**CSCE 4535 Lab 3&4 – Vlans, Trunking and Routing Configuration**

**Final Grade 7%**

**How to Perform a Basic Router Configuration Using the Cisco IOS CLI**

1. <https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus5000/sw/configuration/guide/cli/CLIConfigurationGuide/AccessTrunk.html>
2. <https://www.cisco.com/c/en/us/td/docs/routers/access/1900/software/configuration/guide/Software_Configuration/routconf.html>

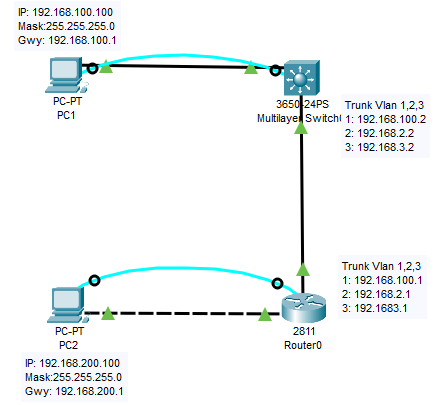
**Lab 3 includes the following procedures:**

1. **Configuring do1Q trunking on Switch-1 (Ref#1)**
2. **Configure sub-interface on a Router-1 (Ref#1)**
3. **Configuring do1Q trunking on Router-1 (Ref#1)**
4. **Configuring Basic Parameters (Ref#2)**
5. **Configure loopback interface on a router (Ref#2)**
6. **Specifying a Default Gateway on a switch**
7. **Specifying a Default Route on a router**
8. **Verifying Network Connectivity,**
9. **Saving Your Router Configuration.**

**Please note that grading for Homeworks and Labs require that you configure correct vlans on the switch and trunk based on the design. Configuring access vlans or configuring all vlans on trunk is not acceptable. I have seen many networks destroyed by this bad practice. I want to make sure that you do not learn bad habits. You will not get full credit for work if you use this practice for homeworks and Labs. Configure to match the Network Design for full credit.**

**Lab 3 – Vlans & Trunking Configuration**

We will use packet tracer activity we created for Lab 2 to learn how to add vlans and Vlan trunking to the network we used for Lab2.



The link from 3650 MLS switch to 2811 Router in Lab 2 was a single physical link for vlan 1.

In Lab 3 we Learn to convert this link to a 802.1Q trunk that can carry multiple vlans from one device to another in step 6.

1. Make a copy of Lab2.pkt file and name it Lab3.pkt
2. Start packet Tracer and load Lab3.pkt activity.
3. Configure Vlans on MLS1 as follows:

Vlan 1 default (already existing)

Vlan 2 Network-2

Vlan 3 Network-3

1. Vlan 2 Network-2
   1. IP address: 192.168.2.2
   2. Network mask: 255.255.255.0
2. Vlan 3 Network-3
   1. IP address: 192.168.3.2
   2. Network mask: 255.255.255.0
3. Configure MLS-1 GigabitEthernet1/0/24
   1. switchport mode trunk
   2. switchport trunk allowed vlan 1,2,3
4. set ip default-gateway 192.168.100.1
5. Save your configuration for MLS1
6. Save Config
   1. to local memory
   2. to local storage (Flash)
   3. to remote storage
7. How do you Configure Router1 vlan 1,2? (you don’t)
8. Configure Router-1 FastEthernet0/1

no ip address

1. Configure Router-1 FastEthernet0/1.1
   1. encapsulation dot1Q 1
   2. IP address: 192.168.100.1
   3. Network mask: 255.255.255.0
2. Configure Router-1 FastEthernet0/1.2
   1. encapsulation dot1Q 2
   2. IP address: 192.168.2.1
   3. Network mask: 255.255.255.0
3. Configure Router-1 FastEthernet0/1.3
   1. encapsulation dot1Q 3
   2. IP address: 192.168.3.1
   3. Network mask: 255.255.255.0
4. Save your configuration for Router-1
5. Save Config
   1. to local memory
   2. to local storage (Flash)
   3. to remote storage
6. Testing
7. Labeling the Network diagram.
8. From MLS1 switch for Vlan 1,2,3 each ping 2811 Router IP address to verify connectivity.
9. From 2811 Router for Vlan 1,2,3 each ping MLS1 switch IP address to verify connectivity.
10. Verify connectivity for PC1 to 2811 Router using ping.
11. Save Packet Tracer Activity
12. Turn in your network diagram, MLS1 Switch & 2811 Router1 configuration items and MLS1 show vlan in a word document for Lab 3 grading.

