

ConEx Concepts and Use Cases

draft-ietf-conex-concepts-uses-02

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IETF-81 ConEx
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Overview

- Lest we Forget: Top Level Goal
- Status
- Changes to draft since Mar-11
- Mailing List Reaction/Contribution
- Deployment Arrangements
- Next steps

Lest we Forget: Top Level Goal

- Leave reader with one take-away message
 - what ConEx is good for
- and understanding of why
- wg chose traffic management
 - LEDBAT & QoS use-cases are consequences
 - other use-cases must not confuse main message

Status

- late
 - chartered to submit to IESG Mar 11
 - draft-02 posted 11 Jul
- new editing team
 - Bob Briscoe & Rich Woundy
- f2f hand-over meetings (where possible)
 - keep the body, change the first impression
- new structure & new text pasted to list & bashed
 - through June/Jul

Changes to draft since Mar-11

- Structural Changes
- Abstract & Intro
- Concepts, incl. Non-Goals & Misconceptions
- Other Use-cases
- Deployment Arrangements (discussed later)

Structural Changes

- Introduced Traffic Mgmt in Intro (see next slide)
- Definitions → Concepts (incl. formal definitions)
- Added “Non-Goals & Misconceptions” under Concepts*
- Use-cases
 - 3 main use-cases reframed as one (traffic mgmt) with 2 consequences
 - Statistical Multiplexing over Differing Timescales → Concepts
 - “Other Use-Cases” section created for brief mentions of others
 - “Accounting for Congestion” → Other/interconnection
- Self-congestion, moved from Intro → Potential Issues
- Information Security → Security Considerations

* plan to move again

Current Structure

1. Introduction
2. Concepts
3. Traffic Management
4. Exposing Congestion
5. ConEx Use-Cases
6. Deployment Arrangements
7. Potential Issues or Non-Issues
8. Security Considerations

Abstract & Intro

- Doc as entry-point to ConEx documentation

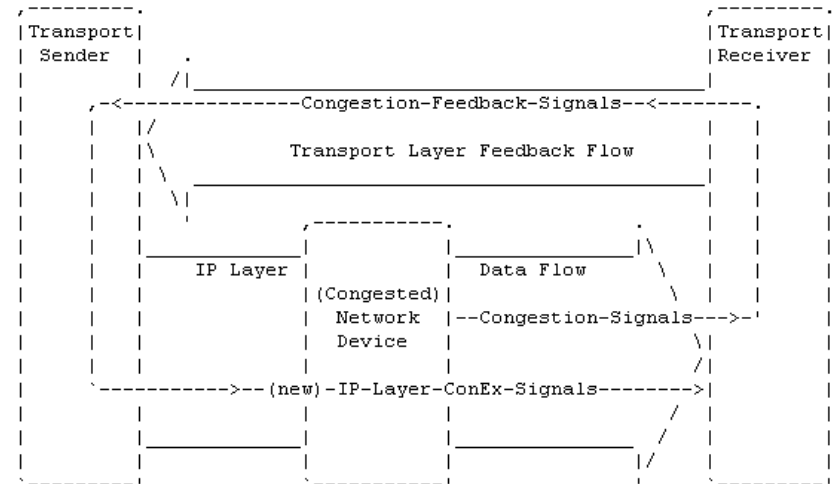


Figure 1: Where the ConEx Protocol Fits in the Internet Architecture

- Focused to reflect traffic mgmt story in body
- Deferred definition of congestion → §2
- Deferred overprovisioning argument → §2
- Avoided justifying Traffic Mgmt, just “it exists”

