End-to-End Multicast QoS

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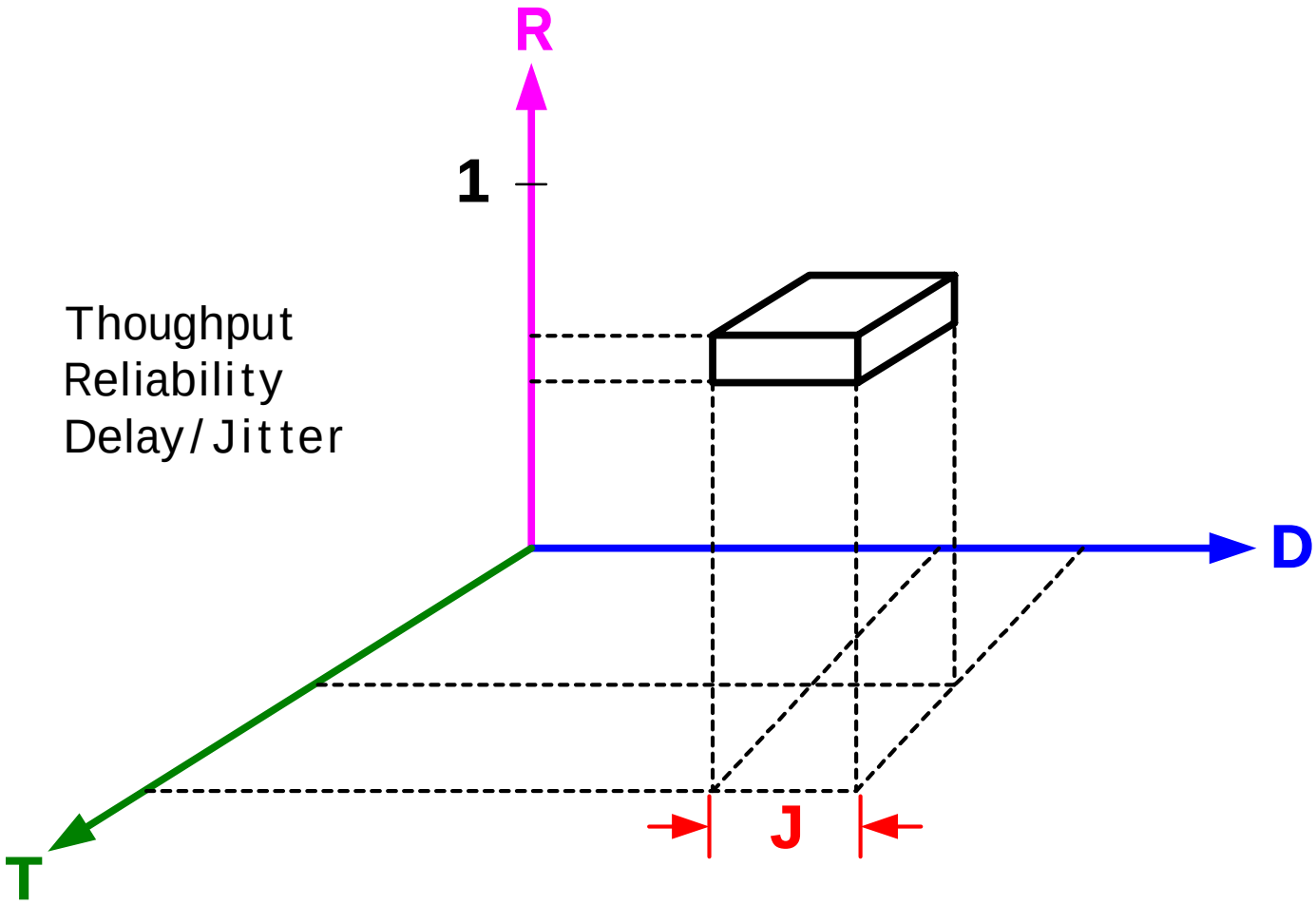
Quality of Service: Engineering



Quality of Service: Human

- How do you know what you want?
- Who and which gets better services?
- Manual? Automatic?
- Your choice or the manager's decision?
- Ready to pay for it?

