

TCP/IP AND UPPER LAYER PROTOCOLS

CISC856 – MPTCP

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1. Give one scenario where MPTCP could do better than TCP.
2. Explain the goals as to improving THROUGHPUT and RESILIENCE using Multipath TCP.
3. What is the token used for? How is the token calculated,
4. Why does MPTCP include data sequence numbers in the option, i.e., why is a single sequence space not enough?
5. What is the difference between the receive window of regular TCP and MPTCP?
6. The sender has 9 MPTCP-PDUs to send over three subflows, each subflow is responsible for sending 3 TCP-PDUs. Suppose the Initial Data Sequence Number is 1 and each MPTCP-PDU contains 1 byte of data. Please give a reasonable sequence mapping on these three subflows. You dont need to consider DATA FIN. (Please draw a graph like those in the presentation).
7. This question needs to use “mptcp.12f.pcap” file. You may need “TCP Extensions for Multipath Operation with Multiple Addresses” to answer this question (Figure 9, Table 1, and Table 2)
(<http://tools.ietf.org/html/draft-ietf-mptcp-multiaddressed-10>)
 - (a) What are the subtypes of MPTCP-PDU 1, 2, 3, 17, 19, and 40? What is each one used for?
 - (b) For MPTCP-PDU 4 and 41, what are the MPTCP data sequence numbers and the subflow sequence numbers?