RSVP FOR QOS:

What role for the IETF?
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\(^1,2\)
- 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