

# The Benefits to Applications of using Explicit Congestion Notification (ECN)

draft-welzl-ecn-benefits

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90th IETF Meeting  
Toronto, July 2014

# Draft goals

## Goals:

- document gains of ECN
- includes less obvious gains
- may include deployment scenarios to illustrate benefit

## Non-goals:

- it does not recommend any router/endpoint behaviour
- it does not define new mechanisms

. . . in short, "***a Manifesto for deploying ECN***"

# ECN advantages seem obvious

- ECN marks instead of **dropping** ECN-capable packets

A receiver gets packets instead of losing them [RFC2884]

However, often few congestion drops [RFC3649]

- Biggest gain can be congestion indication **without loss recovery**

**Reduced Head-of-Line Blocking** for in-order transports

**Reduced probability of timeout** (RTO Expiry)

- RTO collapses cwnd, with significant bad impact

**Some applications do not retransmit lost packets**

Typically VoIP, interactive video, realtime data

- Needs loss-hiding mechanisms, impacts perceived quality

# Main Message

People should ***configure host stacks*** and ***network devices to enable ECN*** - because it will make things better!

***Application developers*** should, where possible, use transports that enable ECN - because this will make things better, without people needing to rewrite apps!

We think this document is useful!

- Is anyone able to help us articulate the gains?
- Can we make this a WG item (in tsvwg or the AQM wg)?