ADVANCED ANALYTICS FOR RESIDENTIAL APPLICATION ASSURANCE

LEVERAGE SUBSCRIBER APPLICATION-USAGE INTELLIGENCE WITH THE ALCATEL-LUCENT 5670 RAM

- **Inform decisions on optimizing subscriber QoS, resulting in a better user experience**
- **Deliver intelligence to help define and monetize new differentiated service offerings**
- **Employ analytics to resolve network impairments faster, leading to reduced costs**

The Alcatel-Lucent Application Assurance (AA) solution offers residential service providers the capability to develop differentiated services. These new personalized broadband services deliver a higher Quality of Experience (QoE) for subscribers and reduce the total cost of ownership for required service provider network infrastructure.

As an integral part of the solution, the Alcatel-Lucent 5670 Reporting and Analysis Manager (RAM) provides network analytics that enable service providers to better understand and characterize subscriber behavior in addition to analyzing application usage over the network. It extends subscriber service information to include per-application volume and QoE reporting and analysis. Service providers can use this information to optimize application performance, implement application usage-based billing, as well as perform application-aware fault isolation, diagnostics/forensics and capacity planning.

SOLUTION OVERVIEW

To continue to give subscribers the freedom and flexibility of on-demand, over-the-top (OTT) video services while managing broadband traffic consumption to provide a better online experience, service providers must have network analytics that provide application-level subscriber usage intelligence. This network intelligence is needed to understand how to balance customer satisfaction with the operation of profitable broadband services.

The Application Assurance solution with the 5670 RAM provides the advanced analytics needed to create optimized services with a more personalized, blended user experience. At the same time, the services create new revenue streams for service providers through application-aware network use-cases such as differentiated offerings, usage-based billing models, enhanced OTT application performance, enriched subscriber HTTP (for example, with partner content) and redirection of HTTP 404 errors to preferred content.

Reporting delivered by the 5670 RAM provides immediate value through a wide range of predefined reports. Versatile reporting options also provide flexible report authoring capabilities that ensure delivery of relevant information to different audiences. These capabilities enable efficient analysis and visualization of current patterns and historical trends.

With the 5670 RAM to classify and track subscriber application usage, service providers are able to better implement traffic policing and rate-limiting as well as gain insight into capacity planning and network/bandwidth right-sizing.

In contrast to simply adding more capacity to increase available bandwidth, network engineering teams get a better understanding of where to manage and control bandwidth-usage for peer-to-peer (P2P) traffic, OTT video, online gaming, VoIP and other popular online applications. This enables service providers to save on CAPEX investments as well as curtail OPEX associated with operating and maintaining more network infrastructure for added capacity. Network operations teams benefit from easier identification of application-level issues to help improve the subscriber experience – making customers happier and call centers quieter.

The 5670 RAM scales with demanding operational requirements to securely collect and warehouse massive volumes of fine-grain data that is intelligently aggregated as required. Northbound interfaces allow the 5670 RAM to easily fit the existing operational environment by simplifying integration with workflows, processes and OSSs/BSSs.

OPTIMIZE USE OF EXISTING NETWORK RESOURCES

Introducing new, differentiated services and maintaining customer satisfaction are critical to improving profitability. However, service providers also need to ensure the optimal use of existing network resources to reduce operational cost.

One of the key contributors to increased operational cost in today's carrier networks has been the emergence of OTT video services, which have fundamentally changed the residential services business model.

Consumer expectations for high OTT video quality are driving demands for ever-more bandwidth, which is quickly consuming capacity upgrades and service provider profits. And unlike P2P traffic, OTT video cannot be throttled, so service providers are faced with the challenge of delivering a controlled QoE for these increasingly high-bandwidth services over their existing capacity investments – and doing so without increasing their operational costs.

With network intelligence from the 5670 RAM, service providers are able to plan for the roll-out of new broadband services that are application-aware. Subscriber traffic is reprioritized for specific applications (such as OTT video) that require more continuous control of bandwidth availability. Application-aware services enable service providers to optimize bandwidth usage for all applications over their existing capacity investments without additional costs – to offer users the per-application QoE they expect.