QoS is Difficult

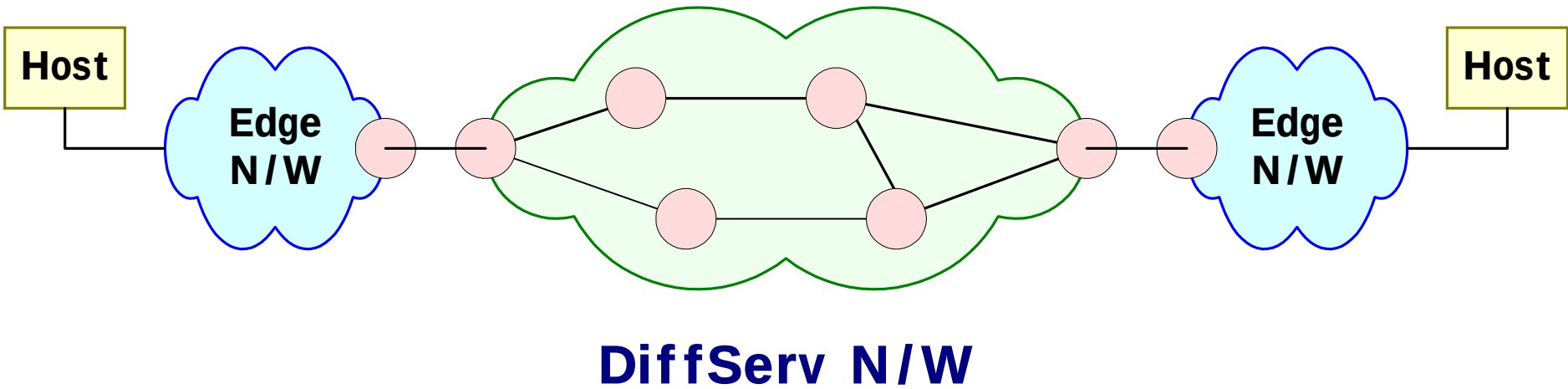
- No networks have rich experience with user-involved dynamic QoS negotiation/ management; PSTN, X.25, FR, ...
- All of a sudden, you want end-to-end group multicast QoS over Internet.
- All involved equipments and humans should be ready; no single hole permissible.

QoS is Expensive

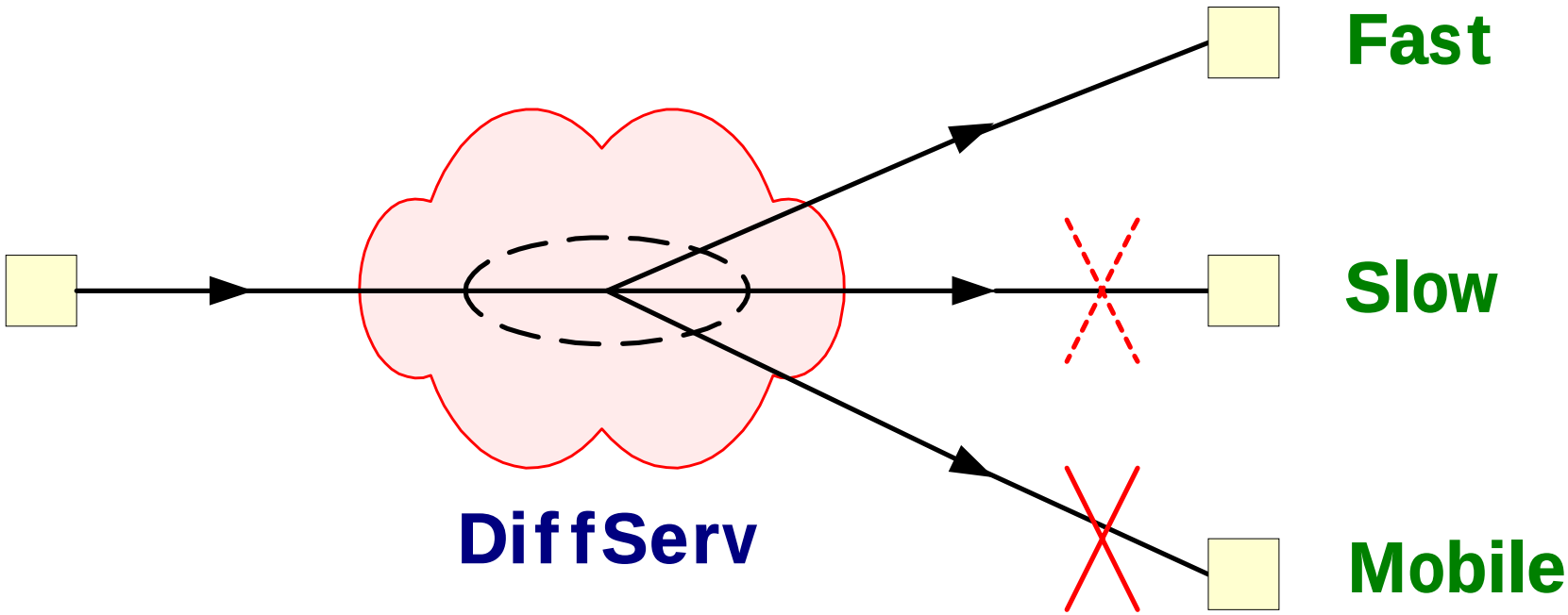
- To upgrade/replace all your
  - Routers
  - Switches: Ethernet, ATM, ...
  - User host software
- To put human resources for site-wide QoS Management
- To impose Code of Conduct for QoS and to police

