Assignment 4 Intro

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Subnetting

• You’re going to have to split up your /27 into blocks of FOUR IP Subnets. Not FOUR subnets, FOUR IPS per subnet (two usables).

• Remember: $H=(2^x)-2$
  • So if $H = 2$, what’s $X$?
  • $X=2$

• Document which network goes where and which is unused for the assignment.

• Pick two for links from the 3750s to the 2800’s

• Pick two more for links from the 2800’s to your Virtual Machines.
Trunking

Uplink Switch

Tagged with Native VLAN

Your 3750

Tagged on Random VLAN A

2800-1

Tagged on Random VLAN B

2800-2
Layer3 and VMs

Uplink Switch

Tagged with
Native VLAN

Your 3750

Tagged on
Random VLAN A

2800-1

Tagged out of
2800 on VM VLAN 4001

Traffic arrives/leaves
VM1 Untagged on
VM VLAN 4001

VM1

Tagged on
Random VLAN B

2800-2

Tagged out of
2800 on VM VLAN 4002

Traffic arrives/leaves
VM1 Untagged on
VM VLAN 4002

VM2

Internet
How Layer2 Really Looks

Uplink Switch
- Tagged with Native VLAN and TAGGED on VM VLANS

Your 3750
- Tagged on Random VLAN A
- Tagged on Random VLAN B
- Tagged on VM VLAN 4000

VM Switch
- Tagged on VM VLAN 4001

VM1

VM2
- Untagged on VM VLAN 4000
- Untagged on VM VLAN 4001

2800-1
- Fa0/0
- Fa0/1

2800-2
- Fa0/0
- Fa0/1

VM VLANs are Tagged

Untagged on VM VLAN 4000

Untagged on VM VLAN 4001
VMs


- You are assigned 4 or 5 VLANs from 4000-4099.

- Pick two. Assign one to each VM you clone.

- Use the ubuntu_2016 image for your images to save you time:
  - default login: cituser
  - default password: b1s0n_br00x
SVI = Switched Virtual Interfaces

- You’re going to have to create some SVIs on 3750
  - `int vlanABC`
    - `ip address A.B.C.D X.Y.Z.0`
    - `no shutdown`
  - Don’t forget to create the VLAN!
    - `vlanABC`
      - `name XYZ`
  - Watch your VTP. May want to set for Transparent!
IP Routing

- 3750 will have to have “ip routing” enabled.

- You’ll then have to add a default route:
  - `ip route 0.0.0.0 0.0.0.0 <default_gateway>`

- You’ll also have to static route on your 3750 for the VM Subnets pointing to your 2800s:
  - `ip route A.B.C.D 255.255.255.X <2800_F0/0.VLAN-A IP>`
Troubleshooting

• Layer2 (Chapter 10)
  • show vlan id <XYZ>
  • show mac address-table (int FaX/Y/Z) or (vlan Z)

• Layer3 (Chapter 16)
  • Can your VM ping your Router? (check layer2)
  • Can your VM ping the Routers gateway (3750)? (check Layer3 route)
  • Can your VM get outside of your switch to the Internets?
Email me with Questions

• cbl@infowest.com

• Remember to put “IT4400” in the subject.
Due Monday at 11:59pm