RSVP Policy Requirements

- Contents:
  - “Token” styles
  - Agreements
  - Who pays?
  - Access Control
  - Gotchas
  - RSVP Policy Summary

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“Token” styles

- The POLICY object contains a “token” to identify a particular amount or particular account.
  - Each “token” represents a finite amount of QoS, analogous to the prepaid phonecards -- “You have 20 seconds of service remaining.”
  - Each “token” represents a customer account, analogous to the standard phonecards -- “Thank you for using BBN.”

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Agreements

- Using the “tokens”, the RSVP policies must support several forms of agreements.
  - **Neighbor to Neighbor**: My ISP and your ISP make agreements on behalf of our customers.
  - **Wholesaler and Retailer**: My ISP will resell connectivity from your ISP. Customers may wish to choose their “long-distance” carrier.
  - **Customer to ISP**: Customer may provide token(s) valid for one or more ISPs in the path.
  - **None**: Customer has no ISP agreements, but might still receive QoS, for example eCash.

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Who pays?

- The various forms of customer/provider agreements must support several billing paradigms.
  - **Sender**: Company may allow consumers to establish reservations at the company’s expense. Advertising, for example.
  - **Receiver**: Video on demand, for example.
  - **Multicast cost-sharing**: Cost is divided amongst the number of subscribers, e.g. conference calls.
  - **Multicast unit-cost**: Consumer pays a fixed rate, e.g. Internet-TV. Similar to pay-per-view.

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Access Control

- Based on customer's agreement and account status, the ISP must decide to allow or deny the QoS request.
  - **Allow**: Honor the QoS message.
  - **Deny**: Refuse the QoS request.
  - **Terminate an Active Flow**: In rare circumstances, an ISP may need to terminate an active QoS flow.
- An ISP may wish to restrict specific parameters based of the QoS request: bandwidth, delay bound, etc.

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Gotchas

- **Policy Routing**: Several of these agreement styles and billing paradigms may require a form of policy routing. “Joe gives us a token for ISP X. Should we, therefore, route his flow to ISP X?”
- **Security**: Spoofable fields, such as IP addresses, must not be trusted in policy decisions.
- **Refresh Intervals**: Once the “policy decision maker” denies a reservation, it should not have to deny the same reservation every refresh interval.

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RSVP Policy Summary

- Simply, the RSVP-supported polices must provide for the widest possible range of Access Control and Accounting styles.
  - We are designing an engineering solution in support of non-engineering requirements. Our technical design must support the variety of non-technical applications.

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