A Self-tuning DHT for RELOAD

draft-maenpaa-p2psip-self-tuning-01

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Background

- The draft-maenpaa-p2psip-self-tuning-00 was presented in IETF 74
- draft-maenpaa-p2psip-topology-plugin-00 submitted to IETF 75
- Main changes in draft-maenpaa-p2psip-self-tuning-01
  - Previously defined a new topology plugin
  - Now self-tuning is defined as an extension to chord-reload
  - Load balancing dropped
Overview - Self-tuning

• Approach 1: static parameters
  • Configure the DHT only once
  • Hope that the operating conditions don't change too much
  • Not possible to achieve both a low stabilization overhead and low failure rate

• Approach 2: self-tuning
  • Adapt the parameters of the DHT to changing operating conditions
Operation

- Each peer collects statistical data about the network
  - Network size, join rate, leave rate
- The data is used to dynamically adjust DHT parameters
  - Sizes of finger and neighbor tables
  - Stabilization interval
- Benefits
  - No need to tune DHT parameters manually
  - System adapts to changing operating conditions
  - Low failure rate and low stabilization overhead
Next steps

• Adopt as a WG item?
• Questions?