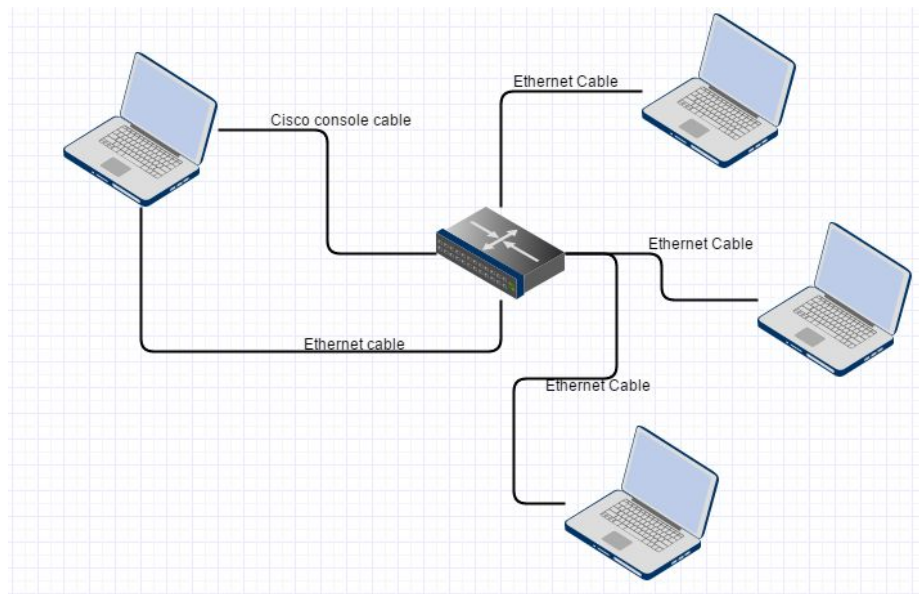Vlad Synnes
Zoltan Batoczki
Samuel Decanio
Robert Florence
Phillip Porter

VLAN Lab

Task 1- Creating Two Virtual LANs on a Cisco Switch

The illustration below is representative of our network configuration. There were four computers connected to a single switch via Ethernet cables, One computer was connected via Cisco console cable and Ethernet.

In this lab, we first connected the computers to the switch and erased any previous VLAN configurations. We then tested that the computers could communicate between each other via pings. Following that, we configured the VLANs and assigned the computers each to their VLAN. We then tested the communication via pings to confirm that the computers could not longer communicate because they were on separate VLANs. We then connected two additional computers and put them in separate VLANs. Following this we confirmed that the computers in each VLAN could communicate with each other but not with the computers in the other VLAN.

While following the provided instructions, there was an issue with connecting to the other computers. One of the computers was able to connect to the host while the the other two could not. The problem was that the subnet masks was not set as the same value as the host for the two computers that had the connection issue. Updating the subnet mask resolved the issue.

Once the vlan configuration was complete on the switch, we were able to configure two computers on one virtual network, and the other two on another virtual network.
The following snapshot shows two machines, each connected to a virtual network

VLAN	Name	Status	Ports
10	rf10	active	Fa0/4
10	rf20	active	Fa0/2

The following snapshot shows a pair of machines in a virtual network, labeled *rf10* and *rf20*

