

# TV Everywhere: Assuring a Consistent Experience Across Device Types

Tablets, smartphones, and laptops have become pervasive in everyday life and consumers are quickly turning to these devices as a new means to consume cable services.

Cable operators are looking to expand their service footprint by offering their premium content to their subscribers on these connected devices. The ability to provide “TV Everywhere” is particularly important for cable operators in competing with Over-the-Top (OTT) providers like Hulu™ and Netflix®.

To be successful, operators need to provide a superior customer experience compared to their competitors. The nGeniusONE™ Performance Management platform provides the end-to-end visibility to assure the delivery of services that empowers cable operators to confidently deliver premium content to their users on any device.

## A Robust Service Assurance Infrastructure

Unlike OTT providers who ride on undifferentiated, best-effort delivery, cable operators have the ability to monitor premium traffic for an assured Quality of Experience (QoE) or guaranteed Key Performance Indicator (KPI) on a per-channel level or per-video-on-demand title by delivering an optimized format for the device (Figure 1).

To differentiate the delivery of premium content to any device, operators need to view all service delivery elements in the service delivery path within the context of the service. The nGeniusONE platform allows operators to monitor data and control plane operations and performance at the network, service enabler, and service level. These service delivery levels are complex, dynamic, and act in unison.

### Network

At the network level, the nGeniusONE platform provides visibility into network problems such as link congestions, capacity issues, load balancing errors, bandwidth spikes, network configuration problems, firewall issues and broad IP transport problems.

### Service Enablers

At the service enabler layer, the nGeniusONE platform can detect problems such as authentication and authorization issues, report on billing mediation platforms, and monitor protocols, including RADIUS, Lightweight Directory Access Protocol (LDAP), Dynamic Host Configuration Protocol (DHCP), and Domain Name Server (DNS) protocols at the Authentication, Authorization, and Accounting (AAA) and DNS servers.

### Services

At the services layer, the nGeniusONE platform provides service and usage visibility by monitoring the HTTP Live Streaming protocol used for streaming video to tablet and smartphone devices, and proactively alerts on errors or violations against established baselines such as response-time delays or increased KPI errors, allowing quick resolution of issues via a seamless integrated workflow to locate the root cause of the problem.

## Service Assurance for Content Everywhere

Leveraging the nGeniusONE platform, it becomes easy to detect which network elements are generating the most delays and errors or have the highest congestion and transactions. The nGeniusONE platform allows users to view detailed response-time analysis on the origination and the Content Delivery Network (CDN) servers, and detect anomalous service and server behavior at the portal, origin, segmentation, vault and CDN. NetScout allows users to monitor the delivery of premium services across services and the network with a proactive approach to prevent service-impacting performance issues.

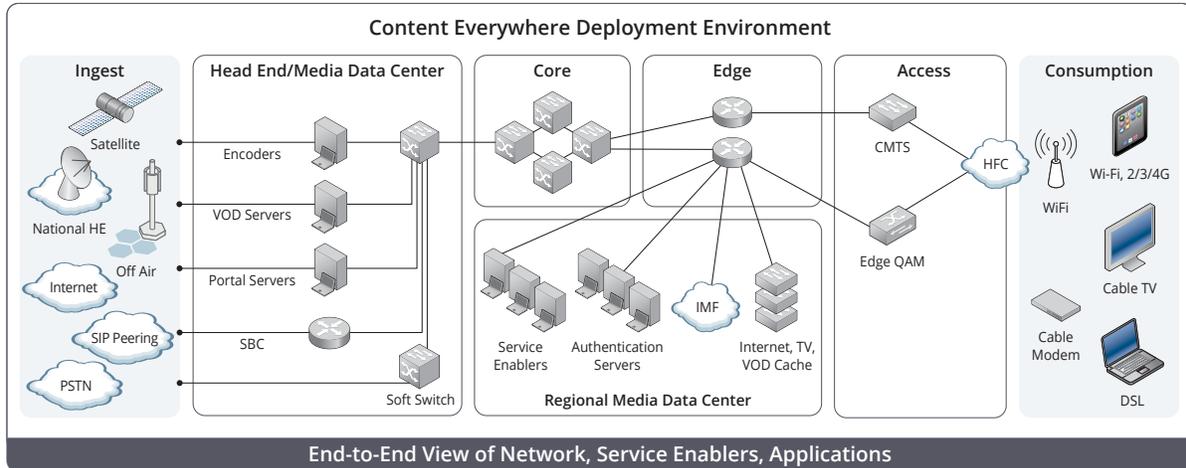


Figure 1: Monitoring on a per-channel flow for each device.

