Computer Network Assignment Help

Q6: The department has a machine that acts as both a webserver (HTTP) and an email (SMTP) server. The webserver runs on port 80 and the email server runs on port 25. You have a logging mechanism that tracks the number of bytes sent and received on those two ports. Do you expect to see a difference in the magnitudes of the sent/received bytes on port 25? How about port 80? State any assumptions that you make.

Answer:

Yes the data transfer may variate as Port 80 is for websites normally and 25 for sending emails. Assuming that HTTP serves content such as HTML, Javascripts, CSS and images which would impact the bytes sent back to the browser. Therefore depending on the type of data the magnitudes would variate for both HTTP and SMTP server but the individual packet size will remain same as per TCP/IP standard.

Q7: Consider Figure 1.19(a) in the textbook. Assume that we know the bottleneck link along the path from the server to the client is the first link with rate Rs bits/sec. Suppose we send a pair of packets back to back from the server to the client, and there is not other traffic on this path. Assume each packet of size L bits, and both links have the same prorogation delay dprop.

a) What is the packet inter-arrival time at the destination? That is, how much time elapses from when the last bit of the first packet arrives until the last bit of the second packet arrives?

Answer:

Parameters:

The rate of first link from client to server = Rs bits/sec

Size of each packet = L bits

The bottleneck link from client to server is determind by Rs. Therefore the transmission time on that link determines the inter-arrival time:

When the first packet is in the bottleneck link, the second packet is queued waiting for the first packet to be transmitted. The transmission delay from the parameters can be calculated using:

Transmission Delay = Length of packet/Transmission Rate

= L/R

b) Now assume that the second link is the bottleneck link (i.e., Rc < Rs). Is it possible that the second packet queues at the input queue of the second link? Explain. Now suppose that the server sends the second packet T seconds after sending the first packet. How large must T be to ensure no queuing before the second link? Explain.

Answer:

b) Yes it is possible that second packet will queue at input of second link. The reason behind is that the second link has low link speed, hence making it wait for the transmission to complete. If the server sends the second packet after T seconds, T's size could be computed using the formula:

Transmission Delay for the second packet = L/R - Transmission Delay for the first packet

Q8: Answer the following:

a) what is a whois database?

Answer: Whois a database query and response protocol used widely for querying databases which contains the information related to registered users of an Internet resource that includes a domain name, an IP address block, or an autonomous system. Network administrators use WHOIS data to identify and fix problems

b) Use various whois databases on the Internet to obtain the names of two DNS servers. Indicate which whois database you used.

Answer: Following whois databases were used on the internet to obtain DNS server names:

1) 1) Network Solutions: https://www.networksolutions.com/whois/index.jsp
   Was used to look up for outlook DNS Servers.
2) GoDaddy : https://www.godaddy.com/whois?isc=goflpk04
   This was used to lookup for Healthybites.

c) Use nslookup on your local host to send DNS queries to three DNS servers: your local DNS server and the two other DNS servers you found in part (b). Try querying for Type A, NS and MX reports. Summarize your findings.

Answer:Only found A names for outlook DNS servers. NS and MX reports were not being generated by the DNS queries.

The list of Name servers found from above are :

Name Servers:dns1.p09.nsone.net
dns2.p09.nsone.net
dns3.p09.nsone.net

dns4.p09.nsone.net
ns1.p43.dynect.net
ns2.p43.dynect.net
ns3.p43.dynect.net
ns4.p43.dynect.net

d Use nslookup to find a web server that has multiple IP addresses. Does the Web server of Columbia University have multiple IP addresses?

Answer: http://linkedin.com/ had multiple IP addresses which resulted in 73 as shown below:

216.3.18.0/24
8.39.53.0/24
8.22.121.0/24
65.156.227.0/24
209.119.43.0/24
216.52.16.0/21
216.52.22.0/24
216.52.18.0/24
216.52.16.0/24
216.52.20.0/24
70.42.142.0/24
208.203.151.0/24
208.50.161.0/24
108.174.14.0/24
108.174.15.0/24
103.20.92.0/24
103.20.93.0/24
108.174.13.0/24
108.174.0.0/20
108.174.1.0/24
108.174.4.0/24
108.174.5.0/24
108.174.6.0/24
108.174.7.0/24
108.174.8.0/24
108.174.9.0/24
108.174.10.0/24
108.174.11.0/24
108.174.12.0/24
108.174.0.0/23
108.174.2.0/23
108.174.4.0/23

108.174.6.0/23
108.174.8.0/23
108.174.10.0/23
108.174.12.0/23
108.174.14.0/23
108.174.0.0/22
108.174.4.0/22
108.174.8.0/22
108.174.12.0/22
108.174.0.0/21
108.174.8.0/21
199.101.161.0/24
64.152.25.0/24
103.20.95.0/24
185.63.147.0/24
185.63.144.0/24
144.2.0.0/24
103.20.94.0/24
144.2.2.0/24
144.2.1.0/24
8.22.161.0/24
144.2.7.0/24
144.2.192.0/24
204.2.228.0/24
144.2.3.0/24
185.63.145.0/24
144.2.194.0/24
144.2.193.0/24
144.2.195.0/24
103.20.93.0/24
103.20.95.0/24
204.2.228.0/24
144.2.3.0/24
64.74.98.0/24
208.111.169.0/24
199.101.160.0/24
108.174.2.0/24
108.174.3.0/24
91.225.248.0/24
91.225.249.0/24
91.225.250.0/24