End-to-End QoS

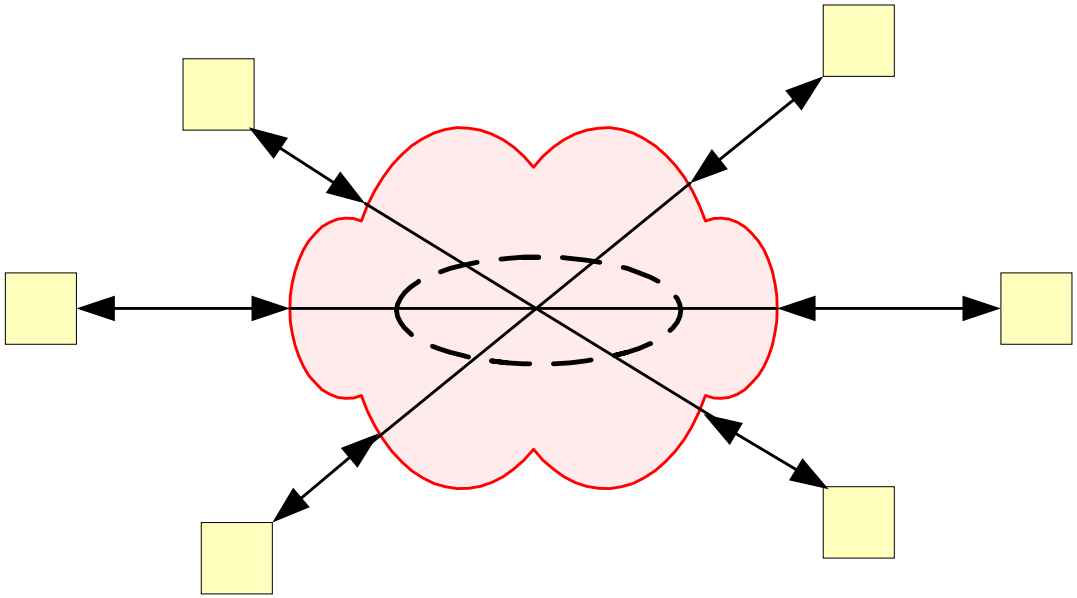
- DiffServ is net end-to-end.
- Your edge network can destroy everything:
  - Ethernet QoS FDX switch? SBM? ...
  - ATM QoS enabled? Properly mapped? ...
- Your host ready?



End-to-End Multicast QoS



E2E Multicast QoS: M-to-M



- M instances of 1-to-M?
  - M receive-QoS'
- One Instance of M-to-M?
  - Multicast QoS negotiation

Packet Switching and QoS

- Massive TDM-like QoS possible with pkt switching?
  - DS: VLL with EF, yet scalable?
  - IS: GS only for bounded delay
  - Essentially statistical MUX within a class
- The best achievable, CoS ...
- Ckt-switched subnet(link) for QoS IP?

Conclusion

- QoS Router is not the end of the story:
  - QoS subnet necessary.
  - QoS host APPs necessary.
- End-to-End Multicast QoS is many hurdles away.
- Only CoS not QoS might be possible over Internet.
- Might need circuit-switched subnet(link) for full QoS IP.