



Network Management Workshop Lab

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The LAB

◆ Internet (172.16.1.0/24)

- ◆ Switch acts as IX, has VLANs to provide separate networks for ISPs

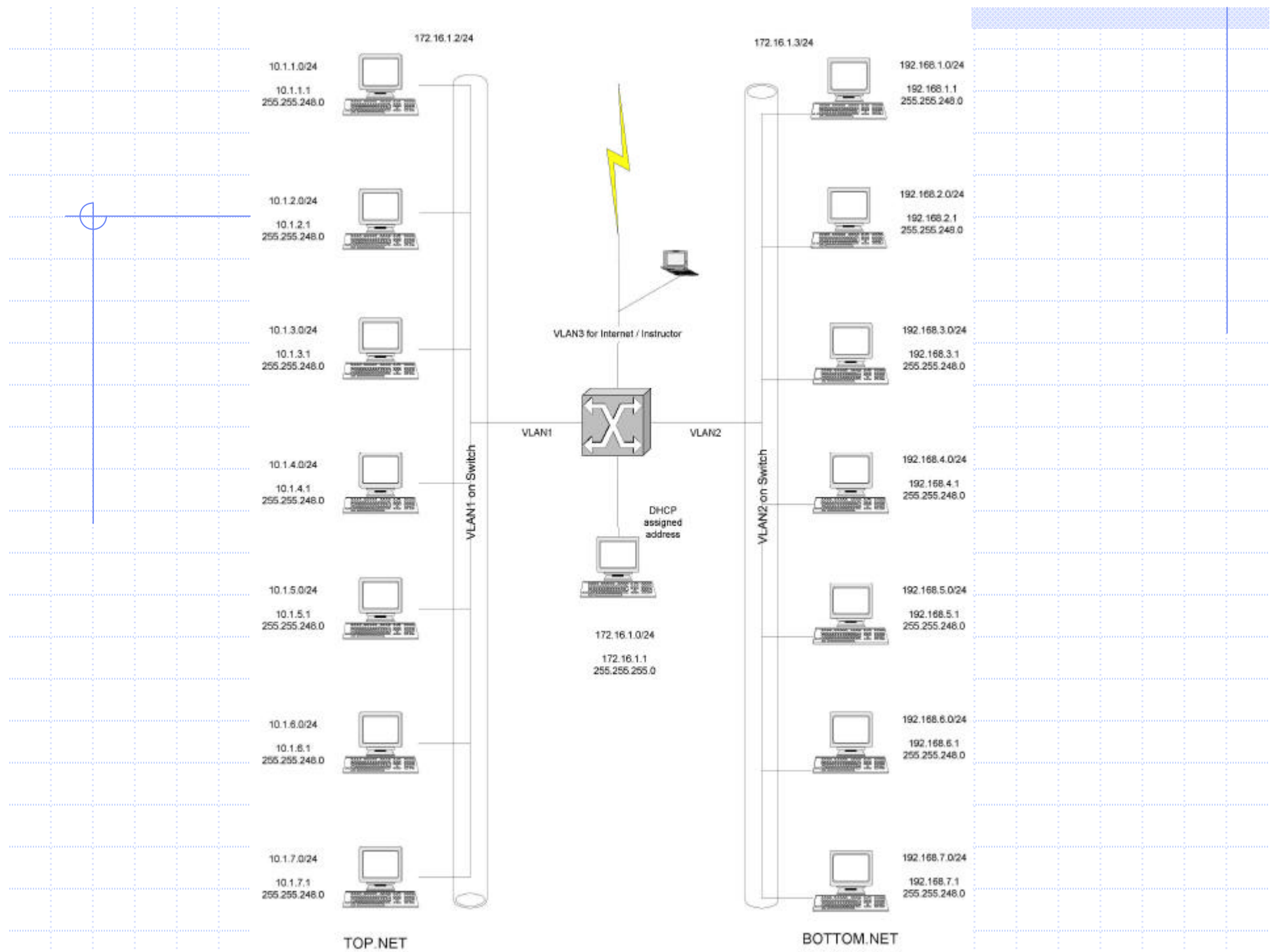
◆ There are two ISPs

■ Top.net

- ◆ 10.1.0.0/21 (i.e 255.255.248.0)
- ◆ host[1-7].top.net
- ◆ each computer is assigned a /24 block

