DetNet Controller Plane Framework

draft-ietf-detnet-controller-plane-framework-01

Xuesong Geng, Huawei Technologies

Andy Malis, Malis Consulting

Mach Chen, Huawei Technologies

Fengwei Qin, China Mobile

Balazs Varga, Ericsson

IETF 113

Background & Purpose

- Background:

  - The DetNet Architecture defines the DetNet Controller Plane in Sec. 4.4.2: The Controller Plane corresponds to the aggregation of the Control and Management Planes in RFC 7426 (SDN Layers and Architecture Terminology)

  - Some DetNet drafts (such as RFC 8938 Data Plane Framework) also include requirements for the Controller Plane

- Purpose:

  - Compile all DetNet controller plane requirements in one place

  - Provide an overview of possible control plane architecture/considerations and give guidance for following control plane work

DetNet Controller Plane Framework Overview

- DetNet Controller Plane Requirements

    - List the primary requirements for DetNet controller Plane

    - Align with section 4.1 of RFC8938

- DetNet Control Plane Architecture

    - Distributed Control Plane and Signaling Protocols

    - SDN/Fully Centralized Control Plane

    - Hybrid Control Plane partly centralized, partly distributed

- DetNet Control Plane for DetNet Mechanisms

    - Explicit Paths / Resource Reservation / PREOF Support

    - Data Plane Specific Considerations (MPLS, IP, Segment Routing..)

- Management Plane Overview

    - Provisioning (YANG Model)

    - DetNet OAM

Update in Version 01

- Section 1

  - Modify management plane specification as:

    "the management plane is primarily involved with fault management, configuration management and performance management(sometimes accounting management and security management is also considered in the management plane, but not in the scope of this document)"

- Section 3

  - Remove detailed descriptions of protocol extension requirements, for example IGP, RSVP-TE

- Section 4

  - Remove section 4.1 "Strict and Loose Path"

Some Issues May Need Further Discussion

- How to deal with the relationship between this document and other RFC and WG documents?

  - RFC 8938: be as the elaboration/explanations of existing specifications

  - draft-ietf-detnet-oam-framework: add reference in the document

- What is the scope of "DetNet Management Plane"?

  - RFC 8655: "The Controller Plane corresponds to the aggregation of the Control and Management Planes in [RFC7426]…When the logical separation of the Control, Measurement, and other Management entities is not relevant, the term "Controller Plane" is used for simplicity to represent them all, and the term "Controller Plane Function (CPF)" refers to any device operating in that plane, whether it is a Path Computation Element (PCE) [RFC4655], a Network Management Entity (NME), or a distributed control protocol."

  - RFC 8938: "This document therefore does not distinguish between information provided by distributed control plane protocols (e.g., RSVP-TE) or centralized network management mechanisms (e.g., RESTCONF, YANG, PCEP)"

  - YANG(as "configuration management") and OAM (as "fault and monitoring management")?

Next steps

- Add "Flow Aggregation" in section 4

- Ask for more input from WG

Thanks!