

Product Guide to Network Infrastructure, Management Solutions and Security

A comprehensive offer by Alcatel-Lucent



February 2011



Introduction

Alcatel-Lucent provides excellent value in highly available, secure and easy-to-manage IP networks with a comprehensive, standards-based product portfolio. This product guide contains an overview of network infrastructure, management and security products.

The network infrastructure product range includes:

- Manageable layer-2/layer-3 LAN switches, both stackable and chassis-based, supporting Power-over-Ethernet and interface speeds up to 10 Gb/s for office, campus and data center networks
- A highly scalable, WLAN solution supporting the latest high-speed (IEEE 802.11n) access for both office and campus networks, as well as including unique remote worker features

- Gateway routers enabling WAN access, at the same time providing a wealth of services from a single box
- MPLS switches for private WANs, supporting standardized VPLS technology (invented by Alcatel-Lucent), providing virtualization of networks without the overhead of complicated routing protocols

The management product range includes:

- Network and network element management systems
- IP address management and (D)DNS management system
- Consolidated service level management system
- Authentication, Authorization and Accounting management system

The security product range includes:

- Host integrity check solution to enforce end-system compliance
- Unified Threat Management solutions

In any network infrastructure, Alcatel-Lucent solutions provide security and availability to the operation of the processes relying on this network.

Alcatel-Lucent is proud to provide you with this **interactive*** product guide representing our enterprise networking, management and security offer, and its key features and benefits for your customers.

Click here to get started!

** Rollover section titles, headings, product names with mouse to see hyperlinks.*

Product Guide to Network Infrastructure, Management Solutions and Security

LAN	WLAN	WAN & MAN	MANAGEMENT	SECURITY
Introduction	Introduction	Introduction	Introduction	Introduction
Chassis Based LAN Switch	Chassis Based WLAN Switch	Service Router	Network	Host Integrity Check
OmniSwitch 10K	OmniAccess WLAN 6000	7750 SR	OmniVista 2500 NMS	CyberGatekeeper
OmniSwitch 9000E	Standalone WLAN Switch	Ethernet Service Switch	OmniVista 3600 AM	Unified Threat Management
OmniSwitch 9000	OmniAccess WLAN 4000	7450 ESS	5620 SAM	Fortinet
Stackable LAN Switch	Wireless Access Point	Service Access Router	Performance	
OmniSwitch 6900	OmniAccess WLAN AP	7705 SAR	VitalSuite	
OmniSwitch 6850E		Universal Services Gateway	IP Address and DNS	
OmniSwitch 6850		OmniAccess 5700 USG	VitalQIP	
OmniSwitch 6400		OmniAccess 5510 USG	Authentication	
OmniSwitch 6250		Business Gateway	8950 AAA	
OmniStack 6200		OmniAccess 5320 BG		
Hardened LAN Switch		OmniAccess 5305 BG		
OmniSwitch 6855				

* Rollover with mouse to see hyperlinks.

Network Infrastructure Product Range

The Alcatel-Lucent network infrastructure portfolio includes highly scalable and manageable products with embedded security for LANs, WLANs, WANs and MANs.

Our LAN product family provides manageable layer-2/layer-3 LAN switches for office, campus and data center networks. The LAN products include both stackable and chassis-based switches that support Power-over-Ethernet plus, IPv6 and interface speeds ranging from 100 Mb/s to 10 Gb/s now and 40 Gb/s to 100 Gb/s in the future. The embedded security in our LAN products provides industry-leading, comprehensive, standards-based network access security.

Our WLAN product family provides a highly scalable WLAN solution supporting the latest high-speed (IEEE 802.11n) access, as well as comprehensive, standards-based network access security.

Our WAN and MAN product families provide gateway routers that enable WAN access, at the same time providing a wealth of service from a single box. In addition, these product families include MPLS switches supporting VPLS technology invented by Alcatel-Lucent, providing virtualization of network traffic without the overhead of layer-3 VPN and Border Gateway Protocol.

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**The Alcatel-Lucent
OmniSwitch™ 10K
Modular LAN Chassis**



The Alcatel-Lucent OmniSwitch™ 10K Modular LAN Chassis Switch is a high-capacity, high-performance switch based on our 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 terabits — will meet bandwidth requirements for today and tomorrow. OmniSwitch 10K Multi-Chassis Link Aggregation (MC-LAG) and Ethernet Ring Protection (ERP) simplify layer-2 network deployments and provide better performance and resiliency.

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.

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- Maximum network performance delivers quality bandwidth for improved application and user experience. Reduces network layers and investment/operating costs.

- MC-LAG optimizes/simplifies layer-2 network designs, reduces administration overhead while increasing network resiliency. Works with any Ethernet device that supports IEEE 802.3ad standard. Provides interoperability, investment protection, and flexibility.

- MPLS and data-center-ready architecture expands deployment capabilities, reduces vendor sprawl and lowers 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.

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- High-density, non-blocking 10GigE ports with large per-port packet buffers
- Multi-Chassis Link Aggregation (MC-LAG)
- Scalable, scalable system architecture capable of multiple uses
- Compact, optimized form factor
- High reliability

Simplified manageability

- Intuitive Alcatel-Lucent command line interface (CLI) in a BASH environment
- Simple Network Management Protocol (SNMP) v1/2/3
- Local and remote server logging
- Policy and port-based mirroring
- Remote port mirroring
- Local port monitoring
- sFlow v5 and RMON
- UDLD and DDM
- File upload using USB, TFTP, FTP, SFTP, or SCP
- Auto-negotiating 10/100/1000 ports
- Auto MDI/MDIX
- BOOTP/Dynamic Host Configuration Protocol (DHCP) client with option 60
- DHCP relay
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP) with MED extensions
- Network Time Protocol (NTP)

Resiliency and high availability

- Smart continuous switching technology
- ISSU
- Multi-Chassis Link Aggregation (MC-LAG)
- ITU-T G.8032 Ethernet Ring Protection
- Virtual Router Redundancy Protocol (VRRP)
- Bidirectional Forwarding Detection (BFD)
- Ring Rapid Spanning Tree Protocol (RRSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- Per-VLAN Spanning Tree (PVST+) and Alcatel-Lucent 1x1 STP mode
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and static LAG groups

Advanced security

- Secure Shell (SSH) with public key infrastructure (PKI) support
- Centralized RADIUS and Lightweight Directory Access Protocol (LDAP) user authentication
- TACACS+ client
- Learned Port Security (LPS) or MAC Address Lockdown
- DHCP snooping, DHCP IP/Address Resolution Protocol (ARP) spoof protection
- Bridge Protocol Data Unit (BPDU) blocking and STP root guard
- Traffic filtering Access Control Lists (ACLs); flow-based filtering in hardware (layer 1 to layer 4)

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Converged networks (QoS)

- Priority queues: Minimum of eight hardware-based queues per port
- Traffic prioritization: Flow-based QoS
- Flow-based bandwidth management
- Queue management with configurable scheduling algorithm
- Weighted Random Early Detection (WRED)
- DiffServ architecture

IPv4 routing

- Multiple virtual routing and forwarding (VRF)
- Static routing, Routing Information Protocol (RIP) v1 and v2
- Open Shortest Path First (OSPF) v2 with graceful restart
- Border Gateway Protocol (BGP) v4 with graceful restart
- Generic routing encapsulation (GRE) tunneling
- VRRP v2

IPv6 routing

- Multiple virtual routing and forwarding (VRF)
- Static routing
- Routing Information Protocol Next Generation (RIPng)
- OSPF v3
- BGP v4 (with extensions to IPv6 routing)
- Graceful restart extensions for OSPF and BGP
- VRRP v3
- Neighbor Discovery Protocol (NDP)

IPv4/IPv6 Multicast

- Internet Group Management Protocol (IGMP) v1/v2/v3 snooping
- Protocol Independent Multicast – Sparse-Mode (PIM-SM), Source Specific Multicast (PIM-SSM)/ Protocol Independent Multicast – Dense-Mode (PIM-DM)
- Distance Vector Multicast Routing Protocol (DVMRP)

Metro Ethernet access

- Ethernet services support per IEEE 802.1ad (QinQ VLAN stacking) Provider Bridge services
- Transparent LAN services with service VLAN (SVLAN) and customer VLAN (CVLAN) concept
- Ethernet network-to-network interface (NNI) and user-network interface (UNI) services
- Service access point (SAP)

Profile identification

- CVLAN-to-SVLAN translation
- Private VLAN feature
- DHCP Option 82: Configurable relay agent information

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Chassis models	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 10 GigE Ports
OmniSwitch 10K	2	2	8	4	AC or DC	2	16	5.12	384	256
Network Interface modules	GigE RJ-45 Ports	GigE SFP Ports	10 GigE SFP+ Ports	40 GigE Ports	100 GigE Ports	Standard Version	Extended Version			
OS10K-XNI-U32S	0	0	32*			X				
OS10K-GNI-C48E	48	0	0				X			
OS10K-GNI-U48E	0	48	0				X			
Remarks *Supports both Gigabit and 10 Gigabit Ethernet transceivers										

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**The Alcatel-Lucent
OmniSwitch™ 9000E
Chassis LAN Switch**

The Alcatel-Lucent OmniSwitch™ 9000E Chassis LAN Switch (CLS) family comprises 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.

The OmniSwitch 9000E family of products are 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 Gigabit Ethernet (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 enhanced by the in-service software upgrade (ISSU) capability, which allows a network to remain operational during patches 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 Multiprotocol Label Switching (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 quality of service (QoS) features at an attractive price and is fully supported by the OmniVista™ 2500 Network Management System.

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The OmniSwitch 9800E Chassis LAN Switch



The OmniSwitch 9800E Chassis LAN Switch is the largest chassis in the OmniSwitch 9000E family. It is an 18-slot chassis (17 RU) with two slots for Chassis Management Modules (CMM) and 16 slots for Network Interface (NI) modules, supporting an aggregation of up to 384 GigE (RJ-45, PoE or SFP) ports or 192 10GigE ports.

Designed for continuous operation, the OmniSwitch 9800E CLS features "no single point of failure", supporting dual CMMs and redundant fans and power supplies.

Sparing for the OmniSwitch 9000E family is simplified because the OmniSwitch 9700E and the OmniSwitch 9800E share a common set of NI modules, power supplies and fan trays with the rest of the OmniSwitch 9000E family.

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The OmniSwitch 9700E Chassis LAN Switch



The OmniSwitch 9700E Chassis LAN Switch is a ten-slot chassis (11 RU) with two slots for Chassis Management Modules (CMM) and eight slots for NI (Network Interface) modules, supporting an aggregation of up to 192 GigE (RJ-45, PoE or SFP) ports or 96 10GigE ports.

Designed for continuous operation, the OmniSwitch 9700E features “no single point of failure,” supporting dual CMMs and redundant fans and power supplies.

The OmniSwitch 9702E Chassis LAN Switch is a NEBS-ready variant of the OmniSwitch 9700E. In comparison with the OmniSwitch 9700E, the OmniSwitch 9702E can increase switching performance when used with the CMM2E modules and 12-port 10GigE NI modules.

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- Prevent business interruption from failures with a combination of redundancy and resilient topology protocols:
 - The system's 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.
 - The extensive support of layer-2 and layer-3 protocols provides a highly available infrastructure.

- Protect 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

- Protect business assets against direct attacks on the infrastructure (malicious and denial-of-service attacks) and enforce IT policy for post- and pre-admission control (unique traffic anomaly detection)

- Reduce energy costs through the system's low power dissipation (less than 2000 watts in the most powerful case configuration)

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High availability

- Smart continuous switching for nonstop 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

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, Dynamica Host Configuration Protocol (DHCP) binding tables and user network profile (UNP)

Large campus and metro network

- Layer-2 deployment using stacked virtual LANs (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, wireless LAN access points and video cameras

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Chassis models	CMM Module Slots	NI Module Slots	Power Supply Bays	Power Supplies AC/DC	Height Rack Units	Fabric Capacity Gb/s	Max GigE ports	Max 10 GigE 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	10 GigE XFP Ports	10 GigE 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			
PoE Power Shelf	Fits 9700E	Fits 9800E	Power Supply Bays	Height Rack Units	Max PoE Power	Power Supplies AC/DC		
OS9-IPS-600A	Yes	Yes	4	3.5	2400 W	AC		

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The Alcatel-Lucent OmniSwitch™ 9000 Chassis LAN Switch

The Alcatel-Lucent OmniSwitch™ 9000 Chassis LAN Switch (CLS) family is a series of layer-2 and layer-3 switches. They are designed to be feature-rich, yet value-priced, for use in network core, distribution and access layers.

The OmniSwitch 9000 family comprises four chassis (OmniSwitch 9600, OmniSwitch 9700, OmniSwitch 9702, and OmniSwitch 9800) and a common set of network interface modules to accommodate various connectivity needs and simplify inventory.

The OmniSwitch 9000 family addresses today's network needs for highly available infrastructure with large switching capacity and high 10 Gigabit Ethernet (10GigE) port densities to support the next generation of converged networks.

The OmniSwitch 9000 family provides the features required to sustain business applications:

- High availability
- High density for GigE and 10GigE interfaces
- Wire-speed performance with low latency and flexible network policies such as quality of service (QoS)
- Comprehensive security

These capabilities ensure an easy and economical way to upgrade or deploy a new Ethernet network. The large number of ports makes the OmniSwitch 9000 family suitable for two- or three-tier network designs — possible with the high-performance capability and density of GigE and 10GigE.

The OmniSwitch 9000 family also has a place in future network planning with its native and extensive support of IPv4/IPv6, addressing the need for migration from IPv4 to IPv6 or new IPv6 deployments. It provides advanced security and QoS features at an attractive price and is fully supported by the OmniVista™ 2500 Network Management System.

Sparing for the OmniSwitch 9000 family is simplified because the OmniSwitch 9700 and the OmniSwitch 9800 share a common set of NI modules and power supplies with the rest of the OmniSwitch 9000 family. The OmniSwitch 9700 and the OmniSwitch 9800 also share additional subcomponents such as the fan tray and PoE shelf.

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The OmniSwitch 9800 Chassis LAN Switch



The OmniSwitch 9800 Chassis LAN Switch (CLS) is the largest chassis in the OmniSwitch 9000 family. It is an 18-slot chassis (17 RU) with two slots for Chassis Management Modules (CMM) and 16 slots for Network Interface (NI) modules, supporting an aggregation of up to 768 GigE ports (384 if PoE ports are considered) or 96 10GigE ports.

