RSVP Extensions for Admission Control over DiffServ using Pre-Congestion Notification

Francois Le Faucheur - flefauch@cisco.com

Francois Le Faucheur, Anna Charny – Cisco
Philip Eardley, Bob Briscoe, Dave Songhurst - BT Research
Kwok-Ho Chan, Joe Babiarz - Nortel
Drafts –

‘Pre-Congestion Notification marking’
draft-briscoe-tsvwg-cl-phb-02.pdf

‘An edge-to-edge Deployment Model for Pre-Congestion Notification: Admission Control over a DiffServ Region’
draft-briscoe-tsvwg-cl-architecture-03

Signalling extensions
- RSVP, draft-lefaucheur-rsvp-ecn-01
- NSIS (future work)

Controlled environment

Border anti-cheating (related work)
draft-briscoe-tsvwg-re-ecn-border-cheat-01
- extending CL-region across operators

PCN over MPLS (related work)
- MPLS & ECN/PCN, draft-davie-ecn-mpls-00

further deployment models using PCN (future work)
- end-to-end / Open
- others?
<table>
<thead>
<tr>
<th>IP routers</th>
<th>Control signalling</th>
</tr>
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<tbody>
<tr>
<td>Reservation enabled</td>
<td>① standard RSVP PATH</td>
</tr>
<tr>
<td>RSVP/ECN gateway</td>
<td>② standard RSVP PATH</td>
</tr>
<tr>
<td>CL PHB &amp; ECN only</td>
<td>③ RSVP unaware</td>
</tr>
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<td>④ standard RSVP PATH</td>
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admission control

RSVP PATH

CL PHB & ECN

data flows

controlled load PHB & ECN

Intserv CL
Admission control

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- piggy-back PCN fraction as opaque object
- admit µflow to aggregate across region
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- RSVP RESV
- CL PHB & ECN
- controlled load PHB & ECN
- Intserv CL

μflows
Proposed Extensions:
New Object: CL-ECN Object

Reflects ratio of CE marked Packets.
FOR ADMISSION CONTROL

Reflects Sustainable Aggregate Rate
FOR PREEMPTION

In Resv Messages

<table>
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<th>Congestion Level Estimate</th>
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<td>Sustainable Aggregate Rate</td>
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Proposed Extensions: New Error Codes

• No CL-capable Egress GW
• Egress GW cannot compute Congestion Level Estimate
• CL-ECN Probes Required
Next Steps

• Reflect upcoming progress of PCN-based admission control and preemption mechanisms