

Alcatel-Lucent VPN Firewall Brick 700 Security Appliance

VPN FIREWALL, VoIP, AND QoS SECURITY GATEWAY



The Alcatel-Lucent VPN Firewall Brick® 700 security appliances take data security to new levels by providing over 1.7 Gbps firewall throughput, along with integrated high-speed VPN, VoIP Security, VLAN and virtual firewall capabilities at a breakthrough price. With QoS bandwidth management features, built in IDS/DoS protections and high network performance, the Brick 700 VPN Firewall security appliances provide solid security for both mid-size and large enterprise environments. This carrier-grade IP services security appliance provides excellent value with low price/performance and total ownership costs, enabling service providers, government entities and large enterprises to deploy secure IP and VPN services that enhance their business while maximizing returns on their capital investments.



APPLICATIONS

- Advanced security services
- VPN services for site-to-site and remote access
- Bandwidth management capabilities
- VoIP Security
- Secure data center Web and application hosting
- Storage network security solution
- Mobile data security
- Packet Data Gateway and Packet Data Interworking Functions for Fixed Mobile Convergence WiFi VPN and VoIP/Data Security
- Managed Security Services
- Unlicensed Mobile Access (UMA) and IP Multimedia Subsystem (IMS) Security

FEATURES

- **Integrated security platform** — Provides high-speed firewall, VPN, QoS, VLAN and virtual firewall capabilities in one configuration
- **Industry-leading throughput** — Delivers 1.7 Gbps firewall performance, 425 Mbps 3 DES VPN performance and 350 Mbps AES VPN performance with optional built-in encryption accelerator card (EAC)
- **Innovative security services** — Includes advanced distributed denial of service attack protection, latest IKEv2 standards, strong authentication and real-time monitoring, logging and reporting
- **High capacity** — Supports up to 7500 simultaneous VPN tunnels, 4,094 VLANs, 350 virtual firewalls, and 1.0 million simultaneous sessions

BENEFITS

- **Higher performance** — Deliver an enhanced user experience with 1.7 Gbps cleartext, 425 Mbps 3DES IPSec VPN throughput, 350Mbps AES IPSec VPN performance, combined with best-in-class bandwidth management — with customer-level, user-level and server-level QoS control
- **Low price/performance** — Get outstanding security and throughput for less than the per-Mbps price of major competitors
- **Low cost of ownership** — One configuration supports multiple IP services with no additional or recurring licensing fees
- **Flexible deployment** — Options include premises- or network-based services with shared or dedicated hardware environments

FEATURES

- **Intrinsically secure, transparent Layer-2 bridge** — Outperforms firewalls running on routers, general purpose operating systems or PC servers
- **Central staging and secure remote management** — Provides integrated control over thousands of VPN Firewall Brick appliances and IPSec Client users (including the Alcatel-Lucent IPSec Client, from one console, using the Alcatel-Lucent Security Management Server (SMS) software
- **High-availability architecture** — Eliminates any single point of failure
- **Proven Secure** — Virtually impenetrable hardened security operating system coupled with secure management infrastructure.

BENEFITS

- **Economical growth path** — Seamless migration to advanced, VoIP, QoS and VPN security services with no added infrastructure investments
- **Plug-and-Play interoperability** — There's no need for costly network reconfigurations or on-site support
- **Cost-effective business continuity** — Take advantage of low priced performance and maintain carrier-class reliability for today's data-heavy business applications
- **Assured business continuity** — native high availability with carrier-class reliability
- **Centralized, Scalable, carrier-class management** — Centrally manage up to 20,000 VPN Firewall Brick units and 500,000 Alcatel-Lucent IPSec Client (or 3rd party IPSec client) users with Alcatel-Lucent Brick Security Management Server v9.0 or later.