Designed for continuous operation, the OmniSwitch 9800 features “no single point of failure”, supporting dual CMMs and redundant fans and power supplies.

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The OmniSwitch 9700 Chassis LAN Switch



The OmniSwitch 9700 Chassis LAN Switch (CLS) is a ten-slot chassis (11 RU) with two slots for Chassis Management Modules (CMM) and eight slots for Network Interface (NI) modules, supporting an aggregation of up to 384 GigE ports (192 if Power-over-Ethernet (PoE) ports are included) or 48 10GigE ports.

Designed for continuous operation, the OmniSwitch 9700 features “no single point of failure”, supporting dual CMMs and redundant fans and power supplies.

The OmniSwitch 9702 Chassis LAN Switch is a NEBS-ready variant of the OmniSwitch 9700.

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The OmniSwitch 9600 Chassis LAN Switch



The OmniSwitch 9600 Chassis LAN Switch (CLS) is the smallest chassis (5.5 RU) of the OmniSwitch 9000 family. It is a five-slot chassis with one slot for the Chassis Management Module (CMM) and four slots for Network Interface (NI) modules, supporting an aggregation of up to 192 GigE ports or 24 10GigE ports. Network resiliency is typically achieved by deploying two OmniSwitch 9600 chassis.

The OmniSwitch 9600 utilizes the OmniSwitch 9700 CMM and shares a common set of NI modules and power supplies with the rest of the OmniSwitch 9000 family. These benefits offer an easy upgrade path to a larger form factor if required.

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- Prevent business interruption from failures with a combination of the OmniSwitch's internal redundancy and resilient topology protocols:
 - The internal redundancy protects all critical functions, such as powering (redundant power supplies with AC and DC options), cooling (redundant fans) and switch management (redundant CMM in the OmniSwitch 9700 and OmniSwitch 9800), with transparent failover.
 - The extensive support of layer-2 and layer-3 protocols provides a highly available network infrastructure.
- Protect investment with a modular and scalable connectivity (GigE and 10GigE), but also with regular software updates to keep on track with evolving standards, such as IPv6, developed by international standards bodies (IEEE, IETF and ITU)
- Protect business assets against direct attacks on the infrastructure (malicious and denial-of-service attacks) and enforce IT policy for post- and pre-admission control (unique traffic anomaly detection)
- Reduce energy costs with the OmniSwitch's low power dissipation (less than 2000 watts in the most powerful configuration)

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High availability

- Smart continuous switching for nonstop operation in redundant CMM configuration
- Passive backplane and redundant active components (power supply unit/fans/CMM)
- 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 768 ports) and 10GigE (up to 96 ports)
- Enhanced forwarding – improves network response time through hardware-based forwarding at first packet, and elimination of CPU solicitation for Access Control List (ACL)/QoS demands

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) and quarantine enforcement mechanism
- Extensive support of user-oriented features of the Alcatel-Lucent Operating System (AOS), such as learned port security (LPS), port mapping, Dynamic Host Configuration Protocol (DHCP) binding tables and user network profile (UNP)

Convergence

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

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OmniSwitch 9000 Chassis	CMM Module Slots	NI Module Slots	Power Supply Bays	Power Supplies AC/DC	Height Rack Units	Fabric Capacity Gb/s	Max RJ-45 ports	Max SFP ports	Max 10 GigE ports
OmniSwitch 9600	1	4	2	AC & DC	5.5	192	192	96	24
OmniSwitch 9700	2	8	3	AC & DC	11	384	384	192	48
OmniSwitch 9800	2	16	4	AC & DC	17	768	768	384	96
OmniSwitch 9000 Network Interface modules	Fast Ethernet RJ-45 Ports	GigE RJ-45 Ports	GigE PoE Ports	GigE SFP Ports	10 GigE XFP Ports				
OS9-XNI-U2	0	0	0	0	2				
OS9-XNI-U6	0	0	0	0	6				
OS9-GNI-C24	0	24	0	0	0				
OS9-GNI-P24	0	0	24	0	0				
OS9-GNI-U24	0	0	0	24	0				
OS9-GNI-C20L	20**	0	0	2*	0				
OS9-GNI-C48T	48***	0	0	0	0				
OmniSwitch 9000 PoE Shelf	Fits 9600	Fits 9700	Fits 9800	Fixed Power Supply	Power Supply Bays	Height Rack Units	Max PoE Power	Power Supplies AC/DC	
OS9-IPS-240A	Yes	No	No	1	0	1	240 W	AC	
OS9-IPS-390A	Yes	No	No	1	0	1	390 W	AC	
OS9-IPS-600A	Yes	Yes	Yes	0	4	3.5	2400 W	AC	
Remarks									
*Supports both Gigabit and Fast Ethernet transceivers									
**Ports are software-upgradeable to Gigabit Ethernet									
***By using MRJ-21 to RJ-45 cable									

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The Alcatel-Lucent OmniSwitch™ 6900 Stackable LAN Switch



The Alcatel-Lucent OmniSwitch™ 6900 Stackable LAN Switch family is layer-2/ layer-3 10 Gigabit Ethernet (10GigE) switches, designed for low latency, high availability and performance, resiliency and simplified operations and management.

These high-port-density 10GigE LAN switches are effectively positioned at the aggregation and core layer of campus networks to support the transition to 10GigE, at Ethernet Access rings in metro deployments, and as “top of rack” and “end of row” in small-to-medium-sized data center deployments.

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- Up to 1.28 Tb/s of wire-rate capacity, low latency and jitter, features including advanced buffer and congestion management

- Offers excellent investment protection and flexibility by supporting variety of expansion modules used to increase the number of 10GigE ports as needed. Both models are designed to support 40G ports in a future release with the addition of new expansion modules.

- Ensures efficient power management, reduces operating expenses and lowers total cost of ownership (TCO) through low power consumption
- Hot-swappable, internal, power-efficient and redundant power supply for easy installation and maintenance

- Best throughput/power consumption ratio saving energy costs
- Outstanding performance when supporting real-time voice, data and video applications for converged scalable networks

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- High 10GigE port density in 1RU form factor that offers up to 64 10GigE ports or 16 40GigE (in a future release) or a combination of the two
- Wire rate, non-blocking at 640 Gb/s bidirectional
- GigE and 10GigE on all ports of the system for smooth Gig to 10GigE transition

- Redundant hardware system architecture. Internal, hot-swappable power supplies, fans. Front-to-back 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 Gig 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

- Comprehensive security: Built-in intrusion detection system (IDS) with traffic anomaly detection (TAD) and quarantine enforcement mechanism; learned port security (LPS), port mapping, Dynamic Host Configuration Protocol (DHCP) binding tables and unified network profile (UNP)
- Hardware-based virtual routing and forwarding (VRF) support for traffic segregation

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	10 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*					
Remarks						
*SFP+ port supports both Gigabit and 10 Gigabit Ethernet transceivers						

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**The Alcatel-Lucent
OmniSwitch™ 6850E
Stackable LAN Switch**



The Alcatel-Lucent OmniSwitch™ 6850E Stackable LAN Switch (SLS) family offers versatile, fixed configuration layer 3 gigabit and 10 Gigabit Ethernet (10GigE) switches, which provide advanced services, high performance, and IEEE 802.3at-compliant Power over Ethernet (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 quality of service (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 enterprise networks, at the aggregation layer, small enterprise core and perform as suitable, advanced customer premises equipment (CPE) for Ethernet access in metro and managed services.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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 operating expenses (OPEX) and lowers total cost of ownership (TCO) through the low power consumption and dynamic 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 virtual LAN (VLAN) provisioning
- Simplifies Metro Ethernet network O&M for service providers

Versatile features and models

- 24-and 48-port gigabit models with 10GigE interfaces. Optional 10G plug-in module delivers two additional 10G ports.
- Up to 384 gigabit and 16 10GigE ports in a virtual chassis configuration
- Support for IEEE 802.3af as well as IEEE 802.3at-compliant PoE
- Modular AC and DC power supplies

High performance and availability

- Wire-rate processing for simultaneous layer-2/IPv4/IPv6 traffic (unicast and multicast)
- Extended scalability in network policies such as Access Control Lists (ACLs) and QoS, and multicast flows for a better VoIP/video experience
- Resiliency provided through a superior architecture offering physical and functional redundancy everywhere: hot-swappable chassis, power supplies, transceivers; redundant backup power supplies and fans
- Improved network availability by supporting Ethernet Ring Protection (ERP) with sub-50 ms re-convergence time in ring topology, reduced traffic disruption times in routed environment by faster failure detection using Bidirectional Forwarding Detection (BFD)

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) and quarantine enforcement mechanism
- Extensive support of Alcatel-Lucent Operation System (AOS) user-oriented features such as learned port security (LPS), port mapping, DHCP binding tables and unified network profile (UNP)
- Hardware-based virtual routing and forwarding (VRF) support for traffic segregation

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, wireless LAN (WLAN) access points and video cameras

Campus and metro network

- Layer-2 deployment using stacked VLANs, including OA&M toolbox and multicast support
- Advanced, out-of-the-box auto-configuration, Link Layer Discovery Protocol (LLDP) network policies and dynamic VLAN allocation
- Layer-3 deployment using multiple VRF

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

	GigE RJ-45 Ports	GigE PoE+ Ports	GigE SFP Ports	GigE Combo Ports	10 GigE SFP+ Ports	10 Gig 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	n/a	AC	AC or DC	1
OmniSwitch 6850E-24X	20	0	0	4	2	2	1	n/a	AC	AC or DC	1
OmniSwitch 6850E-48	44	0	0	4	0	2	1	n/a	AC	AC or DC	1
OmniSwitch 6850E-48X	46	0	0	2	2	2	1	n/a	AC	AC or DC	1
OmniSwitch 6850E-24D	20	0	0	4	0	2	1	n/a	DC	AC or DC	1
OmniSwitch 6850E-24XD	20	0	0	4	2	2	1	n/a	DC	AC or DC	1
OmniSwitch 6850E-48D	44	0	0	4	0	2	1	n/a	DC	AC or DC	1
OmniSwitch 6850E-48XD	46	0	0	2	2	2	1	n/a	DC	AC or DC	1
PoE+ models											
OmniSwitch 6850E-P24	0	20	0	4***	0	2	1	240W	AC	AC	1
OmniSwitch 6850E-P24X	0	20	0	4***	2	2	1	240W	AC	AC	1
OmniSwitch 6850E-P48	0	44	0	4***	0	2	1	240W	AC	AC	1
OmniSwitch 6850E-P48X	0	46	0	2***	2	2	1	240W	AC	AC	1
OmniSwitch 6850E-P24H	0	20	0	4***	0	2	1	390W	AC	AC	1
OmniSwitch 6850E-P24XH	0	20	0	4***	2	2	1	390W	AC	AC	1
OmniSwitch 6850E-P48H	0	48	0	4***	0	2	1	780W	AC	AC	1
OmniSwitch 6850E-P48XH	0	48	0	2***	2	2	1	780W	AC	AC	1
Fiber optic models											
OmniSwitch 6850E-U24X	0	0	22**	2	2	2	1	n/a	AC	AC or DC	1
OmniSwitch 6850E-U24XD	0	0	22**	2	2	2	1	n/a	DC	AC or DC	1
Network Interface modules											
OS6-XNI-U2	0	0	0	0	2	0	n/a	n/a	n/a	n/a	n/a
Remarks											
*Standard CX4-Copper Stack ports are compatible with OmniSwitch 6850 and can be exchanged with OS6-XNI-U2 module											
**SFP port supports both Fast Ethernet and Gigabit Ethernet transceivers											
***Combo port supports PoE+											

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
OmniSwitch™ 6850
Stackable LAN Switch**



The Alcatel-Lucent OmniSwitch™ 6850 Stackable LAN Switch family offers versatile, fixed-configuration Gigabit and 10 Gigabit Ethernet switches with Power-over-Ethernet (PoE) to provide advanced services, high performance, and exceptional value. All of the models in the family are stackable and perform wire-rate, gigabit switching and layer-3 routing for both IPv4 and IPv6, delivering intelligent services to the edge of the network with optimal quality of service (QoS) and integrated security, as well as network access control (NAC).

