ALCATEL-LUCENT OMNIACCESS 5800
ENTERPRISE SERVICES ROUTERS

The Alcatel-Lucent OmniAccess® 5800 Enterprise Services Router (ESR) series bring together network transport and business applications into the same dual core hardware platform. They combine a high-performance router with a standards-based, secure applications server.
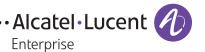
For operating offices and branches, connectivity to the network is essential. Given that many applications and data are "in the cloud," the router is vital for day-to-day operations. It allows for critical business applications to reside on the same device facilitating a single point of management for communications and application delivery in each office.

The OmniAccess 5800 ESR can simultaneously operate as a router and server with its powerful internal dual core architecture. It can provide a server for files, printers, or scanners; IP telephony; energy management; an LDAP backup server; document management – just to name a few generic examples. Additionally, as it is based on accepted international standards, any application based on the Linux® operating system can be easily and quickly migrated, making the OmniAccess 5800 series an integrated solution that reduces dedicated server maintenance costs. The OmniAccess 5800 ESR is also a professional router with advanced features and routing capacity over 100 Mb/s. It has a full operating system in addition to LAN and WAN connectivity capabilities.

FEATURES

- The OmniAccess 5800 provides advanced hardware architecture with a double core processor and two different operating systems: the ESR operating system and a GNU/Linux Debian operating system. Both systems run in parallel, one in each core, as if they were two processors in two different machines, without compromising either performance or stability.

- The powerful processor allows the OmniAccess 5800 ESR to exceed 100 Mb/s routing bidirectional sustained flow throughput under normal operating conditions (IMIX traffic with active services). Supports routing protocols RIP I, RIP II, OSPFv2 and BGP-4 Bidirectional Forwarding Detection (BFD) and is compatible with HSRP.

- Security, incorporating firewall features (Stateful firewall) and IPSec.

- IP Telephony with Media Gateway features and IP Telephony integrated server capable of managing up to 300 telephones with SIP, H.323, Universal Alcatel – New Office Environment (UA-NOE) or SCCP (Skinny) protocols.

- Quality of Service, with CBWFQ, LLQ and WRED algorithms. Supporting a hierarchical system with 32 different traffic classes per interface, traffic marking and profiling as well as traffic pre-classification. Integrated with VPN, MPPP & fragmentation facilities.

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- Server platform supports a standard GNU/Linux Debian OS over which any application can be executed. Communications with the applications server are carried out through a virtual driver connected with the router so behavior from the applications is exactly the same as a typical server with an Ethernet card.
- Security for the branch office utilizing antivirus, antispam, content filtering and IDS functionality.
- WAN optimization achieved through video proxy, web cache and NAS with cloud backup.
- Voice tools including IP Call detection and voice recording.
- OmniAccess 5800 possesses unequalled versatility as a communications device. Capable of expanding to almost any configuration needed in a branch office to include a whole spectrum of Ethernet, WAN, Wi-Fi and voice interfaces.

BENEFITS
- Versatility of being both a router and an applications server
- Routing software oriented toward enterprises
- Advanced capabilities above and beyond standard routing
- Applications server platform
- Integrated applications for the enterprise
- Modularity and flexibility

DETAILED PRODUCT FEATURES
Gigabit Ethernet interfaces
- 2 x 10/100/1000 Ethernet, RJ-45
- Electric interface compliant with 10/100/1000Base-T IEEE 802.3
  - ¬ IEEE 802.3 ah (Ethernet OAM)
  - ¬ Operational up to 180 meters with category 5 cable
  - ¬ Automatic crossed detection MDI/MDIX for all operating modes
  - ¬ Auto-negotiation complying with IEEE 802.3u
- IEEE 802.1Q (VLAN)
- IEEE 802.1X
- 2 status LEDs per port

Fast-Ethernet Switch
- 8 x 10/100 Ethernet, RJ-45
- 10/100Base-T detection
- Automatic semi-duplex/duplex negotiation
- MDI/MDI-X detection (crossover detection)
- Ethernet V2/IEEE 802.3

- LLC (IEEE 802.2), ARP
- IEEE 802.1Q (VLAN) up to 16 VLANs
- Managed switch:
- EtherLike-MIB (RFC 2665)
- SNMP-REPEATER-MIB (RFC 2108)
- MAU-MIB (RFC 2668)
- 2 status LEDs and activity per port

