Cisco PIX Firewall Series

Product Overview

The Cisco PIX Firewall series delivers strong security in an easy-to-install, integrated hardware/software firewall appliance that offers outstanding performance. Cisco's world-leading PIX Firewall family spans the entire user application spectrum, from cost-conscious desktop firewalls for remote offices to carrier-class gigabit firewalls for the most demanding enterprise and service provider environments. Cisco PIX Firewalls deliver superior performance of up to 500,000 simultaneous connections and nearly 1.7 Gigabits per second (Gbps) aggregate throughput—while providing Cisco customers world-class security, reliability and customer service.

Key Features and Benefits

- Security — Cisco PIX Firewalls are purpose-built firewall appliances that utilize a proprietary, hardened operating system which eliminates security risks associated with general purpose operating systems. PIX firewalls also provide the latest in security technology ranging from stateful inspection firewalling, IPsec and L2TP/PPTP-based VPNs, content filtering capabilities, and integrated intrusion detection to help secure your network environment from next-generation attacks. At the heart of the PIX Firewall family is the adaptive security algorithm (ASA), which maintains the secure perimeters between the networks controlled by the firewall. The stateful, connection-oriented ASA design creates session flows based on source and destination addresses, TCP sequence numbers (which are non-predictable), port numbers, and additional TCP flags. All inbound and outbound traffic is controlled by applying security policies to each connection table entry.

- Performance — Cisco PIX firewall's highly scalable, yet very secure architecture based upon stateful inspection technology and application-aware "fixups" provides state-of-the-art performance and robust security. With support for up to 10 Gigabit Ethernet interfaces and 1.7 Gbps of throughput, PIX Firewalls can scale to meet the needs of the most demanding network environments.

- Reliability — Cisco PIX Firewalls provide resilient security services for mission-critical network environments by leveraging the integrated stateful failover capabilities within PIX. Network traffic can be automatically sent to a hot standby unit in the event of a failure, while maintaining concurrent connections via automated state synchronization between the primary and standby units.

- Virtual Private Networking (VPN) — Cisco PIX Firewalls support both standards-based IPsec and L2TP/PPTP-based VPN services, which are suitable for site-to-site and remote access VPN deployments. Tripe DES (3DES) based VPN throughput can be scaled to nearly 100 Mbps using the PIX VPN Accelerator Card (VAC), which offloads compute-intensive encryption/decryption processes to specialized cryptographic coprocessors.

- Network Address Translation (NAT) and Port Address Translation (PAT) —- Cisco PIX Firewalls provide robust NAT and PAT services to conceal IP addresses of internal networks and to expand network address space for internal networks.

- Denial-of-Service (DoS) Attack Prevention — Cisco PIX Firewalls protect the firewall and networks behind them from disruptive network hacking attempts that could otherwise bring a network to a halt.

- Simple, Web-Based Management with PIX Device Manager (PDM) —- Cisco PIX Firewalls provide a simple, easy-to-use web-based interface for centrally managing the configuration of PIX firewalls. Furthermore, PDM provides a wide range of informative, real-time, and historical reports which give critical insight into usage trends, performance baselines, and security events. PDM provides all the tools necessary to manage a firewall, all from the convenience of any web browser.

- Platform Extensibility — Cisco PIX Firewalls provide an extensible platform that can easily grow with your networking needs. With support from two 10/100 Ethernet interfaces all the way up to ten Gigabit Ethernet interfaces in a single firewall appliance solution, PIX Firewalls can fit your budget and your networking environment.

- Low Cost of Ownership — Simple installation and configuration minimizes time investment required for administrators to get PIX firewalls up and running. Minimal time investment combined with an impressive price/performance ratio enable Cisco PIX Firewalls to provide low total cost of ownership (TCO).

Specifications

Hardware

Table 19-21: Technical Specifications for Cisco PIX Firewalll

Description	PIX 506 Firewall	PIX 515 Firewall	PIX 525 Firewall	PIX 535 Firewall
Processor	200 MHz	200 MHz	350 MHz	1 GHz
RAM	32 MB	32 MB or 64 MB	128 MB or 256 MB	512 MB or 1 GB
Flash Memory	8 MB	16 MB	16 MB	16 MB
PCI Slots	None	2	3	9
Fixed Interfaces	2 10BaseT Ethernet	2 10/100 Fast Ethernet	2 10/100 Fast Ethernet	None
Maximum Interfaces	2 10BaseT Ethernet	6 10/100 Fast Ethernet	8 10/100 Fast Ethernet or Gigabit Ethernet	10 10/100 Fast Ethernet or Gigabit Ethernet
VPN Accelerator Card (VAC) Support	No	Yes	Yes	Yes
Failover Support	No	Yes, UR only	Yes, UR only	Yes, UR only
Rack Mountable	No	Yes	Yes	Yes
Size	Desktop	1 RU	2 RU	3 RU

