SDN-NFV: Network Transformation

Seamless transition towards network virtualization with Prodapt’s SDN/NFV Offerings
Telecom Operators
Current Business Challenges &
Business Drivers

Business Drivers

- Service Agility & Flexibility – Dynamic deployment of network services, applications and underlying infrastructure based on business policies
- Eliminate Vendor Lock-in – Open platforms & API driven integration enables operator to “choose best in breed” features for network avoiding vendor lock-in
- Enable Innovation – Advent of new business models as the network moves to “as-a-service” model
- New Revenue Opportunities – Revenue generating services and opportunities coupled with faster time-to-market
- Reduce CAPEX/OPEX – Network function rollout on industry standard high-volume compute, storage and network infra drastically reducing CAPEX/OPEX

Network Challenges- Heterogeneous Network Ecosystem

- Inter-operability between virtual network functions and physical network equipment
- Integration of OSS/BSS stack with SDN/NFV Management & Orchestration (MANO) layer
- Seamless interworking with network analytics and performance management systems
- Cohesion between virtual network ecosystem and development platforms enabling faster service rollout

System Integration Challenges:

- Agile rollout of Network-as-a-Service components using cloud and virtualization stacks – AWS, MS Azure, OpenStack, VMware and KVM
- Enabling continuous development, integration and testing of network micro-services
- High level of custom development for heterogeneous systems to inter-operate
Our Offerings

Prodapt offers committed support to CSPs, ISVs and MVNOs in design, development and deployment of network function virtualization and software defined legacy and hybrid networks. Prodapt bring in its deep expertise for a commercial grade solution or implementation of a proof-of-concept (PoC) for potential use cases. We provide complete lifecycle support from conceptualization to deployment and ongoing support, leveraging our DevOps and NetOps Methodology.

**DEVOPS & NETOPS METHODOLOGY**

- System Design & Consulting
- System Integration
- Service Assurance
- Software Development & Configuration
- Testing

**OFFERINGS USING DEVOPS METHODOLOGY**

**System Design & Consulting**
- Solution feasibility and scope analysis across residential, enterprise and wholesale network services.
- Detailed analysis, estimation and designing of solution keeping business objectives as key focus.
- Consulting and program management.

**Software Development & Configuration**
- Development of resource adapters and service template based configuration for SDN and NFV platforms.
- DevOps based software development and integration, enabling faster ramp-up of service rollout.
- Portal framework based development based on open APIs, enhancing network programmability and agility.
System Integration

- Integration of SDN-NFV MANO Layer with business applications and OSS/BSS stacks for end-to-end network orchestration.
- Deployment and integration of open SDN controllers like – OpenDayLight, ONOS for industry specific used cases
- Integration using NETCONG/YANG, REST, TOSCA, CLI, JSON/XML, YAML

Testing

- End-to-End testing/simulation of order orchestration from ordering to provisioning of physical/virtual network elements.
- Simulation and performance testing of network using proprietary and open network simulators.
- Order orchestration testing of network services from order to activate cycle, ensuring compliance to service/performance level.

Service Assurance

- Strong ITSM program on the service deployment processes.
- Effective configuration management, physical and logical perspective of network infrastructure and services.
- Incident management process implementation, to restore normal service with minimal impact on business.
- Robust release management, for testing, verification and release changes of network ecosystem.

SOLUTIONS

Multi-Domain Network Integration
Design and develop resource adapters for various network domains in multi-vendor environment comprising vendors like- Cisco, Juniper, Coriant and Infinera.

Network Analytics and Service Assurance Solutions
Integrate and design network data warehouse system and service assurance tools for unified network visibility and management.

Open Source Platforms
Integrate and evaluate open SDN controllers and open orchestrators specific to business cases, like - ONAP, ONOS, OpenDayLight, OpenCORD.

VNF Management
Integration of VNF and VIM Manager for instantiation and management of virtual infrastructure and virtual network functions.
Case Study: SDN Multi-Domain Service Orchestrator Implementation

Client Background

A leading provider of voice, data communication & managed services is exploring SDN-NFV based orchestration capabilities to expedite lead time for service provisioning & rollout of enterprise wholesale services like- Optical Wave, Carrier Ethernet, MPLS/VPN.

Challenges

- Multiple network domains silos resulting in higher lead time for service provisioning and rollout.
- User Experience for enterprise customer to be enhanced.
- Integration of disparate network domains like- MPLS, OTN, DWDM & Ethernet for end-to-end orchestration of the network.
- Optimize CAPEX/OPEX in the long run.

Scope

- Implement an SDN-NFV Orchestrator Layer to integrate various NMS/EMS belonging to multiple vendors in the ecosystem.
- Design solution architecture for integrating multi-vendor network domains.
- Development of software plugins based on standard interfaces like- NETCONF, REST and CLI to on-board network resources.
- End-to-end solution testing, spanning from self-service portal to MDSO and across network domains using custom built simulators.
- Support and Maintenance, 24X7 system support in on-shore & off-shore model.
Design end-to-end solution for Implementation and integration of SDN Orchestration and Network Domains.

Implementation of Ciena BluePlanet Multi-Domain Service Orchestrator (MDSO) for Management & Orchestration.

Development of TOSCA service templates based resource adapters to on-board multi-vendors domains comprising of Cisco, Juniper, Coriant, Infinera.

Northbound integration of self-service portal and order management system.

Agile Methodology of software development, integration & testing using DevOps.

**Business Benefits**

- Significant acceleration in order-quote-provision cycle from 45 days to few minutes for wholesale services.
- Reduced Time-To-Market.
- Seamless inter-operability among multiple heterogeneous vendor ecosystems.
- Enhances service agility and network scalability.

**Sample Alliances & Technology Expertize**

**About Prodapt**

Prodapt is a leading global IT services and operations company focused on telecommunications and IoT. Headquartered in Chennai, India, Prodapt has additional locations in the US, Europe, and South Africa. Prodapt is part of the 120-year-old Indian business conglomerate, the Jhaver Group. The Group employs over 16,500 people across 64 countries. Prodapt is an ISO 9001:2008, ISO 27001:2015, SSAE16, and CMMI Level 3 certified company.