

Network Architecture (Ch 2) / Campus Networks (Ch 3)

Essentials: VLANs, DTP, VTP, Link Aggregation (LAG)

Agenda

- Cisco chapter quizzes: due Tuesdays before 11:59pm starting next week
- Midterm: currently scheduled for **Wed Feb 15** during regular class time; may be rescheduled if necessary. Please advise of any conflicts!
(Let's keep watching to see if there's anyone before us in T230 on Wed!)
- Take up any questions
- NetLab overview
- Complete Ch 2 slide deck
- Review concepts of VLAN, VTP, DTP, LAG; ... Lots of board work!

Due Dates (Unless otherwise posted)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	'3012 in-class Q				'3011 in-class Q	
'3012–A1 post-lab		'3011 Cisco Q		'3012–A2 post-lab	'3011-A1/2 post-lab	

References: Ethernet Frames and L2 Switching

Two good overview articles of Ethernet frames are:

https://en.wikipedia.org/wiki/IEEE_802.1Q

https://en.wikipedia.org/wiki/Ethernet_frame#Ethernet_II

Assigned Readings and Lab work

- Read Ch 3 in FLG; due by *next* Fri by 10am (good pop quiz material!)
- Lab 2 pre-lab: due **before** your lab period
- Lab 2 consists of Cisco labs 3-1 and 3-2; includes Lab1-1 for pre-lab quiz
- Lab 2 post-lab due by **Fri Jan 20 @ 12:59pm**
- Cisco online test Ch 2, due by **Tue Jan 17 @ 11:59pm**

NetLab

- Purpose; alternatives; supporting infrastructure; topology
- To book time: <http://netlab.algonquincollege.com>
- To access documentation: <http://netlab.algonquincollege.com/docs/>
- To power-cycle equipment: <http://netlab.algonquincollege.com/powercycle.html>

Glossary of Terms

VLAN: Virtual LAN (Local Area Network)

VTP: VLAN Trunking Protocol

DTP: Dynamic Trunking Protocol

STP: Spanning Tree Protocol

Trunk: A link which is used for sending frames tagged* with a VLAN

Native VLAN: the (one!) VLAN for which **no** tag is attached

ISL: Inter-Switch Link; method of tagging frames with VLAN; Cisco proprietary

802.1Q: IEEE standard for tagging* frames with a VLAN identifier

*well, they're tagged *almost* all the time; see *Native VLAN*

Hierarchy of L2

Flat networks don't scale: use VLANs

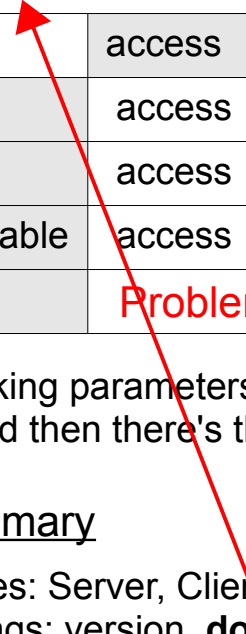
Need trunks for VLANs: use DTP for trunking (actually, don't: security!)

Manual VLANs don't scale: use VTP

Manual redundancy doesn't scale: use STP

Scaling isn't flexible enough: use LAG

DTP Combinations



	access	dyn. auto	dyn. desirable	trunk
access	access	access	access	Problem!
dyn. auto	access	access	trunk	trunk
dyn. desirable	access	trunk	trunk	trunk
trunk	Problem!	trunk	trunk	trunk

- Trunking parameters: allowed VLANs, native VLAN, (... and more)
... and then there's the "**no negotiate**" parameter for **trunk** mode

VTP Summary

- modes: Server, Client, Transparent, Off
- settings: version, **domain**, password (maybe), pruning

Link Aggregation (LAG)

(Coming soon)