Seven things I know about...

AUTOMATED NETWORK TESTING

Operators want increased agility

Operators know they move too slowly to introduce service innovation and that this threatens their future viability. They want to make the whole process of introducing new service offerings across a network much faster, shortening the development, launch, verification and test cycle from months to days. They also need to be able to update and alter services on the fly and deal with changes in the network in an active manner. This will not only enable them to launch, change and upgrade services faster, but will reduce the risk profile of introducing new services, so that no service becomes “too big to fail”. Increased agility will be critical for operators in maintaining their competitive edge in this evolving marketplace. This is the end goal.

Programmable networks introduce new complexity

We are seeing operators move to a network environment that relies on Software Defined Networks and Network Functions Virtualisation for the flexible deployment of network resources and services. This new network structure introduces increased levels of complexity as it brings with it shared, virtualised resources and potentially a number of new niche technology vendors, yet without the vendor lock-in experienced by operators today. That increased complexity brings with it the concurrent requirement to also be able to test the outcome of changes in the network as they happen, and in an automated manner. How can you otherwise make sure that the service is working for the customer as expected?

An innovative culture = DevOps = Test Automation

Being truly agile is more aligned with the way Internet players have operated than with traditional telco business models. It requires a combination of new technology in the network with a new DevOps-like approach that allows for continuous integration. Have you ever heard about DevOps and agility without automated testing being an integral part of it?

Test Automation is about more than just the lab and infrastructure components

For an Over-The-Top (OTT) player, the key resources are the servers in the datacenter, and potentially the Content Distribution Network. In such an OTT deployment, the network is part of the service in the same way as a telecom service. For a telco it’s different — here the resourcing of the network is a key part of the service. In order to guarantee a high quality of service to the end customer, testing the results of subtle changes in the network necessitates having an end-to-end view of the service as it is experienced by the user. The industry has been very focused on the infrastructure components that will support this new innovation culture, but it is also important to get good real-time data from an end-to-end perspective. As well as using this data for active test and assurance, this data can then be fed into automated control systems, like Performance Management or Service Quality Management systems, enhancing the self-learning capabilities of the network and improving customer experience.

Introducing Orchestrated Assurance

Orchestrated Assurance includes activation testing, active monitoring and troubleshooting as part of the orchestration and fulfillment loop. When modelling how to configure a network service, you must also include how the service should be tested and monitored in the model. Adding these capabilities to the service model allows the orchestrator to accurately control and assure the customers are experiencing the service quality that they expect in a completely automated manner.

This would be essentially impossible to do in a hardware-defined environment with manual tools and human intervention. Take the example of an enterprise VPN. The customer’s self-provisioning requires the ability of the service to test the performance of the service as it is delivered.

The active testing component

Netrounds enables wider network automation and intelligence by providing an active testing component in software that can act as a virtual user in the network to test services end-to-end from the user perspective. Test Agents can be distributed throughout the network and the operator can automatically trigger tests via a centralised test controller API (called Netrounds Control Center), making it possible to test different aspects of a service in remote locations. The Test Agents can send test traffic through service chains to give an end-to-end view of a service: in the NFV world there will not only be network services but managed services with different value-added functionality, such as firewalls, included.

When we start talking 5G and network slicing, those slices will all have different requirements that need enhanced visibility and management as well. The Control Center coordinates the Test Agents and collects aggregated test results and KPIs. It also acts as the central management platform where service-specific and automated test sequences are designed. When orchestrators make a configuration change in the network, tests will automatically be triggered via APIs such as NETCONF and YANG.

The new model, enabled by active, automated test

It’s still early days, but we know already that the new operating model that carriers hope to benefit from will be infinitely more complex with new network capabilities that will rely on increased programmability and automation in the network. We know it will be critical to support that dynamic network with an automated test regime that itself is programmable via open APIs, and can be managed from within the operators’ existing orchestration environment. For every change in the network, automated or manual, there should be an equal and automated test to ensure that updated or altered services are delivered right the first time. This will be a key underpinning to the move to DevOps, and more agile service introduction.

Netrounds is a programmable, active test and service assurance platform provider for physical, hybrid and virtual networks. Netrounds’ automation capabilities enable communication service providers to reduce manual efforts required for network testing and service assurance.

www.netrounds.com

What is DevOps?

- DevOps is a way of continually updating and managing services in a live network.
- It entails a constant deploy, test, reiterate method of working.
- It enables service providers to be much more flexible and faster to market with services that work correctly the first time.
- It requires automated, integrated testing to assure and handle interactive changes in real time.

Netrounds’ Marcus Friman says that network automation designed to support new business and operational models necessitates the deployment of automated active testing.