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CONNECT

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Networking in the era of cloud

Research and educational institutions are among the most eager consumers of the cloud environments, massively adopting the most advanced features and resources of private and public providers. Research programs, like many corporate organizations, highly benefit from the flexibility of cloud resources, that are consumed "as-a-service". Moreover, while organizations increasingly migrate their operations to the cloud, the integration of networking with cloud services has become imperative to remain competitive and agile in the digital era.

Words: Paola Crobu, Multicloud Solutions and Cloud Connect Product Manager at Sparkle

The increase in cloud connections and the implications that the "cloud approach" has on global connectivity can dramatically change the networking landscape for Research and Education. Looking at the evolution of networks in the past decade, we see clear trends related to increased capacity, wider coverage, advanced security, Software-Defined technologies, virtualization and automation.

The "as a service" (aaS) concept in the context of cloud computing refers to the provision of various services, allowing users to access them without the need to directly own or manage the underlying infrastructure. It is characterized by on-demand availability of resources and a pay-as-you-go pricing model. The same trend has also occurred in telecommunications, with the advent of Software Defined architectures, where the hardware and the software are decoupled, thus optimizing cost and performance; network virtualization functions have been deployed worldwide, enabling service providers to extend their infrastructure without huge investments.

The next steps for networking are further advanced "on-demand" features through which end users can "buy" their connectivity in the same way they buy cloud: logging on to a portal, selecting the desired destinations, setting the capacity and click! This is the future of connecting to cloud services since the traditional approach of fixed circuits – with contracts of several years - is incompatible with the new requirements.

For network operators, the "Self "modality implies some complexities. First, an end-to-end circuit is composed of segments of different vendors, that must be activated in a synchronized way: all actors must speak the same standard language to automatically set-up the circuit. Once this is done then, end-to-end Service Levels Agreements (SLAs) must be guaranteed and monitored throughout the service duration. All this, without considering the new contractual aspects that this "network cloudification" mode entails. These functions, altogether, are called NaaS (Network as a Service): such cloud-like modes applied to network services will further facilitate the activities of the R&E community reducing costs, ordering and provisioning times and allowing them to focus on their core activity, to the benefit of the entire society.

As users increasingly rely on digital technologies, global service providers like Sparkle can combine their cloud and telecommunication expertise and transfer the cloud experience to networks, embracing a future-proof seamless compute infrastructure and allowing researchers to thrive in an ever-evolving technology landscape.

For more information contact
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