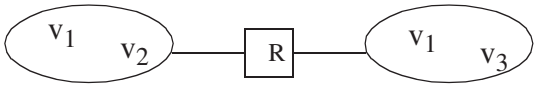
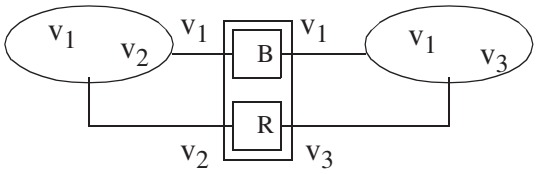
- Encompasses up to 250,000 users
- Spans “unlimited” number of devices
- Multiple DTEs on a switch port
- Multiple VLANs per DTE
- Campus and MAN coverage

Routers and VLANs

- illegal configuration

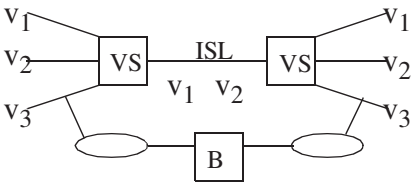


- legal configuration



Questions/Issues

- Do we specify interoperability across ISMs?
- When ISM loop detection utilizes the 802.1D Spanning Tree algorithm, there is a potential problem with a single spanning tree for all VLANs



- An algorithm other than 802.1D STA may be considered for ISM loop detection if it presents VLAN benefits over and above the current STA

David Cullerot, Cabletron Systems, Inc.
802.1 Interim Meeting
October 13, 1995

Virtual LAN Topology

Definitions

- Virtual LAN Switch
  virtual LAN aware layer 2 frame forwarding device
- Interswitch Medium (ISM)
  medium for muxing 1 or more VLANs between 2 or more VLAN switches
  - Types of ISMs
  (a) point-to-point (ISMPP)
  (b) shared (ISMS)
- Access Link
  medium for muxing 1 or more users into a VLAN switch
- Hybrid Link
  medium with 2 or more VLAN switches AND 1 or more users attached
- Private Access Link
  medium for muxing 1 user into a VLAN switch
- Network Port
  VLAN switch port with 1 or more VLAN switches attached
- Access Port
  VLAN switch port with 1 or more users attached
- Hybrid Port
  VLAN switch port with 1 or more VLAN switches and 1 or more users attached
- Private Access Port
  VLAN switch port with 1 user attached

User/VLAN/Port Considerations

- 1 or more users may be attached to 1 or more VLAN switch ports
- each user may be a member of 1 or more VLANs

VLAN Switch Topology Considerations

- VLANs on homogeneous LAN technology
  - ISM same limits as access link (MTU)
  simple encapsulation has problems
- VLAN on heterogeneous LAN technologies
  - ISM more capable than access link (MTU)
  simple encapsulation works
  - ISM less capable than access link (MTU)
  forces fragmentation or forces end station cooperation

Suggestions For Topology

- Supports combinations of star, ring and bus implementations
- Supports MAC and PHY support
- Campus Topology up to 20km radius