Abstracted Network API

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Introduction

- API is a language spoken by an application

  - API provider side describes *what is capable of*

  - API user side needs *how to use the network*

- Well-designed API is important to adopt ICN to application

  - For example, socket API for host-centric paradigm

- We need abstracted network API that allows evolution of applications and the underlying networks

- Essential concepts in ICN's APIs (such as CCN, NetInf, etc.) can improve / integrate the API for better adoption of ICN
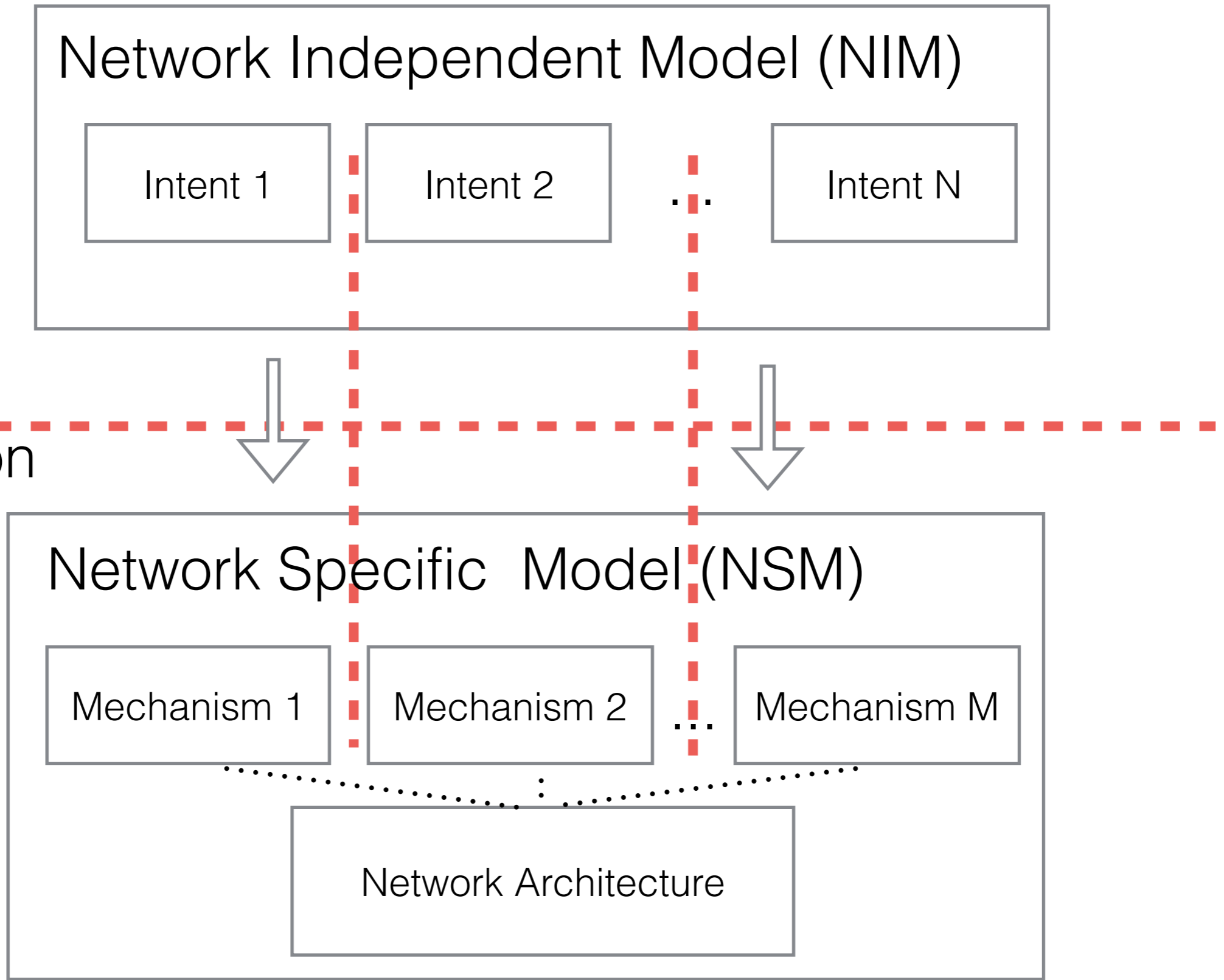
Intent modeling

- This modeling separates concerns vertically

    - Intents of application (NIM)

        - E.g., voice call application requires secure communication channel and certain QoS

    - Mechanisms of network (NSM)

        - E.g., voice call application is implemented with IPSec, Jitter control, etc.