VLAN	Name	Status	Ports
10	rf10	active	Fa0/3, Fa0/4
10	rf20	active	Fa0/1, Fa0/2

```
                                                Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                                Fa0/14, Fa0/15, Fa0/16, Fa0/17
                                                Fa0/18, Fa0/19, Fa0/20, Fa0/21
                                                Fa0/22, Fa0/23, Fa0/24
10    rf10                              active   Fa0/4
20    rf20                              active
30    ADA30                             active
40    ADA40                             active
1002  fddi-default                      act/unsup
1003  token-ring-default                act/unsup
1004  fddinet-default                   act/unsup
1005  trnet-default                     act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0

Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#switchport mode access
                 ^
% Invalid input detected at '^' marker.

Switch(config)#interface fastethernet0/1
Switch(config-if)#swithport mode access
                   ^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#^Z
Switch#
00:19:30: %SYS-5-CONFIG_I: Configured from console by console
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, Fa0/3, Fa0/5, Fa0/6
                                                Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                Fa0/23, Fa0/24
10   rf10                             active    Fa0/4
20   rf20                             active    Fa0/1
30   ADA30                            active
40   ADA40                            active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
 --More--
```

```
                                             Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                             Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                             Fa0/23, Fa0/24
10   rf10                          active   Fa0/4
20   rf20                          active   Fa0/1
30   ADA30                         active
40   ADA40                         active
1002 fddi-default                  act/unsup
1003 token-ring-default            act/unsup
1004 fddinet-default               act/unsup
1005 trnet-default                 act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
30   enet  100030     1500  -      -      -        -    -        0      0

Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fastethernet0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan20
                                          ^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#interface fastethernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#^Z
Switch#
00:24:17: %SYS-5-CONFIG_I: Configured from console by console
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
10   rf10                             active    Fa0/3, Fa0/4
20   rf20                             active    Fa0/1, Fa0/2
30   ADA30                            active
40   ADA40                            active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
30   enet  100030     1500  -      -      -        -    -        0      0
 --More--
```

```
1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2010 by cisco Systems, Inc.
Compiled Tue 26-Oct-10 10:35 by nburra
00:00:20: %SNMP-5-COLDSTART: SNMP agent on host Switch is undergoing a cold start
00:00:24: %LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to up
00:00:24: %LINK-3-UPDOWN: Interface FastEthernet0/3, changed state to up
00:00:25: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
00:00:25: %LINK-3-UPDOWN: Interface FastEthernet0/4, changed state to up
00:00:26: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed sta
te to up
00:00:26: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed sta
te to up
00:00:27: %LINK-5-CHANGED: Interface Vlan1, changed state to administratively down
00:00:27: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed sta
te to up
00:00:27: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed sta
te to up
Switch>enable
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
10   EH10                             active
20   TB20                             active
30   ADA30                            active
40   ADA40                            active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
30   enet  100030     1500  -      -      -        -    -        0      0
40   enet  100040     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

Remote SPAN VLANs
------------------------------------------------------------------------------


Primary Secondary Type              Ports
------- --------- ----------------- ------------------------------------------

Switch#
```
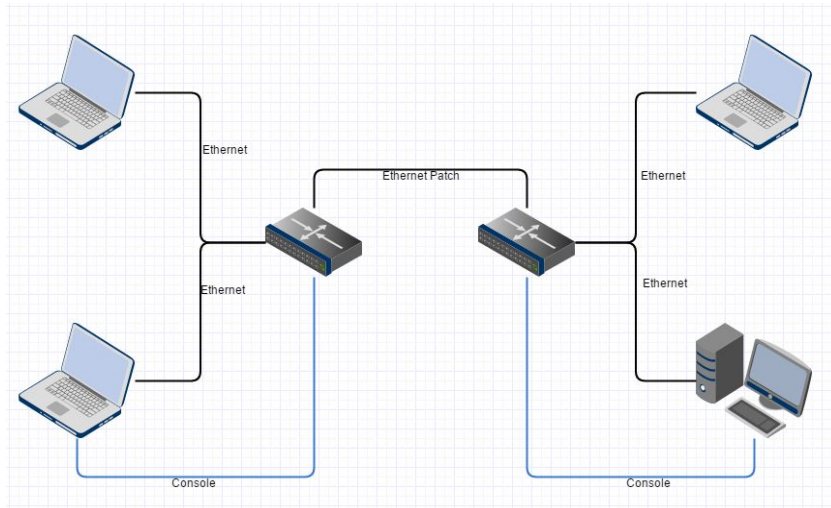
Task 2 - Create a static route through two networks

Below is a Illustration of our Network hardware configuration. Our set up consists of 4 computers connected to our Cisco Routers via Ethernet. We also have a Ethernet Patch cable connecting our two routers, and console cables running from the routers to two of the computers.

Prior to configuring the router, the local machine's' ethernet properties needed to be configured based on the provided information (shown below). Next, using a console cable, each of the routers were configured (using PuTTY and command prompt) to synch with the configurations of the local machines.

