Path Tracing in Named Data Networking

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Goal of path tracing for NDN:

• At a minimum:
  • Provide path information to a NDN named object:
    • In terms of sequence of nodes and associated identifiers
    • For single path as well as multipath as provided by NFD strategy
  • Provide RTT information for each traced path

• Optionally:
  • Provide additional metrics such as those related to the state of the content store.
Existing approaches:

Tracing in IP networks:
Uses an ICMP-based iterative procedure

**ICN Traceroute:**
ICN Traceroute Protocol Specification
draft-mastorakis-icnrg-icntraceroute-00

**Contrace:**
Traceroute Facility for Content-Centric
Network draft-asaeda-icnrg-contrace-02
NDN-Trace:

- Non-iterative approach
- Same Interest / Data exchange
- No changes to the NFD
Traceroute components:

Traceroute consists of three components:

• Traceroute client application
• Traceroute daemon
• Traceroute strategy that handles traceroute requests forwarding