F5 Achieves Intent-based Network Services Delivery with Anuta NCX

Background & Challenges

The Silverline DDoS Protection service keeps customer businesses online when under DDoS attack with a reduced risk of downtime and provides unparalleled visibility and cost efficiencies.

To scale the deployment, F5 Networks needed to abstract their network infrastructure and provide an API layer to App Developers.
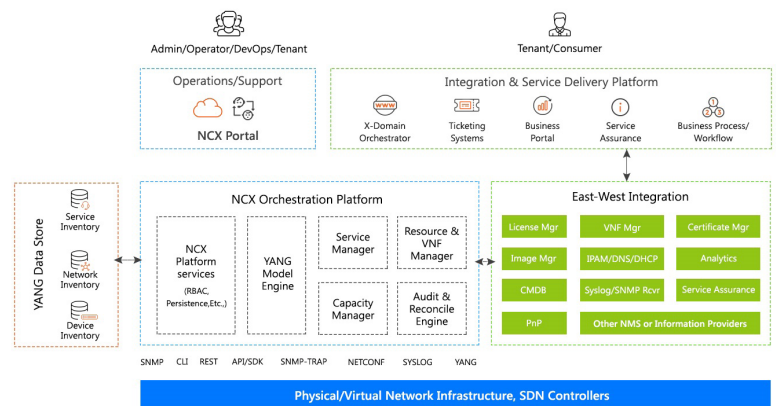
Anuta NCX Solution

NCX delivers multi-vendor network service orchestration for greenfield & brownfield deployments.

NCX has YANG service models for multiple domains such as Branch/CPE, Data Center, Carrier Core and Cloud Interconnects. NCX includes device adapters for hundreds of platfroms from 35 vendors.

Key Success Criteria

- Device and Topology Abstraction
- Support for Open APIs
- Extensibility
- Configuration Audit and Reconciliation
- Multi-Tenancy and RBAC
- Auto Code Generation from YANG models
- Full CRUD (Create, Read, Update and Delete) Development Toolkit (SDK)

NCX Results

- NCX SDK enabled F5 team to focus on Service Models and Business Logic instead of learning complex CLIs.
- Applications don't need to care about devices and topology anymore.
- Time to Market for new features reduced by 30%.

Deployment Details

- 4 Global Data Centers
- 200 Devices
- Device Mix: Arista 7K, Arbor PeakFlow, Juniper MX, F5 LTM and Viprion.

Accelerated Tenant On-boarding

NCX automates the configuration of network services across L2-L7 multi-vendor physical, virtual and hybrid networks. NCX self-service delivery avoids handoffs between multiple operator teams resulting in lower overall OPEX and time to market.

NCX offers comprehensive RBAC and integrates with AD and LDAP to enforce authorization policies.

Extensible Platform with YANG Modeling

NCX uses an extensible, IETF YANG based model-driven configuration and service management engine for managing multivendor devices.

The rich YANG model enables NCX to integrate seamlessly with any platform, device or interface/protocol, delivering a truly open architecture.

Config Reconciliation

NCX periodically performs inventory job and validates the actual device configuration against the device state in NCX. If there is any discrepancy, NCX will generate an alarm.

The admin can either Overwrite NCX or Device to revert the out-of-band changes. The configuration reconciliation feature ensures that NCX state is always in-sync with the device configuration.

Resource and Capacity Management

NCX discovers network infrastructure including device type, role, capacity, and topology. Admin can organize the resources into multiple pods and resource pools for service provisioning.

NCX maintains a real-time inventory of physical and virtual network resources and computes capacity and availability for each service offering. NCX also generates threshold based alerts to inform the tenants.

SDK

NCX SDK includes tools for Build, Package, Verification, Upgrades and Application migration.

DevOps teams can take advantage of the Modeling Tools, Development Environment, Templates for Device and Service models to customize the NCX deployment.

Service View

NCX provides a single pane of glass for the entire service regardless of the infrastructure differences.

For any given tenant, admin can view the service status, provisioned operations, current and historic SLA metrics as well as any alarms related to service health. This information is available through REST API for integration with any self-service portals.

Anuta's YANG model-based NCX platform allows applications to describe intent to the network without worrying about underlying physical infrastructure. NCX enabled our DevOps teams to focus on the service workflow instead of learning complex CLIs.

- Mike Lechner
Manager, Product Development for Silverline
F5 Networks