Network A	
Router name:	*(your initials)* 1
Router WAN address:	10.10.20.20/24
Router LAN address:	10.10.30.1/24
Computer address:	10.10.30.10/24
Computer GW:	10.10.30.1

Network B	
Router name:	*(your initials)* 2
Router WAN address:	10.10.20.10/24
Router LAN address:	10.10.10.1/24
Computer address:	10.10.10.10/24
Computer GW:	10.10.10.1

The next step is to sign in both LAN's workstation computers into an admin account and setup the ethernet settings for each computer. Next, configure both Network A and Network B to the settings shown below. Once the setup for both networks is complete we test the connection by: Rf2# show running-config, and Rf1# show ip route. We unfortunately were not able to connect to workstation B from workstation A, and vice versa. We tested connections by pinging other computers within the network. We could ping/connect within a certain network(intra-network), but not any outbound/inter-network (network to network) connections couldn't be made. For example, computer A, and computer B are connected together within

network A, and those can send messages back and forth, but computer C which is connected to network B, couldn't connect to either computer A or B.

All connection screenshots below.

```
32K bytes of non-volatile configuration memory.
8192K bytes of processor board System flash (Read/Write)


        --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no


Press RETURN to get started!


00:00:08: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
00:00:08: %LINK-3-UPDOWN: Interface Ethernet0/1, changed state to up
00:00:09: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/0, changed state to
 down
00:00:09: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1, changed state to
 up
00:00:27: %IP-5-WEBINST_KILL: Terminating DNS process
00:00:28: %LINK-5-CHANGED: Interface Ethernet0/0, changed state to administratively dow
n
00:00:28: %LINK-5-CHANGED: Interface Ethernet0/1, changed state to administratively dow
n
00:00:29: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1, changed state to
 down
00:00:36: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C2600-IS-M), Version 12.1(14), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Mon 25-Mar-02 23:27 by kellythw
Router>enable
Router#cofig terminal
         ^
% Invalid input detected at '^' marker.

Router#hostname RF2
        ^
% Invalid input detected at '^' marker.

Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname RF2
RF2(config)#ip routing
RF2(config)#interface Ethernet 0/0
RF2(config-if)#ip address 10.10.10.1 255.255.255.0
RF2(config-if)#no shutdown
RF2(config-if)#exit
RF2(config)#
00:03:12: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
RF2(config)#interface Ethernet 0/1
RF2(config-if)#ip address 10.10.20.10 255.255.255.0
RF2(config-if)#no shutdown
RF2(config-if)#exit
RF2(config)#
00:04:07: %LINK-3-UPDOWN: Interface Ethernet0/1, changed state to up
00:04:08: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1, changed state to
 up
RF2(config)#ip route 0.0.0.0 0.0.0.0 Ethernet 0/1
RF2(config)#exit
RF2#
00:04:30: %SYS-5-CONFIG_I: Configured from console by console
```

```
RF1>show running-config
           ^
% Invalid input detected at '^' marker.

RF1>enable
RF1#show running-config
Building configuration...

Current configuration : 433 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname RF1
!
!
!
!
!
!
ip subnet-zero
!
!
!
!
!
!
RF1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     10.0.0.0/24 is subnetted, 2 subnets
C       10.10.20.0 is directly connected, Ethernet0/1
C       10.10.30.0 is directly connected, Ethernet0/0
S*   0.0.0.0/0 is directly connected, Ethernet0/1
RF1#
```

```
RF2(config)#ip routing
RF2(config)#interface Ethernet 0/0
RF2(config-if)#ip address 10.10.10.1 255.255.255.0
RF2(config-if)#no shutdown
RF2(config-if)#exit
RF2(config)#
00:03:12: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
RF2(config)#interface Ethernet 0/1
RF2(config-if)#ip address 10.10.20.10 255.255.255.0
RF2(config-if)#no shutdown
RF2(config-if)#exit
RF2(config)#
00:04:07: %LINK-3-UPDOWN: Interface Ethernet0/1, changed state to up
00:04:08: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1, changed state to
 up
RF2(config)#ip route 0.0.0.0 0.0.0.0 Ethernet 0/1
RF2(config)#exit
RF2#
00:04:30: %SYS-5-CONFIG_I: Configured from console by console
RF2#^Z
RF2#show running-config
Building configuration...

Current configuration : 433 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname RF2
!
!
!
!
!
ip subnet-zero
!
!
!
!
!
!

RF2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     10.0.0.0/24 is subnetted, 1 subnets
C       10.10.20.0 is directly connected, Ethernet0/1
S*   0.0.0.0/0 is directly connected, Ethernet0/1
RF2#
```

