

Cisco Layer-2 Bridging

(OSI Layer 2 - Data Link Layer - Expand / connect the same LAN)

A bridge is a device that connects two or more networks and forwards packets between them

Bridges are software based
Switches are hardware based

Cisco Implementation of Transparent

Transparent bridge - Connect *Ethernet LANs* segments.

Translational bridge - Not a popular bridging method for connecting Ethernet and Token Ring.

Source-route bridge (SRB) - Connects *Token Ring LANs*. SRB bridges recognize a routing information field (RIF) in packet headers, essentially a list of bridges a packet should transverse to reach its destination. Each bridge/interface pair is represented by a Route Designator (RD), the two-byte number used in the RIF. SRB is a bridging method in which one end host locates another end host by discovering available source to destination paths. SRB determines the entire route to a destination, in real time, prior to the sending of data. Uses Explores: All routes and Single route.

Source-route transparent (SRT) - SRT bridges can forward traffic from both transparent and source-route end nodes and form a common spanning tree with transparent bridges, thereby allowing end stations of each type to communicate with end stations of the same type in a network of arbitrary topology.

Remote Source Route Bridging (RSRB) - Used for transporting logical link control, type 2 (LLC2) traffic over an IP network. DLSw+ has replaced many RSRB networks. First, Define ring group, then define peer for local rings, including source-bridge spanning. Last, define peer statements:

```
source-bridge ring-group 10  
source-bridge remote-peer 10 tcp 10.1.1.1
```

```
interface TokenRing0  
ip address 10.1.100.1 255.255.255.255  
source-bridge 100 1 10  
source-bridge spanning
```

Source-Route/Transparent Translational Bridging (SR/TLB) - For conversion of SRB frames with or without RIF to transparent bridging (TBP) source address/destination address (SA/DA) format. Used to go from one media to another (Ethernet -> Token Ring)Ethernet numbering MAC addresses, while Token Ring and FDDI use MAC addresses. This case causes for a 'byte-swap' when bridging

1. Select a spanning tree protocol

router(config)# **bridge** *bridge*

2. Assign a priority to the bridge

router(config-if)# **bridge** *bridge*

Helps determine

3. Assign the bridge

Router(*bridge*)

4. Assign the bridge

Router(*bridge*)

Spanning tree is a protocol defined in IEEE 802.1D that allows bridges from create

Breaks the LAN into segments
Unicast traffic
Broad
Ma