Network Diagram:

Diagram

Description automatically generated

MSL1 Switch Config:

!

version 16.3.2

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname MLS1

!

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

no ip cef

no ipv6 cef

!

!

!

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

!

!

!

!

!

!

interface GigabitEthernet1/0/1

!

interface GigabitEthernet1/0/2

!

interface GigabitEthernet1/0/3

!

interface GigabitEthernet1/0/4

!

interface GigabitEthernet1/0/5

!

interface GigabitEthernet1/0/6

!

interface GigabitEthernet1/0/7

!

interface GigabitEthernet1/0/8

!

interface GigabitEthernet1/0/9

!

interface GigabitEthernet1/0/10

!

interface GigabitEthernet1/0/11

!

interface GigabitEthernet1/0/12

!

interface GigabitEthernet1/0/13

!

interface GigabitEthernet1/0/14

!

interface GigabitEthernet1/0/15

!

interface GigabitEthernet1/0/16

!

interface GigabitEthernet1/0/17

!

interface GigabitEthernet1/0/18

!

interface GigabitEthernet1/0/19

!

interface GigabitEthernet1/0/20

!

interface GigabitEthernet1/0/21

!

interface GigabitEthernet1/0/22

!

interface GigabitEthernet1/0/23

!

interface GigabitEthernet1/0/24

switchport trunk allowed vlan 1-3

switchport mode trunk

!

interface GigabitEthernet1/1/1

!

interface GigabitEthernet1/1/2

!

interface GigabitEthernet1/1/3

!

interface GigabitEthernet1/1/4

!

interface Vlan1

ip address 192.168.100.2 255.255.255.0

!

interface Vlan2

mac-address 000a.4109.4701

ip address 192.168.2.2 255.255.255.0

!

interface Vlan3

mac-address 000a.4109.4702

ip address 192.168.3.2 255.255.255.0

!

ip default-gateway 192.168.100.1

ip classless

!

ip flow-export version 9

!

!

!

banner motd $\*\*\*\*\* Authorized users Only \*\*\*\*\*$

!

!

!

!

line con 0

exec-timeout 5 0

password 7 0822455D0A16

login

!

line aux 0

!

line vty 0 4

exec-timeout 5 0

password 7 0822455D0A16

login

transport input telnet

line vty 5 15

exec-timeout 5 0

password 7 0822455D0A16

login

transport input telnet

!

!

!

!

end

Router1 Config:

!

version 15.1

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname Router1

!

!

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

no ip cef

no ipv6 cef

!

!

!

!

license udi pid CISCO2811/K9 sn FTX1017B9U0-

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

!

!

!

!

!

!

interface FastEthernet0/0

ip address 192.168.200.1 255.255.255.0

duplex auto

speed auto

!

interface FastEthernet0/1

no ip address

duplex auto

speed auto

!

interface FastEthernet0/1.1

encapsulation dot1Q 1 native

ip address 192.168.100.1 255.255.255.0

!

interface FastEthernet0/1.2

encapsulation dot1Q 2

ip address 192.168.2.1 255.255.255.0

!

interface FastEthernet0/1.3

encapsulation dot1Q 3

ip address 192.168.3.1 255.255.255.0

!

interface FastEthernet0/0/0

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/0/1

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/0/2

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/0/3

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/1/0

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/1/1

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/1/2

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/1/3

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/2/0

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/2/1

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/2/2

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/2/3

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/3/0

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/3/1

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/3/2

switchport mode access

switchport nonegotiate

!

interface FastEthernet0/3/3

switchport mode access

switchport nonegotiate

!

interface FastEthernet1/0

no ip address

shutdown

!

interface Vlan1

no ip address

shutdown

!

ip classless

!

ip flow-export version 9

!

