Background

- Previous presentation (draft-maenpaa-p2psip-self-tuning-01) in IETF 76
- Was accepted as a WG item after a hum on the list in December 2009
  - draft-ietf-p2psip-self-tuning-00
- The present version is -01
- The purpose of the presentation is to give a status update
Overview - Self-tuning

- Traditional way to configure a DHT
  - Configure the DHT only once
  - Hope that the operating conditions do not change too much
  - Not possible to achieve both a low stabilization overhead and low failure rate

- Self-tuning DHT
  - Adapt the parameters of the DHT to changing operating conditions
Operation

- Each peer collects statistical data about the network
  - Network size, join rate, and leave rate estimates
- The data is used to dynamically adjust DHT parameters
  - Sizes of finger and neighbor tables
  - Stabilization interval
Changes since the -00 version

• Two main changes
  • Both were proposed on the list
• (1) Sharing of estimates
  • Idea: improve the accuracy of each peer's estimates by allowing peers to share their estimates
  • A peer sends Probe requests to peers in its finger table
  • The request and response contain a new message extension:

```c
struct {
    uint32 network_size;
    uint32 join_rate;
    uint32 leave_rate;
} SelfTuningData;
```

• The estimate to be used is calculated based on the peer's own estimate and the values obtained from other peers
Changes since the -00 version

• (2) Failure detection
  • The leave rate estimation algorithm needs information about the number of observed peer failures
  • Graceful departures are easy
  • Crashes are more difficult
    – Use the lack of STUN keepalives and data packets as an indication of peer failure
    – If no packets are received for 2*Tr seconds, send a Ping request
Status of the draft

- No plans to add new features
- Ready for WGLC as soon as RELOAD base is considered to be stable enough
Questions?