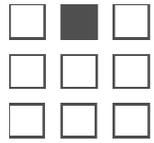


RISING STAR RESEARCH

VLAN Requirements

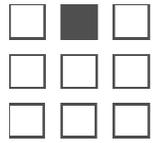
**IEEE 802.1 Interim Meeting
Denver, Colorado
October 11-13, 1995**

**Rising Star Research
K. Karl Shimada
kkarl@netcom.com**



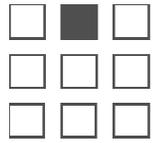
VLAN Requirements

- **Supports all 802 LAN technologies**
 - 802.3 Ethernet
 - 802.3u 100BASE-T
 - 802.4 Token Bus
 - 802.5 Token Ring
 - 802.6 DQDB
 - 802.9 Isochronous Ethernet
 - 802.11 Wireless LAN
 - 802.12 Demand Priority



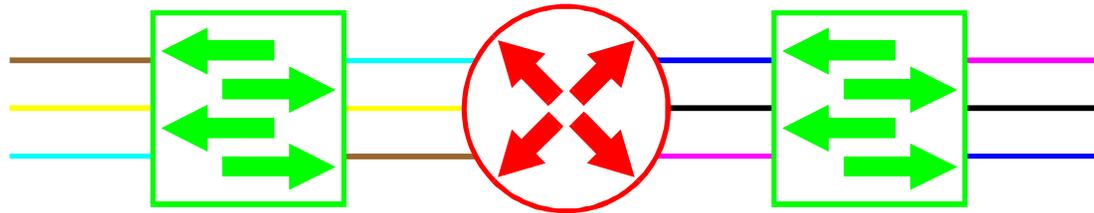
VLAN Requirements

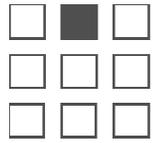
- **Supports both Spanning Tree and Source Routed network topologies**
 - **Spanning Tree**
 - » **Single Spanning Tree per VLAN?**
 - » **Single Spanning Tree covering multiple VLANs?**
 - **Source Routing**
 - » **?**
- **VLANs shall be transparent to end systems once “active”**



VLAN Requirements

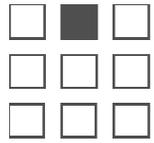
- **Communications between VLANs shall be supported at Layer 3 or higher**





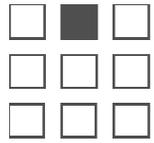
VLAN Requirements

- **Provides the “simple” creation of VLANs as a superset to existing adds, moves and changes**
 - Drag and drop
 - Learn existing network topologies
 - Default policy tables
 - Default VLAN definition
- **Provides “firewalls” between VLANs**
 - Minimize / Eliminate leakage
- **Performance “similar” to existing Bridged networks**
 - Provide proactive traffic / loading management



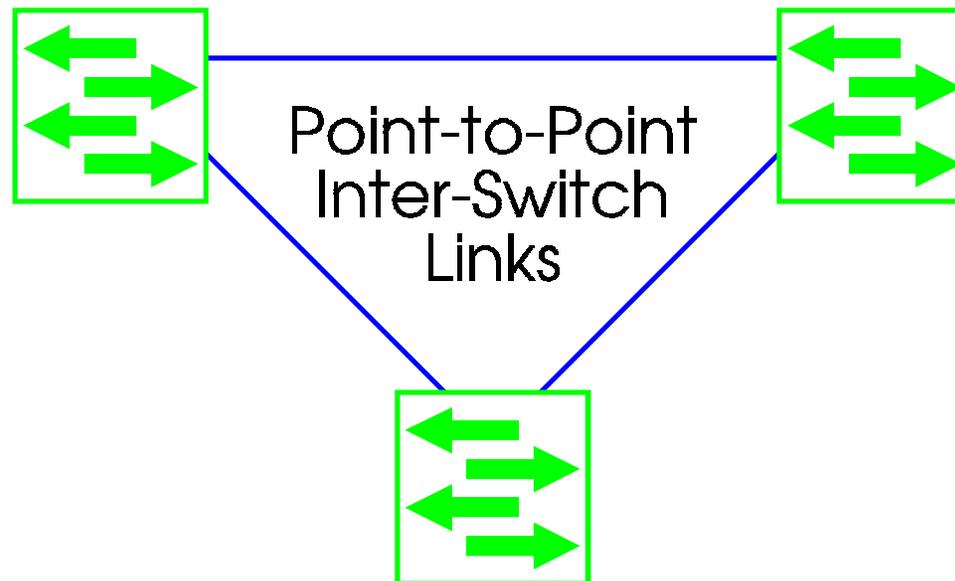
VLAN Requirements

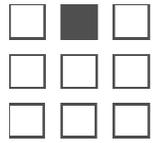
- **Will adapt to changing network topologies without network management intervention**
 - Adding bridges to the network
 - Adding/Deleting links between switches
- **Allows station mobility**
 - Only in MAC-based VLANs
- **Provides a standard method of “sharing” VLAN topology information**
 - Switch configuration
 - Inter-Switch Links
- **End-to-End flow control will be provided**



