

CS 640: Introduction to Computer Networks

Aditya Akella

Lecture 6 -
Ethernet, Multiple Access and Bridging

The Road Ahead

- Multiple access protocols
 - Ethernet's CSMA/CD
- Bridging
- Spanning tree protocol

Multiple Access Protocols

- Prevent two or more nodes from transmitting at the same time over a *broadcast* channel.
 - If they do, we have a *collision*, and receivers will not be able to interpret the signal
- Several classes of multiple access protocols.
 - Partitioning the channel, e.g. frequency-division or time division multiplexing
 - Taking turns, e.g. token-based, reservation-based protocols, polling based
 - Contention based protocols, e.g. Aloha, Ethernet