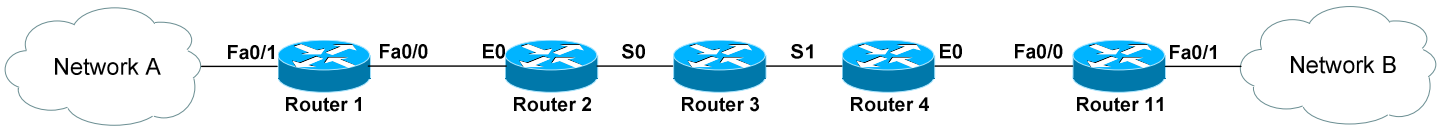
- Basic QoS Lab -

Configuring Basic QoS - Lab



Basic Objectives:

1. Configure and cable the Serial and Ethernet interfaces as indicated in the above diagram.
2. Configure IP addresses between the routers using the following 192.168.YY.x/24 scheme:

Router 1 – Network A = 192.168.123.x
Router 1 – 2 = 192.168.12.x
Router 2 – 3 = 192.168.23.x
Router 3 – 4 = 192.168.34.x
Router 4 – 11 = 192.168.114.x
Router 11 – Network B = 192.168.255.x

3. Configure a loopback interface on each router. The interface should have an address using the following scheme: Y.Y.Y.Y/24. For example, Router 4's loopback should be 4.4.4.4/24.

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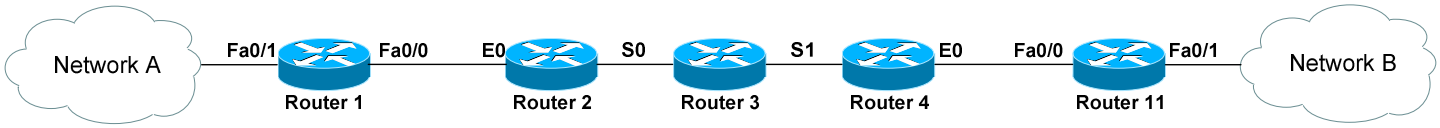
Configuring Basic QoS – Lab (continued)



Routing Objectives:

4. Configure RIPv2 routing on all routers. Ensure that routes are not automatically summarized.

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5. Configure a host in NetworkA and a host in NetworkB, and confirm end-to-end connectivity.

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6. Install the Apache webserver software on each host. The instructor will provide access to the software. Confirm HTTP access between each host.

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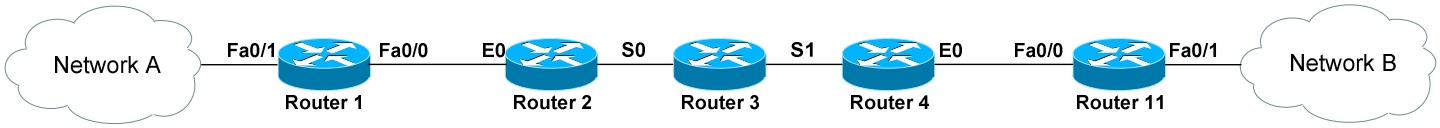
Note: The two hosts will be referred to as WebserverA and WebserverB throughout the remainder of this lab.

Configuring Basic QoS – Lab (continued)



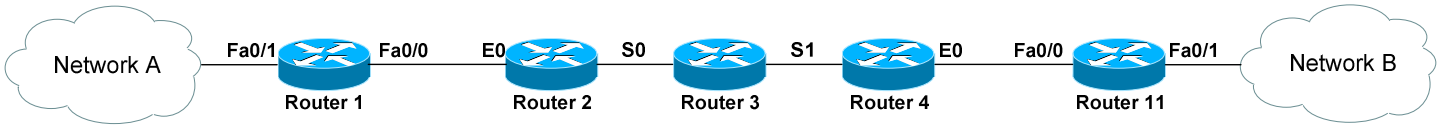
QoS Marking Objectives:

7. Configure Router1 to mark *ICMP* traffic from WebserverA to WebserverB with an IP Precedence of 2.

8. Configure Router1 to mark *HTTP* traffic from WebserverA to WebserverB with an IP Precedence of 4.

9. Use a packet-sniffer to confirm that the appropriate traffic is marked from WebserverA to WebserverB.

Configuring Basic QoS – Lab (continued)



QoS Marking Objectives (continued):

10. Configure Router11 to mark *ICMP* traffic from WebserverB to WebserverA with a DSCP value of AF23.

11. Configure Router11 to mark *HTTP* traffic from WebserverB to WebserverA with a DSCP value of AF31.

12. Use a packet-sniffer to confirm that the appropriate traffic is marked from WebserverB to WebserverA.

13. Use the appropriate *show* command on your router to determine the queuing method in use on each interface.

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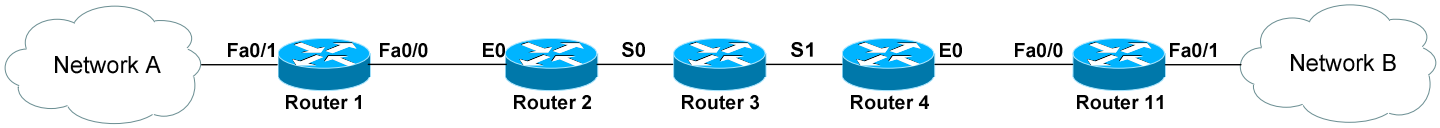
Configuring Basic QoS – Lab (continued)



QoS Legacy Queuing Objectives:

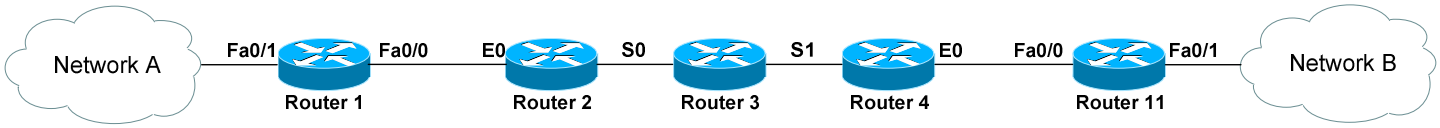
14. On all interfaces that end with a *1* (i.e., fa0/1 or s1), configure Priority queuing. Place HTTP traffic into the High queue, and all other IP traffic into the Normal queue.

15. Use the appropriate *show* command to confirm that Priority queuing is configured on the appropriate interfaces.

16. On all interfaces that end with a *0* (i.e., fa0/0 or s0), configure Custom queuing. Place HTTP traffic into the Queue 1, and all other IP traffic into the Queue 2. Set a byte-count limit of 4000 on Queue 1, and a packet-limit of 40. Set a byte-count limit of 2000 on Queue 2, and a packet-limit of 30.

17. Use the appropriate *show* command to confirm that Custom queuing is configured on the appropriate interfaces.

Configuring Basic QoS – Lab (continued)



QoS CBWFQ Objectives:

18. Remove all Priority or Custom Queuing configuration from the previous objectives.

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19. On all Router 2, Router 3, and Router 4 interfaces, configure Class-Based Weighted Fair Queuing (CBWFQ). Ensure that HTTP traffic from WebserverA to WebserverB (and vice versa) is *guaranteed* 35% of the interface's bandwidth. Ensure that ICMP traffic from WebserverA to WebserverB (and vice versa) is provided with 15% of the interface's bandwidth.

    Note: Accomplish the above without using any access-list statements on Router 2, Router 3, or Router 4.

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20. Use the appropriate *show* command to confirm that CBWFQ queuing is configured on the appropriate interfaces.

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