RBONE —
Resource Administration for the MBONE

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The MBONE needs help!

- Many events:
  - public global/regional broadcasts
  - private, closed teleconferences
- Informal scheduling can't manage growing usage
  => Need more formal, automated scheduling
  - *Want to retain the current social model*
  - *Defer need for authentication and access control*
  - *Accommodate heterogeneous policies*
- Must be dependable to be more than a toy
  - *Receive scheduled events without interference*

Advanced Scheduling, not Advanced Reservation

- Pre-registration sets priority for future use of bandwidth
  - Must specify sources, scope, BW, start time, duration
  - Scheduling tool installs “warrants” on needed links
  - May be centralized, probably distributed (sd++)
  - Managed via full disclosure and public pressure
- Bandwidth reserved via RSVP when receivers tune in
  - Admission control matches warrants to find priority
  - “Walk-in” traffic may be preempted
  - Bandwidth reserved only where receivers are active

Why Two Phases / Mechanisms

- Different timescales
  - *People are involved in scheduling*
  - *Doesn't have to track routing changes as RSVP does*
- Receivers should not have to take action before event

Issues

- Temporary limitation: can only reserve MBONE bandwidth
  - No traffic control at device driver in mrouter
  - No traffic control between mrouters
- Scaling limits — may be only medium-term solution
  - Feedback of conflicts from all links that failed???
  - Volume of events on calendar and/or mailing list that provides the public disclosure
- Should RSVP give preemption warning to walk-ins?

Maximizing MBONE Utilization

- Limit scope when possible — allow regional events
- Limit to particular receivers for private teleconferences
- Walk-in sessions may reserve unused BW with RSVP (establishes FCFS priority)
  - BW not pre-registered
  - BW pre-registered but not used (may be preempted)

Heterogeneous Policies

Examples of per-node administrative policies:

- Set max fraction of bandwidth for pre-registrations
- Set relative priority of local versus global scopes
- Favor requests from particular principals