DetNet QoS
IETF 103, Bangkok

draft-xiong-detnet-qos-policy-00
draft-xiong-detnet-qos-yang-00

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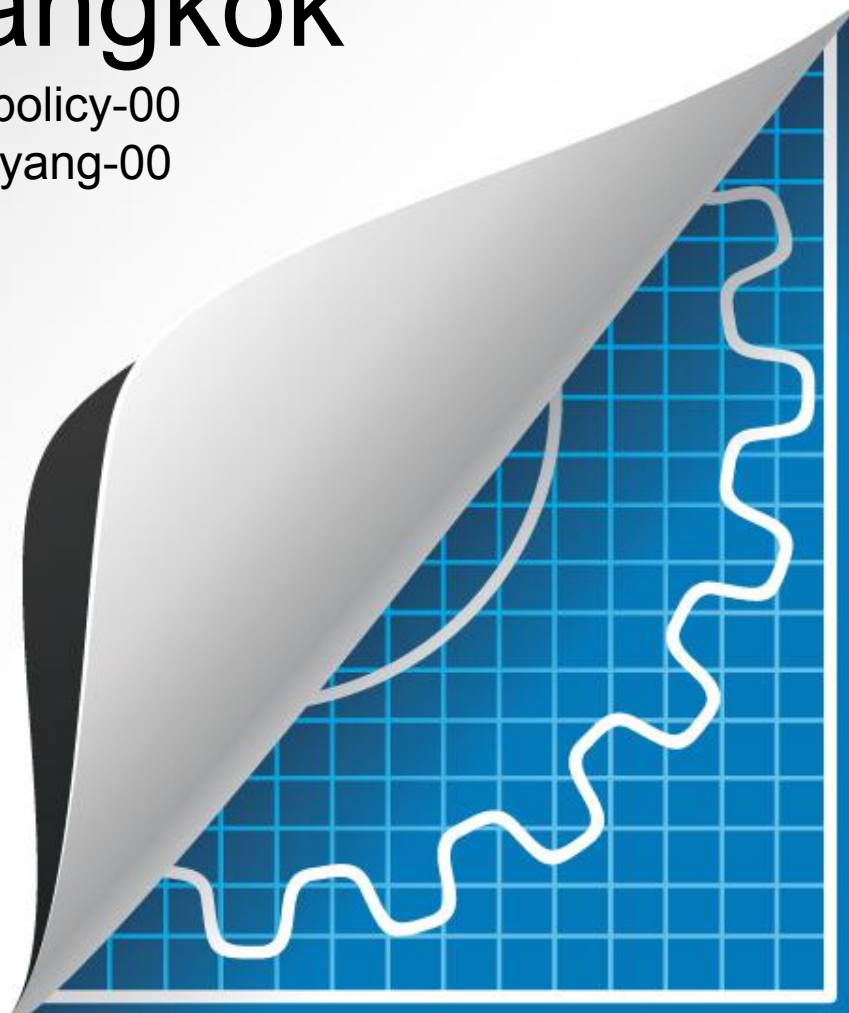
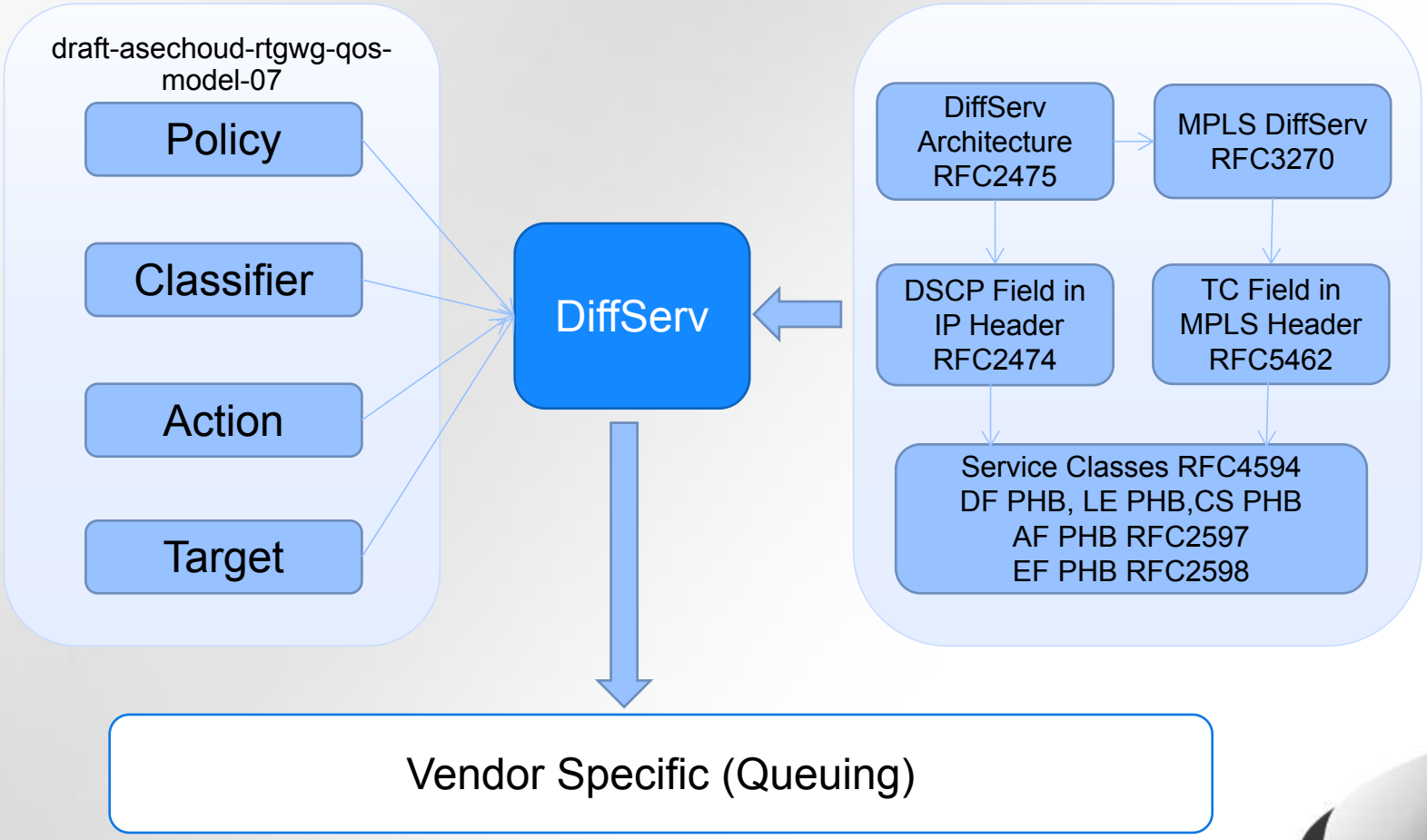
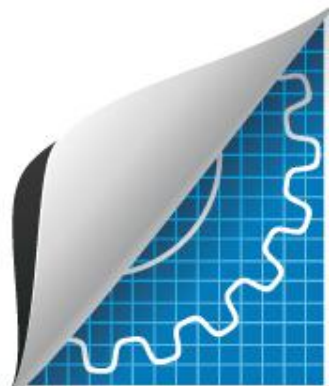


