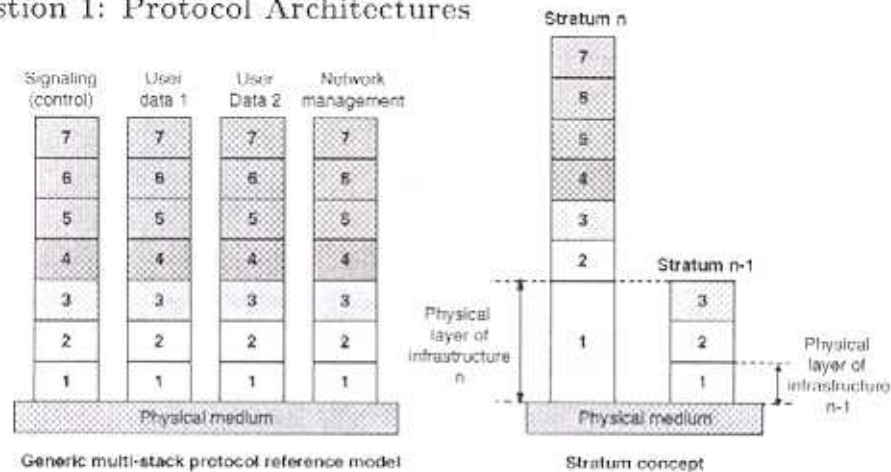


Question 1: Protocol Architectures



- What is the purpose of the above two extended protocol architectures?
- On which protocol layer(s) do we speak about segments, frames, cells, and packets?
- What is a protocol entity, a SDU, and a PDU?
- Characterize the data unit "segment" as used in TCP.
- Characterize the **three** most important transport addresses.
- Characterize the **two** most important application and user addresses.

Question 2: End-to-End Protocols

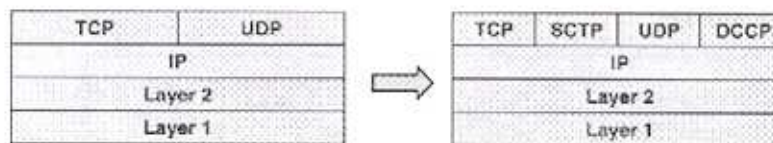


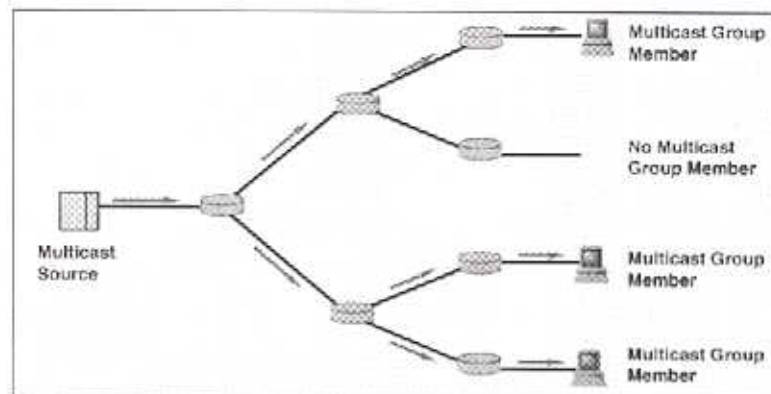
Figure 1.1: Traditional and current transport protocols

- Which protocols are meant by the abbreviation SCTP and DCCP? Give their full names.
- Give **four** major properties of **each** of these protocols.
- For what purpose header compression is being applied?
- Give the main mechanisms used in header compression.
- What is AQM? Give **five** different realizations.

Question 3: Signaling and Multimedia Protocols

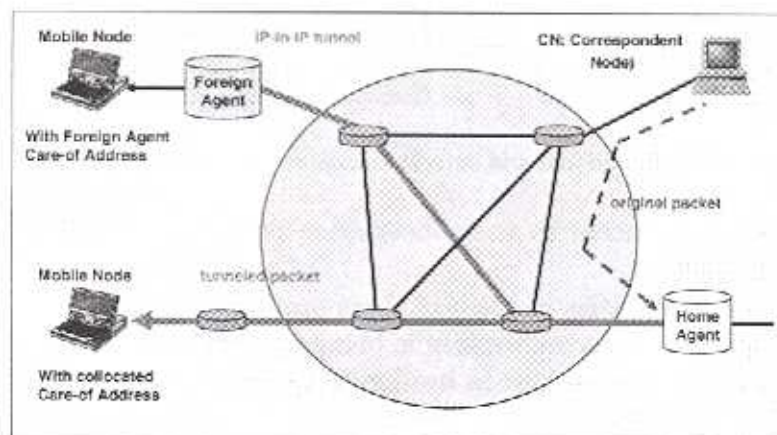
- What is the difference between a traditional and an Internet voice connection?
- Why one needs a buffer at the receiving side?
- Give **two** signaling architectures for next generation networks.
- Give **three** network components for each of these two architectures.
- What is the payload protocol component of SIP?
- How we can distinguish between SIP requests and SIP responses?
- What are the main functions of the protocols RTP, RTCP, and RTSP?
- Give the full name of the **three** acronyms.

Question 4: Multicast



- Which **two** protocol components form the architecture of a multicast environment?
- Which protocol allows an end system to be part of the information distribution?
- Give **two** basic methods to organize the information distribution over the network?
- What is the main difficulty for operating reliable multicast?
- Give **three** methods to cope with this difficulty.
- What is the purpose of Multicast Address-Set Claim (MASC)?

Question 5: Mobile IP



- What is micro-mobility and what is macro-mobility?
- Which communication environments are involved in the two cases?
- Which **two** protocols have been designed to minimized handover-times?
- Describe the basic properties of each of these two protocols.
- In which way the mobile node obtains a CoA in case of IPv4 and IPv6?
- Explain the acronyms MAP, LCoA, and RCoA and give their full names
- Explain what is meant by a mobile IP tunnel?