DELIVERING APPLICATION ANALYTICS FOR AN APPLICATION FLUENT NETWORK

Alcatel·Lucent
Enterprise

INTRODUCTION

Managing and designing an enterprise network is becoming more complex. Delivering real-time applications is a top priority for business managers today, while the number of applications used in the enterprises is growing. Because of these next-generation applications, the level of performance required from the corporate network is far beyond the needs of the typical enterprise application in terms of throughput and latency. The existing business critical applications then require bandwidth with higher quality of service to run the business.

The volume of traffic on wired and wireless enterprise networks is rapidly increasing, adding to the tasks of the already burdened IT administrator. Mobility and virtualization add an unprecedented level of complexity, because the network is no longer statically provisioned with well-known workloads. Traditionally, the enterprise network has played a limited role in optimizing application delivery: It has simply transported raw information from place to place without regard to the application's individual requirements. In this environment, architects have designed the network with enough raw bandwidth to meet peak application delivery requirements. This approach — known as over-provisioning — has provided an adequate user experience, but it is clearly a costly model for network design. At the same time, the enterprise networking budget is also being stretched to handle the additional network requirements.

Enterprise networking staff faces constant challenges in network operation. These challenges are magnified by trends within the enterprise network:

1. Steadily or rapidly increasing volume of traffic on wired and wireless enterprise networks.
2. Increasing number and variety of applications with different network requirements for traffic priority, latency and security. Many of the new applications are difficult to identify because they use the same HTTP protocols and port numbers.
3. Additional complexity caused by end users and Bring Your Own Device (BYOD) policies. With BYOD, the network must cope with a growing mix of mission-critical and less critical or recreational traffic.
4. As one of today's trends is to move towards a hybrid cloud model, networks need to distinguish between mission-critical and non-critical applications beyond just HTTP traffic and provide the right level of resources. However, dedicated analysis tools and appliances are an investment burden.

To truly understand the application behavior, application monitoring and the enforcement of applications in the network infrastructure are important instruments for IT to get the visibility and control required. These controls are needed in the networking equipment to efficiently apply policies aligned with business goals to simplify operations.

ANALYTICS

Network analytics enables organizations to optimize their IT network infrastructure and operations to focus on their key business goals. Optimizing IT administration and network operations help reduce costs, both Capital Expenditure (CAPEX) and Operational Expenditure (OPEX), allowing organizations to drive their business needs more efficiently.

The network analytics market has witnessed accelerated growth during the last two years due to the technological advancements in cloud computing, big data, and mobility services. Rapidly growing demand for cloud services, data center services, and network services with reliable and efficient integration is contributing to the growth. To help adopt these changes, companies are using network analytics because it is less costly and more efficient than traditional services.

The Alcatel-Lucent OmniSwitch® switches and the Alcatel-Lucent OmniVista® 2500 unified management system address these challenges. The OmniVista 2500 network analytics tool provides a wide range of in-depth network information that gives IT an understanding of how the network is being used and helps fine-tune its operation to provide an enhanced user experience, as well as drive network efficiency and ultimately business decisions. The OmniSwitch 6860 family of switches has built-in features at the edge of the network to identify network applications without the extra cost of dedicated appliances or analysis tools. These switches can then apply policies based on applications, including enforcing traffic priorities for business-critical applications as well as bandwidth limits enhancing the user experience without proliferating unwanted applications into the network.

OMNISWITCH 6860

The OmniSwitch 6860 family consists of compact, high-density Gigabit Ethernet (GigE) platforms designed for the most demanding unified wired/wireless networks.

The OmniSwitch 6860 family offers network administrators a comprehensive view of the applications running on the edge of the network with the ability to monitor and prioritize applications. These features go beyond the traditional Layer 2 and Layer 3 address matching and use deep packet inspection (DPI) to examine Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) payload data. The OmniSwitch 6860 family has dedicated hardware that enables the application recognition engine to easily classify and handle real-time network traffic flows at the application level. The switching equipment can then apply network policies, including QoS and bandwidth controls, based on the application type. This improves the user experience, but at the same time maintains the higher priority of mission-critical traffic, allowing the business to run efficiently. The OmniSwitch 6860 family has the capability to apply different QoS policies based on the type of user profile, providing the flexibility required to manage a complex network.

The OmniSwitch 6860 family has an application recognition engine that matches network traffic against more than 2000 application signatures in real time and differentiates between multiple applications that use common HTTP and other port addresses. For example, this capability can be used to apply policies to key business-critical applications like desktop virtualization using Citrix® ICA® HDX™ protocols and company communications applications using Session Initiation Protocol (SIP).

Network users are constantly adding new applications to the network, and current applications continue to evolve. Alcatel-Lucent Enterprise solutions maintain large and up-to-date application signatures which can be updated without network interruption.

