PCN

Congestion and Pre-congestion Notification

IETF 68 – Prague
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Administrivia (1)

- Chairs:
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- Mailing list:
  - `<pcn@ietf.org>`
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- PCN homepage:
  - `http://www.ietf.org/html.charters/pcn-charter.html`
- Meeting materials:
  - `https://datatracker.ietf.org/public/meeting_materials.cgi?meeting_num=68`

Administrivia (2)

- Blue sheets
- Note takers
- Jabber scribe
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- Agenda bash

Agenda

- 10 min   chairs   Administrivia

- 30 min   chairs   Charter review

- 30 min   Kwok-Ho Chan   Overview of prior work

- 20 min   Joy Zhang   Performance Evaluation of CL-PHB
  Admission and pre-emption Algorithms
  draft-zhang-pcn-performance-evaluation-01

- 20 min   Anna Charny   Pre-Congestion Notification Using Single
  Marking for Admission and Pre-emption
  draft-charny-pcn-single-marking-01

- 20 min   Jozef Babiarz   Explicit PCN Marking
  draft-babiarz-pcn-explicit-marking-00

Charter Review (1)

"The Congestion and Pre-congestion Notification (PCN) working group develops mechanisms to protect the quality-of-service of established inelastic flows within a Diffserv domain when congestion is imminent or existing."

Charter Review (2)

- "The focus of the WG is on developing standards for the marking behavior of the interior nodes and the encoding and transport of the congestion information."

- "Reaction mechanisms at the boundary consist of flow consist of flow admission and flow termination."

Charter Review (3)

- PCN will specify the following components:

  (1) A general architecture for flow admission and termination based on aggregated (pre-)congestion information

  (2) A specification of conditions under which interior nodes generate (pre-)congestion information

  (3) Encoding and transport of (pre-)congestion information between the interior and domain egress

  (4) Metering of (pre-)congestion information at the domain egress

  (5) Encoding and transport of (pre-)congestion information between the egress and the controlling domain ingress

  (6) Ingress node control mechanisms for flow admission or termination, based on aggregated (pre-)congestion information

Charter Review (4)

- PCN initial scope is restricted by the following assumptions:

  A) These components are deployed in a single Diffserv domain, where all boundary and interior nodes are PCN-enabled and trust each other for correct PCN marking, encoding, transport and aggregation

  B) All flows handled by these mechanisms are inelastic and constrained to a known maximum rate through policing or shaping

  C) The number of flows across any potential aggregation bottleneck is sufficiently large for stateless, statistical mechanisms to be effective

  D) Flows may have different precedence, but the applicability of the PCN mechanisms for emergency use (911, GETS, WPS, MLPP, etc.) is out of scope

Charter Review (5)

- Goals and Milestones (revised):
  - Nov 2007: Submit "Flow Admission and Termination Architecture within a Diffserv Domain" (Informational)
  - Nov 2007: Submit "Survey of Encoding and Transport Choices of (Pre-)Congestion Information within a Diffserv Domain" (Informational)
  - Mar 2008: Submit "(Pre-)Congestion Detection within a Diffserv Domain" (Proposed)
  - Mar 2008: Submit "Requirements for Signaling of (Pre-) Congestion Informatio from Egress to Ingress in a Diffserv Domain" (Informational)
  - Jul 2008: Submit "Encoding and Transport of (Pre-) Congestion Information from within a Diffserv Domain to the Egress" (Proposed)

Charter Review (6)

- Goals and Milestones (continued)
  - Nov 2008: Submit "Encoding and Transport of (Pre-) Congestion Information from the Domain Egress to the Ingress" (Proposed)
  - Jul 2008: Submit "Suggested Flow Admission and Termination Boundary Mechanisms" (Informational)

Charter Review (7)

- "The architecture document will be comprehensive, and include security, manageability and operational considerations."

- "The WG may produce a small number of informational documents that describe how specific quality-of-service policies for a domain can be implemented using these mechanisms."

Charter Review (8)

- Things PCN may consider after completing the charter milestones:
  - Concatenated Diffserv domains
  - PCN-aware application mechanisms
  - Additional (pre-)congestion response mechanisms (e.g., flow-rate adaptation)
  - Details of these work items are **out of scope** for PCN at this time.
  - PCN "may consider their requirements to design components that are sufficiently general to support such extensions in the future."