Towards a Reference Architecture for IBN

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Considerations for the design of IBN

- Objective: decompose human-friendly intents to configuration commands
- Intents should be agnostic of implementation details (importance of right abstractions)
- Automatic decomposition of intents
- Conflict free intents
- Continuous enforcement of intents
Initial Thoughts on IBN Architecture

Intent Authoring Tool

- Infrastructure/service Intents

Intent Decomposition Logic

- Service Descriptors
- Mgmt Fctn Descriptors
- Knowledge Base

- Select/config. mgmt functions
- feedback

Conflict Analysis

- Abstr. Infrastr. Model

Intent Repository

Intent-aware Orchestrator

- Network Mgmt Function
- Computation Mgmt Function
- Storage Mgmt Function

Infrastructure Mgmt System

- Infrastructure configurations to enforce
Intent authoring
- Human-friendly definitions (who is it for?)
- High-level technical requirements to drive management functions
- Service- and infrastructure-oriented intents

Decomposition logic
- Resolve intent to relevant service and select appropriate mgmt function(s)
- Methods and techniques should not be specified (only guidelines)

Decomposition facilitated by
- Abstract infrastructure model – resources and commodities
- Service and management function descriptors – representative attributes
- Knowledge base – prior knowledge, best practices
• Intent repository
  - Store/retrieve intents – both high-level and low-level

• Conflict analysis
  - Detect/resolve inconsistencies, e.g. as a result of competing goals
  - Carried out at decomposition level

• Interface to management system
  - Selected management functions and execution parameters
  - Orchestrator as ‘contact point’ in infrastructure management system
  - Feedback – feasible configurations? Has intent stopped being met?