

Installation of DXSpider on a Raspberry Pi - v1.12

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System Initialization

Installation and configuration of the Raspbian OS on your Raspberry Pi can be found at <http://www.raspbian.org/RaspbianInstaller>

Begin DXSpider Installation

1. Begin by installing a few tools

```
$ sudo apt-get install mc
```

- mc is a good navigational tool with editor

```
$ sudo apt-get install wget
```

- wget is a good tool for downloading files off the Web
- wget may already be installed on some versions of Raspbian

```
$ sudo apt-get install git-core
```

- git is the tool to retrieve DXSpider and future updates

2. Setup system to install DXSpider

```
$ sudo groupadd spider  
$ sudo useradd -m sysop -G spider  
$ sudo usermod -g spider sysop
```

- follow the instructions to set the full name and password
- if you are not prompted for a password enter the following and add a password:

```
$ sudo passwd sysop  
$ sudo adduser sysop sudo
```

```
$ sudo hostname n6ws-pi
```

- any hostname will do

3. Begin downloading perl libraries.

```
$ sudo apt-get install libtimedate-perl  
$ sudo apt-get install libnet-telnet-perl  
$ sudo apt-get install libcurses-perl  
$ sudo apt-get install libdigest-sha1-perl  
$ sudo apt-get install libdata-dumper-simple-perl
```

- Adds the necessary perl modules for DXSpider
- OK4BX noted the latest build for SHA was changed to libdigest-sha-perl. If you receive an error in the step for sha1, use the following:

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```
$ sudo apt-get install libdigest-sha-perl
```

4. Finalize the Sysop setup and restart the RPi.

```
$ sudo su
# cd ~sysop
# ln -s /home/sysop/spider /spider
# shutdown -r now
```

- after restart login as sysop

5. Load DXSpider software

```
$ cd ~
$ mkdir spider
$ git clone git://scm.dxcluster.org/scm/spider spider.new
$ cp -a /home/sysop/spider.new/.git /spider
$ rm -rf spider.new
$ cd /spider
$ git reset --hard
```

6. Setup permissions on DXSpider files

```
$ sudo su
# cd /home/sysop
# chown -R sysop:spider spider
# find . -type d -exec chmod 2775 {} \;
# find . -type f -exec chmod 775 {} \;
# exit
```

7. Setup DXSpider initialization and parameter files

```
$ cd /spider
$ mkdir local
$ mkdir local_cmd
$ cp perl/DXVars.pm.issue local/DXVars.pm
$ cp perl/Listeners.pm local/Listeners.pm
$ cd local
$ mc
```

- edit DXVars.pm following the instructions in the comments
- edit Listeners.pm to remove “#” from the line for the port, and add additional ports as needed:

```
@listen = (
    ["0.0.0.0", 7300],
);
```

- exit mc

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8. Begin setup of DXSpider

```
$ cd /spider/perl/  
$ ./create_sysop.pl  
  
$ cd /tmp  
$ wget http://ftp.wlnr.net/usdbraw.gz
```

9. Begin Setup of usdbraw file

```
$ /spider/perl/create_usdb.pl /tmp/usdbraw.gz
```

- The step can take a few minutes

10. Compile DXSpider client

```
$ cd /spider/src  
$ make
```

11. Launch DXSpider

```
$ cd /spider/perl  
$ ./cluster.pl
```

12. On a separate ssh or system console (Ctrl-Alt-F2), log into the system as sysop

```
$ /spider/perl/console.pl
```

13. From the command line of the console enter 'load/usdb':

```
N6WS de N6WS-6 16-Mar-2014 2106Z dxspider >load/usdb
```

14. Change /etc/inittab to add the following two lines at the end of the file to allow for initiation of DXSpider on boot, and respawning of the process in case of failure.

```
##Start DXSpider on bootup and respawn it should it crash  
DX:2345:respawn:/bin/su -c "/usr/bin/perl -w /spider/perl/cluster.pl" sysop >/dev/tty6
```

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Running your DXSpider node

To receive DX Spots you will have to arrange with another Sysop to connect to another node.

1. Contact a potential link partner, and arrange for a connection into the DX spotting network. You can do this by soliciting a link partner on the Dxspider-support list. The list information is at <http://mailman.tobit.co.uk/mailman/listinfo/dxspider-support>. Once the partner is found and the adjacent node is configured to accept your connection, you can configure your DXSpider node to connect into the spotting network. There are excellent documented instructions available at <http://wiki.dxcluster.org/> in the “DXSpider Installation Manual” [Paragraph 6.5](#).

To configure your node you must set the adjacent node by node type:

For connection to a DXSpider node use the set/spider command from the console

```
$ /spider/perl/console.pl
-----
N6WS de N6WS-6 16-Mar-2014 2107Z dxspider > set/spider <adjacent_node_callsign>
```

- Enter your link partner as <adjacent_node_callsign> after set/spider

For a connection to an ARCluster node

```
$ /spider/perl/console.pl
-----
N6WS de N6WS-6 16-Mar-2014 2108Z dxspider > set/arcluster <adjacent_node_callsign>
```

2. The next step is to create a connect script to allow connection to your adjacent node partner. Detailed information on connect scripts is contained in the “DXSpider Installation Manual” [Paragraph 6.6](#).

```
$ touch /spider/connect/<adjacent_node_callsign>
$ mcedit /spider/connect/<adjacent_node_callsign>
```

- creates the connect script file and enters the editor

Your connect script should look similar to this script

```
# /spider/connect/<adjacent_node_callsign>
#
# Create a timeout for the connection attempt in seconds
timeout 15
#
# Initiate telnet connections via internet using telnet connection information
# This connection may be using IP address or hostname followed by port number
connect telnet cluster.xyz.com 7300
#
# substitute the callsign of your DXSpider node as <your_node_callsign>
'login:' '<your_node_callsign>'
#
# If you require a password to connect to your adjacent node partner include the following
# substitute the mutually arranged password for <password>
'Password:' '<password>'
#
# End of /spider/connect/<adjacent_node_callsign>
```

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3. To initiate a connection to the your new adjacent node partner

```
$ /spider/perl/console.pl
-----
N6WS de N6WS-6 16-Mar-2014 2108Z dxspider > connect <callsign>
```

- You should see the connection confirmation and DX spots should start appearing.

4. Information on setting up a crontab file in /spider/local_cmd can be found in the DXSpider Installation Manual, [General Information – The crontab file](#).

5. It is a good idea to establish connections with more than one adjacent node partner. A redundant connection with a possible diverse path will ensure the failure of a single node does not interrupt the supply of DX spots to your node. After completion of the sequence of steps to establish the initial connection, repeat the steps for any additional connections.

When you are sure your DXSpider node is running properly, it is advisable to turn off the logging for debug purposes. From the console issue the command to stop all debug logging.

```
$ /spider/perl/console.pl
-----
N6WS de N6WS-6 16-Mar-2014 2108Z dxspider > unset/debug all
```

Summary

That is pretty much all you have to do to get the basic DXSpider up and running on a Raspberry Pi. If you would like to add a TNC for AX25 connections, I have included basic instructions in [Installation of TNC-Pi on DXSpiderPi](#) for adding a [TNC-Pi](#).