

# RSVP FOR QOS:

What role for the IETF?

# Terminology



- RSVP has two major historical uses: making QoS reservations, and traffic engineering
- RSVP-TE is agreed term for the latter
  - ▣ plenty of community support for RSVP-TE in the IETF (CCAMP)
- I'll use RSVP-QoS to refer to the QoS usages of RSVP
  - ▣ this includes but is not limited to Intserv
  - ▣ RSVP can perform admission control for Diffserv too
  - ▣ Extensions to the Intserv architecture also in scope

# Five Concerns



- Is there deployment & implementation of RSVP-QoS?
- Is there a community to work at IETF on standardization of RSVP-QoS?
- Does RSVP-QoS have showstopper technical issues?
- What relationship between RSVP-QoS and RSVP-TE?
- What about NSIS?

# RSVP-QoS Implementation



- 1998 survey listed 37 host or router implementations of RSVP for QoS
- Today we know of:
  - Cisco (host and router)
  - Espial (VoD)
  - Tandberg (videoconferencing)
  - Bitband (VoD)
  - Avaya (VOIP)
  - Microsoft (current support unclear)

# RSVP Deployment

- RSVP solves several real, current QoS problems
  - ▣ Applications where it's better to block the “last straw” session than give degraded service to all sessions (e.g. certain VoD deployments)
  - ▣ Apps with strong QoS requirements AND per-session policy control (e.g. enterprise videoconferencing)
- We know of a large number of service provider and enterprise deployments (>15, not all public, various deployment stages)
  - ▣ Swedish Road Traffic Authority (IP video)
  - ▣ Neuf (VoD, planned)
  - ▣ FT/Orange (Admission control for L3VPN)
  - ▣ Raytheon (planned)
  - ▣ Wells Fargo (evaluating)
  - ▣ Intel (evaluating)

# Community Interest

- Well, that's one reason we're here today
- For the record:
  - ▣ Recent RSVP-QoS drafts/RFCs have at least 10 different authors representing 5 different companies<sup>1,2</sup>
- Two recent internet drafts
  - ▣ draft-guillou-tsvwg-rsvp-vod (VOD for SP triple play)
  - ▣ draft-lavers-rsvp-usage (Enterprise RSVP requirements)

1. Remember when IETF only cared about individuals, not companies?
2. Anyone who thinks that all Cisco employees speak with one voice isn't paying attention

# Community Interest(2)



- Support expressed in recent email (mini-BOF list):
  - Ferit Yegenoglu (Lockheed Martin)
  - Allan Guillou (SFR)
  - Chris Christou (BAH)
  - Sanjay Mehta (Espial)
  - Roberta Maglione (TI)

# Technical Issues



## □ Router Alert

- Limits applicability to certain scenarios, not a deal-breaker
- See draft-intarea-router-alert-considerations

## □ Scalability

- RSVP-TE implementation tested to 30k+ LSPs
- RSVP-QoS implementation tested to 50k+ sessions
- Hierarchical CAC models (RFC3175, RFC4804) can scale further
- Even parts of Integrated Services scale
  - E.g., NPs have 64K policers today

# Relationship to RSVP-TE

- RSVP effort split between CCAMP, MPLS and TSVWG
- Community of interested parties is divided
  - ▣ Lack of feedback in features that may be of use
- Good synergy in many features
  - ▣ Basic RSVP features useful to CCAMP
  - ▣ Refresh reduction, non-IP-RAO signaling from CCAMP useful to RSVP
- Some duplicated effort and mechanisms between RSVP-TE and RSVP-QoS
  - ▣ Preemption priority (POLICY vs SESSION\_ATTRIBUTE)
  - ▣ Resource sharing (RSID vs Association)

# Summary and Recommendations

- RSVP-QoS has enough applicability & interest to warrant continued standardization
  - ▣ Reasonable set of SPs, enterprise users, and vendors involved
- Better to do this in the IETF than elsewhere
  - ▣ Especially given relationship to RSVP-TE
- Relationship to RSVP-TE needs more attention. Possible steps:
  - ▣ Require cross-posting of –QoS drafts to CCAMP, and –TE drafts to <future RSVP home>
  - ▣ Last call drafts in both places
  - ▣ Use expert review process
  - ▣ Design team of RSVP-\* experts to keep an eye on consistency

# Backup Material