With the 5670 RAM, service providers can also gain insight into how to tune their existing service infrastructure to optimize the network resources used and thereby reduce the operational cost of current service offerings. For example, by gaining visibility into how applications are using current network resources, they are able to understand the effectiveness of their existing capacity investment and plan for network expansions accordingly.

In addition, enhanced visibility into network-wide traffic flows for specific subscriber groups (for example, premium subscribers versus basic subscribers) or geographical regions gives service providers an improved understanding of broader usage trends, allowing for more effective capacity management. Particularly relevant to high volume OTT applications (for example, popular streaming videos), the 5670 RAM enables traffic volumes to be characterized and analyzed to evaluate local content hosting options through a Content Delivery Network (CDN) that would reduce peering-related costs.

INFORM DECISIONS TO ENABLE SERVICE REVENUE GROWTH

Whether attracting new subscribers by offering new differentiated and personalized services/service bundles or by up-selling existing subscribers with upgrades that enrich subscriber experience through enhanced partner content and applications, service providers are looking for new opportunities to grow revenue.

The Alcatel-Lucent Application Assurance solution with the 5670 RAM enables service providers to define and monetize new differentiated service offerings, increase average revenue per user and better ensure profitability by enabling application-aware, per-subscriber metering and offline billing techniques.

Personalized usage plans can be offered with tiered, per-application usage caps and QoS levels that are tailored to appeal to the demands of different subscriber types. Whether they spend the bulk of their quota working from home over remote VPN, gaming, watching OTT video or surfing the web, their service can be billed and optimized for what subscribers use most.

Service providers can also increase revenues while helping to alleviate subscriber dissatisfaction caused by usage bill shock by using 5670 RAM network analytics to plan for quota-related service upgrade offerings that would allow subscribers to upgrade their plan to a more suitable one when their current quota is below their usage needs. This could also allow a subscriber to circumvent the billing of overage fees applied against all the bandwidth consumed outside of the scope of their initial personalized usage entitlement for their plan.

In addition, service providers can use the 5670 RAM for intelligence in developing new revenue streams through OTT content providers by driving consumption of preferred partner content through redirection of HTTP 404 errors, offering enhanced OTT application performance, or zero-rating traffic so it does not apply against a subscriber's usage cap.

Application zero-rating can be an incentive subscribers "opt in" for that will ensure they are not double-charged for consuming preferred content. It also provides a value-added option for partners to zero-rate their OTT content and services at the negotiated rates, including the revenue-generating mechanism for service providers to bill partners accordingly.

ENSURE A POSITIVE SUBSCRIBER EXPERIENCE

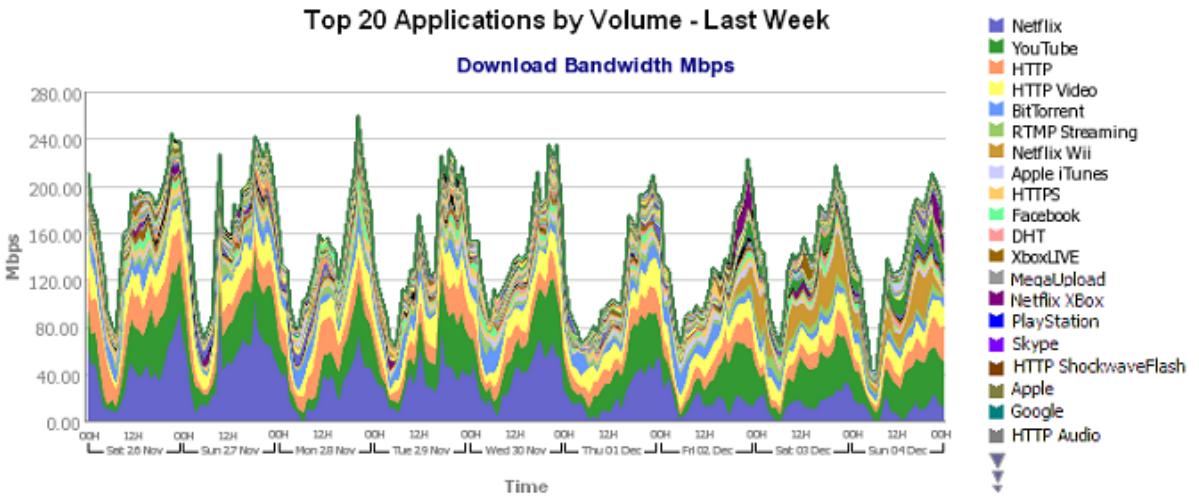
Service providers strive to increase customer loyalty and grow their subscriber base, but it is very difficult to differentiate service offerings in a highly commoditized market where lower-priced competitors are a constant threat. To escape the commoditization curve, service providers must satisfy existing customers by delivering a positive subscriber experience.

