INT DSCP boundary cases

P4 Applications WG meeting
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IP DSCP for indicating INT over TCP/UDP

- If 6b INT codepoint
  - Either INT or QoS can be applied to a give packet, not both
- If less than 6b used for INT, e.g, 1b dedicated to INT
  - Both INT and QoS can be applied to the same pkt
  - But INT and QoS must use mutually-exclusive bit space
- QoS mis-configuration may lead to DSCP overlap
- Case1) INT-capable switch is configured to re-mark DSCP
  - Solution: ignore DSCP re-marking on INT bits if pkt is going out to INT ports
- Case2) Pkts coming from outside of INT domain (end-hosts or legacy) have INT DSCP
  - INT switch must ignore INT DSCP coming from non-INT ports, and zero-out the bits

Port-based INT definitions

- Two port types
  - INT port, connecting INT-capable devices
  - non-INT port (a.k.a Sink port), connecting INT device to non-INT device (end-host or legacy)
- Four INT behaviors
  - B1) pkt in from Sink port, out to INT port: INT Src
  - B2) pkt in from Sink port, out to Sink port: one-hop Sink, do not add INT but report
  - B3) pkt in from INT port, out to INT port: INT transit
  - B4) pkt in from INT port, out to Sink port: INT Sink, terminate & report
- Two boundary conditions
  - C1) pkts coming from Sink ports must not have INT DSCP set. If set, must be zeroed out.
  - C2) pkts going out to Sink ports must not have INT stack
- QoS DSCP marking condition
  - C3) QoS must not set INT DSCP on non-INT pkts going out to INT ports