Towards a Carrier Grade ONAP Platform SDN Architectural Evolution

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Agenda

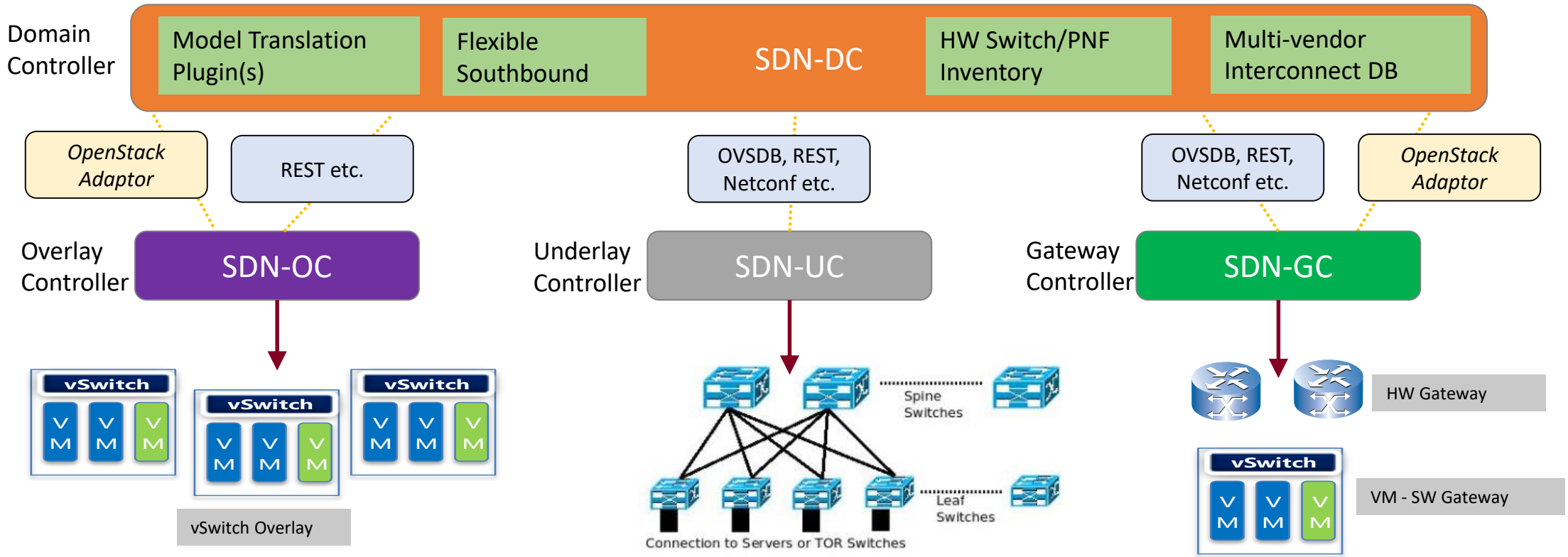
- Multi-vendor SDN Architectural Approach
- Multi-vendor & Cloud SDN ONAP Integration
- MC Networking Challenges & Solution Direction

Multi-vendor SDN Architectural Approach

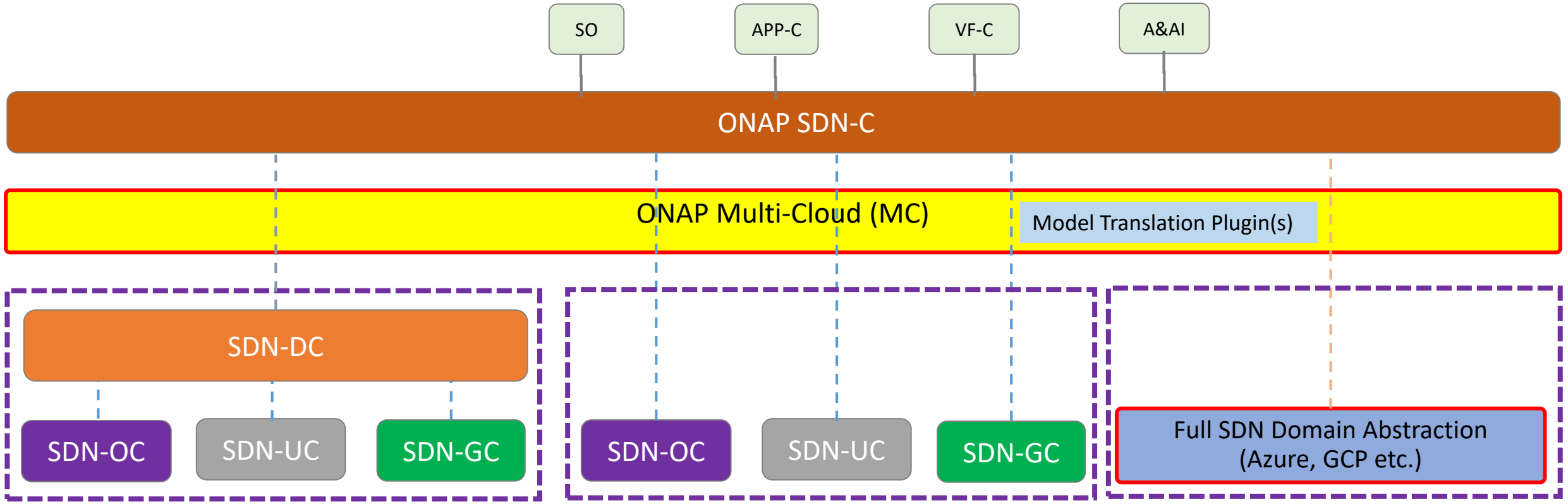
SDN Domain Mapping
- 1 physical DC could have multiple SDN Domains
- Multiple latency bound physical DCs could map to a SDN Domain
- One Domain Controller per SDN domain

Multi-vendor Interconnect DB
- Store interconnect information between Multi-vendor Overlay/Underlay/Gateway Controllers, for e.g. Vlan
- Function similar to SDN-C for connecting MC instance Gateway and WAN Controller

OpenStack Adaptor
- Enable smooth transformation to new Modelling Language (TOSCA, YANG etc.)



Multi-vendor & Cloud SDN ONAP Integration



SDN-DC external to ONAP

- Multi-vendor Interconnect DB in SDN-DC
- HW Switch/PNF inventory exposed to ONAP SDN-C for common management and fine grained control

SDN-DC function implemented in ONAP SDN-C

- Multi-vendor Interconnect DB in SDN-C
- SDN-C fully aware of Overlay/Underlay/Gateway including HW Switch/PNF inventory

Overlay/Underlay/Gateway fully abstracted

- HW Switch/PNF inventory *not* exposed to ONAP

MC Networking Challenges & Solution Direction

Challenge	Workflow	Need	Solution Direction
PNFs (HW Gateway etc.) and Underlay (HW Leaf/Spine switches/routers) not managed by MC instance	Day 1 & Beyond (Init and Deploy)	Foundation	PNFs and Underlay to be accounted in A&AI. SDN Domain controller function per MC instance (implemented in SDN-C or externally).
Lack of standardized APIs for MC instance Underlay Networking	All	Foundation	Standardized Data Models (TOSCA, YANG etc.), Semantics and Model-driven APIs for MC instance Underlay. Model Translation plugins translate to appropriate data model for specific Underlay Controller. Underlay configuration can be Layer 2 (MLAG etc.) or Layer 3 (eBGP etc.).
Underlay Network Configuration per MC instance not automated as part of common workflow	Day 1 (Init)	Foundation	Follow steps similar to WAN underlay Init; need to do this per MC instance.