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SPECT-DM Installation Instructions for Xubuntu

Version v1.0

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Contents

Purpose 4
Pre-requisites 5
Machine Setup 6
Install Qt libraries 6
Local network setup 7
Installing and starting the SPECT-DM test software 9

Purpose

This document has been created to guide the user through the process of setting up an Xubuntu machine for communication with the SPECT-DM device via the SPECT-DM test software.

Pre-requisites

Prior to following the installation instructions below please ensure that you have the Synaptic Package Manager installed. This should be under *System* when clicking the whisker menu (shown below)

If you don't have this installed then follow the steps below to download it:

1) Launch a terminal
2) Issue the following:

```
sudo apt-get install synaptic
```

After completing these steps you should have the Synaptic Package Manager under *System.*

Machine Setup

Install Qt libraries

The SPECT-DM software uses some Qt libraries, follow the steps below to download these libraries:

1) Launch the Synaptic Package Manager
2) Search for and mark the following for installation:

```
libqt5widgets5
libqt5network5
qttools5-dev-tools
```

3) Click *Apply* and accept any message boxes that pop up.

The SPECT-DM test software uses Qt Assistant to display the help for the program. The test software requires an environment variable to tell it where to find the Assistant program, to locate your Assistant program, follow the steps below:

1) Find `qttools5-dev-tools` in the Synaptic Package Manager
2) Right-click this and click *Properties*
3) On the *Installed Files* tab find *assistant*
4) Add the following environment variable to your preferred location e.g. the .profile file in /home/your_username

   ```
   export QT_DIR=/path/to/assistant
   ```

   Warning: Don't add the *assistant* filename to this path, QT_DIR should only be the path to the file.

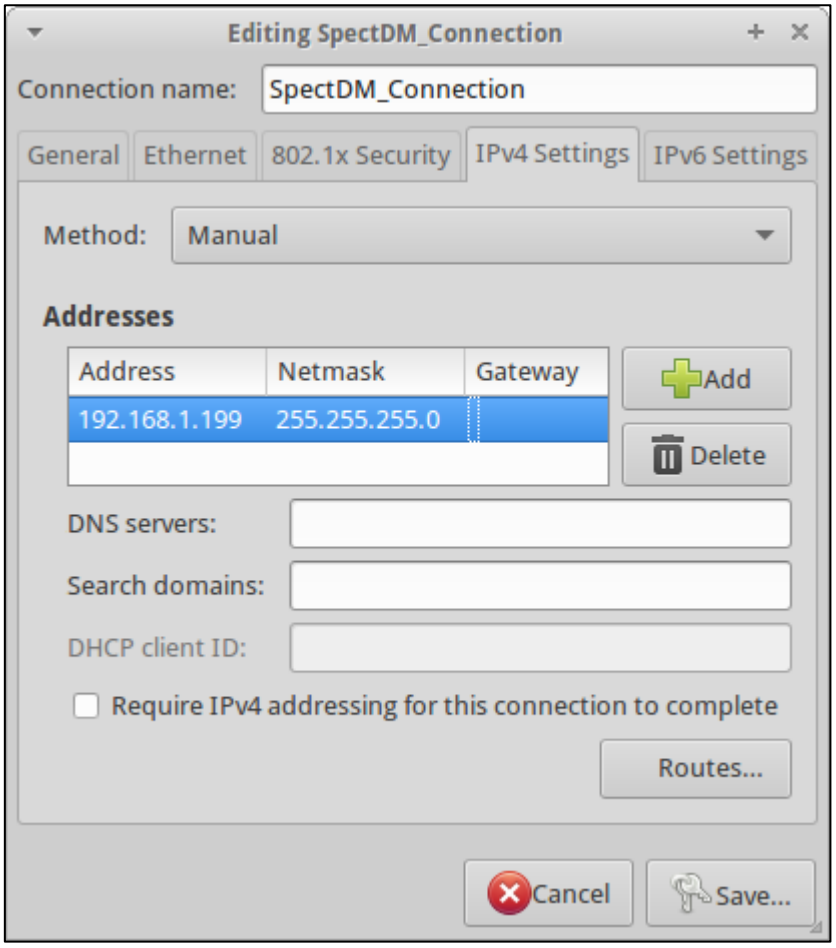
5) Save the file and restart your system to allow the change to take effect.

Local network setup

Switch on the SPECT-DM device and connect it to your machine using a network cable. You have now created a new local network and will need to setup an IP address for your machine, follow the steps below to do this:

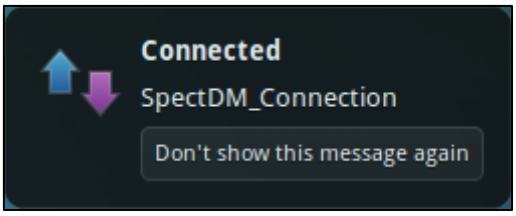
1) In the top right-hand corner of your screen, click on the network manager icon. This will be a loading wheel symbol or two grey arrows:

2) Click *Edit*.
3) Click *Add*.
4) Select *Ethernet* and then *Create…*
5) Give the connection a name and then select the *IPv4 Settings* tab.
6) From this tab select *Manual* from the Method combo box.
7) Click *Add* and enter an address like the following:



Note: The IP address doesn't have to be 192.168.1.199, the netmask of 255.255.255.0 allows the last octet, 199, to be changed. It may be that you have the SPECT-DM attached to a small network in which case just ensure that the IP address of your machine doesn't conflict with another machine on the network or the SPECT-DM device, which is 192.168.1.100.

8) Click *Save…*
9) The following should pop up in the top right-hand corner of your screen:



Installing and starting the SPECT-DM test software

1) From a terminal window, navigate to the directory containing the SPECT-DM software installer and issue the following command:

   ```
   chmod +x SpectDMInstaller
   ```

2) Issue the following in the terminal:

   ```
   sudo ./SpectDMInstaller
   ```

3) The setup wizard should pop up, click *Next>*
4) Select a directory to install the SPECT-DM software to.
5) Follow the rest of the wizard through to the end and then click *Install.*
6) After the installation, navigate to the installation directory in the terminal and issue the following command to start the demo application:

   ```
   ./SpectDMTestApp.sh
   ```

   Note: It is important that you run the .sh file here as opposed to the executable as the script adds the current directory to the LD_LIBRARY_PATH variable before starting the executable to ensure the libraries in the directory are found by the executable.

7) The demo app should now be displayed.

   Enter the IP address you configured earlier for the *Host PC IP,* overwriting the default value.

   The *Camera IP* should be left as 192.168.1.100.

8) Click *Connect* and the other tabs will become available.