ENTERPRISE NETWORKING GUIDE

A comprehensive offer by Alcatel-Lucent Enterprise

Alcatel-Lucent Enterprise provides exceptional value in highly available, secure and easy-to manage IP networks with a comprehensive, standards-based product portfolio.

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This product guide contains an overview of network infrastructure, management and security products.

These products were conceived and designed according to the Alcatel- Lucent Application Fluent Network Vision.

THE PRODUCTS ARE THE BUILDING BLOCKS FOR THESE SOLUTIONS:

Converged wired and wireless area networks

For small- and medium-sized businesses (SMBs) as well as medium- and large-sized enterprises

Data center switching

For both compact and large data centers

THE NETWORK INFRASTRUCTURE PRODUCT LINE

Manageable layer 2/layer 3 LAN switches, both stackable and chassis-based, supporting power over ethernet (PoE) and interface speeds from 100 Mb/s up to 40 Gb/s for of!ce, campus and data center networks.

A highly scalable, wireless LAN (WLAN) solution that supports the latest high-speed (IEEE 802.1n) access for small, medium and large networks, as well as unique remote worker features Enterprise services routers enabling WAN access while providing a wealth of services from a single box.

Multi-Protocol label switching (MPLS) switches for private WANs and data center interconnect, supporting standardized Virtual Private LAN services (VPLS) technology (invented by Alcatel-Lucent), providing virtualization of networks without the overhead of complicated routing protocols.

Wavelength multiplexers switches for data center interconnect, supporting very high bandwidth to multiplex both Ethernet LANs and !ber channel storage networks in a very resilient way.

THE MANAGEMENT PRODUCT LINE

- Network and network element management systems
- Data center fabric management system
- IP Address management (IPAM) system
- Consolidated service level and performance management system

THE SECURITY & BYOD SERVICES PRODUCT LINE

- Embedded network security
- Secure on-boarding, device management, guest access and full suite of BYOD services

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HOW TO BUY

If you've got questions about your company's needs or want to find your nearest Business Partners or get support for our products, you can **submit a simple sales inquiry** form with your details and an Alcatel-Lucent representative will get back to you within five working days. Or alternatively, you can find an Alcatel-Lucent Enterprise reseller in your area by use the partners locator tool on the right.

FIND A PARTNER

Alcatel-Lucent Enterprise solutions are sold by a powerful worldwide network of Business Partners. Providing best-in-class consulting, services and support for enterprises, Alcatel-Lucent Business Partners help you thrive in today's competitive market.

Our business partner locator tools are designed to help you identify the partner(s) that best meet your needs and provide support in your region.

Business Partner Locator -- Worldwide

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TABLE OF CONTENTS

Alcatel·Lucent Enterprise

TABLE OF CONTENTS

CONTINUED

Alcatel·Lucent Enterprise

OmniSwitch™ 6860 Stackable LAN Switch

Alcatel-Lucent OmniSwitch™ 6860 Stackable LAN Switches (SLS) are compact, high-density Gigabit Ethernet (GigE) and 10 GigE platforms designed for the most demanding converged networks.

LAN STACKABLE LAN SWITCH

OVERVIEW

In addition to high performance and availability, the OS6860(E) offers enhanced quality of service (QoS), user authentication, deep packet inspection (DPI), and comprehensive security features to secure the network edge while accommodating user and device mobility with a high degree of integration between the wired and wireless LAN.

The enhanced models of the OmniSwitch 6860 family also supports emerging services such as application fingerprinting for network analytics and up to 60 watts of Power over Ethernet (PoE) per port, making it ready to meet the evolving business needs of enterprise networks.

These versatile LAN switches can be positioned:

At the edge of mid- to large-sized converged enterprise networks

At the aggregation layer

In a small enterprise network core

In the data center for GigE server connectivity and SDN applications

KEY BENEFITS

- With the variety of interfaces and models, the OmniSwitch 6860 family meets any customer configuration needs and offers excellent investment protection and flexibility
- The OmniSwitch 6860 Virtual Chassis increases system redundancy, resiliency, and high availability while simplifying deployment, operations and management of the network
- With advanced PoE capabilities and high density of PoE ports, the OS6860 is ideal for converged campus deployments. It offers deployment flexibility, simplifing the wiring and reducing the time to deploy a variety of edge devices
- The OS6860 application monitoring capability provides network administrators with a comprehensive viewof the applications running in the network, enabling optimization and control of network performance
- With its advanced capabilities, the OS6860 shows outstanding performance when supporting real-time voice, data, and video applications
- OS6860E offers flexible deployment options and enables the network for BYOD deployments and zero-touch guest management
- OS6860E supports SDN for fast deployment of new network services
- Future proofs enterprise investment and enables interoperability with third party solutions

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KEY FEATURES

VERSATILE FEATURES AND MODELS OFFERING HIGH DENSITY GIGABIT AND 10 GIGABIT INTERFACES

Up to 8 switches can be connected using Virtual Chassis technology to create a single chassis-like entity with up to 32 10Gigabit uplinks and 384 Gigabit ports

IEEE 802.3AF AND 802.3AT COMPLIANT POE OF 30 W PER PORT ON ALL PORTS

The enhanced models of OS6860 family support up to 60W of PoE per port on 4 ports

HARDWARE-ACCELERATED DEEP PACKET INSPECTION (DPI) AVAILABLE ON ALL MODELS

Application monitoring and fingerprinting is available on the enhanced models

OMNISWITCH 6860 IS SDN READY

Supporting programmable AOS RESTful APIs, OpenFlow and OpenStack allows the creation of specialized services

ADVANCED UNIFIED ACCESS AND COMPREHENSIVE AND SECURE BYOD SERVICES

- Integrated Policy with dynamic User Network Profiles
- Extensive security features for network access control (NAC), policy enforcement and attack containment
- SIP Fluency to provision and monitor QOS treatment of SIP flows
- Airgroup™ Network Services for Bonjour speaking devices
- Advanced guest management capabilities
- Device on-boarding and automated 802.1x provisioning
- Device posture/health check and fingerprinting
- Application management

TECHNICAL INFORMATION

Chassis models	Gigabit ports	1G/10G SFP+ Ports	20G QSFP+ Virtual Chassis Ports	USB	PoE power budget	Power supply AC/DC	Height rack units
Basic Models							
OmniSwitch 6860-24	24	4	2	1	NA	AC or DC	1
OmniSwitch 6860-P24	24 PoE	4	2	1	240 W	AC	1
OmniSwitch 6860-48	48	4	2	1	NA	AC or DC	1
OmniSwitch 6860-P48	48 PoE	4	2	1	240 W	AC	1
Enhanced Models							
OmniSwitch 6860E-24	24	4	2	1	NA	AC or DC	1
OmniSwitch 6860E-P24	24 PoE	4	2	1	240 W	AC	1
OmniSwitch 6860E-48	48	4	2	1	NA	AC or DC	1
OmniSwitch 6860E-P48	48 PoE	4	2	1	240 W	AC	1
OmniSwitch 6860E-U28	28 SFP	4	2	1	NA	AC or DC	1

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OmniSwitch 6850E

LAN STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6850E Stackable LAN Switch's 10GigE outstanding performance supports real-time voice, data, and video applications. It is the most versatile switch ideal for small network core or converged network edge or in the data center.

OVERVIEW

The Alcatel-Lucent OmniSwitch 6850E Stackable LAN Switch (SLS) family offers versatile, fixed configuration Layer 3 gigabit and 10GigE switches, which provide advanced services, high performance, and IEEE 802.3at-compliant PoE. All models in the family are stackable and perform wire-rate, gigabit switching and routing for both IPv4 and IPv6, delivering intelligent services to the edge of the network with optimal QoS and integrated security as well as network admission control (NAC).

These versatile LAN switches can be positioned at the edge of mid to large size converged enterprise networks, at the aggregation layer, and in a small enterprise core. They are also suitable as advanced CPE for the Ethernet access for metro and managed services.

KEY BENEFITS

- With the variety of interfaces and models, the OmniSwitch 6850 family meets any customer configuration need and offers excellent investment protection and flexibility, as well as ease of deployment, operation and maintenance
- Outstanding performance when supporting real-time voice, data, and video applications for converged scalable networks
- The low power consumption and the efficient power management of OmniSwitch 6850E reduces OPEX and lowers TCO
- By supporting long reach multimode (LRM) SFP+ optical interface, the OmniSwitch 6850E allows customers to reuse their existing multimode fiber (MMF) installations to cost effectively upgrade from 1G to 10G
- Ensures that the new devices such as CCTV cameras, WLAN access points, and full featured desktop sets can be supported
- Fully secures the network at the edge, at no additional cost
- Enterprise-wide cost reduction through hardware consolidation to achieve network segmentation and security without additional hardware installation
- Automated switch setup and configuration, and end-to-end VLAN provisioning support cost-effective installation and deployment
- Simplifies Metro Ethernet network OA&M for service providers
- Supports application fluency for multimedia traffic with automated controls for providing differentiated service levels for different traffic types thus reducing operational complexity and costs

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KEY FEATURES

KEY FEATURES

- Versatile features and models offering gigabit and up to four 10G interfaces
- IEEE 802.3af and 802.3at-compliant capable of delivering up to 30 W PoE per port
- Optional 10G plug-in module delivers additional two 10G ports that can be used as uplinks or for remote stacking
- Wire-rate performance for switching and routing at 10G and gigabit speeds
- Low power consumption and smart PoE allocation
- Redundancy at all levels including power supplies, software and hot swappable SFP modules
- Advanced services are incorporated in the OS: QoS, access control lists (ACLs), L2/L3, VLAN stacking, and IPv6
- Extensive security features for network access control (NAC), policy enforcement and attack containment
- Hardware-based VRF support
- Advanced, out-of-the-box auto-configuration, Link Layer Discovery Protocol (LLDP) network policies and dynamic VLAN allocation
- Ready for Metro Ethernet access: VLAN stacking, multicast switching, Dynamic Host Configuration Protocol (DHCP) snooping/option 82, ITU-T Y.1731, IEEE 802.1ag, IEEE 802.3ah and MAC-forced Forwarding
- Application fluency for multimedia traffic: Dynamic QoS treatment and monitoring on SIP-based conversations on the network. The switch also records real-time conversation quality information concerning packet loss, delay, jitter, MOS score, and R-factor.

TECHNICAL INFORMATION

Chassis models	GigE RJ-45 ports	GigE PoE+ ports	GigE SFP ports	GigE combo ports	10GigE SFP+ ports	10G stack ports*	Network module slots	PoE power budget	Power supply AC/DC	Optional backup PSU	Height rack units
Standard models											
OmniSwitch 6850E-24	20	0	0	4	0	2	1	NA	AC	AC or DC	1
OmniSwitch 6850E-24X	20	0	0	4	2	2	1	NA	AC	AC or DC	1
OmniSwitch 6850E-48	44	0	0	4	0	2	1	NA	AC	AC or DC	1
OmniSwitch 6850E-48X	46	0	0	2	2	2	1	NA	AC	AC or DC	1
OmniSwitch 6850E-24D	20	0	0	4	0	2	1	NA	DC	AC or DC	1
OmniSwitch 6850E-24XD	20	0	0	4	2	2	1	NA	DC	AC or DC	1
OmniSwitch 6850E-48D	44	0	0	4	0	2	1	NA	DC	AC or DC	1
OmniSwitch 6850E-48XD	46	0	0	2	2	2	1	NA	DC	AC or DC	1
Power over Ethernet+ models											
OmniSwitch 6850E-P24	0	20	0	4***	0	2	1	240 W	AC	AC	1
OmniSwitch 6850E-P24X	0	20	0	4***	2	2	1	240 W	AC	AC	1
OmniSwitch 6850E-P48	0	44	0	4***	0	2	1	240 W	AC	AC	1
OmniSwitch 6850E-P48X	0	46	0	2***	2	2	1	240 W	AC	AC	1
OmniSwitch 6850E-P24H	0	20	0	4***	0	2	1	390 W	AC	AC	1
OmniSwitch 6850E-P24XH	0	20	0	4***	2	2	1	390 W	AC	AC	1
OmniSwitch 6850EP24T	0	20	0	4***	0	2	1	780 W	AC	AC	1
OmniSwitch 6850EP24XT	0	20	0	4***	2	2	1	780 W	AC	AC	1
OmniSwitch 6850E-P48H	0	48	0	4***	0	2	1	780 W	AC	AC	1
OmniSwitch 6850E-P48XH	0	48	0	2***	2	2	1	780 W	AC	AC	1
Fiber optic models											
OmniSwitch 6850E-U24X	0	0	22**	2	2	2	1	NA	AC	AC or DC	1
OmniSwitch 6850E-U24XD	0	0	22**	2	2	2	1	NA	DC	AC or DC	1
Network Interface modules											
OS6-XNI-U2	0	0	0	0	2	0	NA	NA	NA	NA	NA

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OmniSwitch 6900

LAN STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6900 Stackable LAN family consists of compact, high-density 10 Gigabit Ethernet (GigE) and 40GigE switches designed for the most demanding networks. They offer unmatched versatility to deliver on the promise of the next-generation virtualized data center.

OVERVIEW

The Alcatel-Lucent OmniSwitch 6900 Stackable LAN family consists of compact, high-density 10GigE and 40GigE switches designed for the most demanding networks. They offer unmatched versatility to deliver on the promise of the next-generation virtualized data center. Because of their modularity these switches accommodate the exact rack configuration and lowest oversubscription ratio required by the application flows in the data center.

In addition to its high performance and extremely low latency, the OmniSwitch 6900 family offers extensive QoS, Layer 2 and Layer 3 switching, as well as system- and network-level resiliency.

These high-port density 10GigE LAN switches are also effectively positioned at the aggregation and core layer of a converged campus network.

KEY BENEFITS

- Up to 1.28 Tb/s of wire-rate capacity, sub-microsecond latency for high-performance server and core connectivity. Outstanding performance when supporting real-time voice, data, and video applications for converged scalable networks
- Offers excellent investment protection and flexibility by supporting a variety of expansion modules used to increase the number of 10GigE port density or add 40GigE ports as needed. Ensures efficient power management, reduces operating expenses and lowers TCO through low power consumption
- Unifies physical and virtual infrastructures providing network operators with a comprehensive end-to-end network view for VM inventory, location tracking, event and log auditing and provisioning operations. This enables error-free network administration operations and simplifies the deployment of new services.
- Comprehensive and flexible fabric architecture designed to automate and simplify the end-to-end deployment of campus, data center, cloud-based services while preventing host address explosion and flooding with built-in SLA service support at low capital and operating costs
- The OmniSwitch virtual chassis increases system redundancy and resiliency by providing maximum uptime and high availability in the network. Optimizes/simplifies Layer 2 and Layer 3 network designs and reduces administration overhead while increasing network capacity with resilient multipath active-active dual homing multi-chassis support. Works with any Ethernet device that supports standard IEEE 802.3ad (LACP) or static LAG to provide interoperability, investment protection, and flexibility
- Extends the lossless capability beyond Fiber Channel over Ethernet (FCoE) to any traffic type in many class of service (CoS) queues simultaneously in the same port. Allows the administrator to have a hands-off operation using application-based dynamic lossless configuration using Enhanced Transmission Selection (ETS) or manually engineered to fit the application needs

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KEY FEATURES

KEY FEATURES

- High 10GigE port density in 1 RU form factor that offers up to 64 10GigE SFP+ ports
- Flexible modular design supporting up to two extension modules to provide maximum of six 40GigE quad small form factor pluggable (QSFP+) ports
- Wire-rate, non-blocking at 640 Gb/s bidirectional
- GigE and 10GigE on all ports of the system for smooth gigabit to 10GigE transition
- Redundant hardware system architecture. Internal, hot swappable power supplies, fans. Front-to-back and back-to-front cooling
- Class-leading low power consumption per 10GigE port
- Wire-rate processing for simultaneous Layer 2/IPv4/IPv6 traffic (unicast and multicast) and Layer 3 routing at gigabit and 10GigE speeds
- Built-in, shared packet buffer, dynamically allocated to handle burst traffic without packet drops
- Advanced services incorporated in the operating system: QoS, access control lists (ACLs), Layer 2 and Layer 3, VLAN stacking and IPv6
- Scalable network virtualization architecture for guaranteed SLA delivery over standard Ethernet fabric: Edge Virtual Bridging (EVB), Shortest Path Bridging (SPB), and dynamic Virtual Network Profiles (VNPs)
- Unified virtual chassis, simplified management, Multi-Chassis Link Aggregation (MC-LAG), hardware-based virtual routing and forwarding (VRF) support
- Data center bridging (DCB) support: Lossless Ethernet for all traffic

TECHNICAL INFORMATION

	10 GigE SFP+ ports	40 GigE SFP+ ports	Network module Slots	Power supply bays	Power Supply AC/DC	Optional backup PSU	Height rack units
Standard models**							
OmniSwitch 6900-X20	20*		1	2	AC or DC	AC or DC	1
OmniSwitch 6900-X40	40*		2	2	AC or DC	AC or DC	1
Network Interface modules							
OS-XNI-U12	12*						
OS-XNI-U4	4*						
OS-HNI-U6	4*	2					
OS-QNI-U3	0	3					

Remarks:

*SFP+ port supports both gigabit and 10GigE transceivers.

**All models offer front-to-back and back-to-front cooling configuration.

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OmniSwitch 6250

LAN STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6250 Stackable Fast Ethernet Switch is a Layer 2+ LAN family of switches for both the enterprise and Ethernet access segments. Enterprise models address the small and medium-sized enterprise edge and branch office environments, while the metro models address the residential and business Ethernet access supplied by service providers.

OVERVIEW

The Alcatel-Lucent OmniSwitch 6250 Stackable Fast Ethernet Switch is a Layer 2+ LAN family of switches for both the enterprise and Ethernet access segments. Enterprise models address the small and medium-sized enterprise edge and branch office environments, while the metro models address the residential and business Ethernet access supplied by service providers.

With an optimized design for flexibility and scalability as well as low power consumption, the OmniSwitch 6250 runs on the field-proven Alcatel-Lucent Operating System (AOS), providing an outstanding edge solution for highly available, self-protective, easily managed and eco-friendly networks.

The OmniSwitch 6250 family is an evolution of the current Alcatel-Lucent OmniStack™ 6200 Stackable LAN Switch family, embedding the latest technology and AOS innovations.

Solutions benefiting from the OmniSwitch 6250 family of switches are:

- Edge of small to medium-sized networks
- Branch office enterprise workgroups
- Residential and commercial managed services applications

KEY BENEFITS

- Provides simplified selection with only two enterprise models (PoE and non-PoE) which reduces sparing and inventory costs and allows for any mix of Power over Ethernet (PoE) and non-PoE, up to 192 ports
- Small form factor and low noise output make the OmniSwitch 6250 ideal for collocation environments. The low power consumption reduces OPEX and cooling costs, resulting in faster ROI.
- Leads the industry in price/feature performance ratio and offers customers a cost-effective network technology upgrade without the necessity of moving to a higher priced Layer 2+ gigabit solution.
- Provides outstanding features and performance for supporting scalable, real-time voice, data and video applications for converged networks.
- Allows existing AOS customers/users immediate familiarity with the product from day one, reducing their TCO and training costs. New users may choose the method of switch access most beneficial to their needs.
- Lifetime warranty eliminates service program costs and ongoing service renewals, lowering TCO and allowing customers to reach ROI targets more quickly.

