CSA-0735

Assignment

Unit-3

Computer Networks

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1. If 5 Mbps stream is sent, how much total traffic is used?

Ans:

Total traffic on the senders local link: 5 Mbps.

Network-wide total traffic Depends on the tree structure, but the total traffic is much less than in unicast and close to 5 Mbps plus a little overhead on each split path.

Effectively 5 Mbps - total from senders point of view

2. Compare with unicast to 10 destination:
The send must create 10 individual unicast connection, each carrying the same 5 Mbps stream.
Total traffic sender:

5 Mbps x 10 = 50 Mbps.

Total network traffic
Also 50 Mbps, assuming all the paths are unique

Comparision.

Multicast - 5 Mbps

Unicast 50 Mbps

Saving with multicast up to 90% less traffic.

2. How many routes are needed in Multicast?

Multicast:

→ Multicast uses a shared tree or source-based tree.
eg (PIM-SM)

→ Each multicast group is identified by a (S,G) or (*,G) pair.

S = Source IP

G = Multicast group IP

→ The router need route. to:

The source (S) or RP

The multicast group G.

Only one multicast route is needed in the routing table per branch of the tree. So across the whole network, roughly 1 multicast route per link used in the tree, not per receiver. This is far fewer than 10 unicast routes.