ConEx Concepts and Use Cases
draft-ietf-conex-concepts-uses-02

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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

• Summarised abstract-mech

• 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 \(\subseteq\) blame \(\supseteq\)
  - 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?