

Distributed Mobility Management (DMM) WG

DMM Work Item: Forwarding Path & Signaling Management (FPSM)

draft-ietf-dmm-fpc-cpdp-03.txt

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Outline

- ❑ Main update in revision 3
- ❑ Supported operational models
- ❑ Model I semantic and operation
- ❑ Model II semantic and operation
- ❑ Next steps

Main Update in version 03

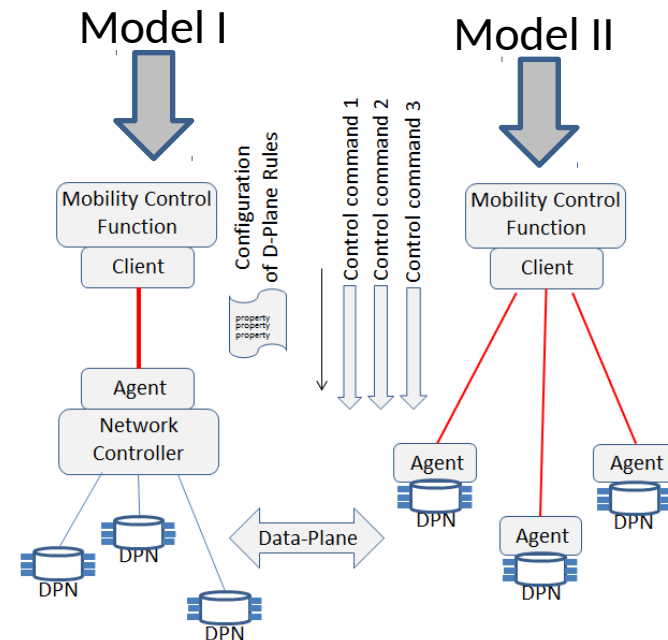
- ❑ Support of two operational models (Model I and Model II)
- ❑ Document re-structured
- ❑ Many clarifications
- ❑ Specification of Data Model and Protocol Operation
- ❑ Advanced set of supported features
 - ❑ traffic treatment, QoS, administrative control, query, notifications
- ❑ YANG models and tree for operational Model I (Base and QoS)
 - ❑ Needs update
 - ❑ To be added for operational Model II

Supported operational models

- ❑ Adopted two operational models
 - ❑ Model I: Client interacts with Agent to build unambiguous rules for Data-Plane treatment
 - ❑ Model II: Client interacts with Agent to control the setup of tunnel, host routes, QoS
- ❑ Support for both operational models enables tailored implementation and deployment
- ❑ Semantics of both models extensible

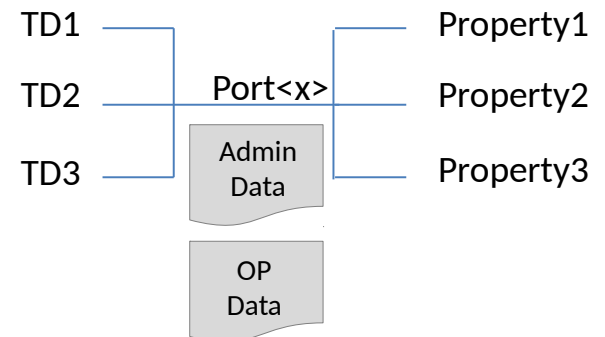
Discussion from IETF94

| Discussion Point | Discussion | |
|------------------|--|---|
| Deployment Model | FPC Agent is in Centralized controller | FPC Agent is in Distributed DPN |
| Principle | Be Declarative | Be Imperative |



Model I - Data Model

- ❑ Model to maintain rules on Client/Agent level
 - ❑ A **Rule** is made of one or multiple traffic descriptors (TD), one or multiple traffic treatment actions (Properties) and a rule identifier/key (Port-ID)
 - ❑ All traffic matching a traffic descriptor is treated per the treatment actions of the associated Port
 - ❑ In addition to treatment action properties, a port has **Administrative properties** associated (session state, bi-directionality of a rule, group management)
 - ❑ Each port has **Operational data** associated, which reflect the status of an enforced rule in the Data-Plane (e.g. enabled, disabled, virtual)



Model I – protocol operation

- ❑ Data-Plane Rules management
- ❑ Monitor registration
 - ❑ Register/De-register a monitor
- ❑ Probe (Client \Rightarrow Agent) and Notification (Agent \Rightarrow Client)
 - ❑ Request / Report status of a monitor
- ❑ Query (Agent \Rightarrow Client)
 - ❑ Request the update of an outdated rule
- ❑ Status response
 - ❑ Indicate the status of processing a message to the sender

Model I – protocol attributes

- ❑ Traffic treatment properties
 - ❑ Encapsulation, IP address/Port re-writing, insert/strip Network Service Header, next hop, QoS
- ❑ Protocol-specific properties
 - ❑ IP-IP encapsulation, GTP-U encapsulation, GRE encapsulation
- ❑ Monitors and Events Notification
 - ❑ Registration of Monitoring Attribute
 - ❑ Registration of reporting kind (Probed, Periodic, Scheduled, Threshold)
- ❑ Administrative properties
 - ❑ Administrative state: enabled, disabled, virtual
 - ❑ Clone reference: use a copy of the referred rule to create a new rule
 - ❑ Port bi-directionality (boolean)
 - ❑ Session state (Complete, Incomplete, Outdated)
 - ❑ Result Code (Success, Failure)

Model II – protocol operation

- Tunnel Interface Management
 - Create/Modify/Delete forwarding tunnel

- Policy Route Management
 - Create/Modify/Delete policy route
 - Add/Delete Traffic Selector

- IP Route Management
 - Create/Delete IP Route

- IP QoS Management
 - Allocate/Deallocate QoS Resources
 - Insert/strip Network Service Header

Model II – protocol attributes

- ❑ Tunnel Attributes

- ❑ Tunnel interface MTU, Encapsulation type, Payload type

- ❑ Route Management Attributes

- ❑ Input/Output interface, Next Hop, Traffic Selector, Dest IP subnet/mask

- ❑ QoS Attributes

- ❑ AMBR, GBR, Traffic Class, Service Path ID, Service Index

Current activity

- ❑ Investigate possible extension of Model I Data Model
 - ❑ More flexibility in defining Data-Plane rules
- ❑ Complete and harmonize features for Model I/II
- ❑ Update YANG model

Next Steps

- Feedback is appreciated at any time
- Complete current activity (previous slide)
- Post update soon after IETF95

- WG last call?