I2NSF Data Model of Consumer-Facing Interface for Security Management

(draft-jeong-i2nsf-consumer-facing-interface-dm-05)

IETF 100

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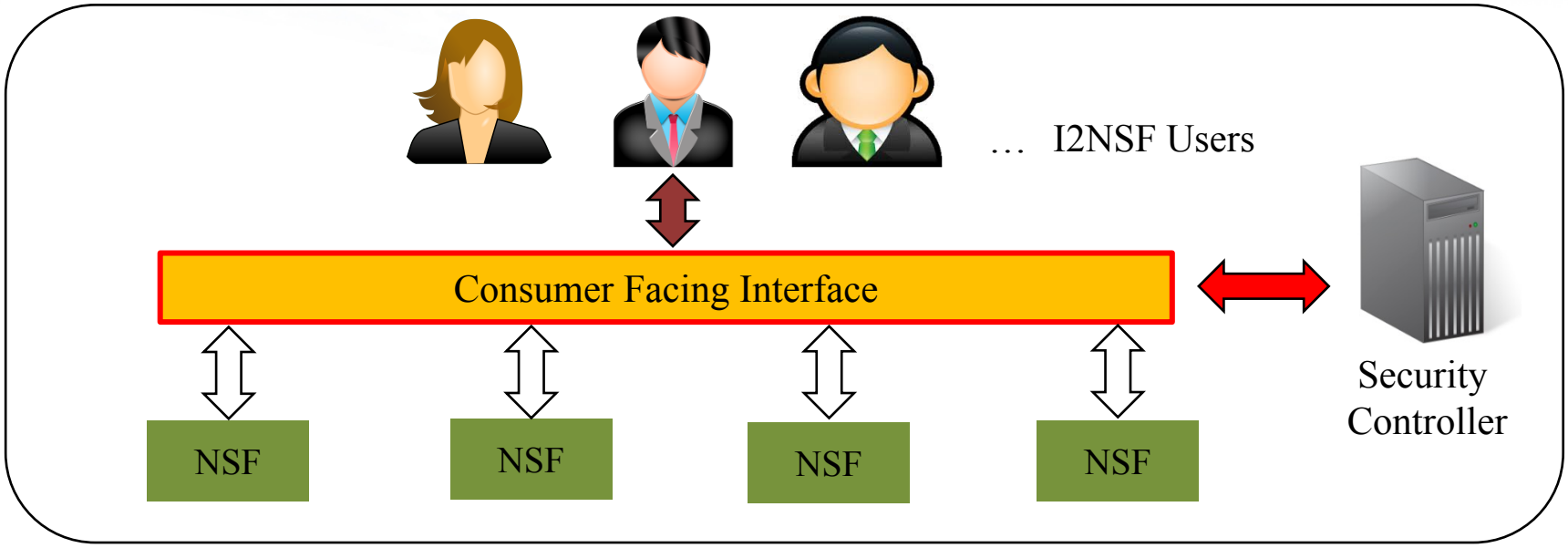
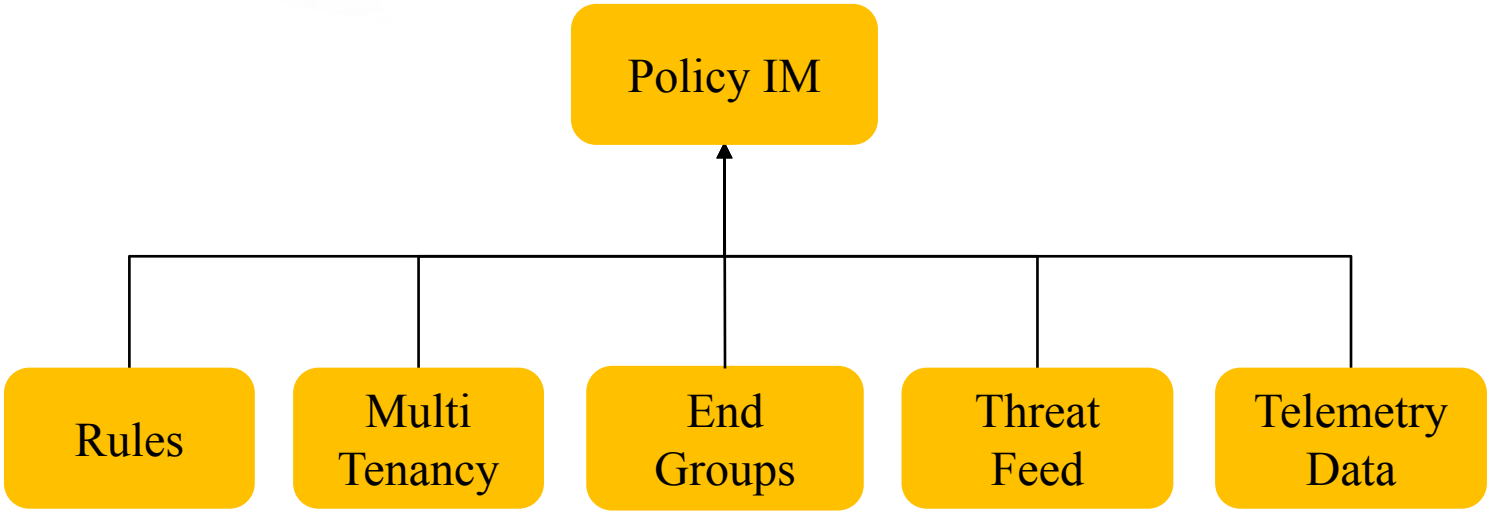
Introduction