TECHNICAL SPECIFICATIONS

Processor/Memory

- 2.8 GHz Processor with 512MB of RAM

LAN/VPN Interfaces

BRICK 700 BASIC MODEL:

- (8) 10/100/1000 ports

BRICK 700 VPN AC AND DC MODELS:

- (8) 10/100/1000 ports
- (1) VPN Encryption Accelerator Card

Other Ports

- SVGA video, DB9 serial, PS/2 keyboard, 4xUSB

Performance

- Concurrent sessions – 1,000,000
- New sessions/second – 20,000
- Rules – 30,000 (shared among all virtual firewalls)
- Max clear text throughput –1.7Gbps (1514 byte UDP Packets)
- Max Clear Text PPS throughput – 800,000 pps (78 byte UDP Packets)
- Max 3DES throughput with software encryption (Brick 700 Basic) – 110Mbps (1460 byte UDP Packets)

- Max 3DES throughput with hardware encryption acceleration (Brick 700 VPN) – 425Mbps (1514 byte UDP Packets)
- Max AES throughput with software encryption (Brick 700 Basic) – 150Mbps (1514 byte UDP Packets)
- Max AES throughput with hardware encryption acceleration (Brick 700 VPN) – 350Mbps (1460 byte UDP Packets)

Virtualization

- Maximum number of virtual firewalls – 350
- Number of VLANs supported – 4,094
- VLAN domains – up to 16 per VLAN trunk
- VPN Firewall Brick partitions – allows for virtualization of customer IP address range, including support for overlapping IP addresses

Modes of Operation

- Bridging and/or routing on all interfaces
- All features supported with bridging
- IP routing with static routes
- 802.1Q VLAN tagging supported inbound and outbound on any combination of ports

- Layer-2 VLAN bridging
- Network Address Translation (NAT)
- Port Address Translation (PAT)
- Policy-based NAT and PAT (per rule)
- Supports virtual IP addresses for both address translation and VPN tunnel endpoints
- PPPoE and DHCP-assignable interface/VLAN addresses
- Redundant DHCP Relay capabilities
- Dynamic registration of mobile VPN Firewall Brick security appliance address for centralized remote management
- Nested zone rulesets for common firewall policies for all Bricks® in zone.
- Link Aggregation
- Mobile Brick using integrated DHCP client.

Services Supported

- Bootp, http, irc, netstat, pop3, SNMP, tftp, pptp, dns, https, kerberos, nntp, rip, ssh, who, RADIUS, eigrp, ident, LDAP, ntp, rip2, syslog, shell, X11, exec, gmp, login, OSPF, rlogin, telnet, talk, H.323, SIP, ftp, imap, mbone, ping, rsh, traceroute, lotus notes, VoIP/SIP, Gopher, IPSec, netbios, pointcast, mtp, sql*net
- Any IP protocol (user definable)
- Any IP protocol + layer 4 ports (user definable)
- Support for non-IP protocols as defined by SAP/Ethertype

Layer-7 Application Support

- Application Filter architecture supports Layer-7 protocol inspection (deep packet inspection) for command and protocol validation, protocol anomaly detection, dynamic channel pinholes and application layer address translation. Application filters include http, ftp, RPC, tftp, H.323/H.323 RAS, SMTP, Oracle SQL*Net, NetBIOS, ESP, DHCP Relay, DNS, GTP, and SIP

Firewall Attack Detection and Protection

- Generalized Day 0 anomaly-based flood protection with patent-pending Intelligent Cache Management Protections
- SYN flood protection to specifically protect inbound servers, e.g. Web servers, from inbound TCP SYN floods
- Strict TCP validation to ensure TCP session state enforcement, validation of sequence and acknowledgement numbers,
- Rejection of bad TCP flag combinations
- Initial Sequence Number (ISN) rewriting for weak TCP stack implementations
- Fragment flood protection with robust fragment reassembly, ensures no partial or overlapping fragments are transmitted
- Generalized IP packet validation including detection of malformed packets
- DoS mitigations for over 190 DoS attacks, including ping of death, land attack, tear drop attack, etc.
- Drops bad IP options as well as source route options
- Connection rate limits to minimize effects of new attacks.

