

Recitation 6: Group exercises

- 1.Multicast
- 2.IGMP
- 3.RSVP
- 4.IPv6
- 5.Mobile-IP

1. Multicast

- What is the difference between unicasting and multicasting?
- What is multiple unicasting?
- What are the applications of multicasting?
- Describe the difference between source-based tree and group-shared tree multicast routing.
- MOSPF is a data-driven protocol. What does this mean?
- Compare the following strategies used in multicast distance vector routing: Flooding, Reverse Path Forwarding (RPF), Reverse Path Broadcasting (RPB), Reverse Path Multicasting (RPM)
- What is the purpose of join message in Core-Based Tree (CBT) protocol?
- When PIM-DM is used?
- When PIM-SM is used?
- What is the multicast backbone (MBONE)? How does it operate? What protocol or protocols are used?

2. IGMP

- What is the value of TTL field in IGMP message?
- What is Maximum Response Time?
- What is a Query router?
- Why is there a need to filter at each of the layers in the IP stack? Why is this particularly important for broadcast and multicast addresses?

3. RSVP

- Why is RSVP needed? When is RSVP useful
- What is a packet classifier?
- What is meant by “soft state” in routers?
- What is jitter control?

4. IPv6

- Why do we need IPv6?
- Can IPv6 be used in vehicles? Discuss.
- Compare IPv4 and IPv6 headers.
- How is demultiplexing done in IPv6?
- How is QoS provided in IPv6?
- When writing an IPv6 address, what can be done with consecutive zeros?
- How is an IPv4 address written in IPv6 form?
- For an IPv6 address, how is the Interface ID derived?
- What is loop-back address in IPv6?
- Why is 2001: DB8 :: /32 a non-routable prefix?
- Which fields of IPv6 Fragment header are used to identify different segments of a packet?
- Compare IPv4 and IPv6 ICMP Echo request/reply headers.
- Why there is no IGMP in IPv6?
- Which record type is used in DNS to specify an IPv6 address?

5. Mobile-IP

- Describe the functions of a home and a foreign agent.
- Discuss different ways of discovering an agent.
- What does the *lifetime* field specify in registration request/reply header?
- What is triangle routing?