

# **DVSWITCH CISCO ROUTER CONFIGURATION**

**Please read this through before you start any changes to your equipment.**

**This write up covers the basic configurations need using the 15.1 and 12.4 code for the routers.**

**Different code versions may vary.**

**Code versions for both are using the advanced Enterprise code  
flash:c2800nm-adventerprisek9-mz.151-1.T.bin**

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Make a copy of the code file.

Open the copy of the code file in a text viewer. i.e. notepad or what ever you are familiar with.

Do not connect any cables to any device yet. Please follow these steps.

Plug in the power cable to the router

Connect to the router via serial cable ( Cisco blue cable ) and connect this to the computer serial interface.

Power up the router with no Ethernet or serial cables connected

Type these commands into the router .

enable

show ip interface brief

look at the Serial interface. Compare this to the code file. This may not be the same depending on your router and the slot that the serial interface in plugged into. Make the change in your note pad.

This is an example

```
router#show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	unassigned	YES	NVRAM	down	down
FastEthernet0/1	unassigned	YES	NVRAM	down	down
Serial0/2/0	unassigned	YES	NVRAM	down	down

```
router#
```

after you have made the changes to the notepad configuration then copy and paste the configuration into the router.

type config terminal or config t ( short hand )

copy and paste the entire configuration into the router.

When its done.

Type exit to get out of the configuration mode.

Type copy run startup-config.

Connect the ethernet and serial cables  
FA0/0 is to your internet connection  
FA0/1 is to the raspberry PI  
Serialx/x/x is the DCE cable to the Quantar Router

Give the router several minutes

Now run this command again

show ip interface brief

Your output will vary slightly because of your ip addressing.

```
DVSWITCH#show ip int brief
Interface          IP-Address          OK? Method Status      Protocol
FastEthernet0/0    192.168.20.155      YES NVRAM  up          up
FastEthernet0/1    172.31.4.137        YES NVRAM  down        down
Serial0/2/0        unassigned          YES NVRAM  down        down
Loopback0          10.2.4.137          YES NVRAM  up          up
DVSWITCH#
```

Now power up your raspberry pi and power up the quantar repeater.

after a few minutes run this command

show ip dhcp bind

you can see that your raspberry pi has obtained an ip address from the router

```
DVSWITCH#sh ip dhcp bind
Bindings from all pools not associated with VRF:
IP address          Client-ID/           Lease expiration     Type
                   Hardware address/
                   User name
172.31.4.138        01b8.27eb.336d.64   Jun 24 2018 09:54 AM Automatic
DVSWITCH#
```

repeat the command  
show ip interface brief

if all is good then you should be seeing something similar to this

```
DVSWITCH#show ip int brief
Interface          IP-Address      OK? Method Status      Protocol
FastEthernet0/0    192.168.20.155  YES NVRAM  up          up
FastEthernet0/1    172.31.4.137   YES NVRAM  up          up
Serial0/2/0        unassigned      YES NVRAM  up          up
Loopback0          10.2.4.137     YES NVRAM  up          up
DVSWITCH#
```

Now from a computer on your network you should be able to ping 172.31.4.138 ( this is the Raspberry Pi).

You should have access to the internet as well. To test this connect to the raspberry pi via ssh session and run an update “ apt update “ and then “ apt upgrade “

## LOGINS AND PASSWORDS

\*\*\*\*\* WARNING \*\*\*\*\* If you change these there is no easy fix for recovery

The router username and password is dvswitch and dvswitch

The enable password is dvswitch

These can be changed . Suggested that you change the enable password and add a second username.

```
username dvswitch privilege 15 secret 5 $1$K0uy$q9nG8Pm4nYbUxIwJqvPnM.
```

```
Username AE4ML privilege 15 secret 0 “ YOUR PASSWORD”
```

it is important that you not change this part “ privilege 15 secret 0 “ the other option is password “Your password” and this method offers no security. Please add a second username line and follow the about outline.

And

```
enable secret 5 $1$sN2e$T25vcBTKo/90AVoT6VTzg.
```

Suggested that you change this

enable secret 0 " Your new password " < This password lets you make changes to the router

## TWEAKS

If you feel the need to tweak the router here are a few other items.

On the configuration for the router you can use your ISP DNS.

To do this replace the 8.8.8.8 and 8.8.4.4 google DNS with your ISP providers DNS servers.

## Restricting access to making changes to the router

if you have only one or two computers that you want to make changes to the router then modify the access-list MANAGED with only those addresses . This means that only these stations can change the router configuration.

such as

```
ip access-list standard MANAGED
permit 192.168.20.104
permit 192.168.20.105
```

## Enable SSH on your router

We already set the domain name as dvswitch.ham  
run this line to generate RSA crypto keys to secure your router connection.

### **crypto key generate rsa**

add these lines to the configuration

