

Orchestrate Your Network Without Boundaries

Simplified Network Provisioning



Business innovation is challenging network agility and efficiency like never before. While application-driven requirements are ramping up to meet the world's real-time demands, legacy networks have been unable to keep pace with growing demands on the network. They end up functioning more like bottlenecks to the change. With constraints of network design, deployment, order, and change management, legacy networks come with growing CAPEX and the OPEX costs as the network scales.

Software-defined Networking (SDN) and Network Feature Virtualization (NFV) on the other hand, is disrupting the existing market landscape and redefining networking standards. Ecode Networks' DFX, is an orchestration solution, which defies the standards set by the legacy networks and provides powerful software tools for enterprises to orchestrate network services dynamically—on demand.

Solve your provisioning problems

DFX, by controlling inter domain SDN controllers, MANOs and end-points (Virtual or Physical) provide a single pane to control his network services.

Key Features include:

- Service Modeling, Service Inventory and Service Design with OSS.
- Resource Management and Service Calendaring.
- In-depth Compliance check [COMPLX™] prior to Network provisioning.
- Real-time service update model for OSS.
- Real time monitoring service data for BSS.
- Network planning with offline network simulation.
- East-West with other Orchestrators and NMS.
- Intelligent traffic optimization by dynamically determining the Quality of Service (QoS).
- End-to-End Analytics Engine.

The solution creates a simple, flatter, and centralized flow-based structure. It controls end-to-end aspects of SDN/NFV and Traditional orchestration while adapting to changes as the network scales up.

A closer look at orchestrating the network

DFX is a set of Application Programming Interface (APIs) residing in the application plane, performs a Northbound REST API call with OSS/BSS and a Southbound interface to REST API call with Network Infrastructure. It communicates with inter domain controllers to provide an interactive interface with the underlying Open Flow/Netconf/CLI - enabled networking infrastructure.

This architecture empowers you with dynamic, real-time network designs, fulfillment and assurance. You can safely modify and test the designs, and then have it automatically deployed in a production environment.

DFX comes packaged as an external application to in the form of a virtual machine and can be deployed as an appliance or can be installed on a standard x86 server. DFX orchestrator comes pre-bundled with operating system, database, authentication mechanisms; users just need to integrate DFX in to their environment.

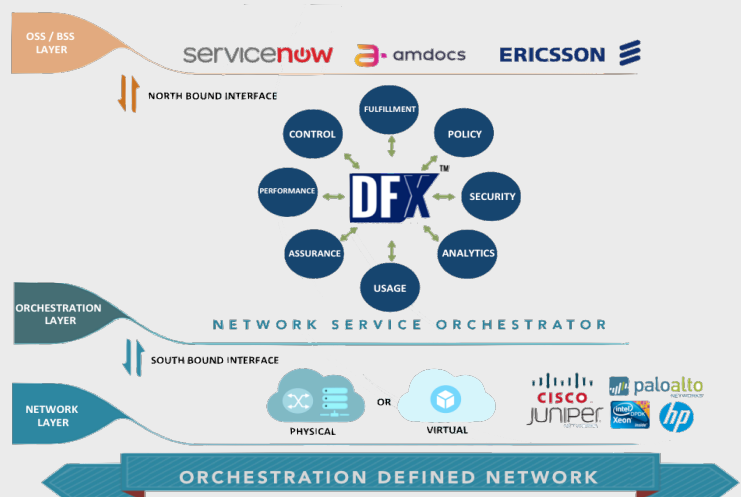


Fig1: DFX Orchestration Architecture

The Reference Architecture

The architecture specifies, at a high level, the reference points and interfaces between orchestration and the controller.

The User portal allows user to define intents, which later are translated and implemented by the means of multiple controllers. It is the orchestration discretion, to select the controller and the feature based on the service request.

The aim of orchestration is to control the connectivity provided by a set of network resources and the flow of network traffic through them, along with possible inspection and modification of traffic that may be performed in the network.

