Computer Network Assignment4

2016302580127 曹相成

1.P2:

a.No. Only one packet can be transmitted at a time over a shared bus.

b.No. Only one memory manipulation can be done at a time over the switching memory.

c.No. Two packets cannot be sent over the same output bus at the same time.

2.P3:

a.(n-1)D

b.(n-1)D

c.0

Because by memory, it is just like IO device, there is delay. Also in bus, every time only one packet can be sent. Only by crossbar switching fabrics, packet can access at any time in common.

3.P15:

With basic IP has 20 bytes of header and each TCP segment also has 20 bytes of header. Then each datagram can carry 1500-20-20=1460 bytes of MP3 file.

5*10^6/1460=3425(plus one method).

4.P16:

a.According to the knowledge we learned in experiment class, the home addresses will be 192.168.1.1, 192.168.1.2, 192.168.1.3, and the router interface being 192.168.1.4.

b.NAT Translation Table

WAN Side	LAN Side
24.34.112.235,4000	192.168.1.1,3345
24.34.112.235,4001	192.168.1.1,3346
24.34.112.235,4002	192.168.1.1,3345
24.34.112.235,4003	192.168.1.1,3346
24.34.112.235,4004	192.168.1.1,3345
24.34.112.235,4005	192.168.1.1,3346

5.P18:

It is impossible to devise such a technique. In order to establish a direct TCP connection between the two, both of them must initiate a connection to the other. However, the NATs covering Arnold and Bob drop SYN packets arriving from the WAN side. So none of them can initiate a TCP connection to the other if they are both behind NATs.