Use Cases and Practices for Intent-Based Networking

IETF-121 NMRG Meeting

draft-kdj-nmrg-ibn-usecases-02

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Background of the Document

- **The positioning of this document**
  - Refine methodologies to build IBN systems
  - Describe the practical learning from different use cases (i.e., difficulties, challenges, research directions, etc.) and general learning
  - Merge IBN use cases drafts (i.e., expired and active drafts)

- **Why merging?**
  - There are many relevant documents still active in NMRG and also in other groups (e.g., OPSAWG).
  - Some of them may have similar parts, like sharing similar architectures and using similar methods for implementation.
  - The goal is to better organize these use cases and condense the research value of IBN and relevant topics (e.g., intent-driven networking, autonomous networking, and AI-based network management).

Update of the Document (1/2)

- **Progress on IBN Use Cases since IETF120.**
  - Authors (Paul, Kehan, and Giuseppe) worked on the refinement of the draft.
    - **The refinement of Section 2 (Methodologies for Building IBN Systems)**
      - **2.1. System Awareness and Data Collection**
        - 1. Methods and Tools
        - 2. Metrics
        - 3. Granularity
      - **2.2. The Construction of an IBN System**
        - 1. Intent Translation
        - 2. Policy Generation and Mapping
        - 3. Intent Verification
        - 4. Intent Deployment
        - 5. Monitoring
        - 6. Validation
        - 7. Optimization

Refinement of Steps for Construction of an IBN System according to RFC9315 (IBN - Concepts and Definitions)

Update of the Document (2/2)

- **Progress on IBN Use Cases since IETF120.**
  - Authors (Paul, Kehan, and Giuseppe) worked on the refinement of the draft.
    - **The clarification for each use case in Section 3 (IBN Use Cases)**
      - 3.1. IBN for Routing and Path Selection
      - 3.2. IBN for Guaranteeing Service-Level Agreement
      - 3.3. IBN for Cloud-Based Security Service Management
      - 3.4. IBN for IoT Device Management
      - 3.5. IBN for Software-Defined Vehicle Management
      - 3.6. IBN for Interconnection
      - 3.7. IBN for IETF Network Slices

    - **The clarification of Section 4 (Practice Learnings)**
      - 4.1. Difficulties and Challenges
      - 4.2. Future Research Directions

IBN Use Cases

- **Which documents were merged?**
  - draft-chen-nmrg-ibn-management-01
  - draft-yang-nmrg-network-measurement-intent-07
  - draft-park-nmrg-ibn-network-management-srv6-02
  - draft-jeong-nmrg-ibn-network-management-automation-04
  - draft-jeong-opsawg-security-management-automation-00
  - draft-jeong-opsawg-intent-based-sdv-framework-02
  - draft-contreras-nmrg-interconnection-intents-05
  - draft-contreras-nmrg-transport-slice-intent-07
  - draft-pedro-ite-01

Next Steps

- We authors believe that this IBN Use Cases Draft has a good shape as an NMRG document.
- We would like to ask for feedback from NMRG to improve this draft further.
- Through the improvement after IETF-121, we would like to ask for the Adoption Call on this draft.