Delivering Agile, Automated Cloud Services

Leverage existing network investments and functionality while evolving from manual to automated operations.

Avaya’s Software-Defined Data Center framework offers a simple five-step process for deploying cloud-based services in a matter of minutes, and is a specific use case of the Software-Defined Networking (SDN) concept. It delivers the capability to holistically orchestrate server, storage, and networking resources through a single, common interface in order to deliver automation within the Data Center. Significantly improved time-to-service is the key deliverable, and agility is the primary business benefit.

The first phase of Avaya’s SDN strategy, our Software-Defined Data Center (SDDC) framework breaks-down the frustration, complexity, and lack of agility that’s typically been the norm when building and deploying business applications. Avaya replaces the complicated, independent provisioning steps between the compute, storage, and networking teams with our simplified, orchestrated, and automated workflow. With the SDDC, compute, storage, and network components are automatically combined, customized, and commissioned through a common orchestration layer.

The Avaya SDDC framework is based on the following components:

- **Reduced Time-to-Service:** Cloud services enabled in minutes, in five simple steps.
- **Simplified Virtual Machine Mobility:** Endpoint provisioning to enable Virtual Machine mobility within and between geographically dispersed data centers.
- **Multi-Vendor Orchestration:** Coordinated allocation of compute, storage, and networking resources via a single interface to streamline the deployment of applications.
- **Openness:** APIs ease integration and customization with Fabric Connect, and interoperability with other Software-Defined Networking architectures.
- **Scale-Out Connectivity:** Services scale to more than 16 million unique services, up from the four thousand limitation of traditional Ethernet networks.
- **Effective Multi-Tenancy:** Achieved through network, compute, and storage layer abstraction and isolation.
- **Improved Network Flexibility:** Overcomes the current Virtual LAN challenges to deliver a load-balanced, loop-free network where any logical topology can be built independent of the physical topology and with simple endpoint provisioning.

Advantages of the Avaya Software-Defined Data Center Architecture

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• An Avaya OpenStack Horizon-based Management Platform, delivering orchestration for compute (Nova), storage (Cinder/Swift) and Avaya Fabric Connect networking (Neutron)

• Open APIs at networking and management layers for ease of integration, customization and interoperability with other Software-Defined Networking architectures

Avaya’s SDDC framework leverages OpenStack, an open-source cloud operating system. Now Data Center administrations can spin up virtual machines, assign storage, and configure networks through a single GUI. This increases the time-to-service, coordination, and agility of delivering business-class applications.

Avaya Fabric Connect enhances and complements the OpenStack environment by removing the restrictions of traditional Ethernet Virtual LAN/Spanning Tree-based networks. Fabric Connect turns a complex, rigid, and un-scalable model of building network services into a dynamic, flexible, and scalable one. It facilitates the unrestricted movement of virtual machines inside the OpenStack orchestration environment, within and between Data Centers. Pioneered by NASA and Rackspace, OpenStack is an open source cloud operating system that simplifies creation and movement of applications and virtual machines in public or private cloud environments. Traditional methods of configuring network, storage, and virtualized servers could take months and involve several complicated independent steps. OpenStack provides a control layer that sits above all the virtualized resources within the Data Center, allowing these to be orchestrated – as a single service entity – through a set of common interfaces and a common dashboard.

Summary

The various components within the Data Center have evolved at different rates. Modern compute environments enable virtual machines to be spun up in minutes and can relatively easily migrate between physical hosts on-demand or dynamically. However, on the whole, the network has remained relatively static and it is often a painstaking, error-prone provisioning process to provision network connectivity. The Avaya Fabric Connect technology has gone a long way to empowering greater network agility, and the Software-Defined Data Center framework leverages this to make connectivity services as dynamic as the modern compute environment.

The Software-Defined Data Center is focused on removing the delays and errors associated with sequential processes of turning-up new services, and creates an automated and agile operational environment where all resources are orchestrated in a coordinated and streamlined fashion.