Residential Broadband Services: Assuring the Triple-Play Experience

The concept of broadband services has evolved from a simple Internet service to a transport infrastructure that enables everything from traditional to cutting-edge services. For example, today's broadband service is allowing TV service to expand to multiple devices and operators are expanding service to include home security and machine-to-machine (M2M) communications.

As each new service is introduced, the complexity of the network increases. Residential and business customers have high expectations for today's broadband services – video needs to be crisp and clear, Internet data rates need to remain high, and voice must be clear. Perform poorly on any one service and customers leave for another provider, with churn costing money, time and resources.

The nGeniusONE™ Performance Management platform provides operators the end-to-end visibility of Internet Protocol (IP) applications and services. This allows cable operators to confidently deliver new services with the knowledge and insight that these services will enhance the operator's brand.

A Robust Service Assurance Infrastructure

To assure the delivery of IP services to subscribers, an operator needs a global view of the network from the core to the cable modems and end devices.

A view of the cable modem layer of the network allows an operator to see if modems from a particular vendor or a certain firmware version are having problems. Firmware mismatches between the cable modem and the network can stop a service in its tracks, and identifying a mismatch is difficult and time consuming.

The nGeniusONE platform allows a cable operator to monitor the data and control plane operations and performance at the network, service enabler, and application level. These service delivery levels are complex, dynamic, and act in unison (Figure 1).

Network

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

Service

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.

Application

At the application layer, the nGeniusONE platform provides application and usage visibility by monitoring the Real-Time Messaging Protocol (RTMP) used by Ericsson's® Mediaroom, HTTP Live Streaming protocol used for streaming video to TV, tablet and smartphone devices, and proactively alerts on errors or violations against established baselines such as response-time delays, and frozen video, or audio-only video and enables quick resolution of issues via a seamless integrated workflow to locate the root cause of the problem.
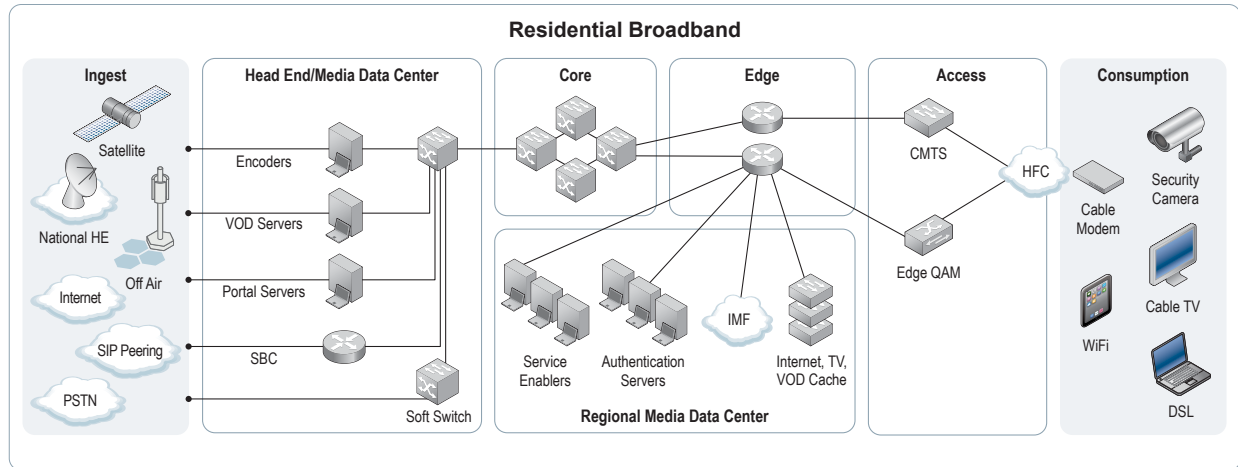
Figure 1: End-to-end view of network, service enablers and applications.

Service Assurance for Cable Networks

The nGeniusONE platform makes it easier to detect which network elements are generating the most delays and errors, highest congestions, and transactions. System users can view detailed response-time analysis on the origination and the Content Delivery Network (CDN) servers and detect anomalous application and server behavior at the portal, origin, segmentation, vault and CDN. The operations team can monitor the delivery of premium services across applications and the network with a proactive approach to prevent service-impacting performance issues.

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 services to connected devices including TVs, tablets and smartphones and assures the delivery of high-quality services for a consistent customer experience. Cable operators can now scale and manage the dynamic nature and complexity of IP service delivery with rich protocol analysis.

With the nGeniusONE platform, operators can confidently roll out new services and content over a cable or carrier WiFi infrastructure, protect the user experience and sustain new subscriber acquisition while reducing churn.

The nGeniusONE Platform for Unified Service Delivery Management

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

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