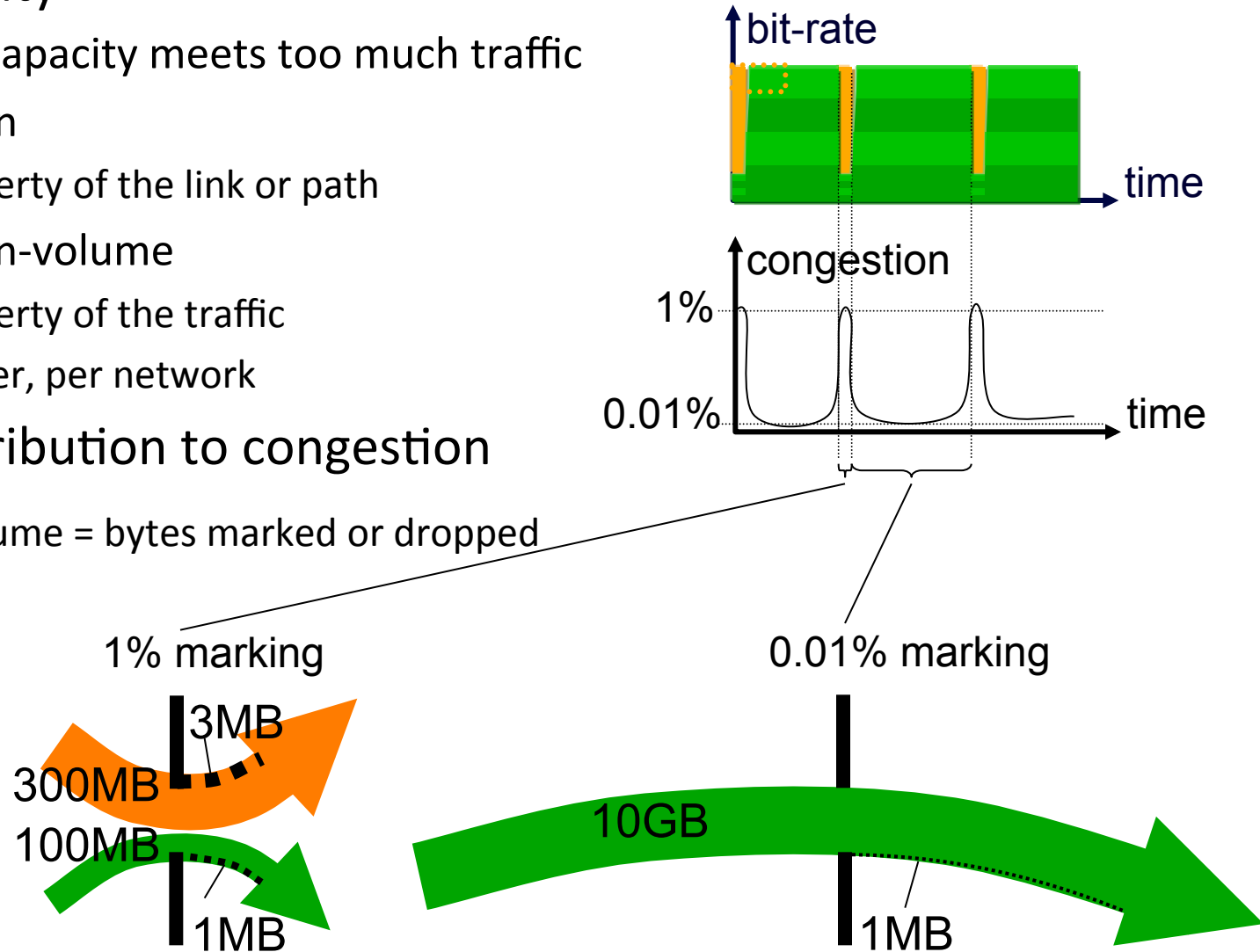
Concepts

- Concepts
 - preceded definitions with explanatory text on main concepts (next slide)
 - congestion definition now consistent with abstract-mech
- Added Non-Goals & Misconceptions
 1. not fine-grained congestion control by operator
 2. enforcing per-flow fairness considered harmful
 3. not substituting for capacity planning
 4. not eliminating all congestion
 - not included: utilisation vs congestion

Main Concepts

- accountability
 - too little capacity meets too much traffic
 - congestion
 - a property of the link or path
 - congestion-volume
 - a property of the traffic
 - per user, per network
- user's contribution to congestion

congestion-volume = bytes marked or dropped



Use-cases

- 3 main use-cases reframed as one: traffic management
 - with 2 consequential use-cases:
 - incentivises LEDBAT
 - informs intra-class QoS
- Statistical Multiplexing over Differing Timescales
 - a property of ConEx used in the other use-cases
 - belongs under Concepts
 - introduced a little in Intro & under Traffic mgmt
 - still need a brief explanation of this under Concepts too
- “Other Use-Cases” section created to contain
 - Preventing congestion collapse
 - Inform Inter-Operator Contracts
 - Inform Capacity Provisioning

Mailing List response/contribution

- Full reviews: Nandita, Alissa, Mikael
- Substantial continuous reviews
 - Michael M, John L, Toby, Phil, Georgios, Dave McD
- Re-rewrite of Intro
 - and diagram bashing
- Mechanism
 - tradeoff: concrete explanation vs prejudging decisions
- Terminology
 - freedom ⇔ blame ⇔
 - transport sender/receiver
 - traffic management
- Structuring main use-cases as sequential
- Non-Goals nearer end
 - advert in “Concepts”
- Improved structure...

Proposed Structure

1. Introduction
2. Concepts
 1. Definitions
3. Core Use Case: Informing Congestion Management
 1. History
 2. Existing Approaches
 3. Drawbacks of Existing Approaches
 4. Use Case Description
4. Other Use Cases
 1. Creating Incentives for Scavenger Transports
 2. Supporting Intra-Class Quality of Service
 3. Preventing Congestion Collapse
 4. Informing Inter-Operator Contracts
 5. Informing Capacity Provisioning
5. Deployment Arrangements (see next slide)
6. Commercial Secrecy as a Potential Deployment Barrier
7. Non-Goals
8. Security Considerations, [...etc]

Current Structure (-06)

1. Introduction
2. Concepts
 1. Definitions
3. Traffic Management
4. Exposing Congestion
5. ConEx Use-Cases
 1. Inform the Operator's Traffic Management
 2. Consequence: Incentivise Scavenger Transports
 3. Consequence: User-Controlled Intra-Class QoS
 4. Other Use-Cases
6. Deployment Arrangements
7. Potential Issues or Non-Issues
8. Security Considerations, [...etc]

- Alissa Cooper becomes doc editor
(prize for proposing this :)
- outstanding issue:
 - introduce downstream congestion & ECN early (§2) or late (e.g. §4.4)?

Deployment Arrangements

- Recall top level goal
 - one take-away message on what ConEx is good for and understanding of why...
...and believable initial deployment
- in Prague we promised to add this
- made an attempt, but it won't work, it can't work
 - deployment is about mechanism components
 - a huge lump to add to a doc that was avoiding mechanism
- alternative proposal, 3 informational drafts:
 1. ConEx Concepts and Use-Cases
 2. ConEx Abstract Mechanism
 3. ConEx Single Network Deployment Scenarios
 - #2 is prerequisite for #3
 - brief section in #1 summarising and pointing to #3

Next Steps

- wordsmith Concepts
- transplant out deployment arrangements
 - leave a signpost to it in a dedicated small section
- wordsmith use-cases
- modus operandi
 - one section at a time to mailing list
- aim for WGLC around Nov 11?