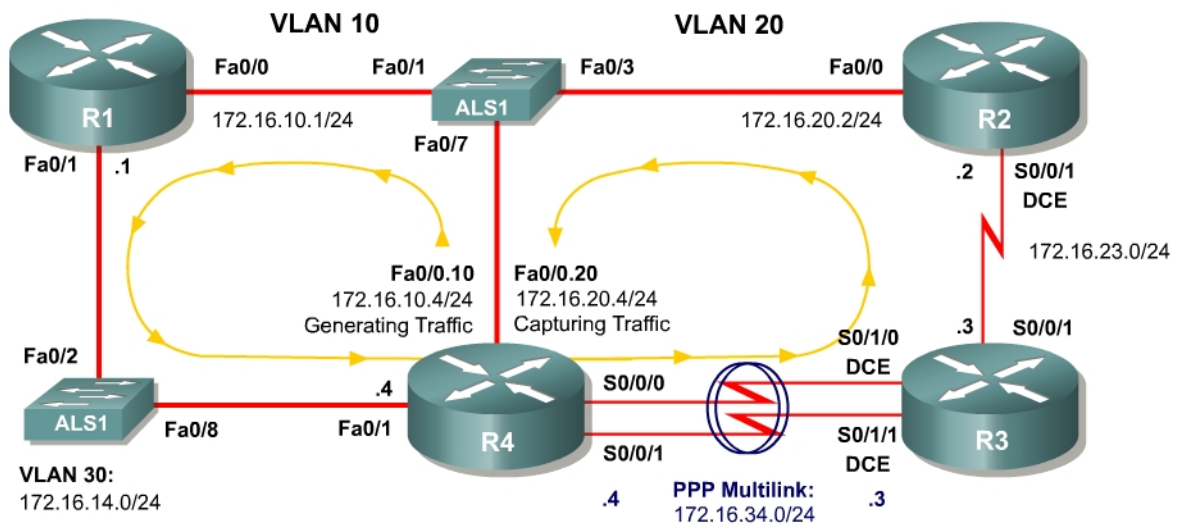


Case Study: QoS and MLPPP

Instructions

Implement the International Travel Agency network shown in the topology diagram and using the information and the instructions in the scenario. Implement the design on the lab set of routers. Verify that all configurations are operational and functioning according to the guidelines. This lab requires you to have the advanced Packet configuration set up as shown in Lab 3.1: Preparing for QoS.

Topology Diagram



Scenario

The International Travel Agency is evaluating Quality of Service (QoS) strategies in their test environment using a traffic generator. This lab should be completed using the IOS command-line interface (CLI), without using Cisco Security Device Manager (SDM).

- Set up R4 using the advanced Packet configuration and start traffic generation. (Certain configuration changes may change the traffic generation status so traffic generation may need to be restarted later in the lab.)
- Configure all interfaces using the subnetting scheme shown in the diagram, with the exception of the serial links between R3 and R4.
- Use a clock rate of 800000 on the serial link between R2 and R3.
- Configure the serial links between R3 and R4 to run at 2 mbps.
- Bind the serial links between R3 and R4 using PPP multilink and address it as shown in the diagram.

- Use weighted fair queuing (WFQ) on the PPP multilink.
- Enable the PPP multilink interleaving with a maximum interleaving delay of 20 ms.
- The International Travel Agency network should be running Open Shortest Path First (OSPF) in AS 1.
- Use Network-based Application Recognition (NBAR) on R1 to discover which traffic types are being generated from the traffic generator.
- Determine three different traffic classes and mark them with varying IP precedence for each class (this is subjective).
- Use NBAR to classify packets.
- Perform this marking outbound on R1 towards R4.
- Make sure the various classes do not exceed 3 megabits/second for each class.
- Do not configure queuing strategies to accomplish this task.
- Configure low latency queuing (LLQ) on R3 for the link between R2 and R3.
- Allocate bandwidth for each IP precedence you configured earlier.
- Also allocate some bandwidth for OSPF packets, and place this traffic in the priority queue.
- Bandwidth amounts are subjective, but do not exceed the capacity of the link.