WLAN-specific features
- IEEE 802.11 a/b/g/n modes
- Manual or automatic channel selection
- Selectable power transmission
- Manual or automatic speed selection
- IEEE 802.11i, WPA, WPA2
- EAP, EAPOL
- Authentication (open, shared, WPA)
- Encryption (AES, TKIP, WEP)
- ESSID
- MAC filtering
- Quality of Service (QoS) AIFS, CWmin, CWmax

USB interface
- USB 2.0 host interface
- Cellular features:
- Passive interface down detection (analysis of received traffic)
- Active interface down detection (poll)
- Automatic handover

Console
- TIA/EIA-232 at 9600 b/s (max. 115,200 b/s)
- 8 bits without parity and one stop bit (8N1)

Protocols and functionalities
IPv4
- IP, ARP, Proxy ARP
- Static IP Routing
- RIP I, RIP II, OSPFv2 and BGP-4
- Bidirectional Forwarding Detection (BFD)
- Compatible with HSRP
- RFC 2281 Virtual Router Redundancy Protocol (VRRP)
- Policy routing
- Multi-VRF
- Quality of backup: Routing based on network quality measurements
- Multi-path per IP packet (with static and dynamic routing)
- Weighted balancing per TCP/IP session
- Multicast: IGMP, IGMP-proxy, MOSPF
- DHCP client, server and relay
- NTP Client
- DNS client and proxy

- DNS cache
- DNS dynamic updating (RFC 2136)
- DynDNS Client
- NAT/PAT/Port Mapping/NAT exceptions
- PAT firewalling
- Multiple addresses per interface
- Loopback interfaces

IPv6
- IPv6 Core/Routing
- Dual Stack IPv4/IPv6 (DS-Lite)
- Address autoconfiguration
- Multicast MLD/MLDv2
- IPv4 to IPv6 transition mechanisms (RFC 4213)
- IPv6 over IPv4/IPv4 over IPv6 tunnels
- ACLs and firewall
- IPv6 ,management (CLI, Telnet, FTP, ping, traceroute, etc.)

PPP
- PPP (RFC 1661), PAP/CHAP, IPCP
- Dynamic assignment of IP addresses (own or peer)
- PPP Multilink
- Multi-Class Extension to Multi-Link PPP (RFC 2686)

PPPoE
- PPPoE over Ethernet and over ATM
- PPPoE Bridge + routing (PPPoE pass-through)
- PPP Multilink over PPPoE
- Re-negotiation based on PADT

ATM
- SAR AAL5
- PVCs: 31 and SVCs
- VPIs and VCIs range: Complete
- Dynamic creation and destruction of PVCs
- Traffic Shaping: CBR, UBR, VBR-nrt, VBR-rt
- OAM F4/F5

Encapsulation over ATM
- Routed IP RFC 1483 LLC and VC-based
- PPPoA RFC 2364 LLC and VC-based
- PPPoE RFC 2516 LLC and VC-based
- Classical IP over ATM (RFC 2225)
- Ethernet Bridged RFC 1483 LLC and VC-based
- Frame Relay over ATM: FRF.5 and FRF.8

Quality of Service (QoS)
- Packet labeling (DiffServ) depending on interface, subinterface, protocol, port, MAC and size

- Congestion control: FIFO, queuing priority, BRS proprietary system, WFQ
- Traffic limiting in queues, with overflow in lesser priority queues. Standard limitation over ATM and Frame Relay
- Fragmentation in FR (FRF.12) PPP and MPPP

Security and VPNs
- IPSec client and server, compatible with third-party IPSec peers
- IPSec security services: ESP and AH
- IPSec operation modes: tunnel and transport
- Encryption: RC4, DES, 3DES and AES
- Authentication: SHA-1 and MD5
- IKE Protocol
- ISAKMP Configuration Methods. Oakley groups 1, 2, 5 and 15
- NAT-Traversal
- Reverse Route Injection (RRI)
- X.509v3, LDAP and PKIX digital certificates
- SCEP Protocol
- Tunnel End-point Discovery (TED) Protocol
- IPSec PMTU Discovery
- GRE and multi-GRE. GRE RC4 encryption
- Next Hop Resolution Protocol (NHRP)
- Dynamic Multipoint IPSec VPNs (DMIVPN)
- Gateway Encryption Transport VPN (RFC 3547)
- RADIUS Access Control (RFC 2138)
- L2TP client (LAC), L2TP initiation and L2TP Server (LNS)
- L2TP/IPSec Server, compatible with Microsoft clients
- Telnet, SSH and FTP console access user and password protected
- User and permission levels
- Advanced IP filters
- Firewall functions
  ¬ Static and dynamic access controls (Stateful Packet Inspection)
  ¬ Intrusion detection and DoS

