

# SD-WAN in Service Provider Networks



MMIX MMNOG  
FORUM 2020

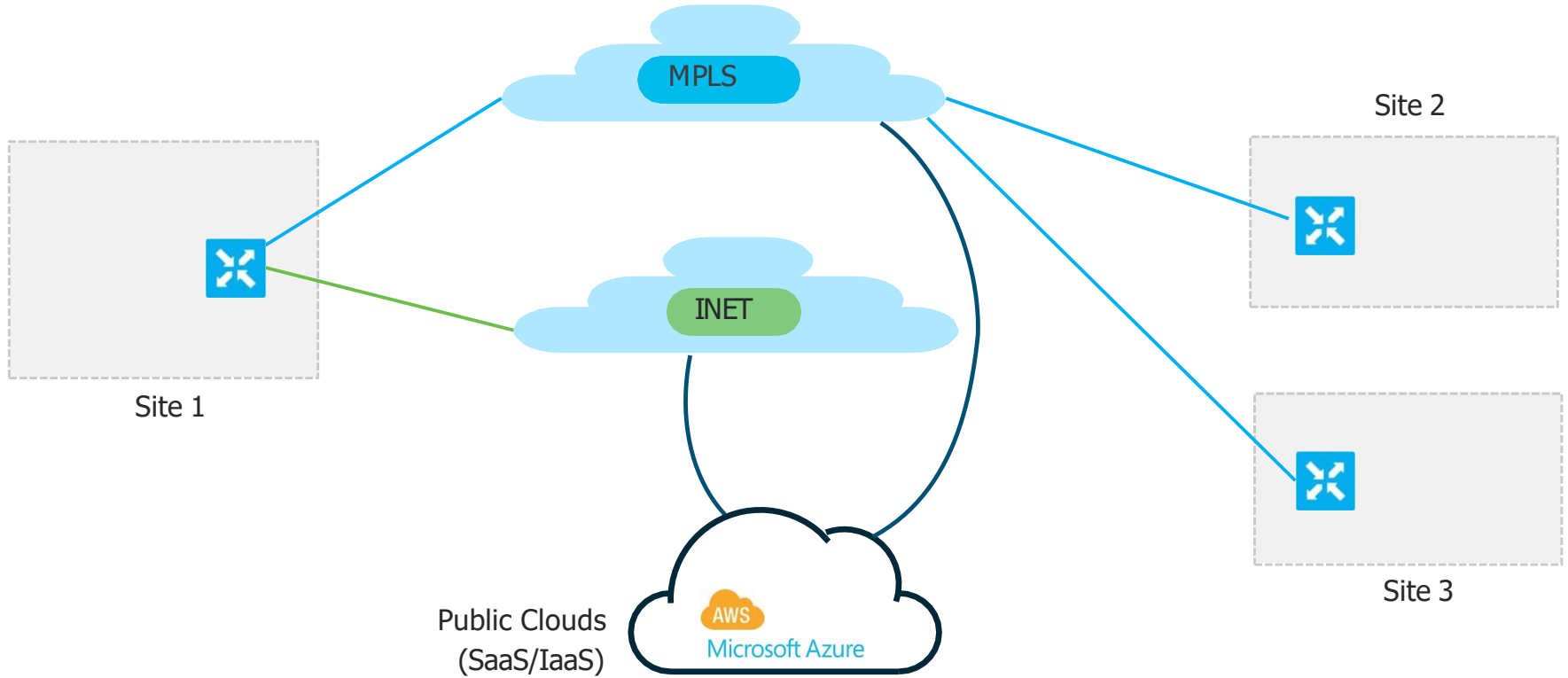


Yangon, Myanmar  
13-17 January 2020

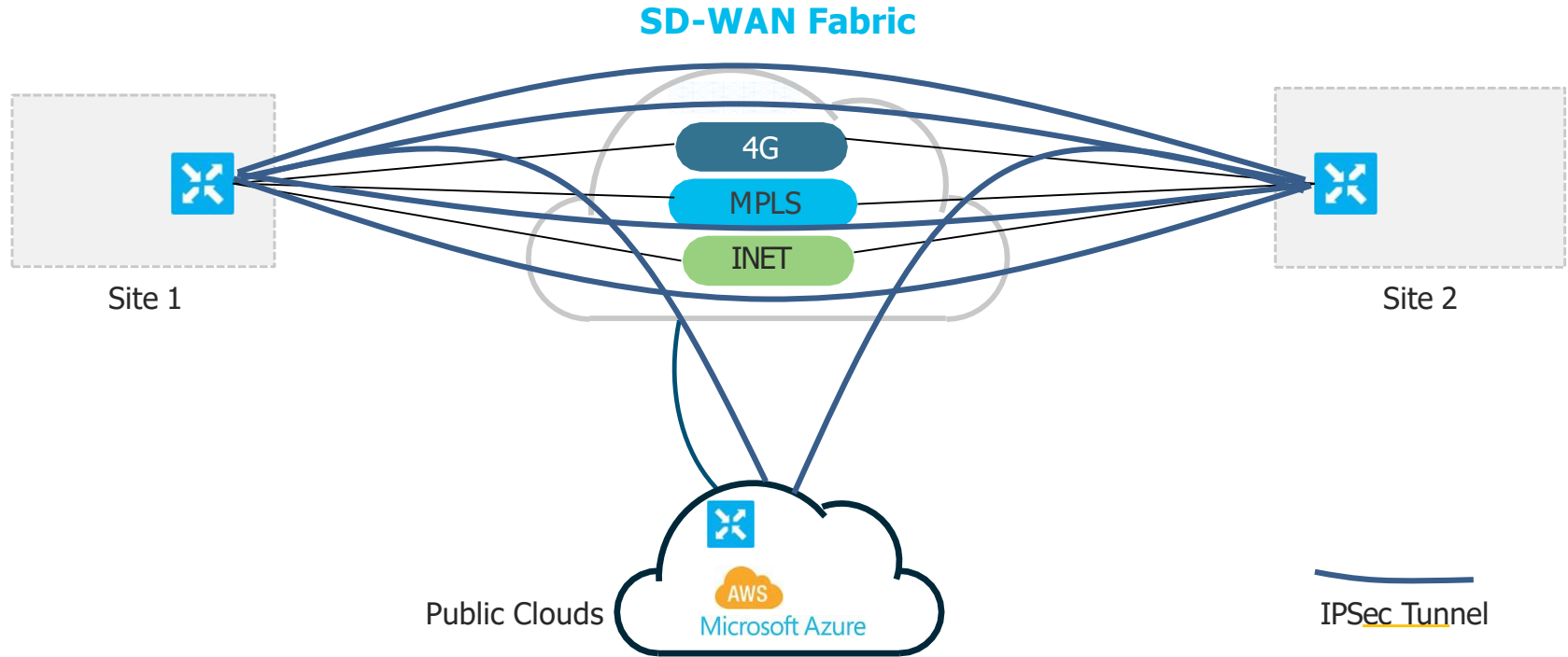
