MPLS Network Actions (MNA) Open DT Activities – Status Update

Report # 4
Product of the MPLS MNA Open Design Team

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MNA Open DT Overview

- Joint activity between three working groups MPLS, PALS and DETNET
  - The chairs from the three WGs coordinate agendas and decisions
- Open DT meetings:
  - weekly every Thursday (11:00 AM ET)
- Open DT chairs coordination meeting:
  - weekly every Tuesday (1:00PM ET)
- Participation
  - Around 15-20 participants per week
- Taxonomy of MNA documents:
  https://trac.ietf.org/trac/mpls/wiki/MNADocumnets

Update to Open DT WG documents (since IETF114) 1/2

- Use Cases for MPLS Network Action Indicators and MPLS Ancillary Data
  - ID: https://datatracker.ietf.org/doc/html/draft-ietf-mpls-mna-usecases
  - Status of document:
    - Adopted as a WG document in May 2022
    - Added new usecases (IOAM DEX, Generic Function Delivery in MPLS)
    - WG and DT continues to refine existing and add new identified usecases
- Requirements for MPLS Network Action Indicators and MPLS Ancillary Data
  - ID: https://datatracker.ietf.org/doc/draft-ietf-mpls-mna-requirements
  - Status of document:
    - Authors addressed another round of comments received from Adrian Farrel
    - Document is stable and candidate for WGLC

Update to Open DT WG documents (since IETF114) 2/2

- MPLS Network Actions Framework
  - ID: https://datatracker.ietf.org/doc/html/draft-ietf-mpls-mna-fwk-02
  - Status of document:
    - Addressed discussion points raised during weekly Open DT meeting (visited on later slides)
    - No outstanding issues, candidate for WGLC

Update #1: Competing MNA Solution Proposals

- The Open DT reviewed several proposals for the packet encodings for the MNA solution
  - A compilation of the multiple solutions brought forward is present at https://trac.ietf.org/trac/mpls/wiki/MNADocumnets
- Open DT Chairs encouraged authors:
  - To meet and discuss bringing forward a converged solution,
  - Or, for the MPLS Open DT to bring forward a single unified solution
- The authors have reported to the Open DT chairs that progress has been made on a converged set of MNA solution documents

Update #2: Ordering of MNA Network Actions

- Discussed during weekly Open DT meetings and agreed that:
  - A solution should give a deterministic, explicit order.
  - The need for an order of evaluation for network actions needs to be articulated
  - Conclusion/text added in the rev -01 of I-D.draft-ietf-mpls-mna-fwk

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4.1. Order of Evaluation

For MNA to be consistent across implementations and predictable in operational environments, its semantics need to be entirely predictable. An MNA solution MUST specify a deterministic order for processing each of the Network Actions in a packet. Each Network Action must specify how it interacts with all other previously defined Network Actions. Private network actions MUST be included in the ordering of Network Actions, but the interactions of private actions with other actions is outside of the scope of this document.“

Update #3: MNA Network Action (NA) Scope

- Triggered by discussions during weekly Open DT meetings:
  - Additional text to the MNA Framework was proposed to generalize the scope of the MNA NA.
  - A Poll was run to solicit support for the text. Concluded with good support.
  - Text was reflected in rev -02 of I-D.draft-ietf-mpls-mna-fwk

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This framework does not place any constraints on the scope or on
the ancillary data for a network action. Any network action may
appear in any scope or combination of scopes, may have no ancillary
data, may require in stack data, and/or post stack data. Some
combinations may be sub-optimal, but this framework does not place
any limitations on an MNA solution. A specific MNA solution may
define such constraints.
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Update #4: Poll on MPLS Forwarder Characteristics

- A short questionnaire on how existing MPLS forwarder implementations handle SPLs
  - Triggered by Open DT Chairs in collaboration with Open DT members
  - Intention, to reveal any dependency that MNA protocol extensions can have on how existing implementations handle (e)SPLs when they are present in an MPLS label stack
  - The call was run for 4 weeks and responses were anonymously collected and reported in I-D.draft-farrel-mpls-forwarder-poll-response

MNA Open DT Next Steps

- Question on recurrence and frequency of MPLS Open DT meetings
- Need for further discussion and consensus on how non-IP payloads will be carried over an MNA enabled LSP