Alternate Marking Deployment Framework

draft-ietf-ippm-alt-mark-deployment-00

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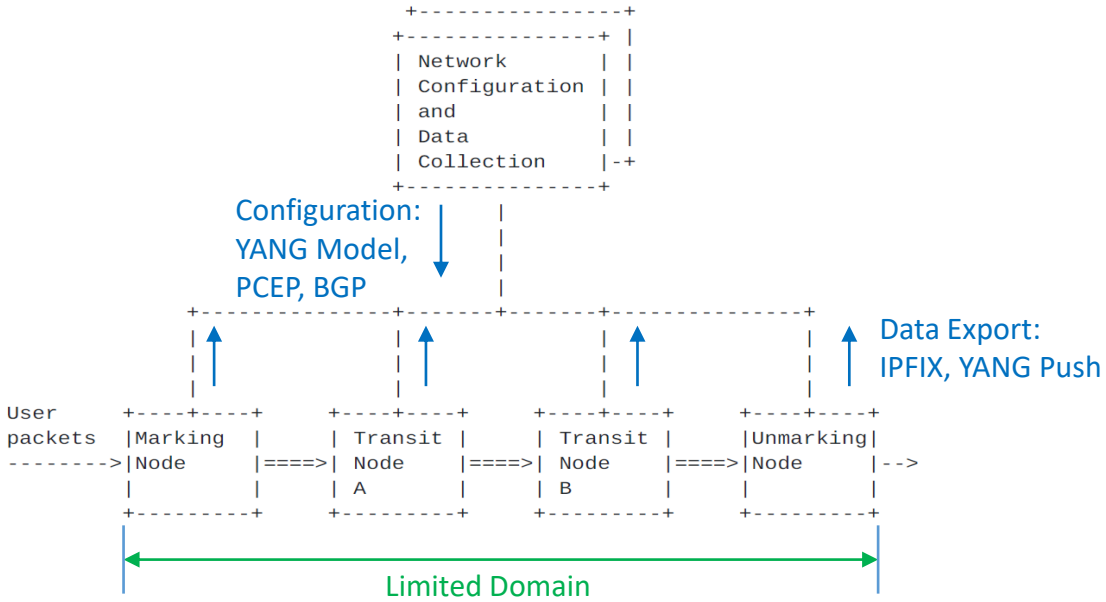
Motivation

- This draft aims to provide guidance for the AltMark (RFC 9341, RFC 9342) deployment, especially with regard to the manageability



The scope is to clarify the following aspects:

- Deployment Domain
- Measurement Nodes
- Type of Measurements
- Configuration Aspects
- Data Export, Collection and Calculation
- Encapsulations
- Implementation Guidelines
- Security

Deployment Domain, Measurement Nodes, and Type of Measurements

AltMark Deployment Domain and Measurement Nodes

The AltMark Method is deployed in a **controlled domain** for security and compatibility reasons

- The typical **deployment domain** is an overlay network domain:
  - The traffic is encapsulated at one border, decapsulated at the other border and the encapsulation incorporates the AltMark data.
  - The **marking nodes** and **unmarking nodes** can border the AltMark Domain, while all the other nodes are **transit nodes**

Type of Measurements

Either one or two flag bits might be available for marking in different deployments:

- **One flag**: packet loss measurement, while delay measurement according to the single-marking method. Mean delay could also be used.
- **Two flags**: packet loss measurement, while delay measurement according to double-marking method.

The duration of the AltMark period affects the frequency of the measurement

The choice of methods affects the kind of information derived and the computational load

Configuration Aspects
Data Export, Collection and Calculation, Encapsulations, and Security

Configuration
The YANG model can be used for the definition of the AltMark data sent over network management protocols such as the NETCONF and RESTCONF.

- draft-ydt-ippm-alt-mark-yang has been proposed as merge of two separate YANG models

There are also other control plane mechanisms to advertise and activate AltMark capabilities, using PCEP or BGP:

- draft-ietf-idr-sr-policy-ifit, draft-ietf-idr-bgp-ifit-capabilities, draft-ietf-pce-pcep-ifit

Data Export
The new IPFIX Information Elements (IEs) to export AltMark measurement data are specified in draft-gfz-opsawg-ipfix-alt-mark.

- In addition to IPFIX, YANG Push can also be used

Encapsulations
Different Encapsulations have been reported (IPv6, SRv6, BIER, MPLS, SFC, NVO3,…)

Security
The Security fundamental requirement of the limited domain is also highlighted.

Next Steps

- Make this draft stable. Anything else to clarify?
- Move forward the companion documents on IPFIX IEs and YANG Data Model

Comments are welcome!

Thank You