1. Set your adjacent node by node type. You need to have your cluster running. (ie., ./cluster.pl) and theDXSpider console open. If you don’t have the console open, bring up another SSH session and login as sysop, then run

/spider/perl/console.pl

Once your console comes up type in the command:

set/spider <adjacent\_node\_callsign>

1. Quit console.pl by typing in “q”, without the “” marks and press enter. Now create a connect script to allow connection to your adjacent node partner. You will have a file for each adjacent node. Login as sysop.

touch /spider/connect/<adjacent\_node\_callsign>

nano /spider/connect/<adjacent\_node\_callsign>

1. Copy and paste the following into your connect script, then edit with the correct “adjacent\_node\_callsign”,” cluster.xyz.com” and “your\_node\_callsign”. Make sure to remove the “<>” when editing.

timeout 60

abort (Busy|Sorry|Fail)

# your partners host. example: connect telnet pi.k0pir.us 7300

connect telnet cluster.xyz.com 7300

# your node. example: 'login' 'k0pir-3'

'login' '<your\_node\_callsign>'

# partners node callsign. example: client wb3ffv-3 telnet

client <adjacent\_node\_callsign> telnet

1. Ctrl X and save file
2. Change mode on this file

chmod 775 /spider/connect/<adjacent\_node\_callsign>

1. Initiate a connection to your new adjacent node partner.

/spider/perl/console.pl

connect <adjacent\_node\_callsign>

1. You should now see spots in the console. It may take a few seconds before you see them.
2. You need a cron job to connect to the nodes automatically when starting DXSpider. Quit console.pl by typing in “q”, without the “” marks and press enter.

sudo su

touch /spider/local\_cmd/crontab

nano /spider/local\_cmd/crontab

1. Copy and paste this into the file then edit the callsign. One crontab, just keep adding your partners to it starting on a new line at the bottom.

# Check every 10 minutes to see if xxxx is connected and if not

# start a connect job

0,10,20,30,40,50 \* \* \* \* start\_connect('k0pir-2') unless connected('k0pir-2')

1. Ctrl X then save file.
2. Change mode on this file.

chmod 775 /spider/local\_cmd/crontab

1. To allow a partner node to connect to your DXSpider node at startup it must be declared as a spider type. Do this with a startup file.

nano /spider/scripts/startup

1. Copy and paste the following into the startup file. One startup file, just keep adding your partners to it starting on a new line. This allows your partner nodes to connect to your node. Make sure to remove the “<>” when editing.

#
# startup script
#
#set maximum number of spots allowed to 100
set/var $Spot::maxspots = 100
set/spider <adjacent\_node\_callsign>

1. Ctrl X then save file.
2. DXSpider will be writing a lot of data so it must be purged regularly. Courtesy [DO7PSL](http://do7psl.de/installation-of-dxspider-on-a-raspberry-pi/).

touch /etc/cron.daily/spider

nano /etc/cron.daily/spider

1. Copy and paste this into the file.

#!/bin/sh

# We need to delete old files.

spiderdir="/spider/data/spots/2016"

if [ -n "$spiderdir" ] && [ -d "$spiderdir" ]; then

 # only keep three days' depth of these

 find "$spiderdir" -type f -mtime +3 -exec rm {} \;

fi

spiderdir="/spider/data/debug/2016"

if [ -n "$spiderdir" ] && [ -d "$spiderdir" ]; then

 # only keep a couple of day's depth of these

 find "$spiderdir" -type f -mtime +2 -exec rm {} \;

fi

spiderdir="/spider/data/log/2016"

if [ -n "$spiderdir" ] && [ -d "$spiderdir" ]; then

 # only keep a week's depth of these

 find "$spiderdir" -type f -mtime +7 -exec rm {} \;

fi

* 1. Ctrl X then save file.
1. Make it executable.

