.245.226:8021/debian/opendv.list -o /etc/apt/sources.list.d/opendv.list
```

If your repeater has full internet access and you need special Raspbian packages:

- armhf (ARM-based devices running Raspbian/armhf (hard fpu))

execute this command at the command prompt:

```
# sudo curl ftp://141.75.245.226:8021/raspbian/opendv.list -o /etc/apt/sources.list.d/opendv.list
```

Take care that you copy the complete line to your system and execute it!

This command copies a configuration file with information about the repository servers to your apm sources directory.
You will not need to execute this command again later for any updates.

After that download the public gpg key which is needed to verify the packages, and add it to the apt-keys:

```
# cd /tmp
# wget ftp://141.75.245.226:8021/debian/dl5di.pk
# sudo apt-key add dl5di.pk
```

Important note:

The following page is for special applications where the repeater is located in the closed amateur radio amprnet / hamnet (44/8), like we have it in Europe at some places.
There is a special repository server on that closed network for installation and updates.
This server is not available from the internet!

Skip this page if you have configured internet access before!
In case that you want to change your choice, execute the correct command, it will overwrite the former setting.

If your repeater has access to the closed amprnet / hamnet (44/8) and you need standard Debian packages for one of the following platforms:

- amd64 (PCs running 64bit Debian Linux)
- i386 (PCs running 32bit Debian Linux)
- armel (ARM-based devices running Debian/armel (soft fpu))
- armhf (ARM-based devices running Debian/armhf (hard fpu))

execute this command at the command prompt:

```
# sudo curl http://44.225.73.2/dl5di-soft/repositories/debian/opendv.list -o /etc/apt/sources.list.d/opendv.list
```

If your repeater has access to the closed amprnet / hamnet (44/8) and you need special Raspbian packages:

- armhf (ARM-based devices running Raspbian/armhf (hard fpu))

execute this command at the command prompt:

```
# sudo curl http://44.225.73.2/dl5di-soft/repositories/raspbian/opendv.list -o /etc/apt/sources.list.d/opendv.list
```

Take care that you copy the complete line to your system and execute it!

This command copies a configuration file with information about the repository servers to your apm sources directory. You will not need to execute this command again later for any updates.

If you accidently chose the wrong command run the other, it will overwrite the former entry.

After that download the public gpg key which is needed to verify the packages, and add it to the apt-keys:

```
# cd /tmp
# wget http://44.225.73.2/pub/dl5di-soft/repositories/debian/dl5di.pk
# sudo apt-key add dl5di.pk
```

Step2: Update the catalogues

```
# sudo apt-get update
```

Please note that you need to enter this command each time when you start to work with apt-get to load the latest catalogues to your system.

Step 3: Install the AnalogueRepeater package

The installation command is

```
# sudo apt-get install analoguerepeater
```

Say “yes” to install the software, its’ dependencies and probably some other package updates.

Step 4: Configure the AnalogueRepeater

There is no **text-based configuration tool** available yet like it is provided with the D-StarRepeater and ircDDBGateway.

You need to configure the AnalogueRepeater in the graphic mode of the software and set the preferences from the menu

4.1 Configuration in text mode:

… not yet available, may follow later.

4.2 Configuration in GUI mode:

You might configure the AnalogueRepeater in GUI mode using an X session on the Linux PC or from remote using openVNC or MS Remote-Console.

If your system is not configured with English LOCALE settings I would recommend to use a start script which sets the LOCALE correct to “en_US.UTF-8”.
This makes sure that the numeric locale settings will be set correct.

The repeater package provides such startscripts, use “analoguerepeater.sh” start your GUI screens.

After the configuration has been finished and the system runs properly use EXIT in the File menu to stop and leave the software.

Step 5: Start the AnalogueRepeater in daemon mode

You may start the daemon with the commands:

```
# sudo /etc/init.d/analoguerepeater start
```

Step 6: Configure the autostart features of the G4KLX AnalogueRepeater

Use this command to activate the startscript:

```
/usr/sbin/update-rc.d analoguerepeater defaults
```

Using the start-/stopscript will automatically activate and deactivate a watchdog controlled by cron, which makes sure, that the software is restarted if it should break for whatever reason.
Please find more information in the manual for the AnalogueRepeater.

Step 7: Test startup capability

I everything works fine reboot your PC and check if all components come up properly.

Step 8: Update the AnalogueRepeater package

Later updates will be installed as usual by

```
# sudo apt-get update
```

```
# sudo apt-get upgrade analoguerepeater
```

or during a normal apt-get system updates.

The update process will automatically stop the analoguerepeater, install the update and restart it if the start-scripts are configured for autostart.
On ARM based systems - which usually have no hardware clock - the script will also start ntpdate to set the actual date and time. It has to stop and restart ntpd for that.

It would be wise to check the configuration for possible changes and new options after each update.
You can start the AnalogueRepeater in GUI mode again.
Don't forget to stop the daemon before you start the GUI version!

In case of an issue you may easily step back to the version which was installed before:

```
# sudo apt-get downgrade analoguerepeater
```

Please find more information on the apt-get features in the manpage or on the internet.

73 Hans, DL5DI

APPENDIX 1:

Path-structure of your Debian installation

The Debian installation uses a different path structure than the YUM/CentOS installation or the installation from source.
One basic reason is, that the installation runs as non-root and non-root accounts are not allowed to write to config files in the /etc tree.

`/etc/apt/sources.lists.d/opendv.list`	Repository server list
`/etc/default/analoguerepeater`	start options of analoguerepeater
`/etc/init.d/analoguerepeater`	startup file for the analoguerepeater
`/home/opendv/repeater/analoguerepeater`	configurationfile
`/usr/bin/analoguerepeater`	analoguerepeater executable
`/usr/bin/analoguerepeaterd`	analoguerepeaterd executable (daemon)

and some more

APPENDIX 2:

Start-Process / places where to place options manually :

During startup the init-process starts "/etc/init.d/analoguerepeater" with the option "start".

This startscript is part of the distribution and should not be changed manually!

It loads parameters from the file /etc/default/analoguerepeater which may be adjusted to meet the local needs.

The content of this file looks like this:

```
# Defaults for analoguerepeater initscript
# sourced by /etc/init.d/analoguerepeater
# installed at /etc/default/analoguerepeater by the maintainer scripts
#
DAEMON_PATH=/usr/bin/analoguerepeaterd
DAEMON_ARGS="-daemon -logdir /var/log"
DAEMON_USER=opendv
```

- DAEMON specifies which executable program should be started.
- DAEMON_ARGS may also include the parameters "-nolog" and "-logdir".
  Please find more details about possible command line parameters in the general Repeater manual:
  http://groups.yahoo.com/group/PCRepeaterController/files/Documentation/
- DAEMON_USER specifies the user account which will be used to run the executable.
  Do not change the entry unless you exactly know what you do!
  Wrong permissions may break the functionality of the software.