



# **IETF Hackathon:** **I2NSF Framework Project**

**IETF 108**  
**July 20-24, 2020**  
**Online**

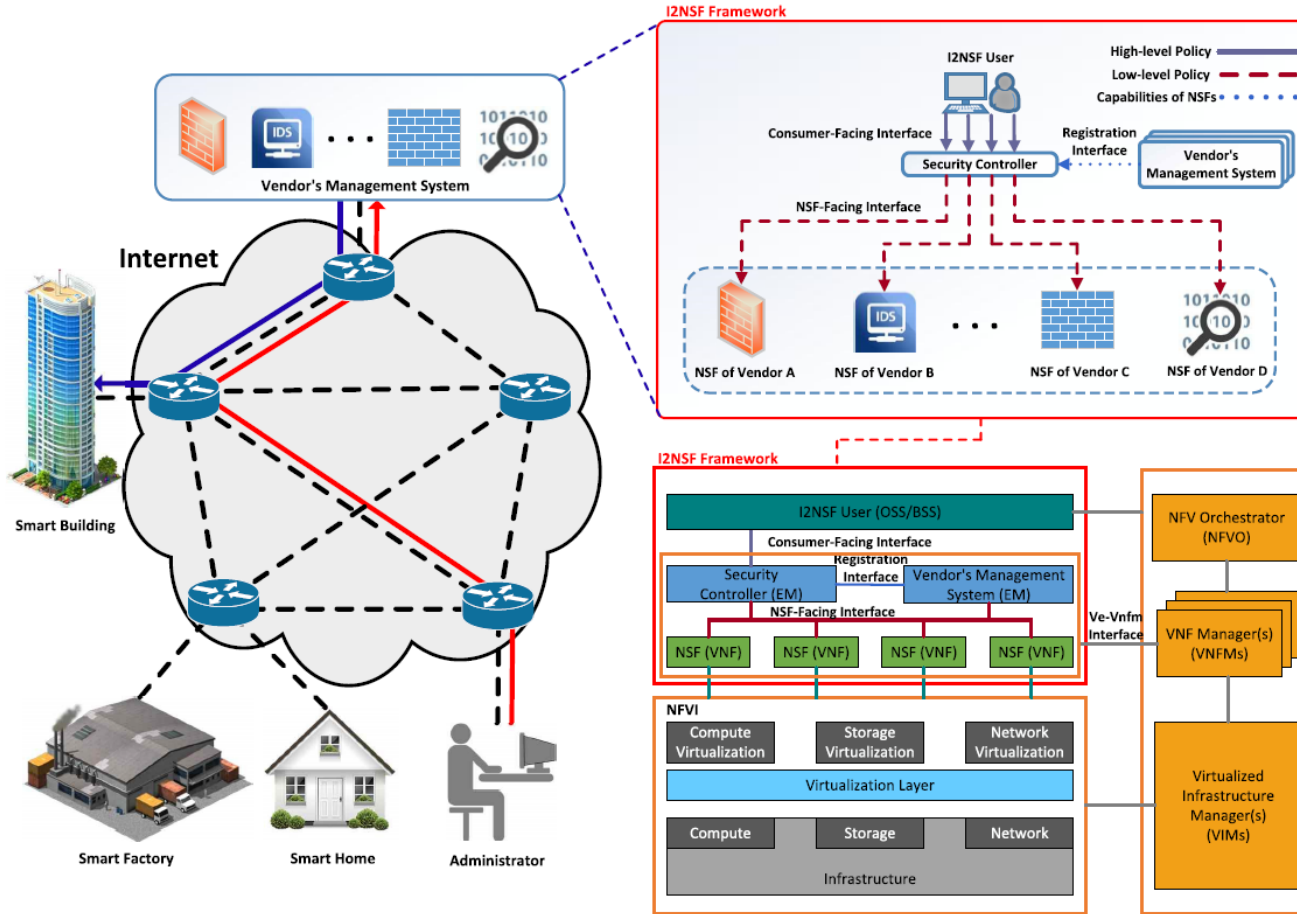
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# Hackathon Plan

- ❖ The Reflection of the Revision of the following drafts in the OpenStack-based I2NSF System:
  - draft-ietf-i2nsf-capability-data-model-06
  - draft-ietf-i2nsf-consumer-facing-interface-dm-09
  - draft-ietf-i2nsf-nsf-facing-interface-dm-09
  - draft-ietf-i2nsf-registration-interface-dm-08
  - draft-yang-i2nsf-security-policy-translation-06