1. Rack-mountable products come with rack-mount hardware
2. Failover requires a special Cisco cable, included with failover capable systems

Table 19-22: Power Requirements for Cisco PIX Firewall

Description	PIX Firewall 506	PIX Firewall 515	PIX Firewall 525	PIX Firewall 535
Autoswitching	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC
Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz, single phase
Current	1.5-0.75 Amps	1.5-0.75 Amps	5-2.5 Amps	4-2 Amps

Table 19-23: Physical and Environmental Specifications for Cisco PIX Firewall

Description	PIX 506 Firewall	PIX 515 Firewall	PIX 525 Firewall	PIX 535 Firewall
Dimensions (H x W x D)	1.72 x 8.5 x 11.8 in. (4.4 x 21.7 x 29.9 cm)	1.72 x 16.82 x 11.8 in., 1 RU (4.4 x 42.7 x 29.9 cm)	3.5 x 17.5 x 18.25 in., 2 RU (8.89 x 44.45 x 46.36 cm)	5.25 x 17.5 x 18.25 in., 3 RU (8.89x 44.45 x 46.36 cm)
Weight	6 lb.	11 lb. (4.9 kg)	32 lb. (14.5 kg)	32 lb. (14.5 kg)
Operating Temperature	-25 to 113˚F (-5 to +45˚C)	-25 to 113˚F (-5 to +45˚C)	-25 to 131˚F (-5 to +55˚C)	-25 to 113˚F (-5 to +45˚C)
Storage Temperature	-77 to 158˚F (-25 to +70˚C)	-77 to 158˚F (-25 to +70˚C)	-13 to 158˚F (-25 to +70˚C)	-13 to 158˚F (-25 to +70˚C)
Operational Humidity	95% relative humidity (RH)	95% relative humidity (RH)	95% relative humidity (RH)	95% relative humidity (RH)
Operational Altitude	9843 ft (3000m), 77˚F (25˚C)	9843 ft (3000m), 77˚F (25˚C)	9843 ft (3000m), 104˚F (40˚C)	9843 ft (3000m)
Heat Dissipation (Worst Case with Full Power Usage)	102.4 BTU/hr	160.37 BTU/hr	410 BTU/hr	750 BTU/hr

Software

For additional specifications, see the Cisco PIX Firewall datasheet on the Cisco Web at

httP://www.cisco.com/go/pix.

For software options for the Cisco PIX Firewall Series, see PIX Firewall Software in the tables below..

Cisco PIX Firewall Software Features

- State-of-the-art Adaptive security algorithm (ASA) and stateful inspection firewalling

- Cut-through proxy authenticates and authorizes connections, meanwhile enhancing performance

- Easy-to-use web-based interface for managing PIX firewalls remotely

- Support for up to 10 ethernet interfaces ranging from 10-BaseT, 10/100 Fast Ethernet to Gigabit Ethernet

- Stateful firewall failover capability with synchronized connection information and product configurations

- True Network Address Translation (NAT) as specified in RFC 1631

- Port Address Translation (PAT) further expands a company's address pool-one IP address supports more than 64,000 hosts

- Support for IPsec and L2TP/PPTP-based VPNs

- Support for high performance URL filtering via integration with Websense-based URL filtering solutions

- Mail Guard removes need for external mail relay server in perimeter network

- Support for broad range of authentication methods via TACACS+, Radius and Cisco ACS integration

- DNS Guard transparently protects outbound name and address lookups

- Flood Guard and Fragmentation Guard protect against denial of service attacks

- Support for advanced Voice over IP (VoIP) standards including SIP, H.323 and others

- Java blocking eliminates potentially dangerous Java applets (not compressed or archived)

- Cisco IOS-style command-line interface

- Extended authentication, authorization, and accounting capabilities

- Net Aliasing transparently merges overlapping networks with the same IP address space

- Ability to customize protocol port numbers

- Integration with Cisco Intrusion Detection Systems for shunning connections of known malicious IP addresses

- Enhanced customization of syslog messages

- Simple Network Management Protocol (SNMP) and syslog for remote management

- Reliable syslogging using either TCP or UDP

- Extended transparent application support (both with and without NAT enabled) includes:

