Registration Interface Information Model for Interface to Network Security Functions

(draft-hyun-i2nsf-registration-interface-im-01)

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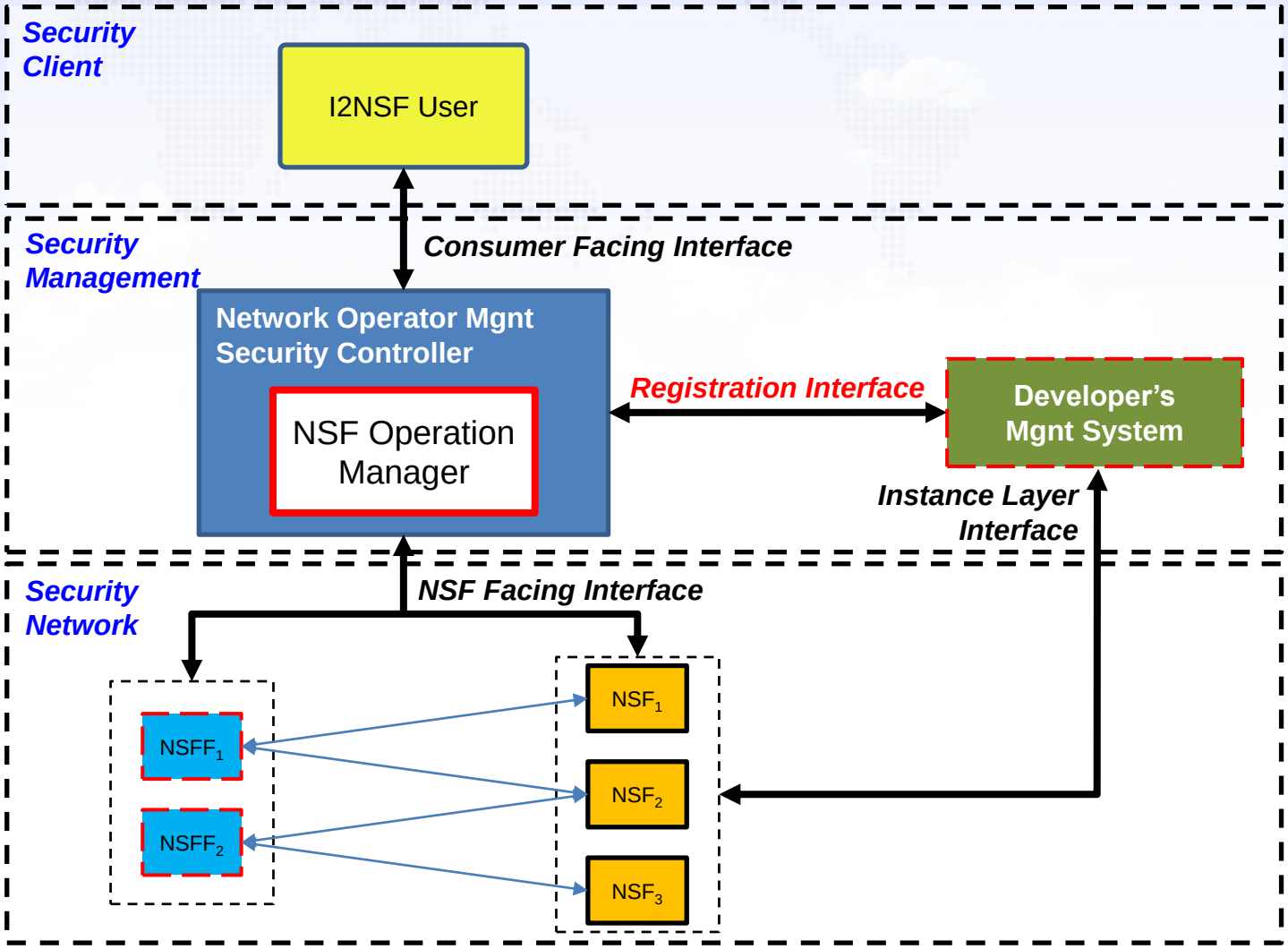
Introduction

Introduction (1/2)

- Dynamic Life Cycle Management of NSFs is important for efficient network resource utilization.
- Information Model & Data Model for Registration Interface is required for the following purposes:
  - To Request Developer's Management System (DMS) to create a new NSF, and
  - To Register new NSF instances by DMS
- Secure Registration of distributed NSFs via Registration Interface can be performed in a centralized manner.

Registration Interface in I2NSF Framework



Registration Interface for NSF Operation Manager and Developer's Mgnt System

- Registration of NSFs in NSF Catalog of NSF Operation Manager
  - NSF Profile (e.g., Capability and Capacity)
- Dynamic Life Cycle Management of NSF instances.
  - NSF instantiation
  - NSF Load status
  - NSF elimination

Introduction (2/2)

- As an Information Model for registration interface, draft-hyun-i2nsf-registration-interface-im-01 has been updated from draft-hyun-i2nsf-registration-interface-im-00.
- As a Data Model for registration interface, draft-hyun-i2nsf-registration-interface-dm-00 has been proposed newly.

Update of Version

Update of Version

- The changes from draft-hyun-i2nsf-registration-interface-im-00:
  - Miscellaneous expressions in the whole descriptions are corrected.
  - The description of NSF Access Information and Performance Capability is specified in more detail than the previous version.
- draft-hyun-i2nsf-registration-interface-dm-00 defines a YANG data model based on the information model in draft-hyun-i2nsf-registration-interface-im-00.

Data Model of Registration Interface

- draft-hyun-i2nsf-registration-interface-dm-00
  - The capability data model has been referenced from draft-hares-i2nsf-capability-data-model-01.

```
module : ietf-i2nsf-regs-interface
  +--rw regs-req
  |  uses i2nsf-regs-req
  +--rw life-cycle-mgnt-req
  |  uses i2nsf-life-cycle-mgnt-req

NSF Profile
  +--rw i2nsf-nsf-profile
    +--rw i2nsf-capability
    |  uses ietf-i2nsf-capability
    +--rw performance-capability
    |  uses i2nsf-nsf-performance-caps

NSF Performance Capability
  +--rw i2nsf-nsf-performance-caps
    +--rw cpu-num uint16
    +--rw disk-size uint16
    +--rw ram-size uint16

NSF Access Information
  +--rw i2nsf-nsf-access-info
    +--rw nsf-address  inet:ipv4-address
    +--rw nsf-port-address inet:port-address
```

```
Life-Cycle Management Request
  +--rw i2nsf-life-cycle-mgnt-req
    +--rw req-level uint16
    +--rw req-id uint64
    +--rw (req-type)?
      +--rw (req-creation-type)
        +--rw nsf-profile
        |  uses i2nsf-nsf-profile
      +--rw (req-elimination-type)
        +--rw nsf-access-info
        |  uses i2nsf-nsf-access-info

Registration Request
  +--rw i2nsf-regs-req
    +--rw nsf-profile
    |  uses i2nsf-nsf-profile
    +--rw nsf-access-info
    |  uses i2nsf-nsf-access-info
```

Next Steps

- We will design the functionalities to create and register new NSF instance(s) via I2NSF Registration Interface.

- We will implement the following two roles of Registration Interface in OpenStack Platform:
  - Registration of NSFs in the NSF Catalog of Security Controller
  - Dynamic Life Cycle Management of NSF Instances through Developer's Management System