## 802.1Q Fields

| | |
|---|---|
| **Tag protocol identifier (TPID):** | 16-bit is field set to 0x8100 to identify the packet as an 802.1Q packet. |
| **Priority code point (PCP):** | 3-bit field indicates a class of service (CoS) as part of Layer 2 quality of service (QoS) between switches. |
| **Drop elgible indicator (DEI):** | This 1-bit field indicates whether the packet can be dropped when there is bandwidth contention. |
| **VLAN identifier (VLAN ID):** | This 12-bit field specifies the VLAN associated with a network packet. |

## Centralized Forwarding VS Distributed Forwarding

**✱Centralized Forwarding✱**

⇨ When a route processor (RP) engine is equipped with a forwarding engine

**✱Distributed Forwarding✱**

⇨ Forwarding engines are equipped in the line cards

⇨ When a packet is received on the ingress line card, it is transmitted to the local forwarding engine. The forwarding engine performs a packet lookup, and if it determines that the outbound interface is local, it forwards the packet out a local interface. If the outbound interface is located on a different line card, the packet is sent across the switch fabric, also known as the backplane, directly to the egress line card, bypassing the RP.

## VLAN Ranges

| | |
|---|---|
| **VLAN 0** | ***Used for 802.1P Traffic*** Cannot be modified/deleted |
| **VLAN 1** | ***Default VLAN*** Cannot be modified/deleted |
| **VLAN 1002 to 1005** | ***Reserve Range*** Can be modified/deleted |
| **VLAN 2 to 1001** | ***Normal Range*** Can be modified/deleted |
| **VLAN 1006 to 4094** | ***Extended Range*** Can be modified/deleted |

By **justinpam08**

cheatography.com/justinpam08/

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