paloalto TECHDOCS

PA-220 Next-Gen Firewall Hardware Reference

EoS

docs.paloaltonetworks.com

Contact Information

Corporate Headquarters:
Palo Alto Networks
3000 Tannery Way
Santa Clara, CA 95054
www.paloaltonetworks.com/company/contact-support

About the Documentation

- For the most recent version of this guide or for access to related documentation, visit the Technical Documentation portal docs.paloaltonetworks.com.
- To search for a specific topic, go to our search page docs.paloaltonetworks.com/search.html.
- Have feedback or questions for us? Leave a comment on any page in the portal, or write to us at documentation@paloaltonetworks.com.

Copyright

Last Revised

June 15, 2020

Table of Contents

Before You Begin

Read the following topics before you install or service a Palo Alto Networks® next-generation firewall or appliance.**The following topics apply to all Palo Alto Networks firewalls and appliances except where noted.**

- Upgrade/Downgrade Considerations for Firewalls and Appliances
- Tamper Proof Statement
- Third-Party Component Support
- Product Safety Warnings

Upgrade/Downgrade Considerations for Firewalls and Appliances

The following table lists all hardware features that have upgrade or downgrade impact. Make sure you understand all upgrade/downgrade considerations before you upgrade or downgrade from the specified version of PAN-OS.

Feature	Release	Upgrade Considerations	Downgrade Considerations
PA-7000 Log Forwarding Card (LFC)	10.0	If you are using an LFC with a PA-7000 Series Firewall, when you upgrade to PAN-OS 10.0, you must configure the management plane or dataplane interface for the service route because the LFC ports do not support the requirements for the service route. We recommend using the dataplane interface for the Data Services service route.	n/a
Upgrading a PA-7000 Series Firewall with a first generation switch management card (PA-7050-SMC or PA-7080-SMC)	PAN-OS 8.0 and later	Before upgrading the firewall, run the following CLI command to check the flash drive's status: **`debug system disk-smart-info disk-1`**. If the value for attribute ID #232, **Available_Reservd_Space 0x0000**, is greater than 20, then proceed with the upgrade. If the value is less than 20, then contact support for assistance.	Before downgrading the firewall, run the following CLI command to check the flash drive's status: **`debug system disk-smart-info disk-1`**. If the value for attribute ID #232, **Available_Reservd_Space 0x0000**, is greater than 20, then proceed with the downgrade. If the value is less than 20, then contact support for assistance.

Tamper Proof Statement

To ensure that products purchased from Palo Alto Networks were not tampered with during shipping, verify the following upon receipt of each product:

- The tracking number provided to you electronically when ordering the product matches the tracking number that is physically labeled on the box or crate.
- The integrity of the tamper-proof tape used to seal the box or crate is not compromised.
- The integrity of the warranty label on the firewall or appliance is not compromised.

(PA-7000 Series firewalls only) PA-7000 Series firewalls are modular systems and therefore do not include a warranty label on the firewall.

Third-Party Component Support

Before you consider installing third-party hardware, read the Palo Alto Networks Third-Party Component Support statement.

Product Safety Warnings

To avoid personal injury or death for yourself and others and to avoid damage to your Palo Alto Networks hardware, be sure you understand and prepare for the following warnings before you install or service the hardware. You will also see warning messages throughout the hardware reference where potential hazards exist.

All Palo Alto Networks products with laser-based optical interfaces comply with 21 CFR 1040.10 and 1040.11.

The following safety warnings apply to all Palo Alto Networks firewalls and appliances, unless a specific hardware model is specified.

- When installing or servicing a Palo Alto Networks firewall or appliance hardware component that has exposed circuits, ensure that you wear an electrostatic discharge (ESD) strap. Before handling the component, make sure the metal contact on the wrist strap is touching your skin and that the other end of the strap is connected to earth ground.

  French Translation: Lorsque vous installez ou que vous intervenez sur un composant matériel de pare-feu ou de dispositif Palo Alto Networks qui présente des circuits exposés, veillez à porter un bracelet antistatique. Avant de manipuler le composant, vérifiez que le contact métallique du bracelet antistatique est en contact avec votre peau et que l'autre extrémité du bracelet est raccordée à la terre.
- Use grounded and shielded Ethernet cables (when applicable) to ensure agency compliance with electromagnetic compliance (EMC) regulations.

