NETSCOUT

Is Your Information Close Enough to the Edge

Bruce Kelley, Chief Technology Officer (CTO), NETSCOUT

As 5G rolls out, added capacity and performance is set to enable new applications from augmented and virtual reality to ultra-high definition video, such as 4k and 8k. However, provision of mobile broadband is the initial 5G application being rolled out by service providers because there's a clear market need for it, and service providers are familiar with the network demands of mobile broadband services.

Just because more capacity is available for mobile broadband with 5G, does not mean that it should be used unnecessarily by sending terabits of data across the network to be analyzed by centrally-located cloud servers. Instead, the extra capacity presents an opportunity for service providers to place compute power at the Edge of the Network, so analysis can be performed, and to only send relevant data or insights on to centralized servers. This opportunity means so-called mobile edge computing (MEC) devices are being deployed by enterprises.

MEC devices exist both on customer premises in the form of devices that have more intelligence and at the Edge of the Network in the form of devices collocated with equipment such as routers in service provider points of presence. We are likely to see a growing number of more intelligent devices being deployed for the Internet of Things (IoT) to reduce unnecessary data transmission, and at the same time, service provider sites such as cell towers or street cabinets will increasingly resemble mini data centers with sizable compute power.

The advantages to enterprises are clear. They will eliminate unnecessary transmissions of traffic, potentially enhance security, and gain improvement in response time because applications that are sensitive to latency will not have to utilize networks congested with vast flows of information that is likely to have low or no relevance. This is an area in which service providers can bring their skills and real estate to market and monetize those advantages effectively, gaining revenues beyond basic connectivity services. However, service providers have not stopped there. They are moving network infrastructure to the edge in order to support the new data loads and traffic patterns of both 5G and IoT.

Moving cloud, compute, and processing power to the edge of the network will support the ultra-low latency requirements of 5G applications, such as connected cars, which run at the network edge. Service providers will use their new network architectures, which are virtualized via network functions virtualization (NFV), to deploy MEC coupled with cloud radio access network (C-RAN) systems to support these types of traffic (Figure 1).

With the Network Edge now a key foundation for data analytics, it is playing an ever more important part in the performance of service provider networks. It is important to ensure that this network infrastructure, in the form of mobile edge computing, delivers on its promises and is carrier-grade in the same way as the service provider network that enables it.
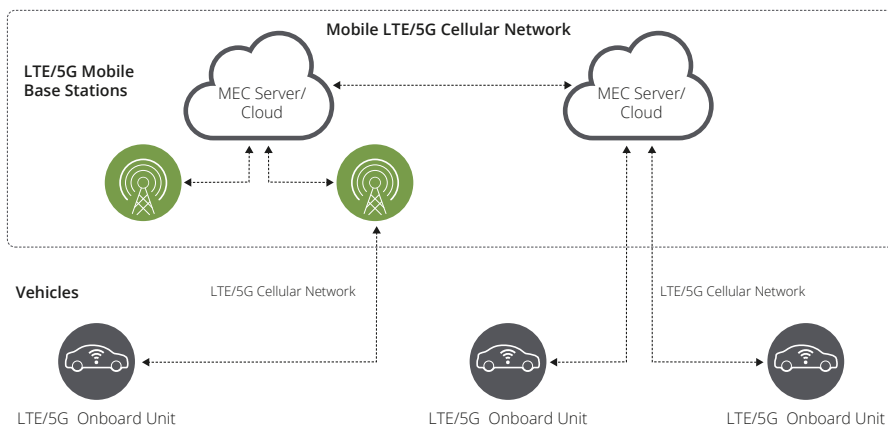
Figure 1: Reliable Vehicle-to-X Communication With Mobile Edge Computing and Heterogeneous Connectivity.

Though the traffic journey is curtailed by having intelligence at the network edge, it still needs to be managed, secured, and supported by the service provider. As with traffic that travels across the entire network to a centralized server resource, service providers need visibility into the mobile edge computing traffic in order to enable full service assurance.

The only way to achieve this is to utilize a smart data solution which will maintain visibility throughout every aspect of the network. From the customer premise or IoT device, over the short distance network to the MEC resource, service providers need to access and analyze data in real-time to gain actionable insights into how applications on the network behave. Actionable insights can be used to identify security breaches, the need for greater capacity to be made available, or for predictive analytics to be performed allowing service providers to smooth out the peaks and valleys in network demand from a given application or device.

With the Network Edge now a key foundation for data analytics, it is playing an ever more important part in the performance of service provider networks. It is important to ensure that this network infrastructure, in the form of mobile edge computing, delivers on its promises and is carrier-grade in the same way as the service provider network that enables it. Virtual probes enabled by network virtualization provide the means for service providers to achieve deep visibility. Virtual probes can be spun up as required and configured to provide useful insights into service performance – even at the edge.

Children are taught to be cautious of going too close to the edge of swimming pools or cliffs but when it comes to the network, the edge presents a compelling, yet under-exploited, place to gain true operational efficiency and maximized network utilization.

NETSCOUT.

Corporate Headquarters
NETSCOUT Systems, Inc.
Westford, MA 01886-4105
Phone: +1 978-614-4000
www.netscout.com

Sales Information
Toll Free US: 800-309-4804
(International numbers below)

Product Support
Toll Free US: 888-357-7667
(International numbers below)

NETSCOUT offers sales, support, and services in over 32 countries. Global addresses, and international numbers are listed on the NETSCOUT website at: www.netscout.com/company/contact-us