- Multilayer Switching Lab -

Multilayer Switching – Lab

Switch 1
Catalyst 3550 EMI

Fa0/8

Fa0/2

Fa0/3   Fa0/7

PC1   PC2

Fa0/0   Fa0/1
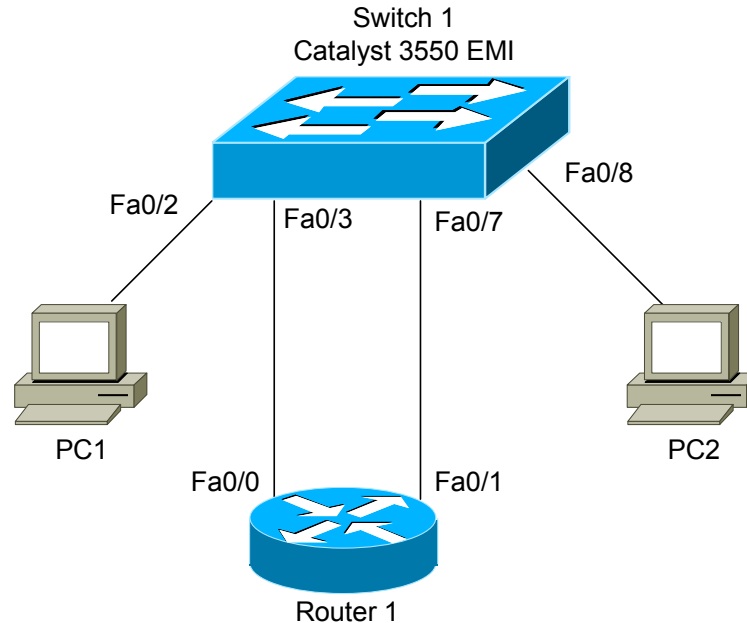
Router 1

Basic Objectives:

1. Configure and cable the Ethernet interfaces on both the switch and router as indicated in the above diagram.

2. Configure the Ethernet interfaces on the router with the following IP addresses:

   Router 1 fa0/0: 192.168.0.1/24
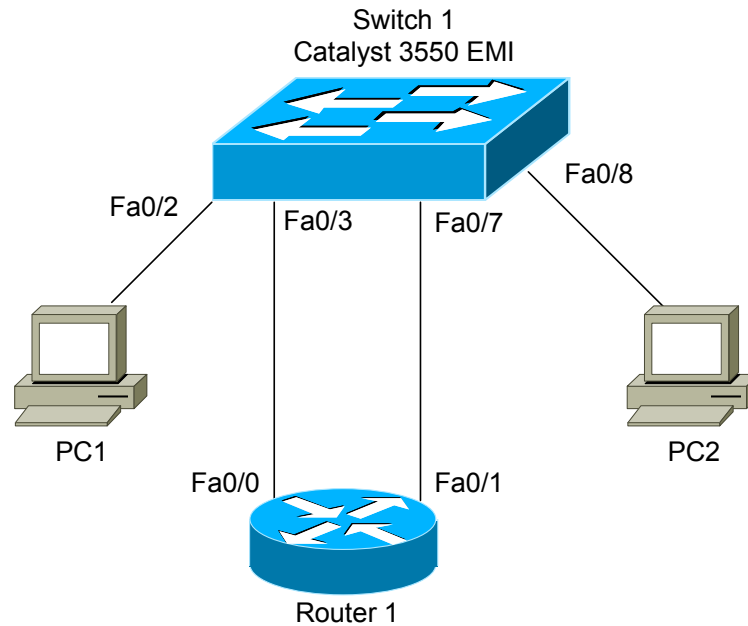   Router 1 fa0/1: 192.168.1.1/24

3. Use an operating system of your choice on PC1 and PC2. Ensure that each is running the TCP/IP stack.

Multilayer Switching – Lab (continued)

Switch 1
Catalyst 3550 EMI

Fa0/8

Fa0/2   Fa0/3   Fa0/7

PC1

PC2

Fa0/0   Fa0/1

Router 1

Standard VLAN Routing Objectives:

4. Create VLANs 100 and 200 on Switch 1. Assign switchports fa0/2 and fa0/3 to VLAN 100, and switchports fa0/7 and fa0/8 to VLAN 200.