VLAN Requirements

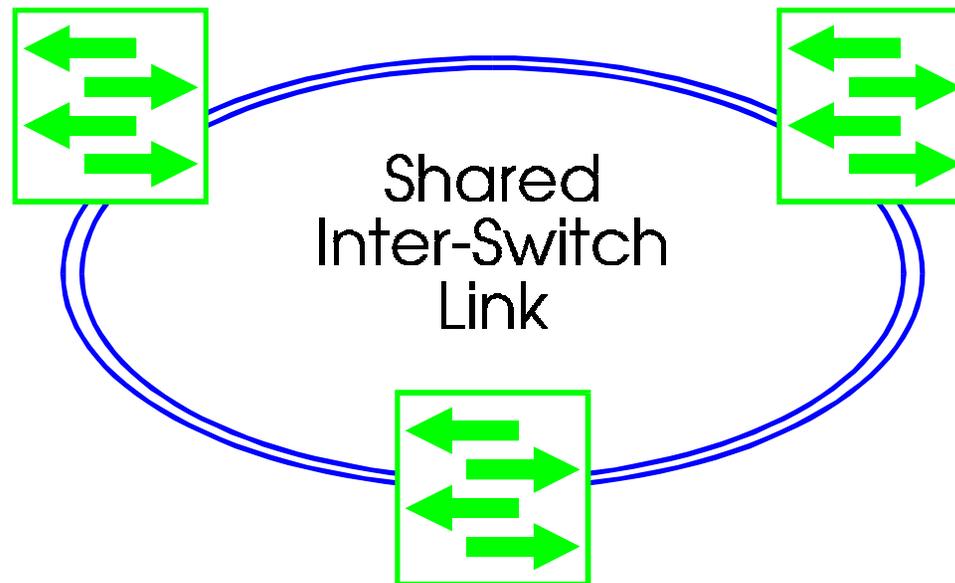
- **Inter-Switch links shall support point-to-point, switched, as well as shared LAN connections**

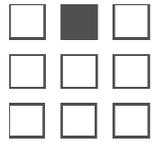




VLAN Requirements

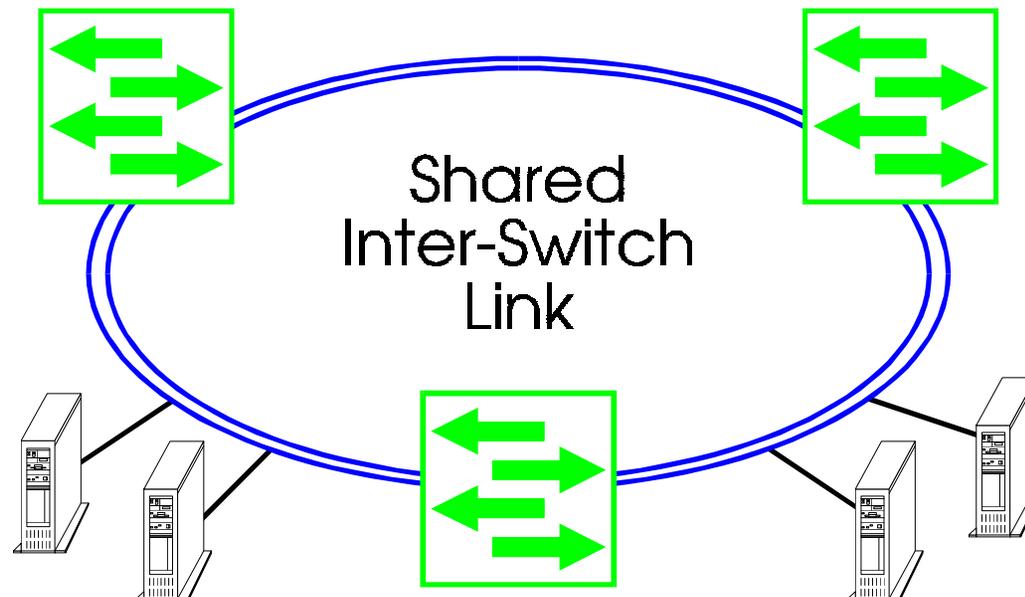
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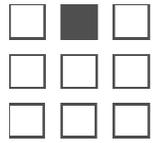




VLAN Requirements

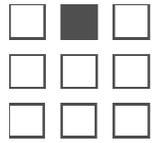
- Shared LAN IS-IS links shall support multiple end systems





VLAN Requirements

- **Enhanced VLAN services will be “allowed”**
 - Protocol grouping
 - Quality of service
 - Application groups
- **Will interoperate with existing stations**
 - NICs
 - Drivers
- **Will interoperate with existing 802.1D bridges**
 - Spanning Tree
 - Source Routing
 - Source Routing Transparent



VLAN Requirements

- **Shall include defined management objects (join, leave, merge, partition)**
 - Creation and deletion of VLANs
 - Addition of ports/stations/IS devices to VLANs
 - Changing ports/stations/IS devices on VLANs
 - Moving ports/stations/IS devices from one VLAN to another
 - Remove ports/stations/IS devices from VLANs
- **Network management stations will be able to monitor all VLANs in an 802.1D Bridged LAN**
 - Physical view
 - Logical view