Chapter 8
NFV Practical Implementation

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ABSTRACT
This chapter is focused on the traditional network architecture limitations with NFV benefits. Discussion of NFV architecture and framework as well as management and orchestration has been discussed in this chapter. Cisco VNF portfolio and virtual network functions implementation is included with software implementation of the architecture of NFV (network function virtualization). Management and orchestration functional layers as per ETSI standard. The challenges in NFV implementation is also a concern today, which is a part of this chapter.

NFV PRACTICAL ORIENTATION

Network functions virtualization (NFV) has changed the way we have traditionally thought about networking design, deployment & Implementation of the networking components within the IT Infrastructure through the approach of virtualization & not through the traditional hardware approach with predefined software within each component.

NFV decouples network functions from underlying hardware resources by virtualizing the storage, network and compute functions (Chiosi, Clarke, Willis, Reid, Feger, Bugenhagen, & Benitez, 2012). The Idea is to save the proprietary equipment cost by virtualizing network functions and creating on servers instead of their defined hardware.

This transition towards virtualization will take a period of time because providers & enterprises are not going to decommission their existing Infrastructure and replace everything by virtualized Individual components as this will be too expensive then.

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TRADITIONAL NETWORK ARCHITECTURE LIMITATIONS

1. Scalability Limitations.
2. Vendor dependent predefined hardware & software components.
3. High operational cost due to the management of Individual hardware within datacenters.
5. Individual Hardware management Issues.
6. Huge Capital Expenditure.
7. Limitation in rapidly offering services to the users due to the time to build the infrastructure.
8. Additional hardware to deploy for High Availability.

NFV BENEFITS

1. Service Elasticity.
2. Operational Efficiency.
4. Capital Expenditure Reduction.
5. Vendor agnostic.
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