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Meet any customer configuration need and offer excellent investment protection and flexibility, as well as ease of deployment, operation and maintenance
- Ensure network availability with a field-upgradable solution, reduce operating complexity and cost, and optimize response time for users and applications

- Achieve outstanding performance when supporting real-time voice, data and video applications for converged scalable networks
- Ensure efficient power management, reduce operating expenses and lower total cost of ownership (TCO) through the lowest power consumption in its class and dynamic PoE allocation, which delivers only the power needed by the attached device

- Achieve enhanced security, fully integrated in the operating system and adaptive to user mobility, with comprehensive network access control, intrusion detection, containment and remediation at the edge of the network at no additional cost, allowing business continuity and preventing network outages

- Automated switch setup and configuration and end-to-end VLAN provisioning support cost-effective installation and deployment
- Help simplify metro Ethernet service providers' network operations, administration and management

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Versatile features and models offering gigabit and 10-gigabit (10G) interfaces, IEEE 802.3af-compliant PoE, and 10/100 models upgradable to gigabit via a software license key without any network reconfiguration
- Stacking capability for virtual chassis redundancy
- External power supply choice (AC, DC, PoE) for flexible deployment and easier maintenance or power upgrade

- Wire-rate performance for switching and routing at gigabit and 10G speeds
- Advanced services incorporated in the operating system; for example, advanced QoS, Access Control Lists (ACLs), bridging (layer 2) and routing (layer 3), VLAN stacking, and IPv6
- Superior user and network security feature set

- 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, Y.1731, IEEE 802.1ag, IEEE 802.3ah and MAC-Forced Forwarding (RFC 4562), and MEF 9/14 compliant

- Suited for the edge, enterprise LAN wiring closets, aggregation layer in three-tier network, small enterprise core switching and metro Ethernet access — residential and business Ethernet services

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

	Fast Eth RJ-45 Ports	Fast Eth PoE Ports	GigE RJ-45 Ports	GigE PoE Ports	GigE SFP Ports	GigE Combo Ports	10 GigE XFP Ports	10 Gig Stack Ports	PoE Power Budget	Power Supply AC/DC	Optional Backup PSU	Height Rack Units
Standard models												
OmniSwitch 6850-24L	20*	0	0	0	0	4	0	2	n/a	AC	AC or DC	1
OmniSwitch 6850-24	0	0	20	0	0	4	0	2	n/a	AC	AC or DC	1
OmniSwitch 6850-24X	0	0	20	0	0	4	2	2	n/a	AC	AC or DC	1
OmniSwitch 6850-48L	44*	0	0	0	0	4	0	2	n/a	AC	AC or DC	1
OmniSwitch 6850-48	0	0	44	0	0	4	0	2	n/a	AC	AC or DC	1
OmniSwitch 6850-48X	0	0	48	0	0	0	2	2	n/a	AC	AC or DC	1
OmniSwitch 6850-24LD	20*	0	0	0	0	4	0	2	n/a	DC	AC or DC	1
OmniSwitch 6850-24D	0	0	20	0	0	4	0	2	n/a	DC	AC or DC	1
OmniSwitch 6850-24XD	0	0	20	0	0	4	2	2	n/a	DC	AC or DC	1
OmniSwitch 6850-48LD	44*	0	0	0	0	4	0	2	n/a	DC	AC or DC	1
OmniSwitch 6850-48D	0	0	44	0	0	4	0	2	n/a	DC	AC or DC	1
OmniSwitch 6850-48XD	0	0	48	0	0	0	2	2	n/a	DC	AC or DC	1
Remarks *Ports are software upgradeable to Gigabit Ethernet **SFP port supports both Fast Ethernet and Gigabit Ethernet transceivers ***Combo port supports PoE												

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

	Fast Eth RJ-45 Ports	Fast Eth PoE Ports	GigE RJ-45 Ports	GigE PoE Ports	GigE SFP Ports	GigE Combo Ports	10 GigE XFP Ports	10 Gig Stack Ports	PoE Power Budget	Power Supply AC/DC	Optional Backup PSU	Height Rack Units
PoE models												
OmniSwitch 6850-P24L	0	20*	0	0	0	4***	0	2	240W	AC	AC	1
OmniSwitch 6850-P24	0	0	0	20	0	4***	0	2	240W	AC	AC	1
OmniSwitch 6850-P24X	0	0	0	20	0	4***	2	2	240W	AC	AC	1
OmniSwitch 6850-P48L	0	44*	0	0	0	4***	0	2	240W	AC	AC	1
OmniSwitch 6850-P48	0	0	0	44	0	4***	0	2	240W	AC	AC	1
OmniSwitch 6850-P48X	0	0	0	48	0	4***	2	2	240W	AC	AC	1
OmniSwitch 6850-P24LH	0	20*	0	0	0	4***	0	2	390W	AC	AC	1
OmniSwitch 6850-P24H	0	0	0	20	0	4***	0	2	390W	AC	AC	1
OmniSwitch 6850-P24XH	0	0	0	20	0	4***	2	2	390W	AC	AC	1
OmniSwitch 6850-P48LH	0	44*	0	0	0	4***	0	2	390W	AC	AC	1
OmniSwitch 6850-P48LH	0	0	0	44	0	4***	0	2	390W	AC	AC	1
OmniSwitch 6850-P48XH	0	0	0	48	0	0	2	2	390W	AC	AC	1
Fiber optic models												
OmniSwitch 6850-U24X	0	0	0	0	22**	2	2	2	n/a	AC	AC or DC	1
OmniSwitch 6850-U24XD	0	0	0	0	22**	2	2	2	n/a	DC	AC or DC	1
Remarks *Ports are software upgradeable to Gigabit Ethernet **SFP port supports both Fast Ethernet and Gigabit Ethernet transceivers ***Combo port supports PoE												

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
OmniSwitch™ 6400
Stackable Gigabit
LAN Switch**



The Alcatel-Lucent OmniSwitch™ 6400 Stackable Gigabit LAN Switch is an extension to the existing OmniSwitch family of products that support triple-speed applications, layer 2+ and an extensive array of networking features. The OmniSwitch 6400 addresses small-to-medium-sized business (SMB) needs for converged voice, data and video networks as well as service providers' requirements for residential and business Ethernet access. Designed for optimized flexibility, scalability and low power consumption, the OmniSwitch 6400 provides an outstanding edge solution for highly available, self-protective, easily managed and eco-friendly networks.

The OmniSwitch 6400 family comprises five stackable models that have built-in security, resiliency and enhanced OA&M management capabilities, making them ideal for any networking environment. This Alcatel-Lucent product offering supports the familiar and field-proven Alcatel-Lucent Operating System (AOS) functionality for effortless deployment within our available customer base while offering extended features to address new customer requirements. The OmniSwitch 6400 is the right fit for customers looking for improved edge performance, high availability, integrated security with easy deployment and management — all in one cost-effective platform.

The OmniSwitch 6400 was designed to be used in a variety of markets and to complete the Alcatel-Lucent Ethernet access, SMB and branch office solution offerings with a best-of-breed, stackable LAN switch. This switch family offers the capacity enterprises and service providers need when advanced layer-3 or 10-gigabit (10G) uplinks are not required. Compared with the Alcatel-Lucent OmniSwitch 6250 Stackable LAN Switch, the OmniSwitch 6400 provides gigabit performance.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Uses AC or DC power
- Offers high availability using stacking functions, redundant power and complete element redundancy
- Offers a variety of Power-over-Ethernet (PoE), non-PoE gigabit and fiber models. Includes the 24- and 48-port (PoE and non-PoE) triple-speed copper versions and a 24-port fiber model

- Supports advanced layer-2 switching with basic layer-3 routing at wire-rate speeds and extensive AOS functionality
- Features always-on robust infrastructure, optimal response time for users and applications, and investment protection

- Allows business continuity and prevents network outages with edge network security and control
- Offers scalable and versatile configuration with effortless deployment meeting SMB, branch office or service provider preferences

- Stackable, fixed-configuration chassis in a 1U form factor can be optionally equipped with Alcatel-Lucent-approved small form factor pluggable (SFP) transceivers supporting short, long and very long distances

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Choice of 24 ports, 48 ports, PoE, non-PoE and fiber models
- Scalability from 24 to 384 ports by stacking up to eight units with dedicated stacking ports
- 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 features

- Auto-sensing network access control (NAC) through the Access Guardian framework (IEEE 802.1X, MAC, rules)
- Automated containment and quarantine with the Alcatel-Lucent OmniVista 2500 NMS Quarantine Manager™ integrated in the OmniVista 2500 NMS
- Advanced quality of service (QoS) and Access Control Lists (ACLs) for traffic control

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 Gigabit Ethernet 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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

OmniSwitch 6400	Fast Ethernet RJ-45 Ports	GigE RJ-45 Ports	GigE SFP Ports	GigE Combo Ports	10 Gig Stacking Ports	PoE Power Budget	Main Power Supply	Optional Backup PSU	Height Rack Units
Standard models, AC and DC									
OmniSwitch 6400-24	0	20	0	4	2	n/a	AC	AC or DC	1
OmniSwitch 6400-48	0	44	0	4	2	n/a	AC	AC or DC	1
Power over Ethernet models									
OmniSwitch 6400-P24	0	20	0	4	2	240 W	AC	AC	1
OmniSwitch 6400-P48	0	44	0	4	2	240 W	AC	AC	1
OmniSwitch 6400-P24H	0	20	0	4	2	390 W	AC	AC	1
OmniSwitch 6400-P48H	0	44	0	4	2	390 W	AC	AC	1
Fiber optic models, AC and DC									
OmniSwitch 6400-U24X	0	0	22	2	2	n/a	AC	AC or DC	1
OmniSwitch 6400-U24XD	0	0	22	2	2	n/a	DC	AC or DC	1

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

The Alcatel-Lucent OmniSwitch™ 6250 Stackable Fast Ethernet 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.

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 Alcatel-Lucent 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/metro Ethernet triple-play applications

All models in the Alcatel-Lucent OmniSwitch 6250 family are stackable, half-rack width (8.5 inches/21.59 cm), fixed-configuration chassis in a 1U form factor. A variety of Power-over-Ethernet (PoE) (enterprise) and non-PoE (enterprise and metro) models are offered, which can be optionally equipped with Alcatel-Lucent-approved, small form factor pluggable (SFP) transceivers supporting short, long and very long distances.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Provides simplified selection with only two enterprise models (PoE and non-PoE):
 - Reduces sparing and inventory costs
 - Allows for any mix of PoE and non-PoE, up to 416 ports

- Small form factor and low noise output make the OmniSwitch 6250 ideal for collocation environments. The low power consumption reduces operating expenses and cooling costs, lowering OPEX and resulting in faster return on investment (ROI).
- Leads the industry in price/feature-performance ratio and offers customers a cost-efficient 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 total cost of ownership (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.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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 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 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 384 10/100 and 32 GigE ports per 8U 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

Features for residential and business Ethernet access services

- Ethernet services: Virtual LAN (VLAN) stacking, SVLAN, CVLAN
- Embedded 2544 CPE test head
- Layer 2 Protocol Tunneling (L2PT)
- Service Assurance Agent (SAA) including: L2, IP, ETH-LB and ETH-DMM

- ITU-T G.8032 Ethernet Ring Protection
- Zero Touch auto-configuration via DHCP Services
- Ethernet OA&M (ITU-T Y.1731 and IEEE 802.1ag (v8.1)) for management and troubleshooting
- 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 IGMP snooping, Access Guardian) for traffic containment
- Supported by industry-leading Alcatel-Lucent 5620 SAM
- Compliant with MEF 9 and 14

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

OmniSwitch 6250	Fast Ethernet RJ-45 Ports	GigE SFP Ports	GigE Combo Ports**	2.5 Gig Stacking Ports	PoE Power Budget	Main Power Supply	Optional Backup PSU	Height Rack Units
Standard models								
OmniSwitch 6250-24	24	0	2	2	n/a	AC	AC or DC	1
OmniSwitch 6250-48	48	0	2	2	n/a	AC	AC or DC	1
Power over Ethernet plus (PoE+) models								
OmniSwitch 6250-P24	24	0	2	2	180 W	AC	AC	1
OmniSwitch 6250-P48	48	0	2	2	180 W	AC	AC	1
Metro Ethernet models, AC and DC								
OmniSwitch 6250-8M	8	2*	2	0	n/a	AC	AC or DC	1
OmniSwitch 6250-24M	24	2*	2	0	n/a	AC	AC or DC	1
OmniSwitch 6250-24D	24	2*	2	0	n/a	DC	AC or DC	1
Remarks *SFP ports can be used for transceiver or 2.5 Gigabit stacking **Supports both Gigabit and Fast Ethernet transceivers								

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

The Alcatel-Lucent OmniStack™ 6200 Stackable LAN Switch



The Alcatel-Lucent OmniStack™ 6200 Stackable LAN Switch (SLS) is a family of stackable Ethernet switches that address enterprise and residential networking needs. The OmniStack 6200 family consists of seven different, stackable, layer-2+ switches: 12-, 24- and 48-port Fast Ethernet switches with and without Power over Ethernet (PoE). There is also a version that can contain up to 26 optical fiber transceivers. The switches securely support advanced quality of service (QoS) with advanced user and traffic classification capabilities for exceptional video, voice and data performance. These compact switches have a one rack unit (1U) high form factor that supports an all-in-one stackable design. The OmniStack 6200 family comes with a comprehensive set of features making it perfect for:

- Enterprise workgroups
- LAN wiring closets
- Edge deployments

- Small-to-medium-sized businesses and branch offices
- Deployments requiring PoE

The OmniStack 6212 and OmniStack 6224 are a perfect fit for environments with severe noise restrictions because they offer a fanless design.

This switch family provides a superior architecture with four usable Gigabit Ethernet (GigE) ports that support stacking and multi-gigabit uplink connectivity without sacrificing user ports.

- Every OmniStack 6200 switch comes with two RJ-45 Gigabit Ethernet ports that can be used with standard Ethernet cabling for fault-tolerant dedicated stacking links or as gigabit ports in a standalone configuration.
- They also come with two additional gigabit combo ports that provide ports for upstream connectivity to the network or

to high-speed servers. Combo ports provide the user the ability to attach using standard copper Ethernet cabling or fiber with industry standard optical transceivers.

This means every OmniStack 6200 switch comes with four simultaneously operational wire-speed GigE ports.

The OmniStack 6200 can be stacked with a mix-and-match of any model up to eight units high supporting a fault-tolerant stack loop. The RJ-45 Gigabit Ethernet ports used for stacking use standard Category 5 Ethernet cabling and RJ-45 connectors for dedicated stacking between elements, supporting one primary plus one secondary management entity.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Cost-effective enterprise workgroup switch for small and medium-sized enterprise networks
- Highly available network edge for key applications, such as IP voice communications, by providing PoE, wire-speed QoS and security
- Reduces the complexity and costs associated with training, configuration and maintenance by offering industry-standard command line interface (CLI) and simplified stack management with standard Ethernet cabling
- Supports service providers' requirements for the network edge with virtual LAN (VLAN) stacking, multicast TV VLANs for user service differentiation and efficient bandwidth usage with better operator control and security

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

Availability/performance

- Superior architecture with 24/48 ports Fast Ethernet and four gigabit ports that support stacking and multi-gigabit uplink
- IEEE 802.1s (Multiple Spanning Trees), 802.1w (Rapid Reconfiguration of Spanning Tree) for loop-free topology, link redundancy and sub-second failover
- Advanced QoS for user traffic and user service differentiation

Manageability / ease of deployment

- Fanless designs for OmniStack 6212 and OmniStack 6224 models. Perfect fit for office environment with noise restrictions
- Industry-standard CLI, Simple Network Management Protocol (SNMP) and web browser for easier operations
- IEEE 802.1ab and Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED) extensions for network discovery, topology and easier VoIP deployment

Security

- Per-port and per-user IEEE 802.1X and MAC-address authentication
- Guest VLAN, private VLAN for limiting network access to unauthorized clients
- Dynamic Host Configuration Protocol (DHCP) snooping and dynamic Address Resolution Protocol (ARP) inspection for IP address control and protection

Ethernet access services

- Per-service VLAN stacking with per-port and inner VLAN classification
- Multicast TV VLAN registration for maximum bandwidth efficiency between edge and core

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

OmniStack 6200	Fast Eth RJ-45 Ports	Fast Eth SFP Ports	GigE RJ-45 Ports*	GigE Combo Ports**	PoE Power Budget	Main Power Supply	Optional Backup PSU	Heighth Rack Units
Standard models								
OmniStack 6212	12	12	2	2	n/a	AC	AC or DC	1
OmniStack 6224	24	24	2	2	n/a	AC	AC or DC	1
OmniStack 6248	48	48	2	2	n/a	AC	AC or DC	1
Power over ethernet models								
OmniStack 6212P	12	12	2	2	75W	AC	AC	1
OmniStack 6224P	24	24	2	2	180W	AC	AC	1
OmniStack 6248P	48	48	2	2	375W	AC	AC	1
Fiber optic models, AC and DC								
OmniStack 6224U	0	24	2	2	n/a	AC	AC or DC	1
Remarks *GigE RJ-45 ports can be used for Gigabit stacking **Supports both Gigabit and Fast Ethernet transceivers								

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
OmniSwitch™ 6855
Hardened LAN Switch**



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

The superior, rugged hardware design, coupled with the widely deployed and field-proven Alcatel-Lucent Operating System (AOS), makes the OmniSwitch 6855 ideal for industrial and mission-critical applications that require a wider range of operating temperatures, more stringent EMC/EMI requirements and an optimized feature set for high security, reliability, performance and easier management.

