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The I2NSF registration interface is used to register NSF instances created by Developer’s Management System (DMS) to Security Controller.

This document aims to provide a base information model of I2NSF registration interface for dynamic NSF instantiation/destruction and registration.
Motivation

- Information model for Registration Interface is required for the following purposes:
  - Efficient network resource utilization through dynamic instantiation of NSFs and load balancing
  - Serving an NSF’s request for advanced inspection via another NSF
  - Registering NSF instances by Developer’s Management System (DMS)
Dynamic Life Cycle Management

- When an NSF triggers an **advanced inspection** of the suspicious traffic via another type of NSF currently **unavailable in the system**.
- When an NSF instance is currently under **congestion**.
- When an NSF instance is in **idle**.

*Diagram:

1. Traffic
2. Inspection Result
3. Request

- Firewall
- Security Controller
- DPI
- Developer’s Mgt System

**Flow:**
- Traffic to Firewall
- Firewall to Security Controller
- Security Controller to Developer’s Mgt System
- Developer’s Mgt System to DPI
DMS creates and registers a new NSF instance to Security Controller via Registration Interface.
Dynamic Instantiation for Load Balancing (1/2)

1. Report Current Load Status
2. Request Additional Mitigator Instances

Security Controller

DDoS Mitigator

Congestion

Developer’s Mgmt System
Dynamic Instantiation for Load Balancing (2/2)

1. Instantiation
2. Register new Mitigator instances
3. Instantiation
4. Distribute Traffic

DDoS Mitigator
DDoS Mitigator
DDoS Mitigator

Developer’s Mgmt System
Next Steps

- We will design **YANG Data Model** for I2NSF Registration Interface.

- We will implement dynamic life cycle management of NSF instance(s) via I2NSF Registration Interface
  - using our IETF-97 I2NSF Hackathon Code.
Thank you!
Any questions or comments?