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KEY FEATURES

GENERAL FEATURES

- Innovative models with half-rack width for greater variety of switch combinations
- Highly efficient and optimized in their form factor, power consumption and acoustic output
- Developed to satisfy customer requests for a feature-rich, cost-effective, 10/100 stackable switch built on the latest technologies
- AOS-based, field-proven software with management through web interface
- (WebView), command line interface (CLI) and Simple Network Management Protocol (SNMP)
- Supported by Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS) and Alcatel-Lucent 5620 Service Aware Manager (SAM) applications for service providers

SECURITY FEATURES

- Auto-sensing network access control (NAC) through the Alcatel-Lucent Access Guardian framework (multi-client/VLAN 802.1X, MAC, rules)
- Advanced QoS and access control lists (ACLs) for traffic control, including an embedded denial of service (DoS) engine to filter out unwanted traffic attacks
- Web-based authentication (captive portal)

PERFORMANCE AND REDUNDANCY FEATURES

- Advanced Layer 2+ features with basic Layer 3 routing for both IPv4 and IPv6 wire-rate switching and routing performance
- High availability with virtual chassis concept, redundant stacking links, primary/secondary unit failover, hot swappable power options and configuration rollback

FEATURES FOR RESIDENTIAL AND BUSINESS ETHERNET ACCESS SERVICES

- Ethernet services: VLAN stacking, SVLAN, CVLAN
- Ethernet OA&M (ITU-T Y.1731 and IEEE 802.1ag [v8.1]) for management and troubleshooting
- TR-101 PPPoE Intermediate Agent allowing for the Point-to-Point Protocol over Ethernet (PPPoE) network access method
- MAC-forced forwarding support according to RFC 4562
- Embedded Customer Provider Edge (CPE) Test Head traffic generator and analyzer tool to validate the customer SLAs
- Layer 2 Protocol Tunneling (L2PT)
- Service Assurance Agent (SAA) including: L2, IP, ETH-LB, and ETH-DMM
- ITU-T G.8032 Ethernet Ring Protection (ERP)
- Zero touch auto-configuration through Dynamic Host Configuration Protocol (DHCP) services
- Extensive QoS capability guarantees delivery: Tri-color marking, flow (policy)-based and port-based bandwidth management for both ingress rate limiting and/or egress rate shaping
- IPTV multicast for video services delivery
- Metro edge security features (private VLAN, DHCP and Internet Group Management Protocol [IGMP] snooping, Access Guardian) for traffic containment
- Supported by industry-leading Alcatel-Lucent 5620 SAM
- Compliant with MEF 9 and 14

FEATURES FOR SMALL TO MEDIUM-SIZED ENTERPRISE EDGE, BRANCH OR SMALL BUSINESS SCENARIOS

- Feature-rich Fast Ethernet switches at the LAN edge where gigabit speed is not required
- Very flexible media options with PoE and non-PoE
- Two combo ports on each unit, individually configurable for connectivity to servers, aggregating switches or data centers
- Scalable up to 192 10/100 and 16GigE ports per 4 RU rack space
- Highly optimized in their form factor and acoustic output for collocation environments
- Wire-speed Layer 2+ and basic Layer 3 switching
- Intelligent, secure and available networking for demanding applications

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TECHNICAL INFORMATION

Standard models	Fast Ethernet RJ-45 ports	GigE SFP ports	GigE combo ports**	2.5G stacking ports	PoE power-budget	Main power supply	Optional backup PSU	Height rack units
OmniSwitch 6250-24	24	0	2	2	NA	AC	AC or DC	1

Power over Ethernet plus (PoE+) models	Fast Ethernet RJ-45 ports	GigE SFP ports	GigE combo ports**	2.5G stacking ports	PoE power-budget	Main power supply	Optional backup PSU	Height rack units
OmniSwitch 6250-P24	24	0	2	2	180 W	AC	AC	1

Metro Ethernet models	Fast Ethernet RJ-45 ports	GigE SFP ports	GigE combo ports**	2.5G stacking ports	PoE power-budget	Main power supply	Optional backup PSU	Height rack units
OmniSwitch 6250-8M	8	2*	2	0	NA	AC	NA	1
OmniSwitch 6250-24M	24	2*	2	0	NA	AC	AC or DC	1
OmniSwitch 6250-24MD	24	2*	2	0	NA	DC	AC or DC	1

Remarks:

*SFP ports can be used for transceiver or 2.5G stacking.

**Supports both gigabit and Fast Ethernet transceivers

NA - not available

Alcatel·Lucent Enterprise

OmniSwitch 6855

LAN CHASSIS-BASED LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6855 Ethernet Hardened LAN Switch models are industrial grade, managed, Gigabit Ethernet (GigE) switches designed to operate reliably in harsh electrical and severe temperature environments.

OVERVIEW

The Alcatel-Lucent OmniSwitch 6855 Ethernet Hardened LAN Switch models are industrial grade, managed, GigE switches designed to operate reliably in harsh electrical and severe temperature environments.

This superior, rugged hardware design coupled with the widely deployed and field proven Alcatel-Lucent Operating System (AOS) makes it ideal for the following:

- Industrial and mission-critical applications - locations that require devices to operate at wider operating temperatures, have more stringent EMC/EMI requirements and have an optimized feature set for high security, reliability, performance and easy management.
- Applications requiring gigabit backbone connectivity - power utilities, transportation and traffic control systems, industrial factory floor installations, video surveillance systems and outdoor installations

The target applications for these versatile LAN switches are power utilities, transportation and traffic control systems, industrial factory floor installations, video surveillance systems and outside installations, all requiring the benefits and performance of IP and Gigabit Ethernet.

KEY BENEFITS

- Designed with redundancy and availability in mind
- Withstands industrial/military shock and vibration tests
- Designed to operate in a wide temperature range and harsh EMI/EMC environments with uninterrupted traffic and zero communication errors
- Environmentally-friendly product
- Wire-rate performance for IPv4 and IPv6 traffic
- PoE support that enables converged networks in challenged environments to connect and power security cameras, IP phones, wireless access points
- Fully secures the network at the edge, at no additional cost, by supporting the network proactive and reactive capabilities that are provided through the Alcatel-Lucent Access Guardian, traffic anomaly detection, and the Alcatel-Lucent OmniVista™ 2500 Network Management System Quarantine Manager
- Supports cost-effective installation and deployment by automated switch setup and configuration, and end-to-end VLAN provisioning

KEY FEATURES

KEY FEATURES

- Wire-rate IPv4/IPv6 Layer 2 and Layer 3 switching at gigabit speeds for safe investment
- Integrated security features for network access control, policy enforcement and attack containment
- Advanced QoS to support triple play applications
- Wide choice of models offering different port densities: 10GigE, 14GigE, and 24GigE copper and support variety of fiber types: single-mode, multimode, short- and long-haul optics allowing distances of up to 70 km
- Power over Ethernet (PoE) support on all copper models
- Diverse power supply options: External, redundant, hot swappable, AC and DC
- Convection cooling fanless design that offers increased reliability and lower acoustic levels
- Purpose-built, industrial strength hardware design, engineered to operate in temperatures ranging from -40°C up to +75°C

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TECHNICAL INFORMATION

Chassis models	GigE RJ-45 ports	GigE PoE ports	GigE SFP ports	GigE combo ports	10GigE SFP+ ports	PoE power budget	Power supply AC/DC	Optional backup PSU	Height rack units
AC models									
OmniSwitch 6855-14	8	4	2**	0	0	60 W	AC	AC or DC	1
OmniSwitch 6855-P14	8	12	2**	0	0	185 W***	AC	AC	1
OmniSwitch 6855-24	16	4	0	4	0	60 W	AC	AC or DC	1
OmniSwitch 6855-U10	2	0	8**	0	0	NA	AC	AC or DC	1
OmniSwitch 6855-U24X	0	0	22**	2	2*	NA	AC	AC or DC	1
DC models									
OmniSwitch 6855-14D	8	4	2**	0	0	60 W	-48 V/	AC or DC	1
							24 V DC		
OmniSwitch 6855-U10D	2	0	8**	0	0	NA	-48 V/	AC or DC	1
							24 DC		
OmniSwitch 6855-24D	20	0	0	4	0	NA	-48 V DC	AC or DC	1
OmniSwitch 6855-24DL	20	0	0	4	0	NA	24 V DC	AC or DC	1
OmniSwitch 6855-U24XD	0	0	22**	2	2*	NA	-48 V DC	AC or DC	1
OmniSwitch 6855-U24XDL	0	0	22**	2	2*	NA	24 V DC	AC or DC	1

Remarks:

*Ports can be used for uplink or stacking.

**SFP port supports both Fast Ethernet and Gigabit Ethernet transceivers.

***185 W at up to 60°C; 66 W at higher temperatures

NA - not available

Alcatel·Lucent Enterprise

OmniSwitch 6450-10

LAN STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6450-10 Value Gigabit Ethernet (GigE) LAN family is designed for classroom, enterprise workgroups and managed services segments. With an optimized small design as well as low power consumption, the OmniSwitch 6450-10 runs the field-proven Alcatel-Lucent Operating System (AOS), providing an outstanding edge solution for highly available, secure, self-protective, easily managed and eco-friendly networks.

OVERVIEW

The Alcatel-Lucent OmniSwitch 6450-10 Value GigE LAN family is designed for classroom, enterprise workgroups and managed services segments. With an optimized small design as well as low power consumption, the OmniSwitch 6450-10 runs the field-proven Alcatel-Lucent OS, providing an outstanding edge solution for highly available, secure, self-protective, easily managed and eco-friendly networks.

The Alcatel-Lucent OmniSwitch 6450 family is embedded with the latest technology, AOS innovations, and offers maximum investment protection.

Solutions benefiting from the OmniSwitch 6450-10 family of switches are:

- Classroom and workgroup networks
- Branch office enterprise workgroups
- Metro Ethernet managed services applications

KEY BENEFITS

- Small form factor and fanless design (zero noise output) make the OmniSwitch 6450-10 models ideal for workgroup, library and classroom environments.
- Starts with the Fast Ethernet (FE) models (10L/P10L) and later migrates to gigabit user port speeds with license upgrade
- Power over Ethernet (PoE) models offer 120 W of PoE power and are IEEE 802.3at compliant
- Creates advanced managed services with CPE when adding the metro license option
- Low power consumption reduces OPEX and cooling costs, resulting in faster return on investment (ROI)
- Leads the industry in price/feature-performance ratio and offers customers a cost-effective advanced Layer 2+ network technology solution either in FE or GigE options
- Provides outstanding features and performance for supporting scalable, real-time voice, data and video applications for converged networks
- Allows existing AOS customers/users immediate familiarity with the product from day one, reducing their total cost of ownership (TCO) and training costs. New users may choose the method of switch access most beneficial to their needs.
- Limited lifetime hardware warranty eliminates service program costs and ongoing service renewals, lowering TCO and allowing customers to quickly reach their ROI targets.

Alcatel·Lucent Enterprise

KEY FEATURES

VERSATILE FEATURES AND MODELS

- Offers 10/P10 gigabit models or FE 10L/P10L models with upgrade path to gigabit speeds
- All models have small, optimized form factor and are fanless.
- Optional metro services feature license option for service provider deployments.
- Support for IEEE 802.3af as well as IEEE 802.3at-compliant PoE
- Internal AC power supply on all models

MANAGEMENT

- AOS field-proven software with management through web interface (WebView), command line interface (CLI) and Simple Network Management Protocol (SNMP)
- Ethernet operations, administration and maintenance (OA&M) support for service configuration and monitoring
- Support by Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS)
- Alcatel-Lucent 5620 Service Aware Manager (SAM) applications for service providers

SECURITY FEATURES

- Flexible device/user authentication with Alcatel-Lucent Access Guardian (IEEE 802.1x/ MAC/captive portal) with Host Integrity Check (HIC)
- Advanced QoS and Access Control Lists (ACLs) for traffic control, including an embedded denial of service (DoS) engine to filter out unwanted traffic attacks
- Extensive support of AOS user-oriented features such as learned port security (LPS), port mapping, Dynamic Host Configuration Protocol (DHCP) binding tables, and unified network profile (UNP)

PERFORMANCE AND REDUNDANCY FEATURES

- Advanced Layer 2+ features with basic Layer 3 routing for both IPv4 and IPv6
- Triple speed (10/100/1000) user interfaces and GigE fiber interfaces (SFPs) supporting 100Base-X or 1000Base-X optical transceivers
- Wire-rate switching and routing performance
- High availability with virtual chassis concept, redundant stacking links, primary/secondary unit failover, hot-swappable power options and configuration rollback

CONVERGENCE

- Enhanced VoIP and video performance with policy-based QoS
- Future-ready support for multimedia applications with wire-rate multicast
- IEEE 802.3at PoE+ support for IP phones, WLAN access points and video cameras

TECHNICAL INFORMATION

OmniSwitch 6450-10 port models	Fast Ethernet RJ-45 ports	GigE RJ-45 ports	GigE SFP ports	GigE Combo ports	PoE Power budget	Main power supply	Optional backup PSU	Height rack units
Standard models								
OmniSwitch 6450-10L	8	0	2	2	NA	AC	NA	1
OmniSwitch 6450-10	0	8	2	2	NA	AC	NA	1
PoE models								
OmniSwitch 6450-P10L	8	0	2	2	120 W	AC	NA	1
OmniSwitch 6450-P10	0	8	2	2	120 W	AC	NA	1

Remarks:

10-port models are 1/2-rack width.

19" rack mounting options sold separately.

All 10-port models are fanless.

NA - not available

Alcatel·Lucent Enterprise

OmniSwitch 9000E

LAN CHASSIS-BASED LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 9000E Chassis LAN Switch (CLS) family is comprised of the OmniSwitch™ 9700E, OmniSwitch™ 9702E, and the OmniSwitch™ 9800E. The OmniSwitch 9000E family has a common set of network interfaces, power supplies and fan trays to accommodate various connectivity needs and simplify inventory.

OVERVIEW

The OmniSwitch 9000E family of products is fully featured, highly available, high-performance chassis-based LAN switches designed to be used in the core as well as in LAN access.

The OmniSwitch 9000E family supports both high-density 10 Gigabit Ethernet (10GigE) configurations for core networking and high-density GigE with or without Power over Ethernet (PoE) following the latest high power (IEEE 802.3at) standards.

Operational network availability is supported by the use of hot-swappable and redundant components. It is further enhanced by multi-chassis link aggregation (MC-LAG) active-active dual homing using IEEE 802.3ad (Link Aggregation Control Protocol [LACP]) interfaces distributed across nodes enabling highly resilient architectures and in-service software upgrade (ISSU) capability, which allows a network to remain operational during patch upgrades of the core operating system.

The OmniSwitch 9000E family has native and full support of IPv4/IPv6, addressing the need for migration from IPv4 to IPv6 or new IPv6 deployments. It also brings carrier technology such as MPLS into the enterprise campus, featuring Virtual Private LAN Service (VPLS). VPLS is a standardized protocol invented by Alcatel-Lucent to virtualize local networks over MPLS without the need for Border Gateway Protocol (BGP).

The OmniSwitch 9000E family provides advanced security and QoS features at an attractive price and is fully supported by the Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS).

KEY BENEFITS

- Prevents business interruption from failures with a combination of redundancy and resilient topology protocols:
  - The system redundancy protects all critical functions, such as powering (redundant power supplies with AC and DC options), cooling (redundant fans), and switch management (redundant CMMs) with transparent failover and ISSU.
  - MC-LAG increases system redundancy and resiliency by providing maximum uptime and high availability in the network. Increases network capacity with resilient multipath active-active dual homing.
  - The extensive support of Layer 2 and Layer 3 protocols provides a highly available infrastructure.
- Protects investment with a modular and scalable connectivity (GigE and 10GigE), but also with regular software updates to keep on track with evolving standards (IEEE, IETF and ITU), such as IPv6 and MPLS
- Protects business assets against direct attacks on the infrastructure (malicious and denial of service [DoS] attacks) and enforces IT policy for pre- and post-admission control (unique traffic anomaly detection)
- Reduces energy costs through the system's low power dissipation (less than 2000 W in the most powerful case configuration)

KEY FEATURES

HIGH AVAILABILITY

- Smart continuous switching for non-stop operation in redundant CMM configuration
- ISSU for hitless operating system patches
- Passive backplane and redundant active components (power supply units, fans, CMMs)
- Extensive Layer 2 and Layer 3 protocol support for spatial resiliency

HIGH PERFORMANCE AND SCALABILITY

- Wire-rate processing for simultaneous Layer 2/IPv4/IPv6 traffic (unicast and multicast)
- High density with GigE (up to 384 ports) and 10GigE (up to 192 ports)
- Best network response time through hardware-based forwarding at first packet
- MC-LAG provides increased system resiliency with node level redundancy and increased network scalability with multipath active-active dual homing

COMPREHENSIVE SECURITY

- Flexible device/user authentication with Alcatel-Lucent Access Guardian™ (IEEE 802.1X/ MAC/captive portal) with host integrity check (HIC)
- Built-in intrusion detection system (IDS) with traffic anomaly detection (TAD)
- Extensive support access features such as learned port security (LPS), port mapping, Dynamic Host Configuration Protocol (DHCP) binding tables and user network profile (UNP)
- Microsoft Active Directory authentication snooping (Kerberos)

LARGE CAMPUS AND METRO NETWORK

- Layer 2 deployment using stacked VLANs, including OA&M toolbox and multicast support
- Layer 3 deployment using multiple virtual routing and forwarding (VRF)
- IP/MPLS deployment using VPLS

CONVERGENCE

- Enhanced VoIP and video performance with policy-based QoS
- Future-ready support for multimedia applications with wire-rate multicast
- IEEE 802.3at PoE+ support for IP phones, WLAN access points and video cameras
- Fluent network for voice and video: Session Initiation Protocol (SIP) detection, monitoring and tracking

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TECHNICAL INFORMATION

Chassis model	CMM module slots	NI module slots	Power supply bays	Power supplies AC/DC	Height rack units	Fabric capacity Gb/s	Max GigE ports	Max 10GigE ports
OmniSwitch 9700E	2	8	3	AC or DC	11	384	192	96
OmniSwitch 9702E	2	8	3	AC or DC	11	768	192	96
OmniSwitch 9800E	2	16	4	AC or DC	17	768	384	192

Network Interface modules	GigE RJ-45 ports	GigE PoE+ ports	GigE SFP ports	10GigE XFP ports	10GigE SFP+ ports
OS9-XNI-U2E	0	0	0	2	0
OS9-XNI-U12E	0	0	0	0	12
OS9-GNI-C24E	24	0	0	0	0
OS9-GNI-P24E	0	24	0	0	0
OS9-GNI-U24E	0	0	24	0	0

Power over Ethernet Power Shelf	Fits 9700E	Fits 9702E	Fits 9800 E	Power supply bays	Height rack units	Max. PoE power	Power supplies AC/DC
OS9-IPS-600A	Yes	Yes	Yes	4	3.5	2400W	AC

Alcatel·Lucent Enterprise

OmniSwitch 10K

LAN CHASSIS-BASED LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 10K Modular LAN Chassis Switch is a high-capacity, high-performance switch based on the state-of-the-art Alcatel-Lucent Operating System (AOS), which is field-proven in enterprise, service provider and data center environments.

OVERVIEW

The Alcatel-Lucent OmniSwitch 10K Modular LAN Chassis Switch is a high-capacity, high-performance switch based on the state-of-the-art Alcatel-Lucent Operating System (AOS), which is field-proven in enterprise, service provider and data center environments.

The OmniSwitch 10K delivers uninterrupted network uptime with non-stop Layer 2 and Layer 3 forwarding and in-service software upgrades (ISSUs). Deep packet buffers, a lossless virtual output queuing (VOQ) fabric, and extensive traffic management capabilities improve application performance and user experience. Its scalability – beyond 5.12 Tb – will meet bandwidth requirements for today and tomorrow. OmniSwitch 10K Multi-Chassis Link Aggregation (MC-LAG), Virtual Chassis (VC), Shortest Path Bridging (SPB-M), Virtual Network Profile (vNP), and Ethernet Ring Protection (ERP) simplify Layer 2 network deployments and provide better performance and resiliency.

OmniSwitch 10K with support of lossless Ethernet: Priority Flow Control (PFC), Enhanced Transmission Selection (ETS) and Data Center Bridging (DCBX), together with Edge Virtual Bridging (EVB) make it ideal for emerging data center solutions. The OmniSwitch 10K class-leading, low power consumption, front-to-back cooling, compact form factor, and all front accessible components make it a perfect fit for data center applications and as a long-term upgrade to any network.

