



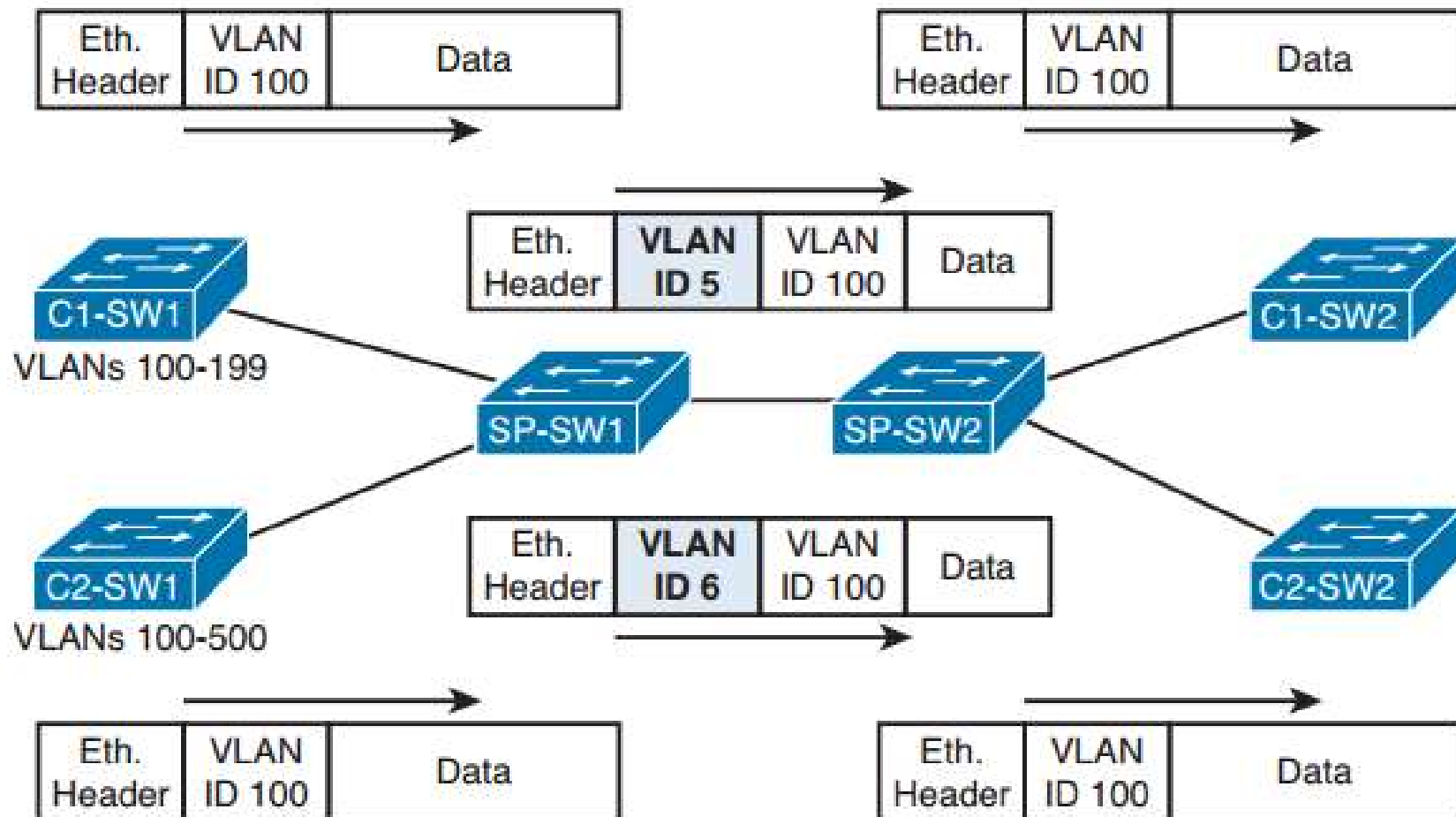
802.1Q-in-Q Tunneling

Q-in-Q Basic Operation

- **VLANs have not extended beyond the WAN boundary.**
- **802.1Q-in-Q:**
 - **Allows an SP to preserve 802.1Q VLAN tags across a WAN service**
 - **More flexibility for network design options, particularly with metro Ethernet services**
 - **CDP and VTP traffic can be configured to pass transparently over the Q-in-Q service**

Q-in-Q Basic Operation

SP:
Customer1: VLAN 5
Customer2: VLAN 6



Q-in-Q Configuration Example

```
SP-SW1 (config)# vlan 5
SP-SW1 (config-vlan)# name Customer1
SP-SW1 (config-vlan)# exit
SP-SW1 (config)# vlan 6
SP-SW1 (config-vlan)# name Customer2
SP-SW1 (config-vlan)# exit
```

This interface is configured as an ordinary trunk port:

```
SP-SW1 (config)# interface FastEthernet0/24
SP-SW1 (config-if)# switchport trunk encapsulation
dot1q
SP-SW1 (config-if)# switchport mode trunk
```

Q-in-Q Configuration Example

The Fa0/1 interface connects to C1-SW1:

```
SP-SW1 (config)# interface FastEthernet0/1
SP-SW1 (config-if)# switchport mode dot1q-tunnel
SP-SW1 (config-if)# switchport access vlan 5
SP-SW1 (config-if)# l2protocol-tunnel cdp
SP-SW1 (config-if)# l2protocol-tunnel vtp
```

CISCO SYSTEMS