- This document describes an YANG data model for Consumer-Facing Interface between I2NSF User and Security Controller in I2NSF system in a NFV environment
- A data model is required for enabling different users of a given I2NSF system to manage security policies for specific flows



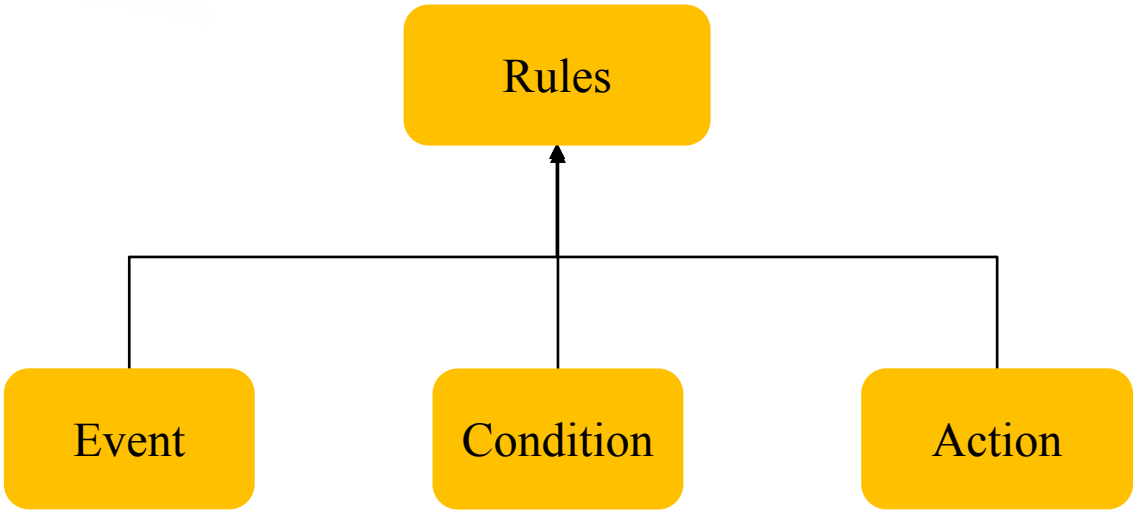
Introduction

- The data model is derived from the information model in “draft-kumar-i2nsf-client-facing-interface-im-04”
- The information model defines the managed objects and their relationship to build the interface



Introduction

- The information model is organized based on the "Event-Condition-Action" (ECA) policy model
- The main objective of this draft is to fully transform the information model into an YANG data model that can be used for delivering control via the Consumer-Facing Interface



Updates of Version

Update of Version

- The following changes are made from draft-jeong-i2nsf-consumer-facing-interface-dm-04
  - Data tree model has been revised according to the information model and Event-Condition-Action (ECA) based policy generation
  - YANG data model has been revised using the data tree model
  - The data tree model and the YANG data model for use case have also been modified for ECA-based policy generation
  - An example XML output for use case has been added in appendix

Major Update of Version

Data Model for Consumer-Facing-Interface

Multi Tenancy

```
+--rw multi-tenancy
|  +--rw policy-domain* [policy-domain-id]
|  |  +--rw policy-domain-id                uint16
|  |  +--rw name                            string
|  |  +--rw address                         string
|  |  +--rw contact                         string
|  |  +--rw date                            yang:date-and-time
|  |  +--rw authentication-method           string
|  +--rw policy-tenant* [policy-tenant-id]
```