# Agenda

- Overview of SD-WAN
- Deployment Models
- End to End Service Orchestration

# Traditional WAN



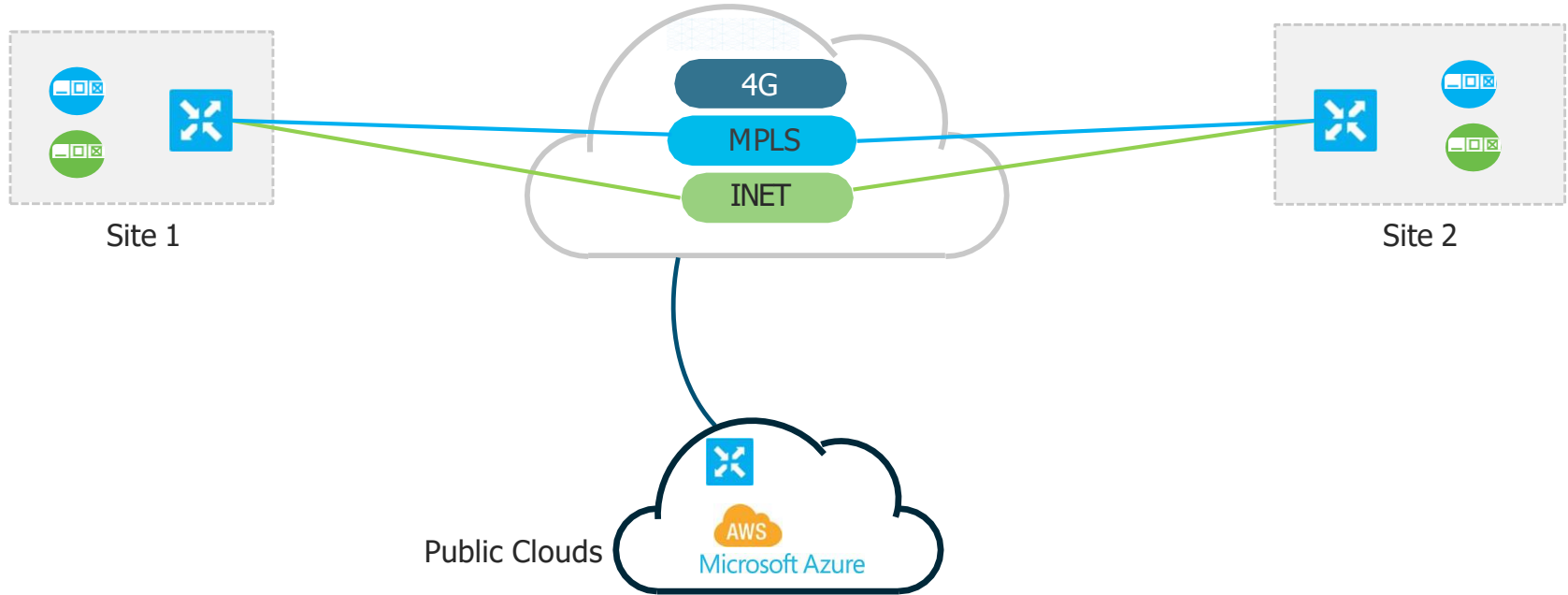
# Software Defined WAN - Transport Independence