KEY BENEFITS

- Maximum network performance delivers quality bandwidth for improved application and user experience. Reduces network layers and investment/operating costs
- MC-LAG and VC optimize/simplify Layer 2 network designs, reduce administration overhead while increasing network resiliency; work with any Ethernet device that supports IEEE 802.3ad standard; and provide interoperability, investment protection, and flexibility.
- MPLS and data center-ready architecture expand deployment capabilities, reduce vendor sprawl and lower operating costs.
- Chassis size, component accessibility and compatibility with existing platforms provide a painless replacement upgrade. Front-to-back cooling and dense 10GigE ports (256 ports per chassis) meet stringent data center application needs.
- Increased system redundancy and resiliency provide maximum uptime in the network core.
- vNP support to manage applications as services and automatically adapt to optimize application performance and server utilization, including automating the movement of virtual machine within the fabric
- SPB-M for maximum resiliency and fast reconvergence, as well as active/active dual homing capability

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KEY FEATURES

HIGH AVAILABILITY

- Smart continuous switching for non-stop operation in redundant Chassis Management Module (CMM) and fabric configuration
- ISSU for hitless operating system patches
- System virtualization with MC-LAG and VC
- Passive backplane and redundant active components (power supply units, fans, CMMs)
- Extensive Layer 2 and Layer 3 protocol support for spatial resiliency

HIGH PERFORMANCE AND SCALABILITY

- Wire-rate processing for simultaneous Layer 2/IPv4/IPv6 traffic (unicast and multicast)
- High density with GigE (up to 384 ports), 10GigE (up to 256 ports), and 40GigE (up to 64 ports)
- Best network response time through hardware-based forwarding at first packet
- Layer 2 multi-path support with Shortest Path Bridging (SPB)
  - IEEE 802.1aq
- Data center networking
- VM automation support with vNPs
- Lossless Ethernet Protocols support with PFC
  - IEEE 802.1Qbb, ETS
  - IEEE 802.1Qaz and DCB X
- VEP A support with EVB
  - IEEE 802.1Qbg

CONVERGED NETWORKS

- Enhanced VoIP and video performance with policy-based QoS and VOQ
- Queue management with configurable scheduling algorithm
- Congestion avoidance: Support for end-to-end Head of Line (E2E-HoL) blocking prevention and flow control

LARGE CAMPUS AND METRO NETWORK

- Layer 2 deployment using stacked VLANs, including OAM toolbox and multicast support
- ERP support
- Layer 3 deployment using multiple virtual routing and forwarding (VRF)

TECHNICAL INFORMATION

Chassis models 1	CMM module slots	CFM module slots	NI module slots	Power supply bays	Power supplies AC/DC	Fan tray slots	Height rack units	Fabric capacity Tb/s	Max GIgE ports	Max 10GIgE ports	Max 40GIgE ports
OmniSwitch10K	2	2	8	4	AC or DC	2	16	5.12	384	256	64

Network Interface modules	GIgE RJ-45 ports	GIgE SFP ports	10GIgE SFP+ ports	40GIE ports	100GigE ports	Standard version	Extended version
OS10K-QNI-U8E***	0	0	0	8			X
OS10K-QNI-U4E***	0	0	0	4			X
OS10K-XNI-U32S	0	0	32*			X	
OS10K-XNI-U32E***	0	0	32*				X
OS10K-XNI-U16E***	0	0	16*				X
OS10K-XNI-U16L***	0	8**	8*				X
OS10K-GNI-C48E	48	0	0				X
OS10K-GNI-U48E	0	48	0				X

Remarks

*Supports both gigabit and 10GigE transceivers

**License upgradeable to 10GigE SFP+ port

***Available in future software release

Alcatel·Lucent Enterprise

OmniSwitch 6450-24/48

LAN STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6450 Value Fast and Gigabit Ethernet Stackable LAN family offers versatile, 24/48-port fixed configuration switches with optional upgrade paths for Gigabit Ethernet (GigE) access, 10 gigabit stacking, 10GigE uplinks and metro Ethernet services.

OVERVIEW

With an optimized design for flexibility and scalability as well as low power consumption, the OmniSwitch 6450 Stackable Fast and Gigabit Ethernet Switch runs the field-proven Alcatel-Lucent Operating Software (AOS), providing an outstanding edge solution for highly available, secure, self-protective, easily managed and eco-friendly networks.

The Alcatel-Lucent OmniSwitch 6450 family is embedded with the latest technology, AOS innovations and offers maximum investment protection.

Solutions benefiting from the OmniSwitch 6450 family of switches are:

- Edge of small to medium-sized networks
- Branch office enterprise and campus workgroups
- Residential and commercial managed services applications

KEY BENEFITS

- Meets any customer configuration need and offers excellent investment protection and flexibility, as well as ease of deployment, operation and maintenance
- Outstanding performance when supporting real-time voice, data and video applications for converged scalable networks
- Ensures efficient power management, reduces OPEX and lowers TCO through energy efficient Ethernet and dynamic Power over Ethernet (PoE) allocation, which delivers only the power needed by the attached device
- A field-upgradeable solution that makes the network highly available and reduces OPEX
- Fully secures the network at the edge, at no additional cost
- Enterprise-wide cost reduction through hardware consolidation to achieve network segmentation and security without additional hardware installation
- Supports cost-effective installation and deployment with automated switch setup and configuration and end-to-end VLAN provisioning
- Simplifies metro Ethernet network OA&M for service providers

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KEY FEATURES

VERSATILE FEATURES AND MODELS

- 24 and 48 ports, PoE+, non-PoE and 24-port fiber models with two fixed SFP+ 10G ready interfaces
- Scalability from 24 to 384 Fast Ethernet and GigE ports and 16 10GigE ports
- Optional SFP+ stacking module, supports local and remote stacking
- Optional 10GigE uplink license option
- Optional metro services feature license option for service provider deployments
- Support for IEEE 802.3af as well as IEEE 802.3at-compliant PoE
- Support energy efficient Ethernet
- Internal AC or DC redundant power supplies

MANAGEMENT

- AOS field-proven software with management through web interface (WebView), command-line interface (CLI) and Simple Network Management Protocol (SNMP)
- Ethernet OA&M support for service configuration and monitoring
- Support by Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS)
- Alcatel-Lucent 5620 Service Aware Manager (SAM) applications for service providers

SECURITY

- Flexible device/user authentication with Alcatel-Lucent Access Guardian (IEEE 802.1x/ MAC/captive portal) with Host Integrity Check (HIC)
- Advanced quality of service (QoS) and Access Control Lists (ACLs) for traffic control, including an embedded denial of service (DoS) engine to filter out unwanted traffic attacks
- Extensive support of AOS user-oriented features such as learned port security (LPS), port mapping, Dynamic Host Configuration Protocol (DHCP) binding tables and unified network profile (UNP)

PERFORMANCE AND REDUNDANCY

- Advanced Layer 2+ features with basic Layer 3 routing for both IPv4 and IPv6
- Model dependent
  - Fast Ethernet (10/100) access ports upgradeable to GigE (10/100/100)
  - GigE (10/100/1000) access ports
  - SFP supporting 100Base-X or 1000Base-X optical transceivers
- SFP uplinks, supporting GigE and 10 GigE with upgrade license installed
- Wire-rate switching and routing performance
- High availability with virtual chassis concept, redundant stacking links, primary/secondary unit failover, hot swappable power options and configuration rollback

CONVERGENCE

- Enhanced VoIP and video performance with policy-based QoS
- Future-ready support for multimedia applications with wire-rate multicast
- IEEE 802.3at PoE+ support for IP phones, WLAN access points and video cameras

Alcatel·Lucent Enterprise

TECHNICAL INFORMATION

OmniSwitch 6450 24/48 family	FE*** RJ-45 ports	GigE RJ-45 ports	GigE SFP ports	GigE combo ports	GigE/10GigE SFP+ ports*	10G stacking ports**	PoE power budget	Main power supply	Optional backup PSU	Height rack units
OmniSwitch 6450-24L	24	0	0	0	2	2	NA	AC	AC or DC	1
OmniSwitch 6450-48L	48	0	0	0	2	2	NA	AC	AC or DC	1
OmniSwitch 6450-24	0	24	0	0	2	2	NA	AC	AC or DC	1
OmniSwitch 6450-48	0	48	0	0	2	2	NA	AC	AC or DC	1
OmniSwitch 6450-P24L	24	0	0	0	2	2	390 W	AC	AC	1
OmniSwitch 6450-P48L	48	0	0	0	2	2	700 W	AC	AC	1
OmniSwitch 6450-P24	0	24	0	0	2	2	390 W	AC	AC	1
OmniSwitch 6450-P48	0	48	0	0	2	2	700 W	AC	AC	1
OmniSwitch 6450-U24		0	22	2	2	2	NA	AC	AC or DC	1

Remarks:

*10 Gigabit speed requires OS6450-SW-PERF license.

**10 Gigabit stacking requires OS6450-XNI-U2 expansion module and cables.

***Fast Ethernet ports can be upgraded to Gigabit Ethernet by software license.

All main power supplies are internal.

All non-PoE model power supplies are internal.

NA - not available

Alcatel·Lucent Enterprise

OmniAccess RAP155 Series Access Points

WLAN WIRELESS ACCESS POINTS

The multifunctional Alcatel-Lucent OmniAccess™ RAP155 Series Access Points (APs) deliver secure 802.11n wireless and wired networking to small and medium sized businesses (SMB) and provide access to corporate resources from branch offices. OmniAccess RAP155 Series APs are ideal for ultra-high-density Wi-Fi environments that require fast encrypted throughput.

OVERVIEW

With unmatched deployment flexibility, the OmniAccess RAP155 Series APs can operate in Alcatel-Lucent Instant™ mode controlled by the OmniVista™ 3600 Air Manager management platform or in controller-managed mode where all network services are centralized by OmniAccess WLAN Controllers.

In Instant mode, traffic is locally bridged but it still provides the flexibility of establishing secure IPsec VPN tunnels back to WLAN controllers.

The OmniAccess RAP155 Series APs offer a wide range of enterprise-class features, including role-based network access and policy-based forwarding. Integrated ClientMatch™ technology ensures consistently high performance across the WLAN infrastructure.

At locations that require greater coverage, a RAP155 can join an Alcatel-Lucent Instant WLAN cluster. Simply install additional RAP155s or any Alcatel-Lucent Instant AP and the entire cluster is managed as one. If one Alcatel-Lucent Instant AP fails, another AP automatically takes over with no disruption.

With a wireless data rate of up to 450 Mb/s, the dual-radio RAP155 has five Ethernet ports (one uplink and four local) and a USB port to connect to 3G and 4G networks. Optionally, the RAP155 can provide power over Ethernet (PoE) on its two local ports for IP phones and other devices.

KEY BENEFITS

- Delivers best-in-class RF management
- Improved wireless performance
- Provides enhanced security through secure connection of remote users to corporate network resources

KEY FEATURES

KEY FEATURES

- ClientMatch technology eliminates sticky clients by continuously gathering session performance metrics to steer mobile devices to the best AP and radio, for improved performance
- Integrated Adaptive Radio Management™ (ARM) technology provides airtime fairness, auto-corrects Wi-Fi coverage holes and ensures that APs stay clear of RF interference
- Zero-touch provisioning

Alcatel·Lucent Enterprise

TECHNICAL INFORMATION

Coming Soon...

Alcatel·Lucent Enterprise

OmniAccess 100 Series Remote Access Points

WLAN WIRELESS ACCESS POINTS

With superior deployment flexibility, the OmniAccess 100 Series RAPs can operate in Alcatel-Lucent Instant mode, with control by the Alcatel-Lucent OmniVista™ 3600 Air Manager (AM), or in controller-managed mode where all network services are centralized by Alcatel-Lucent OmniAccess LAN (WLAN) Controllers. In Alcatel-Lucent Instant mode, traffic is locally bridged, but it still provides the flexibility of secure tunneling to an OmniAccess WLAN Controller.

OVERVIEW

The OmniAccess 100 Series RAPs offer a wide range of enterprise-class features, including role-based network access, policy-based forwarding, and Adaptive Radio Management (ARM), which optimizes Wi-Fi client performance and ensures that OmniAccess Access Points (APs) stay clear of interference.

At locations that require greater coverage, the OmniAccess 100 Series RAPs can join an Alcatel-Lucent Instant WLAN cluster. With the addition of an OmniAccess 100 RAP or any OmniAccess Instant AP, the entire cluster is managed as one. If one OmniAccess Instant AP fails, another AP automatically takes over with no disruption.

With a wireless data rate up to 300 Mb/s in the 2.4-GHz and 5-GHz radio bands, the OmniAccess 100 Series RAPs have one 10/100/1000Base-T Ethernet uplink, one 10/100Base-T local Ethernet port and one USB port to connect to 3G and 4G networks.

KEY BENEFITS

- Delivers best-in-class RF management, including automatic transmit power and channel control with auto coverage-hole correction
- Scans remotely to identify sources of RF interference
- Provides flexibility for meeting unique management and deployment requirements

KEY FEATURES

KEY FEATURES

- Adaptive Radio Management (ARM)
- Spectrum analyzer to scan the 2.4-GHz and 5-GHz radio bands
- Wireless or wired operating mode

TECHNICAL INFORMATION

Coming Soon...

OmniAccess 220 Series AP

WLAN WIRELESS ACCESS POINTS

With a maximum data rate of 1.3 Gb/s in the 5-GHz band and 600 Mb/s in the 2.4-GHz band, the OmniAccess 220 Series APs are three-times faster than 802.11n APs and provide performance similar to a wired connection.

OVERVIEW

ClientMatch technology eliminates sticky clients by continuously gathering session performance metrics from mobile devices. This information is then used to steer each mobile device to the best AP and radio on the WLAN.

Proactive and deterministic, ClientMatch dynamically optimizes Wi-Fi client performance as users roam and RF conditions change. If a mobile device moves out of range of an AP or if RF interference impedes performance, ClientMatch automatically steers the mobile device to a better AP.

With ClientMatch, OmniAccess 220 Series APs load web pages faster, deliver video streams with improved quality and support high densities of mobile devices. An 802.11ac network without ClientMatch performs no different than an 802.11n WLAN.

In addition, the OmniAccess 220 Series APs support priority handling and policy enforcement for individual Microsoft® Lync® media on the same device, including encrypted videoconferencing, voice, chat and desktop sharing.

KEY BENEFITS

- Provides capability for phased wired infrastructure upgrades
- Delivers best-in-class RF management
- Provides enhanced security:
  - Secure connection of remote users to corporate network resources
  - Secure storage of credentials and keys
  - Secure tunneling of wired Ethernet traffic

KEY FEATURES

KEY FEATURES

- EtherChannel link aggregation on two Gigabit Ethernet ports, providing 1.9-Gb/s aggregate throughput* (*Available Q3 2013)
- Adapts to available 802.3af powerover-Ethernet (PoE) instead of requiring customers to upgrade to 802.3at PoE+
- Support for up to 600 Mb/s for TurboQAMenabled mobile devices operating in the 2.4-GHz band – an industry first
- Integrated Adaptive Radio Management™ technology
- Remote spectrum analysis to identify sources of RF interference
- Wireless mesh connections, which are convenient where Ethernet drops are not available
  - Integrated Trusted Platform Module (TPM)
  - SecureJack-capable

TECHNICAL INFORMATION

Coming Soon...

Alcatel·Lucent Enterprise

OmniAccess 4x50 Series Controllers

WLAN STANDALONE WLAN SWITCH

The Alcatel-Lucent OmniAccess™ 4x50 Series wireless LAN (WLAN) Controller is a next-generation networking platform, 802.11ac ready, optimized for mobile application delivery to ensure the best mobility experience over Wi-Fi.

OVERVIEW

With a new central processor that employs eight cores with four threads each, it is the equivalent of 32 virtual CPUs. As a result, the OmniAccess 4x50 WLAN series supports 32,000 mobile devices and performs stateful firewall policy enforcement at 40 Gb/s — plenty of capacity and speed for BYOD and devices compliant with IEEE 802.11ac.

New levels of visibility are provided by the unique Alcatel-Lucent AppRF technology. With AppRF, IT can see applications by user, including the top web-based applications like Facebook and Box.

The OmniAccess 4x50 WLAN series also manages authentication, encryption, VPN connections, IPv4 and IPv6 Layer 3 services, the Policy Enforcement Firewall™, Adaptive Radio Management™, and RFProtect™ spectrum analysis and wireless intrusion protection.

KEY BENEFITS

- Maintains uninterrupted network operations
- Provides sufficient cooling and rapid time to repair
- Provides maximum reliability and uptime
- Provides connections for high availability

KEY FEATURES

DUAL FIELD REPLACEABLE REDUNDANT POWER SUPPLIES

HOT-SWAPPABLE, FIELD REPLACEABLE FAN TRAY WITH MULTIPLE FANS

SOLID STATE DRIVES

TWO DUAL MEDIA PORTS: 1000BASE-X OR 10/100/1000BASE-T

TECHNICAL INFORMATION

Coming Soon...

Alcatel·Lucent Enterprise

Instant
Access Points

WLAN WIRELESS ACCESS POINTS

The Alcatel-Lucent OmniAccess™ family of wireless instant access points (IAPs) is designed to support the various requirements of mobile enterprise networks from branch offices to small offices to remote offices.

OVERVIEW

The Alcatel-Lucent OmniAccess family of wireless instant access points (IAPs) is designed to support the various requirements of mobile enterprise networks from branch offices to small offices to remote offices. IAPs do not require any OmniAccess WLAN switches/ controllers. One of the IAPs within a cluster of IAPs operates as a virtual controller and manages other IAPs in the cluster. Maximum number of IAPs supported in a cluster is 16.

The OmniAccess wireless IAPs are offered with dual and single radio configurations. This broad portfolio of IAPs addresses the needs of a wide array of environments including:

- Indoor dual radio deployments
- Indoor single radio deployments
- Challenging RF indoor deployments
- Ceiling deployments
- Workspace deployments
- Telecommuter deployments
- Remote AP (RAP) capabilities
- Integrated Trusted Platform (TPM) for secure storage of credentials and keys
- IEEE 802.11n compliancy

KEY BENEFITS

Coming soon...

KEY FEATURES

KEY FEATURES

- High-speed wireless with up to 450 Mb/s of throughput. Improved coverage compared with IEEE 802.11a/b/g technologies. Backward compatibility with 802.11a/b/g Wi-Fi® clients
- Supports key enterprise-grade functions such as Adaptive Radio Management (ARM), air monitoring over 2.5 GHz and 5 GHz spectrum, wireless intrusion prevention, QoS, and battery life extension for portable phone equipment
- Integrated antenna supported on OmniAccess Instant AP93, OmniAccess Instant AP105, OmniAccess Instant AP134 and OmniAccess Instant AP135
- RP-SMA antenna interfaces supported on OmniAccess Instant AP92 and OmniAccess AP134
- 10/100/1000Base-T (RJ-45) auto-sensing Ethernet interfaces with support for IEEE 802.3af PoE or 802.3at, PoE+ supports

TECHNICAL INFORMATION

Remarks	*Please check operating system version for compatibility.

Standard/Remote Access Points

WLAN WIRELESS ACCESS POINTS

The Alcatel-Lucent OmniAccess™ family of wireless access points (APs) is designed to support the various requirements of mobile enterprise networks from large campuses to small branch offices to remote offices.

OVERVIEW

The Alcatel-Lucent OmniAccess family of wireless access points (APs) is designed to support the various requirements of mobile enterprise networks from large campuses to small branch offices to remote offices. The APs aggregate wireless user traffic onto the enterprise network and direct this traffic to OmniAccess WLAN switches.

The OmniAccess wireless APs are offered in both indoor and outdoor models, with dual and single radio configurations. This broad portfolio of APs addresses the needs of a wide array of environments including:

- Indoor and outdoor dual radio deployments
- Indoor single radio deployments
- Challenging RF indoor deployments
- Ceiling deployments
- Workspace deployments
- Telecommuter deployments
- Harsh environment/factory floor deployments
- Secure outdoor wireless bridging deployments
- Remote AP (RAP) capabilities
- Integrated Trusted Platform (TPM) for secure storage of credentials and keys
- IEEE 802.11n compliancy

KEY BENEFITS

- Multi-function APs simultaneously provide WLAN access, air monitoring, and wireless intrusion detection and prevention
- Fully featured, enterprise-grade access points
- Multi-purpose APs with the ability to support remote AP operation or mesh AP operation
- High-speed wireless with up to 300 Mb/s of throughput per radio on all OmniAccess APs (RAP-2WG supports up to 54 Mb/s and AP68 supports up to 75 Mb/s)
- IEEE 802.3af Power over Ethernet (PoE) power sourcing. Also supports IEEE 802.3at PoE+ on some models
- High availability with dual Ethernet ports on the OmniAccess AP120 series
- Supports antenna diversity for enhanced antenna sensitivity and supports multiple input multiple output (MIMO)
- Flexible mounting options with support for wall, ceiling and plenum deployments

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KEY FEATURES

KEY FEATURES

- High-speed wireless with up to 450 Mb/s of throughput. Improved coverage compared with IEEE 802.11a/b/g technologies. Backward compatibility with 802.11a/b/g Wi-Fi® clients
- Supports key enterprise-grade functions such as Adaptive Radio Management (ARM), air monitoring over 2.5 GHz and 5 GHz spectrum, wireless intrusion prevention, Call Admission Control (CAC), QoS, and battery life extension for portable phone equipment
- All APs support IEEE 802.11n (OmniAccess RAP-2WG only supports 802.11b/g)
- Integrated antenna supported on OmniAccess AP93, OmniAccess AP105, OmniAccess AP121 and OmniAccess AP125
- RP-SMA antenna interfaces supported on OmniAccess AP92, OmniAccess AP120 and OmniAccess AP124
- Quad N-type female antenna interfaces supported on outdoor APs
- 10/100/1000Base-T (RJ-45) auto-sensing Ethernet interfaces with support for IEEE 802.3af PoE or 802.3at, PoE+ supports
- DC power connector for external (optional) country-specific AC adapter kits

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TECHNICAL INFORMATION

Chassis models	IEEE 802.11n	Campus access point	Standard access point	Campus mesh	Remote mesh	Air monitor	Spectrum analysis	Number of radios	Operating frequency bands	Antennas or connector	GigE RJ-45 ports	Fast Ethernet RJ-45 ports	Power	Max power
Indoor AP models														
AP-68	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	No	1	2.4	Integrated	0	1	PoE/ DC	8 W
AP-68P****	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	No	1	2.4	Integrated	0	1	PoE/ DC	8 W
AP-92	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	1	2.4/5	SMA	1	0	PoE/ DC	10 W
AP-93	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	1	2.4/5	Integrated	1	0	PoE/ DC	10 W
AP-104	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	SMA	1	0	PoE/ DC	12.5 W
AP-105	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	Integrated	1	0	PoE/ DC	12.5 W
AP-120	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	1	2.4/5	SMA	2	0	PoE/ DC	12 W
AP-121	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	1	2.4/5	Integrated	2	0	PoE/ DC	12 W
AP-124	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	SMA	2	0	PoE/ DC	16 W
AP-125	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	Integrated	2	0	PoE/ DC	16 W
AP-134	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	SMA	2	0	PoE/ DC	18 W
AP-135	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	Integrated	2	0	PoE/ DC	18 W
Remote AP models														
RAP-2WG	No***	No	Yes*	No	No	Yes*	?	1	2.4	Integrated	0	2	DC	6.5 W
RAP-5WN	Yes	No	Yes*	No	No	Yes*	?	1	2.4/5	Integrated	1	4	DC	12 W
Outdoor AP models														
AP-175PoE	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	N-type	1	0	PoE+	15 W
AP-175AC	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	N-type	1	0	AC	15 W
AP-175DC	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	2	2.4/5	N-type	1	0	DC	15 W

Remarks:

*Please check operating system version for compatibility.

