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

draft-welzl-ecn-benefits

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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 loosing 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 losshiding 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)?