Software Driven Networks: Use Cases and Framework

draft-stiliadis-sdnp-framework-use-cases-01.txt

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Service Lifecycle

SP & IT Domain

Application Developer Service Request

Service Mapping

Service Binding
SDN Controller Framework

Compute Domain

Policy

Compute & Storage Controller

API

SDN Controller(s)

Service SPEC

Network Specific Module

API

Interface SPEC

Network Element Control Plane

Network Domain

Policy

Compute & Storage Controller

API

SDN Controller(s)

Network Specific Module

API

Network Management System

Existing APIs

Network Element Control Plane

Domain A

Domain B
Example: Instantiate VM and connect to IP VPN

Application Service Request

Service Mapping
DC Space: SPB service instantiation

1. User Request (Application Definition)
2. Service Request
3. Policy Verification
4. VM Configuration
5. Network Binding
6. Service Instantiation
7. ISID Service AD (SPB core)

Service Provider VPNs/LTE/BNG or Internet Networks

VPLS/IP VPN PEs

Core SW

ToR

SDN Controller (Network Mapping & Binding)

Compute (VM) Management

Policy

NIC

v-Switch

VM B

New VM
Use Case: VPN Configuration

1. User Request
2. Service Request
3. Policy Verification
4. VM Configuration
5. DC LAN Binding
6. VRF Instantiation
7. BGP Route distribution

Service Provider VPNs/LTE/BNG or Internet Networks

Compute (VM) Management

SDN Controller Network Mapping & Binding

Policy
Limiting the Scope

- Define the SDN framework (communications & schema) for
  - Applications & SDN controller interactions
  - SDN controllers to network elements and/or network management systems
- Focus on simple use cases
  - End-to-end solution for selected use cases
- Enable extensions
  - Allow technologies to evolve framework