

# Distributed Flow Measurement in IPv6

draft-wang-ippm-ipv6-distributed-flow-measurement-03

Haojie Wang (China Mobile)

Sijun Weng (China Mobile)

Changwang Lin (New H3C Technologies)

Xiao Min (ZTE Corporation)

Greg Mirsky (Ericsson)

IETF-117

# Motivation

- **High requirements for SLA**

Network devices report measurement data to the controller. The controller collects data and calculates the quality of the forwarding path. The controller optimizes the path and issues a new path to the ingress node.

The processing procedure is lengthy and difficult to guarantee the SLA requirements.

- **Reduce the complexity of interaction between controllers**

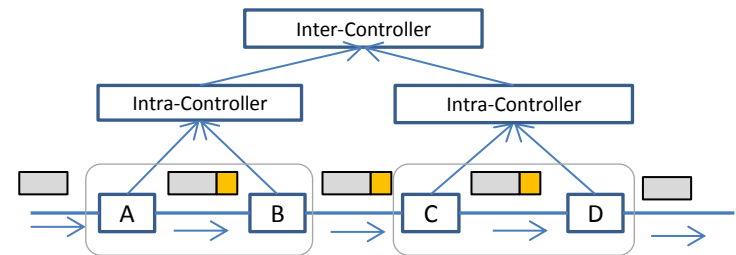
In the inter-AS scenarios the measurement data needs to be summarized, calculated and presented on the centralized inter-AS controller. This interaction is complex between different level controllers.

- **No dependent on controller**

We also hope to support forwarding path quality measurement in scenarios where controllers are not deployed.

This draft proposes **a distributed flow performance measurement method** without the participation of the controller.

The measurement results can be used by the router to select the forwarding path that meets the high SLA requirements.



# Overview

## ✓ objective

To propose a distributed flow performance measurement method with **without** the participation of the controller.

The measurement results can be used by the router to select the forwarding path that meets the SLA requirements.

## ✓ Work process

### 1. Source Node (A)

Add flow measurement data to traffic, based on the method proposed in [draft-wang-ippm-ipv6-flow-measurement]

### 2. intermediate nodes (B/C) and End node (F)

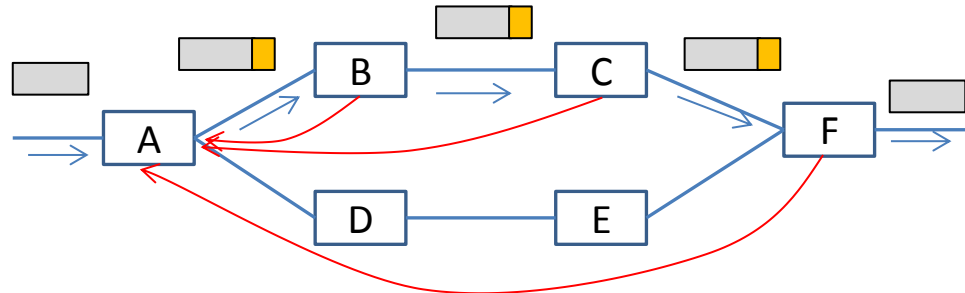
- Record statistics and timestamps based on the flow measurement data of the traffic
- Send the statistics and timestamps to the source node (A)

### 3. Source Node (A)

According to the results of the measurement, choose the appropriate path to F

## ✓ Main context of draft

- Define work mode  
Source node model & End node model
- Defines Extension to flow monitor option  
for carrying the necessary measurement data
- Measurement information and result notification  
Defines the data structure for the measurement results  
Discusses several ways of sending measurements back to the source node



# Extension of the Flow Monitor Option

1. Extend the Ext FM type bitmap of Flow Monitor Option for distributed flow measurement.
  - Packet timestamp bit
  - Previous period count bit
2. Carry one or more measurement information and results in the form of TLV in the additional information field of Flow Monitor Option.
  - Packet count TLV
  - Time Stamp TLV
  - Packet loss TLV
  - Packet delay TLV
  - Average Packet loss TLV
  - Average Packet delay TLV

# Next Step

- This draft has been presented at IETF-115 in IPPM WG.
- Any questions or comments are Welcomed
- Seeking for adoption call

Thank You