The OmniSwitch 6855 supports Power-over-Ethernet (PoE), which enables the provisioning of power to Ethernet devices, such as CCTV cameras, wireless access points, card readers and industrial sensors at the edge of the network.

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.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Withstand greater shock, vibrations, wider temperature range and harsh EMC/EMI environments with uninterrupted traffic and zero communication errors
- Enable converged networks in challenged environments to connect and power CCTV cameras, IP phones, and wireless access points with PoE support

- Support real-time voice, data and video applications. The switches provide first-packet wire-speed classification and processing for all packets, giving a noticeable performance boost to converged enterprise networks.
- Achieve a faster convergence time in a ring configuration, with support for the Ethernet Ring Protection (ERP) protocol

- Provide resiliency through a superior architecture, offering physical redundancy at all levels
- Fully secure 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 NMS Quarantine Manager

- Reduce enterprise-wide costs through hardware consolidation to achieve network segmentation and security without additional hardware installation
- Supports cost-effective installation and deployment by automated switch setup and configuration and end-to-end VLAN provisioning

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Ruggedized hardware design
- Gigabit models with high port density and 10G uplinks. Up to 24 RJ-45 copper or SFP fiber models supporting variety of fiber types: single-mode, multi-mode, short- and long-haul optics, allowing distances up to 70 km

- Convection cooling for fan-less models or temperature-triggered fans
- Diverse power supply options: external, redundant, hot-swappable, AC and DC
- Redundancy at all levels including power supplies, software and hot-swappable small form factor pluggable (SFP) modules

- PoE support on all copper models
- Wire-rate switching and routing at gigabit speeds
- Advanced services incorporated in the operating system: quality of service (QoS), Access Control Lists (ACLs), layer 2/layer 3, VLAN stacking and IPv6

- Extensive security features for network access control, policy enforcement and attack containment
- Hardware-based virtual routing and forwarding (VRF) support

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

OmniSwitch 6855	GigE RJ-45 Ports	GigE PoE Ports	GigE SFP Ports	GigE Combo Ports	10 GigE 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	60W	AC	AC or DC	1
OmniSwitch 6855-24	16	4	0	4	0	60W	AC	AC or DC	1
OmniSwitch 6855-U10	2	0	8**	0	0	n/a	AC	AC or DC	1
OmniSwitch 6855-U24X	0	0	22**	2	2*	n/a	AC	AC or DC	1
DC models									
OmniSwitch 6855-14D	8	4	2**	0	0	60W (-48V DC)	-48V/24 DC	AC or DC	1
OmniSwitch 6855-U10D	2	0	8**	0	0	n/a	-48V/24 DC	AC or DC	1
OmniSwitch 6855-24D	20	0	0	4	0	n/a	-48V DC	AC or DC	1
OmniSwitch 6855-24DL	20	0	0	4	0	n/a	24V DC	AC or DC	1
OmniSwitch 6855-U24XD	0	0	22**	2	2*	n/a	-48V DC	AC or DC	1
OmniSwitch 6855-U24XDL	0	0	22**	2	2*	n/a	24V DC	AC or DC	1
Remarks									
*Ports can be used for uplink or stacking									
**SFP port supports both Fast Ethernet and Gigabit Ethernet transceivers									

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
OmniAccess™ 6000**



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 radio frequency (RF) management, application fingerprinting and strict over-the-air quality of service (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.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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 quality of service (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 hand-off 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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

Chassis 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	10 GigE 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															

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
OmniAccess™ 4000**

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.

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 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.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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 quality of service (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 hand-off 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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

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	10 GigE XFP Ports	Power Supply AC/DC	Optional Backup PSU	Height Rack Units	Redundant Power Supply
OmniAccess WLAN 4306	8	32	32	0	4	4	1	0	0	0	0	AC	n/a	1	n/a
OmniAccess WLAN 4306G	16	64	64	0	0	0	2	4	0	2	0	AC	n/a	1	n/a
OmniAccess WLAN 4306GW	17	64	64	1	0	0	2	4	0	2	0	AC	n/a	1	n/a
OmniAccess WLAN 4505	32	128	128	0	0	0	0	0	4	0	0	AC	n/a	1	n/a
OmniAccess WLAN 4604	64	256	256	0	0	0	0	0	4	0	0	AC	n/a	1	n/a
OmniAccess WLAN 4704	128	512	512	0	0	0	0	0	4	0	0	AC	n/a	1	n/a
Remarks *Needs licensing															

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

The Alcatel-Lucent OmniAccess™ WLAN AP



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 address the needs of a wide array of environments including:

- Indoor and outdoor dual radio deployments
- Indoor single radio deployments
- Challenging radio frequency (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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Multifunction APs simultaneously providing WLAN access, air monitoring, and wireless intrusion detection and prevention
- Fully featured, enterprise-grade access points

- Multipurpose 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

- Support for antenna diversity for enhanced antenna sensitivity and support of multiple input multiple output (MIMO)
- Flexible mounting options with support for wall, ceiling and plenum deployments

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- High-speed wireless with up to 300 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), quality of service (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

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

OmniAccess WLAN Access Points	IEEE 802.11n	Campus Access Point	Remote Access Point	Campus Mesh	Remote Mesh	Air Monitor	Spectrum Analysis	Number of Radios	Operating Frequency Bands	Antennae 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-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
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
RAP-5	No	No	No	No	No	No		0	n/a	n/a	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														

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

The Alcatel-Lucent 7750 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.

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-c12, 7750 SR-7, 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.



PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- **Purpose-built platform:** 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 nonstop routing and nonstop switching

- **Investment protection:** Flexible form factors and network asset portability across the service router portfolio result in optimal CAPEX investment with extended asset longevity and depreciation cycles
- **Performance:** Sophisticated packet processing capabilities and service headroom result 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 across all service routers to minimize approval for use test cycles, eliminate all issues related to release and feature backward compatibility and allow for rapid fault isolation

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- **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 ATM interfaces. Additional interface options include OC-3/STM-1 support on the ASAP interface card and a combination interface card supporting gigabit and 10-gigabit (10G) ports.

- **Multiservice edge:** Comprehensive service continuity with Frame Relay/ATM/Ethernet pseudowire services (VPWS), Ethernet/Frame Relay/ATM service interworking, Ethernet, Frame Relay and ATM access to VPLS, IP VPNs and Internet services with service-aware quality of service (QoS) to maintain stringent service level agreements (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 basis. Enhancements include class-based forwarding allowing service packets to be directed over specific Resource Reservation Protocol (RSVP) label switched paths (LSPs) based on their forwarding class. Label Distribution Protocol (LDP) over RSVP with Traffic Engineering (RSVP-TE) allows end-to-end LDP tunnels to inherit RSVP-TE properties.

- **Hierarchical QoS:** 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 combine 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. Enhancements include pseudowire switching to scale VPWS and VPLS over multi-area networks and LDP over RSVP-TE to avoid a full mesh of end-to-end RSVP-TE tunnels between provider edge (PE) routers.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- **High availability:** Nonstop services and nonstop routing provide unparalleled availability and reliability. Nonstop services ensure that VPLS-based services and VPRNs are not affected when there is a control processing module (CPM) switchover on the 7750 SR. With nonstop routing, LDP adjacencies, sessions and the database remain intact if there is a switchover. Other differentiating high availability features include multi-chassis link aggregation (LAG) and pseudowire redundancy.
- **Operations, administration and maintenance:** 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:** In-service software upgrade (ISSU) minimizes down time between minor release upgrades. The service assurance agent (SAA), which consists of OA&M and debugging tools, allows network operators to collect statistics such as loss, jitter, latency, response time and packet loss. Multicast troubleshooting allows network operators to assess the distribution of IP multicast traffic, to trace multicast paths in the network and to calculate performance metrics of the network.
- **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 a per-port basis.
- **Network management:** The Alcatel-Lucent 7750 SR is fully supported by the Alcatel-Lucent 5620 Service Aware Manager (SAM) and Alcatel-Lucent 5650 Control Plane Assurance Manager (CPAM), which simplify the provisioning, management and troubleshooting of IP/MPLS networks.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

Chassis Models	CPM/CFM Slots		Number of MDAs		Number of CMAs			Power Supply Bays	Power Supplies			Height Rack Units	Max Fabric Capacity		
7750 SR-12	2		20		0			3	DC			14	2 Tb/s		
7750 SR-7	2		10		0			2	DC			8	1 Tb/s		
7750 SR-c12	2		6		12			2	DC			5	90 Gb/s		
7750 SR-c4	1		2		4			2	DC			3	90 Gb/s		
Port types	Fast Eth RJ-45	Fast Eth Fiber	GigE RJ-45	GigE SFP	10 GigE XFP	10 GigE SFP+	100GigE CFP	OC-3c STM-1c	OC-12c STM-4c	OC-48c STM-16c	OC-192c STM-64	DS3/E3	T1/E1 ATM IMA	DS1/E1 Channel	
7750 SR-c12 and SR-c4 interface options															
Ethernet MDA-XP	20		10/20		1/2/4										
Ethernet MDA	60		20												
POS MDA								8	8	2					
CMA	8		1/5					2	2				4	8	8
ASAP MDA								4	1	4/12					
CES MDA								1**/4	1	1/4					
ATM MDA								4	4						
7750 SR-12 and SR-7 Media Dependent Adapters															
Ethernet MDA-XP	20		20/48*		10/20		1/2/4								
Ethernet MDA	60		20												
High Scale MDA (IMM)					10		1								
POS MDA								8/16	8/16	2/4		1			
ASAP MDA								4	1	4/12					
CES MDA								1/4	1						
ATM MDA								4/16	4						
7750 SR Integrated Media Modules (IMM - full slot cards - No MDAs)															
IMM	48		48		48		48		4/5/8		12		1		
Remarks * 6 x mini RJ-21 ** on CMA															

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

**The Alcatel-Lucent
7450 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.

The 7450 ESS overcomes the limitations imposed by traditional Ethernet switches with features like Hierarchical QoS (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 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.



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- **Flexibility:** H-QoS enables network managers to support users that require different service classes
- **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, when compared with existing layer-2 and layer-3 Ethernet switches, 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); upgradable 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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- **Focus on service:** Supports a service-oriented architecture (SOA) by using service level agreement (SLA)-based Ethernet services with filtering, shaping and quality of service (QoS) on a per-service basis, while scaling to support tens of thousands of users
- **Virtualization:** Deploys IETF implementations of VPWS and VPLS
- **High availability:** Includes nonstop services, nonstop 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 2-3 times per rack) when compared with competing layer-2/layer-3 Ethernet switches with 10-Gb/s architecture
- **Future-ready:** Enables quick and painless adaptation and upgrades to new and evolving standards using programmable fast path

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Chassis Models	CPM/CFM Slots	Number of MDAs	Number of CMAs	Power Supply Bays	Power Supplies	Height Rack Units	Max Fabric Capacity							
7450 ESS-12	2	20	0	2	DC	14	2 Tb/s							
7450 ESS-7	2	10	0	2	DC	8	1 Tb/s							
7450 ESS-6	2	8	0	2	AC/DC	8	320 Gb/s							
7450 ESS-6V	2	8	0	2	AC/DC	18	320 Gb/s							
7450 ESS-1	1	2	0	2	AC/DC	1.5	40 Gb/s							
Port types	Fast Eth RJ-45	Fast Eth Fiber	GigE RJ-45	GigE SFP	10 GigE XFP	10 GigE SFP+	100GigE CFP	OC-3c STM-1c	OC-12c STM-4c	OC-48c STM-16c	OC-192c STM-64	DS3/E3	T1/E1 ATM IMA	DS1/E1 Channel
7450 ESS Media Dependent Adapters														
Ethernet MDA-XP	20		20/48*	10/20	1/2/4									
Ethernet MDA	60	20												
High Scale MDA (IMM)				10	1									
POS MDA								8/16	8/16	2/4	1			
ASAP MDA								4	1			4/12		
CES MDA								1/4	1					
ATM MDA								4/16	4					
7450 ESS Integrated Media Modules (IMM - full slot cards - No MDAs)														
IMM	48	48	48	48	4/5/8	12	1							
Remarks														
* 6 x mini RJ-21														

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The Alcatel-Lucent 7705 Service Access Switch



The Alcatel-Lucent 7705 Service Access Switch (SAS) delivers industry-leading IP/MPLS and pseudowire capabilities in a compact platform that has the ability to reliably groom and aggregate multiple media, service and transport protocols onto an economical packet transport infrastructure.

Industry-leading scalability and density are provided in the 7705 SAR-8, a two-rack unit (2U) version of the 7705 SAR that supports up to 96 T1/E1 any service any port (ASAP) ports, serial cards, Ethernet cards and more. The platform can optionally be configured with redundant control and switch modules (CSMs) and uplinks. 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-F has six 10/100 BASE-T auto-sensing Ethernet ports, plus two ports that support 10/100/1000 BASE-TX using Small Form Factor Pluggable (SFP) optics.

The 7705 SAR-F is a fixed-configuration version of the SAR; its form factor is one rack unit (1U) factoring height 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-18 is a 10 RU version of the 7705 SAR with industry-leading scalability. It is designed to support the full range of existing 7705 SAR services and line adapter cards, but in a larger-scale platform, also capable of supporting 10 Gb/s interfaces. 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.