Loosely-coupled modeling

- This modeling separates concerns horizontally

  - Manageable and integrated way to use network

    - E.g., *get()* named data regardless of network protocol

  - Reduced dependency between application and network

    - E.g., communication between applications on ICN and CCN

Prototype of abstracted Network API
IPlug and DSocket

Application	
Extention	*Bind*
IPlug	

Plug-in *Plug-out*

DSocket
Domain
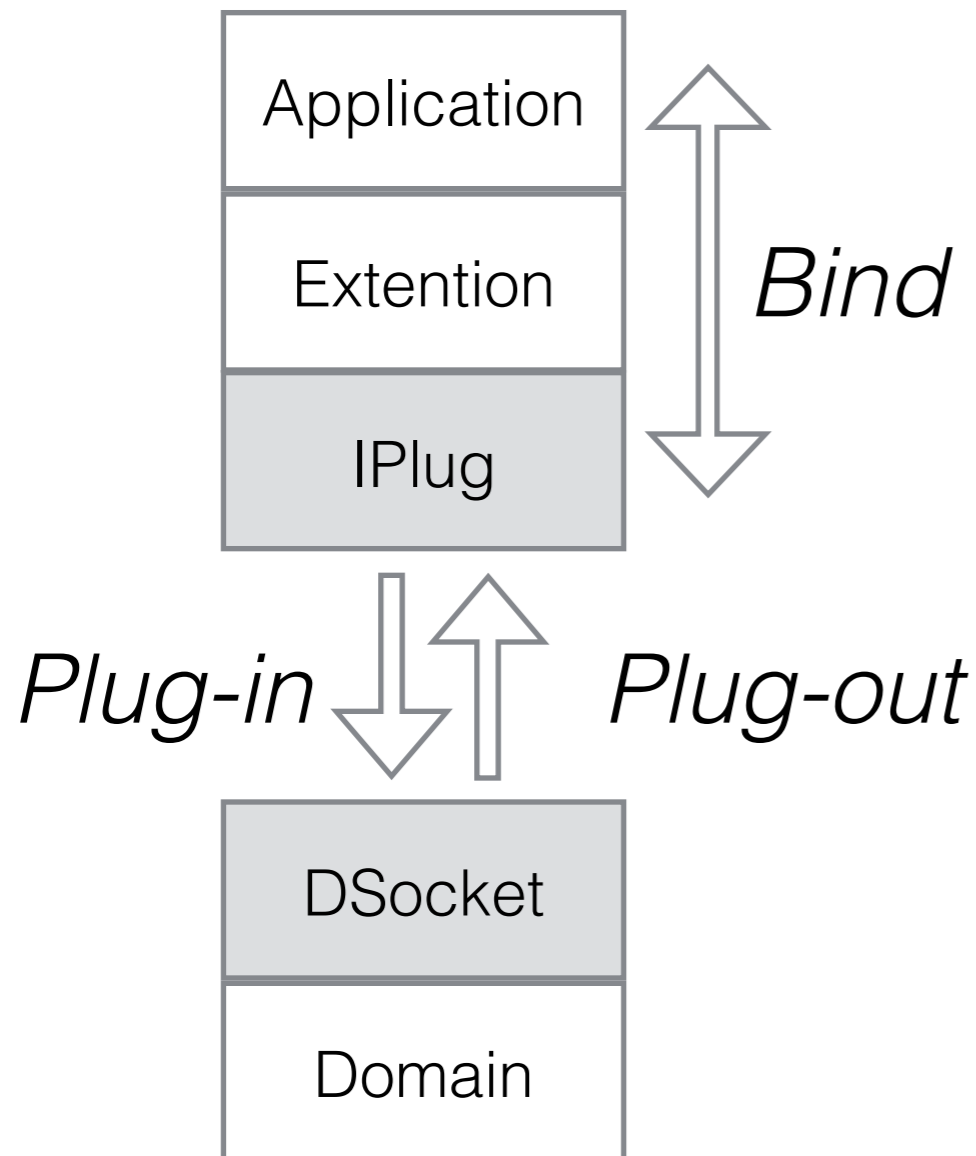
- Bind : identification of applicaion

- Plug-in & Plug-out : dynamic association between applicaion and network

Q&A