Workstation A:

Destination	Works?
LAN A	Yes
WAN A	No
WAN B	No
LAN B	No
Workstation B	No

Workstation B:

Destination	Works?
LAN B	Yes
WAN B	No
WAN A	No
LAN A	No
Workstation A	No

Task 3 - Combined Switch Router

In this lab we connected two routers and two switches to allow four computers to be on the separate VLANS, the goal was to still be able to communicate with one another through the routers. We setup two VLANs on each switch and then configured a trunk between the switches using the routers. This allowed us to transmit data between the VLANs we set up on the switches.

We encountered many problems with the preparation of this lab.One problem we faced when attempting this lab was our inability to use the "encapsulate" command on one of our routers. This was a problem because we could not configure the router without setting encapsulation. To remedy the problem we replaced said router, but the replacement had another issue, resulting in packet transmission failure. Additionally, the IP addresses used on our network were changed from those specified in the lab to 192.168.0.0 because it solved an inexplicable error involving the schools network and addresses in the 10.0.0.0 range. And lastly, we discovered that one of the ports on the new router was shut down after being

configured and was not properly enabled. Nevertheless, we performed the lab the best we could and produced valuable data.

(Worked with seperate group: *C. Day, B. Schmitt, J. Grammer, A. Kirk, G. Gevoian, C. Lu*)
First we physically connected two routers and switches. The WAN interface of each router was connected to the other via a crossover cable. The LAN interface was connected to the last port of each switch. Two PCs were connected to the first two ports of each switch.
Next was IP configuration. We set all the IPs on the PCs according to the tables on Page 2 of the lab instructions. However, we ran into an issue using the 10.0.0.0 IP range. We switched to the 192.168.0.0 IP range which fixed the issue.
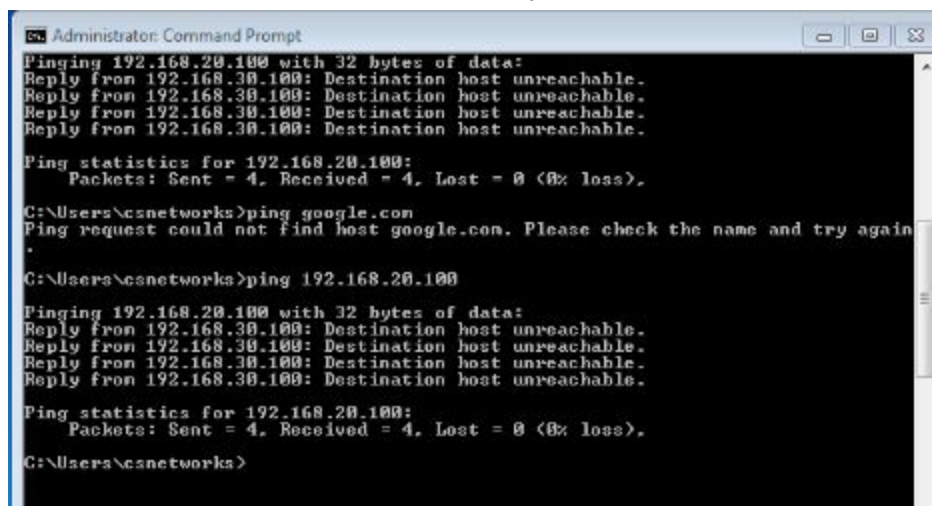
  Following that, we configured the routers. They used the 192.168.0.0 network to communicate between each other, and the first router was given 192.168.0.1 and the second given 192.168.0.2. This allowed the two routers to see each other and ping one another. The local interfaces had to be configured next. They were set up as sub-interfaces with dot1q encapsulation, allowing for both the subnets to communicate with each other on the same physical port. Static routes were set up to allow the traffic from the hosts to be redirected between the routers. At this point the routers have been set up and tested by pinging and known to be working.
After we finished setting up the routers, we moved on to set up the switches. We erased the previous VLAN data that was on the switch then moved on to adding our own VLAN set up. This setup basically involved dividing two ports on each of the two switches to a separate VLAN, making four total VLANs. Trunking was enabled on both of the switches, which allowed the VLANs to be shared across each other. At this point, the network was set up and it was time to move on to testing the network.
  All group members ran pings on their workstations to insure that we could communicate with all the other workstations and routers. Also, the routers were able to successfully ping the hosts and their own interfaces.

