ALCATEL-LUCENT ENTERPRISE CONVERGED NETWORK SOLUTION
DELIVER A QUALITY USER EXPERIENCE, STREAMLINE OPERATIONS AND REDUCE COSTS

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Enterprise

THE NEW CHALLENGES IN DELIVERING A HIGH-QUALITY USER EXPERIENCE

Three key trends are driving new network demands and complexity: the need to deliver mission-critical real-time applications, the support of next-generation devices, and virtualization.

The rapid growth and importance of real-time applications, such as VoIP, video and collaboration suites, push legacy networks to their limit with ever-increasing demands for bandwidth and overall enhanced quality of service.

Many new devices such as smart phones, IP cameras, smart boards and feature-rich next-generation IP phones demand additional bandwidth and sometimes have power requirements that are above the limits of today's networks. Many employees are demanding to use their own devices, such as smart phones and tablets, needing to connect to corporate network. This increases the security risks and makes it difficult for network managers to predict bandwidth consumption, rendering the standard practice of static provisioning of bandwidth priority ineffective. Since IT can no longer control the endpoint, any tuning to improve application delivery now must be done in the network and preferably in an automatic fashion.

Virtualization is no longer confined to the data center. Today virtualization occurs throughout the network, all the way down to the desktop. With virtualized desktops, computing is carried out in the data center rather than at the desktop, with a traffic stream for display information which is sensitive to delays and network interruptions.

It is imperative to have a converged network architected from the ground up to effectively meet the demands of new applications, devices and virtualization. Now is the time for enterprises to re-think their strategy with the move to a 10Gig network core. They must adopt a network with a simplified architecture that optimizes resource utilization and simplifies the overall management, instead of adding another layer of complexity.
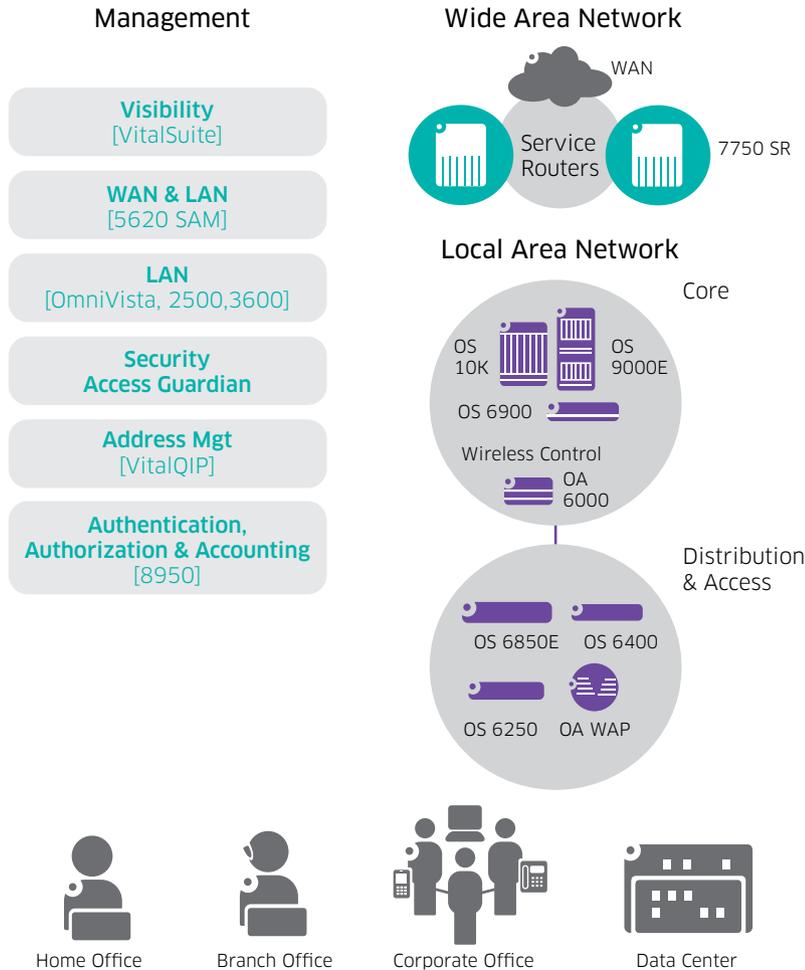
THE ALCATEL-LUCENT APPLICATION FLUENT CONVERGED NETWORK