QoS/Bandwidth Management

- Classified by physical port, virtual firewall, firewall rule, session bandwidth guarantees – Into and out of virtual firewall, allocated in bits/second
- Bandwidth limits - Into and out of virtual firewall, allocated in bits/second, packets/session, sessions/second
- ToS/DiffServ marking and matching
- Integrated with application layer filters

Content Security

- HTTP filter keyword support integrated with HTTP application filter
- Basic content filtering with configurable whitelist/blacklist and content keyword matching.
- URL redirection for blacklist sites
- Rules-based routing feature for HTTP, SMTP and FTP features (Security Management Server v9.1 or later)
 - Interoperates with all 3rd party Anti-virus, Anti-Spam, and Content Filtering systems
 - Redirects only protocol-specific packets to 3rd party systems performing Anti-virus, Anti-spam, and content filtering services.
- Application-layer protocol command recognition and filtering
- Application-layer command line length enforcement
- Unknown protocol command handling
- Extensive session-oriented logging for application-layer commands and replies
- Hostile mobile code blocking (Java®, ActiveX™)

Firewall User Authentication

- Browser-based authentication allows authentication of any user protocol
- Built-in internal database – user limit 10,000
- Local passwords, RADIUS, SecurID
- User assignable RADIUS attributes
- Certificate Authentication

VPN

- Maximum number of dedicated VPN tunnels – 7,500
- Manual Key, IKEv1, IKEv2, DoD PKI, X.509
- 3DES (168-bit), DES (56-bit)
- AES (128, 192, 256-bit)
- SHA-1 and MD5 authentication/integrity
- Replay attack protection
- Remote access VPN
- Site-to-site VPN
- IPSec NAT Traversal/UDP encapsulated IPSec
- IKEv2 IPSec NAT Traversal and Dead Peer Detection
- LZS compression
- Spliced and nested tunneling
- Fully meshed or Hub and Spoke Site-to-Site VPN

VPN Authentication

- Local passwords, RADIUS, SecurID, X.509 digital certificates
- PKI Certificate requests (PKCS 12)
- Automatic LDAP certificate retrieval
- DoD PKI

High Availability

- VPN Firewall Brick security appliance to VPN Firewall Brick security appliance active/passive failover with full synchronization
- 400 millisecond device failure detection and activation
- Session protection for firewall, VoIP and VPN
- Link failure detection
- Alarm notification on failover
- Encryption and authentication of session synchronization traffic
- Self-healing synchronization links
- Pre-emption and IP tracking for improved health state checking
- Seamless system upgrade with no downtime for redundant deployments

TECHNICAL SPECIFICATIONS

Diagnostic Tools

- Out of band debugging and analysis via serial port/modem/terminal server
- Centralized, secure remote console to any Brick VPN Firewall security appliance supports Ping, Traceroute, and Packet
- Trace with filters
- Remote VPN Firewall Brick security appliance bootstrapping
- Real-time log viewer analysis tool
- Java-based Navigator for remote access to management system

3-Tier Management Architecture

- Centralized, carrier-class, active/active management architecture with Alcatel-Lucent Security Management Server (SMS) software
- Secure VPN Firewall Brick to SMS communications with Diffie-Helman and 3DES encryption, SHA-1 authentication and integrity and digital certificates for VPN Firewall Brick security appliance/Alcatel-Lucent Security Management Server authentication
- Up to 100 simultaneous administrators securely managing all aspects of up to 20,000 VPN Firewall Brick units in a hierarchical management cluster.
- Secure, reliable, redundant real-time alarms, logs, reports

Certifications

- ICSA V4.1 Firewall Certification in process
- ICSA V1.2 IPSec Certification in process
- FIPS 140-2 Certification in process
- EAL-4 Certification in process
- NEBS™ Level 3 (compliant to Telecordia GR1089-CORE and GR-63-CORE) in process for Brick 700 VPN DC version.

Mean Time Between Failure

- Brick 700 Basic: 62,817 hours
- Brick 700 VPN AC: 62,049 hours
- Brick 700 VPN DC: 61,301 hours
- Telecordia SR-332 at Standard Reference Conditions.