**Concurrent use of both radios in the same frequency band is not supported.

***Supports IEEE 802.11b/g

****Available in China only

Alcatel·Lucent Enterprise

OmniAccess 6000

WLAN CHASSIS-BASED WLAN SWITCH

The Alcatel-Lucent OmniAccess™ 6000 is a high-performance, fully featured, modular WLAN switch able to aggregate up to 2048 campus-connected access points (APs). The OmniAccess 6000 provides a true user-centric network experience, delivering follow-me connectivity, identity-based access, and application continuity services.

OVERVIEW

The Alcatel-Lucent OmniAccess 6000 is a high-performance, fully featured, modular WLAN switch able to aggregate up to 2048 campus-connected access points (APs). The OmniAccess 6000 provides a true user-centric network experience, delivering follow-me connectivity, identity-based access, and application continuity services.

The OmniAccess 6000 offers a scalable design that supports large deployments and can be easily implemented as an overlay without disruption to the existing wired network. Advanced Voice over WLAN (VoWLAN) features such as call admission control (CAC), voice-aware RF management, application fingerprinting, and strict over-the-air QoS allow the OmniAccess 6000 to deliver mobile VoIP capabilities.

The OmniAccess 6000 is managed through the integrated management capability of the Alcatel-Lucent OmniAccess Wireless Operating System or the Alcatel-Lucent OmniVista™ 3600 Air Manager.

KEY BENEFITS

- Supports multiple supervisor engines designed to handle heavy traffic loads generated by IEEE 802.11n APs
- Can control up to 2048 campus-connected APs by offering a “pay-as-you-grow” model. The OmniAccess 6000 AP capacity can grow with the addition of supervisor modules and/or software licenses.
- Allows for overlay deployments without disruption to the existing wireline infrastructure
- Simplifies management by minimizing the number of network elements
- Provides analysis of the RF environment to facilitate deployment with self-tuning APs and to facilitate operation of the network with virtual real-time site survey
- Integrates both wireless networking and wireless intrusion detection and prevention, thus reducing the cost of wireless infrastructure and cost of operating the wireless network
- Provides visibility into sources of RF interference with integrated spectrum analyzer
- Prevents unauthenticated users from accessing the corporate wireless network, while safely supporting guest users, contractors and corporate users
- Decreases management burden of security through role-based security
- Allows for the real-time location tracking of wireless users to enrich presence information. Also supports location tracking of wireless asset tags throughout the enterprise
- Improves voice quality through support of QoS mechanisms such as Wi-Fi multimedia (WMM), differentiated services code point (DSCP) marking and prioritization, and call admission control (CAC)
- Improves end users’ voice experience by maximizing battery life with protocols such as Unscheduled Automatic Power Save Delivery (U-APSD)
- Provides unmatched voice security through embedded stateful firewall
- Allows for seamless handoff of voice terminal as users move from AP to AP
- With application fingerprinting technology, enables identification of encrypted voice and video protocols and allows for application of QoS

KEY FEATURES

KEY FEATURES

- High performance
- Scalable architecture
- Centralized WLAN switching
- Dynamic RF management
- Integrated wireless intrusion prevention
- Integrated spectrum analysis
- User-centric security with stateful firewall
- Real-time location tracking
- Application fingerprinting
- QoS, extended battery capabilities, seamless roaming for support of voice terminals

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TECHNICAL INFORMATION

Chassis models	Local access points*	Remote access points*	Mesh nodes*	Built-in access points	Fast Ethernet RJ-45 ports	Fast Ethernet PoE+ ports	GigE RJ-45 ports	GigE PoE+ ports	GigE combo ports	GigE SFP ports	10GigE XFP ports	Power supply AC/DC	Optional backup PSU	Height rack units	Redundant power supply
OmniAccess WLAN 6000, 1 x sup 3	512	1024	1024	0	0	0	0	0	0	10	2	AC	AC	2.5	Yes
OmniAccess WLAN 6000, 2 x sup 3	1024	2048	2048	0	0	0	0	0	0	20	4	AC	AC	2.5	Yes
OmniAccess WLAN 6000, 3 x sup 3	1536	3072	3072	0	0	0	0	0	0	30	6	AC	AC	2.5	Yes
OmniAccess WLAN 6000, 4 x sup 3	2048	4096	4096	0	0	0	0	0	0	40	8	AC	AC	2.5	Yes

Remarks:

*Needs licensing

Alcatel·Lucent Enterprise

OmniAccess 4000

WLAN STANDALONE WLAN SWITCH

The Alcatel-Lucent OmniAccess™ 4000 family of high-performance wireless LAN (WLAN) switches are fixed form factor controllers designed for advanced WLAN services. At the same time they offer a cost-effective price point for small to large networks.

OVERVIEW

The Alcatel-Lucent OmniAccess 4000 family of high-performance WLAN switches are fixed form factor controllers designed for advanced WLAN services. At the same time they offer a cost-effective price point for small to large networks.

The switches share a common set of advanced features to offer best-in-class security and accommodate demanding applications such as Voice over WLAN (VoWLAN). In addition, these WLAN switches simplify the deployment, monitoring and troubleshooting of the WLAN infrastructure.

The switches aggregate network traffic from access points (APs), process the traffic, and deliver it to the network.

The OmniAccess 4000 family includes multiple models designed to support the various requirements of differently sized wireless networks such as campus, branch office and small business networks. The OmniAccess™ 4306, 4306G/GW, 4504, 4604 and 4704 are fully featured WLAN switches designed from the ground up to support the traffic load of IEEE 802.11n high-speed wireless networks with the ability to aggregate up to 8, 16, 32, 64, and 128 LAN-connected APs respectively.

The OmniAccess 4306 and 4306G/GW are specially designed for cost-effective branch office deployment, providing advanced wireless services identical to those offered by the other 4000 family of WLAN switches. The OmniAccess 4306 and 4306G/GW go beyond pure wireless services by providing 3G connectivity, built-in print and file servers and secure Ethernet connectivity.

KEY BENEFITS

- Handles heavy traffic loads generated by IEEE 802.11n high-performance networks
- Supports “pay-as-you-grow” capability through software licensing model. WLAN switch AP capacity can grow with the addition of software licenses.
- Allows for overlay deployments without disruption to the existing wireline infrastructure
- Simplifies management by minimizing the number of network elements
- Provides analysis of the RF environment to facilitate deployment with self-tuning APs and to facilitate operation of the network with virtual real-time site survey
- Integrates both wireless networking and wireless intrusion detection and prevention, thus reducing the cost of wireless infrastructure and cost of operating the wireless network
- Provides visibility into sources of RF interference with integrated spectrum analyzer
- Prevents unauthenticated users from accessing the corporate wireless network, while safely supporting guest users, contractors and corporate users
- Decreases management burden of security through role-based security
- Allows for the real-time location tracking of wireless users to enrich presence information. Also supports location tracking of wireless asset tags throughout the enterprise
- Improves voice quality through support of QoS mechanisms such as Wi-Fi® multimedia (WMM), differentiated services code point (DSCP) marking and prioritization, and call admission control (CAC)
- Improves end users’ voice experience by maximizing battery life with protocols such as Unscheduled Automatic Power Save Delivery (U-APSD)
- Provides unmatched voice security through embedded stateful firewall
- Allows for seamless handoff of voice terminal as users move from AP to AP
- With application fingerprinting technology, enables identification of encrypted voice and video protocols and allows application of QoS
- In addition, branch office WLAN switches (OmniAccess 4306, 4306G/GW) provide USB ports, which can be used to connect storage devices or printers. These devices are then accessible anywhere in the branch network.
- Has provision for 3G connectivity, allowing the rapid setup of a branch network when no wired connection (DSL, for example) is available
- Can be used as a backup connection in case of primary wired link failure

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KEY FEATURES

KEY FEATURES

- High performance
- Scalable architecture
- Centralized WLAN switching
- Dynamic RF management
- Integrated wireless intrusion prevention
- Integrated spectrum analysis
- User-centric security with stateful firewall
- Real-time location tracking
- Application fingerprinting
- QoS, extended battery capabilities, seamless roaming for support of voice terminals
- 3G connectivity, built-in print and file servers and secured Ethernet connectivity available in branch office WLAN switches

TECHNICAL INFORMATION

Standalone models	Local access points*	Remote access points*	Mesh nodes*	Built-in access point	Fast Ethernet RJ-45 ports	Fast Ethernet PoE+ ports	GigE RJ-45 ports	GigE PoE+ ports	GigE combo ports	GigE SFP ports	10GigE XFP ports	Power supply AC/DC	Optional backup PSU	Height rack units	Redundant power supply
OmniAccess WLAN 4306G	16	64	64	0	0	0	2	4	0	2	0	AC	NA	1	NA
OmniAccess WLAN 4306GW	17	64	64	1	0	0	2	4	0	2	0	AC	NA	1	NA
OmniAcces WLAN 4505XM	32	128	128	0	0	0	0	0	4	0	0	AC	NA	1	NA
OmniAcces WLAN 4604	64	256	256	0	0	0	0	0	4	0	0	AC	NA	1	NA
OmniAccess WLAN 4704	128	512	512	0	0	0	0	0	4	0	0	AC	NA	1	NA

Remarks:

*Needs licensing

NA - not available

Alcatel·Lucent Enterprise

OmniAccess 5725R ESR

WAN ENTERPRISE SERVICE ROUTER

The Alcatel-Lucent OmniAccess™ 5725R comes with an integrated Ethernet switch and is capable of serving a large number of intelligent electronic devices at a remote site without additional equipment. Its embedded managed switch includes full support of VLANs and other advanced switching features.

OVERVIEW

The OmniAccess 5725R can guarantee optimal performance and maximum security in communications among multiple services in IP networks. The router multiplexes remote site communications using embedded cellular broadband or ADSL links, or flexible external modems. Maximum reliability communication is guaranteed thanks to a full range of management, supervision and backup functions.

The ruggedized router also comes with the intelligence required for efficient implementation of highly secured, scalable and permanently available communications services based on broadband links. Communications cyber-security is supported with state-of-the-art, low-latency hardware encryption and a complete stack of VPN protocols and firewalling techniques

KEY BENEFITS

- Ensures optimal availability and reliability
- Provides maximum security
- Lowers CAPEX because of integrated Ethernet switch and scalability

Alcatel·Lucent Enterprise

KEY FEATURES

RELIABLE LTE WIRELESS-WAN (WWAN) PERFORMANCE

Two 4G cellular interfaces provide uninterrupted vehicle connectivity and application continuity when travelling through poor coverage areas, for example from a private city wireless network onto a commercial carrier service

Automatic selection of the best available connection, based on network availability, signal reception level, quality of service (QoS), time of the day, cost, speed or position

Passive link supervision: Permanently controls signal coverage, technology availability, IP transmission service status and transmission activity

Poll-based link supervision: Detects and corrects failures and degradations on the 4G communications; the router controls error rate, link latency and jitter to guarantee utmost performance of the streaming transmission (real-time IP-CCTV image transmission or voice)

Tight integration of internal cellular modules for shock and vibration resilience, improved radio transmission and reception, protection against theft and advanced monitoring for troubleshooting (instead of the unprofessional USB-based solutions)

Up to two antennas per radio interface to maximize coverage at any location

WWAN+ proprietary optimization of network protocols for improved communication over cellular networks

WAN CONNECTIVITY

Independent Gigabit Ethernet (GigE)10/100/1000M port for connecting to WAN Ethernet lines (requires a license)

High processing capacity for maximum performance for Ethernet transmission

Full VLAN support in the GigE port and Fast Ethernet ports (trunking, filtering and QinQ)

Leased line support with E1/T1 and universal serial port (synchronous) (V.35, X.21 and V.24)

ADVANCED SECURITY FEATURES

Incorporated encryption processor optimizes device performance in scenarios with IPSec tunnels

Fully parameterized IPSec client/server: Advanced IPSec features such as PKI encryption (digital certificates), extended authentication and Reverse-Route Injection (RRI) guarantee compatibility with other commercial VPN solutions

Latest-generation meshed topology VPN networks: Dynamic Multipoint VPN technology

IP filtering, MAC filtering and the SPI firewall protect the router from DoS attacks

HIGH-PERFORMANCE WLAN AND WWAN

Embedded WLAN module (IEEE 802.11b/g/n) with double external antenna connector (2x2 MIMO), activated by license

Configurable Access Point and Client operation modes, either to reroute from the Wi-Fi terminals to the mobile network (access to Internet or to corporate VPN, depending on the service specifications, when in Access Point mode) or to connect the router to the branch WiFi network to access certain applications in the branch (when in Client mode).

4G interface fully integrated in the router's internetworking protocol architecture (CIT features), thereby providing high quality and efficient 4G/VPN services

Three backup options for the main 4G service: Through the secondary SIM card, the external USB/4G modem and by connecting to an alternative APN (double PDP context; optional)

Improved 4G signal stability in areas with poor WWAN coverage: Up to three SMA ports for external 4G antennas (Rx diversity)

Passive WWAN monitoring mechanisms (making it unnecessary to transmit polling traffic): Through the constant monitoring of signal coverage, the connection to the mobile network, the IP connection and the branch traffic transmitted and received over the WWAN link, the router can accurately and dynamically detect problems with device performance and take the appropriate actions (WWAN backup, trap reports, etc.); this minimizes the time the communications service is unavailable

Simultaneous support of audio GSM calls and 4G data transmission for emergency telephony services

INTEGRATED VOIP SOLUTION

Call rerouting over the main VoIP link or through the GSM telephony line enabled in the router's 4G interface

Universal B2B-UA SIP Server, compatible with Unified Communications and with survival functionality residing in the router itself (does not require IP terminals with survival)

IP switchboard features (IP-PABX): Ring groups, hunt groups, capture groups, double dialing, local message recording, and blind and attended transfers

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TECHNICAL INFORMATION

Coming Soon...

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Enterprise

OmniAccess 5725A ESR

WAN ENTERPRISE SERVICE ROUTER

Enable secure, high-speed 4G/LTE mobile broadband connectivity for buses, light rail and first responders for multimedia managed services, including video, telemetry, passenger services, vehicle health, dispatch and tracking, and Automatic License Plate Recognition.

OVERVIEW

The Alcatel-Lucent OmniAccess™ 5725A is an integrated, rugged communications platform that enables highly available, reliable and secure broadband cellular connectivity to the vehicle. Multiple services across departments and agencies can be delivered over a single platform, reducing the equipment, connectivity and operational costs of communications.

This router combines a robust mechanical design, adequate for its installation at in-vehicle cabinets, with a versatile broadband wireless (wireless WAN and Wi-Fi) and wired (Ethernet) communications port layout. The OmniAccess 5725A also offers a robust enterprise-class IP stack for the efficient implementation of multiple managed VPN services on mobile access.

KEY BENEFITS

- Provides Enterprise services for in-vehicle environments
- Ensures optimal availability and reliability
- Delivers improved communication over cellular networks
- Provides maximum Wi-Fi security

Alcatel·Lucent Enterprise

KEY FEATURES

RELIABLE LTE WIRELESS (WWAN) PERFORMANCE

One or two embedded 4G/LTE broadband radio interfaces for true high-speed connectivity to on-board applications

Automatic selection of the best available connection based on network availability, signal reception level, quality of service (QoS), time of the day , cost, speed or position

Passive link supervision: Permanently controls signal coverage, technology availability, IP transmission service status and transmission activity

Poll-based link supervision: Detects and corrects failures and degradations on the 4G communications; the router controls error rate, link latency and jitter to guarantee utmost performance on the streaming transmission (real-time IP-CCTV image transmission or voice)

Tight integration of internal cellular modules for shock and vibration resilience, improved radio transmission and reception, protection against theft, and advanced monitoring for troubleshooting (instead of unprofessional USB-based solutions)

Up to two antennas per radio interface to maximize coverage at any location

WWAN+ proprietary optimization of network protocols for improved communication over cellular networks

MULTIPURPOSE EMBEDDED WI-FI

Embedded WLAN interface with configurable or location-based Client and Access Point modes

Vehicle-proof Wi-Fi: Multiple antennas for better transmission, flexible frequency operation (2.4 and 5 GHz), extended temperature range, reduced component aging, surge circuit protection and power efficiency

State-of-the-art Wi-Fi security, guaranteeing communication privacy and confidentiality

Multiple service coexistence based on independent SSIDs and QoS

Intelligent roaming management based on signal level

FULLY MANAGED ETHERNET SWITCH PORTS

Full VLAN support, per-VLAN QoS, per-port Ethernet diagnostics and SNMP management allow for the implementation of efficient and secured LAN networks on board

ENTERPRISE-CLASS INTERNETWORKING INTELLIGENCE

Dynamic routing protocols favor the implementation of scalable corporate VPN networks

Multiple service support, based on advanced QoS: Hierarchical traffic analysis, labeling and prioritization guarantees bandwidth to critical applications when sharing limited bandwidth resources

IP forwarding policy based on the real-time status of the transmission link: Packet loss, delay, jitter

Multiple virtual router instances for simultaneous but independent agency/jurisdiction service over the same platform

KEY ADVANTAGES OVER MODEMS AND GATEWAYS

Supports multiple embedded or existing access links (for example, P25) to guarantee service continuity

Extends public safety data network security requirements to the fixed remote and mobile edge

Manages multiple services from various agencies and jurisdictions over a single converged platform, with each agency maintaining its own virtual network ownership experience

Efficiently uses links to transmit various applications based on application criticality, required bandwidth, and nominal and available bandwidth

Allows for shared access to in-vehicle resources such as cameras and displays

TECHNICAL INFORMATION

Coming Soon...

Alcatel·Lucent Enterprise

OmniAccess 5725 ESR Rugged

WAN ENTERPRISE SERVICE ROUTER

The Alcatel-Lucent OmniAccess™ 5725 Enterprise Services Router (ESR) is a rugged, highly intelligent industrial-grade router that delivers secure and reliable broadband IP connectivity to vehicles, as well as SCADA telemetry and remote control networks.

OVERVIEW

The Alcatel-Lucent OmniAccess 5725 Enterprise Services Router (ESR) is a rugged, highly intelligent industrial-grade router that delivers secure and reliable broadband IP connectivity to vehicles, as well as SCADA telemetry and remote control networks. The possible uses include vehicle connectivity, Smart Grid deployment, pipelines, and other industrial environments.

Because of the integrated Ethernet switch, OmniAccess ESRs are capable of serving a large number of intelligent electronic devices at the remote site without additional equipment. They contain the full top-of-the-line routing and switching features of the rest of the OmniAccess ESR line.

The router can guarantee optimum performance and maximum security in communications among multiple services in different IP networks. It multiplexes remote site communications using embedded cellular broadband or digital subscriber line (DSL) links. Maximum reliability communication is guaranteed due to a full range of management, supervision and backup functions.