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- **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 quality of service)

- **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, eliminate all issues related to release and feature backward compatibility, and allow for rapid fault isolation

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- **Upgrade path:** Economical upgrade path from T1/E1-based backhaul to economical and flexible packet-based transport. Support of V.35, X.21, RS-232, G.703, FXS, FXO, C37.94.

- **Dependability:** One-for-one hitless CSM failover (7705 SAR-8, SAR-18), synchronization redundancy, network uplink resiliency and power feed redundancy

- **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:** Extends IP/MPLS capabilities to small site hubs and network edge in a compact form factor
- **Data integrity:** Redundancy and independent validation of accuracy facilitate data synchronization functions

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7705 Service Aggregation Router	CSM Slots	High Cap. Adapter Cards**	Standard Adapter Cards***	Power Supply Feeds	Power Supplies****	Height Rack Units	Max Fabric Capacity			
7705 SAR-18	2	4	12	2	DC	10	140 Gb/s			
7705 SAR-8	2	0	6	2	DC	2	12Gb/s			
7705 SAR-F	0*	0*	0*	2	DC	1	2Cb/s			
7705 Service Aggregation Router	CSM Slots	High Cap. Adapter Cards**	Standard Adapter Cards***	Power Supply Feeds	Power Supplies****	Height Rack Units	Max Fabric Capacity			
7705 SAR-18	2	4	12	2	DC	10	140 Gb/s			
7705 SAR-8	2	0	6	2	DC	2	12Gb/s			
7705 SAR-F	0*	0*	0*	2	DC	1	2Cb/s			
Port types	Fast Eth RJ-45	GigE SFP	OC-3c STM-1c	OC-3/ STM-1	DS3/ E3	T1/E1 ATM IMA	DS1/E1 Channel	E&M	Serial	Aux Alarm
7705 Adapter Cards	Channel									
8-port Ethernet	6	2								
16 and 32-port ASAP T1/E1						16/32	16/32			
2 and 4-port OC3/STM-1			4	2						
4-port DS3/E3						4				
6-port E&M								6		
12-port Serial (RS-232, V.35, X.21)									12	
36-port Auxiliary Alarm										36
Remarks										
* Fixed configuration										
** 20G per card slot (half duplex)										
*** 2-5G per card slot (half duplex)										
**** -48/-60V or +24V, 3rd party AC power available										

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The Alcatel-Lucent OmniAccess™ 5740 Unified Services Gateway



The Alcatel-Lucent OmniAccess™ 5740 Unified Services Gateway (USG) — an access router with a streamlined form factor, two interface slots, and support for a comprehensive set of mix-and-match interface modules — offers unified services such as firewall, quality of service (QoS), voice, etc. The OmniAccess 5740 USG has been specifically designed to support carrier-managed services applications for small and medium-sized businesses (SMBs), enterprise regional/branch offices, and campus gateways that require built-in resiliency and redundancy. The OmniAccess 5740 USG provides multiple centrally managed services on one platform (Ethernet switching, IP routing, VoIP, video) to reduce the cost and complexity of the WAN access network infrastructure and allow new services to be implemented quickly and easily.

The Alcatel-Lucent OmniAccess 5740 USG is usually deployed at carrier-managed SMBs and enterprise branch offices for secure Internet, voice connectivity and layer-2/layer-3 VPN connectivity. This USG provides various WAN connectivity options, such as redundant Gigabit Ethernet (GigE), T1/E1 and serial interfaces, enabling deployments like IP VPN, layer-2 VPN, and corporate Frame Relay networks. Its modular and multi-slot architecture allows deployment for multiple T1 (or serial-linked) Internet access. Its swappable modules, like Service Engine (SE) and interfaces, provide the high availability that business-critical branch offices need, and it provides converged solutions for enterprise branch offices looking for future expansion.

Typical deployment solutions that benefit from the versatile OmniAccess 5700 USG router family are:

- Converged medium and large branch offices
- Aggregation of multiple branch sites that have differing WAN connectivity
- Multiple T1 (or serial-linked) Internet access and corporate Frame Relay
- Head office location for smaller organizations
- Customer premises equipment for carrier-managed services

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- **Purpose built architecture:** Software and hardware architecture specifically designed to provide a rich and extensive suite of features and services that branch offices require
- **Modular design:** Leverages a highly modular design that allows the addition of new services on an as-needed basis
- **Enhanced uptime:** The Alcatel-Lucent ModuLive operating system enables in-service upgrades and configuration changes to ensure that a fault in one service causes minimal or no disruption to other services.

- **Efficiency:** Provides true service unification, saves CPU resources, minimizes latency through the system, and unifies VoIP functionality with low latency and high-throughput performance with minimal packet loss
- **Redundancy:** Features like Virtual Router Redundancy Protocol (VRRP), WAN bundling, backup interface, Equal Cost Multipath Protocol (ECMP) provide system and link level redundancy

- **Privacy and security:** Maintains separate routing and forwarding tables to extend the privacy and security of an MPLS VPN down to the customer edge (CE), (that is, small branches), enabling a cheaper, scalable and secure multi-VPN virtual routing and forwarding (VRF) (multi-VPN VRF CE) solution
- **Enhanced security:** Security-first architecture delivers a comprehensive set of security features such as stateful firewall, VPN and intrusion detection system/intrusion prevention system (IDS/IPS)

- **Centralized management with service assurance:** Management via Simple Network Management Protocol (SNMP) and TR-069 provides centralized management and enables large-scale deployments; Ethernet Operations, Administration and Maintenance (EOAM) provides end-to-end service assurance.
- **Ethernet services over media with EOAM:** Ethernet services over all media, along with innovative offering of EOAM over all media, offer end-to-end, consistent troubleshooting tools.
- **Open platform:** Enables the integration of customer and partner applications as needed

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- **Unified services and features:** Consolidation of multiple services and protocols such as LAN switching, WAN routing, firewall, VPNs, intrusion detection system/intrusion prevention system (IDS/IPS), and VoIP on a single system that is managed by a unified network management interface
- **Modularity and expandability:** A modular platform that support a selection of interface modules such as 10/100/1000 Ethernet layer 2, T1, E1, and serial synchronous (V.35, X.21, TIA/EIA-232)

- **Modular software design:** Alcatel-Lucent ModuLive operating system enhances mission-critical application delivery and insulates the system to prevent failure of any one service.
- **Robust routing services:** VRRP, Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), generic routing encapsulation (GRE), Internet Group Management Protocol (IGMP), Protocol Independent Multicast (PIM), Policy-based Routing (PBR), Multi-VPN VRF CE
- **Advanced security services:** Stateful firewall, network address translation (NAT), destination network address translation (DNAT), IPSec VPN, IDS/IPS, distributed denial of service (DDoS) protection

- **Flexibility with high availability:** Choice of Gigabit Ethernet, T1/E1 bundles, and serial WAN interface, high availability mechanisms, VRRP, bundling, backup interface, ECMP, etc. supports on-line insertion and removal (OIR) for various modules
- **Application-adaptive QoS:** Hierarchical QoS with fine-grain classification enables application-specific and application-adaptive QoS to support voice, video and data services.
- **Ethernet services over all media:** Bridging over T1/E1 bundles (Point-to-Point Protocol (PPP), Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR), High-Level Data Link Control (HDLC)), bridging over ADSL, layer-2 QoS and MAC filtering

- **Centralized management and zero touch deployment:** SNMP support, TR-069 support, custom default configuration
- **Service assurance to the customer:** EOAM (IEEE 802.1ag, ITU-T Y.1731)
- **Extending IP VPN advantages to customer premises:** Multi-VRF CE including support over single WAN link
- **OnePass packet processing:** Global classification of packets for all services, down to an application's payload level, in a single pass

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Chassis models	Service Engine Slots	NI Module Slots	Fixed Power Supply	Power Supply Bays	Height Rack Unit
OmniAccess 5740 USG	1	1	1 AC	0	1
Modules	GigE RJ-45 Ports	T1/E1** Ports		Serial V.35, X.21, RS-232* Ports	
OA7-SE, Service Engine	2	0		0	
OA780-SF, Switching Fabric	0	0		0	
OA7-T1E1-4	0	4		0	
OA7-USP-4	0	0		4	
OA7-GE-8	8	0		0	
Remarks *By selecting appropriate cable **T1 or E1, software-definable					

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**The Alcatel-Lucent
OmniAccess™ 5510
Unified Services
Gateway**



The Alcatel-Lucent OmniAccess™ 5510 Unified Services Gateway (USG) router is a compact, affordable, purpose-built platform for simultaneous, secure, wire-speed delivery of voice and data services to small offices. It has been specifically designed to meet the needs of carrier-managed services applications for small and medium-sized businesses (SMBs) and enterprise small branch offices.

The Alcatel-Lucent OmniAccess 5510 USG comprises a range of fixed-configuration routers that provide secure data connectivity over Ethernet, ADSL, T1/E1, Sync Serial (V.35, X.21, RS-232), and 3G cellular interfaces. This integrated access solution combines a best-in-class router with a firewall, high-speed hardware-based encryption,

virtual private network (VPN) tunneling, quality of service (QoS) and security for IP voice, and data service unit (DSU)/channel service unit (CSU) functions in a single platform. These cost-effective platforms provide consistent wire-speed throughput with no degradation in performance, even when multiple services are enabled.

Typical deployment solutions that benefit from the versatile OmniAccess 5510 USG are:

- All-in-one secure WAN connectivity/access for SMBs
- Unified networking services for small enterprise branch offices
- Carrier-managed services applications
- Basic Internet connectivity or secure VPN communications

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- **Flexible configuration:** Different models with a variety of WAN connectivity options enable customers to meet various deployment scenarios.
- **Simple and easy deployment:** Rack-friendly and desktop-friendly options allow fast installation in a variety of enterprise environments.
- **Network simplification:** Provides the same services and features as multiple devices in a single, resilient, low-cost, small-footprint platform

- **Enhances up time:** The Alcatel-Lucent ModuLive operating system enables in-service upgrades and configuration changes to ensure that a fault in one service causes minimal or no disruption to other services.
- **Efficiency:** Provides true service unification, saves CPU resources, minimizes latency through the system and unifies VoIP functionality with low latency, high-throughput performance with minimal packet loss

- **Redundancy:** Remote office Voice Resiliency (RoVR) enables redundancy at multiple levels (call server, Virtual Router Redundancy Protocol (VRRP), WAN links) to provide always-on voice functionality for small branches
- **Privacy and security:** Maintains separate routing and forwarding tables to extend the privacy and security of an MPLS VPN down to the customer edge (CE) (that is, small branches), enabling a cheaper, scalable and secure multi-VPN virtual routing and forwarding (VRF) (Multi-VPN VRF CE) solution

- **Enhanced security:** Security-first architecture delivers a comprehensive set of security features such as stateful firewall, VPN and intrusion detection system/intrusion prevention system (IDS/IPS)
- **Suitability for environmentally friendly deployment:** Low-power, fanless design consumes less power and makes it suitable for noise-sensitive environment

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- **Flexibility:** Choice of fiber, Ethernet, 3G, T1/E1, serial, ADSL (Annex A and B) WAN interface models
- **Streamlined hardware form factor:** Choice of half-rack width or desktop deployment with fanless design provides a variety of deployment options
- **Service and feature flexibility:** Despite the streamlined form factor, same service and feature richness offered as for high-end USG routers

- **Modular software design:** Alcatel-Lucent ModuLive operating system enhances mission-critical application delivery and insulates the system to prevent failure of any one service.
- **Single-pass packet processing:** Alcatel-Lucent OnePass provides global classification of packets for all services down to an application's payload level.
- **Robust routing services:** VRRP, Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), generic routing encapsulation (GRE), Internet Group Management Protocol (IGMP), Protocol Independent Multicast (PIM), Policy-based Routing (PBR), Multi-VPN VRF CE

- **Extension of IP VPN advantages to customer premises:** Multi-VRF CE, including support over single WAN link
- **Advanced security services:** Stateful firewall, network address translation (NAT), destination network address translation (DNAT), IPsec site-to-site and client VPN, Dynamic Multipoint VPN (DMVPN) client, signature-based IDS/IPS, distributed denial of service (DDoS) protection
- **Ethernet services over all media:** Bridging over T1/E1, serial (Point-to-Point Protocol (PPP), Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR), High-Level Data Link Control (HDLC)), bridging over ADSL, layer-2 QoS and MAC filtering

- **Application adaptive QoS:** Hierarchical QoS with fine-grain classification enables application-specific and application-adaptive QoS to support voice, video and data services.
- **Centralized management and zero touch deployment:** SNMP support, TR-069 support, custom default configuration
- **Service assurance to the customer:** Ethernet Operations, Administration and Maintenance (EOAM) (IEEE 802.1ag, ITU-T Y.1731)

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	WAN Ports	Fast Ethernet RJ-45 ports	USB Ports	Power Supply
Models				
OmniAccess USG 5510-AA	ADSL 2+ Annex A	5	1	AC, optional DC
OmniAccess USG 5510-AB	ADSL 2+ Annex B	5	1	AC, optional DC
OmniAccess USG 5510-GE	1 GigE Combo	5	1	AC, optional DC
OmniAccess USG 5510-SR	Serial V.35, X.21, RS-232*	5	1	AC, optional DC
OmniAccess USG 5510-TE	T1/E1**	5	1	AC, optional DC
Remarks				
*By selecting appropriate cable				
**T1 or E1, software-definable				

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**The Alcatel-Lucent
OmniAccess™ 5320
Business Gateway**



The Alcatel-Lucent OmniAccess™ 5320 Business Gateway (BG) product family provides converged multiservice access gateways for use with broadband or IP networks, enabling converged voice and data at the network edge (the customer's premises). The OmniAccess 5320 BG family consists of three different product lines:

- OmniAccess 5321 BG with ADSL2+ WAN access
- OmniAccess 5324 BG with single-pair SHDSL WAN access
- OmniAccess 5328 BG with two-pair SHDSL WAN access

The OmniAccess 5320 BG family comes with a comprehensive set of features making it perfect for:

- Multiservice access
- ISDN migration
- IP Centrex
- Integrated voice and data for branch offices
- Standalone voice gateway

The OmniAccess 5320 BG family delivers business and Session Initiation Protocol (SIP) trunking and supports the deployment of IP Multimedia Subsystem (IMS) and IP Centrex solutions. It is suitable for small-to-medium-sized businesses (SMBs) that require centrally managed or locally managed deployment.