IETF QoS


draft-asechoud-rtgwg-qos-model-07
Policy
Classifier
Action
Target
DiffServ
DiffServ Architecture RFC2475
MPLS DiffServ RFC3270
DSCP Field in IP Header RFC2474
TC Field in MPLS Header RFC5462
Service Classes RFC4594
DF PHB, LE PHB,CS PHB
AF PHB RFC2597
EF PHB RFC2598
Vendor Specific (Queuing)

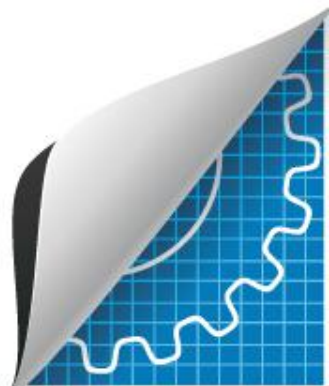
DetNet QoS Requirements

- As per draft-ietf-detnet-architecture-09
  - DetNet and non-DetNet flows could coexist with existing Class of Service schemes
  - DetNet flows MUST be differentiated from non-DetNet traffic
  - Non-DetNet traffic can not disrupt the DetNet flows
  - DetNet flows can be shaped or scheduled
  - The aggregation of DetNet flows must be supported
  - More others ...



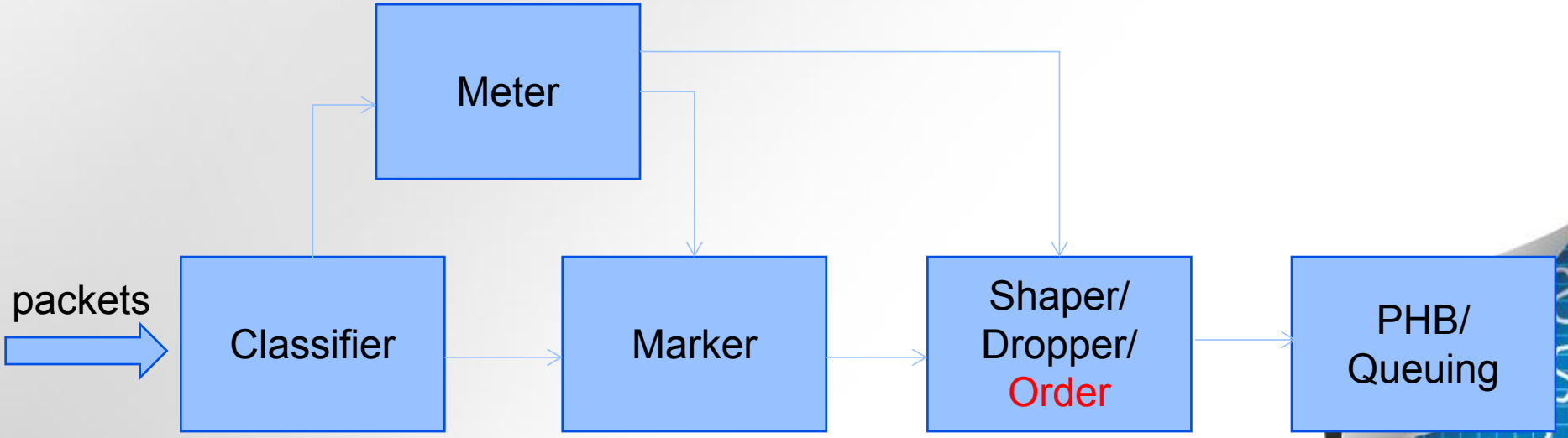
DetNet QoS Drafts

- draft-xiong-detnet-qos-policy-00
- Apply Differentiated Services (DiffServ) model in DetNet and define a DetNet DiffServ mechanism including DetNet IP and MPLS encapsulation.
  - DetNet Classifiers (Behavior Aggregate (BA) and Multi-Field (MF))
  - DetNet Traffic Conditioners (Add Order Action)
  - DetNet Per-hop Behavior (PHB) (Add DetNet (DN) PHB)
  - DetNet Queuing
- draft-xiong-detnet-qos-yang-00
- Define a YANG data model for DetNet DiffServ Qos.
  - DetNet QoS Tree Structure
  - DetNet QoS Module



DetNet DiffServ Model

- Classifier:
  - BA,MF classifiers
- Traffic Conditioner:
  - meter,marker,shaper,dropper,order actions
- PHB:
  - DF,AF,EF,CS,LE,DN service classes



DetNet QoS Tree Structure

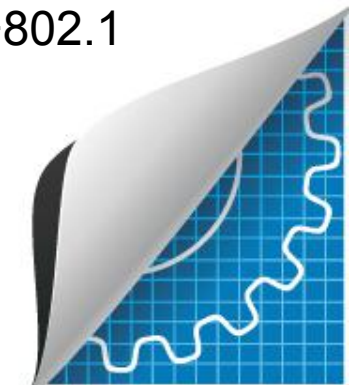
```
module: ietf-detnet-qos
  +--rw detnet-qos-policies
    +--rw detnet-policy-template* [detnet-policy-name]
      +--rw detnet-policy-name            string
      +--rw detnet-policy-type?           detnet-policy-type
      +--rw detnet-classifier-tecmplate* [detnet-classifier-name]
        +--rw detnet-classifier-name      string
        +--rw detnet-classifier-type?     detnet-classifier-type
