SRP
A Multimedia Protocol

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Multimedia Characteristics

- Loss
- Latency
Multimedia Over TCP

- Guaranteed delivery (No loss)
- Flow Control
- Unbounded delay

Multimedia Over UDP

- Best effort delivery (minimal latency)
- Unbounded loss
Multimedia Over SRP

- Selective Retransmission Protocol
- Combination of TCP & UDP
- Retransmits a percentage of lost packets
- Application layer client/server protocol

SRP Implementation

- Algorithms
- Equal Loss Latency (ELL)
- Optimum Quality (OQ)
### Testing Approach

- **UDP blaster**
- **Token bucket router**

### Sample Data

**SRP - ELL (3% loss, 50ms)**

- **Latency (ms)**
  - 0
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30
  - 35
  - 40
  - 45

- **Lost Packets**
  - 0
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30
  - 35
  - 40
Low Loss, Low Latency

- 3% Loss, 50 ms Round Trip Time

High Loss, High Latency

- 15% Loss, 275 ms Round Trip Time
Conclusions

- SRP is a good balance
- Great potential
- Additional tuning

Future Work

- Flow control
- Loss detection
- Additional algorithms