Data compression
- Compression in X.25 and PPP
- IPHC Compression
- Van Jacobson and STA LZS compression

IBM-SNA support
- SDLC-QLLC-LLC2 Conversions
- SNA over IP
- DLSw (RFC 1795) and remote IP Bridge (tunnel)
- SNA over Frame Relay (RFC 1490)
- BAN and remote Bridge Frame Relay
- SNA over X.25 (X.25-QLLCB)

Bridging
- Bridge over PPP (BCP), HDLC, Frame Relay with GRE
- Spanning Tree Protocol (STP) (IEEE 802.1d)
- Rapid Spanning Tree Protocol (RSTP) (IEEE 802.1w)
- Multiple bridge domains
- Simultaneous bridging and routing
- Class of Service (CoS) (IEEE 802.1p)
- Per VLAN Spanning Tree Protocol (PVST)
- Source Routing, MAC filtering and NetBIOS

Telephony over IP (ToIP)
- Signaling
- SIP: RFC 3261, RFC 3262, RFC 3264, RFC 3265
- SIP transport over UDP, TCP and TLS
- X.509 authentication over TLS
- SIP SDP: RFC 2327
- SIP SDES: RFC 4568
- H.323, H.245, H.225
- RAS
- UA-NOE (server function)
- SCCP (skinny) (server function)
- SIP and H.323 modified AASTRA (server function)
- Simultaneous telephone survival for SIP/H.323/SCCP/UA-NOE/SIP (AASTRA)/H.323(ASTRA) terminals
- Encryption
- G.711 (A-law and mu law)
- G.729 (a and b)
- G.723.1 (5.3 kb and 6.4 kb)
- T.38

PBX features
- Attended and blind transfers
- Multiple terminal simultaneous ringing
- Hunt group

- Call groups
- Overflow
- Call forwarding if busy, no answer or unconditional
- Music on hold, streaming mode from file
- Configurable microphone, loud speakers, echo and tone levels
- RTP, RTCP, SRTP
- Data fragmentation FRF.12
- Header compression CRTP
- Silence suppression (VAD)
- Various voice packets per data frame
- CODED classes per destination
- Direct dialing
- Numerical expansion and compression

X.25 Switch
- Programmable routing
- X.25 call parameter modification
- X.25 over TCP/IP: XOT (RFC 1613)

Management
- Command line interface (CLI) on console, Telnet and Secure Shell (SSH)
- Access/execution user levels (local authentication or RADIUS)
- SNMPv3: MIB-2, Private MIB by Alcatel-Lucent Enterprise
- Event Logging System
- Network/link quality guarantee agent (feature similar to SAA)
- Netflow V5 and V9
- Syslog Client
- NTP Protocol
- DynDNS Client
- FTP and TFTP software, BIOS and configuration updating
- Integrated protocol analyzer compatible with Ethereal/Wireshark
- Default configuration switch
- Partial support of Cisco Discovery Protocol (CDP)
- RADIUS Accounting (RFC 2139)
- To be integrated in Alcatel-Lucent OmniVista® 2500 Network Management System 3.5.6

TECHNICAL SPECIFICATIONS

Table 1. Product matrix

PRODUCT MATRIX	OA 5840	OA 5850
Integrated GigE ports	2	2
Wi-Fi option	Yes	Yes
DSL-specific slot	1	1
Multipurpose Voice/Data slots	1	2
Hard disk option	No	Yes (250 GB)
Processor	Dual Core 800 MHz	Dual Core 800 MHz
Flash	64 MB	64 MB
RAM	512 MB	512 MB
Console	1	1
Power consumption**	40 W	45 W
Heat dissipation	618 BTU/h	825 BTU/h
Width	44 cm (17.32 in)	44 cm (17.32 in)
Depth	37.8 cm (13.70 in)	37.8 cm (13.70 in)
Height	4.3 cm (1.85 in)	4.3 cm (1.85 in)
Approximate weight	4.5 kg (9.92 lb)	4.5 kg (9.92 lb)
Operating temperature	5°C to 45°C (32°F to 113°F)	5°C to 45°C (32°F to 113°F)
Storage temperature	–10°C to 70°C (14°F to 158°F)	–10°C to 70°C (14°F to 158°F)
Humidity (operating)	5% to 90% non-condensing	5% to 90% non-condensing
Humidity (storage)	5% to 90% non-condensing	5% to 90% non-condensing

