NFV Orchestration: Evolving Ecosystems & Solutions

EXECUTIVE SUMMARY

The definition of network functions virtualization (NFV) orchestration (NFVO) has expanded beyond the original European Telecommunications Standards Institute (ETSI) NFV Industry Specification Group (ISG) specification. Today, there are solutions that can manage both virtual and physical network functions, as well as provide rich service templating/modeling and policy management capabilities. The Open Networking Automation Platform (ONAP) and Open Source MANO (OSM) open source projects continue to build momentum, leaving it unclear what role vendor solutions will play. Also to be determined is how NFVO will coexist with traditional operations support systems (OSS).

NFV Orchestration: Evolving Ecosystems & Solutions highlights the strategies leading NFVO suppliers are taking in this critical domain, discusses how the market is likely to evolve in the near term as suppliers and their customers progress on their NFV transformation journeys, and examines the leading open source orchestration projects. Finally, the report profiles 16 leading vendors with compelling offerings in the NFVO market.

The NFVO has two main responsibilities:

**Resource Orchestration:** The orchestration of NFV infrastructure (NFVI) resources across multiple virtualized infrastructure managers (VIMs) provides "services that support accessing NFVI resources in an abstracted manner independently of any VIMs, as well as governance of virtual network function (VNF) instances sharing resources of the NFVI infrastructure." This includes the following capabilities:

- Validation and authorization of NFVI resource requests from VNF managers (VNFMs)
- NFVI resource management across operator’s infrastructure domains
- Supporting the management of the relationship between the VNF instances and the NFVI resources allocated to them
- Policy management and enforcement for network service instances and VNF instances
- Collect usage data of NFVI resources by VNF instances or groups of VNF instances
Network Service Orchestration: The lifecycle management of network services. This includes the following capabilities:

- Management of network services deployment templates and VNF packages
- Network service instantiation and network services instance lifecycle management
- Management of the instantiation of VNFMs
- Management of the instantiation of VNFs in coordination with VNFMs
- Validation and authorization of NFVI resource requests from VNFMs
- Management of the integrity and visibility of the network service instances through their lifecycle
- Management of the network service instances topology
- Network service instances automation management
- Policy management and evaluation for network service instances and VNF instances

The Open Networking Automation Platform (ONAP) and Open Source MANO (OSM) open source projects continue to build momentum, leaving it unclear what role vendor solutions will play. Also to be determined is how NFVO will coexist with traditional operations support systems (OSS). The excerpt below shows the high-level vision (according to ETSI) of the NFVO's role in the larger MANO framework.

Excerpt: ETSI NFV ISG MANO Architectural Framework

Source: ETSI

NFV Orchestration: Evolving Ecosystems & Solutions is published in PDF format.