Common Data Layer

Marie-José Montpetit, U. Concordia, Montréal, Canada
Edgar Ramos, Ericsson Finland,
Roberto Morabito, Princeton U. USA
Eve M. Schooler, Intel USA

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“The network is the data”

• Rise of data driven services and applications in networking and especially in IoT
• Delay sensitive or critical decision making needs to be done close to the location of data gathering or data usage
• Sophisticated AI/ML application need to combine data and functionalities at the edge not just in remote clouds
• Cloud-edge continuum and in-network computing/compute first networking architectures require local processing/coordination/orchestration
• New powerful hardware (Tofino etc.) and software abstractions available for IoT and edge computing
Proposed Architecture
Functionalities

• Data layer functions
  • Filtering and match/action on headers and metadata
  • Managing pub-sub
  • Service/data/function discovery
  • Orchestration
  • Cache management (size/staleness)
  • Local processing using generic and dedicated hardware
  • Local decision making (based on the above)
  • Networking (local and remote)

• Links to other initiatives
  • ICN/NDN
  • Distributed networks
  • AI in networking/NM
  • Discovery
  • Compute-First Networking
  • “Intelligence market” (Ericsson Research)
  • Semantic Web
Next steps

• Continue developing the architecture and define specific services
• Develop/link to use cases
  • Automotive
  • Agriculture 4.0
  • Next generation IoT in industry
  • Etc.
• Propose solutions
• Prepare a draft for IETF 109
marie@mjmontpetit.com
edgar.ramos@ericsson.com
roberto.morabito@princeton.edu
eve.m.schooler@intel.com