!

!

banner motd $\*\*\*\*\* Authorized users Only \*\*\*\*\*$

!

!

!

!

line con 0

exec-timeout 5 0

password 7 0822455D0A16

login

!

line aux 0

!

line vty 0 4

exec-timeout 5 0

password 7 0822455D0A16

login

transport input telnet

line vty 5 15

exec-timeout 5 0

password 7 0822455D0A16

login

transport input telnet

!

!

!

end

MSL1 Show VLAN Output:

VLAN Name Status Ports

---- -------------------------------- --------- -------------------------------

1 default active Gig1/0/1, Gig1/0/2, Gig1/0/3, Gig1/0/4

Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8

Gig1/0/9, Gig1/0/10, Gig1/0/11, Gig1/0/12

Gig1/0/13, Gig1/0/14, Gig1/0/15, Gig1/0/16

Gig1/0/17, Gig1/0/18, Gig1/0/19, Gig1/0/20

Gig1/0/21, Gig1/0/22, Gig1/0/23, Gig1/1/1

Gig1/1/2, Gig1/1/3, Gig1/1/4

2 Network-2 active

3 Network-3 active

1002 fddi-default active

1003 token-ring-default active

1004 fddinet-default active

1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

1 enet 100001 1500 - - - - - 0 0

2 enet 100002 1500 - - - - - 0 0

3 enet 100003 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

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

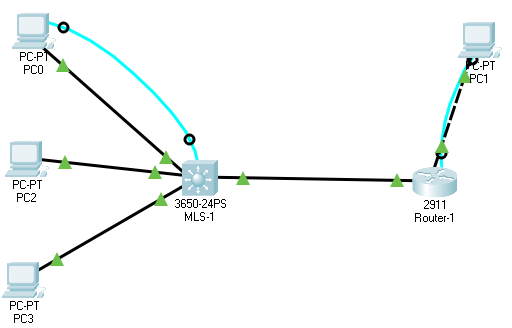
Remote SPAN VLANs

------------------------------------------------------------------------------

Primary Secondary Type Ports

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**Lab 4 – Vlans , Trunking and Routing Configuration**