# I2NSF Framework for IBN-Based Security Services

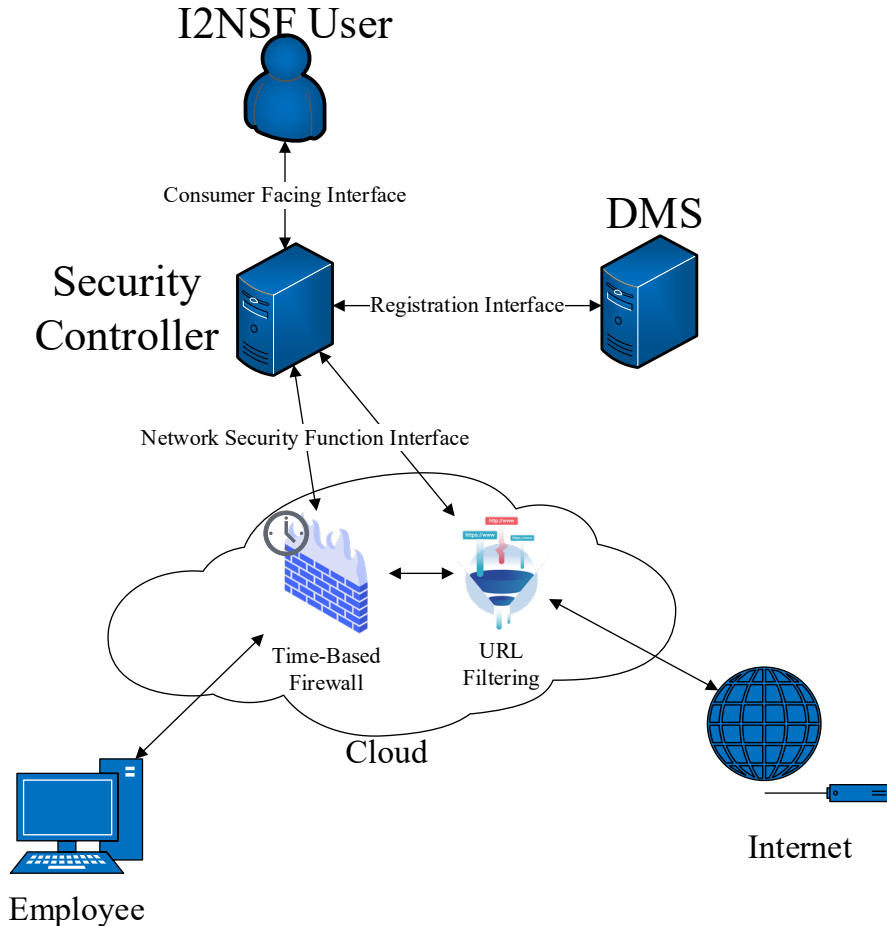


## Reference:

"IBCS: Intent-Based Cloud Services for Security Applications", IEEE Communications Magazine, Vol. 58, Issue 4, April 2020.

<https://ieeexplore.ieee.org/document/9071988>

# Network Topology for Hackathon Project



- **Open Source:**
  - ✓ **OS:** Ubuntu 16.04 LTS
  - ✓ **ConfD:** 6.6 Version
  - ✓ **MySQL:** 14.14 Version
  - ✓ **OpenStack:** Queens
  - ✓ **Suricata:** 3.2.1 RELEASE
  - ✓ **RestConf:** JETCONF Server
- **Minimum Specification for OpenStack:**
  - ✓ **RAM:** 4 ~ 8 GB
  - ✓ **Storage:** 10 GB
  - ✓ **CPU:** 2 ~ 4 cores @ 2.4 GHz

# What got done

- Restoration of I2NSF Framework on top of OpenStack
  - Web-based I2NSF User
  - Console-based Security Controller and DMS
  - Security Policy Translator in Security Controller
- Reflection of the Latest Revision of YANG Data Models
  - Consumer-Facing Interface over RESTCONF/YANG
  - NSF-Facing Interface over NETCONF/YANG (Partially)

# What we learned

- We recognized the necessity of a security policy translator to support the following for IBN-based security services:
  - Automatic mapping between High-level YANG attributes and Low-level YANG attributes
  - Installation of Low-level YANG production rules for the generation of the Low-level security policy
- Next Steps
  - Reflection of the Latest Registration Interface YANG Data Model
  - Implementation of the I2NSF Monitoring YANG Data Model
  - Enhancement of Security Policy Translator for Automatic Setup

# Wrap Up

## Hackathon Team:

- **Champion:**
  - Jaehoon Paul Jeong (SKKU)
- **Members:**
  - Patrick Lingga (SKKU)
  - Chaehong Chung (SKKU)
  - Yoseop Ahn (SKKU)
- **Participants:**
  - Younghan Kim (SSU)
  - Hyunsik Yang (SSU)
  - Kyungsik Kim (KNU)
  - Benson Muite (Kichakkato Kizito)

## • Open Source Project:

<https://github.com/jaehoonpaul/i2nsf-framework/tree/master/Hackathon-108>

## • Demo Video Clip:

<https://youtu.be/dAA1WTGhIXE>