Homework 3 of Communication Network

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1

8 interfaces; 3 forwarding tables.

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- Subnet 1: 223.1.17.0/25
- Subnet 2: 223.1.17.128/26
- Subnet 3: 223.1.17.192/26

3

Begin:

	x	y	z	u	v
x	0	1	2	2	∞
z	2	10	0	∞	5
v	∞	15	5	1	0

End:

	x	y	z	u	v
x	0	1	2	2	3
z	2	10	0	4	5
v	3	15	5	1	0

4

First we need to send the packets in the link, which needs the transmission time. Then the last bit needs to wait for the propagation delay until it arrives the destination. So the total time is the sum of the transmission time and the propagation delay.

$$T_{trans} = 1000bytes \cdot \frac{8bits}{byte} \cdot (\frac{sec}{10 \times 10^6 bits})^{-1} \cdot \frac{10^6 \mu s}{sec} = 800\mu s$$

$$T_{prop} = 1\mu s$$

$$T_{total} = T_{trans} + T_{prop} = 801\mu s$$

5

50% overhead. IP -> 40 bytes, TCP -> 40 bytes.