    — Sun remote procedure call (RPC)

    — Microsoft Networking client and server communication (NetBIOS over IP) using NAT

    — Multimedia, including RealNetworks' RealAudio, Xing Technologies' Streamworks, White Pines' CuSeeMe, Vocal Tec's Internet Phone, VDOnet's VDOLive, Microsoft's NetShow, VXtreme Web Theatre 2; and Intel's Internet Video Phone and Microsoft's NetMeeting (based on H.323 standards)

    — Oracle SQL*Net client and server communication

Table 19-24: PIX Firewall Manager Specifications

Operating Systems	Browsers
Windows 2000 (Service Pack 1)	MS Internet Explorer 5.01 (Service Pack1) or higher (5.5 recommended)
Windows NT 4.0 (Service Pack 6a)	Netscape Communicator 4.51 or higher (4.76 recommended)
Windows 98 (original or 2 nd addition)	
Sun Solaris 2.6 or 2.8 running CDE or	MS Internet Explorer 5.0 or higher (5.5 recommended)
OpenWindows window manager	Netscape Communicator 4.51 or higher (4.76 recommended)

Operating Systems	Browsers
Redhat Linux 6.2 or 7.0 running GNOME or KDE 2.0 desktop environment	Netscape Communicator 4.76

For additional specifications, see the Cisco PIX Firewall datasheet on the Cisco Web at

httP://www.cisco.com/go/pix.

For software options for the Cisco PIX Firewall Series, see PIX Firewall Software in the tables below.

Ordering Information

Where to buy Cisco products

Visit http://www.cisco.com/public/ordering_info.shtml

Product and Part Numbers

Part Numbers for the Cisco PIX Firewall

Part Description	Part Number
PIX Firewall Solutions	
ONE 10/100 Mbps ETHERNET INTERFACES, RJ45	PIX-1FE
ONE 10/100 Mbps ETHERNET INTERFACES, RJ45	PIX-1FE=
Single Gigabit Ethernet Interface for PIX Firewall	PIX-1GE
Single Gigabit Ethernet Interface for PIX Firewall	PIX-1GE=
Single 66MHz Gigabit Ethernet Interface	PIX-1GE-66
Single 66MHz Gigabit Ethernet Interface	PIX-1GE-66=
PIX Four-port 10/100 Ethernet interface	PIX-4FE
PIX Four-port 10/100 Ethernet interface	PIX-4FE=
ONE 4/16 Mbps TOKEN-RING INTERFACE	PIX-1TR
ONE 4/16 Mbps TOKEN-RING INTERFACE	PIX-1TR=
FAILOVER UPGRADE KIT - SW V3.0 OR LATER	PIX-FO=
FDDI Interface for the PIX Firewall	PIX-FDDI
PIX FDDI Card	PIX-FDDI=
PIX 506 (Chassis, software, two 10BaseT ports)	PIX-506
3DES Software Licence for PIX 506	PIX-506-SW-3DES
3DES Software Licence for PIX 506	PIX-506-SW-3DES=
PIX 506 spare AC power supply	PIX-506-PWR-AC=
515 R to UR License Upgrade (includes 32 MB RAM)	PIX-515-SW-UPG=
Software upgrade from Failover to UnRestricted for PIX 515	PIX-515-SW-FO-UR=
Software upgrade from Failover to Restricted for PIX 515	PIX-515-SW-FO-R=
Blank to fill unused option slot on PIX 515	PIX-BLANK-SLOT
PIX 515 Chassis only	PIX-515
PIX 515 DC Powered Firewall Appliance	PIX-515-DC
PIX 515 Unrestricted Function software license	PIX-515UR-SW
PIX 515 spare AC power supply	PIX-515-PWR-AC=
PIX 520 Chassis only	PIX-520

