

# ICN Management Protocols Discussion Kick-off

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# Initial Thoughts

- We now have reasonably mature baseline protocols (CCNx and NDN)
  - CCNx in RFC editor processing for publication as experimental RFC
  - NDN has evolved to be very close semantically to CCNx, so modulo packet encodings, we can probably have one management protocol suite for both
- A number of things holding us back
  - No deployments outside a few existing testbeds
  - Not a lot of feedback on where the pain points are
  - Multiple proposals, none of which have had much practical experience
  - Some missing base functionality (e.g. packet steering)
- Purpose of this discussion
  - (Quickly) go over current state of the art - Ping, Traceroute, CCNInfo, NDN-NMF
  - See where there are useful commonalities and unique facilities that we want to preserve
  - Make some progress on what to do in parallel, what to try to converge, etc.
- Note that while people are here and available to talk about Ping/Traceroute and CCNInfo, we also have some slides from earlier Interim on ICN-NMF – these are worth looking at too:
  - <https://datatracker.ietf.org/meeting/interim-2018-icnrg-03/materials/slides-interim-2018-icnrg-03-sessa-network-measurement-framework-and-path-tracing-utility-for-ndn>

# Some architectural considerations

- What parts are embedded in the ICN forwarding semantics, versus layered on top?
  - Do all the forwarders have to support these things
  - If layered, do all forwarders have to intercept and process hand interests to an application?
  - Are responses with independent Data, or some chained/combined response from multiple hops?
- How are the request packets steered onto paths?
  - Do we need explicit next hop selection if layered design?
  - Do we need a "built-in" packet steering capability in the forwarding?
- What is the exact security model?
  - What things need to be trusted to do what?
  - Who signs which things?
  - Are there new DoS vectors introduced?

# Interest Packet Steering

- How sophisticated does support for multi-path need to be?
- How are paths discovered?
- If we need to explicitly steer interests, how is this done?
- Since there are some non-management (valuable?) uses for packet steering – e.g. multi-path congestion control – should we put effort now into selecting a scheme and integrating it with the base protocols?