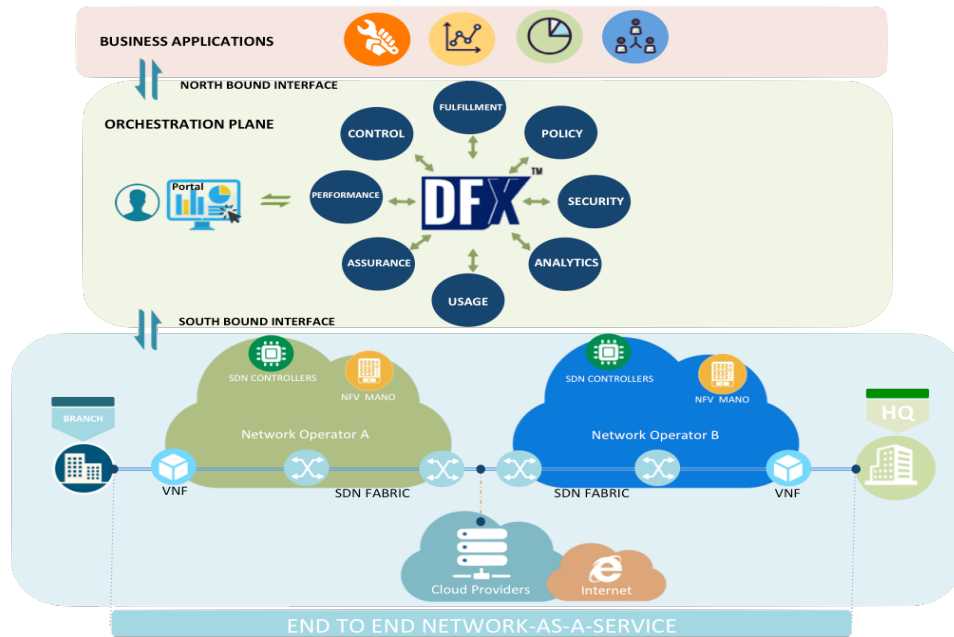


Fig 2: DFX Orchestration – E2E Service Provisioning

DFX—by representing a new architecture is setting up a new standard. It gives you complete programmatic control of a dynamic, abstracted view of the network and its key attributes include:

- Service level abstraction and fulfillment.
- Uniform Vendor-agnostic interface.
- Seamless integration with OSS/BSS.
- Supported Vendor Device Catalogue.
- Multi-controller support.
- Bespoke customization.

Operating environment recommendations

- **Hardware:** 64-bit dual x86 processor, minimum memory 16 GB RAM (quad-core x86 with 32 GB or more of memory recommended)
- **Storage:** 1Tb Serial Advanced Technology Attachment (SATA), Serial Attached SCSI (SAS), or solid-state drive (SSD); Volume storage: 2 disks with 2 TB SATA
- **Network:** 1/10 GB interface card (2)
- **OS:** Linux OS (CentOS 6.4, RHEL 6.4) with kernel-based virtual machine (KVM) support

Network Orchestration facilitates a Service Provider with an agile, dynamic and cost-effective network service-provisioning model, enabling him with a new Networking as a Service (NaaS) business proposition. The architecture is comprised of distributed Virtual Network Functions (VNFs) and centralized SDN Fabric, spanned across the globe, providing connectivity from A-end to B-end. DFX acts as an orchestration layer between OSS/BSS systems and facilitates an interface between controller federation and MANOs.

A user request/intent gets translated by orchestrator, compiled and provisioned on the data plane using a federation of controllers. To enable network services on demand, orchestrator capitalizes the functional abstraction as provided by controller federations and MANO.

System:

- Ready to deploy Virtual Appliance.
- Enterprise Class Resiliency.
- Cluster Federation.
- Keystone based IDM.
- Seamless Upgrades.
- Java SDK and OSGI – Bundle based feature distribution.
- High Throughput Cassandra DB.
- Domain Control.
- Templates and Federation based commits

Deployment License:

- Based on the number of orchestrated nodes.
- Based on controller plugins.
- Based on OSS/BSS APIs.

About ECODE

ECODE NETWORKS, provider of SDN/NFV Management and Orchestration solutions are working with customers who strive to pilot the intricacies of their multi-vendor environment, our Network Services Orchestrator provisions End-to-End heterogeneous network at ease. Unlike the proprietary management systems, our product creates an open ecosystem amongst multi-vendor platforms, by abstraction of network services and helping our users to deploy and manage an end-to-end service.

Backed with a proven track record of Network Consulting, Ecode was seeded to foster network innovation by disruption by the means of Network Orchestration by abstraction. Although, Enterprise and Data Centers are prime area of the focus, but our orchestration techniques are also applied to the Cloud industry. Our core philosophy lies in stepping in the customer shoes and hunting their pain points, maximizing productivity and profitability by delivering innovative products and solutions.



Office: 68, Lombard Street, London, EC3V 9LJ

Learn more at

www.ecodenetworks.com

Contact us

info@ecodenetworks.com



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