** Maximum power consumption under full traffic load

Table 2. Expansion Module Matrix

WAN/DATA/VOICE MODULES	OA 5840	OA 5850
*VDSL2	Yes	Yes
*ADSL2	Yes	Yes
G.SHDSL (2-port)	Yes	Yes
Serial	Yes	Yes
2 BRI (Data)	Yes	Yes
1 E1/T1	Yes	Yes
2 BRI (Voice)	Yes	Yes
1 port SFP	Yes	Yes
4 FXS/FXO	Yes	Yes
2 E&M	Yes	Yes
**4 E1/T1	No	Yes
**3-port serial	No	Yes
**2-port SFP	No	Yes

* DSL modules only operate on the DSL slot
** High-density modules only operate with the OmniAccess 5850

Table 3. OmniAccess 5800 ordering information

PRODUCT	FEATURE
OA5840-xx	OA5840 ESR modular chassis base model has 2 x GigE WAN, 8 x GigE LAN, 1 x DSL slot, 1 x AIC slot. HW ready for 802.11bgn (activated by license). See SW licenses available. See part number suffix for power cord plug type.*
OA5850-xx	OA5850 ESR modular chassis base model has 2 x GigE WAN, 8 x GigE LAN, 1 DSL slot, 2 x AIC slots. HW ready for 802.11bgn (act by license). See SW licenses available. See part number suffix for power cord plug type.*
OA5850D-xx	OA5850 ESR modular chassis with 250 GB HD memory storage for applications. See base model for ports. HW ready for 802.11bgn (act by license). See SW licenses available. See part number suffix for power cord plug type.*
MODULES	
ESR-DSL-ADSL	ADSL2+/ADLS2 card for OA ESR modular routers
ESR-DSL-VDSL	VDSL2/VDSL card for OA ESR modular routers
ESR-AIC-2SHDSL	G.SHDSL 2-pair card for OA ESR modular routers
ESR-AIC-3SS	3-port Sync Serial card for OA ESR modular routers
ESR-AIC-1E1T1	1-port E1/T1 card for OA ESR modular routers
ESR-AIC-4FXSFXO	4-port FXS/FXO card for OA ESR modular routers includes DSPs
ESR-AIC-2BRI	2-port BRI card for OA ESR modular routers includes DSPs
ESR-AIC-1PRI	1-port PRI card for OA ESR modular routers includes DSPs.
ESR-AIC-2EM	2-port E&M card for OA ESR modular routers, includes DSPs
ESR-AIC-1SS	1-port Sync Serial card for OA ESR modular routers
ESR-AIC-2SFP	2-port GigE SFP card for OA ESR modular routers. Supported on OA5850 ESR
ESR-AIC-4E1T1	4-port E1/T1 card for OA ESR modular routers
ESR-AIC-2B-ST	2-port ISDN BRI-S/T data only card for OA ESR modular routers
ESR-AIC-2AM	2-port Analog modem for OA ESR modular routers
SOFTWARE	
OA5840-WLAN-SL	WLAN 802.11bgn AP activation license for OmniAccess 5840 ESR
OA5840-TOIP-SL	Telephony services activation license for OmniAccess 5840 ESR
OA5840-SEC-SL	Security services activation license for OmniAccess 5840 ESR
OA5840-SNA-SL	Data services activation license for OmniAccess 5840 ESR
OA5850-WLAN-SL	WLAN 802.11bgn AP activation license for OmniAccess 5850 ESR
OA5850-TOIP-SL	Telephony services activation license for OmniAccess 5850 ESR
OA5850-SEC-SL	Security services activation license for OmniAccess 5850 ESR
OA5850-SNA-SL	Data services activation license for OmniAccess 5850 ESR
APPLICATIONS	
OA5850-AV-SL	Antivirus application license for OmniAccess 5850 ESR
OA5850-FS-SL	File Server application license for OmniAccess 5850 ESR
OA5850-IDS-SL	IDS application license for OmniAccess 5850 ESR
OA5850-NT-SL	NTOP application license for OmniAccess 5850 ESR
OA5850-VP-SL	Video Proxy application license for OmniAccess 5850 ESR
OA5850-WC-SL	Web Cache application license for OmniAccess 5850 ESR

*Note rack mount kit not included. Please refer to accessories section of World Wide Price List.

Warranty

Standard Hardware warranty

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