

DiffServ Lower Effort (Scavenger)
Service Class DSCP
[Differentiated Services Code Point]

David Black
(as individual contributor)

Background

- Class Selector DiffServ Code Points (RFC 2474)
 - IP Precedence backwards compatibility
 - CS0-CS7: xxx000
- Lower Effort (LE) forwarding PHB/PDB (RFC 3662)
 - Less than Best Effort forwarding
 - “network makes no commitment to deliver LE packets”
 - Default (suggested) DSCP: CS1
 - Overrides RFC 2474 “SHOULD” for CSn ordering
 - Recommended in practice by RFC 4594 (Service Classes)
- Now: Replace CS1 as default LE DSCP?
 - Looking for WG direction on what to do

More Background

- IP Precedence, CSn ≠ Ethernet Priority Code Point (PCP)
 - Ethernet: PCP 1 has always been LE (Lower Effort)
 - IP Precedence: RFC 3662 “changed” CS1 to use with LE
 - RFC 3662: Informational, not Standards Track
- Default DSCPs widely used
 - Based on RFC 4594 (DiffServ service classes)
 - RFC 4594 recommends CS1 for Low-Priority Data
- If RFC 4594 classes used, only a subset are deployed
 - May or may not include CS1 (many networks don't)
 - Result: Priority inversion risk (small) if LE traffic is CS1-marked
 - CS1 → CS0 (Best Effort) common at network boundaries
 - More likely result: No LE vs. Default (Best Effort) differentiation

LE DSCP: Do Something Else?

- Idea: New LE default DSCP: 000xx0 (e.g., 000010)
 - Register w/IANA as default DSCP for LE service
 - Small draft to do that and update RFCs as needed
- 000xx0 Advantages:
 - No risk of priority inversion wrt CS0 (000000)
 - Appears to be incrementally deployable
- 000xx0 Disadvantages
 - Have to preserve existing CS1 usage for LE forwarding
 - Still get “bleaching” to CS0 at network boundaries
 - But perhaps w/future opportunity for improvement?

LE DSCP: Do Something Else?

- New LE default DSCP: 000xx0 (e.g., 000010)
 - Register w/IANA as default DSCP for LE service
 - Small draft to do that and update RFCs as needed

Should we do this?

DISCUSS