To answer this challenge, Alcatel-Lucent Enterprise brings its application fluent network approach to the converged network. Our vision of an application fluent network is based upon a resilient architecture with streamlined operations that reduce network complexity and automatic control with dynamic tuning of network performance. This application fluent network possesses broad knowledge of both network devices and the applications to which they are connecting. Most importantly, it understands the context of the conversation between device and application — and makes decisions based on that understanding.
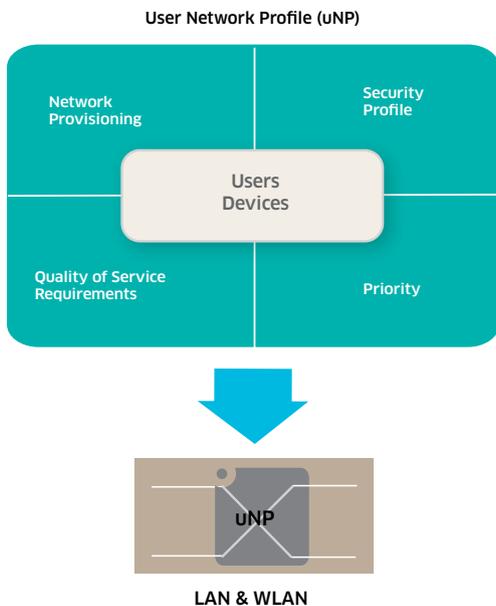
A Complete Solution for the Converged Network

The Alcatel-Lucent Enterprise Application Fluent Converged Network Solution includes a wire-rate 10G network core with Alcatel-Lucent's market-leading OmniSwitch 6900 and the OmniSwitch 10K Modular LAN Chassis as well as a complete set of stackable access switches like the OmniSwitch 6850E, OmniSwitch 6400 and OmniSwitch 6250, a variety of wireless access points and a comprehensive management stack to deliver:

Management

- **Visibility** [VitalSuite]
- **WAN & LAN** [5620 SAM]
- **LAN** [OmniVista, 2500,3600]
- **Security** Access Guardian
- **Address Mgt** [VitalQIP]
- **Authentication, Authorization & Accounting** [8950]

Wide Area Network

WAN

Service Routers — 7750 SR

Local Area Network

Core
- OS 10K
- OS 9000E
- OS 6900
- Wireless Control OA 6000

Distribution & Access
- OS 6850E
- OS 6400
- OS 6250
- OA WAP

Home Office — Branch Office — Corporate Office — Data Center

- A simplified network with wire-rate 10G core
- Network virtualization for reduced equipment and streamlined operations
- A resilient network that does not impact real-time application performance in case of failure
- Embedded security for protecting users and securing new devices
- Conversations managed in context with uNP for a high-quality user experience
- Automated provisioning of access switches and endpoints
- Low power consumption

The Alcatel-Lucent converged network solution supports open standards and interfaces to deliver quality bandwidth with a significant reduction in network complexity. Standards-based equipment ensures interoperability and future expandability.

User Network Profile (uNP)

Network Provisioning	Security Profile
	Users Devices
Quality of Service Requirements	Priority

uNP

LAN & WLAN

The Alcatel-Lucent User Network Profile

Unique to Alcatel-Lucent Enterprise and embedded in the access layer switches is the ability to manage conversations in context with the Alcatel-Lucent User Network Profile (uNP).

Figure 2 shows the uNP conceptually where the user and devices are surrounded by the information required to manage them.

The uNP enables the network to automatically adjust its configuration depending on the movement of users and devices in the network, instead of the traditional approach of static configuration based on switch ports.

uNP:

- Minimizes IT effort by eliminating the need to manually reconfigure the network when devices are moved around
- Improves application delivery performance for user mobility: fine tunes the network so the users have the same experience wherever they are connected
- Provides consistent security throughout the network

A Simplified and Resilient Architecture

The converged network solution offers new architecture that is simplified and flattened with just two layers instead of the traditional three-layer architecture. In many cases, it is possible to eliminate the need for a distribution layer due to the introduction of new-generation wire-rate 10GigE core switches, led by the OmniSwitch 6900 and OmniSwitch 10K, with marketing-leading port density and switching capacity.

Virtualization is also important to achieving a flattened and simplified architecture since it removes the inefficiencies of a spanning tree protocol and enables the network to keep all links active and fully utilize all resources available. The traditional methods would disable all redundant links and only use them in the event of the main link or switch failures.

The Alcatel-Lucent Application Fluent Network provides simple and resilient architecture. It uses less equipment, increases efficiency and also provides industry-leading re-convergence time in case of equipment failure without impacting the experience with real-time applications, like voice and video.

Leading Performance, Future-Proof Core

Video traffic is predicted to account for 54% of corporate bandwidth by 2016, according to the Yankee Group. The modern corporation needs a network that is able to sustain the current multimedia challenges and also has the capability to support future demands, such as the expected increase in adoption of video.