The 5670 RAM provides the application usage data required to intelligently adapt QoS policies when and where required. This allows service providers to deliver an assured user experience for personalized broadband content and to increase customer satisfaction. With improved visibility of subscriber usage patterns, service providers can offer value-added services and service bundles based on actual customer demand.

With demand for bandwidth-intensive and time-sensitive applications on the rise, it is crucial for service providers to understand exactly how subscribers are using applications in order to better assure the network – to enable a positive customer experience.

The 5670 RAM delivers superior network assurance by allowing service providers to monitor, analyze and document application usage trends and traffic flows. This allows them

Figure 1. Visibility into subscriber application usage



to detect potential issues before they become service affecting and to better conduct and document forensic analysis to report on issues.

With the 5670 RAM, network operators can investigate subscriber service degradation issues by exploring application usage across different service segments and through specific points in the IP/MPLS network (such as points tied to various access types, whether copper, fiber or Wi-Fi).

The 5670 RAM also enables application performance monitoring to help service providers ensure a better QoE to differentiate services, such as VoIP services, from competing OTT applications. For example, Mean Opinion Score (MOS) voice quality analysis through the 5670 RAM provides the monitoring needed to enable subscribers to have a better, more QoE-assured VoIP service over the network than they receive from OTT VoIP providers.

In addition, in some geographic regions, service providers look for an alternative for managing P2P traffic that subscribers will view in a more positive light than traffic throttling. With an Alcatel-Lucent Application Assured network, the 5670 RAM can be used to provide "fair-share" analysis and reporting to enable a more positive approach to bandwidth access by giving a better understanding of how to reprioritize subscriber traffic in a more "net-neutral" way.

FLEXIBILITY AND EFFICIENCY TO SCALE OPERATIONS

The network-centric Alcatel-Lucent approach to application assurance helps service providers minimize investments in new hardware and software, giving them the flexibility and efficiency needed to better scale operations. The 5670 RAM follows this approach through a highly flexible and scalable architecture. It enables service providers to scale operations by providing an intelligent aggregation engine that enables collection and warehousing of massive amounts of data.

The 5670 RAM also leverages the service provider's existing Alcatel-Lucent 5620 Service Aware Manager (SAM) deployment to increase operational efficiency by improving fault isolation, troubleshooting, diagnostics/forensics and capacity planning. For example, 5670 RAM extends the service-aware management information from the 5620 SAM on Ethernet- and IP/MPLS-based services to include per-application volume and subscriber QoE analysis. With the 5670 RAM, traffic flows can be examined across various service segments and through specific points in the network.

In addition, tight integration of the 5670 RAM with the 5620 SAM enables dynamic inventory tracking, which provides uninterrupted reporting without manual intervention. Traditional reporting suites do not have this capability.

THE ALCATEL-LUCENT ADVANTAGE

Alcatel-Lucent's comprehensive portfolio of service-aware management applications gives service providers the flexibility and control to implement the lean and scalable processes required to maximize operational efficiency.

The 5670 RAM is an integral part of the Alcatel-Lucent Application Assurance solution for residential, mobile and converged subscriber services. It offers visibility to identify, classify and analyze applications, enabling service providers and their customers to explore usage trends as well as to provide insight into improving application performance and optimizing QoS.

By using the 5670 RAM to collect, warehouse, aggregate and analyze application usage and traffic flows, service providers are able to better understand network usage and to make informed decisions. Many service providers worldwide have already deployed the Alcatel-Lucent Application Assurance solution with the 5670 RAM to ensure a positive user experience, sustained revenue growth and the operational flexibility to contain costs.

LEARN MORE

Visit the Alcatel-Lucent website for more information on the 5670 RAM:
www.alcatel-lucent.com/5670ram

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