1. Start packet Tracer
2. Install new PC-0
3. Configure PC-0
   1. IP address: 192.168.1.100
   2. Network mask: 255.255.255.0
   3. Default Gateway: 192.168.1.1
4. Record the MAC Address PC-0: 0050.0F17.E249
5. Install two new PC’s PC-2 & PC3
6. Configure PC-2
   1. IP address: 192.168.100.100
   2. Network mask: 255.255.255.0
   3. Default Gateway: 192.168.100.1
7. Record the MAC Address PC-2: 0003.E485.D63E
8. Configure PC-3
   1. IP address: 192.168.101.100
   2. Network mask: 255.255.255.0
   3. Default Gateway: 192.168.101.1
9. Record the MAC Address PC-3: 0001.6386.1700
10. Install a Multilayer Switch-1 3650 (MLS-1– add power supply, note GigabitEthernet Interfaces on 3650)
11. Connect PC-0 to MLS-1
    1. Console cable
    2. Ethernet cable
12. Configure MLS-1 Management GigabitEthernet1/0/1
    1. switchport mode access
    2. access (Vlan 1 is default)
13. Review the current configuration
14. Apply Security Script to setup the following:
    1. Configure Hostname for MLS-1
    2. Configure enable “secret password” cisco
    3. Configure “line console 0 password” cisco
    4. Configure the console Idle privilege exec timeout of 5 minutes
    5. Now encrypt the console password
    6. Now add a banner “No unauthorized access allowed!”
    7. Configure vty lines 0-4 for remote access
    8. Configure password “cisco” for remote login
15. Configure Vlans as follows:
    1. Vlan 1 default
    2. Vlan 10 Network-1
    3. Vlan 20 Network-2
16. Vlan 1 default
    1. IP address: 192.168.1.2
    2. Network mask: 255.255.255.0
17. Vlan 10 Network-1
    1. IP address: 192.168.100.2
    2. Network mask: 255.255.255.0
18. Vlan 20 Network-2
    1. IP address: 192.168.101.2
    2. Network mask: 255.255.255.0
19. Configure MLS-1 Network 1 GigabitEthernet1/0/2
20. switchport mode access
21. access (Vlan 10)
22. Configure MLS-1 Network 2 GigabitEthernet1/0/3
23. switchport mode access
24. access (Vlan 20)
25. Configure MLS-1 Trunk GigabitEthernet1/0/24
    1. switchport mode trunk
    2. switchport trunk allowed vlan 1,10,20
26. Save your configuration for MLS-1
27. Save Config
    1. to local memory
    2. to local storage (Flash)
    3. to remote storage
28. Install new PC-1
29. Configure PC-1
    1. IP address: 192.168.2.100
    2. Network mask: 255.255.255.0
    3. Default Gateway: 192.168.2.1
30. Record the MAC Address PC-0: 000A.F350.CC03
31. Install a Router -1 (2911, note GigabitEthernet Interfaces on 2911)
32. Connect PC-1 to Router-1
    1. Console cable
    2. Ethernet cable
33. Configure Router-1 GigabitEthernet0/2
    1. IP address: 192.168.2.1
    2. Network mask: 255.255.255.0
34. Review the current configuration
35. Apply Security Script to setup the following:
    1. Configure Hostname for MLS-1
    2. Configure enable “secret password” cisco
    3. Configure “line console 0 password” cisco
    4. Configure the console Idle privilege exec timeout of 5 minutes
    5. Now encrypt the console password
    6. Now add a banner “No unauthorized access allowed!”
    7. Configure vty lines 0-4 for remote access
    8. Configure password “cisco” for remote login
36. How do you Configure Router 1 vlan 10,20? (you don’t)
37. Configure Router-1 GigabitEthernet0/0 and connect it to MLS-1 Trunk GigabitEthernet1/0/24
38. Configure Router-1 GigabitEthernet0/0.1
    1. encapsulation dot1Q 1
    2. IP address: 192.168.1.1
    3. Network mask: 255.255.255.0
39. Configure Router-1 GigabitEthernet0/0.2
    1. encapsulation dot1Q 10
    2. IP address: 192.168.100.1
    3. Network mask: 255.255.255.0
40. Configure Router-1 GigabitEthernet0/0.3
    1. encapsulation dot1Q 20
    2. IP address: 192.168.101.1
    3. Network mask: 255.255.255.0
41. Save your configuration for Router-1
42. Save Config
    1. to local memory
    2. to local storage (Flash)
    3. to remote storage
43. Testing
44. Labeling the Network diagram.
45. Ping PC-0 to Gateway IP
46. Ping PC-1 to Gateway IP
47. Telnet from MLS1 to Router1
48. Save Packet Tracer Activity
49. Telnet 192.168.1.1 from PC0
    1. Now you have remote console connection
50. Test and save output in a word file and upload the following in word file for grading:
    1. Ping PC-0, PC-1, PC-2, PC3 Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | PC0 | PC1 | PC2 | PC3 |
| PC0 | ==== | Pinging 192.168.2.100 with 32 bytes of data:  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time=1ms TTL=127  Ping statistics for 192.168.2.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms | Pinging 192.168.100.100 with 32 bytes of data:  Reply from 192.168.100.100: bytes=32 time=22ms TTL=127  Reply from 192.168.100.100: bytes=32 time=1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.100.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 22ms, Average = 5ms | Pinging 192.168.101.100 with 32 bytes of data:  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time=1ms TTL=127  Reply from 192.168.101.100: bytes=32 time=1ms TTL=127  Ping statistics for 192.168.101.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms |
| PC1 | Pinging 192.168.1.100 with 32 bytes of data:  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time=1ms TTL=127  Reply from 192.168.1.100: bytes=32 time=1ms TTL=127  Ping statistics for 192.168.1.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms | ==== | Pinging 192.168.100.100 with 32 bytes of data:  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.100.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 0ms, Average = 0ms | Pinging 192.168.101.100 with 32 bytes of data:  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.101.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 0ms, Average = 0ms |
| PC2 | Pinging 192.168.1.100 with 32 bytes of data:  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time=1ms TTL=127  Reply from 192.168.1.100: bytes=32 time=1ms TTL=127  Ping statistics for 192.168.1.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms | Pinging 192.168.2.100 with 32 bytes of data:  Reply from 192.168.2.100: bytes=32 time=1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.2.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms | ==== | Pinging 192.168.101.100 with 32 bytes of data:  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Reply from 192.168.101.100: bytes=32 time=1ms TTL=127  Reply from 192.168.101.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.101.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms |
| PC3 | Pinging 192.168.1.100 with 32 bytes of data:  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time<1ms TTL=127  Reply from 192.168.1.100: bytes=32 time=1ms TTL=127  Ping statistics for 192.168.1.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 1ms, Average = 0ms | Pinging 192.168.2.100 with 32 bytes of data:  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time<1ms TTL=127  Reply from 192.168.2.100: bytes=32 time=1ms TTL=127  Reply from 192.168.2.100: bytes=32 time=2ms TTL=127  Ping statistics for 192.168.2.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 2ms, Average = 0ms | Pinging 192.168.100.100 with 32 bytes of data:  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Reply from 192.168.100.100: bytes=32 time<1ms TTL=127  Ping statistics for 192.168.100.100:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 0ms, Average = 0ms | ==== |