The screenshot below confirms our ability to communicate with one another over the network.

The image below is a graphical representation of the network we recreated.
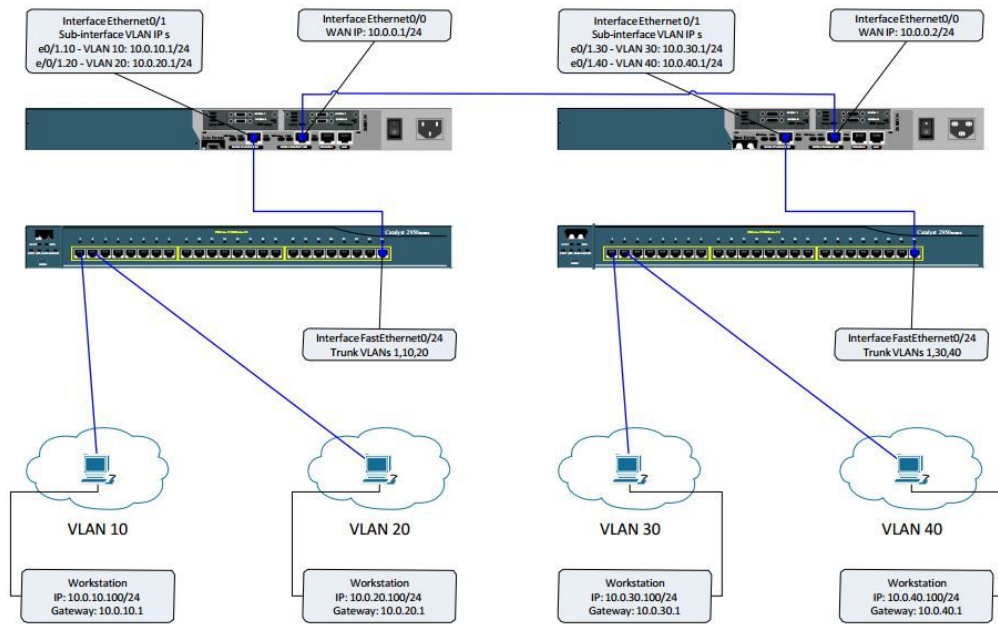
The images below shows our ping attempts before enabling the router port.

The image below shows our Switch 1 VLAN configuration

```
SW1#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                Fa0/23
10   VL10                             active    Fa0/1
20   VL20                             active    Fa0/2
30   CB30                             active
40   CB40                             active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
30   enet  100030     1500  -      -      -        -    -        0      0
40   enet  100040     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

Remote SPAN VLANs
-------------------------------------------------------------------------------


Primary Secondary Type              Ports
------- --------- ----------------- -------------------------------------------

SW1#
```

The image below shows our Switch 2 VLAN configuration

```
SW2#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                Fa0/23
10   PCP10                            active
20   PCP20                            active
30   VL30                             active    Fa0/1
40   VL40                             active    Fa0/2
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
30   enet  100030     1500  -      -      -        -    -        0      0
40   enet  100040     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

Remote SPAN VLANs
-------------------------------------------------------------------------------


Primary Secondary Type              Ports
------- --------- ----------------- -------------------------------------------

SW2#
```