End Group

```
+--rw policy-endpoint-groups
|  +--rw meta-data-source* [meta-data-source-id]
|  |  +--rw meta-data-source-id             uint16
|  |  +--rw name                            string
|  |  +--rw date                            yang:date-and-time
|  |  +--rw tag-type?                       boolean
|  |  +--rw tag-server-information?         string
|  |  +--rw tag-application-protocol?       string
|  |  +--rw tag-server-credential?          string
```

Threat Feed

```
+--rw threat-prevention
|  +--rw threat-feed* [threat-feed-id]
|  |  +--rw threat-feed-id                  uint16
|  |  +--rw name?                           string
|  |  +--rw date?                           yang:date-and-time
|  |  +--rw feed-type?                      enumeration
|  |  +--rw feed-server?                    string
|  |  +--rw feed-priority?                  uint16
|  +--rw custom-list* [custom-list-id]
```

Telemetry Data

```
+--rw telemetry-data
|  +--rw telemetry-data* [telemetry-data-id]
|  |  +--rw telemetry-data-id               uint16
|  |  +--rw name?                           string
|  |  +--rw date?                           yang:date-and-time
|  |  +--rw logs?                           boolean
|  |  +--rw syslogs?                        boolean
|  |  +--rw snmp?                           boolean
|  |  +--rw sflow?                          boolean
```

Policy

```
+--rw policy
|  +--rw rule* [rule-id]
|     +--rw rule-id*              uint16
|     +--rw name?                 string
|     +--rw date?                 yang:date-and-time
|     +--rw event* [event-id]
|     |  +--rw event-id                string
|     |  +--rw name?                   string
|     |  +--rw date?                   yang:date-and-time
|     |  +--rw event-type?             string
|     |  +--rw time-information?       string
|     |  |  +--rw begin-time?               yang:date-and-time
|     |  |  +--rw end-time?                 yang:date-and-time
|     |  +--rw event-map-group?        -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                                threat-feed/threat-feed/
|     |  |                                threat-feed-id
|     |  +--rw enable?                 boolean
|     +--rw condition* [condition-id]|
|     |  +--rw condition-id            string
|     |  +--rw source?                 -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                                threat-feed/threat-feed/
|     |  |                                threat-feed-id
|     |  +--rw destination?            -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                                threat-feed/threat-feed/
|     |  |                                custom-list-id
|     |  +--rw match?                  boolean
|     |  +--rw match-direction?        string
|     |  +--rw exception?              string
|     +--rw action* [policy-action-id]
|     |  +--rw policy-action-id        string
|     |  +--rw name?                   string
|     |  +--rw date?                   yang:date-and-time
|     |  +--rw primary-action?         string
|     |  +--rw secondary-action?       string
|     +--rw precedence           uint16
|     +--rw owner?               string
```

Major Update of Version

Data Model for Consumer-Facing-Interface

```
+--rw policy
|  +--rw rule* [rule-id]
|     +--rw rule-id*                uint16
|     +--rw name?                   string
|     +--rw date?                   yang:date-and-time
|     +--rw event* [event-id]
|     |  +--rw event-id             string
|     |  +--rw name?                string
|     |  +--rw date?                yang:date-and-time
|     |  +--rw event-type?          string
|     |  +--rw time-information?    string
|     |  |  +--rw begin-time?            yang:date-and-time
|     |  |  +--rw end-time?              yang:date-and-time
|     |  +--rw event-map-group?     -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                             threat-feed/threat-feed/
|     |  |                             threat-feed-id
|     |  +--rw enable?              boolean
|     +--rw condition* [condition-id]
|     |  +--rw condition-id         string
|     |  +--rw source?              -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                             threat-feed/threat-feed/
|     |  |                             threat-feed-id
|     |  +--rw destination?         -> /ietf-i2nsf-consumer-facing-interface/
|     |  |                             threat-feed/threat-feed/
|     |  |                             custom-list-id
|     |  +--rw match?               boolean
|     |  +--rw match-direction?     string
|     |  +--rw exception?           string
|     +--rw action* [policy-action-id]
|     |  +--rw policy-action-id     string
|     |  +--rw name?                string
|     |  +--rw date?                yang:date-and-time
|     |  +--rw primary-action?      string
|     |  +--rw secondary-action?    string
|     +--rw precedence              uint16
|     +--rw owner?                  string
```

Event
Determine condition clause of the policy rule can be evaluated or not.

Condition
Action in policy rule can be executed or not.

Action
Simple permit/deny/rate-limiting, etc.

Next Step

- We will discuss with IM & DM team for
  - the consistency between IM and DM
  - the generalization of the data model for more use cases

Thank you!