Service Assurance in SDN & Cloud

EXECUTIVE SUMMARY

In today's business environment, cloud services and applications are becoming more popular as organizations are looking to reduce costs while increasing agility and scalability, and decreasing time-to-market for new products or services. This demand is timely for enterprises that wish to move specific service elements to a public/hybrid cloud environment and for service providers that are looking for alternative revenue streams and have the advantage of an existing infrastructure and access to a large subscriber base.

The key to their success will be to understand the demands and apprehensions of their end users and customers, respectively, whose primary concern is not just quality of service (QoS), but the quality of the overall user experience. This requires an assurance solution that can effectively manage the end-user experience in private, public and hybrid cloud environments.

In other words, service providers must think beyond existing network service-level agreements (SLAs) and ensure cloud service assurance that would include all elements of the end-user experience. This would include correlated view of user's content, network and session layers to provide a competitive and satisfactory customer experience that accelerates customer acceptance of cloud services.

The key for cloud service providers is to find a service assurance solution that can monitor the cloud infrastructure at all levels while preemptively managing subscriber experience at the application level. In turn, issues at the subscriber level (or application level) must be reported back (preferably in real time) to the network and business level so that changes may be made accordingly.

Though the requirement of this type of service assurance seems daunting, it will be essential for cloud providers that will be dealing with potentially billions of transactions on the application layer while simultaneously trying to satisfy and retain their cloud customers.

Cloud service providers' intention to differentiate themselves from data-centric vendors means that they must abstract the physical network and manage that along their IT and storage resources across their access and wide-area networks. Concepts of software-defined networking (SDN) and network function virtualization (NFV) are relevant in this context. Holistic service assurance – especially in the context of cloud services and SDN – must be closely aligned with service fulfillment.

SDN and carrier cloud environments are dynamic in nature, which demands real-time view of the provisioned state of the infrastructure that is regularly updated with network changes, which ultimately translates to underlying network device changes. In our opinion, a service assurance vendor that can assure cloud and IP services is well geared toward supporting SDN when it becomes mainstream.
Service Assurance in SDN & Cloud examines how traditional service assurance tools function in the context of today's cloud and IP networks and explains how those solutions must evolve to ensure the subscriber experience for different types of cloud services. The report explores how the concepts of SDN and NFV interact with these new service assurance challenges and analyzes the functions that a future comprehensive service assurance solution for the cloud must possess.

The report examines seven key vendors in the cloud and IP assurance space, analyzing the critical qualities for success as a cloud assurance player: real-time session/service visibility and insight; service correlation and modeling; managing workload availability and mobility; application performance management; WAN optimization; issues in multi-vendor cloud environment; actionable alerts and root cause analysis; and reliance on probes. Click here for the full list of included vendors.

Traditionally, service assurance is defined as policies and processes that help service providers identify faults in the network. For cloud service providers, the competitive bar is much higher, requiring the quality of the content, session and IP network topology layers – mainly across multi-vendor networks – to be maintained. This requires immediate access to all the information from each of the traditional silos, so that it can be automatically correlated for each session. The excerpt below shows the main functions and advantages of a cloud service assurance solution.

Excerpt 1: Functionalities & Advantages of Cloud Service Assurance Solution

Source: Heavy Reading
Report Scope & Structure

Service Assurance in SDN & Cloud is structured as follows:

Section I is an introduction to the report, with complete report key findings.

Section II examines how traditional service assurance tools function in the context of today’s cloud and IP networks.

Section III studies the service assurance challenges for different types of cloud services and looks at how traditional solutions must evolve to ensure subscriber QoE.

Section IV explores the difficulties of service assurance in the context of SDN.

Section V details the functions and advantages of a comprehensive service assurance solution for the cloud.

Section VI analyzes seven key vendors that we believe are leading players in the cloud and IP assurance space.

Section VII presents our conclusions for this report.

Service Assurance in SDN & Cloud is published in PDF format.