Figure 1: OmniSwitch with DPI identifies network traffic and applies policies based on application signatures
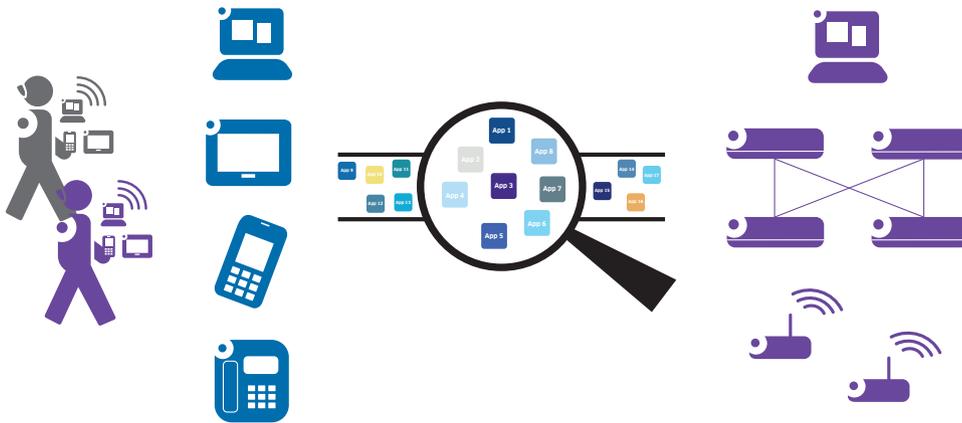
WIRELESS NETWORKS

Today's networks need application visibility and analytics across multiple users, multiple device types as well as across wired and wireless networks. Alcatel-Lucent Enterprise solutions provide the same advanced functionality for application visibility monitoring and control across the whole network, wired and wireless. The Alcatel-Lucent OmniAccess® wireless controller has built-in intelligence to identify many new types of applications such as mobile applications, network services like Apple® AirPrint™ and AirPlay®, web-based applications, and encrypted applications. It supports the growing number of wireless users and devices at the edge, along with deep packet inspection to achieve the same application monitoring and control as on the wired network. The network intelligence is extended to include powerful heuristics and visualization techniques to simplify application handling and reduce costs.

A single solution for both wired and wireless users across multiple device types makes the deployment easy and reduces the cost of operations.

OMNIVISTA 2500

The OmniVista 2500 unified management system has a network-wide view across wired and wireless devices, which makes it possible to control the latest application signature sets with application analytics. This simplifies IT operations and reduces costs by optimizing the network. OmniVista 2500 downloads and installs updated applications signatures to identify new and evolving network applications, which simplifies management while reducing operational expenses.

It also provides graphical views of historical and real-time data for advanced visualization of the application traffic in the OmniSwitch 6860 family. The OmniVista 2500 unified management system can provide graphical views for, for example, network utilization, top users, and top virtual machines across the whole network, as well as generate reports to drive business decisions. The network analytics tool also includes a dashboard to display key network indicators for a quick view of network operations and quick troubleshooting, all reducing the IT administrator burden and the costs of maintaining the network.

Figure 2: The OmniVista dashboard has customizable key network indicators for quick monitoring, identification and resolution of network-wide analytics
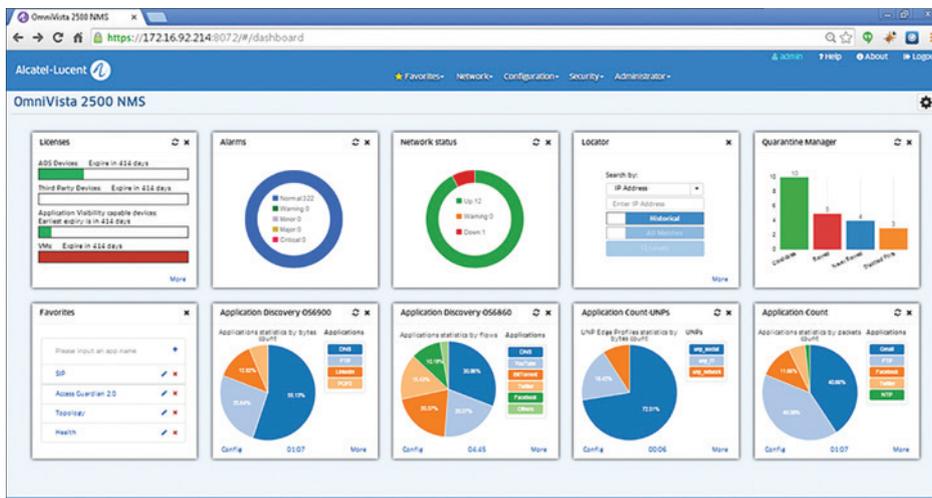
SUMMARY

The Alcatel-Lucent OmniSwitch 6860 family of Stackable LAN Switches, OmniAccess Wireless LAN Controller and OmniVista 2500 provide the IT administrator with tools for the continuous monitoring of the network to keep up with evolving network needs, providing the means to fine-tune the network for optimal operations and cost efficiencies. The built-in tools of the OmniSwitch 6860 family of Stackable LAN Switches help businesses identify network applications and efficiently manage growing network complexity without the expense of dedicated analysis tools and appliances. The OmniVista 2500 unified management system provides a scalable real-time application management platform that is unique to the industry with its real-time and historical views on a full range of analytics for the whole network.

To learn more, visit OmniSwitch 6860 and OmniVista 2500 on the web.

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