    _____
    _____
    _____

5. Configure the router to pass traffic between VLANs 100 and 200.

    _____
    _____
    _____

6. Configure a default gateway on each PC, pointing to the appropriate interface on the router. Ensure connectivity between the two PC's.

    _____
    _____
    _____

Multilayer Switching – Lab (continued)

Switch 1
Catalyst 3550 EMI

Fa0/2

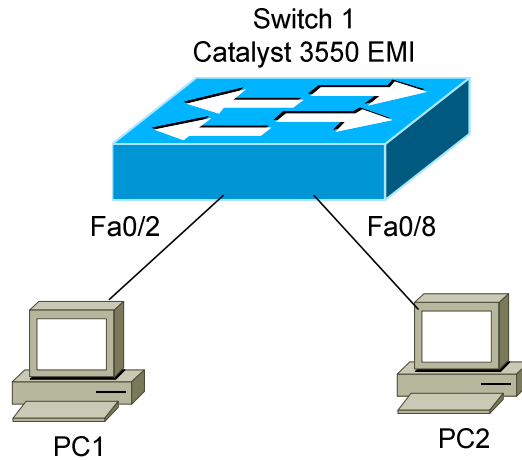Fa0/5

Fa0/8

PC1

PC2

Fa0/0
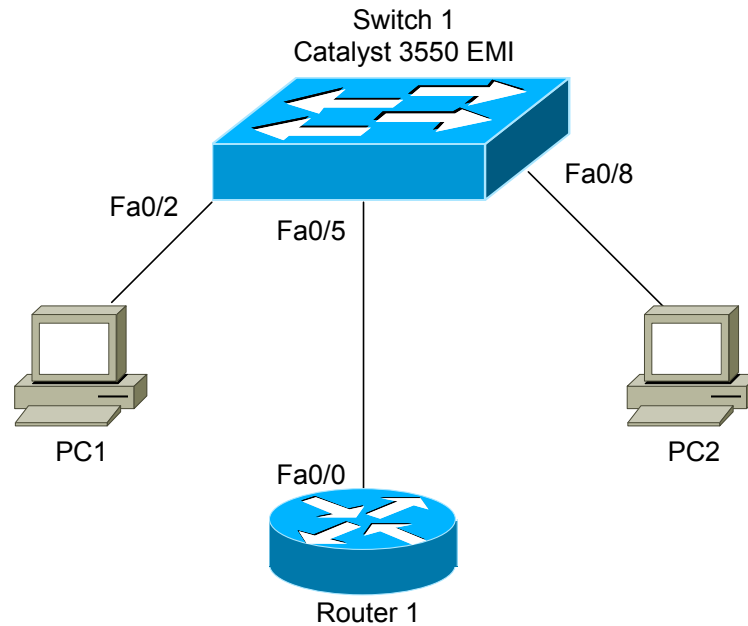
Router 1

Router-on-a-Stick Objectives:

7. Reconfigure and cable the Ethernet interfaces on both the switch and router as indicated in the above **new** diagram. Ensure that VLANs 100 and 200 are still created, and that switchport fa0/2 is assigned to VLAN 100, and switchport fa0/8 is assigned to VLAN 200.

    _____
    _____

8. Configure switchport fa0/5 as appropriate to pass all VLAN traffic to Router 1.

    _____
    _____
    _____

9. Configure Router 1's fa0/0 as appropriate to route between VLANs 100 and 200. Configure PC 1's and PC 2's default gateways as appropriate to ensure connectivity.

    _____
    _____
    _____
    _____
    _____

Multilayer Switching – Lab (continued)

Switch 1
Catalyst 3550 EMI

Fa0/2   Fa0/8

PC1   PC2

Multilayer Switching Objectives:

10. Reconfigure and cable the Ethernet interfaces on both the switch and router as indicated in the above **final** diagram. Ensure that VLANs 100 and 200 are still created, and that switchport fa0/2 is assigned to VLAN 100, and switchport fa0/8 is assigned to VLAN 200.

_____
_____

11. Configure multilayer switching as appropriate to route between VLAN 100 and VLAN 200.

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_____
_____
_____
_____
_____
_____

12. Configure PC 1's and PC 2's default gateways as appropriate to ensure connectivity.

_____
_____
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