























## Bridges

- connects similar LANs
- · identical physical / link layer protocols
- minimal processing
- can map between MAC formats
- reasons for use
  - -reliability
  - -performance
  - -security
  - -geography















## **Fixed Routing**

- Routing selected for each source-destination pair of LANs
  - -Done in configuration
  - -Usually least hop route
  - -Only changed when topology changes
- Widely used in commercially available products
- Manually loading the data into the routing tables
- Simple, minimal processing
- But suitable only for small and stable internets



21

## Spanning Tree

- IEEE 802.1
- Bridge automatically develops routing table
- Automatically updates in response to changes
- Consists of 3 mechanisms:
  - -Frame forwarding
  - -Address learning
  - —Loop resolution



23

## **Address Learning**

- can preload forwarding database
- when frame arrives at port X, it has come form the LAN attached to port X
- use source address to update forwarding database for port X to include that address
- have a timer on each entry in database
- · if timer expires, entry is removed
- each time frame arrives, source address checked against forwarding database
  - -if present timer is reset and direction recorded
  - -if not present entry is created and timer set