The OmniAccess 5320 BG is a low-cost, fixed-configuration platform that is easy to deploy, configure and manage. The OmniAccess 5320 is targeted to operators and carriers that seek to offer next-generation network (NGN)/IMS/IP Centrex solutions that will include converged access (voice and data) devices to their SMB customer networks.

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- Reduce total cost of ownership
 - Simplified implementation for both customer and operator with “all-in-one-box” solution that is both a gateway and proxy; also delivers routing, switching, Plain Old Telephone Service (POTS) , ISDN BRI, VoIP and ADSL
 - Competitive price that includes high-performance, business-class software
 - Zero-touch installation through auto-provisioning and auto-configuration

- Increase operator revenue
 - Converged access gateway for SMB market providing opportunity to address the IMS/ Centrex portfolio
 - Opportunity to address the IMS/ Centrex portfolio using business trunking, which provides a smooth migration to IP/IMS and SIP services

- Easy network migration to SIP/NGN with a hybrid offer that keeps the existing phones and PBX
- Also suited for remotely managed media gateway inside customer premises equipment (CPE) LAN environment
- Ideal for modern SMB environment — migrating to IP Centrex-managed solution

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- Integrated DSL modem router with four 10/100 Fast Ethernet ports, up to 12 Foreign eXchange Subscriber (FXS) ports, up to eight ISDN BRI ports and up to two PRI or some combination of ports
- xDSL or Ethernet WAN
- All-in-one, secure WAN access with routing, switching, security and voice support

- Up to eight IP Security (IPSec) virtual private network (VPN) (site-to-site and client) tunnels
- Up to eight PVC over xDSL WAN interface
- Provision of equivalent voice service over broadband/VoIP with up to 60 voice channels
- Best-in-class quality of service (QoS) for both data and voice

- Auto-provisioning
- Local proxy and multiple SIP server support for redundancy (needs OmniAccess 5300 BG firmware, Release 4.0.0 or higher)
- Remote management
 - Simple Network Management Protocol (SNMP)
 - Telnet
 - TR-069

- Stateful inspection firewall with comprehensive Application Layer Gateway (ALG) support
- Proven interoperability with industry-leading Automatic Configuration Server (ACS) and IMS and PBX solution

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	ADSL2+ Port Annex A/B	SHDSL Ports	Fast Eth RJ45 Ports	PRI Voice Ports	BRI Voice Ports	FXS Voice Ports	USB Ports
OmniAccess BG 5321							
OmniAccess BG 5321	*	n/a	4	*	*	*	1
OmniAccess BG 5324							
OmniAccess BG 5324-04A	n/a	1	4	*	*	*	1
OmniAccess BG 5328							
OmniAccess BG 5328-04A	n/a	2	4	*	*	*	1
Remarks * model dependent							

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**The Alcatel-Lucent
OmniAccess™ 5305
Business Gateway**



The Alcatel-Lucent OmniAccess™ 5305 Business Gateway (BG) product provides multiservice/ converged access gateways for use with broadband or IP networks, enabling converged voice and data at the network edge (the customer's premises). The OmniAccess 5305 BG delivers business and Session Initiation Protocol (SIP) trunking and supports the deployment of IP Multimedia Subsystem (IMS) and IP Centrex solutions. It is suitable for small office/home office (SOHO) environments as well as for small to medium-sized businesses (SMBs) that require centrally managed or locally managed deployment. The OmniAccess 5305 BG family comes

with a comprehensive set of features making it perfect for:

- Multiservice access
- ISDN migration
- IP Centrex
- Integrated voice and data for branch offices

The OmniAccess 5305 BG is a low-cost, fixed-configuration platform that is easy to deploy, configure and manage. Its target market includes operators and carriers that seek to offer next-generation network (NGN)/IMS/IP Centrex solutions with converged access (voice and data) devices in their SMB customer networks.

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- Reduce total cost of ownership
 - Simplified implementation for both customer and operator with “all-in-one-box” solution that is both a gateway and a proxy; also delivers routing, switching, Plain Old Telephone Service (POTS), ISDN BRI, VoIP, ADSL and WLAN
 - Competitive price that includes high-performance, business-class software
 - Zero-touch installation through auto-provisioning and auto-configuration
- Increase operator revenue
 - Converged access gateway for managed services for SMB market
 - IMS/IP Centrex portfolio opportunities using business trunking, which provides a smooth migration to IP/IMS and SIP services
 - Easy network migration to SIP/NGN with a hybrid offer that keeps the existing phones and PBX
- Ideal for modern SMB environment — offers up-to-date connectivity

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7705 Service
Access Switch

OmniAccess 5740
USG

OmniAccess 5510
USG

OmniAccess 5320
BG

OmniAccess 5305
BG

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Integrated ADSL/ADSL2/ADSL2+ modem router with combination of two Foreign eXchange Subscriber (FXS) ports and one ISDN BRI port
- DSL and/or Ethernet WAN
- All-in-one, secure WAN access with routing, switching, security, WLAN and voice support
- Up to eight IP Security (IPSec) VPN (site-to-site and client) tunnels

- Up to eight permanent virtual circuits (PVCs) over xDSL WAN interface
- Provision of equivalent voice service over broadband/VoIP with support for two analog voice channels
- Best-in-class quality of service (QoS) for both data and voice
- Auto-provisioning

- Local proxy and multiple SIP server support for redundancy (needs OmniAccess 5300 BG firmware, Release 4.0.0 or higher)
- Remote management
 - Simple Network Management Protocol (SNMP)
 - Telnet
 - TR-069

- Stateful inspection firewall with comprehensive Application Layer Gateway (ALG) support
- Proven interoperability with industry-leading Automatic Configuration Server (ACS) and IMS and PBX solution

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

	ADSL2+ Port Annex	SHDSL Port	Fast Ethernet RJ-45 Ports	PRI Voice Ports	BRI Data Ports	BRI Voice Ports	FXS Voice Ports	WLAN 802.11b/g	USB Ports
OmniAccess 5305 BG									
OmniAccess BG 5305-11Bx*	A or B	0	4	0	0	1	0	0	0
OmniAccess BG 5305-12Ax*	A or B	0	4	0	0	0	2	0	0
OmniAccess BG 5305-13Mx*	A or B	0	4	0	0	1	2	0	0
OmniAccess BG 5305-13MxW	A or B	0	4	0	0	1	2	1	0
Remark *The small 'x' should be replaced by A or B, indicating Annex A or Annex B support									



**OmniSwitch™ 10K
Modular LAN Chassis**



**OmniSwitch™ 6900
Stackable LAN Switch**



**OmniAccess™
AP175**



**OmniAccess™ 5510
Unified Services Gateway**

To provide our customers with the industry's best value in highly available, secure and easy to manage network solutions.

Management Solutions Product Range

Alcatel-Lucent has a wide portfolio of management infrastructure products that run on industry-standard operating systems and provide network management for LANs, wireless LANs (WLANs), WANs and MANs. Alcatel-Lucent also offers comprehensive service level management and IP address and Domain Name System (DNS) management. Our latest addition is Authentication, Authorization and Accounting (AAA) management.

The management product range includes:

- Network switch management system, designed to manage the OmniSwitch™ product series, yet open to other elements managed by Simple Network Management Protocol (SNMP)
- WLAN management system, designed to manage the OmniAccess™ WLAN products, yet open to managing other vendors' Wi-Fi® systems
- MAN management system, designed to manage the Service Router, Ethernet Service Switch and OmniSwitch products, yet open to manage other SNMP-manageable elements
- Service level management system, designed to provide comprehensive performance reporting for network infrastructure, IP telephony, call center, applications and desktops
- IP address management system, not only for clear IP address management, but also to provide DNS, E.164 Number to URI Mapping (ENUM), Network Time Protocol (NTP) and Trivial File Transfer Protocol (TFTP) services
- AAA services for secure, scalable and fast authentication of any user or device in the entire network

PRODUCT OVERVIEW

KEY SELLING POINTS

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TECHNICAL INFORMATION

The Alcatel-Lucent OmniVista™ 2500 Network Management System



The Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS) provides a comprehensive set of components and tools that simplify the management of 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 all facets of network management up to critical aspects of network security.

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.

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- **Unified cohesive management and network-wide visibility:** Provides a common GUI with which network administrators can perform monitoring and configuration operations across multiple devices, using a single touch (one touch operations reducing operator intervention). The intuitive GUI also provides an extensive set of configuration operations and reporting capabilities for all network activities and events.
- **Scalable architecture:** Provides simultaneous client sessions based on an extensible architecture suitable for large infrastructures, allowing the OmniVista 2500 NMS environment to be tailored to the user's network and budget needs
- **Centralized control of switch administration access rights and network administrator credentials:** Offers OneTouch setup of user login, password and partitioned management (user credentials and access rights).
- **Configuration management:**
 - Automates configuration management for initial provisioning and for ongoing maintenance operations
 - Reduces manual tasks associated with configuration maintenance by identifying configuration changes across multiple devices at once
 - Optimizes configuration management operations for best practices for backup/restore operations and software version compliance across large organization
- **Policy-based approach for network access control and QoS:** OneTouch and Expert modes are available for creating, distributing and updating policies from a centralized framework, across multiples switches.
- **Role-based management with User Network Profile configuration:** Includes the Access Guardian, the OmniVista 2500 NMS component for end-user network security management including authentication, host integrity compliance check and resource access definition
- **Network quarantine:** Eliminates threats and security risks from misbehaving devices by providing automation for quarantine and isolation. The 2500 NMS Quarantine Manager™ simplifies intrusion detection and notification by providing Traffic Anomaly Detection configuration for visibility of network behavior anomalies. It simplifies enforcement and definition of a network security perimeter.
- **Open application collaboration:** Simplifies application collaboration with external third-party and in-house-developed applications through Northbound interface based on Web services

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- 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 view — 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 lifecycle 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 quality of service (QoS) for voice, video and data performance optimized and network resource access enforced with simplified or expert modes
- 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

OmniVista 2500 NMS Server

Supported platforms and operating systems

- Microsoft® Windows® Server 2008 Release 1 operating system (32-bit and 64-bit)
- Microsoft Windows Server 2008 Release 2 (64-bit)
- Microsoft Windows 7.0 operating system (32-bit and 64-bit)
- Oracle® Solaris™ 10 operating system (32-bit and 64-bit)
- Red Hat® Enterprise Linux® ES 5.4.0 software (32-bit and 64-bit)
- Novell® SUSE™ 10 Linux software (32-bit and 64-bit)

Virtualization systems

- VmWare ESXi 4.0 software

Minimum CPU and disk space

- Intel® Pentium® 4 processor with 2 GHz or higher (for Windows and Linux)
- Sun UltraSPARC® 5 processor or higher (Oracle Solaris)

Minimum RAM and disk space

- 2 GB RAM or higher
- 5 GB free disk space

OmniVista 2500 NMS Client

Supported platforms and operating systems

- Microsoft Windows XP® Pro operating system
- Microsoft Windows 7.0 operating system (32-bit and 64-bit)
- Oracle Solaris 10 (32-bit and 64-bit)
- Red Hat® Enterprise Linux® ES 5.4.0 software (32-bit and 64-bit)
- Novell® SUSE™ 10 Linux software (32-bit and 64-bit)

Supported web browsers

- Microsoft Internet Explorer® 8.0
- Mozilla® Firefox® 3.5

Minimum CPU and disk space

- Intel® Pentium® 4 processor with 2 GHz or higher (for Windows and Linux)
- Sun UltraSPARC 5 processor or higher (Oracle Solaris)

Minimum RAM and disk space

- 2 GB RAM or higher
- 5 GB free disk space

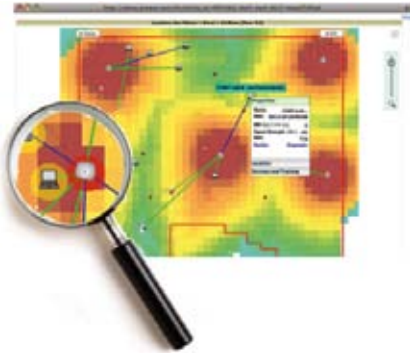
PRODUCT OVERVIEW

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The Alcatel-Lucent OmniVista™ 3600 Air Manager



The Alcatel-Lucent OmniVista™ 3600 Air Manager is a wireless LAN (WLAN) management software suite that provides centralized visibility, configuration and control over today's wireless networks. The OmniVista 3600 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 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.

PRODUCT OVERVIEW

KEY SELLING POINTS

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- 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 radio frequency (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
- With 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 task for large organizations

PRODUCT OVERVIEW

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- User, session and device monitoring with bandwidth usage, RF signal strength, quality of service (QoS) data, and roaming history

- Storage of nearly 2 years of historical data, user roaming patterns and detailed capacity reports

- Real-time location information
- Management of multiple vendors' wireless solutions
- Compliance audits and configuration policy enforcement

- Rogue access point detection and classification
- Automatic distribution, scheduling and verification of firmware updates

PRODUCT OVERVIEW**KEY SELLING POINTS****KEY FEATURES****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, 4 GB RAM
- 200 managed devices: Intel Xeon L5310 processor, Dual-Core AMD Opteron 8216 processor, 6 GB RAM
- 500 managed devices: Intel Xeon E5420 processor, Dual-Core AMD Opteron 8222 processor, 8 GB RAM
- 1000 managed devices: Intel Xeon E5450 processor, Dual-Core AMD Opteron 8222 processor, 12 GB RAM
- 2500 managed devices: Intel Xeon E5460 processor, 16GB RAM

Disk storage

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

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

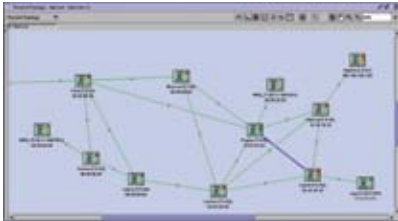
PRODUCT OVERVIEW

KEY SELLING POINTS

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The Alcatel-Lucent 5620 Service Aware Manager



The Alcatel-Lucent 5620 Service Aware Manager (SAM) takes enterprises and service providers 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

5620 Service Aware Manager Enterprises and service providers can further enhance the 5620 SAM's 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 pre-certified OSS partner application integrations.

