A Self-tuning DHT for RELOAD

draft-maenpaa-p2psip-self-tuning-01

Jouni Mäenpää
Gonzalo Camarillo
Jani Hautakorpi

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?