<<<insert ping results here>>>

* 1. Execute arp -a on PC-0

Internet Address Physical Address Type

192.168.1.1 000c.cf87.c801 dynamic

* 1. Record “Show arp” on MLS-1

Protocol Address Age (min) Hardware Addr Type Interface

Internet 192.168.1.2 - 0001.96DA.4236 ARPA Vlan1

Internet 192.168.100.2 - 0001.96DA.4201 ARPA Vlan10

Internet 192.168.101.2 - 0001.96DA.4202 ARPA Vlan20

* 1. Record “show ip route” on Router-1

Codes: L - local, C - connected, S - static, 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 not set

192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.1.0/24 is directly connected, GigabitEthernet0/0.1

L 192.168.1.1/32 is directly connected, GigabitEthernet0/0.1

192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.2.0/24 is directly connected, GigabitEthernet0/2

L 192.168.2.1/32 is directly connected, GigabitEthernet0/2

192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.100.0/24 is directly connected, GigabitEthernet0/0.2

L 192.168.100.1/32 is directly connected, GigabitEthernet0/0.2

192.168.101.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.101.0/24 is directly connected, GigabitEthernet0/0.3

L 192.168.101.1/32 is directly connected, GigabitEthernet0/0.3

* 1. Export MLS1 & Router-1 configuration to Desktop & upload for grading.
  2. Save Packet Tracer Activity

1. Turn in your network diagram, MLS1 & Router 1 configuration items and MLS1 show vlan along with the Test (46a-d) above in a word document for grading.

Network Diagram:

Diagram

Description automatically generated

MLS1 Switch Config:

!

version 16.3.2

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname MLS-1

!

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

no ip cef

no ipv6 cef

!

!

!

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

!

!

!

!

!