PRODUCT OVERVIEW

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- Introduce new services and technologies with accelerated and reliable provisioning that minimizes the risk of misconfiguration and reduces time-to-market

- Prevent potential service-affecting problems proactively before they impact users
- Resolve problems quickly and simply

- Collect statistics efficiently for flexible billing and service level agreement (SLA) options
- Provide unmatched operational scalability to support network and service growth

- Increase productivity and flexibility with a management solution that easily adapts to allow cost-effective integration into the existing operational environment, enhancing workflows and processes

PRODUCT OVERVIEW

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- 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, Operations Support Systems (OSSs) and Business Support Systems (BSSs)

Operating environment

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) 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.

PRODUCT OVERVIEW

KEY SELLING POINTS

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The Alcatel-Lucent VitalSuite™ Performance Management Software



Alcatel-Lucent VitalSuite™ Performance Management Software is an award-winning multivendor, multitechnology performance management solution. It is a comprehensive, fully integrated, cost-effective package that provides both historical and near-real-time views into everything from complex contact center transactions to VoIP traffic to mission-critical applications and network resources. The solution proactively monitors, measures and optimizes performance at every level of IT operations.

VitalSuite has several major software modules:

- **VitalApps™ 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, DNS, and in-house applications by monitoring traffic volumes and application transaction response time.

- **VitalNet™ Network Performance Management Software/VitalSuite Real Time Event Analysis Software** - This module provides critical network information necessary to pre-empt 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, reports with drilldowns, trending and capacity planning, advanced thresholding and alarming, and advanced VoIP monitoring.

- **Alcatel-Lucent VitalFlow™ software** collects Netflow records directly from routers in the network, and provides powerful traffic analysis and reporting features based on that data. VitalFlow offers the integrated Flow monitoring capability helps monitor application and network traffic behavior to identify how the network bandwidth is used.
- **Alcatel-Lucent VitalART™ 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.

continued

PRODUCT OVERVIEW

KEY SELLING POINTS

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VitalSuite is a sophisticated information delivery 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, multitechnology converged infrastructure. It enables IT managers to monitor, analyze, manage and predict service performance from a single centralized location for wireless, LAN, WAN, server, ATM, VoIP, Genesys contact centers, and applications..

PRODUCT OVERVIEW

KEY SELLING POINTS

KEY FEATURES

TECHNICAL INFORMATION

- Access at-a-glance personalized performance data that is aligned with an IT operational model, including multivendor and multitechnology support
- Obtain centralized views of applications and networks: Client web/database transactions, routers, switches, LAN/WAN, servers, VoIP, Genesys, flow data, etc.
- Pre-empt potential network problems with real-time network-wide visibility
 - Network-wide visibility: Monitor performance across the entire IT infrastructure via individual network resources, maps, paths, domains, groups and services

- Simplify analysis and planning for every organizational level with drill-down reports
- Proactively track performance problems to their source, maximizing up time
- Increase VoIP quality by efficiently identifying the root cause using advanced VoIP performance monitoring solution with the capability to generate VoIP traffic
- Monitor application and network infrastructure using unique Genesys™ Contact Center monitoring features with specialized data collection from Genesys servers

- View network flow traffic with the ability to monitor, alert, and analyze flow data for application profiling, application network utilization and traffic flow reporting
- Strengthen support of critical business transactions with applications performance monitoring
 - Enhance the end-user experience
 - Access real-time data to identify performance issues before they affect users
- Protect network investments with enhanced operational performance

- Realize rapid return on investment (ROI) with immediate system deployment and access to performance data
 - Leverage the fast, easy deployment characteristics of VitalSuite
 - Help network managers identify potential trouble spots, verify service level agreement (SLA) compliance and optimize resource utilization
- Protect investments: Use built-in toolkits to speed integration with existing management systems and emerging technologies
- Implement carrier-class management capabilities priced to suit enterprise IT budgets — cost-effective price to performance
- Leverage VitalSuite scalability features to grow incrementally as your network grows

PRODUCT OVERVIEW

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- **Industry-leading scalability:** VitalSuite can scale from single-server deployments that monitor small networks to multiserver deployments that monitor network and service quality across today's largest environments. Customers can start small and grow as needed.
- **Comprehensive multivendor VoIP performance monitoring:** Includes collection and analysis of individual VoIP call records from leading VoIP platforms including Avaya, Cisco, and Alcatel-Lucent (streaming call records from OmniPCX™). VitalSuite also supports active VoIP monitoring via synthetic VoIP transactions using the VitalSuite VoIP Agent capability, or Cisco IP SLA operations.

- **Centralized application and network visibility:** Easy-to-use web-based GUI with a single administration interface for user accounts administration, domain and group definition, and threshold definitions. VitalSuite heat charts provide an intuitive, at-a-glance indicator of application and/or network performance problems with efficient drill-downs to additional performance details. Customized reports provide the ability to view both application and network data in the same report.

VitalApps Application Performance Management Software

- **VitalAgent™ client software:** Pinpoints application-related problems on desktops, notebooks and servers
- **Powerful fault detection and Centralized alarm console:** Proactively receives alarms for application and network faults and performance shortfalls then display on the unique heat charts and summary reports.
- **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. Mid-Tier Agent gives insight concerning incoming and outgoing traffic from the server.

- **Extensibility and Remote diagnostics:** Provides the ability to add support for in-house applications. Allows administrator to visit remote desktops to see problems exactly as end users see them.

VitalNet/VitalSuite Real Time Event Analysis Software

- **Flexible, multivendor and multitechnology support:** Monitors diverse resource types and more than 600 devices from more than 50 different vendors.
- **Fully automated monitoring with versatile reporting:** Provides Auto-discovery and different reports for efficient, on-target troubleshooting, continuous operations data for monitoring service quality, high-level summaries and long-term trends for capacity planning with domain management capability
- **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 drill-down from high-level views to detailed information. High-level displays include heat charts, traffic charts, network topology maps, and personalized MyVital portal views
- **Extensive data collection with quick extensibility:** Collects data from WAN, LAN, servers, firewall, Genesys Contact Centre, VoIP and other network elements MIBWorks and DataWorks provide a way to add data collection for new devices

VitalFlow

- **Simple and Advanced Application traffic analysis:** Informs the network manager about the “who, what, when, where and how” concerning application traffic usage on the network. Provides “Top N” reports.

VitalART 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:** the 100% wizard-based GUI Supports a wide variety of table and chart types with robust formatting, viewing, exporting and scheduling options

PRODUCT OVERVIEW

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TECHNICAL INFORMATION

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

VitalApps Application Performance Management Software

- Server system requirements
 - Microsoft® Windows® 2003 operating system (32-bit) with Microsoft SQL Server 2005 (32-bit)
 - Microsoft Windows 2008 R2 (64-bit) with Microsoft SQL Server 2008 (64-bit)
- VitalAgent desktop system requirements
 - Microsoft Windows XP operating system with SP2, Vista® Business, Windows 7 (32-bit/64-bit)

- Mid-tier agent server system requirements
 - Microsoft Windows Server 2003 operating system, Windows Server 2008 (64-bit), Oracle® Solaris™ 10, HP-UX® 11 and Linux® (Red Hat 4) 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)
 - Custom in-house applications such as those using Java™

VitalNet/VitalSuite Real Time Event Analysis Software and VitalFlow

- Server system requirements
 - Microsoft Windows 2003 operating system (32-bit) with Microsoft SQL Server 2005 (32-bit)
 - Microsoft Windows 2008 R2 (64-bit) with Microsoft SQL 2008 (64-bit)
 - Oracle Solaris 10 with Oracle 10
- VoIP agent system requirements
 - Microsoft Windows XP operating system with SP2, Vista Business, Windows 7 (32-bit/64-bit)
- Supports SNMP v1, v2 and v3
- Monitored network elements (multivendor)
 - Routers and switches
 - WAN and LAN
 - Servers
 - VoIP
 - Firewalls
 - Genesys Contact Center
 - DSL
 - WLAN and WiMAX
 - Wireless

VitalART Advanced Reporting Tool

- Server system requirements
 - Microsoft Windows 2003 operating system (32-bit) with Microsoft SQL Server 2005 (32-bit)
 - Microsoft Windows 2008 R2 (64-bit) with Microsoft SQL Server 2008 (64-bit) R2
 - Oracle Solaris 10 with Oracle 10

VitalSuite client system requirements:

- Microsoft Internet Explorer® 7 browser, Internet Explorer 8 or Mozilla® Firefox® 3.6

PRODUCT OVERVIEW

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**The Alcatel-Lucent
VitalQIP™ DNS/DHCP IP
Management Software**



The Alcatel-Lucent VitalQIP™ DNS/DHCP IP Management Software product is a fully integrated IP management system consisting of Domain Name System (DNS), Dynamic Host Configuration Protocol (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 5000, the enterprise next-generation model 1200, the original enterprise model 1000 and the branch office model 500.

VitalQIP provides the most flexible offering in the IP address management (IPAM) market today. Whether its functionality is based on dedicated appliances or implemented on non-dedicated 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.

PRODUCT OVERVIEW

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Lower 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 subnet block.
- Reduction in infrastructure support costs
- Reduction in address assignment process and departmental costs
- Reduction in disaster recovery costs

Lower down-time costs

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

Reduce company risk and improve business operations

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

Increase 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

Provision 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)

PRODUCT OVERVIEW

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- **Extensive tools** to further simplify IPAM such as Address Allocation and MyViews: VitalQIP continues to extend its capabilities and build 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:** Can support 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 software appliances running in a virtual environment. (Most vendors can support appliance-only solutions, which typically requires a customer to purchase more new hardware instead of potentially leveraging their installed base.).
- **Proven scalability:** Has supported customers with millions of addresses for over 10 years. As new technologies such as DNS Security Extensions (DNSSEC), and more importantly IPv6, become a reality, a proven product will be critical for scaling environments.
- **Microsoft Active Directory®:** Provides more complete integration with Microsoft Active Directory. For example, VitalQIP can configure Microsoft Windows DNS servers that are integrated in Microsoft Active Directory; most competitors have very limited capabilities.

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TECHNICAL INFORMATION

VitalQIP Enterprise Server 7.2**Operating systems, processors and memory requirements**

- Microsoft Windows Server® 2003 operating system with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): Intel® Pentium® 4 (>1 GHz), >1 GB RAM
- Microsoft Windows Server 2003 R2 with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): Intel Pentium 4 (>1 GHz), >1 GB RAM
- Red Hat® Linux® 5.2 software or higher (32-bit and 64-bit): Any x86 (>500 MHz), >1 GB RAM
- Sun Solaris 9 operating system (32-bit and 64-bit): UltraSPARC® (>500 MHz), >1 GB RAM
- Sun Solaris 10 (32-bit and 64-bit): UltraSPARC (>500 MHz), >1 GB RAM

Disk space

- 500-MB disk space (does not include disk space required for data segments)

VitalQIP Remote Server and Distributed Services 7.2**Operating systems, processors and memory requirements**

- Microsoft Windows Server 2003 operating system with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): Intel Pentium 4 (>500 MHz), >256 MB RAM
- Microsoft Windows Server 2003 R2 with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): Intel Pentium 4 (>500 MHz), >256 MB RAM
- Red Hat Linux 5.2 software or higher (32-bit and 64-bit): Any x86 (>300 MHz), >256 MB RAM
- Sun Solaris 9 operating system (32-bit and 64-bit): UltraSPARC (>300 MHz), >256 MB RAM
- Sun Solaris 10 (32-bit and 64-bit): UltraSPARC (>300 MHz), >256 MB RAM

Disk space

- 300-MB disk space

VitalQIP Client (GUI and CLI) 7.2**Operating systems, processors and memory requirements**

- Microsoft Windows Server 2003 operating system with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): x86 (>500 MHz), >256 MB RAM
- Microsoft Windows Server 2003 R2 with SP2 (Standard and Enterprise Server) (32-bit and 64-bit): x86 (>500 MHz), >256 MB RAM
- Microsoft Windows Server 2008 (Standard and Enterprise Server) (32-bit and 64-bit): x86 (>500 MHz), >256 MB RAM
- Microsoft Windows Vista® operating system (Enterprise and XP Professional) (32-bit and 64-bit): x86 (>500 MHz), >256 MB RAM
- Red Hat Linux 5.2 software or higher (32-bit and 64-bit): Any x86 (>300 MHz), >256 MB RAM

- Sun Solaris 9 operating system (32-bit and 64-bit): UltraSPARC (>300 MHz), >256 MB RAM
- Sun Solaris 10 (32-bit and 64-bit): UltraSPARC (>300 MHz), >256 MB RAM

Disk space

- 300-MB disk space
- Not to include Sybase® or Oracle® client

VitalQIP Web Client 7.2
Browser requirements

- Microsoft Internet Explorer® 7.x browser or higher
- Mozilla® Firefox® 2.x browser or higher

PRODUCT OVERVIEW

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**VitalQIP Appliance
Manager 1.6 –
Hardware models**

Model 500

- AMM 500
- AMS 500

Model 1000

- AMM 1000
- ESM 1000
- AMS 1000

Model 1200

- AMM 1000
- ESM 1000
- AMS 1000

Model 5000

- AMM 5000
- ESM 5000

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

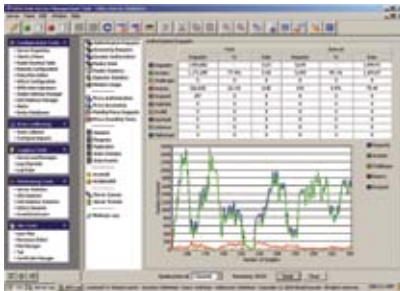
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The Alcatel-Lucent 8950 Authentication, Authorization and Accounting Server



The Alcatel-Lucent 8950 Authentication, Authorization and Accounting (AAA) server is an award-winning, industry-leading software product that supports over 1000 service providers and enterprise customers, providing service to hundreds of millions of ports and subscribers worldwide. A key component of the Alcatel-Lucent Enterprise solution, the Alcatel-Lucent 8950 AAA supports WLAN, Wi-Fi® and VoIP networks.

AAA is a required architectural component for access to most public and private data networks.

- **Authentication:** Verifies that a user really is who he claims to be. Verification is accomplished with passwords, token cards, X.509 digital certificates, SIM cards, etc.
- **Authorization:** Checks that the user has permission to access the service by checking against a database, a file, etc. what the user can do, and restricts access to the network if necessary
- **Accounting:** Records what the user has done during a connection In terms of connection time, bytes sent/received, access service, etc.