The nGeniusONE platform provides the operations team a unified contextual dashboard view into all the critical service delivery elements required for delivery of premium content to be connected and assures the delivery of high-quality services for a consistent customer experience. Cable operators can scale and manage the dynamic nature and complexity of IP service delivery with rich protocol analysis.

With the nGeniusONE platform monitoring the network, operators can confidently roll out new content services on multiple connected devices, protect the user experience and sustain new subscriber acquisition while reducing churn.

### nGeniusONE Platform for Unified Service Delivery Management

The nGeniusONE platform is a highly scalable, unified performance management system that combines real-time situational awareness, historical analysis, and multi-layered analysis capabilities to enable efficient service delivery management in complex, converged services networks. The nGeniusONE platform converges network, service enabler and service performance management to deliver holistic service visibility across service tiers, end-to-end networks, and diverse user devices.

The service-oriented workflows of the nGeniusONE platform enable seamless, contextual transitioning across multiple layers of analysis, facilitating efficient hand off of incident response tasks across the different Network Operations groups.

The nGeniusONE platform streamlines service delivery management by providing layers that support data, voice and video services with multidimensional reporting and data analytics.

- Real-time Service Dashboard provides service visualization with Intelligent Early Warning for proactive service delivery management
- Network and service performance analysis provides correlated views of key performance metrics of the signaling bearer and enabler components from access, core and service networks
- Session analysis enables session-level subscriber analysis with hop-by-hop transaction analysis
- Deep-dive packet analysis enables protocol-level analysis and forensic evidence collection

Leveraging an advanced, highly scalable architecture, the nGeniusONE platform delivers powerful capabilities, including:

- Single performance management platform supporting multi-technology, multi-service networks for data, voice and video services
- Real-time correlated data plane and control plane monitoring and analysis for voice, video and data traffic
- Modern, service-oriented workflows support proactive and reactive management activities to quickly identify, triage and resolve performance incidents

### The NetScout Advantage

The nGeniusONE platform unifies multiple analysis views into a single pane of glass providing an integrated analysis architecture that simplifies and streamline performance management activities. More than 165 Service Providers in 48 countries rely on the nGenius® solution to gain greater insight to assure the performance, availability and quality of their network and services.

## NETSCOUT™

**Americas East**  
310 Littleton Road  
Westford, MA 01886-4105  
Phone: 978-614-4000  
Toll Free: 800-357-7666

**Americas West**  
178 E. Tasman Drive  
San Jose, CA 95134  
Phone: 408-571-5000

**Asia Pacific**  
17F/B  
No. 167 Tun Hwa N. Road  
Taipei 105, Taiwan  
Phone: +886 2 2717 1999

**Europe**  
One Canada Square  
29th floor, Canary Wharf  
London E14 5DY, United Kingdom  
Phone: +44 207 712 1672

NetScout offers sales, support, and services in over 32 countries.

For more information, please visit [www.netscout.com](http://www.netscout.com) or contact NetScout at 800-309-4804 or +1 978-614-4000

Copyright © 2015 NetScout Systems, Inc. All rights reserved. NetScout, nGenius, InfiniStream and Sniffer are registered trademarks, nGeniusONE and Adaptive Service Intelligence are trademarks and MasterCare is a service mark of NetScout Systems, Inc. and/or its affiliates in the United States and/or other countries. All other brands and product names, and registered and unregistered trademarks are the sole property of their respective owners. NetScout reserves the right, at its sole discretion, to make changes at any time in its technical information, specifications, and service and support programs.