```
ip ssh time-out 60
ip ssh authentication-retries 2
```

go to this line in the code

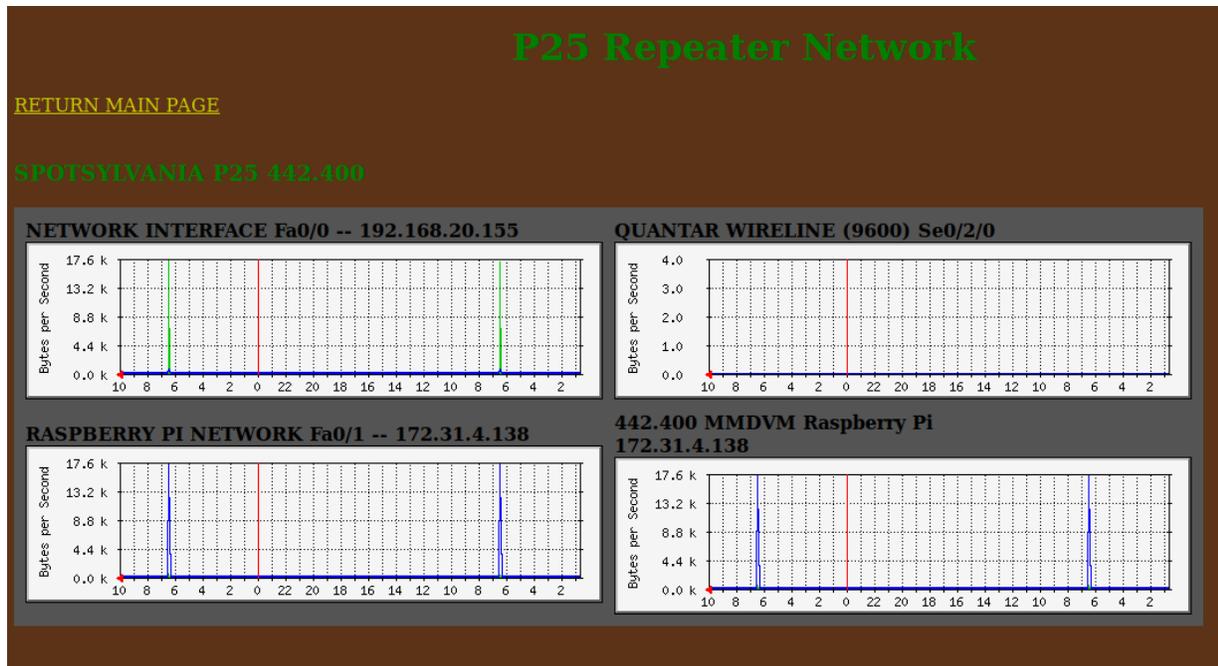
```
line vty 0 4
```

*Add this line to prevent non-SSH Telnets.*

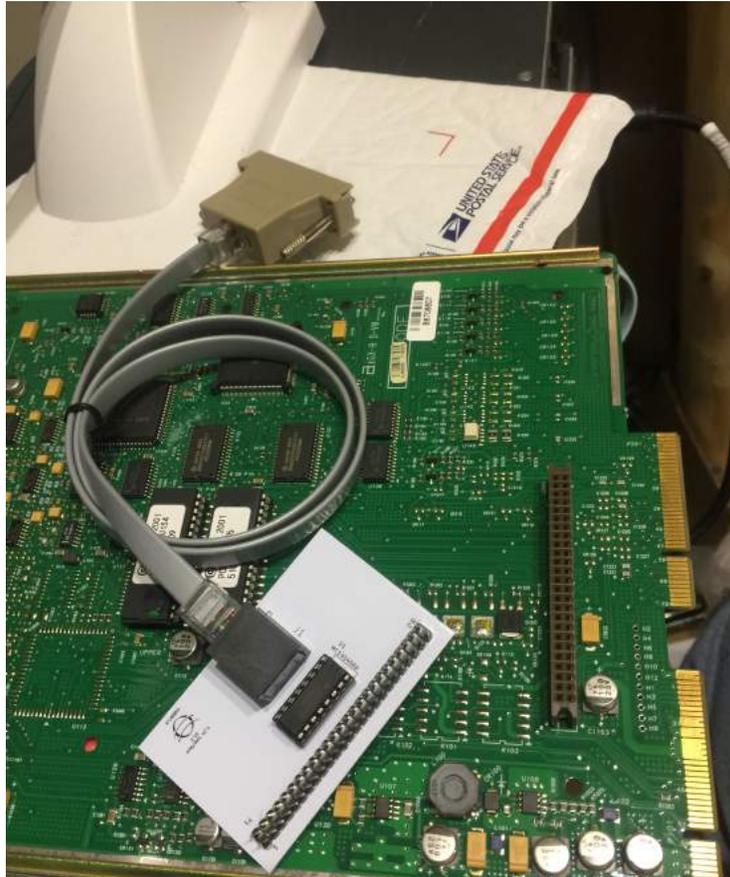
```
transport input ssh
```

further reading see this link <https://www.cisco.com/c/en/us/support/docs/security-vpn/secure-shell-ssh/4145-ssh.html>

SNMP traps can be used. You can setup a computer running MRTG and the computer can pole your router for data and display this in a web page to see the status of your system