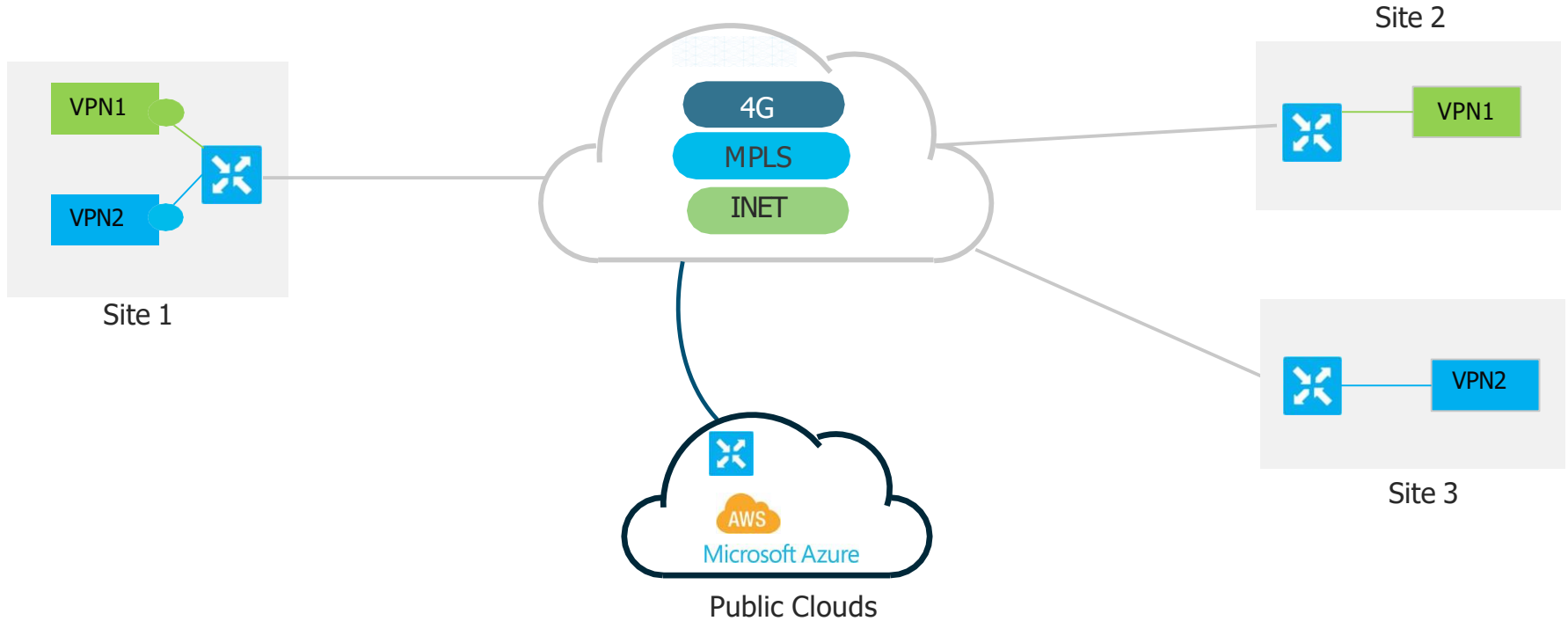
# Software Defined WAN - Transport Independence

App-Aware Routing (TE, SLAs)