Part Description	Part Number
PIX 520, -48VDC power chassis only	PIX-520-DC
software license for redundant PIX 520	PIX-520-SW-FO
PIX Firewall 525 Chassis	PIX-525
PIX 525 DC Chassis	PIX-525-DC
PIX Firewall 535 Chassis	PIX-535
PIX 535 512MB RAM Upgrade (2-256MB DIMM, UR Only)	PIX-535-MEM-512
Redundant AC power supply for PIX 535	PIX-535-PWR-AC
PIX 535 spare AC power supply	PIX-535-PWR-AC=
Redundant DC power supply for PIX 535	PIX-535-PWR-DC
PIX 535 spare DC power supply	PIX-535-PWR-DC=
Blank to fill unused power supply slot on PIX 535	PIX-535-PWR-BLANK
PIX Midrange license	PIX-CONN-1K
PIX Entry level license	PIX-CONN-128
PIX Unrestricted license	PIX-CONN-UR
PIX Classic, 10K, 510, 520 Failover to entry license upgrade	PIX-CONN-FO-128=
PIX Classic, 10K, 510, 520 failover to mid license upgrade	PIX-CONN-FO-1K=
PIX Classic, 10K, 510, 520 failover to UR license upgrade	PIX-CONN-FO-UR=
PIX Classic, 10K, 510, 520 Entry to midrange license upgrade	PIX-CONN-128-1K=
PIX Classic, 10K, 510, 520 entry to UR license upgrade	PIX-CONN-128-UR=
PIX Classic, 10K, 510, 520 midrange to UR license upgrade	PIX-CONN-1K-UR=
PIX Software Upgrade for Non-Support Customers	PIX-CONN-VER=
128 MB Memory Upgrade for PIX Firewall Models 510 and 520	PIX-MEM-5XX-128=
PIX 52X 128MB RAM Upgrade (UR Only)	PIX-52X-MEM-128
PIX Firewall IPSec Accelerator	PIX-VPN-ACCEL
PIX Firewall IPSec Accelerator	PIX-VPN-ACCEL=
PIX Firewall Bundles	
PIX 506 (Chassis, software, two 10BaseT ports)	PIX-506
PIX 515FO Bundle (Chassis, failover SW, 2 FE ports)	PIX-515-FO-BUN
PIX 515R Bundle (Chassis, restricted SW, 2 FE ports)	PIX-515-R-BUN
PIX 515UR Bundle (Chassis, unrestricted SW, 2 FE ports)	PIX-515-UR-BUN
PIX 515-R DC Bundle (Chassis, R software, two 10/100 ports)	PIX-515-DC-R-BUN
PIX 515-UR DC Bundle(Chassis, UR software, two 10/100 ports)	PIX-515-DC-UR-BUN

Part Description	Part Number
Entry level PIX Firewall 520, two 10/100 Enet NICs	PIX-520-128-CH
Midrange PIX Firewall 520, two 10/100 Enet NICs	PIX-520-1K-CH
PIX 520 Failover (Chassis, software, two 10/100 ports)	PIX-520-FO-BUN
Unrestricted PIX Firewall 520, two 10/100 Enet NICs	PIX-520-UR-CH
PIX 525FO Bundle (Chassis, failover SW, 2 FE ports)	PIX-525-FO-BUN
PIX 525R Bundle (Chassis, restricted SW, 2 FE ports)	PIX-525-R-BUN
PIX 525UR Bundle (Chassis, unrestricted SW, 2 FE ports)	PIX-525-UR-BUN
PIX 535FO Bundle (Chassis, failover SW, 2 FE ports)	PIX-535-FO-BUN
PIX 535UR Bundle (Chassis, unrestricted SW, 2 FE ports)	PIX-535-UR-BUN
PIX 535R Bundle (Chassis, restricted SW, 2 FE ports)	PIX-535-R-BUN
PIX Firewall Flash Cards	
PIX 16MB ISA Flash card	PIX-FLASH-16MB=
PIX Firewall Crypto	
PIX 3DES Software License Without Client Software	PIX-VPN-3DES
PIX 3DES Software License Without Client Software	PIX-VPN-3DES=

Minimum Software Versions

Cisco PIX 506 Firewall: Minimum Software Version: 5.1(2)

The Cisco PIX 506 Firewall is provided in a single, unlimited mode.

Table 19-25: Cisco PIX 506 Firewall Software Licenses

Product Number	Product Description
PIX-VPN-DES	56-bit DES IPSec software license for Cisco PIX 506 Firewall
PIX-506-SW-3DES	168-bit 3DES IPSec software license for Cisco PIX 506 Firewall

Cisco PIX 515 Firewall: Minimum Software Version: 4.4(1)

Starting with Cisco PIX version 5.1(2) the Cisco PIX 515-R Firewall supports a maximum of three interfaces. Customers must purchase the third interface. This is a free software upgrade for customers with SMARTnet contracts and is available on Cisco.com. Customers who upgrade from an earlier version must obtain a new activation key from licensing@cisco.com. Customers who purchase a new Cisco PIX 515-R Firewall with software version 5.1(2) preinstalled will not be affected. Software version 5.2 or later does not require a new activation key for third-party interface support.

