

### 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 eligible 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 1001** *Normal Range* Can be modified/deleted

**VLAN 1006 to 4094** *Extended Range* Can be modified/deleted



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