        +--rw (classifier-type)?
        |  +--:(ba)
        |  |  +--rw (encapsulation-type)?
        |  |     +--:(MPLS)
        |  |     +--:(IP)
        |  +--:(mf)
        |     +--rw (encapsulation-type)?
        |        +--:(MPLS)
        |        +--:(IPv4)
        |        +--:(IPv6)
        +--rw detnet-action* [detnet-action-type]
          +--rw detnet-action-type      detnet-action-type
          +--rw (actions)?
            +--:(meter)
            +--:(marker)
            +--:(shaper)
            +--:(dropper)
            +--:(order)
```

```
|        |    +--rw phb-class?    qos-phb-classC
|        |    +--rw tc-value      uint8
|        |    +--rw s-label?      uint32
```

```
|        |    +--rw phb-class?                qos-phb-class
|        |    +--rw dscp-value                uint8
|        |    +--rw ipv4-source-address?      inet:ipv4-address
|        |    +--rw ipv4-destination-address? inet:ipv4-address
|        |    +--rw protocol-ID?              uint8
|        |    +--rw source-port-numbers?      inet:port-number
|        |    +--rw destination-port-numbers? inet:port-number
```

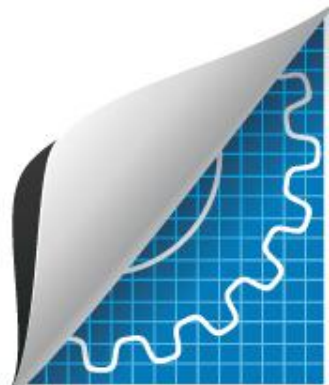
DetNet MPLS DiffServ

- As per RFC3270, DetNet MPLS encapsulation consideration with DiffServ
  - The S-label can be used in combination with MPLS TC field in MF classifier.
  - TC-encoded-PSC LSP (E-LSP) and Label-Only-Inferred-PSC LSP (L-LSP) can be used to support DetNet explicit routes with MPLS-TE LSP.
  - Order action can be used for POF.
  - Two or more LSPs can be merged into one LSP at one egressing LSR to support DetNet flows aggregation.
  - More than one LSP carrying the same flow can be used for PRF and PEF.
  - DetNet L2 Service is supported in TSN over MPLS and the LSP egressing over egde nodes can use the preconfigured PHB->802.1 mapping.
  - More others...



Next Steps

- More work and contributions
- Comments and discussions
- Welcome to join us



Thanks!