P25NX interface card and the Quantar interface board



P25NX cardx board and ready to be inserted. Below are two Cisco 2811

connected to the routers



UHF REPEATER 442.575  
DPL 156  
NAC 293 TG10282

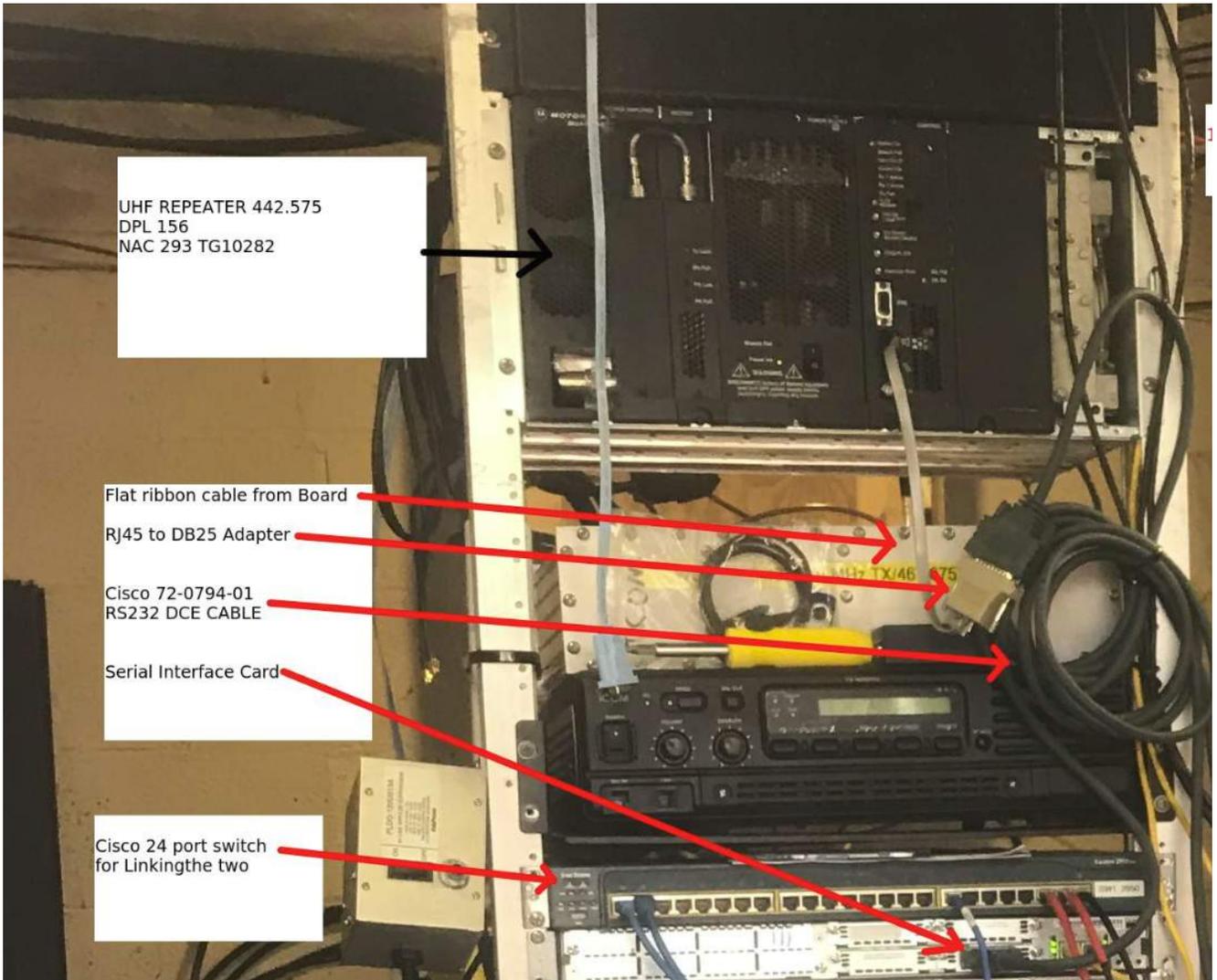
Flat ribbon cable from Board

RJ45 to DB25 Adapter

Cisco 72-0794-01  
RS232 DCE CABLE

Serial Interface Card

Cisco 24 port switch  
for Linking the two



15.1 code Extras.

15 code offers a few more tweaks

Object groups

Stateful firewall inspections