The image below shows our Router 1 Configuration

```
interface FastEthernet0/0
 ip address 192.168.0.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0
 no ip address
 shutdown
!
interface FastEthernet0/1
 ip address 192.168.50.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1.10
 encapsulation dot1Q 10
 ip address 192.168.10.1 255.255.255.0
!
interface FastEthernet0/1.20
 encapsulation dot1Q 20
 ip address 192.168.20.1 255.255.255.0
!
interface Serial0/1
 no ip address
 shutdown
!
ip http server
no ip http secure-server
ip classless
ip route 10.0.30.0 255.255.255.0 10.0.0.2
ip route 10.0.40.0 255.255.255.0 10.0.0.2
ip route 192.168.30.0 255.255.255.0 192.168.0.2
ip route 192.168.40.0 255.255.255.0 192.168.0.2
!
!
!
!
!
!
!
!
!
!
line con 0
line aux 0
line vty 0 4
!
!
end

R1#
```

The image below shows our Router 2 configuration

```
R2#show run
Building configuration...

Current configuration : 733 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname R2
!
!
!
!
!
!
ip subnet-zero
!
!
!
!
!
!
interface Ethernet0/0
 ip address 192.168.0.2 255.255.255.0
!
interface Ethernet0/1
 no ip address
!
interface Ethernet0/1.30
 encapsulation dot1Q 30
 ip address 192.168.30.1 255.255.255.0
!
interface Ethernet0/1.40
 encapsulation dot1Q 40
 ip address 192.168.40.1 255.255.255.0
!
ip classless
ip route 10.0.30.0 255.255.255.0 10.0.0.1
ip route 10.0.40.0 255.255.255.0 10.0.0.1
ip route 192.168.10.0 255.255.255.0 192.168.0.1
ip route 192.168.20.0 255.255.255.0 192.168.0.1
ip http server
!
!
line con 0
line aux 0
line vty 0 4
!
end

R2#
```

The image below shows our successful Ping

```
C:\Users\csnetworks>ping 192.168.30.100

Pinging 192.168.30.100 with 32 bytes of data:
Reply from 192.168.30.100: bytes=32 time=1ms TTL=126
Reply from 192.168.30.100: bytes=32 time=1ms TTL=126
Reply from 192.168.30.100: bytes=32 time=1ms TTL=126
Reply from 192.168.30.100: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.30.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\csnetworks>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:
Reply from 192.168.10.1: bytes=32 time=2ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255
Reply from 192.168.10.1: bytes=32 time=1ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\Users\csnetworks>ping 192.168.20.100

Pinging 192.168.20.100 with 32 bytes of data:
Reply from 192.168.20.100: bytes=32 time=2ms TTL=127
Reply from 192.168.20.100: bytes=32 time=1ms TTL=127
Reply from 192.168.20.100: bytes=32 time<1ms TTL=127
Reply from 192.168.20.100: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.20.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Users\csnetworks>ping 192.168.30.100

Pinging 192.168.30.100 with 32 bytes of data:
Request timed out.

Ping statistics for 192.168.30.100:
    Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),
Control-C
^C
C:\Users\csnetworks>ping 192.168.30.1

Pinging 192.168.30.1 with 32 bytes of data:
Reply from 192.168.30.1: bytes=32 time=1ms TTL=254
Reply from 192.168.30.1: bytes=32 time=1ms TTL=254
Reply from 192.168.30.1: bytes=32 time=1ms TTL=254
Reply from 192.168.30.1: bytes=32 time=1ms TTL=254

Ping statistics for 192.168.30.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\csnetworks>ping 192.168.40.1

Pinging 192.168.40.1 with 32 bytes of data:
Reply from 192.168.40.1: bytes=32 time=1ms TTL=254
Reply from 192.168.40.1: bytes=32 time=1ms TTL=254
Reply from 192.168.40.1: bytes=32 time=1ms TTL=254
Reply from 192.168.40.1: bytes=32 time=1ms TTL=254

Ping statistics for 192.168.40.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\csnetworks>
```