!

interface GigabitEthernet1/0/1

switchport mode access

switchport nonegotiate

!

interface GigabitEthernet1/0/2

switchport access vlan 10

switchport mode access

switchport nonegotiate

!

interface GigabitEthernet1/0/3

switchport access vlan 20

switchport mode access

switchport nonegotiate

!

interface GigabitEthernet1/0/4

!

interface GigabitEthernet1/0/5

!

interface GigabitEthernet1/0/6

!

interface GigabitEthernet1/0/7

!

interface GigabitEthernet1/0/8

!

interface GigabitEthernet1/0/9

!

interface GigabitEthernet1/0/10

!

interface GigabitEthernet1/0/11

!

interface GigabitEthernet1/0/12

!

interface GigabitEthernet1/0/13

!

interface GigabitEthernet1/0/14

!

interface GigabitEthernet1/0/15

!

interface GigabitEthernet1/0/16

!

interface GigabitEthernet1/0/17

!

interface GigabitEthernet1/0/18

!

interface GigabitEthernet1/0/19

!

interface GigabitEthernet1/0/20

!

interface GigabitEthernet1/0/21

!

interface GigabitEthernet1/0/22

!

interface GigabitEthernet1/0/23

!

interface GigabitEthernet1/0/24

switchport trunk allowed vlan 1,10,20

switchport mode trunk

!

interface GigabitEthernet1/1/1

!

interface GigabitEthernet1/1/2

!

interface GigabitEthernet1/1/3

!

interface GigabitEthernet1/1/4

!

interface Vlan1

ip address 192.168.1.2 255.255.255.0

!

interface Vlan10

mac-address 0001.96da.4201

ip address 192.168.100.2 255.255.255.0

!

interface Vlan20

mac-address 0001.96da.4202

ip address 192.168.101.2 255.255.255.0

!

ip classless

!

ip flow-export version 9

!

!

!

banner motd #No unauthorized access allowed!#

!

!

!

!

line con 0

exec-timeout 5 0

password 7 0822455D0A16

login

!

line aux 0

!

line vty 0 4

password 7 0822455D0A16

login

transport input telnet

!

!

!

!

end

Router-1 Config:

!

version 15.1

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname Router-1

!

!

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

ip cef

no ipv6 cef

!

!

!

!

license udi pid CISCO2911/K9 sn FTX1524OROV-

!

!

!

!

!

!

!

!

!

!

!

spanning-tree mode pvst

!

!

!

!

!

!

interface GigabitEthernet0/0

no ip address

duplex auto

speed auto

!

interface GigabitEthernet0/0.1

encapsulation dot1Q 1 native

ip address 192.168.1.1 255.255.255.0

!

interface GigabitEthernet0/0.2

encapsulation dot1Q 10

ip address 192.168.100.1 255.255.255.0

!

interface GigabitEthernet0/0.3

encapsulation dot1Q 20

ip address 192.168.101.1 255.255.255.0

!

interface GigabitEthernet0/1

no ip address

duplex auto

speed auto

shutdown

!

interface GigabitEthernet0/2

ip address 192.168.2.1 255.255.255.0

duplex auto

speed auto

!

interface Vlan1

no ip address

shutdown

!

ip classless

!

ip flow-export version 9

!

!

!

banner motd #No unauthorized access allowed!#

!

!

!

!

line con 0

exec-timeout 5 0

password 7 0822455D0A16

login

!

line aux 0

!

line vty 0 4

password 7 0822455D0A16

login

transport input telnet

!

!

!

End

MSL1 Show VLAN:

VLAN Name Status Ports

---- -------------------------------- --------- -------------------------------

1 default active Gig1/0/1, Gig1/0/4, Gig1/0/5, Gig1/0/6

Gig1/0/7, Gig1/0/8, Gig1/0/9, Gig1/0/10

Gig1/0/11, Gig1/0/12, Gig1/0/13, Gig1/0/14

Gig1/0/15, Gig1/0/16, Gig1/0/17, Gig1/0/18

Gig1/0/19, Gig1/0/20, Gig1/0/21, Gig1/0/22

Gig1/0/23, Gig1/1/1, Gig1/1/2, Gig1/1/3

Gig1/1/4

10 Network-1 active Gig1/0/2

20 Network-2 active Gig1/0/3

1002 fddi-default active

1003 token-ring-default active

1004 fddinet-default active

1005 trnet-default active

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

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

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs

------------------------------------------------------------------------------

Primary Secondary Type Ports