Table 19-26: Cisco PIX 515 Firewall Software Licenses

	Product Number	Requirements/Comments
Restricted	PIX-515-SW-R	Cisco PIX 515 Firewall Restricted software license. Failover is not supported.

	Product Number	Requirements/Comments
Unrestricted	PIX-515-SW-UR	Cisco PIX 515 Firewall Unrestricted software license.
		Requires PIX-515-MEM-32 to upgrade base chassis from 32 MB to 64 MB
Failover	PIX-515-FO-SW	Cisco PIX 515 Firewall Failover software license.
Restricted to Unrestricted	PIX-515-SW-UPG=	Cisco PIX 515 Firewall Restricted to Unrestricted software license upgrade. Includes PIX-515-MEM-32 to upgrade base chassis from 32MB to 64MB.
Failover to Restricted	PIX-515-SW-FO-R	Cisco PIX 515 Firewall Failover to Restricted software license upgrade.
Failover to Unrestricted	PIX-515-SW-FO-UR	Cisco PIX 515 Firewall Failover to Unrestricted software license upgrade.
56-bit DES IPSec	PIX-VPN-DES	Zero cost option required to enable DES support.
		http://www.cisco.com/kobayashi/sw-center/internet/pix.shtml
168-bit 3DES IPSec	PIX-VPN-3DES	168-bit 3DES IPSec software license for Cisco PIX Firewall.

Cisco PIX 525 Firewall: Minimum Software Version: 5.2(1)

Table 19-27: Cisco PIX 525 Firewall5 Software Licenses

	Product Number	Requirements/Comments
Restricted	PIX-525-SW-R	Cisco PIX 525 Firewall Restricted software license. Failover not supported.
Unrestricted	PIX-525-SW-UR	Cisco PIX 525 Firewall Unrestricted software license.
Fail-Over	PIX-525-FO-SW	Cisco PIX 525 Firewall Failover software license.
Restricted to Unrestricted	PIX-525-SW-R-UR	Cisco PIX 525 Firewall Restricted to Unrestricted software license upgrade. Includes 128 MB RAM.
Fail-Over to Restricted	PIX-525-SW-FO-R	Cisco PIX 525 Firewall Failover to Restricted software license upgrade.
Fail-Over to Unrestricted	PIX-525-SW-FO-UR	Cisco PIX 525 Firewall Failover to Unrestricted software license upgrade.
56-bit DES IPSec	PIX-VPN-DES	Zero cost option required to enable DES support.
		http://www.cisco.com/kobayashi/sw-center/internet/pix.shtml
168-bit 3DES IPSec	PIX-VPN-3DES	168-bit 3DES IPSec software license for PIX Firewall.

Cisco PIX 535 Firewall: Minimum Software Version: 5.3(1)

Table 19-28: Cisco PIX 535 Firewall Software Licenses

	Product Number	Requirements/Comments
Restricted	PIX-535-SW-R	Cisco PIX 535 Firewall Restricted software license. Failover not supported.
Unrestricted	PIX-535-SW-UR	Cisco PIX 535 Firewall Unrestricted software license.
Fail-Over	PIX-535-FO-SW	Cisco PIX 535 Firewall Failover software license.
Restricted to Unrestricted	PIX-535-SW-R-UR	Cisco PIX 535 Firewall Restricted to Unrestricted software license upgrade. Includes 512MB RAM.
Fail-Over to Restricted	PIX-535-SW-FO-R	Cisco PIX 535 Firewall Failover to Restricted software license upgrade.
Fail-Over to Unrestricted	PIX-535-SW-FO-UR	Cisco PIX 535 Firewall Failover to Unrestricted software license upgrade.
56-bit DES IPSec	PIX-VPN-DES	Zero cost option required to enable DES support.http://www.cisco.com/kobayashi/sw-center/internet/pix.shtml
168-bit 3DES IPSec	PIX-VPN-3DES	168-bit 3DES IPSec software license for PIX Firewall.

Documentation

For part numbers for product specific documentation, visit

http://www.cisco.com/univercd/cc/td/doc/pcat/swdo__d1.htm

Services and Support

Table 19-29: Available Support Contracts for the Cisco PIX Firewall Family

Description	Part Number
PIX SMARTnet maintenance—all versions	CON-SNT-PIX
PIX SMARTnet maintenance—all versions (two-tier products)	CON-SNT-PKG12