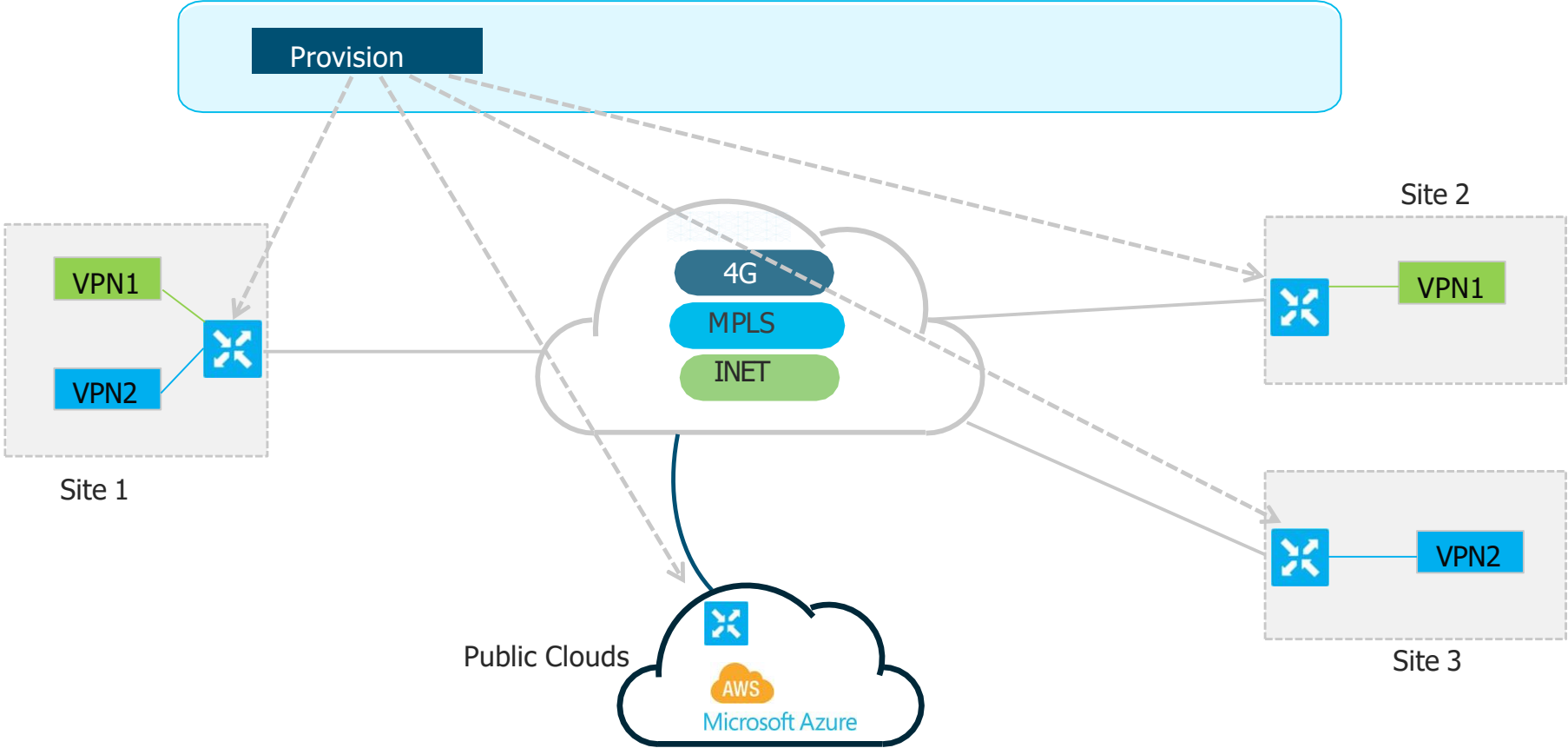
- App1 via MPLS
- App2 via INET



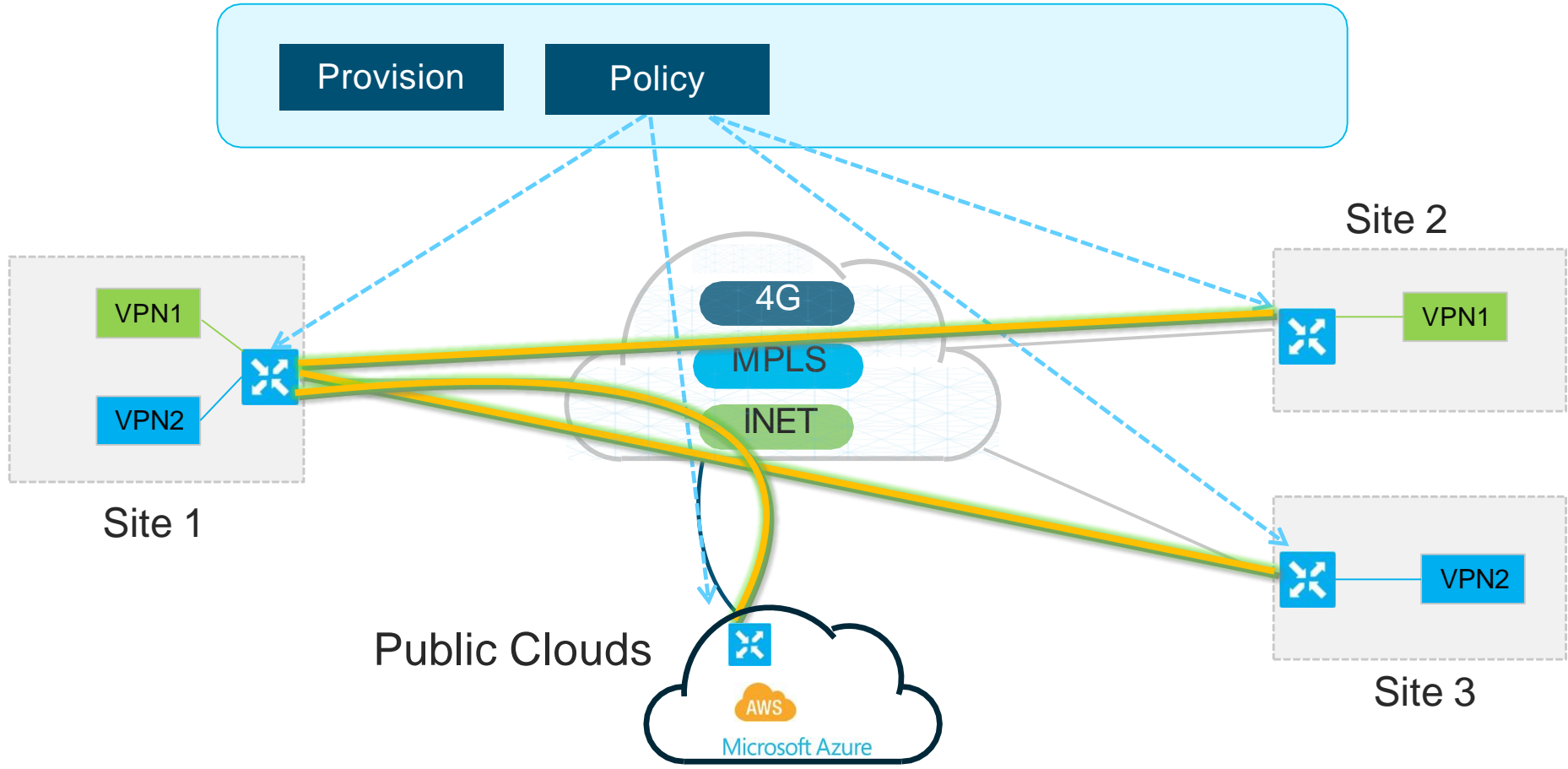
# Software Defined WAN – Segmentation



# Software Defined WAN – Centralized Mgmt

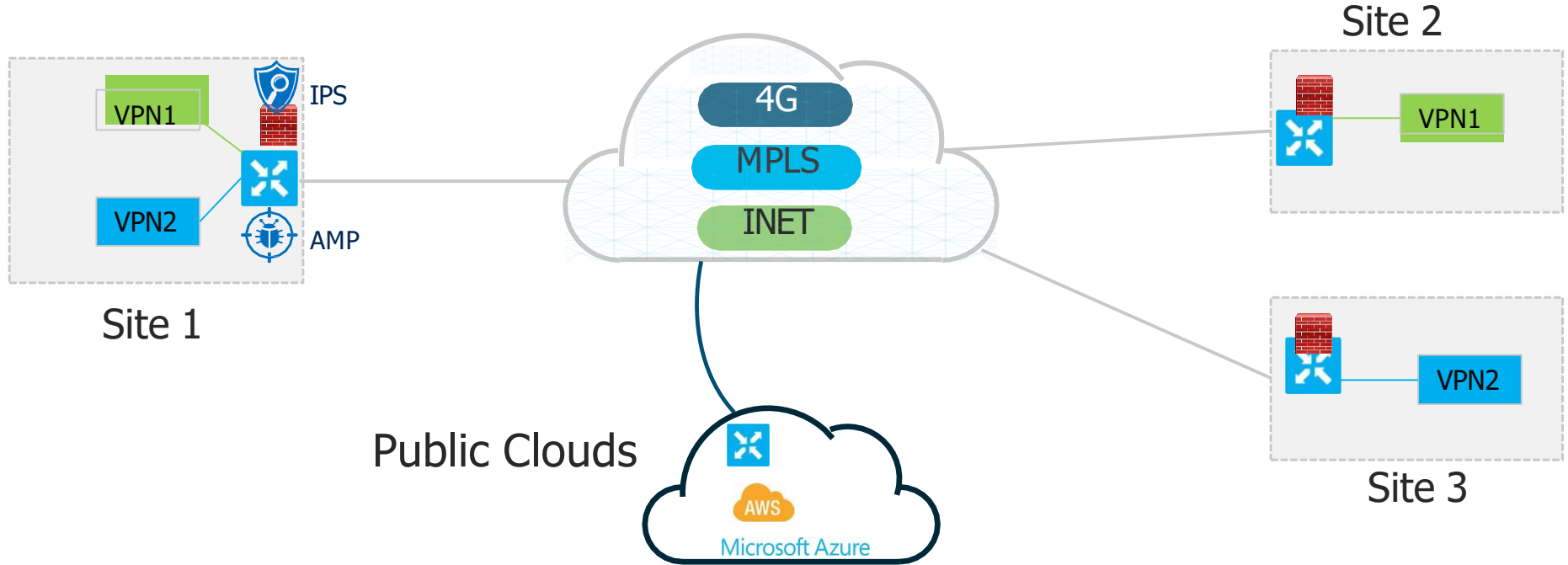