OmniAccess ESRs are equipped with the intelligence required for the efficient implementation of highly secured, scalable, and permanently available communication services based on broadband links. Communications security is supported with state-of-the-art low latency hardware encryption, and the most complete stack of VPN protocols and firewall techniques.

KEY BENEFITS

- Rugged designs provide protection against extreme temperatures, vibrations, over voltages, and electromagnetic interference.
- Complete suite of IP networking protocols, security VPN and firewall features, professional router management tools
- Top-grade management. The SNMPv3 agent allows easy integration with network management platforms.
- 4-port or 6-port Ethernet switch (10/100M) (depending on model)
- Embedded WLAN IEEE 802.11a/b/g/n interface (multiple-input multiple-output [MIMO], double port for external Wi-Fi® antennas), with professional security (IEEE 802.11i) (on selected models)
- Wide array of variants with additional interfaces to select from, including cellular (LTE), VDSL, GPS, and a serial port (asynchronous)
- Powered from batteries or industrial voltage ranges (depending on model)
- Hardware encryption, optimizing transmission of encrypted traffic
- WWAN+ proprietary optimization of network protocols for improved communication over cellular networks

Alcatel·Lucent Enterprise

KEY FEATURES

ADVANCED ROUTING FUNCTIONS AND QOS

- Complex network routing, such as route balancing, routing protocols oriented to corporations, routing based on policies, multiple instant routing or routing depending on real-time measured quality on the line
- Border router for different dynamic routing domains (RIP, OSPF, or BGP), administrative distance in IP routes, route filtering based on maps and policy-based routing (PBR), multi Hot Standby Router Protocol (HSRP), and multi Virtual Router Redundancy Protocol (VRRP) for network resilience and load balancing applications
- Link quality monitoring through the Alcatel-Lucent NSM/NSLA system.

SECURE COMMUNICATIONS

- Encryption processor incorporated; optimizes device performance in scenarios with IPSec tunnels
- Fully parameterized IPSec client/server with advanced IPSec features guaranteeing compatibility with other commercial VPN solutions
- Latest generation meshed topology VPN networks (Dynamic Multipoint VPN technology)
- IP filtering, MAC filtering, and the SPI firewall protect the router from DoS attacks

MECHANICAL AND HARDWARE DESIGN OPTIMIZED FOR IN-VEHICLE INSTALLATION

- Anti-shock and anti-vibration protection, and high temperature dissipation
- Fed from the vehicle battery or industrial power source using robust connector
- User configurable power turnoff delays for vehicle deployments
- Optimized power consumption expands the vehicle battery autonomy

EFFICIENT COMMUNICATIONS MANAGEMENT

- A Syslog client reports any events detected by the ESR Events Logging System.
- SNMPv3 agent provides the ability to send traps and read MIB2 and Private MIB depending on the defined management communities.

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TECHNICAL INFORMATION

Hardware features	OA5725A	OA5725R	OA5725R-4*
LAN-Ethernet ports	4 x 10/100	6 x 10/100	6 x 10/100
External slots (WIC)	-	-	-
VDSL port	-	1	-
a/b/g/n Wi-Fi	1	-	-
WWAN (and GPS)	3G/3.7G/4G	-	3G/3.7G
USB port	-	-	-
Console/Asynchronous serial port	1	1	1
Sync/Async serial port	-	-	-
Power over Ethernet	-	-	-
IPSec hardware acceleration/encryption	Yes	Yes	Yes
Power supply	-	-	-
19?? metal housing	-	-	-
Fanless	Yes	Yes	Yes
Rugged	Yes	Yes	Yes
Software features			
Adv. routing (BGP, VRF, VRRP)	Yes	Yes	Yes
Internet Protocol version 6 (IPv6)	Yes	Yes	Yes
IPSec tunnels (max. sessions)	40	40	40
ToIP support (max. terminals)	400	100	100

Alcatel·Lucent Enterprise

OmniAccess 5800 ESR Modular

WAN ENTERPRISE SERVICE ROUTER

The Alcatel-Lucent OmniAccess™ 5800 Enterprise Services Router (ESR) Modular series is an innovative and revolutionary product bringing together both a communications infrastructure and business processes in the same dual core hardware platform.

OVERVIEW

The Alcatel-Lucent OmniAccess 5800 Enterprise Services Router (ESR) Modular series is an innovative and revolutionary product bringing together both a communications infrastructure and business processes in the same dual core hardware platform. It is a high-performance professional router and PBX with an integrated standards-based secure application server, thus providing unified management aimed at simplifying provision and maintenance tasks.

The Alcatel-Lucent 5800 ESR can act as an office server for files/printers/scanners, IP telephony, domotics (home automation) management, energy efficiency, Lightweight Directory Access Protocol (LDAP) backup, and many other uses. It is based on standards so any application based on GNU/Linux® can be easily and quickly migrated making the OmniAccess 5800 series an integrated solution that reduces dedicated server maintenance costs.

The 5800 series is also a professional router with advanced features and switching capacity superior to 100 Mb/s, a full network operating system in addition to many different LAN and WAN connectivity capabilities. The router can provide Wi-Fi® and 4G (cellular) interfaces. Additionally, by using its two expansion slots, a myriad of interfaces can be added: VDSL2, ADSL2+, G.SHDSL (2p), 3 serial ports, 2 BRI, 2 SFP, 4 FXS/FXO, 2 E&M, or 4 E1/T1.

KEY BENEFITS

- 800 MHz dual core CPU provides full routing functionality and leaves a core available for applications
- Simplifies application management in offices by integrating it into the same box as the router
- One of the most complete network protocol stacks for access routers worldwide
- Very high performance
- Top-grade management. The SNMPv3 agent allows integration with network management platforms.
- Embedded WLAN IEEE 802.11a/b/g/n interface (multiple-input multiple-output [MIMO]), double port for external Wi-Fi antennas), with professional security (IEEE 802.11i)
- Embedded 4G cellular interface

Alcatel·Lucent Enterprise

KEY FEATURES

STATE-OF-THE-ART IN HARDWARE AND SOFTWARE

Up to two independent devices perfectly integrated into one box:

- Powerful modular router with advanced routing functionality
- Versatile applications server with a Debian GNU/Linux base

MODULARITY

- Base double connectivity Gigabit and an 8-port integrated switch (with optional Power over Ethernet [PoE])
- 2 expansion slots and many card possibilities: VDSL2, ADSL2+, G.SHDSL (2p), 3 serial ports, 2 BRI, 2 SFP, 4 FXS/FXO, 2 E&M, or 4 E1/T1

ROUTING SOFTWARE ORIENTED TOWARD ENTERPRISES

The OmniAccess 5800 series uses ESR code (Alcatel-Lucent Internetworking Code), and is widely regarded as a point of reference for professional routing. It is used by the hundreds of thousands of devices operating for clients and in the most demanding environments. The following are just a few of the outstanding characteristics:

- Places enormous emphasis on security, incorporating firewall features (stateful firewall) and IPSec with all its variants (RC4, DES, 3DES, RSA, SHA-1, MD5 algorithms, digital certificates, DMVPN, GETVPN)
- Supports IP telephony with Media Gateway features (MGCP, SIP, H323) and IP telephony integrated server capable of managing up to 300 telephones with SIP, H323, Alcatel-Lucent NOE/UE or SCCP (Skinny) protocols
- QoS with CBWFQ, LLQ and WRED algorithms supporting hierarchical system with 32 different traffic classes per interface, traffic marking and profiling as well as traffic preclassification contained in VPNs and integrating QoS with MPPP and fragmentation
- Necessary routing protocols adapted to corporate networks and MPLS in general (RIP-2, BGP-4 and OSPF in addition to Policy Routing, routing activating based on polls, HSRP, VRRP, VRF)
- Management adapted to needs of carriers and large enterprises through powerful command-line interfaces (CLIs), access controlled through RADIUS/TACACS+, SNMPv3, ample level of debugs and statistics, integrated analyzer compatible with Ethereal™, now named Wireshark®

APPLICATION SCENARIOS ON THE EMBEDDED GNU/LINUX CORE

As an applications server, the OmniAccess 5800 series can be integrated in numerous scenarios such as:

- Intrusion detection polls and service denegation
- Communications accelerator
- Web cache proxy and content control
- File or printer server
- Video flow control
- Digital signage
- Domotics
- Energy efficiency

It can also serve as an open platform for third-party applications.

Alcatel·Lucent Enterprise

TECHNICAL INFORMATION

	OA5840	OA5850
Hardware features		
Integrated LAN-Ethernet ports (optional PoE)	8 x 10/100	8 x 10/100
WAN-Ethernet ports	2 x 10/100/1000	2 x 10/100/1000
External slots (WIC)	1	2
Optional WLAN	a/b/g/n	a/b/g/n
Optional WWAN (and GPS)	3G/3.7G/4G	3G/3.7G/4G
USB port	1	1
Console/Asynchronous serial port	1	1
IPSec hardware acceleration/encryption	Yes	Yes
Power supply	Internal	Internal
19?? metal housing	Yes	Yes
Fanless	?	?
Rugged	?	?
Hard disk option	No	Yes
Data/voice daughter boards: VDSL2, ADSL2+, G.SHDSL (2p), 1 Serial, 2 BRI, 1 SFP, 4 FXS/FXO, 2 E&M, 2 BRI (voice)	Yes	Yes
High-density daughter boards: 4 E1/T1, 3 serial, 2 SFP, G.SHDSL (4p)	No	Yes
Software features		
Adv. routing (BGP, VRF, VRRP)	Yes	Yes
Internet Protocol version 6 (IPv6)	Yes	Yes
IPSec tunnels (max. sessions)	500	500
ToIP support (max. terminals)	300	300
User applications (on second CPU core)	No	Yes

Alcatel·Lucent Enterprise

7750
SR

WAN SERVICE ROUTER

The Alcatel-Lucent 7750 Service Router (SR) is a superior multiservice edge router that is purpose-built for mission-critical enterprise and vertical market customers, service providers and cable multiple system operators (MSOs) looking to deliver a new wave of services on a single IP/MPLS network.

OVERVIEW

The Alcatel-Lucent 7750 Service Router (SR) is a superior multiservice edge router that is purpose-built for mission-critical enterprise and vertical market customers, service providers and cable multiple system operators (MSOs) looking to deliver a new wave of services on a single IP/MPLS network.

Optimized for the delivery of high-performance data, voice and video services, the Alcatel-Lucent 7750 SR is available in four chassis sizes whose capacities range from 90 Gb/s to 2 Tb/s. All offer a wide range of interfaces with unmatched density and service performance. The four models offered are the 7750 SR-12, 7750 SR-7, 7750 SR-c12, and the 7750 SR-c4.

Leveraging the strength of the Alcatel-Lucent Service Router Operating System (SR OS), the 7750 SR delivers the flexibility to achieve the service continuity, service richness and service assurance critical to customer satisfaction and market leadership.

KEY BENEFITS

- Purpose-built platform: IP/MPLS based, enables the efficient and cost-effective delivery of a new generation of differentiated voice, video, and data services
- Reliability: Integrates full system redundancy and industry-leading non-stop routing and non-stop switching
- Investment protection: Flexible form factors and network asset portability across the service router portfolio results in optimal CAPEX investment with extended asset longevity and depreciation cycles
- Performance: Market-leading packet processing capabilities and service headroom results in maximized network asset yields with no hidden CAPEX owing to line card or platform proliferation
- Efficiency: Reduced OPEX and accelerated time to market through rapid service provisioning and advanced OA&M tools
- Speed and security: Improved service level guarantees through a comprehensive approach to high availability using purpose-built hardware and software, which provides industry-leading performance and comprehensive security capabilities
- Consistency: Creates service and operational continuity by using a common operating system, SR OS, across all service routers to minimize approval for use test cycles, eliminates all issues related to release, features backward compatibility and allows for rapid fault isolation

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Advanced services: Enables Virtual Private LAN Service (VPLS), Virtual Private Wire Service (VPWS), Virtual Private Routed Networks (VPRNs) based on RFC 4364 and IPv6 services
- Service tunneling: Enables Layer 2 and Layer 3 services on a single platform with the flexibility of any service over any port (ASAP) over a wide range of interfaces, including DS3/E3, Ethernet, SDH/SONET (PoS), Frame Relay, and Asynchronous Transfer Mode (ATM) interfaces.
- Multiservice edge: Comprehensive service continuity with Frame Relay/ATM/Ethernet pseudowire services (VPWS); Ethernet/Frame Relay/ATM service interworking; Ethernet/Frame Relay/ATM access to VPLS, IP VPNs and Internet services with service-aware QoS to maintain stringent SLAs and ensure a seamless migration to emerging services
- Quality of service: Service-based QoS allows for service-based queuing, which enables shaping, policing and marking of different traffic flows on a per-service, per-user basis.
- Hierarchical QoS: H-QoS uses an advanced scheduling mechanism, with multiple levels and instances of queuing, shaping, policing and marking to prioritize different services over the same connection and combines all services into overall SLAs.
- Service scaling: Concurrently supports tens of thousands of Layer 2 and Layer 3 services, more than 2 million Border Gateway Protocol (BGP) routes and up to 32,000 LSPs per system.
- High availability: Supports non-stop services and non-stop routing, MPLS, Fast Reroute and in-service software upgrade (ISSU) to guarantee network uptime and provide unparalleled availability and reliability.
- OA&M: Service assurance capabilities such as administration and maintenance toolkit and mirroring are integrated to reduce mean-time-to-repair (MTTR) and ensure a predictable end-user experience.
- Enhanced troubleshooting tools: ISSU minimizes downtime between minor release upgrades.
- Security: Critical path method queuing eliminates the effect of one peer consuming the system resources, and service-based filtering uses Access Control Lists (ACLs) to filter on a per-service or per-interface basis.
- Accounting and billing: Service-based accounting and billing collects statistics on a per-service basis, not just on a per-port basis.
- Network management: The 7750 SR is fully supported by the Alcatel-Lucent 5620 Service Aware Manager (SAM) and Alcatel-Lucent 5650 Control Plane Assurance Manager (CPAM).

TECHNICAL INFORMATION

Remarks:

*6 x mini RJ-21

**On CMA

Alcatel·Lucent Enterprise

OmniAccess 5700 ESR Compact

WAN ENTERPRISE SERVICE ROUTER

The Alcatel-Lucent OmniAccess™ 5700 Enterprise Services Router (ESR) compact router product line comprises state-of-the-art Enterprise Access Routers.

OVERVIEW

The Alcatel-Lucent OmniAccess 5700 Enterprise Services Router (ESR) compact router product line comprises state-of-the-art Enterprise Access Routers. The OmniAccess 5700 ESR routers deliver fast and uninterrupted network communications with the most complete networking features. A variety of network interfaces are offered on the different compact models, including 4G cellular (LTE), VDSL, SHDSL, E1/T1 CSU/DSU WAN, SFP and universal serial port (synchronous) (V.35, X.21, V.24). These routers incorporate an advanced protocol stack, including support for dynamic routing, multi Virtual Router Redundancy Protocol (VRRP), link quality management, redundant links, VLANs, QoS, bridging, VPNs, and Simple Network Management Protocol (SNMP) among others.

The OmniAccess 5700 ESR product line delivers many features in a compact form factor with no moving parts. It is ready to cover any need which could arise in enterprise access networks.

KEY BENEFITS

- One of the most complete network protocol stacks for access routers worldwide
- Very high performance
- Hardware encryption, optimizing transmission of encrypted traffic
- Gigabit Ethernet port (10/100/1000M, RJ-45 connector) and 4-port switch (10/100/1000M)
- Embedded WLAN IEEE 802.11b/g/n interface (multiple-input multiple-output [MIMO], double port for external Wi-Fi® antennas), with professional security (IEEE 802.11i)
- Wide array of variants with additional interfaces to select from, including 4G cellular (LTE), VDSL, SHDSL, E1/T1 CSU/DSU WAN, SFP, and universal serial port (synchronous) (V.35, X.21, V.24)
- USB Host 2.0 port for additional cellular connectivity
- External power supply (90 V to 240 V AC adaptor) or through Ethernet (Power over Ethernet [PoE] client integrated on selected models)
- Top-grade management. The SNMPv3 agent allows easy integration with network management platforms.

Alcatel·Lucent Enterprise

KEY FEATURES

ADVANCED ROUTING FUNCTIONS AND QOS

The purpose of the OmniAccess 5700 ESR series is to provide service for a large number of small and medium branches. The device is capable of offering advanced features, all of which can be necessary in a corporate environment, for example:

- Advanced routing features fit for complex networks, such as route balancing, routing protocols oriented to corporations, routing based on policies, multiple instant routing, or routing depending on real-time measured quality on the line
- Border router for different dynamic routing domains (RIP, OSPF, or BGP); administrative distance in IP routes; route filtering based on maps and more
- Multi Hot Standby Router Protocol (HSRP) and multi-VRRP for network resilience and load balancing applications
- Link quality monitoring through the Alcatel-Lucent NSM/NSLA system. Routing policy based on link quality (RTT, erroneous frame rate and UDP jitter)

SECURE COMMUNICATIONS

- Encryption processor incorporated; optimizes device performance in scenarios with IPSec tunnels
- Fully parameterized IPSec client/server. Advanced IPSec features such as PKI encryption (digital certificates), extended authentication, and Reverse-Route Injection
- Latest generation meshed topology VPN networks (Dynamic Multipoint VPN technology)

EFFICIENT COMMUNICATIONS MANAGEMENT

- A Syslog client reports any events detected by the ESR Events Logging System.
- SNMPv3 agent provides the ability to send traps and read MIB2 and Private MIB
- Network clock synchronization (NTP client)
- Telnet, SSH2, FTP, TFTP, and RADIUS client

depending on the defined management communities. The 5720 ESR can be easily integrated into the existing network management platform.

CONNECTIVITY OPTIONS AND ADVANCED FUNCTIONALITIES

- Cellular (up to LTE), Wi-Fi, complete serial port, ADSL2+/VDSL2, SHDSL (ATM 4p), SFP, and E1/T1

INTEGRATED VOIP SOLUTION, UNIVERSAL VOIP MEDIA GW

- Universal B2B-UA SIP Server, compatible with Alcatel-Lucent Enterprise Unified Communications and NOE/UA
- Service provided for up to 10 IP telephones in the branch

TECHNICAL INFORMATION

Alcatel·Lucent Enterprise

7450
ESS

WAN ETHERNET SERVICE SWITCH

The Alcatel-Lucent 7450 Ethernet Service Switch (ESS) is a feature-rich MPLS-based switch/router designed to aggregate and switch voice, video, and data traffic in mission-critical enterprise and service provider networks. It is ideally suited as a backbone and aggregation node in a network, providing Layer 2 connectivity for multiple locations and access to the Layer 3 WAN access points.

OVERVIEW

The Alcatel-Lucent 7450 Ethernet Service Switch (ESS) is a feature-rich MPLS-based switch/router designed to aggregate and switch voice, video, and data traffic in mission-critical enterprise and service provider networks. It is ideally suited as a backbone and aggregation node in a network, providing Layer 2 connectivity for multiple locations and access to the Layer 3 WAN access points.

The Alcatel-Lucent 7450 ESS overcomes the limitations imposed by traditional Ethernet switches with features like hierarchical quality of service (H-QoS) and MPLS resiliency. It sets a new market standard for the delivery of Ethernet business services such as Virtual Private Wire Service (VPWS) and Virtual Private LAN Service (VPLS).

The Alcatel-Lucent 7450 ESS provides scalable performance and port density in five chassis configurations: 12-slot 7450 ESS-12, 7-slot 7450 ESS-7, 6-slot 7450 ESS-6, 6-slot 7450 ESS-6v, and 1-slot 7450 ESS-1.

KEY BENEFITS

- Flexibility: QoS/H-QoS enables network managers to support users that require different service classes and maximizes the bandwidth utilization.
- Configurability: Product sizes and densities are available to match any requirements up to terabit switching/routing capacity.
- Dependability: Outstanding network stability, scalability, availability and performance, through a combination of MPLS, bridged Ethernet, stacked VLANs and Spanning Tree Protocols
- Upgrade path: Inherent product scalability coupled with a programmable architecture ensures forklift-free upgrades and reduces truck rolls (no technician deployment); upgradeable to full IP/MPLS Layer 3 capabilities
- Fault tolerance: Diagnostics and mirroring are implemented through built-in end-to-end Ethernet OA&M tools.
- Fast deployability: Ethernet services with advanced provisioning tools reduce the time from installation to network operation.

