DetNet Flow Information Model

draft-zha-detnet-flow-info-model-01

Yiyong Zha, Yuanlong Jiang, Liang Geng
Update Since Berlin

- Add more information on
  - Flow identifier
  - Traffic description
- Some editorial changes
Flow Information

- All about how to describe a flow
  - Define common concepts of a DetNet flow with necessary information

- Used by different network functions or entities
  - Flow identifying and filtering
  - Data plane configuration
  - Resource reservation
  - Control protocols
  - YANG models
Flow Identifier

- First step for DetNet service provisioning
  - Differentiates via user
- Layer 2 flow identification

Diagram:
- End user
- Access Network
- DetNet Network

- port
- Vlan+ mac
Flow Identifier

- Differentiates via user+ applications
- Layer 3 flow identification
Traffic Description

- To reserve proper amount of resource
- Is bandwidth reservation enough?
- More description on traffic, more determinism on service
Traffic Shaping

- “The network can’t provide a bounded or deterministic latency to an unbounded flow”
- Shaping helps to limit the traffic from source
Traffic Shaping

- Flowspec in RSVP

- Flowspec structure provides the following QoS parameters to RSVP
  - TokenRate
  - TokenBucketSize
  - PeakBandwidth
  - Latency
  - DelayVariation
  - ServiceType
Traffic Shaping

- Flow description including leaky bucket and token bucket
- Is it enough for DetNet resource reservation?
- Can App use this to tell network the maximum attributes of traffic it is going to send?

<table>
<thead>
<tr>
<th>Name</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaky Bucket</td>
<td>Buffer size</td>
</tr>
<tr>
<td></td>
<td>Input rate</td>
</tr>
<tr>
<td></td>
<td>Output rate</td>
</tr>
<tr>
<td></td>
<td>Initial Buffer</td>
</tr>
<tr>
<td>Token Bucket</td>
<td>Burst</td>
</tr>
<tr>
<td></td>
<td>Token Rate</td>
</tr>
</tbody>
</table>
Service Model

- Service needs DetNet flow information
- Mapping of flow attributes from up layer to lower layer

Figure 3: Types of end systems
Control Plane

- Flow information is needed for PCE, NBI, and SBI
Status and Next

▪ Current status
  ▪ 01 version, has some comments
  ▪ Focus on flow identifier and traffic description, need more information

▪ Next step
  ▪ More participants
  ▪ More information
  ▪ More applicability
Questions?