# Software Defined WAN – Centralized Mgmt

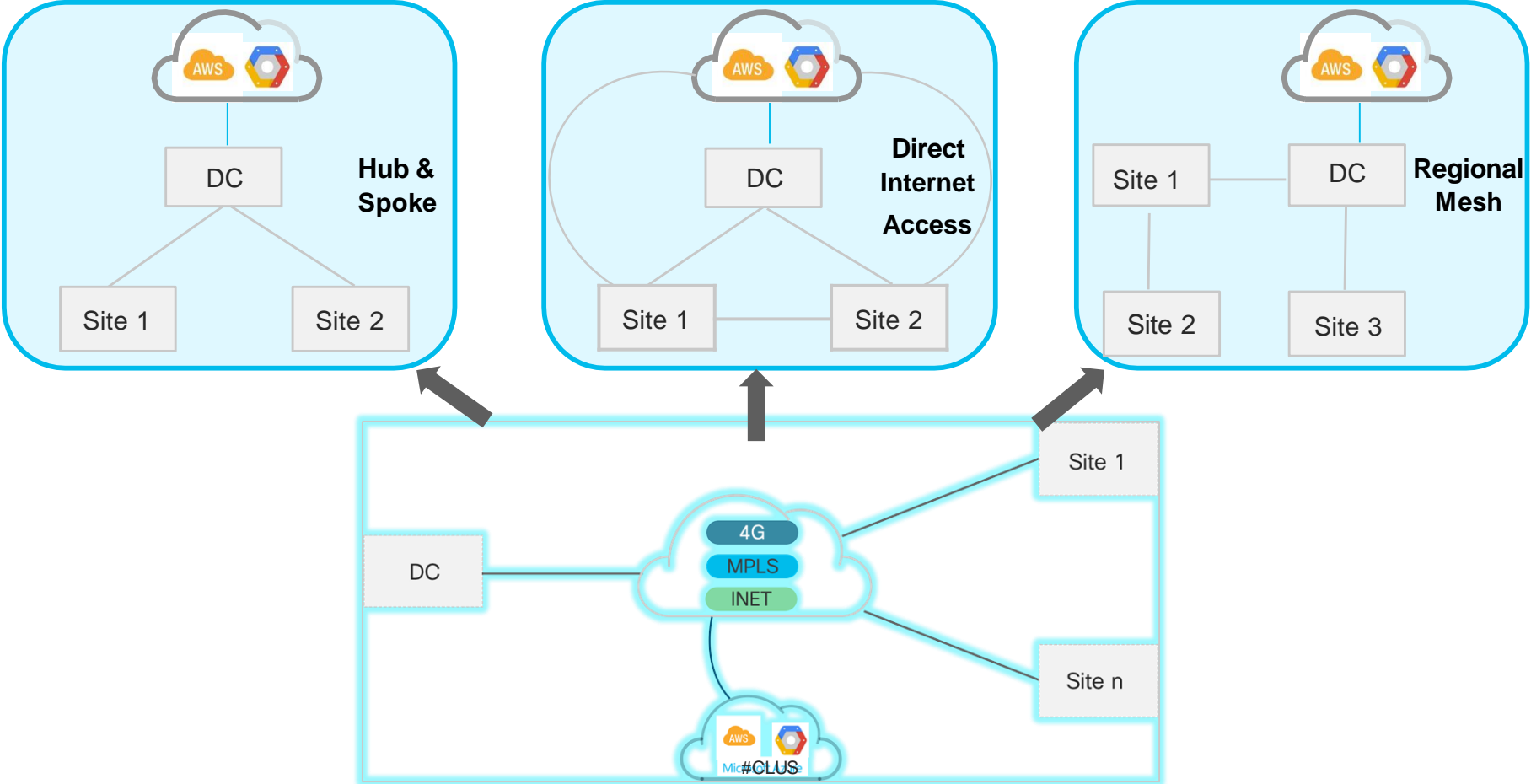




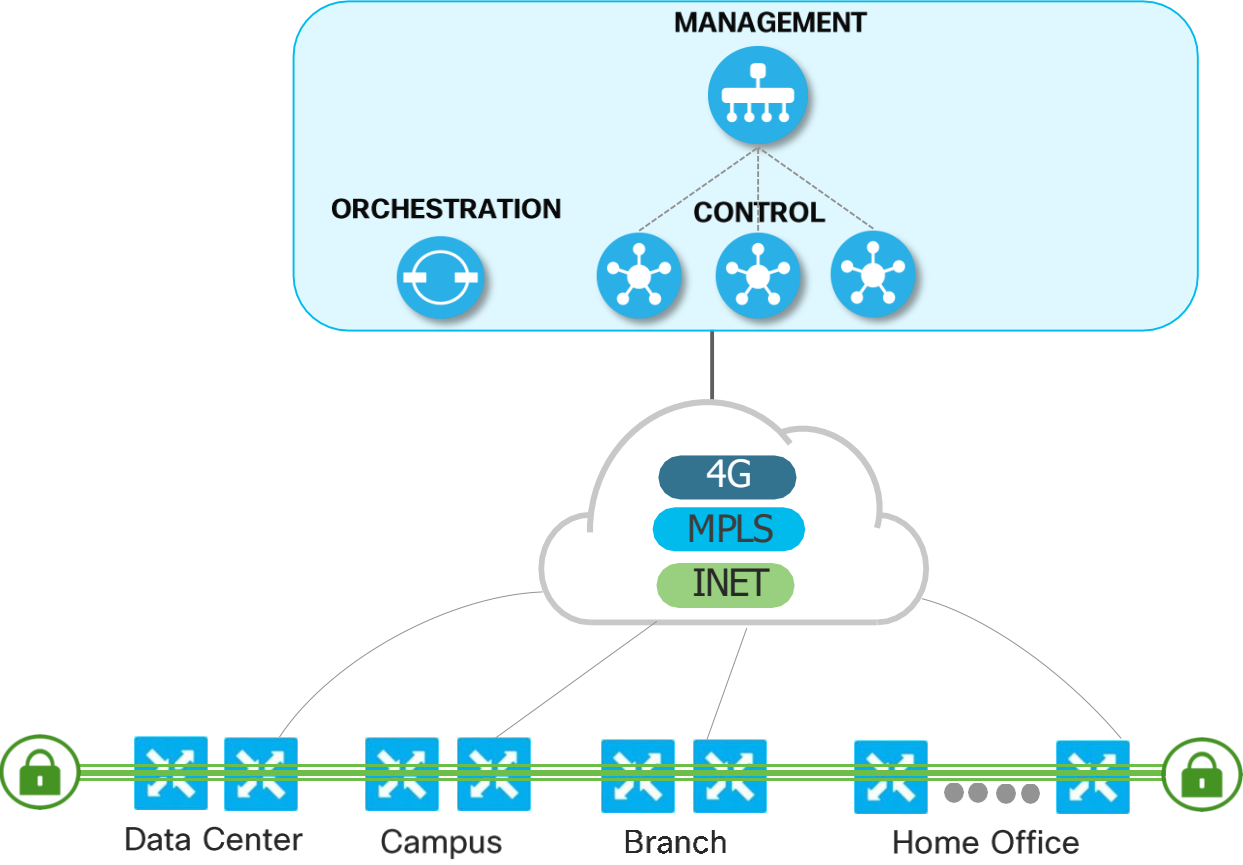
# Software Defined WAN – Security



# Software Defined WAN – Overlays



# SD-WAN Components



## Orchestration