Dimensions (W x L x H)

- 19" x 19" x 1.75" (1U)
- 48.3 cm x 48.23 cm x 4.4 cm (1U) Rack Mountable per EIA-310 specification.
- Weight: 27 lbs (12.3 kg)
- Shipping Weight: 30 lbs (13.6 kg)

Cooling

- Chassis fans (intake & exhaust), power supply fans

Operating Altitude

- Up to 13,123 ft (4,000 m)

Environmental

OPERATING

- Normal Operating Temperature: 0 to 40° C
- Shock: 2.5g at 15 – 20 ms on any axis
- Relative humidity: 5–85% at 40 C. (non-condensing)
- Vibration: 5g at 2 – 200Hz on any axis

NON-OPERATING

- Temperature: -40 to 70° C
- Shock: 35g at 15 – 20 ms on any axis
- Relative humidity: 5–90% at 40 C. (non-condensing)
- Vibration: 5g at 2 – 200Hz on any axis

Power

AC MODELS:

- Internal AC to DC Power Supply: 300W max
- Auto-ranging: 100 to 240 VAC, 47 to 63 Hz
- Consumption: 8A @ 120 VAC; 5A @240 VAC

DC MODEL:

- Internal DC to DC Power Supply: 300W max
- Input Range: -36 to -72 VDC
- Consumption: 10A @ -48 VDC, 8A @ -60 VDC

Alcatel-Lucent Security Management Server

Software Requirements

- Sun Solaris™ 2.8, 2.9 or 2.10 on SPARC processors
- Microsoft Windows® 2000 Professional, Windows® 2000 Server, Windows XP Professional, Windows Server 2003 or Windows Vista Business.

Hardware Requirements

SUN® WORKSTATION OR SERVER FOR SUNSOLARIS OPERATING SYSTEM:

- Sun UltraSPARC5 (600 MHz processor or better) or better
- 512MB of system memory (minimum)
- Swap space at least as large as system memory
- 2 GB free disk space in file system partition where software is to be installed
- 50MB free disk space in root partition
- 1 10/100 Ethernet interface
- CD-ROM drive
- 3.5" floppy drive, USB port and serial port.
- Video card capable of supporting 1024x768 resolution (65,535 colors)

INTEL®-BASED COMPUTER (FOR MICROSOFT WINDOWS® 2000 PROFESSIONAL, WINDOWS 2000 SERVER, WINDOWS XP PROFESSIONAL, WINDOWS SERVER 2003)

- 700 MHz Pentium III processor (minimum)
- 512 MB system memory (minimum), higher recommended
- CD-ROM drive
- Swap space at least as large as install system memory
- 2 GB free space on an NTFS partition
- 3.5" floppy, USB port and serial port.
- 1 Ethernet 10/100 card
- Video card capable of supporting 1024x768 resolution

INTEL®-BASED COMPUTER (FOR MICROSOFT VISTA® BUSINESS)

- 2.0 GHz processor (minimum)
- 1GB system memory (minimum), 2GB recommended
- CD-ROM drive
- Swap space at least as large as install system memory
- 80 GB harddisk with 40GB free space on a NTFS partition
- 3.5" floppy, USB port and serial port.
- 1 Ethernet 10/100 card
- Video card capable of supporting 1024x768 resolution

TECHNICAL SPECIFICATIONS

	North and South America	Europe	Asia, Pacific
Product Safety Approvals	CSA Certified to UL® 60950-1, 1st Edition	CE	CB Scheme to EN/IEC 60950-1
	CAN/CSA 22.2 No. 60950-1-03	CB Scheme to EN/IEC 60950-1	AS/NZS 3260 1993 with amendments 1,2,3 and 4
			ACA TS 001 1997
EMC Approval	FCC Part 15, Class B	CE	VCCI Class A
	ICES-003, Class B	EN55024/VCC	AS/NZS – CISPR Pub 22, Class A
		EN300-386, Class B	
Network Attachment Approvals	Not Applicable	Not Applicable	Not Applicable

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
109625004	VPN Firewall Brick 700 Basic Security appliance
109624981	VPN AC Security appliance
109624999	VPN DC NEBS Security appliance
Contact your Alcatel-Lucent representative or authorized reseller for details	Alcatel-Lucent Security Management Server Brick 700 security appliances require v9.0 (patch level 276) or later version. Available in several configurations to meet your networking requirements.
Contact your Alcatel-Lucent representative or authorized reseller for details	Alcatel-Lucent IPsec Client Available in several configurations to meet your networking requirements.

To learn more, contact your dedicated Alcatel-Lucent representative, authorized reseller, or sales agent. You can also visit our Web site at www.alcatel-lucent.com.

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