Data Communication & Computer Networks Name: AOUN-HAIDER ID: FAZI-BJE-133 Assignment: 02 F = 20Gbits = 20x1024 Mbits Us = 30Mbps, di = 2Mbps O N=10, U= 300 Kbps Des = max { NF/us, Fldmin } = max & 10x20x1024, 20x1024 } = max & 6826, 10240 } = 10240 DP2p = max & Flus, Fldmin, NF/(us+ & ui)} = max { \frac{20x1024}{30}, \frac{20x1024}{2}, \frac{10x20x1024}{30+(10x\frac{300}{201})} \} = max 3 683, 10240, 6221 } = 10240

 $N = 10, \quad U = 700 \text{Kbps}$ $D_{CS} = \max_{x \in \mathbb{Z}} \frac{10 \times 20 \times 1024}{30}, \frac{20 \times 1024}{2}$ = 10240

$$P_{2p} = max \begin{cases} 683, 10240, \frac{10x20x1024}{30 + (10x\frac{200}{1024})} \end{cases}$$

$$= 10240$$

$$S = 10, \ U = 2 \text{ Mbps}$$

$$D_{es} = max \begin{cases} \frac{10x1024x20}{30}, \frac{20x1024}{3} \end{cases}$$

$$= 10240$$

$$D_{p2p} = max \begin{cases} 683, 10240, \frac{10x20x1024}{30 + 10x2} \end{cases}$$

$$= 10240$$

$$W = 100, \ U = 300 \text{ Kbps}$$

$$D_{cs} = max \begin{cases} \frac{100x20x1024}{30}, \frac{100x20x1024}{2} \end{cases}$$

$$= 68267$$

$$D_{p2p} = max \begin{cases} \frac{20x1024}{30}, \frac{20x1024}{2}, \frac{1000x20x1024}{30 + 100x} \frac{300}{1024} \end{cases}$$

$$= max \begin{cases} 683, 10240, 34536 \end{cases}$$

$$= 34536$$

$$D_{cs} = max \begin{cases} \frac{100x20x1024}{30}, \frac{20x1024}{30}, \frac{20x1024}{30 + 100x} \frac{300}{1024} \end{cases}$$

$$= max \begin{cases} 68267, 10240, \frac{34536}{3} \end{cases}$$

$$= 34536$$

$$D_{cs} = max \begin{cases} \frac{100x20x1024}{30}, \frac{20x1024}{30}, \frac{20x1024}{30 + 100x} \frac{300}{1024} \end{cases}$$

$$= 62267$$

$$D_{p2p} = max \begin{cases} 683, 10240, \frac{100x20x1024}{30 + 100x} \frac{300}{1024} \end{cases}$$

$$= 20826$$

(a)
$$N = 1000$$
, $U = 2Mbps$

$$Dcs = 682667$$

$$D_{12p} = max \frac{3}{4}683, 10240, 10089 ? = 10240$$

Client Server:			N	A. A.
-		10	100	1000
`	300 Kbps	10240	68267	622,667
u	700 Kbps	10240	68267	682,667
	2 Mbps	10240	68267	682,667
	,	, '		

Peer to peel;

N

		10	100	1000
	SOOK bps	10240	34536	63411
ч	700 Kbps	10240	20826	2870
	2 Mbps	10240	10240	10240

(2)

An e-commerce site can use cookies to maintain a purchase record for each of its customers. Cookies are small pieces of data that are stored on a user's computer by a web browser and are often used to store information for various purposes including tracking activity and preferences.

when a user makes a purchase on the e-commerce site, the server can create a cookie to store relevant information about the purchase. This information might include the order number, product details, purchase

e-commerce site wishes to track.

2) Setting the cookie:

The server then sends this cookie to the user's browser. The cookie is typically set with an expiration date to determine how long the information should be stored on the user's device. For example, the cookie may expire in a tew days, weeks or even months depending on the e-commerce site's need.

3) Storing purchase records:

As the user continues to make purchases on the e-commerce site, additional cookie can be created and set, each containing information about a specific purchase. These cookies accumulate in the user's browser, effectively creating a purchase history for that particular customer.

4) Accessing purchase records:

when the customer returns to the e-commerce site; the website can access the cookies stored on the user's olevice to retrieve their purchase history. This allows the e-commerce site to provide personalized recommendations, order tracking and other

services based on the user's previous purchase

9) $T_{ip} = RTT_{-1} + RTT_{-2}$ = 2-114

= 16msec

Tuonn = 2x RTT_HTTP

= 2×26

= 52 msec

To = Num-of-object x Tconn = 9x52 = 469 msec

T = Tep + Tonn + To

= 16msec + 32 msec + 468 msec

To= 2x RTT_HTTP

- 52 msec

Tronn = 52 msec

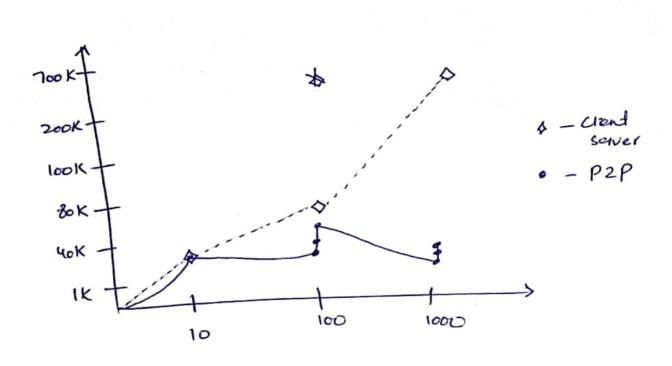
Tip = 16 msec

T = Tip + Tconn + To

= 16msec + 52msec + 52msec

T = 120msec





(1)