Plane



## Management Plane



## Control Plane

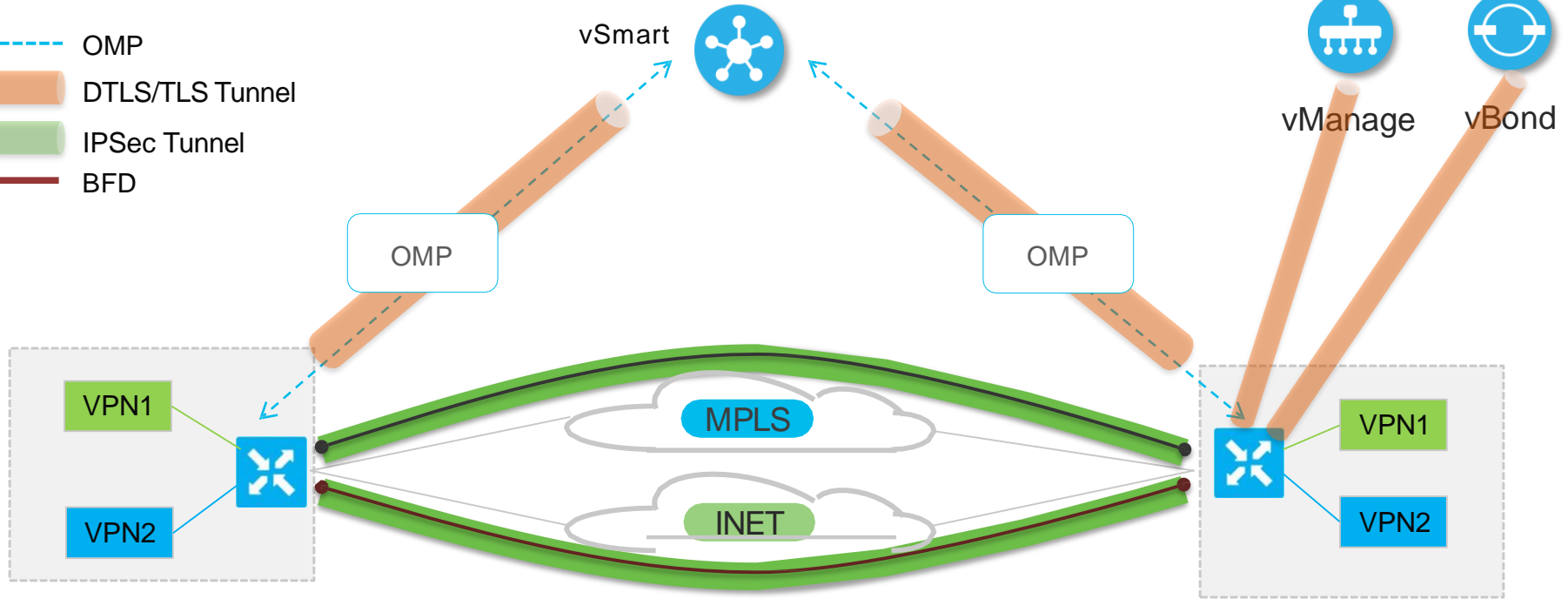


## Data Plane



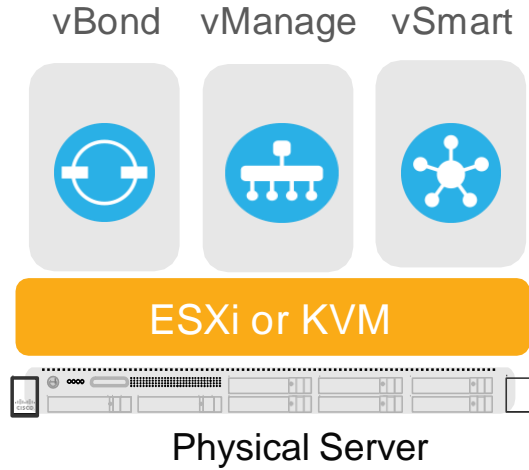
# Cisco SD-WAN Fabric Operations

- OMP
- DTLS/TLS Tunnel
- IPSec Tunnel
- BFD

