

CS 640 Introduction to Computer Networks

Lecture 19

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Today's lecture

- Ethernet bridging
 - The learning bridge
 - Spanning tree algorithm for bridges
 - VLANs (Virtual LANs)
- Auxiliary protocols between layers 2 and 3
 - ARP
 - DHCP

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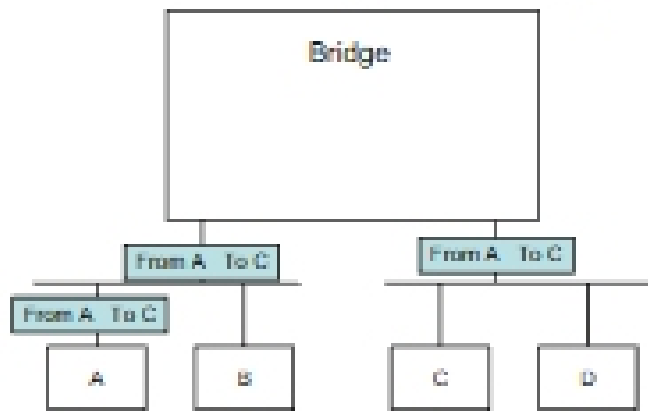
Why use Ethernet bridges?

- Larger networks
- More concurrent communication
- Extend Ethernet without changing computers



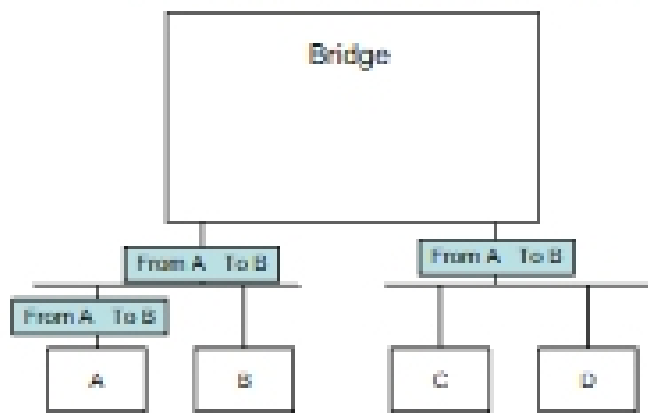
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Basic transparent bridge



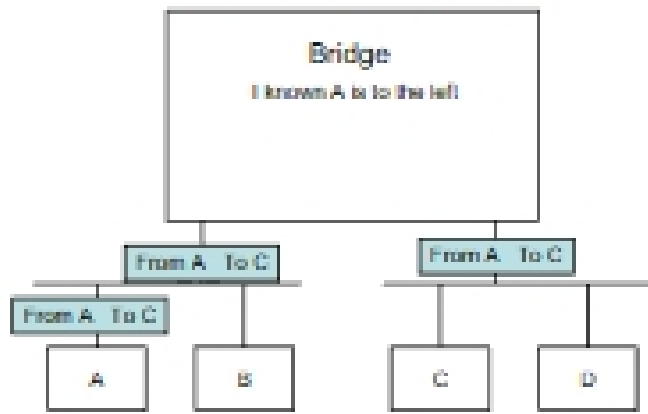
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Basic transparent bridge

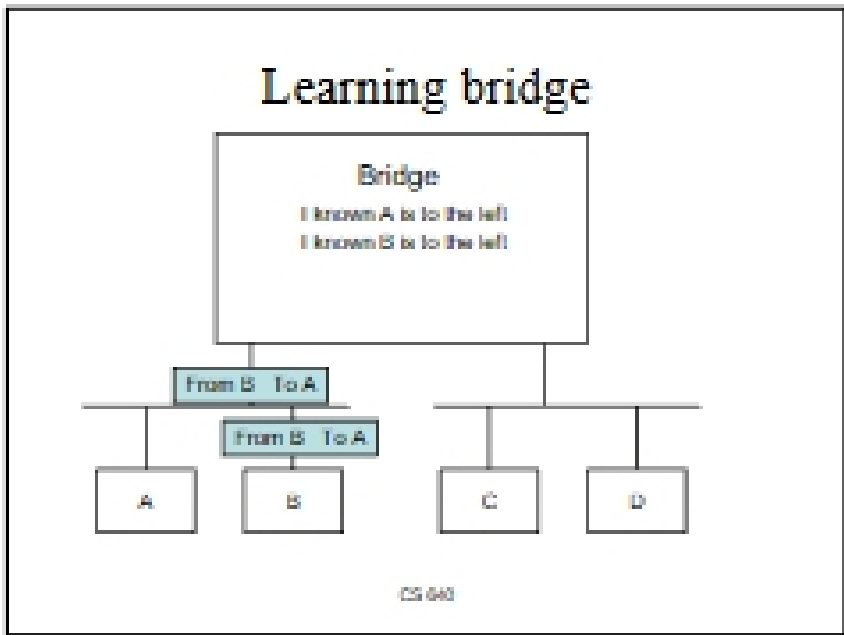


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Learning bridge



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- ### Learning bridges
- Initially forward frames onto all ports
 - Learn where hosts are based on source address
 - For known addresses only forward to right port
 - Multicast/broadcast go to all ports
 - Terminology
 - For twisted pair based Ethernet
 - Repeaters are called hubs
 - Bridges are called switches
 - A segment or collision domain has wires and hubs
 - LAN vs. extended LAN
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