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KEY FEATURES

FOCUS ON SERVICE

- Supports a service-oriented architecture (SOA) by using SLA-based Ethernet services with filtering, shaping and QoS on a per-service basis, while scaling to support tens of thousands of users

VIRTUALIZATION AND HIGH AVAILABILITY

- Deploys IETF implementations of VPWS and VPLS
- Includes non-stop services, non-stop routing, MPLS, Fast Reroute and in-service software upgrade (ISSU) to guarantee network uptime

FLEXIBLE BILLING

- Deterministic, tiered or usage-based billing options

SMALL FOOTPRINT

- Leads the industry in rack density (by two to three times per rack) when compared with competing Layer 2/Layer 3 Ethernet switches with 100 Gb/s architecture

FUTURE-READY

- Enables quick and painless adaptation and upgrades to new and evolving standards using programmable fast path

TECHNICAL INFORMATION

Remarks:

*AC options available

**6 x mini RJ-21

***5 x mini RJ-21

Alcatel·Lucent Enterprise

OmniAccess ESR WWAN Enabler

WAN ENTERPRISE SERVICE ROUTER

The Alcatel-Lucent OmniAccess™ Enterprise Services Router (ESR) Cellular WAN Enabler is an external interface card that enables the enterprise router with cellular connectivity (up to 4G LTE). This cutting-edge peripheral does not require available interface card slots, or PCMCIA or USB slots in the router. The unique interface between the OmniAccess ESR Cellular WAN Enabler and the router is the Ethernet.

OVERVIEW

The Alcatel-Lucent OmniAccess Enterprise Services Router (ESR) Cellular WAN Enabler is an external interface card that enables the enterprise router with cellular connectivity (up to 4G LTE). This cutting-edge peripheral does not require available interface card slots, or PCMCIA or USB slots in the router. The unique interface between the OmniAccess ESR Cellular WAN Enabler and the router is the Ethernet.

The management of this new interface is seamlessly integrated into the router engine, so that the service intelligence offered by the router for the landline WAN service is fully available for the new wireless WAN (WWAN) service. The standards-based communication on the Ethernet between the Enabler and the router guarantees compatibility with most existing enterprise routers.

This innovative device offers an easy and cost-effective solution for boosting cellular coverage for indoor scenarios. Enterprise routers are usually hosted in the server room or in the data center room where typically there is a lack of cellular coverage or, if present, the radio signal is not strong enough to guarantee broadband speeds at LTE frequency bands. Addressing this challenge, the ESR Cellular WAN Enabler is placed outside the server room in the spot with the best available cellular coverage and delivers connectivity to the router over the corporate Ethernet network. This new approach overrides the need for expensive coaxial cables and repeaters to boost the cellular coverage, while at the same time improving reception quality.

KEY BENEFITS

- Cost reduction and easy indoor cellular deployment. No expensive coaxial wiring or amplifiers are required to link the enterprise network platform to the cellular antenna, just the existing firm's Ethernet wiring.
- Reuse of the enterprise router installed base. No need for available expansion slots in the router or router upgrades.
- Compatible with third-party enterprise routers. The standards-based communication with the router guarantees compatibility with a large range of third-party enterprise routers.
- Fully managed from the enterprise router engine. The OmniAccess ESR Cellular WAN Enabler is fully configured and monitored from the router.
- Flexible traffic flow distribution policies can be implemented in the router for the efficient use of the router landline WAN and WWAN (ESR Cellular WAN Enabler) resources.
- Easy migration to future cellular technologies. The enterprise cellular technology is upgraded by just replacing the ESR Cellular WAN Enabler, not the entire router.
- Best in class scalability. A single router can manage multiple ESR Cellular WAN Enabler devices, allowing for coexistence of independent WWAN services in the enterprise for disaster recovery.
- Fast installation. It can also be used to provide immediate office connectivity until the fixed line is installed.

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Auto-provisioning (no manual programming required in the Enabler). A new point-to-point interface is configured into the router to manage the OmniAccess ESR Cellular WAN Enabler. When the Enabler boots up, it receives the full Ethernet and 3G/4G programming using Dynamic Host Configuration Protocol (DHCP).
- Advanced cellular link failure detection and reporting. Detection mechanisms based on control traffic flow tracking and inactivity timers permit the Enabler to report the cause of the 3G/4G failure back to the router.
- World-class 3G/4G diagnostics. The most complete radio interface monitoring information is available for an accurate service quality auditing and accounting, such as the signal strength history report on the past hour, the serving and neighbor cell received instant power, transmission speed, detailed UTRAN info and AT command-line interface (CLI).
- Small form factor, desktop or wall mounted
- Powered by Power over Ethernet (PoE) (IEEE 802.3af) or by an external power supply (included)
- SMA external antenna ports allow for the use of a wide range of external RF antennas
- SIM card tray with anti-theft protection

TECHNICAL INFORMATION

Hardware features

Power	PoE/DC
Connection to router	Ethernet
WAN interface	LTE
Inconspicuous design	Yes

Software features

Zero management (configured by router)	Yes
Compatible with third-party routers	Yes
Connection monitoring	Yes

Alcatel·Lucent Enterprise

7705 SAR

WAN SERVICE ACCESS ROUTER

The Alcatel-Lucent 7705 Service Aggregation Router (SAR) delivers industry-leading IP/MPLS and pseudowire capabilities in compact platforms that have the ability to reliably groom and aggregate multiple media, service and transport protocols onto an economical packet transport infrastructure.

OVERVIEW

The Alcatel-Lucent 7705 Service Aggregation Router (SAR) delivers industry-leading IP/MPLS and pseudowire capabilities in compact platforms that have the ability to reliably groom and aggregate multiple media, service and transport protocols onto an economical packet transport infrastructure.

The 7705 SAR-8 provides industry-leading scalability and density in a 2 RU version that supports a variety of adapter cards including T1/E1 any service any port (ASAP), serial data interfaces, Ethernet, microwave, CWDM OADM, and more. The platform can be optionally configured with redundant control and switch modules (CSMs) and uplinks providing very high reliability. The Alcatel-Lucent 7705 SAR-8 has eight slots; two are allocated for CSMs, with the remaining six being available for user traffic adapter cards.

The 7705 SAR-M is a series of 1 RU high routers available in four different configurations. All four variants support four 10/100/1000Base-TX with small form factor pluggable (SFP) optics, and three 10/100/1000Base-T auto-sensing Ethernet ports. The variable capabilities of the four variants are:

- Module slot, all Ethernet, fan cooled
- Module slot, Ethernet plus T1/E1, fan cooled
- All Ethernet, passively cooled
- Ethernet plus T1/E1, passively cooled

The 7705 SAR-F is a fixed configuration version of the SAR. Its form factor is 1 RU high and it supports up to 16 T1/E1 ASAP ports. The ASAP ports can be configured to support ATM, Inverse Multiplexing over ATM (IMA), TDM and Multilink Point-to-Point Protocol (MLPPP). The 7705 SAR-F also has six 10/100Base-T auto-sensing Ethernet ports, plus two ports that support 10/100/1000Base-TX using SFP optics.

The 7705 SAR-18 is a 10 RU version of the 7705 SAR with industry-leading scalability. It has 18 slots; two for CSMs, and the remaining 16 slots for traffic adapter cards. It is designed to support the full range of existing 7705 SAR traffic adapter cards, but in a larger scale platform it is also capable of supporting 10 Gb/s interfaces in four of the 16 slots. The 7705 SAR-18 is designed to efficiently and economically address the requirements of larger aggregation hubs or points of concentration within an IP/MPLS network.

KEY BENEFITS

- Cost effective: Transition from SDH/SONET/PDH-based connectivity to Ethernet and/or IP-based networking infrastructures to greatly reduce recurring operating expenditures such as line lease costs
- Resilient: Advanced resiliency features improve network uptime and allow critical services to be offered
- Performance: Rapid fault detection and powerful commissioning and troubleshooting tools improve productivity of operations staff and reduce network downtime
- Compact: Small but powerful enough to carry multiple traffic streams through multiprotocol and convergence capabilities (with flexible and granular QoS)
- Configurable: Alleviates the burden of complex pre-engineering and future scenario planning with a modular, flexible architecture
- Tough: Compact, rugged form factors are well suited for remote sites where deployment conditions are not ideal
- Information integrity: Accurate synchronization avoids data underflows, overflows and transmission "slips"
- Consistent: Creates service and operational continuity by using a common operating system across all service routers to minimize approval for use test cycles, eliminates all issues related to release and features backward compatibility, and allows for rapid fault isolation

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Migration to packet infrastructure: Economical upgrade path from circuit-based T1/E1 networking to economical and flexible IP/MPLS-based packet transport. Support for low-speed interfaces – V.35, X.21, RS-232, G.703 co-dir, FXS, FXO, C37.94
- Dependability: One-for-one hitless CSM failover (7705 SAR-8, SAR-18), synchronization redundancy, network uplink resiliency, power feed redundancy, and temperature hardening (7705 SAR-8, SAR-M, SAR-F)
- Powerful management tools: Service-aware OA&M capabilities complemented by the Alcatel-Lucent 5620 Service Aware Manager (SAM) management portfolio for GUI-based network and element configuration, provisioning, and fault and performance management
- Convergence: Dense adaptation of multiple converged services onto an economical packet infrastructure
- Dynamic routing to the access: Extends IP/MPLS capabilities to small sites, hubs, and network edge in compact form factors
- Network synchronization: Flexible synchronization options with redundancy and independent validation of accuracy

Alcatel·Lucent
Enterprise

TECHNICAL INFORMATION

Chassis models	CSM slots	High capacity adapter cards**	Standard adapter cards***	Expansion module	Power supply bays	Power supplies ****	Height rack units	Max. fabric capacity
7705 SAR-18	2	4	12	0	2	DC	10	140 Gb/s
7705 SAR-8	2	0	6	0	2	DC	2	12 Gb/s
7705 SAR-M (fan cooled)	0*	0	0	1	2	DC	1	5 Gb/s
7705 SAR-M (passively cooled)	0*	0*	0*	0*	2	DC	1	5 Gb/s
7705 SAR-F	0*	0*	0*	0*	2	DC	1	2 Gb/s

Port types	Fast Ethernet RJ-45	GigE SFP	OC-3/STM-1 clear	OC-3/STM-1 channelized	DS3/E3	T1/E1 channelized	T1/E1 ATM IMA	E&M	Serial	CWDM Passive optical	FXO	FSX	C37.94	G.703 co-dir	Aux. alarm
7705 Adapter cards															
8-port Ethernet	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-
8-port GigE	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
16- and 32-port ASAP T1/E1	-	-	-	-	-	16/32	16/32	-	-	-	-	-	-	-	-
2- and 4-port OC-3/STM-1	-	-	4	2	-	-	-	-	-	-	-	-	-	-	-
4-port DS3/E3	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
6-port E&M	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-
12-port Serial (RS-232, V.35, X.21)	-	-	-	-	-	-	-	12	-	-	-	-	-	-	
8-port Voice and teleprotection	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-
1-, 2-, 4- CWDM OADM	-	-	-	-	-	-	-	-	-	1-, 2-, 4-	-	-	-	-	-
8-color CWDM OADM	-	-	-	-	-	-	-	-	-	8-color	-	-	-	-	-
34-port Auxiliary alarm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34

Port types	ADSL2, ADSL2+, VDSL2	G.SHDSL, ADSL2, ADSL2+, VDSL2	GPON	CWDM passive optical
7705 SAR-M modules				
1-port GPON ONT	-	-	1	-
8-pair XDSL	8 pairs	-	-	-
1-color CWDM OADM	-	-	-	1 color
6-pair DSL	-	6 pairs	-	-

Port types	10G SFP+	GigE SFP
7705 SAR-18 X-Adapter card		
1-port 10G	1	-
10-port 1G	-	10

Remarks:

*Fixed configuration

**10G per card slot (full duplex)

***2.5G per card slot (full duplex)

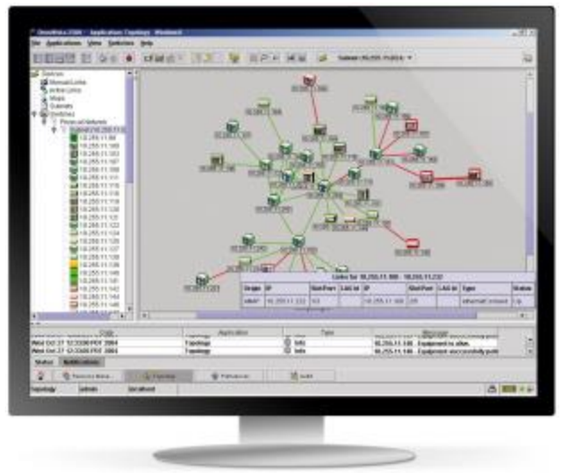
****-4.8 V/-60 V or +24 V (SAR-F, SAR-M, SAR-8 only), third-party AC power available (100 V AC to 240 V AC)

Alcatel·Lucent Enterprise

OmniVista 2500 NMS

MANAGEMENT NETWORK

The Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS) provides a comprehensive set of components and tools that simplify the management of the Alcatel-Lucent Enterprise portfolio and third-party networking devices.



OVERVIEW

The Alcatel-Lucent OmniVista 2500 Network Management System (NMS) provides a comprehensive set of components and tools that simplify the management of the Alcatel-Lucent Enterprise portfolio and third-party networking devices.

The Alcatel-Lucent OmniVista 2500 NMS allows managers to monitor network activity, configure and troubleshoot each device, and provision and manage an entire network from a single platform. In a single application, the OmniVista 2500 NMS reduces the complex deployment and administration of Alcatel-Lucent Enterprise solutions, from network infrastructure operations such as edge security deployment up to network management operations related to data center and virtualization deployment, with the new optional OmniVista 2500 module – the Alcatel-Lucent OmniVista™ 2500 Virtual Machine Manager (VMM).

The OmniVista 2500 NMS has a true client/server architecture, allowing multiple users to access its services simultaneously either through a Java™-based client or through web browser applications.

KEY BENEFITS

- Unified cohesive management and network-wide visibility: Provides a single intuitive GUI for network administration, enabling monitoring and configuration operations across multiple devices, for all network activities and events
- Scalable architecture: Provides simultaneous client sessions based on an extensible architecture suitable and scalable for large deployment
- Centralized control of switch administration access rights and network administrator credentials: Offers OneTouch setup of user login, password, administration credentials and access rights
- Configuration management: Automates initial devices configuration provisioning, ongoing maintenance and best practices, and compliance operations across large organizations
- Policy-based approach for network access control and QoS: For creating, distributing and updating policies from a centralized framework, across multiple switches
- Data center provisioning and virtualization simplification of operations with the OmniVista VMM: The optional OmniVista 2500 VMM addresses monitoring and inventorying for virtual network resources such as virtual machines, ensuring consistent and unified management and operational simplification for data centers.
- Role-based management with User Network Profile configuration: For end-user network access control including authentication, host integrity compliance and resource access definition
- Network quarantine: Quarantine Manager™ simplifies automated enforcement and definition of a network security perimeter for quarantine and isolation.
- Open application collaboration: Northbound interface based on web services for external third-party application collaboration

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Centralized, cohesive application covering all facets of network management operations and network security with a common, intuitive look and feel
- Intuitive, graphical topology map with extensive network adjacencies display and advanced logical filters for a more logical, business-like view of network infrastructure
- Centralized control of network device administration access rights and network administrator credentials
- Alarms monitoring and notification with advanced filtering capabilities and smart responders for fast notification and remediation
- Location-based troubleshooting tools for quick network connectivity problem resolution
- Simplified prime configuration and initial provisioning through centralized and automated network device configuration
- Network configuration change life cycle provided by identifying scope of changes across network devices and configurations and appropriate scheduled changes applied
- Best practices operations and compliance enforcement for backup/restore operations and software version management for device configuration management operations
- Policy-based Access Control List (ACL) and QoS for voice, video and data performance optimized and network resource access enforced with simplified or expert modes
- Universal Network Profile definition and automated configuration assignment for data center infrastructure provisioning with extensive troubleshooting operations for constant virtual machine inventory and location tracking
- Global end-user network profile and security configured for role-based access to resources and management of credentials
- Template-like approach for simplified configuration of Traffic Anomaly Detection
- Network quarantine for security perimeter enforced to automatically contain potential threats
- Northbound interface/web services APIs for easy application integration with IT dashboard applications developed in-house

TECHNICAL INFORMATION

OmniVista 2500 NMS server-supported platforms and operating systems

- Microsoft® Windows® Server 2008 (32-bit and 64-bit versions)
- Microsoft Windows 7 Enterprise (32-bit and 64-bit versions)
- Red Hat® Enterprise Linux® ES 6.1 (32-bit and 64-bit versions)
- SUSE® Linux Enterprise Server 11.2 (64-bit version)

Virtualization system installation

- VMware® ESXi 4.0 minimum (64-bit installation)

Minimum CPU

- Intel® Pentium® Quad Core 2 GHz minimum

Minimum RAM

- 4G RAM or higher

OmniVista 2500 NMS client-supported platforms and operating systems

- Microsoft Windows 7 (32-bit and 64-bit versions)
- Red Hat Enterprise Linux ES 6.1 (32-bit and 64-bit versions)
- SUSE Linux Enterprise Server 11.2 (64-bit version)

Supported web browsers

- Microsoft Internet Explorer® 8.0 or higher
- Mozilla® Firefox® 8.0 or higher

Minimum CPU and disk space

- Intel Pentium Dual Core processor with 2 GHz minimum

Minimum RAM

- 2G RAM or higher

Alcatel·Lucent Enterprise

5620 SAM

MANAGEMENT NETWORK

The Alcatel-Lucent 5620 Service Aware Manager (SAM) takes enterprises well beyond the traditional boundaries of element, network and service management. It enables unified, end-to-end management of IP/MPLS and Carrier Ethernet networks and the services they deliver. Rapid provisioning reduces time to market and increases flexibility when new services are launched. Proactive troubleshooting helps resolve problems before they affect users.

OVERVIEW

The Alcatel-Lucent 5620 Service Aware Manager (SAM) takes enterprises well beyond the traditional boundaries of element, network and service management. It enables unified, end-to-end management of IP/MPLS and Carrier Ethernet networks and the services they deliver. Rapid provisioning reduces time to market and increases flexibility when new services are launched. Proactive troubleshooting helps resolve problems before they affect users.

The Alcatel-Lucent 5620 SAM offers a modular, extensible and scalable architecture that can be customized to fit specific operational environments. It consists of four modules that provide:

- Element management for traditional fault, configuration, accounting, performance, and security (FCAPS) functionality
- Network infrastructure configuration, service provisioning, scripting and customer management
- Service assurance including physical, network and service topology views, and OA&M service diagnostics tools
- Operations Support System (OSS) integration with external applications

Enterprises can further enhance the 5620 SAM management capabilities with the Alcatel-Lucent 5650 Control Plane Assurance Manager (CPAM), Alcatel-Lucent 5670 Reporting and Analysis Manager (RAM), Alcatel-Lucent custom service portals, and precertified OSS partner application integrations.

KEY BENEFITS

- Introduces new services and technologies with accelerated and reliable provisioning that minimizes the risk of misconfiguration and reduces time to market
- Prevents potential service-affecting problems proactively before they impact users
- Faster and simplified problem resolution to quickly pinpoint and solve issues
- Collects statistics efficiently for flexible billing and SLA options
- Provides unmatched operational scalability to support network and service growth
- Increases productivity and flexibility with a management solution that easily adapts to allow cost-effective integration into the existing operational environment, enhancing workflows and processes

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Easy-to-use GUI that accelerates configuration and provisioning tasks. Automation further accelerates tasks and minimizes the time and costs associated with the errors that commonly occur when a command line interface (CLI) is used.
- Common provisioning for Layer 2 and Layer 3 services to reduce the cost of delivering different service types
- Extensive service assurance capabilities that allow proactive identification of problems before they affect customers
- Powerful troubleshooting tools that help to quickly pinpoint the root cause of problems to speed resolution
- Templates that allow simplified integration with existing processes and workflows
- Open interfaces that enable integration with custom web portals, OSSs and Business Support Systems (BSSs)

TECHNICAL INFORMATION

Operating environment

The Alcatel-Lucent 5620 Service Aware Manager, Release 9.0, operates on the following platforms:

Main, database, auxiliary servers and clients:

- X86 or Intel-based platforms (HP® or Oracle® Sun® servers only)
- Oracle® Solaris® 10 Operating System
- Database: Oracle database 11g

Additional clients:

- Microsoft® Windows® 2000/2003/XP Professional/Vista Business and Ultimate (32 bit)
- Microsoft Windows 7 Professional (32-bit and 64-bit editions)

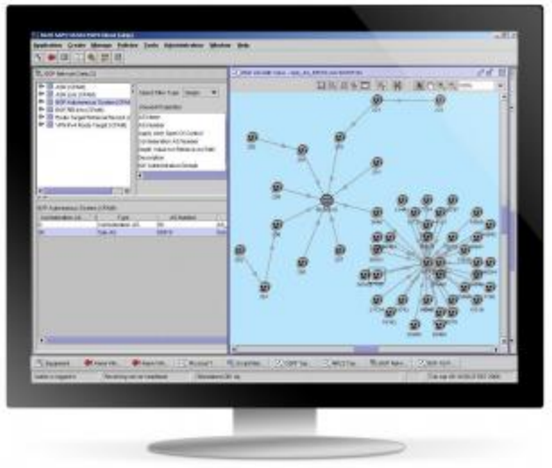
Note: Hardware recommendations may vary depending on scale of deployment. Contact your Alcatel-Lucent representative for 5620 SAM platform sizing recommendations.