The Alcatel-Lucent solution is based on a new generation of wire-rate 10GigE core switches providing unparalleled port density and switching capacity. The OmniSwitch 10K modular chassis support up to 256 x 10GigE wire-speed ports and a total 5.12 Tbps switching capacity, while the OmniSwitch 6900 fixed chassis support up to 64 x 10GigE wire-speed ports and a total 1.28 Tbps switching capacity in a compact 1U form factor.

These core switches reduce the need for oversubscription to meet the demands of today's real-time applications and is prepared to support your future needs. The hardware is ready to support 40GigE and 100 GigE interfaces, which can be added with expansion interface modules.

Seamless Connectivity on Wired or Wireless Access

Companies need to stay competitive and show differentiation. It is imperative that employees are empowered with applications and devices that allow them to share knowledge and remain connected with their peers and customers all the time wherever they are.

With an Alcatel-Lucent Converged Network Solution, employees can fully exploit the benefits of mobility and new applications. Users can experience the same level of high-quality application delivery whether they are using a wired or wireless connection. New 802.11n access points support the increased speeds needed for real-time applications. Additionally Alcatel-Lucent's solution is capable of understanding voice and video flows and adjusting the wireless operation to prioritize this traffic and avoid any service interruption; this also includes special technology to optimize video streaming delivery.

Embedded Security

A quality user experience can only be provided if the network is always running and the information is protected. Security is a fundamental component in the corporate network architecture.

More than ever before, security needs to be built in from the ground up and apply universally across all methods of access for the network: wired or wireless. This leads to reduced complexity with enhanced security.

Network edge security services provided with Alcatel-Lucent's solution are applied on each device rather than a switch port and use ACL's for post admission controls. This includes an edge security framework with automatic endpoint authentication and profile assignment (uNP), dynamic user authentication and profile assignment (uNP), automatic host integrity check with network quarantine, rogue device detection and isolation, role-based post admission controls and traffic anomaly detection.

Converged Management

IT departments are under unprecedented stress. Not only do they need to support innovative new devices and applications, but also are asked to increase quality and reduce costs. In order to achieve this objective, it is necessary to streamline operations via automated provisioning and a powerful and unified management system.

Alcatel-Lucent leverages its extensive experience managing carrier networks to provide end-to-end network and application visibility, as well as carrier-class trouble shooting tools. OmniVista provides a common network management experience for network access and core, meeting the requirements to easily manage corporate, branch and home office sites for both wired and wireless users. OmniVista also includes integrated security management for consistent application of security across the corporation. Additionally, Alcatel-Lucent VitalSuite provides end-to-end application performance visibility; VitalQIP provides IP address management and the 8950 AAA provides Authentication, Authorization and Accounting.

ENJOY THE ADVANTAGES OF AN APPLICATION FLUENT CONVERGED NETWORK

Deliver a high-quality user experience

Alcatel-Lucent Application Fluent Network vision delivers an enhanced user experience with:

- Unique, dynamic tuning of network performance for real-time application delivery ensures a high-quality user experience.
- Market-leading resiliency provides the ability to recover from switch and link faults without impacting real time applications such as voice and video.

Streamline your IT operations

- Embedded security at the edge increases user, device and corporate security without the operational complexity associated with many security systems.
- Automated provisioning of edge switches and endpoints and integrated carrier-class troubleshooting tools minimize IT time to support network.
- Simplified management and maintenance frees the IT staff from the daily struggle to ensure application performance for users.

Reduce network infrastructure costs

- Flatter network with better use of switch and network links due to network virtualization requires less equipment, reducing capital costs.
- Market-leading low power consumption reduces operational costs.
- Streamlined operations reduce operational costs.

Protect your Investment

- Equipment shipped today already supports IPV6 and is ready to support technologies including 40GigE and 100GigE, enabling future growth without swapping out hardware.
- TCO of competitors' solution can be as high as 40% more than Alcatel-Lucent Converged Network Solution

A better converged network

Only Alcatel-Lucent Enterprise offers an application fluent converged network. It delivers a simplified, virtualized network with industry-leading wire-rate switching capacity and port density, enabling enterprises to create new operational efficiencies, cost savings and a consistent, high-quality user experience across all applications.

It not only offers innovation to meet today's challenges, but also the capacity to support the enterprise in the next 5 to 7 years, including the ability to gradually add 40GigE, a sustainable deployment that anticipates the convergence of wired and wireless into a single layer and the technologies to transition to cloud computing maintaining the same hardware that supports the current needs.

These Alcatel-Lucent benefits provide the best ROI in the industry topped with a sustainable solution for the years to come.

You can enjoy the benefits of the Alcatel-Lucent Application Fluent Converged Network Solution NOW. To learn more, visit http://enterprise.alcatel-lucent.com/?solution = Net workInfrastructure&page = homepage.

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