VLAN Tagging

Mar 2024

Introduction

In some cases, customers want to use VLAN tagging on our equipment to allow for the control of traffic either upstream or downstream.

This is not available in the GUI, but can be managed from the Linux OS.

In this example we will look at VLAN tagged IP outputs, but the same is possible in reverse for the IP inputs.

Below is what we want to achieve. An IP multicast output on a couple (or more) VLANs that are tagged. All of the VLANs feed in to a trunk port on the switch. Each VLAN output is then available on a separate interface on the switch.

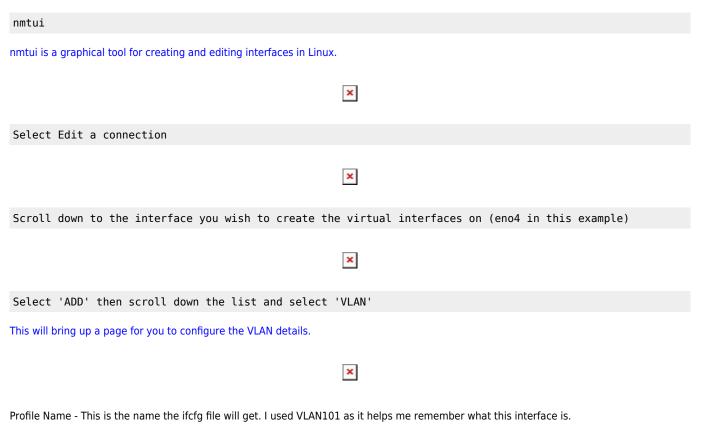
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In the above example, the two outputs from the EL, from VLAN101 and VLAN102 are fed in to the Cisco interface 47 which is configured as a trunk port. Then VLAN101 traffic is available on interface 45 on the Cisco, and VLAN102 traffic is available on interface 46 on the Cisco. Interface 46 and 46 are 'Switchports' not trunk ports.

On the Encoding Live in Alma Linux

The first step is for us to setup the VLANs on the Linux OS. These are virtual interfaces which contain both the VLAN ID and IP Address for the virtual interface. We will configure two virtual interfaces here, but you can have more if you require.

Either SSH into the EL or use a KVM and enter the following:



Device - This is the name the VLAN will get, and the name you will refer to it by in EL Configurations. I used interface_name.VLAN_id so

eno4.101

Parent - this is the parent interface, we are using eno4 in this example.

VLAN id - Enter your VLAN id here (I am using 101 and in the next example 102)

IPV4 - Fill our your IPv4 Address/Subnet/Gateway etc.

Click OK to save the configuration

Here are the settings for my second VLAN.

Once you have created your VLANs in nmtui you should see them listed in the main page.

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EXIT nmtui.

Reboot the Server.

Once the server has rebooted, navigate to the following directory:

cd /etc/sysconfig/network-scripts

List the files in this directory, and you should see the interface files for the VLANs you created.

```
ll
total 24
-rw-r--r-. 1 root root 445 Feb 14 14:49 ifcfg-eno1
-rw-r--r-. 1 root root 274 Feb 27 08:34 ifcfg-eno2
-rw-r--r-. 1 root root 274 Feb 28 13:55 ifcfg-eno3
-rw-r--r-. 1 root root 244 Jan 1 2015 ifcfg-eno4
-rw-r--r-. 1 root root 376 Mar 19 15:34 ifcfg-VLAN101
-rw-r--r-. 1 root root 376 Mar 19 14:27 ifcfg-VLAN102
```

Above we can see the VLAN101 and VLAN102 configuration files have been created.

We can look at the contents of the configuration files using the 'cat' command.

cat ifcfg-VLAN101 VLAN=yes TYPE=Vlan PHYSDEV=eno4 VLAN ID=101 **REORDER HDR=yes** GVRP=no MVRP=no HWADDR= PROXY METHOD=none BROWSER ONLY=no B00TPR0T0=none IPADDR=15.0.100.1 PREFIX=16 DEFROUTE=yes IPV4 FAILURE FATAL=yes IPV6 DISABLED=yes IPV6INIT=no IPV6_DEFROUTE=yes IPV6_FAILURE_FATAL=no IPV6_ADDR_GEN_MODE=default NAME=VLAN101 UUID=5028382e-2cde-4b1f-ac94-0d77de1910f1 2024/05/20 06:09

DEVICE=eno4.101 ONBOOT=yes

cat ifcfg-VLAN102 VLAN=yes TYPE=Vlan PHYSDEV=eno4 VLAN_ID=102 REORDER_HDR=yes GVRP=no MVRP=no HWADDR= PROXY_METHOD=none BROWSER_ONLY=no B00TPR0T0=none IPADDR=16.0.100.1 PREFIX=16 DEFROUTE=yes IPV4_FAILURE_FATAL=yes IPV6 DISABLED=yes IPV6INIT=no IPV6_DEFROUTE=yes IPV6_FAILURE_FATAL=no IPV6_ADDR_GEN_MODE=default NAME=VLAN102 UUID=5b82db81-9074-4e29-bfec-3c7238aaa1c4 DEVICE=eno4.102 ONB00T=yes

There is one last setting to check (and if you are using an appliance that was created with the corporate ISO then this should be fine).

From the command line, enter the following:

lsmod |grep 8021q

You should see an output similar to below:

8021q	40960	0
garp	16384	1 8021q
mrp	20480	1 8021q

Setting the interface names in Controller

This part does assume that you are familiar with Controller on the Encoder and Multiplexer (you will only be using one or the other)

Now that the VLANs are configured, we need to set those names in Controller to be able to use them. Remember that our VLAN names are:

eno4.101 eno4.102

Open the Controller on your appliance, in this example I am using the output of the Multiplexer.

The first Output we are using the interface name eno4.101 The Stream Address is 239.100.100.1. It is important you use the VLAN tag here (eno4.101) and not just the interface name (eno4).

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For the second Output we are using the interface name eno4.102 The Stream Address is 239.100.100.2.

Testing the Encoding Live Configuration

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