Alcatel·Lucent Enterprise

5650 CPAM

MANAGEMENT NETWORK

The Alcatel-Lucent 5650 Control Plane Assurance Manager (CPAM) is an IP/MPLS control plane management solution enabling enterprises to assure network and service availability against control plane misconfigurations, malfunctions, and undetected routing updates as well as accelerate service problem resolutions over an IP/MPLS infrastructure.



OVERVIEW

The Alcatel-Lucent 5650 Control Plane Assurance Manager (CPAM) is an IP/MPLS control plane management solution enabling enterprises to assure network and service availability against control plane misconfigurations, malfunctions, and undetected routing updates as well as accelerate service problem resolutions over an IP/MPLS infrastructure. The Alcatel-Lucent 5650 CPAM offers real-time control plane visualization, proactive control plane surveillance, configuration validation, and control plane diagnosis.

With the IP network expanding, the need to assure against potential issues in the network IP control plane increases – visibility into emerging issues enables proactive resolution before services are impacted.

The 5650 CPAM is a route analytics solution that is tightly integrated within the Alcatel-Lucent 5620 Service Aware Manager (SAM) to deliver unprecedented real-time visualization, surveillance, and troubleshooting for dynamic IP/MPLS networks and services. It enables assurance against multivendor control plane misconfigurations, malfunctions, and undetected routing updates, as well as accelerates service problem resolutions over an IP/MPLS infrastructure.

The 5650 CPAM delivers this functionality based on real-time control plane information provided by the Alcatel-Lucent 7701 Control Plane Assurance Appliance (CPAA). The Alcatel-Lucent 7701 CPAA is a route listening and route processing hardware device that non-intrusively participates in routing plane signaling. It is based on the Alcatel-Lucent proven and evolving service router operating system (SR OS).

KEY BENEFITS

The 5650 CPAM improves network assurance and operational efficiency through seamless integration with the Alcatel-Lucent 5620 SAM, thereby making control plane issues directly related to IP/MPLS infrastructure and services easy to understand and address through:

- Proactive assurance: Reduces SLA violations through simplified detection of abnormal control plane behavior and misconfigurations before they lead to customer-affecting problems
- Rapid troubleshooting: Rapidly resolves problems by visualizing control plane topology, routing configuration and updates/queries
- Scalable IP/MPLS operations: Enables first line operators to independently resolve problems without the need to escalate to blackbelt IP experts
- Accelerates processes through optimized workflows and automation
- Improves accuracy of third-party network planning and traffic engineering applications by providing real-time IP topology and IP path information

Alcatel·Lucent Enterprise

KEY FEATURES

PROACTIVE ASSURANCE

- Allows operators to analyze the impact of changes graphically and prevalidate changes before they are made to the live network using topology simulation
- Proactively monitors for link state advertisements (LSAs) propagated by Interior Gateway Protocols (IGPs), routing protocols and inter-autonomous system (AS) route updates maintained by Border Gateway Protocols (BGPs)
- Detects and notifies suspicious IP or MPLS label switched path (LSP) changes that deviate from the intended change, or reviews a full history of all changes

RAPID TROUBLESHOOTING

- Troubleshoots Layer 2 and Layer 3 services, MPLS infrastructure using OA&M traces that overlay on an IP topology view
- Highlights the IP/MPLS link qualification/ disqualification to identify the exact node that cannot route a request using constrained shortest path first (CSPF) path computation and analysis
- Utilizes consolidated multicast troubleshooting and topology, allowing for multicast tree visualization through Protocol Independent Multicast (PIM) and Internet Group Management Protocol (IGMP) leaf overlay on IGP topology

SCALABLE IP/MPLS OPERATIONS

- Enables automated IGP misconfiguration discovery using protocol audits to reveal incomplete IGP, Label Distribution Protocol (LDP), or Resource Reservation Protocol (RSVP) peering
- Streamlines path update investigations through efficiently navigating from path change records directly to the correlated routing events that caused the change
- Enables multivendor real-time graphical control plane visualization by leveraging passive control plane listening and active distributed user-query processing from the Alcatel-Lucent 7701 CPAA

TECHNICAL INFORMATION

Operating environment

The Alcatel-Lucent 5650 CPAM is a route analytics solution that is tightly integrated within the 5620 SAM to deliver unprecedented real-time visualization, surveillance and troubleshooting for dynamic IP/MPLS networks and services.

The Alcatel-Lucent 5620 SAM, Release 7.0, operates on the following platforms:

- Sun Solaris™ 10 x 86 for Sun Microsystems AMD-based platforms (preferred)
- Sun Solaris 10 for Sun Microsystems SPARC® platforms
- Microsoft® Windows® 2000/2003/XP Professional (32-bit edition) operating system
- Microsoft Windows Vista® Business and Ultimate (32-bit editions) for 5620 SAM client only

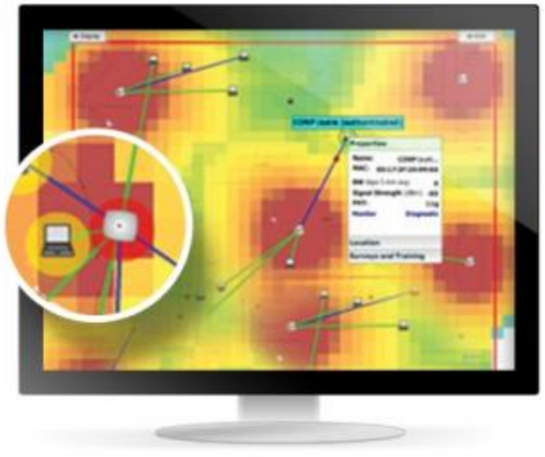
Contact your Alcatel-Lucent representative for 5620 SAM platform sizing recommendations.

Alcatel·Lucent Enterprise

OmniVista 3600 Air Manager

MANAGEMENT NETWORK

The Alcatel-Lucent OmniVista™ 3600 Air Manager (AM) is a WLAN management software suite that provides centralized visibility, configuration, and control over today's wireless networks. The OmniVista 3600 AM reduces the cost of operating the wireless infrastructure, improves network performance, improves reliability for wireless end users, and makes the network more secure.



OVERVIEW

The Alcatel-Lucent OmniVista 3600 Air Manager is a WLAN management software suite that provides centralized visibility, configuration, and control over today's wireless networks. The OmniVista 3600 AM reduces the cost of operating the wireless infrastructure, improves network performance, improves reliability for wireless end users, and makes the network more secure.

The OmniVista 3600 AM is a true operations management solution that delivers a full set of capabilities including real-time user and device monitoring, centralized configuration and compliance management. These management features are designed for the entire IT staff, providing every team member with customized monitoring views and the detailed information required for the job. Most importantly, they provide complete visibility and transparency, so IT can see exactly where users are and how the network is performing at all times.

In addition to serving the Alcatel-Lucent OmniAccess wireless product line, the OmniVista 3600 Air Manager supports the WLAN infrastructure of multiple vendors, thus providing a centralized operations platform for a heterogeneous WLAN network through all phases of its life cycle.

KEY BENEFITS

- Provides Level One and Level Two Help Desk with all relevant user information to troubleshoot and fix a WLAN problem in very little time
- Enhances security through availability of forensic information pertaining to user activity over the wireless network
- Provides accurate assessment of performance and network capacity over time; allows for proactive planning of network upgrade for increased capacity
- Provides efficient and fast RF troubleshooting information by correlating between RF heat map, interference map and user location
- Offers flexibility in deployment strategy with the ability to gradually migrate third-party equipment while using OmniVista 3600 as the common centralized management platform
- Its audit capability prevents a large number of security incidents resulting from improper configuration of wireless equipment
- Detects one of the most dangerous and yet common threats from WLANs – rogue access points
- Simplifies firmware distribution tasks for large organizations

KEY FEATURES

KEY FEATURES

- User, session and device monitoring with bandwidth usage, RF signal strength, QoS data, and roaming history
- Storage of nearly two years of historical data, user roaming patterns and detailed capacity reports
- Real-time location information
- Management of wireless solutions for multiple vendors
- Compliance audits and configuration policy enforcement
- Rogue access point detection and classification
- Automatic distribution, scheduling and verification of firmware updates

Alcatel·Lucent Enterprise

TECHNICAL INFORMATION

Operating system

To ensure hardware capability, the server hardware should support Red Hat® Enterprise Linux®. The Alcatel-Lucent OmniVista 3600 Air Manager includes a default operating system based on CentOS. Optionally, Red Hat Enterprise Linux may be chosen. Only 32-bit Red Hat Enterprise Linux installations are supported; not supported are 64-bit operating system installations.

Hardware platform

The hardware platform sizing is based on the number of managed devices and practical use of the OmniVista 3600 Air Manager Core Platform, Rogue AP Detection Module and the Visual RF Module.

Processors and memory

- 100 managed devices: Intel® Xeon® L5310 processor, Dual-Core AMD Opteron™ 2210 processor, 4G RAM
- 200 managed devices: Intel Xeon L5310 processor, Dual-Core AMD Opteron 8216 processor, 6G RAM
- 500 managed devices: Intel Xeon E5420 processor, Dual-Core AMD Opteron 8222 processor, 8G RAM
- 1000 managed devices: Intel Xeon E5450 processor, Dual-Core AMD Opteron 8222 processor, 12G RAM
- 2500 managed devices: Intel Xeon E5460 processor, 16G RAM

Disk storage

- 100 managed devices: 7.5G to 15G (15,000 rpm)
- 200 managed devices: 15G to 30G (15,000 rpm)
- 500 managed devices: 38G to 75G (15,000 rpm, multiple disks in RAID)
- 1000 managed devices: 75G to 150G (15,000 rpm, multiple disks in RAID)
- 2500 managed devices: 187G to 375G (15,000 rpm, multiple disks in RAID)

Contact your Alcatel-Lucent representative for more specific guidelines for sizing hardware.

Alcatel·Lucent Enterprise

OmniVista 2500 VMM

MANAGEMENT NETWORK

The Alcatel-Lucent OmniVista™ 2500 Virtual Machine Manager (VMM), an optional component of the OmniVista 2500 Network Management System (NMS), addresses new operational requirements and new capabilities required to ensure consistent, unified management and operation simplification for the new virtualized infrastructure deployed in data centers.

OVERVIEW

The Alcatel-Lucent OmniVista 2500 Virtual Machine Manager (VMM), an optional component for the OmniVista 2500 Network Management System (NMS), addresses new operational requirements and new capabilities required to ensure consistent, unified management and operation simplification for the new virtualized infrastructure deployed in data centers.

The OmniVista 2500 VMM offers a comprehensive end-to-end solution unifying physical and virtual infrastructures into a single viewing pane for network operators. Network operators can monitor and control virtual networks, ensuring that virtual network policies are consistently and automatically applied across the infrastructure. This enables error-free network operations for the IT organization and simplifies deployment of value-added services such as live virtual machine migration which includes VMware® VMotion™ and Citrix® XenMotion™.

The OmniVista 2500 VMM contributes to a comprehensive manageability solution that in conjunction with the OmniVista 2500 NMS spans the Alcatel-Lucent routing and switching network portfolio.

KEY BENEFITS

- Vendor agnostic architecture: Supports and interfaces with leading enterprise virtualization vendors, VMware® vCenter™ and Citrix® XenServer™
- Virtual network resources visibility and inventory: Automatically discovers and constantly updates the complete virtual machine inventory including all relevant information related to the network infrastructure, offering a complete single viewing pane for end-to-end physical and virtual networks, increasing operational efficiency
- Simplified tracking and troubleshooting: Provides correlated information and a single viewing pane on connectivity between virtual and physical networks, offering a complete current state of the network with constant synchronization. It simplifies troubleshooting operations and reduces downtime.
- Unified provisioning with automation: Establishes virtual network profile definition and configuration. Facilitates virtual network profile assignment to network infrastructure to ensure consistent service delivery. It reduces the need to constantly communicate between network infrastructure and the virtualization team changes related to configuration changes.
- Event and audit logs: Maintains a log of all critical events and actions, tracking all critical configuration changes
- Flexible installation: Supports all leading IT platforms and server operating systems. It leverages VMware vCenter directly out of the box, requiring no extra installation on hypervisor platform.

Alcatel·Lucent Enterprise

KEY FEATURES

KEY FEATURES

- Supports and interfaces with leading Enterprise virtualization vendor, VMware vCenter and Citrix XenServer
- Automatically discovers and constantly updates the complete virtual network inventory to offer a complete single viewing pane for end-to-end physical and virtual networks
- Simplified tracking and troubleshooting capabilities with VM locator to offer a complete state of network with constant synchronization between a virtual and physical network, including real-time and historical location tracking for virtual machines
- Facilitates unified provisioning with automation for virtual network profile configuration to reduce human errors by managing virtual network profile assignment to the data center network infrastructure for maximum service availability
- Maintains event and audit logs for all critical actions for OmniVista 2500 VMM to provide historical records for compliance purposes
- Flexible installation as OmniVista 2500 VMM runs as an optional module fully integrated with OmniVista 2500 NMS, relying on the same management user interface and same cohesive workflow, and reducing the training curve

TECHNICAL INFORMATION

Minimum OmniVista 2500 VMM software requirements (server and client)

- Microsoft® Windows® Server 2008 (32-bit and 64-bit versions) – server only
- Microsoft® Windows® 7 Enterprise (32-bit and 64-bit versions)
- Red Hat® Enterprise Server 6.1 (32-bit and 64-bit versions)
- SUSE® Linux Enterprise Server 11.2 (64-bit version)

Minimum OmniVista 2500 VMM server configuration

- For Microsoft Windows, Red Hat ES, SUSE:
  - Intel® Pentium® Quad Core 2 GHz minimum
  - 4 GB RAM minimum

Minimum OmniVista 2500 NMS client configuration

- For Microsoft Windows, Red Hat ES, SUSE configuration
  - Intel Pentium Dual Core 2 GHz minimum
  - 2 GB RAM minimum

Minimum VMware requirements for VM inventory and location features

- VMware vCenter Server Standard, Release 4.1 minimum

Minimum Citrix requirements for VM inventory and location features

- Citrix XenServer Advanced and Enterprise Release 6.0 minimum

Alcatel·Lucent Enterprise

VitalSuite

MANAGEMENT PERFORMANCE

The Alcatel-Lucent VitalSuite™ Performance Management software is a comprehensive, fully integrated, scalable, and cost-effective package that provides both historical and near-real-time views into everything from virtual environments to Voice over IP (VoIP) traffic to mission-critical applications and network resources. The solution proactively monitors, measures and optimizes performance at every level of IT operations using an easy-to-use Web 2.0 GUI with support for both IPv4 and IPv6 network environments.

OVERVIEW

The Alcatel-Lucent VitalSuite Performance Management software is an award-winning multivendor, multi-technology. multi-tenant application-aware network performance management solution. It is a comprehensive, fully integrated, scalable, and cost-effective package that provides historical, trending and near-real-time views into everything from Virtiualization (Cloud/SDN) to Unified Communication (VoIP traffic) to mission-critical applications to application traffic flows and server/network resources. The solution proactively monitors, measures and optimizes performance at every level of IT operations using an easy-to-use Web 2.0 GUI with support for both IPv4 and IPv6 network environments.

VitalSuite has several major software modules:

- VitalSuite® Apps Application Performance Management software – This module monitors and manages application performance for business-critical applications. It proactively gives network-wide, real-time visibility for tracking and analyzing the behavior of network-based applications such as e-mail, Web, Domain Name System (DNS), and in-house applications by monitoring traffic volumes and application transaction response times from end-user's perspective.
- VitalSuite® Net Network Performance Management software/VitalSuite® Real-time Event Analysis software – This module provides critical network information necessary to preempt problems, optimize resources, and plan for maximum return on network investments. For your multivendor, multifunction network devices, VitalNet/VitalRealTime provides network resource auto-discovery, centralized visibility, advanced 2D/3D topology views, reports with drilldowns, trending and capacity planning, advanced thresholding and alarming, servers (VMs) and VoIP monitoring. The software also collects SNMP traps to provide fault management information about network devices.
- VitalSuite® Flow software collects traffic flow records directly from the network and provides powerful traffic analysis and reporting features based on that data. VitalSuite Flow offers the integrated Flow monitoring capability that helps monitor application and network traffic behavior to identify how the network bandwidth is being used.
- VitalSuite® ART Advanced Reporting Tool is a comprehensive Web-based tool that enables you to generate advanced custom presentation-quality reports and graphs by extracting monitored data from VitalSuite.

VitalSuite is a sophisticated monitoring system that allows IT organizations to provide internal users and/or customers with secure views into the quality of services they receive. VitalSuite provides the critical network information necessary to preempt problems, optimize resources and plan for maximum return on network investments. This market-leading management solution provides near-real-time, end-to-end, Web-based visibility into geographically dispersed, multivendor, multi-technology converged infrastructure. It enables IT managers to monitor, analyze, manage and predict service performance from a single centralized location for Servers & VMs, LAN, WAN, WLAN, virtualized environments (Cloud/SDN), Unified Communications & VoIP, Genesys™ contact centers, and applications.

KEY BENEFITS

- Accesses at-a-glance personalized performance data that is aligned with an IT operational model, including multivendor and multi-technology support
- Improves operations team productivity using the easy-to-use Web 2.0 GUI with simple but powerful workflow, search, and filtering capabilities
- Obtains centralized views of application, virtualization and network performance: Client web/database transactions, routers, switches, LAN/WAN, servers & VMs, Cloud/SDN, UC & VoIP, Genesys, traffic flow data, and SNMP traps
- Preempts potential network problems with real-time network-wide visibility in both IPv4 and IPv6 environments with advanced thresholds & alerts
- Network-wide visibility: Monitors performance across the entire IT infrastructure using individual network resources, topology, paths, domains, groups and services
- Technology-specific visibility: Monitors performance using technology-specific dashboards for VoIP and virtualization environments
- Monitors application performance through both end-user activity and synthetic application transactions
- Simplifies analysis and planning for every organizational level with searches & filter, standard reports, drill down reports, dashboards and 2D/3D topology views
- Proactively tracks performance problems to their source and maximize uptime
- Increases VoIP quality by efficiently identifying the root cause using advanced VoIP performance monitoring solution with the capability to generate synthetic VoIP traffic
- Monitors application and network infrastructure using unique Genesys contact center monitoring features with specialized data collection from Genesys servers
- Views network flow traffic with the ability to monitor, alert, and analyze flow data for application profiling, application network utilization and traffic flow reporting
- Strengthens support of critical business transactions with applications performance monitoring to enhance the end-user experience
- Accesses real-time data to identify performance issues before they affect users
- Protects network investments with enhanced operational performance
- Realizes rapid return on investment (ROI) with immediate system deployment and access to performance data
- Leverages the fast, easy deployment characteristics of VitalSuite
- Helps network managers identify potential trouble spots, verify SLA compliance, and optimize resource utilization
- Protects investments: Use built-in toolkits to speed integration with existing management systems and emerging technologies
- Implements carrier-class management capabilities priced to suit enterprise IT budgets – cost-effective price to performance
- Leverages VitalSuite scalability features to grow incrementally as the network grows

KEY FEATURES

GENERAL FEATURES

Industry-leading scalability with single-server deployments to multiserver and multi-tiered deployment scenarios

Comprehensive multivendor VoIP performance monitoring with VoIP Dashboard views which includes collection and analysis of individual VoIP call records from leading VoIP platforms including Avaya, Cisco, and Alcatel-Lucent (streaming call records from OmniPCX™).

Centralized application and network visibility with easy-to-use Web 2.0-based GUI from a single administration interface for user accounts administration, domain and group definition, 2D/3D topology discovery & configuration and threshold definitions.

