Network Security Functions Facing Interface YANG Data Model
(draft-kim-i2nsf-nsf-facing-interface-data-model-04)

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Data Models

- **Capability Data Model**: To register the capabilities of NSFs into Security Controller.

- **NSF-Facing Interface Data Model**: To configure the policies into an NSF dynamically.
Introduction

• This draft is an updated version from draft-kim-i2nsf-nsf-facing-interface-data-model-03.

• This draft defines a YANG data model corresponding to the information model for NSF-Facing Interface.
  • draft-ietf-i2nsf-capability-00.

• This YANG data module was verified through a prototype implemented at IETF-100 Hackathon.
Major Changes of This Version

• Capability Algebra
  - Event/Condition/Action Clauses (Resolved)
  - Resolution Strategy Mechanism (Resolved)
  - Default Action Mechanism (Resolved)

• Consistency between Capability IM and NSF-Facing Interface Data Model
  - Object-Oriented Features (Ongoing)
Consistency between Capability IM and NSF-Facing Interface Data Model (1/6)

Mapping between IM and DM

Inheritance

(subclasses to define Network Security ECA Policy Rules extensibly, so that other Policy Rules can be added)

(subclasses of Event, Condition, and Action Objects for Network Security Policy Rules)
Consistency between Capability IM and NSF-Facing Interface Data Model (2/6)

Inheritance

Mapping between IM and DM
Consistency between Capability IM and NSF-Facing Interface Data Model (3/6)

Mapping between IM and DM

Aggregation Relation
Consistency between Capability IM and NSF-Facing Interface Data Model (4/6)
Consistency between Capability IM and NSF-Facing Interface Data Model (5/6)

Inheritance

Mapping between IM and DM

module: ietf-i2nsf-nsf-facing-interface
  +--rw generic-nsf
  |   +--rw i2nsf-security-policy* [policy-name]
  |       ... +--rw eca-policy-rules* [rule-id]
  |       ... +--rw resolution-strategy
  |       ... +--rw default-action
  |       ... +--rw event-clause-container
  |               +--rw condition-clause-container
  |                   +--rw condition-clause-list* [eca-object-id]
  |                   |   +--rw entity-class? identityref
  |                   |   +--rw eca-object-id string
  |                   |   +--rw (condition-type)?
  |                   |       |   +--(packet-security-condition)
  |                   |       |   ... +--(packet-payload-condition)
  |                   |       |   ... +--(target-condition)
  |                   |       |   ... +--(users-condition)
  |                   |       |   ... +--(context-condition)
  |                   |       |   ... +--(gen-context-condition)
  |                   |   ... +--rw action-clause-container
  |   ... +--rw i2nsf-security-policy* [policy-name]
  ... +--rw eca-policy-rules* [rule-id]
  ... +--rw resolution-strategy
  ... +--rw default-action
  ... +--rw event-clause-container
  ... +--rw condition-clause-container
  ... +--rw condition-clause-list* [eca-object-id]
  ... +--rw entity-class? identityref
  ... +--rw eca-object-id string
  ... +--rw (condition-type)?
  ... |   +--(packet-security-condition)
  ... |   ... +--(packet-payload-condition)
  ... |   ... +--(target-condition)
  ... |   ... +--(users-condition)
  ... |   ... +--(context-condition)
  ... |   ... +--(gen-context-condition)
  ... |   ... +--rw action-clause-container
Consistency between Capability IM and NSF-Facing Interface Data Model (6/6)

Inheritance

Mapping between IM and DM
Next Steps

• 1. We will discuss with IM & DM team for consistency between IM and DM.

• 2. We will verify YANG data model by implementing a prototype.

• 3. We request WG Adoption.
Q&A
Thank you