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Exercises in PMMC

Exercise 8

Hand out date: Wednesday Nov 16, 2016
Submission until and discussion: Nov 23, 2016 9:45

1) QoS Methods

1.1) Which (eight) QoS methods were introduced in the lecture? Briefly describe the purpose of each method and argue for each of the methods when it is applied (during connection establishment or data transfer) and what it operates on (QoS parameters or user data).

1.2) Why is there a correlation between when a QoS method is applied (connection establishment/data transfer) and what it operates on (QoS parameters/user data)?

1.3) Describe the difference between unilateral, bilateral, and trilateral QoS Negoitation.

2) Traffic Shaping

2.1) What is traffic shaping and what is its goal?

2.2) Which three basic types of traffic shaping do you know? Characterize each type in one sentence respectively.

2.3) Assign the five traffic shaping mechanisms that were introduced in the lecture to the three types of traffic shaping. Describe each mechanism.

2.4) Name and briefly describe standard UNIX tools for packet filtering and traffic shaping.

3) QoS in IP and Differentiated Services

3.1) Which fields in IPv4- and IPv6-Headers serve to implement QoS and how?

3.2) Describe the meaning and functionality of PHB.

3.3) What is abbreviated by DSCP? How is PHB related to DSCP?

3.4) Name and describe two forwarding classes.

4) Traffic Engineering

4.1) How is traffic engineering defined? What are its goals?

4.2) What are the short-term and long-term instruments of traffic engineering? Explain both in one sentence respectively.

4.3) What is a traffic model?

4.4) Why is it harder to model IP-traffic than traditional telephone traffic?