The Alcatel-Lucent 8950 AAA features the same software as that in the “carrier” version and licensing adapts features and price points for enterprise requirements. A “scale-as-you-grow” model provides flexible licensing for up to 100,000 users/devices.

The PolicyAssistant offers pre-canned, typical enterprise IEEE 802.1x/EAP setup. Services are defined and delivered by business partners, and only a small hardware footprint is required.

Extensive management and troubleshooting tools guarantee visibility into RADIUS activity

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- Reduces capital expenditures (CAPEX) server costs by up to 50 percent compared with competitors
- Provides excellent price point compared with competition
- Scales to support a virtually unlimited number of subscribers
- Supports multiple networks

- Reduces operating expenditures (OPEX) through a single interface for subscriber management
- Increases enterprise security and compliance with regulations with a network-based solution

- Features a small hardware footprint for great software performance
 - Choice of operating system - Microsoft® Windows®, Linux®, Oracle Solaris™
 - Virtualization certification pending

- Features easy deployment with canned, typical policies and tools for vast percentage of SMB EAP requirements
- Provides additional revenue channel for business partners

PRODUCT OVERVIEW

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- 8950 AAA supports the 802.1x authentication using the following EAP protocols:
 - EAP-TLS
 - EAP-TTLS
 - EAP-PEAP
 - EAP-MD5
 - EAP-GTC
- 8950 AAA implements XML-based dictionary which is a superset of RFC standard and Vendor Specific Attributes (VSA) giving the ability to adapt to various vendors of edge devices in an enterprise network.
- 8950 AAA offers an optional built-in programming language for writing custom AAA policy applications. This powerful PolicyFlow™ language allows configuring the 8950 AAA according to any complex policy rules of an enterprise. PolicyFlow architecture built on Java™ programming language is flexible and extensible.
- PolicyAssistant is a graphical wizard to define policies for enterprise policy rules. If the application requires complex policies, use policy flows instead of the PolicyAssistant.

Logging mechanism is flexible and configured according to the requirements.

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Supported platforms:

- Windows
- Solaris and Linux upon request
- Virtualization certification pending

Optional features:

- TACACS+
- Redundant Server
- Policy Flow Unlock

Multiple configurations to support all environments, including:

- Standalone AAA server capability
- Pre-integration with the InfoExpress CyberGatekeeper, OmniSwitch and VPN Firewall Brick
- AAA with a pre-integrated LDAP directory server: Alcatel-Lucent 8661 DS, Microsoft AD

- Adaptable configuration options for integration in any network environment with full support for redundancy and availability requirements
- In addition to the SMT, the 8950 AAA provides a Command Line Interface (CLI), which allows access to the 8950 AAA.

Security Product Range

Alcatel-Lucent provides network security products designed to provide the security required to protect valuable information and daily operations in IT.

Our security product range includes:

- Host integrity check solution to enforce end-system compliancy
- Unified threat management solutions

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**InfoExpress
CyberGatekeeper**

Alcatel-Lucent offers a seamless, secure and scalable enterprise network access control (NAC) solution through its embedded network security framework. This framework includes a comprehensive security solution for verifying endpoint integrity through host integrity checking (HIC).

The InfoExpress CyberGatekeeper operates best in conjunction with the Alcatel-Lucent OmniSwitch and OmniAccess WLAN products HIC integration function but also can function as a seamless overlay with other Alcatel-Lucent or third-party systems. The CyberGatekeeper is a one-stop HIC and NAC product for enterprises. HIC capabilities screen endpoints and allow them to access the network only if they meet specific security policy requirements.

The CyberGatekeeper supports both HIC desktop agent and agentless (web-based agent) methods. It allows the management of endpoint requirement policy across all user connection modes (wired, wireless or remote VPN), all user types (employee, contractor or guest), and a broad range of devices and platforms (Microsoft® Windows®, Linux®, Mac OS devices).

The CyberGatekeeper can be deployed seamlessly in just a few hours with minimal network changes. The product is available in an appliance/software version and a software-only version.

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- Ensures 100 percent of network endpoints (systems are compliant with the company policy set for patch levels, application settings and configuration) or they are quarantined until remediated
- Separates authentication mechanism from security
 - IEEE 802.1x not a requirement for HIC
 - Endpoints can be plugged into phones and still be secure

- Does not interfere with existing VoIP deployments
- Keeps rogue devices off the network
- Reduces vulnerabilities: Security solutions, operating system and patches are assured to be running and up-to-date

- Lowers help desk costs: Automatic remediation of non-compliant PCs
- Improves security compliance/auditing scorecard
- Reduces risks associated with improperly configured computers

- Integrates with existing patch management solutions to preserve software investments
- Reduces support costs by maintaining standard configurations across desktops

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- Automatically manages the security fitness of endpoints
- Operates independently of authentication mechanism and network access controls
- Auto-remediation through automatic installation of missing patches, fully interoperable with third-party remediation/patch management solutions

- Integration with the Alcatel-Lucent OmniSwitch integrates and enforces endpoint compliance with the company policy set for patch level, application settings and configuration at the very first entry point to the network, the edge switch

- HIC policy server provides a single management platform to define, manage and monitor endpoint security fitness compliance
- Compatible with Microsoft Windows, Linux and Mac OS operating systems
- Agents are permanently installed or provided on-demand with a web browser

- Dynamic enforcement with User Network Profiles and Access Control Lists (ACLs)
- Central policy management delivers consistent user experience
- Continuous surveillance of endpoint configuration

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TECHNICAL INFORMATION**LAN and WLAN products supporting HIC enforcement**

- OmniSwitch 6250, running AOS 6.6.3 and higher
- OmniSwitch 6400, 6850, 6850E, 9000, 9000E, running AOS 6.4.3 and higher
- OmniAccess WLAN, running AOS-W 3.4.3 and higher

CGS-1000 CyberGatekeeper Server Appliance

- Hardware revision: 1000-sm1a
- Software revision: 6.02
- Compliance: Restriction of Hazardous Substances (RoHS), Underwriters Laboratories (UL), Federal Communications Commission (FCC)
- Power requirements: 5 A Max (100 V to 240 V 50/60 Hz, single power supply)
- Network interfaces: Dual 1000BT full-duplex RJ-45 (copper)
- Audit connections: Rated up to 10,000 for policies with 500 audited conditions
- Enforcement modules
 - CGSI (HIC): Max 100 client switches
 - EAP (RADIUS Proxy): Max 100 client switches
 - Dynamic NAC: Max 200 managed subnets

CGM CyberGatekeeper Manager Software Suite

- Includes Policy Manager and Reporting Server
- Requires Microsoft Windows Server® 2003 operating system and Microsoft SQL Server® 2005/2008 database software
- Hardware specifications to support an implementation vary depending on total number of endpoints, policy complexity and data retention period. The following sample configuration is provided only as a guide for supporting a 3000-endpoint implementation

**Web server (dedicated)
Windows Server 2003 with SP1**

- Processor and memory: Intel® Core™2 Quad processor, 2.4 GHz, 3.0 GB of RAM
- Disk subsystem: RAID 5, 7200 rpm disks, minimum 80 GB for operating system and application

Database SQL server (dedicated)**Windows Server 2003 (64-bit) with SP1; SQL Server 2005/2008**

- Processor and memory: Intel Core 2 Quad processor, 2.4 GHz, 8 GB of RAM
- Disk subsystem: RAID 5, 7200 rpm disks, minimum 100 GB for DB
- Expected average database size: 45 GB

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Fortinet

Fortinet delivers unified threat management and specialized security solutions to protect against sophisticated network- and content-based threats. Fortinet is a market leader in network security, delivering purpose-built hardware and software that improves performance, increases protection and reduces costs. Many of the largest and most successful organizations and service providers in the world rely on Fortinet technology to protect their networks and data.

Fortinet's consolidated architecture gives customers the ability to deploy a wide range of fully integrated security technologies to stay abreast of changes to their networks, applications and users. Fortinet's centralized management and simple licensing enables customers to deploy the security technologies they need, where and when they need them.

Benefits of Fortinet solutions include:

- High-performance protection
- Seamlessly integrated technologies
- Complete content protection
- Rigorous third-party certifications and customer requirements
- Lower total cost of ownership
- Superior flexibility and ease of deployment
- End-to-end protection



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- Offers certified protection with maximum performance and scalability with a powerful, complete content inspection firewall
 - Detects and eliminates viruses, worms and spyware in real time. Scans incoming and outgoing e-mail attachments (SMTP, POP3, IMAP) and all FTP and HTTP traffic, including web-based e-mail
 - Delivers alerts based on a customizable database of more than 1400 known attack signatures. FortiGate® multi-threat security stops attacks that evade conventional host-based anti-virus systems, with real-time response to fast-spreading threats.
- Enables blacklisting of web sites and domains, keyword scanning of e-mails (configurable on a per-user basis) and the ability to leverage a dynamic scoring system using a number of criteria
 - Processes all web content against known malicious URLs to block inappropriate material and malicious scripts including Java™ applets, cookies, and Microsoft® ActiveX® scripts from the network. Fortinet categorizes more than 25 million domains and billions of web pages to ensure its customers can avoid malware.
- Provides secure communication tunnels between networks and clients using industry-standard IP Security (IPSec), Secure Sockets Layer (SSL) and Transport Layer Security (TLS), Point-to-Point Tunneling Protocol (PPTP), and Layer 2 Tunneling Protocol (L2TP)-based VPN support. Fortinet's ASIC-accelerated VPN capabilities allow enterprises to use the Internet as the public infrastructure and a variety of specialized protocols to support private communications through it.
- Helps users control network traffic to optimize or guarantee performance, low latency, and/or bandwidth with Fortinet's traffic shaping. The FortiOS™ firmware offers packet classification, queue disciplines, policy enforcement, congestion management, quality of service and fairness.

PRODUCT OVERVIEW

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- Firewall with powerful complete content inspection firewall offers certified protection, maximum performance and scalability
- Antivirus Gateway detects and eliminates viruses, worms and spyware, in real-time. Scans incoming and outgoing email attachments (SMTP, POP3, IMAP) and all FTP and HTTP traffic
- Intrusion Prevention provides alerts based on a customizable database of more than 1,400+ known attack signatures
- Antispam with blacklisting of websites & domains, keyword scanning of emails (each configurable on a per-user basis) and the ability to leverage a dynamic scoring system
- Web Filtering processes all web content against known malicious URLs to block inappropriate material and malicious scripts including Java Applets, Cookies, and ActiveX scripts entering the network
- VPN Industry standard IPSec, SSL-TLS, PPTP, and L2TP-based VPN support provides secure communication tunnels between networks and clients
- Traffic Shaping to control network traffic in order to optimize or guarantee performance, low-latency, and/or bandwidth for particular users or specific applications

PRODUCT OVERVIEW

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TECHNICAL INFORMATION**Large enterprise and managed service provider systems**

- FortiGate-5140 – 14-slot chassis, AC or DC power
- FortiGate-5060 – Six-slot chassis, AC or DC power
- FortiGate-5050 – Five-slot chassis, AC or DC power
- FortiGate-5020 – Two-slot chassis, AC power
- FortiGate-5001A-SW/-DW Blade – Threat Management blade with GigE and SFP options
- FortiGate-5005FA2 – Threat Management blade with eight SFP ports
- FortiSwitch-5003/5003A – Switch Fabric blade with GigE/SFP ports
- FortiController-5208 – Load Balancer blade

Enterprise appliances

- FortiGate-3950/3951B – 2 GigE, 4 SFP ports, 2 SFP+ ports and 5/4 expansion slots
- FortiGate-3810A – 8 GigE, 2 SFP ports and 2 single-width, 2 expansion slots
- FortiGate-3600A – 8 GigE ports, 2 SFP ports and 1 expansion slot
- FortiGate-3040B – 2 GigE ports, 10 SFP ports, 8 SFP+ ports and 4 expansion slots
- FortiGate-3016B – 2 GigE ports, 16 SFP ports and 1 expansion slot
- FortiGate-1240B – 16 GigE ports, 24 SFP ports, one single-width expansion slot and 6 FSM slots
- FortiGate-800 – 4 10x100 ports, 4 GigE ports
- FortiGate-800F – 4 10x100 ports, 4 SFP ports
- FortiGate-620B/620B-DC – 20 GigE ports and 1 expansion slot

- FortiGate-310B/310B-DC – 10 GigE ports and 1 expansion slot
- FortiGate-311B – 10 GigE ports and 1 FSM expansion slot
- FortiGate-300A – 4 x 10/100 ports and 2 GigE ports
- FortiGate-224B – 26 x 10/100 ports
- FortiGate-200B/200B-POE – 8 x 10/100 ports and 8 GigE ports
- FortiGate-200A – 8 x 10/100 ports and 2 GigE ports

Appliances for small to medium-sized business (SMB), remote office/branch office (ROBO), and small office/home office (SOHO)

- FortiGate-110C/111C – 8 x 10/100 ports and 2 GigE ports
- FortiGate-82C – 4 GigE ports
- FortiGate-80C/80CM – 6 x 10/100 ports and 2 GigE ports
- FortiWiFi-80CM/81CM – 6 x 10/100 ports, 1 x 10/100 DMZ, 2 GigE ports and 1 Wi-Fi a/b/g/n
- FortiGate-60C – 5 GigE ports, 1 x 10/100 ports DMZ and 2 x 10/100 WAN ports
- FortiWiFi-60C – 5 GigE ports, 1 x 10/100 ports DMZ, 2 x 10/100 WAN ports and 1 Wi-Fi a/b/g/n
- FortiGate-50B/51B – 5 x 10/100 ports
- FortiWiFi-50B – 5 x 10/100 ports and 1 Wi-Fi b/g
- FortiGate-30B – 4 x 10/100 ports
- FortiWiFi-30B – 5 x 10/100 ports and 1 Wi-Fi b/g

For more information

Should you require further information about Alcatel-Lucent Enterprise solutions, products and services:

- Contact your Alcatel-Lucent representative
- Visit the public Internet web site at:
<http://enterprise.alcatel-lucent.com>

Alcatel-Lucent Enterprise business partners may visit the Alcatel-Lucent Enterprise Business Portal web site at:

<https://businessportal.alcatel-lucent.com>

Business partners in North America may visit the specific North American Business Partner web site at:

www.alcatel-lucent.com/us/partners

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