CSA0735

COMPUTER NETWORK

UNIT-3

ASSIGNMENT 3

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Scenario: Real time train updates are multicast to 5 Control Centers

Parameter:

  ↳ Stream duplication

  ↳ PIM-SM efficiency

  ↳ Bandwidth.

Questions:

1. If 50 trains each send 1Mbps, what's bandwidth with unicast?

Ans: Bandwidth with unicast.

↳ Each train sends 1 Mbps x 5 Control Centers.
  = 5Mbps per train.

↳ 50 trains x 5 Mbps = 250 Mbps total outbound bandwidth.

  Total unicast Bandwidth = 250 Mbs.
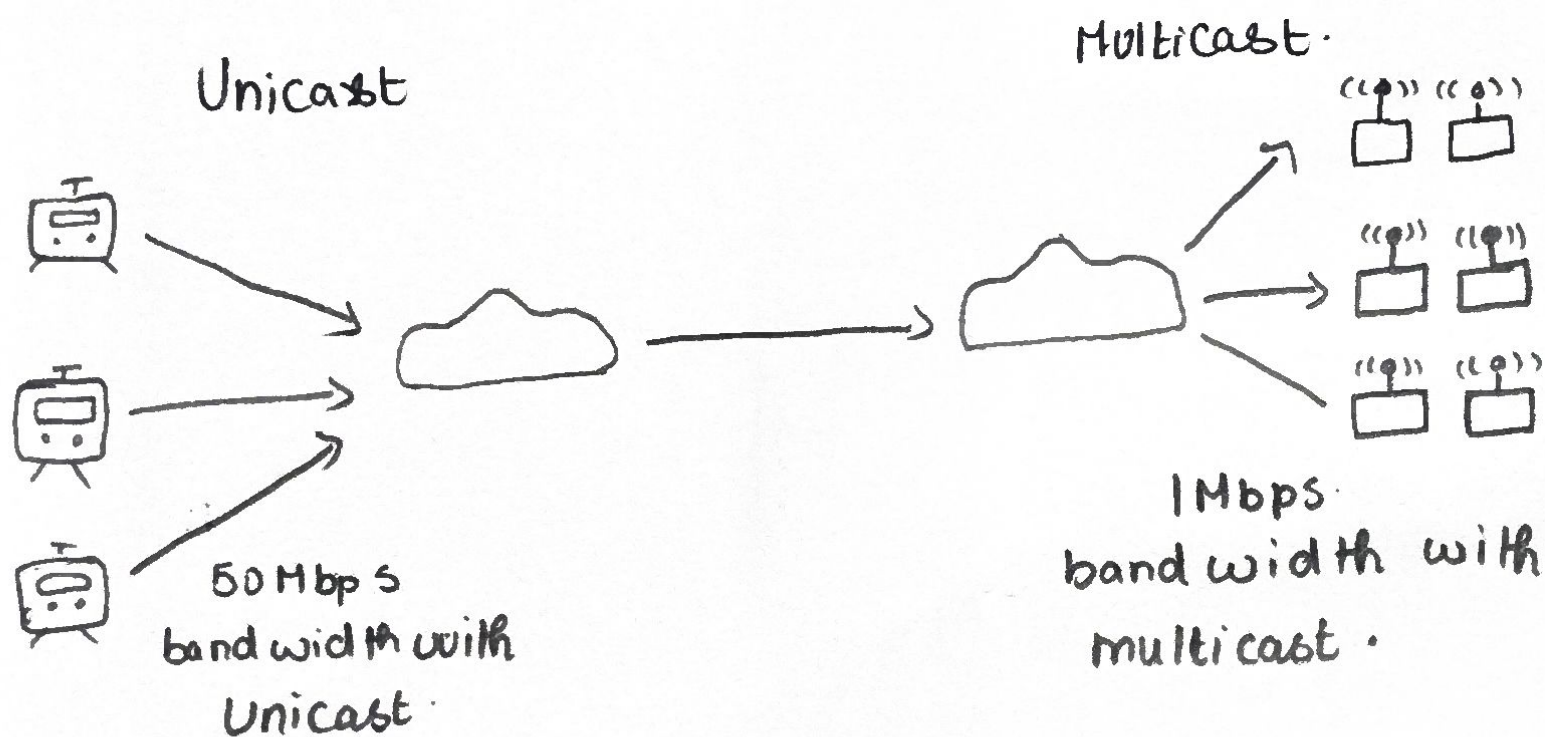
2. What's the bandwidth with multicast?

Ans:

With multicast (PIM-SM).

- Each train sends only 1Mbps stream into the network.

- Router replicate packets only as needed, efficiently distributing to 5 centers.

- 50 trains × 1Mbps = 50 Mbps.

Total Multicast Bandwidth = 50 Mbps.

Unicast

Multicast.

50 Mbps bandwidth with Unicast.

1Mbps bandwidth with multicast.

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Unicast

Multicast.

50 Mbps bandwidth with Unicast.

1Mbps bandwidth with multicast.