

## SAPs & MTU

Essentials: SAP encapsulations and treatment of Q-tags

### Agenda

- Term Test #2: next **Wed, March 13 @ 4pm**, room **CA412**
- Field-trip debrief – How was it?
- Don't forget: "Upcoming opportunities" from Wk 8 Day 1 lecture notes
- Meet-up next Tue 5:30-8:30pm  
<https://www.meetup.com/Open-Source-Networking-Ottawa-Group/events/258302050/>
- Start Module 2 – SAPs
- Coming Next: Complete Module 2 – MTU, x-Pipe interworking

### Assignments and Lab work

- Read NRS-II book: Chapter 19 on VPLS by Mon Mar 12
- Lab 7 post-lab: due by **11:59pm Sun** for both lab sections.
- Lab #8: SA Lab 2: basic Epipe / VPWS service
- Coming next for theory: **Exercise 2** due **8:00am Fri Mar 15<sup>th</sup>**
- Coming next in Lab: SA Lab 3: VPLS

### References

- NRS-II Chapter 18: VPWS Services, p. 1018-1066
- Inter-dependencies of MTU values: SA Module 2.24-25; NRS-II p. 1046-7

### Treatment of Q-tags on SAPs (looking ahead to Lab #9)

In Lab 9, we will build a VPLS along side existing ePipe services. Remember what "P" in VPN stands for: private or separate traffic, so there's no chance of interference IFF we define the SAPs correctly.

In SA Module 1, we saw the three possible SAP encapsulation "modes":

- **null encapsulation**
- dot1q encapsulation (a single q-tag)
- qinq encapsulation (two q-tags)

In SA Module 2, we learn about the equivalent of a "native VLAN" (for Dot1Q encapsulation) and how to specify it in the SAP definition. There are two options:

- default SAP: e.g. 1/1/1:\*
- **null SAP** e.g. 1/1/1:0

Please distinguish the "**null encapsulation**" from "**null SAP**"; they're very different things!

For Lab 9 – VPLS (next week), make sure you've read and understood SA Module 3, slides 8-11.

## Compatibility for Ethertype on singly and doubly tagged frames

Ref: SA Module 2, slide 14; NRS-II p. 1029-1030

In the SR OS, the ethertype of Dot1Q or QinQ frames can be configured to any value in the range 0x600-0xffff (1536..65535), with a default = 0x8100. The configuration is applied on a per-port basis, with the command:

```
configure port • {port Num} • ethernet • {dot1q-etype | qinq-etype} {value}
```

Below is a chart for multi-vendor interoperability (from data published in 2008). Note that any frame with a non-matching etype is simply considered untagged.

Vendor	Top / Outer Tag	Bottom / Inner Tag
Cisco	0x8100	0x8100
Foundry	<b>0x9100</b>	0x8100
Extreme	<b>0x88a8</b>	0x8100
Juniper	<b>0x9100</b> ; configurable	0x8100
Nokia 7x50 SR	0x8100; configurable	0x8100; configurable