■ Bottom.net

- ◆ 192.168.0.0/21 (i.e 255.255.248.0)
- ◆ host[1-7].bottom.net
- ◆ each computer is assigned a /24 block



top.net

- ◆ host1.top.net= 10.1.1.0/24,
- ◆ host2.top.net= 10.1.2.0/24,
- ◆ host3.top.net= 10.1.3.0/24
- ◆ host4.top.net= 10.1.4.0/24,
- ◆ host5.top.net= 10.1.5.0/24,
- ◆ host6.top.net= 10.1.6.0/24,
- ◆ host7.top.net= 10.1.7.0/24,

top.net

- ◆ 10.1.1.0/24 = 10.1.1.0 to 10.1.1.256
- ◆ 10.1.2.0/24 = 10.1.2.0 to 10.1.2.256
- ◆ 10.1.3.0/24 = 10.1.3.0 to 10.1.3.256
- ◆ 10.1.4.0/24 = 10.1.4.0 to 10.1.4.256
- ◆ 10.1.5.0/24 = 10.1.5.0 to 10.1.5.256
- ◆ 10.1.6.0/24 = 10.1.6.0 to 10.1.6.256
- ◆ 10.1.7.0/24 = 10.1.7.0 to 10.1.7.256

bottom.net

- ◆ host1.bottom.net = 192.168.1.0/24
- ◆ host2.bottom.net = 192.168.2.0/24
- ◆ host3.bottom.net = 192.168.3.0/24
- ◆ host4.bottom.net = 192.168.4.0/24
- ◆ host5.bottom.net = 192.168.5.0/24
- ◆ host6.bottom.net = 192.168.6.0/24
- ◆ host7.bottom.net = 192.168.7.0/24

bottom.net

- ◆ 192.168.1.0/24 = 192.168.1.0 to 192.168.1.256
- ◆ 192.168.2.0/24 = 192.168.2.0 to 192.168.2.256
- ◆ 192.168.3.0/24 = 192.168.3.0 to 192.168.3.256
- ◆ 192.168.4.0/24 = 192.168.4.0 to 192.168.4.256
- ◆ 192.168.5.0/24 = 192.168.5.0 to 192.168.5.256
- ◆ 192.168.6.0/24 = 192.168.6.0 to 192.168.6.256
- ◆ 192.168.7.0/24 = 192.168.7.0 to 192.168.7.256

Assigning IP address

- ◆ Assign the first IP address from your space as the primary interface address
 - host\$ = x.x.x.1 (i.e host1 = 10.1.1.1)
 - use 255.255.248.0 as your NetMask

- ◆ The Gateway will have two Interface and act as router for the ISP network
 - second Interface configured with
 - ◆ top.net = 172.16.1.2, bottom.net = 172.16.1.3

Checking the connectivity

- ◆ set up your networking
 - set up your hosts file properly
 - your Primary DNS server is your host1
 - your secondary DNS server is 172.16.1.1
- ◆ check the connectivity
 - ping each other within your own ISP

Setting up your gateway

- ◆ Set up routing in the gateway
e.g for top.net
 - set up IPv4 Forwarding
 - ◆ `echo 1 > /proc/sys/net/ipv4/ip_forward`
 - ◆ add 'ipv4_forward=true' in `/etc/sysconfig/network`
 - ◆ add static routes to the neighboring ISP's IP Space
 - `ip route add default via 172.16.1.2 dev eth1`
 - The gateway is set up to act as a DNS for your network

Test across the IX connection

◆ Top.net

- ping IPs in bottom.net
- do a traceroute to hosts in bottom.net

◆ Bottom.net

- ping IPs in top.net
- do a traceroute to hosts in top.net