CHAPTER 24 : Congestion Control and Quality of Service

Solutions to Selected Review Questions

Review Questions

1. ***User-related*** attributes define how fast the user wants to send data. ***Networkrelated attributes*** define network characteristics.

2. ***Differentiated Services*** was developed to handle the shortcomings of IntServ. The main processing was moved from the core of the network to the edge of the network. Also, the ***per-flow service*** was changed to ***per-class service***.

3. In ***congestion control***, the load on a network is prevented from exceeding the capacity. ***Quality of service*** refers to the characteristics that a flow of data seeks to attain. If there is good congestion control, then the QoS is also good and vice versa.

4. When ***IntServ*** is used at the IP level, a signaling system is needed to set up the needed virtual circuit. The ***Resource Reservation Protocol*** is this signaling system.

5. Congestion can be alleviated by ***back pressure***, ***a choke point***, and ***explicit signaling***.

6. ***Open-loop*** congestion control policies try to prevent congestion. ***Closed-loop*** congestion control policies try to alleviate the effects of congestion.

7. The following policies can help to prevent congestion: ***a good retransmission policy***, ***use of the selective-repeat window***, ***a good acknowledgment policy***, ***a good discard policy***, and ***a good admissions policy***.

8. A flow of data can be described by its ***reliability***, ***delay***, ***jitter***, and ***bandwidth***.

9. Frame Relay uses the ***BECN*** bit and the ***FECN*** bit to control congestion.

10. ***Scheduling***, ***traffic shaping***, ***admission control***, and ***resource reservation*** can improve QoS.

11. The data rate of ***bursty data*** changes suddenly in a very short period of time.

12. A ***traffic descriptor*** is a qualitative value that describes a data flow.

13. ***Traffic shaping*** is a mechanism to control the amount and rate of traffic sent to the network. The ***leaky bucket*** method and the ***token bucket*** method can shape traffic.

14. The attributes are ***access rate***, ***committed burst size***, ***committed information rate***, and ***excess burst size***.

15. The ***average data rate*** is always less than or equal to the ***peak data rate***.

16. The TCP send window size is determined by the ***receiver*** and by the ***congestion on the network***.