T-110.5110 Computer Networks II

10.01.2008 Examination

Choose 3 of the 4 topics below and write essays on them. Each topic has additional questions that should be considered in your essay. Discuss other relevant issues as well. Remember to consider what is important and what is not when writing your essay. You may write your essays in Finnish, Swedish, or English.

Remember to include the following information in your paper: the course name, date, student ID, name, and signature.

1. IP Quality of Service

   What is the motivation for Quality of Service (QoS) and what things make its deployment difficult on the Internet? Please compare RTP, MPLS, DCCP and the IntServ and Diffserv architectures.

2. Transport layer protocols

   Describe the main features of DCCP and SCTP. Discuss the usage scenarios and deployment cases of these two protocols.

3. NAT (Network Address Translation) traversal

   Explain briefly what are NAT boxes and how they relate to the Internet architecture. What solutions are currently used to support NAT traversal? Consider STUN, TURN, and ICE.

4. Mobile IPv4, Mobile IPv6, and NEMO.

   Explain and compare these protocols. What protocol optimizations have been standardized? How is security supported?

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17.12.2007 Examination (16-19 T1)

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1. Transport layer protocols: TCP enhancements, DCCP, and SCTP.

   Describe the main features of the transport protocols and compare them with each other. Consider issues such as traffic types and congestion control.

2. NAT (Network Address Translation) traversal

   Explain briefly what are NAT boxes and how they relate to the Internet architecture. What solutions are currently used to support NAT traversal? Consider STUN, TURN, and ICE.

3. Mobility protocols for the Internet

   Why is mobility support needed? Consider Mobile IPv4, Mobile IPv6, and NEMO. You can also discuss application layer mobility protocols.

4. Locator/identity split on the Internet

   What is locator/identity split and what problems of the Internet architecture it proposes to solve? How does HIP and overlays relate to this topic?