QoS , Application requirements

Quality of Service (QOS) determines a network's capability to support predictable service over various technologies, containing frame relay, Asynchronous Transfer Mode (ATM), Ethernet, SONET IP-routed networks. The networks can use any or all of these frameworks.

The QOS also provides that while supporting priority for one or more flows does not create other flows fail. A flow can be a combination of source and destination addresses, source and destination socket numbers, session identifier, or packet from a specific application or an incoming interface.

The QOS is primarily used to control resources like bandwidth, equipment, wide-area facilities etc. It can get more efficient use of network resources, provide tailored services, provide coexistence of mission-critical applications, etc.

QOS Concepts

The QOS concepts are explained below−

Congestion Management

The bursty feature of data traffic sometimes bounds to increase traffic more than a connection speed. QoS allows a router to put packets into different queues. Servicespecific queues more often depend on priority than buffer traffic in an individual queue and let the first packet by the first packet out.

Queue Management

The queues in a buffer can fill and overflow. A packet would be dropped if a queue is complete, and the router cannot prevent it from being dropped if it is a high priority packet. This is referred to as tail drop.

Link Efficiency

The low-speed links are bottlenecks for lower packets. The serialization delay caused by the high packets forces the lower packets to wait longer. The serialization delay is the time created to put a packet on the connection.

Elimination of overhead bits

It can also increase efficiency by removing too many overhead bits.

Traffic shaping and policing

Shaping can prevent the overflow problem in buffers by limiting the full bandwidth potential of the applications packets. Sometimes, many network topologies with a highbandwidth link connected with a low-bandwidth link in remote sites can overflow low bandwidth connections.

Therefore, shaping is used to provide the traffic flow from the high bandwidth link closer to the low bandwidth link to avoid the low bandwidth link's overflow. Policing can discard the traffic that exceeds the configured rate, but it is buffered in the case of shaping.

Protocols of Transport Layer:

- TCP(Transmission Control Protocol)
- UDP (User Datagram Protocol)
- SCTP (Stream Control Transmission Protocol)
- DCCP (Datagram Congestion Control Protocol)
- ATP (AppleTalk Transaction Protocol)
- FCP (Fibre Channel Protocol)
- RDP (Reliable Data Protocol)
- RUDP (Reliable User Data Protocol)
- SST (Structured Steam Transport)
- SPX (Sequenced Packet Exchange)