VITALSUITE APPS APPLICATION PERFORMANCE MANAGEMENT SOFTWARE

- VitalAgent™ client software: Pinpoints application-related problems on desktops, notebooks and servers with near-realtime application transition reports
- Powerful fault detection and centralized alarm console: End-to-end application performance monitoring. Provides end-user perspective using active and passive monitoring with real-time demarcation of every application transaction by client, network and server time.
- Extensibility and remote diagnostics: Provides the ability to add support for in-house applications

VITALSUITE NET/VITALSUITE REAL-TIME NETWORK PERFORMANCE MANAGEMENT SOFTWARE

- Flexible, multivendor and multi-technology support: Monitors diverse resource types and more than 600 devices from more than 50 different vendors in both IPv4 and IPv6 environments
- Fully automated monitoring with versatile reporting: Provides auto-discovery, various reports for efficient and on-target troubleshooting with searches, filters and drill-down capabilities
- Versatile thresholding with instantaneous event notification: Offers default user-configurable, multilevel, rate-based, time-based and adaptive (learned from historical data) thresholds, device-specific or network-wide. E-mail, alarms summary, network path, topology and trap messages are used for event notification.
- Powerful event analysis: Advanced tools to filter, analyze and summarize raw performance data, and present it in easy-to-use graphical displays with quick drilldown from high-level views to detailed information. High-level displays include heat charts, traffic charts, 2D/3D network topology views, dashboards, and personalized MyVital portal views
- Extensive data collection with quick extensibility: Collects data from WAN, LAN, WLAN, servers & VMs, virtualized environments (Cloud/SDN), firewalls, Genesys contact center, Unified Communications, VoIP, and other network elements. MIBWorks and DataWorks tools provide a way to add data collection for new devices.
- Ability to collect and analyze incoming SNMP traps from network devices

VITALSUITE FLOW

- Simple and advanced application traffic analysis: Informs the network manager about the “who, what, when, where and how” concerning applications traffic usage on the network.
- Provides “Top N” reports for overall network, per interface or per endpoint

VITALSUITE ART ADVANCED REPORTING TOOL

- Fully integrated reporting tool: Provides access to all VitalSuite Performance Management software data sets, calculations, multilevel domain and group definitions; automatically discovers new collector data added
- Easy-to-use powerful custom reporting tool

TECHNICAL INFORMATION

General

- Tablet GUI interface for Mobility
- N-tier architecture for unsurpassed scalability (single server or multiserver deployments)
- Failover backup poller feature
- Northbound APIs for integration
- Internationalized GUI and OS support

VitalSuite Apps Application Performance Management software

- Server system requirements
  - Microsoft® Windows® 2008 R2 (64-bit version) with Microsoft SQL Server 2008 R2 (64-bit version)
  - Microsoft® Windows® 2012 (64-bit version) with Microsoft SQL Server 2008 R2 (64-bit version) or Microsoft SQL Server 2012 (64-bit version)
- VitalAgent desktop system requirements
  - Microsoft Windows XP operating system with SP2 or SP3, Windows 7 Professional (32-bit/64-bit versions) and Windows 8 Professional (64-bit version)
- Mid-tier agent server system requirements
  - Microsoft Windows Server 2003 operating system, Windows Server 2008 (64-bit version), Windows Server 2012 (64-bit version), Oracle® Solaris™ 10, Linux® (Red Hat® 6.x or SUSE® 10) operating systems
- Monitored applications
  - Internet (HTTP, HTTPS, and web-based applications such as DNS)
  - Groupware (e-mail, IBM® Lotus® Notes® mailbox, file and print services)
  - Databases (Oracle®, Microsoft SQL Server, Sybase® and LDAP)
  - Infrastructure (VPN, DNS and security)
  - SIP transactions
  - Custom in-house applications such as those using Java™

VitalSuite Net, VitalSuite Real-time, and VitalSuite Flow Performance Management software

- Server system requirements
  - Microsoft Windows 2008 R2 (64-bit version) with Microsoft SQL 2008 R2 (64-bit version)
  - Microsoft® Windows® 2012 (64-bit version) with Microsoft SQL Server 2008 R2 (64-bit version) or Microsoft SQL Server 2012 (64-bit version)
  - Red Hat Enterprise Linux 6.x (6.3 or later) with Oracle 11.g R2 Enterprise Edition with Partitioning Feature
- VoIP agent system requirements
  - Microsoft Windows XP operating system with SP2 or SP3, Windows 7 Professional (32-bit/64-bit versions), Windows 8 Professional (64-bit versions)
- Supports IPv4 and IPv6
- Supports SNMP v1, v2, and v3
- Supports Netflow v1, v5, v7, v9, and IPFIX
- Supports Sflow v5
- Collects incoming SNMP traps
- Monitored network elements (multivendor)
  - Routers and switches
  - WAN and LAN
  - Servers
  - Virtualized environments
  - UC & VoIP
  - Firewalls
  - Load Balancers
  - Genesys contact center
  - DSL
  - WLAN and WiMAX
  - ATM
  - Wireless
  - Active network probes

VitalSuite ART Advanced Reporting Tool

- Server system requirements
  - Microsoft Windows 2008 R2 (64-bit version) with Microsoft SQL Server 2008 R2 (64-bit version)
  - Microsoft® Windows® 2012 (64-bit version) with Microsoft SQL Server 2008 R2 (64-bit version) or Microsoft SQL Server 2012 (64-bit version)
  - Red Hat Enterprise Linux 6.x (6.3 or later) with Oracle 11.g R2 Enterprise Edition with Partitioning Feature

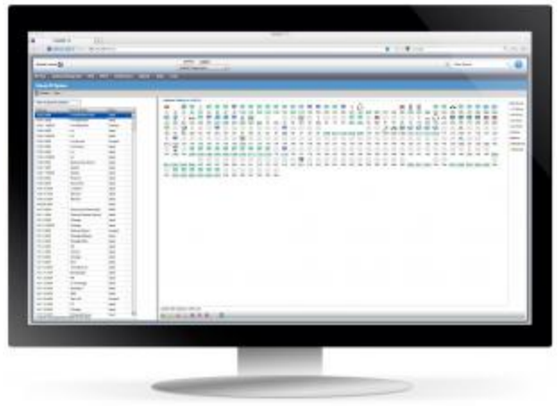
VitalSuite client system requirements:

- Microsoft Internet Explorer® 8, 9, or 10 browser, or Mozilla® Firefox® 20.0

VitalQIP

MANAGEMENT IPAM

The Alcatel-Lucent VitalQIP™ Domain Name System/ Dynamic Host Configuration Protocol (DNS/DHCP) IP management software product is a fully integrated IP management system consisting of DNS, DHCP, and IP address management (IPAM).



OVERVIEW

The Alcatel-Lucent VitalQIP DNS/DHCP IP management software product is a fully integrated IP management system consisting of DNS, DHCP, and IP address management.

VitalQIP is available as off-the-shelf software, as a purpose-built hardened appliance, as a software appliance, or as a software appliance running in a virtual environment.

The VitalQIP appliance product family consists of the carrier-grade model 6000, the enterprise next-generation model 1210, 1210 RAID and the branch office models 500 and 700.

VitalQIP provides the most flexible offering in the IPAM market today. Whether its functionality is based on dedicated appliances or implemented on customer provided servers, this functionality can be mixed and matched in various combinations to allow customers to take advantage of existing hardware, corporate standard hardware or corporate virtual environments.

KEY BENEFITS

Lowers personnel costs

- Accurate, centralized IP network inventory reduces address assignment errors and links IP device addresses to domain names. It also improves network move/add/change processes by providing IP address visibility to the individual object level, not just the subnet block.
- Reduction in infrastructure support costs
- Reduction in address assignment process and departmental costs
- Reduction in disaster recovery costs

Lowers downtime costs

- Improvement in availability of network infrastructure
- Reductions in operator errors and misconfigurations

Reduces company risk and improves business operations

- Risk reduction due to employee turnover
- Improvement in overall network operational efficiencies
- Reduced troubleshooting time and support costs due to inaccurate configuration

Increases productivity

- Maintenance of consistent, accurate IP inventory
- Operating expenses controlled through automation
- High availability for clients/subscribers
- High-performance access for clients/subscribers
- Optional integrated VitalQIP Appliance Manager Platforms to take advantage of the off-the-shelf hardware/software solution with extended capabilities for efficient patch management and processing as well as DNS high availability

Provisions new services quickly

- Performance-proven in today's most demanding networks (third-party benchmarked)
- Address space rapidly provisioned, and critical IP name and services reliably delivered throughout the network
- Industry-leading DHCP server performance benchmarked by third party (Exodus Labs)

KEY FEATURES

EXTENSIVE TOOLS

Extensive tools to further simplify IPAM such as Address Allocation and MyViews: VitalQIP continues to extend its capabilities and built-in tools to provide more efficient IP address, DNS and DHCP management, such as allowing for user-created rules and templates for automatic and consistent creation of best-fit address space for new sites.

AUDITING AND CUSTOMIZABILITY

Provides superior auditing, extensibility and customizability to meet unique customer needs, as required by many end customers; for example, custom fields, corporate extensions, object names and user exits

FLEXIBILITY

Supports a mix of legacy servers (running Oracle® Solaris™ operating system, Microsoft® Windows® operating system, and Linux® software) and new appliances such as remote servers, as well as software appliances and those running in a virtual environment. (Most vendors can support appliance-only solutions, which typically require a customer to purchase additional new hardware instead of potentially leveraging their installed base.)

PROVEN SCALABILITY

Support for customers with millions of addresses for over 10 years. As new technologies such as Virtual environments, cloud computing, IPv6 and Software defined networking become a reality, a proven product will be critical for scaling environments.

SECURITY

Provides support for TSIG, gsss-tsig and DNSSEC. DNS firewalling using RPZ Zones, DNS server blacklisting along with LDAP and Radius clients for authentication callouts.

TECHNICAL INFORMATION

Operating systems, processors and memory requirements

Microsoft

Operating systems, processors and memory requirements:

- Microsoft® Windows® Server 2003 operating system with SP2 (Standard and Enterprise server): Intel® Pentium® 4 (>1 GHz), >1G RAM
- Microsoft Windows Server 2003 R2 with SP2 (Standard and Enterprise server) Intel Pentium 4 (>1 GHz), >1G RAM
- Red Hat® Linux® 5.2 software or higher 64 bit: Any x86 (>500 MHz), >1G RAM
- Sun Solaris 10 UltraSPARC (>500 MHz), >1G RAM

Remarks:

The software appliance can also be run as a virtual appliance.

ClearPass Policy Management System

SECURITY UNIFIED POLICY MANAGEMENT

The ClearPass Policy Management system allows enterprise to create and manage network policies for wired and wireless devices, while providing a simpler way to roll out BYOD services.

One place to manage all things BYOD

OVERVIEW

As part of Alcatel-Lucent's Unified Access Strategy, the ClearPass Policy Management system creates and manages policies that extend across the network, for users, devices and applications (apps), while policies are enforced via Alcatel-Lucent LAN switches and WLAN controllers. This gives organization total control over user and device policies and a simpler way to roll out Bring Your Own Device (BYOD) services.

From one integrated platform, ClearPass enables IT to manage network policies, securely onboard and manage devices, admit guest users, provide device health and posture checks, and even secure, distribute and manage work-related mobile apps. And it works on a wired or wireless network.
ClearPass also leverages contextual data about user roles, devices, application use, location, and time of day, to quickly deploy BYOD services and streamline network operations across wireless or wired networks, and VPNs.
To reduce helpdesk tickets and easily manage a large volume of devices, ClearPass offloads routine tasks to users through guest self-registration portals and personalized self-service employee portals.

KEY BENEFITS

- IT has unprecedented control and a simpler way to roll out BYOD
- Users can provision their own devices with the right security settings and download the right apps without helpdesk assistance
- Users can register their own devices, like projectors, printers and Apple TVs, by simply filling out an online form
- Clear separation between work and personal use: work apps are kept separate from personal apps via a virtual desktop
- Network access privileges automatically extend to devices and apps using contextual data, such as user roles, device types, application use, location, motion, and time of day
- Application updates and security controls are automatically applied from the integrated ClearPass Policy Management platform
- Whether you have 25 or 25,000 guests, it's the most scalable visitor management system for wireless and wired devices

KEY FEATURES

TECHNICAL INFORMATION

Converged Campus Network Solution

The Alcatel-Lucent converged campus network solution is built upon a unified access approach for a consistent user experience, on a wired and wireless network, and a high performance 10G/40G core. This network has the intelligence to automatically adjust itself based on user mobility, keeping costs low and maximizing the available resources.

OVERVIEW

The Alcatel-Lucent Converged Campus Network Solution provides an intelligent network that is aware of the applications, users and devices, and utilizes this information to automatically adjust to provide the best user experience in accordance with business priorities. It applies the principles of an AFN to provide a simple and secure resilient architecture, automatic controls to perform dynamic adjustments and simplified operations using automation to reduce OPEX. The solution offers all the elements to handle the latest IT innovation trends and provides investment protection for the next 5 to 7 years.

The Alcatel-Lucent Converged Campus Network Solution includes a high performance core and a unified access architecture with built-in BYOD functionality. Additionally, it relies on product families to provide WAN connectivity and a complete management stack to help IT manage, monitor and troubleshoot the entire network.

KEY BENEFITS

Enables corporations to embrace the new trends such as mobility, BYOD and the cloud, while simplifying the tasks for IT and minimizing both capital and operational expenses.

It offers connectivity and quality delivery of multimedia applications everywhere on any device. Companies benefit from better productivity, employee satisfaction, agility, collaboration, and competitiveness, thus opening the door for new business initiatives.

KEY FEATURES

RIGHT-SIZED CORE

The Alcatel-Lucent Enterprise network core includes the market-leading switches including the OmniSwitch 6900, OmniSwitch 9000E, and the OmniSwitch 10K Modular LAN Chassis. It offers a high-density, wire rate 10 GigE/40GigE network core. Additionally, network virtualization technology like the Virtual Chassis (VC) provide redundancy, low latency, and fast recovery from nodes or link failures. When Wi-Fi® is provided, the core can be augmented with WLAN controllers including the OmniAccess WLAN 4x04 family and the 4x50 family.

UNIFIED ACCESS

The unified access offers a set of network services that apply seamlessly to wired and wireless. These network services address key areas like security, device management, application control, user and guest management. It provides a common policy framework, a common authentication scheme, and a single authentication database that applies to users connected with wired or wireless devices. This seamless experience is offered with a broad set of 1GigE/FE LAN switches including the OmniSwitch 6850E, 6855, 6450(L), 6250, and 802.11n/ac wireless Access Points that can operate independently or using a WLAN controller.

BYOD NETWORK SERVICES

Built-in to the unified access there is a set of BYOD services that enable any company to easily embrace BYOD. These network services apply to users connected to wired or wireless devices and provide guest access management, device onboarding, device posture and fingerprinting, containerization of corporate applications, and a sophisticated policy engine that adjusts the network behavior based on the user, device, and application.

WAN CONNECTIVITY

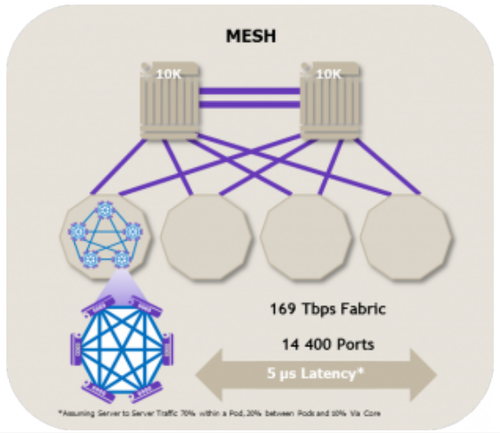
Customers seeking to deploy their own WAN can count on the OmniAccess Enterprise Services Router (ESR) family of branch routers and Alcatel-Lucent 7750 Service Routers. The ESR family provides integrated GigE switches, Wi-Fi, 3G/4G WAN, and a variety of other WAN interfaces in a single device.

COMPREHENSIVE MANAGEMENT STACK

The management stack includes all tools needed to provision, monitor and troubleshoot the network (OmniVista 2500/3600) as well as provide end-to-end application visibility (VitalSuite), IP Address Management (VitalQIP), Authentication, Authorization and Accounting, and BYOD-related services (ClearPass).

Data Center Switching

Alcatel-Lucent helps enterprises address the challenges facing today's data center network while delivering a high-quality user experience for real-time applications, greater agility in deploying new applications, seamless integration of public cloud services, and reduced data center costs.



OVERVIEW

The complete solution for data center networking includes the Mesh, WAN Connect and management.

The Mesh, includes the market-leading OmniSwitch 10K Modular LAN Chassis, the OmniSwitch 6900 Stackable LAN Switch and the OmniSwitch 6850E Stackable LAN Switch. The Mesh can scale linearly both in architecture and in pricing model to connect from under 100 to over 10,000 servers. The Mesh delivers on all the new requirements of virtualized workloads.

WAN connect includes both IP and optical WAN interconnect of data center sites by means of the Service Router and the Photonic Services Swithc.

The management stack includes VitalSuite for end-to-end application performance visibility as well as the OmniVista 2500 Network Management System and Virtual Machine Manager for fabric management.

KEY BENEFITS

DELIVER A HIGH-QUALITY USER EXPERIENCE

Alcatel-Lucent's application fluent fabric provides any-to-any connectivity with low latency, low power consumption and the overall switching capacity needed to deliver optimal performance for real-time, mission-critical applications. Plus, with the Pod and Mesh, automation is built-in to dynamically adjust treatment of application traffic flows.

GROW YOUR BUSINESS FASTER AND MORE EFFICIENTLY

The Alcatel-Lucent Enterprise Data Center Switching Solution helps you increase agility and speed in deploying new services and applications. Automation across your entire data center is possible with this solution because it is able participate in data centers that are designed with SDN architecture. A pay-as-you-grow business model and directconnect architecture enable enterprises to start with "right-sized" initial deployment and grow as needed. With an application fluent approach to network virtualization, IT teams enjoy automated virtual machine movement. For larger enterprises, specific corporate departmental data centers can be partitioned to create virtual data centers and reduce complexity. Looking ahead, enterprises of all sizes can achieve seamless co-existence with cloud-based services, helping to simplify cloud service delivery to corporate networks.

REDUCE DATA CENTER COSTS

Alcatel-Lucent's market-leading, low power consumption means lower energy costs for the enterprise. Alcatel-Lucent also helps lower operational costs by treating applications as complete services to simplify data center management. Finally, a virtualized network infrastructure helps reduce equipment and space costs.

Operating systems, processors and memory requirements

KEY FEATURES

PERFORMANCE

The Alcatel Lucent Data Center Solution provides low-latency, multipath fabric with automatic control capabilities resulting in high performance. It bridges the Application and Network by delivering automation and application performance visibility within the network. With a unique dynamic tuning of network performance across the entire network providing the best quality of user experience.

AUTOMATION

OmniVista™ VMM automatically adjusts the network as a virtual machine is moved within and between data center sites.Overlay network visibility and performance assurance is integrated within the switch device to extend the interaction within the DC fabric. . OmniVista™ VMM provides live and historic visibility into the SLA performance while informing the administrator proactively with alarms when SLAs are not met.

SCALABILITY

Alcatel-Lucent Enterprise's Mesh/Pod architecture provides a Pay-As-You-Grow solution. Pay-as-you-grow business model and directconnect architecture enable cost effective deployments, scaling to 10K+ servers with very low oversubscription rates and latency. It allows the Enterprises to start small and scale to a larger fabric based on their requirement and time minimizing the upfront CAPEX and OPEX investment.

CONVERGED MANAGEMENT

Connectivity to the Fiber Channel storage infrastructure was introduced within the Mesh/Pod architecture providing a truly converged infrastructure. With the release of a new 12 ports expansion module to support converged networking interface ports (CNI) enterprises can now connect their FC-based storage infrastructure directly to the Mesh/Pod architecture. The new software enhancements supporting FIP snooping enables security with built-in FC/FCoE gateway at the entry point of the Fabric.

SOFTWARE DEFINED NETWORKING (SDN)

To facilitate the adoption of SDN-based technologies Alcatel-Lucent Enterprise provides the necessary network components to integrate with many solutions. The support of OpenFlow 1.3.1 and 1.0 agent are available on TOR switches. Alcatel-Lucent Enterprise switches extend the flexibility to the DC administrators to choose between a complete OpenFlow implementation or a paced implementation with a hybrid mode of operation where OpenFlow and regular Ethernet co-exist simultaneously across the fabric. There are open APIs for switch integration for any number of SDN controllers as well as an OpenStack Networking.