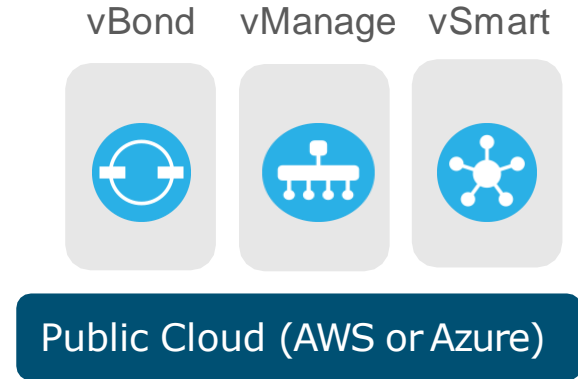


# Controllers Deployment

## On-Premise

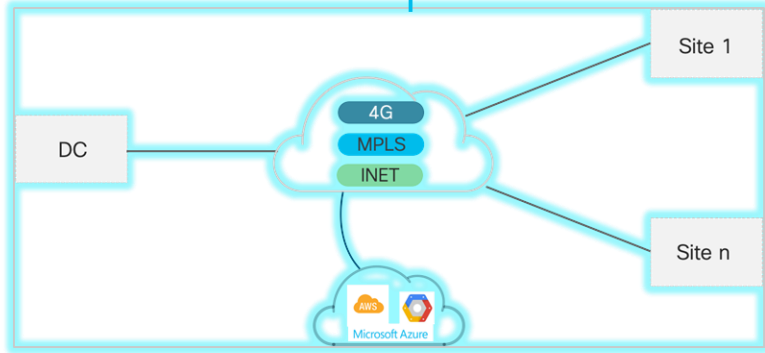
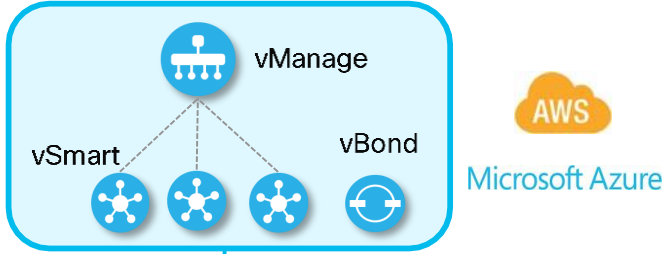


## Hosted

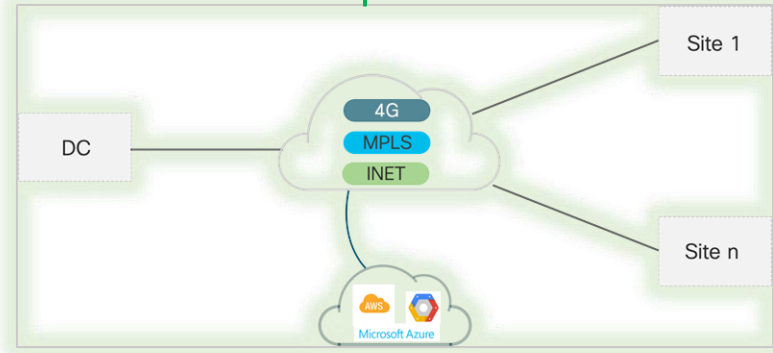
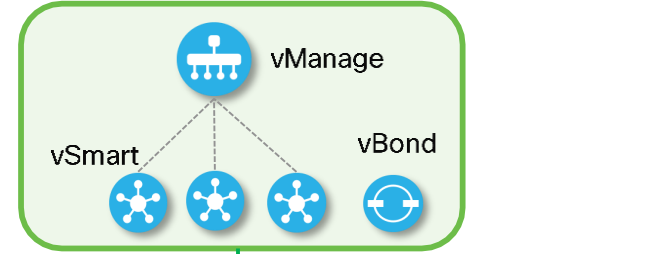