chmod a+x /etc/cron.daily/spider

1. Let’s do it weekly too. Courtesy [DO7PSL](http://do7psl.de/installation-of-dxspider-on-a-raspberry-pi/).

touch /etc/cron.weekly/clear\_log.sh

nano /etc/cron.weekly/clear\_log.sh

1. Copy and paste this into the file.

#!/bin/sh

# We need to delete old files.

logdir="/var/log"

 rm $logdir/\*.gz

1. Ctrl X then save file.
2. Make it executable.

chmod a+x /etc/cron.weekly/clear\_log.sh

1. Let’s reboot to see if everything is still working. At the prompt type in:

shutdown –r now

1. After rebooting , login and start your cluster and in another SSH session open your console. You should see spots after a few minutes. Give it some time.

cd /spider/perl

./cluster

/spider/perl/console.pl (Open another SSH session and start the console. In a few minutes, could be longer, do you see spots? Yes, awesome! No, go back and check the connect script and chmod 775.)

1. Just a couple of more things. We want DXSpider to restart on reboot and in the Raspberry Pi 3 we will need to start it as a service. We’ll use a script which was written by [SV5FRI](http://www.sv5fri.eu/?p=2292471).

sudo nano /etc/init.d/dxspider

1. Copy and paste the following script into the file then save and close.

#!/bin/sh
### BEGIN INIT INFO
# Provides: dxspider
# Required-Start: $all
# Required-Stop: $all
# Default-Start: 2 3 5
# Default-Stop: 0 1 6
# Short-Description: Dxspider
### END INIT INFO
#
# Created by SV5FRI
# Email: sv5fri@gmail.com
#
##############################
NAME=dxspider
DESC=dxspider

PID=`ps -A |grep perl|awk '{print $1}'`

set -e

pidfile=/spider/local/cluster.lck

. /lib/lsb/init-functions

RETVAL=0

# See how we were called.

 start()
 {

 echo "Starting DxSpider Server..."
 /bin/su - sysop -c "/usr/bin/perl -w /spider/perl/cluster.pl" > /dev/tty3&
 RETVAL=$?
 [ $RETVAL -eq 0 ] && touch /var/lock/dxspider
 echo
 return $RETVAL

 }

 stop()
 {
 echo "Stopping DxSpider Server..."
 pkill -F $pidfile
 RETVAL=$?
 [ $RETVAL -eq 0 ] && rm -f /var/lock/dxspider
 echo
 return $RETVAL
 }

 restart()
 {
 stop
 start
 }

case "$1" in
 start)
 start
 ;;

 stop)
 stop
 ;;

 restart)
 restart
 ;;
 status)
 if [ -f "$pidfile" ];
 then
 echo "Dxspider is running with pid: $PID"
 else
 echo "Dxspider is stopped..."
# RETVAL=$?
 fi
 ;;

 \*)
 echo $"Usage: $0 {start|stop|restart|status}"
 exit $?
 ;;
esac
exit $?

* 1. Ctrl X and save the file.
1. Change permission

sudo chmod +x /etc/init.d/dxspider

1. Let’s install sysv-rc-conf to enable DXSpider to startup automatically on reboot.

sudo apt-get update

sudo apt-get install sysv-rc-conf

1. Run sysv-rc-conf and check off DXSpider to start. Check 2, 3 and 5. Then exit.

sudo sysv-rc-conf

Check DXSpider 2,3 and 5

Exit

1. Reboot Raspberry pi

sudo su shutdown –r now

1. Upon reboot DXSpider will startup automatically. You can go into the console and make sure it’s running. Use SSH and login as sysop. Run the command /spider/perl/console.pl. It may take a few minutes (10 minutes) before spots start appearing. Give it time.
2. Backup your Raspberry Pi 3
	1. Insert a USB stick into one of the Raspberry Pi’s USB ports
	2. Login using VNC
	3. Click on the Raspberry button in the toolbar
	4. Go to Accessories
	5. Go to SD Card Copier
	6. Make your selections and click start