Remote Testing: the Achilles Heel of Cloud Services

Daniel Joseph Barry, Napatech (www.napatech.com)

Cloud services provide a new and promising opportunity for Enterprises to address the growing complexity of IT. The availability of smartphones and the expectation of immediate and simple access to both private and company specific information on a global basis are driving demand for centralization of IT services and the related competence required to support these effectively.

Cloud service providers have established the necessary competence and IT infrastructure to deliver on these demands, but there is one potential Achilles heel that can present a challenge; assuring cloud service quality and performance.

One of the fundamental precepts of cloud services is the cloud itself, which in most cases can be read as the Internet. But, how can a cloud service provider assure quality delivery of services across an entity it does not control? Service Level Agreements (SLAs) can be entered with communication service providers, but how do you ensure that these SLAs are being met? If they are not being met, how does this affect the services you provide? Can you compensate for this, so that the end-user impact can be minimized?

Remote testing provides part of the solution. The ability to emulate service experience for potential users both before service is provided and during service when issues occur can help in understanding the characteristics of the cloud connecting customers to the cloud service.

Technology already exists that makes remote testing possible. Traffic generation technology is available that can be used to stress test networks using typical user traffic. Traffic can be generated that will fully load user connections to the cloud service allowing the individual connection to be tested, but also allows the cloud service itself to be stress tested, if many of these sessions are established simultaneously.

Advanced network adapters now provide synchronized traffic generation features, which can be used by OEM vendors to build traffic generation systems based on standard servers with extreme time precision. Multiple traffic generation systems using these features can be synchronized with nanosecond. All they need is a reliable clock source, which could be GPS, CDMA or IEEE1588/PTP. With this technology, remote cloud testing can be performed with extreme precision, as each Ethernet frame can be time-stamped with nanosecond resolution.

With this type of technology, Cloud service providers could precisely control when traffic loads or simulated user sessions are started and by using packet capture technology, analyze and measure the characteristics of the cloud connecting these traffic generators. This can include latency measurements with extreme accuracy, packet drop analysis, number of TCP resends, total amount of data exchanged etc.

Because the traffic generation is synchronized, the traffic generators can be located anywhere in the world, as long as they have access to a reliable clock source.

The combination of synchronized traffic generators and packet capture probes provides a remote testing infrastructure that can help cloud service providers overcome the Achilles heel issue of assuring cloud services even when you don't control the cloud itself.

Visit www.napatech.com [1] for more information.

Source URL (retrieved on *03/13/2014 - 9:31am*):
http://www.wirelessdesignmag.com/blogs/2012/01/remote-testing-achilles-heel-cloud-services

Links:
[1] http://www.napatech.com