# Deployment Model – Per tenant

Customer 1

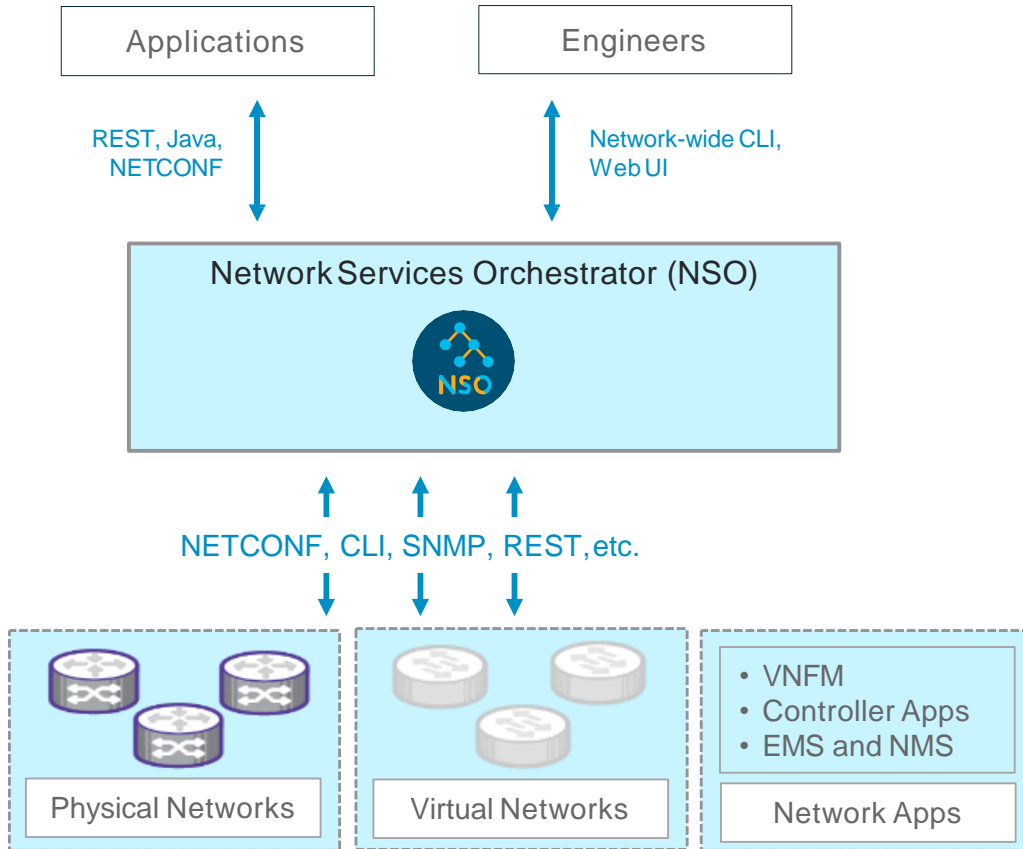


Customer 2



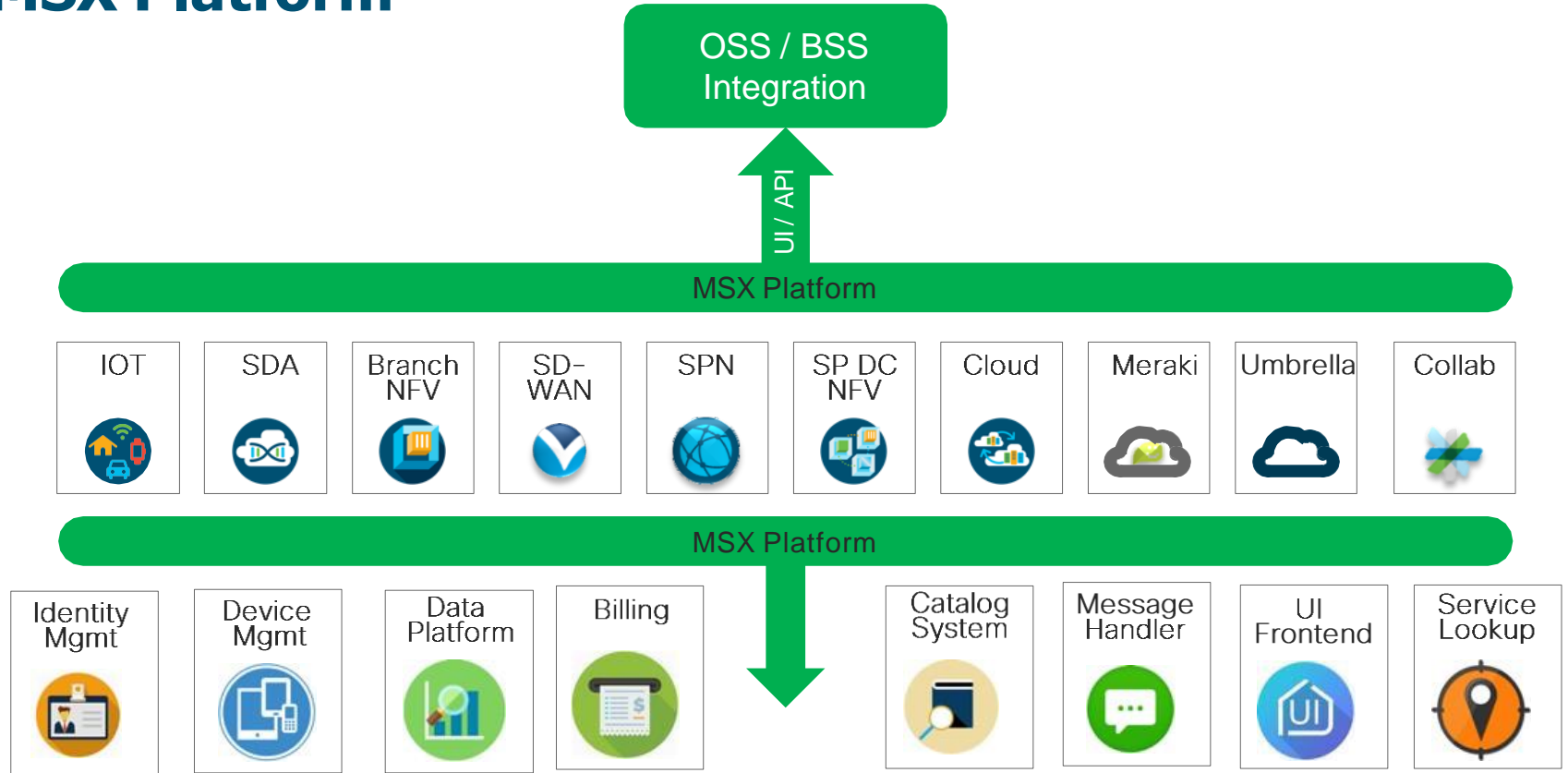
# End to End Service Orchestration

## Network Services Orchestration (NSO)



- **Multi-vendor** service orchestrator
- **Model Driven** Orchestration
  - Service Data models
  - Device Data Model
  - All Models are **YANG** Based
- Single pane of glass for:
  - L2-L7 networking
  - Hardware Devices
  - Virtual Appliances
- **Custom** or **Pre-developed** Packages (**Core Function Pack**)

# MSX Platform







Thank you

