Quality of Service Lecture 3

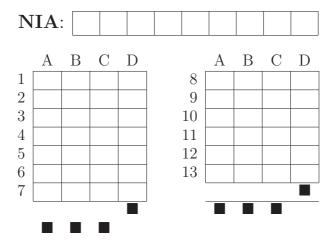
Date: Spring
Duration: 15 min.

- There is only one correct answer for each multiple choice question.
- Each correct answer adds 1 point.
- Each incorrect answer has a penalty of $\frac{1}{3}$ points.
- No score is awarded for unanswered questions, neither positive nor negative.
- No score is awarded if you mark more than one answer.

Write your personal data clearly.

| Last name: | |
|-------------|--|
| First name: | |
| Group: | |

Permutation: A



- 1.- Which tool somoothes bursty traffic without dropping packets?(a) A classifier.
 - (b) A meter.
 - (c) A shaper.
 - (c) A shaper.
 - (d) A marker.
- 2.- Which of the following classification methods has the lower computational cost?
 - (a) Deep packet inspection.
 - (b) QoS markings.
 - (c) IP and port source and destination pairs.
 - (d) Stateful inspection.
- 3.- Where can we find a TX-ring
 - (a) Between the marker and the meter.
 - (b) Between the classifier and the queues.
 - (c) Between the scheduler and the transmission line.
 - (d) Between the policer and the shaper.
- 4.- Why is QoS more important in case of equipment failure or scheduled downtime?
 - (a) Because QoS simplifies the configuration and reduces the length of the downtime.
 - (b) Because there might be not enough resources to satisfy all traffic, and it is important to prioritize.
 - (c) Because the scheduled downtime is usually at night or during the weekend.
 - (d) Because QoS increases the available bandwidth, making sure that there is plenty of resources even during failure conditions.
- 5.- Where is computationally expensive classification and marking done?
 - (a) At the edge of the network where traffic is less aggregated.
 - (b) At the outgoing interface of core routers.
 - (c) In the network core, where the routers are more powerful.
 - (d) At the incoming interface of core routers.
- 6.- What is the name defined by the IETF to refer to the treatment that a router offers to a class of traffic?
 - (a) Synchronous Optical Networking (SONET).
 - (b) Per Hop Behaviour (PHB).
 - (c) Hierarchical replication code (HRC).
 - (d) Binary Exponential Backoff (BEB).

- 7.- When is it appropriate to police the traffic?
 - (a) When it is desired to prevent packet loss.
 - (b) When the traffic is in contract and we want to increase the delay.
 - (c) When we want to absorb a burst and temparity store the additional traffic.
 - (d) When it is exceeding the agreed profile and we want to avoid delay and jitter.
- 8.- Which of the following is not a typical element in a queue system?
 - (a) An IP address.
 - (b) A buffer.
 - (c) A scheduler.
 - (d) A dropper.
- 9.- What is the preferred OSI layer to implement end-to-end QoS?
 - (a) Layer 1.
 - (b) Layer 3.
 - (c) Layer 4.
 - (d) Layer 7.
- 10.- Where is a chain of QoS tools applied?
 - (a) In the routing tables.
 - (b) In the router switching fabric. A tool (e.g. a policer) that is configured in a router, will apply to all interfaces and directions.
 - (c) In the router interfaces, taking into account the direction of traffic (incoming/outgoing).
 - (d) In the router ports.
- 11.- Which techniques would you use to identify and classify P2P traffic?
 - (a) Incoming interface and source IP address.
 - (b) Deep packet inspection and stateful inspection.
 - (c) Source port classification and layer 4 protocol.
 - (d) Metering.
- 12.- Why is it not possible to offer per IP flow granularity in data networks?
 - (a) Because a router only pays attention to layer 4 information.
 - (b) A core router may handle millions of IP flows and it is not scalable to keep state about them and treat them differently.
 - (c) Because it is not possible for a router to identify an IP flow.
 - (d) Because it would increase the queueing time.

- 13.- What is not a downside of bandwidth overprovisioning?
 - (a) The need to pay for the extra bandwidth.
 - (b) Lack of protection from the extra bandwidth consumption by virus/worms and other security attacks.
 - (c) Network usage may increase in pair with extra network provisioning.
 - (d) Higher complexity.