Thinking outside the box with Integrated Telecom Cloud

Today's trend for ICT transformation driven by data centers involves network-wide evolution. By constructing new data centers and transforming existing ones, Huawei's Integrated Telecom Cloud integrates IT and CT services and carries them on the same platform. Operators can rapidly deploy and provision services, elastically scale capacity, and integrate clouds for NE services, NFV clouds, and private clouds.

By Hu Jie

How operators see it

After passing the incubation and POC stages, SDN and NFV – two of the most popular transformation technologies – are being commercialized. Operators are transforming their NE service silos into virtualized, cloudified architecture, and deploying shared platforms with multiple Virtualized Network Function (VNF) services. This helps them decouple software and hardware, accelerate service innovation TTM, raise efficiency, and cut OPEX. A major IT strategy for siloed architecture has been to cloudify support applications, like BSS, OSS, big data, and OA, on private clouds.

Previously, it was assumed that true joint management and resource sharing between CT and IT services was impossible. Now, though, the integration of private and telecoms clouds into one cloud on a shared infrastructure layer is something that's increasingly viable.

Benefits

- Raises efficiency by connecting departments on a shared service platform for maintaining IT and CT applications.
- Eliminates information silos and integrates scattered resources, improving resource utilization.
- Integrates and decentralizes management and monitoring through a One Cloud Two Domains system for private and NFV cloud services.

Challenges

- Simultaneously meeting the differing system requirements of IT and CT services that coexist on the same platform.
- Ensuring simple O&M and adapting to the changes in organizational structure.

Integrated Telecom Cloud

As an infrastructure solution for telecom cloud, standard NFV Infrastructure (NFVI) is fully open and offers carrier-grade performance and reliability.

By transforming existing data centers and constructing new ones, IT and CT services can coexist. The Integrated Telecom Cloud solution allows telecom and private clouds to share IaaS and carry IT and CT services at the same time, meeting the diverse requirements of different services under unified management. The cloud also supports multiple data center SDNs, which is implemented on top of standard NFVI.

Shared platform

CT services and IT services have different requirements; for example, some CT data plane services demand high throughput and separately configured accelerator boards. The Integrated Telecom Cloud allows CT and IT services to share a single cloud running on multiple distributed data centers. The services also share virtual resource pools like KVM, VMware, and XEN; physical resource pools; and container technology.

Integrated Telecom Cloud enables cloud-network synergy and carrier-grade performance for carrier-grade latency and throughput, and prioritizes hardware acceleration for telecom cloud services, unified management, and O&M monitoring.

More importantly, it's based on open-source OpenStack architecture, which decouples layers and supports heterogeneous third-party software and hardware systems.

Automated data center networks

E2E network automation, SDN-based internal data center network automation, and network collaboration in and between data centers are all made possible with IT and CT services on the same cloud. Streamlining Layer-2 networks between data centers also enables automated resource

deployment and flexible capacity expansion.

Unified service orchestration and management

An integrated coordination layer is required to plan and coordinate services and carry out rights-based management and monitoring on all physical resources, virtual resources, and upper-layer services.

Taking the pain away

The Integrated Telecom Cloud removes information silos by forming single clouds from distributed data centers, and allowing these clouds to share resource pools. The single cloud improves user experience, speeds up TTM, and improves resource utilization. Moreover, resources can be elastically scaled, while E2E unified management solves issues with heterogeneous resources, multi-vendor equipment, and complex O&M.

Operators' legacy investments are protected by decoupling software and hardware, which in turn enables open ecosystems.

The bottom line

Compared with standard NFVI, Huawei's Integrated Telecom Cloud delivers major commercial value in three main areas:

On-demand resource allocation: The hierarchical decoupling of software and hardware transforms hardware into a resource pool where network function NEs are based on distributed data centers. Resource allocation is then on-demand.

One-click configuration of network functions: The resources and configurations required by network functions, such as computing, networks, storage, and security services, are configured on an integrated platform.

Dynamic adjustment of network functions: Software-based functions enable instant adjustments to be made on application operations like installation, deletion, migration, and capacity expansion and reduction.

Integrated Telecom Cloud handles design and automates O&M for all back-end COTS hardware and software. Its full range of services includes NFV application migration, application loading, cloud resources, and standardized applications for native cloud.

Operators can focus on front-end services, service innovation, and business development rather than worrying about the platform, giving a true out-of-the-box user experience.

The solution in action

Huawei's Integrated Telecom Cloud helps operators evolve single services into multiple services, single data centers into multiple data centers, and NFV to SDNFV (converged SDN and NFV).

As part of América Móvil's Network 2020 strategic plan, Huawei is integrating 41 of the operator's data centers across 19 countries into four logical data centers over the next five years. Features include an integrated operations framework that will transform a high quantity of existing siloed applications into an integrated resource pool for unified cross-data center service management.

So far, Huawei's Integrated Telecom Cloud has helped the customer slash service TTM from six to nine months to one week and cut TCO by 25 percent. The solution's open NFVI platform already smoothly runs Huawei, Cisco, Affirm and other third-party NFV.

As a cornerstone of an integrated ICT cloud, the Huawei Integrated Telecom Cloud can help operators transform into a future where IT and CT act in concert.