Network Intent concepts

draft-moulchan-nmrg-network-intent-concepts-00

Karthik Sivakumar
Mouli Chandramouli
Cisco Systems
Objectives

• Definitions of Network Intent

• Differentiate Network Policy, Network Configuration

• A proposal for realizing Network Intent

• Some use cases

• Next steps of Research
Network Intent

• First, several efforts on this topic

  – “Autonomic” network intent – distributed policy
  – Domain Specific Language based approaches – NEMO, Promise theory
  – Implementations often imply Intent = Network configuration
Network Intent – Architecture

• Definition
  – Network Administrator articulates a desired / expected outcome from the network
  – Multiple approaches to realize Network Intent
  – Can lead to conflicts with the state of the network or conflicts with previous intents
  – Confusion with Network Policy, Service Models, Network Configuration
Network Intent – Architecture

User

Intent API

SDN Controller

Intent Engine

Device 1

Device 2

Device 3

Instruct network
Network Intent – Use cases

• Place a video call from User A to User B

• What are congested links in the network?
Network Intent – Next steps

• Problem definition stage
• Solution approach in research
  – Multiple approaches are pursued
    • Autonomic based techniques
    • DSL based techniques
• We are considering Natural Language Processing, ML and AI
• Suggestions/Collaborations welcome