ICN Evaluation: Why and How?

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Discussion Starter

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- Quantitative criteria?

- Evaluation environment?

- Qualitative criteria?

- What do we really want to prove?

Quantitative criteria

- What does *better* mean?
  - Faster downloads?
  - Quicker response?
  - Lower utilization (links, CPUs, …)?
  - Do we need new metrics? Why?
  - Danger of confusing evaluation and profiling!
- And compared to what?
  - Consider the transport protocols in ICN 2012
  - Compare against TCP or BitTorrent?

- What is the measurement environment?
- Can we use existing traces for ICN?
  - Will ICN applications behave the same way?
  - Same for models of application behavior
- Can we use existing network graphs for ICN?
  - Will ICN networks look the same as IP networks?
  - Maybe business relationships will change a lot

Qualitative criteria

- Are there important qualitative benefits from ICN?
  - Improved multi-homing?
  - Improved mobility?
  - Improved privacy?
  - Improved access controls?
  - Simplified network management?
  - Simplified application design?
  - There are arguments against some of these!

- Is ICN research worthwhile to begin with?
  - Is ICN only about caching (HotNets 2011)?
  - If so, is it better than evolving HTTP?
- Maybe ICN lowers resource requirements
  - Spreading CPU/RAM load across more nodes
- Maybe ICN improves real-time delivery
  - Allowing dynamic traffic engineering
- It must be something to do with naming data!
  - But we need to decide what that is…