

# Specifying Alternate Semantics for the ECN Field

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## What is the problem?

- 1: **How do routers know** which ECN semantics to use with which packets?
- 2: Problems with **incremental deployment**?
- 3: For incremental deployment, **co-existence** with traffic using standard ECN?
- 4: **Evaluating alternate-ECN semantics.**

## How do routers know?

- In most proposals, a diffserv field is used.
  - Out-of-band mechanisms have also been proposed.
- Note that **RFC 3168** gives the default ECN semantics for all packets, regardless of the diffserv codepoint.
- Do all routers using the diffserv codepoint know that it indicates alternate ECN semantics?
- What if the diffserv codepoint is changed along the path?

# Problems with incremental deployment?

- What if some routers along the path don't understand the alternate ECN semantics?

How does the alternate-ECN traffic perform?

## Co-existence with competing traffic (when some routers don't understand the alternate-ECN semantics)?

- There are three possibilities:
  - 1: **Unsafe in the global Internet**; or
  - 2: Methods to guarantee that **all routers** along the path **understand the alternate semantics**; or
  - 3: Alternate ECN semantics can **co-exist** with routers using default ECN semantics.
    - E.g., if a default-ECN router sets the ECT codepoint, the alternate-ECN traffic responds appropriately.

## Evaluation of alternate ECN semantics:

(In an environment where all routers understand the alternate ECN semantics.)

- 1: Is the **ECN nonce** used?
  - If not, is there some way to verify feedback from receiver?
- 2: **Co-existence with competing traffic** (when all routers along the path understand the alternate ECN semantics).
- 3: **General merits** of the alternate-ECN semantics?