

# The Benefits and Pitfalls of using ECN

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The views expressed are solely those of the authors.

# Purpose

- Goal of the draft is to present a vision for why people should be using ECN
- Identify key benefits, but also identify pitfalls
- General recommendation is to enable ECN

# Changes in -01

- This is mostly a rewrite to ete all the sections and a rewrite to improve readability
- We're presenting today because we think this is now ready for wider review.

# Document Overview

1. Introduction (what is ECN)
2. ECN deployment (new section)
  - Public Internet v. Private (e.g. DCTP)
3. Benefits to avoid congestion
  - 3.1 Improved Throughput
  - 3.2 Reduced Head-of-Line Blocking
  - 3.3 Reduced Probability of RTO Expiry
  - 3.4 Applications that do not retransmit
4. Benefit from Early Congestion Detection
  - 4.1 Avoiding Capacity Overshoot
  - 4.2 Making Congestion Visible

# Document Overview 2

5. Other forms of ECN-Marking/Reactions

6. Pitfalls when using ECN

6.1 Bleaching and middlebox requirements

6.2 Verifying whether a path really supports ECN

6.3 Receiver cheating

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## 7. Conclusion

### Prerequisites for network devices

should not reset the ECN codepoint to zero by default  
should correctly update the ECN codepoint in the presence of congestion

should correctly support alternate ECN semantics

### Prerequisites for network endpoints

should use transports that receive ECN marks

should correctly return congestion feedback

should use transports that can detect misuse and paths that do not support ECN, providing fallback

# Known Issues

- Table in section 5 should include section 4 topics.
- We were late uploading the new rev (sorry)

# Next steps

- Please read & comment, or offer to review
- We think this can soon go to WGLC