  French Translation: Des câbles Ethernet blindés reliés à la terre doivent être utilisés pour garantir la conformité de l'organisme aux émissions électromagnétiques (CEM).
- (PA-3200, PA-5200, PA-5400, PA-7050, and PA-7080 firewalls only) At least two people are recommended for unpacking, handling, and relocating the heavier firewalls.
- Do not connect a supply voltage that exceeds the input range of the firewall or appliance. For details on the electrical range, refer to electrical specifications in the hardware reference for your firewall or appliance.

  French Translation: Veillez à ce que la tension d'alimentation ne dépasse pas la plage d'entrée du pare-feu ou du dispositif. Pour plus d'informations sur la mesure électrique, consulter la rubrique des caractéristiques électriques dans la documentation de votre matériel de pare-feu ou votre dispositif.
- (Devices with serviceable batteries only) Do not replace a battery with an incorrect battery type; doing so can cause the replacement battery to explode. Dispose of used batteries according to local regulations.

  French Translation: Ne remplacez pas la batterie par une batterie de type non adapté, cette dernière risquerait d'exploser. Mettez au rebut les batteries usagées conformément aux instructions.
- I/O ports are intended for intra-building connections only and not intended for OSP (Outside Plant) connections or any network connections subject to external voltage surge events.

• 	(All Palo Alto Networks appliances with two or more power supplies) Caution: Shock hazard Disconnect all power cords (AC or DC) from the power inputs to fully de-energize the hardware. **French Translation:** (Tous les appareils Palo Alto Networks avec au moins deux sources d'alimentation) Débranchez tous les cordons d'alimentation (c.a. ou c.c.) des entrées d'alimentation et mettez le matériel hors tension.
• 	(PA-7000 Series firewalls only) Caution: High touch current Connect to earth before connecting to the power supply. Ensure that the protective earthing conductor is connected to the provided ground lug on the rear side of the firewall.
• 	(PA-7000 Series firewalls only) When removing a fan tray from a PA-7000 Series firewall, first pull the fan tray out about 1 inch (2.5cm) and then wait a minimum of 10 seconds before extracting the entire fan tray. This allows the fans to stop spinning and helps you avoid serious injury when removing the fan tray. You can replace a fan tray while the firewall is powered on but you must replace it within 45 seconds and you can only replace one fan tray at a time to prevent the thermal protection circuit from shutting down the firewall. **French Translation:** (Pare-feu PA-7000 uniquement) Lors du retrait d'un tiroir de ventilation d'un pare-feu PA-7000, retirez tout d'abord le tiroir sur 2,5 cm, puis patientez au moins 10 secondes avant de retirer complètement le tiroir de ventilation. Cela permet aux ventilateurs d'arrêter de tourner et permet d'éviter des blessures graves lors du retrait du tiroir. Vous pouvez remplacer un tiroir de ventilation lors de la mise sous tension du pare-feu. Toutefois, vous devez le faire dans les 45 secondes et vous ne pouvez remplacer qu'un tiroir à la fois, sinon le circuit de protection thermique arrêtera le pare-feu.

The following applies only to Palo Alto Networks firewalls that support a direct current (DC) power source:

French Translation: Les instructions suivantes s'appliquent uniquement aux pare-feux de Palo Alto Networks prenant en charge une source d'alimentation en courant continu (c.c.):

- Do not connect or disconnect energized DC wires to the power supply.

  French Translation: Ne raccordez ni débranchez de câbles c.c. sous tension à la source d'alimentation.
- The DC system must be earthed at a single (central) location.

  French Translation: Le système c.c. doit être mis à la terre à un seul emplacement (central).
- The DC supply source must be located within the same premises as the firewall.

  French Translation: La source d'alimentation c.c. doit se trouver dans les mêmes locaux que ce pare-feu.
- The DC battery return wiring on the firewall must be connected as an isolated DC (DC-I) return.

  French Translation: Le câblage de retour de batterie c.c. sur le pare-feu doit être raccordé en tant que retour c.c. isolé (CC-I).
- The firewall must be connected either directly to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode conductor is connected.

  French Translation: Ce pare-feu doit être branché directement sur le conducteur à électrode de mise à la terre du système d'alimentation c.c. ou sur le connecteur d'une barrette/d'un bus à bornes de mise à la terre auquel le conducteur à électrode de mise à la terre du système d'alimentation c.c. est raccordé.
- The firewall must be in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthing conductor of the DC supply circuit and the earthing of the DC system.

  French Translation: Le pare-feu doit se trouver dans la même zone immédiate (des armoires adjacentes par exemple) que tout autre équipement doté d'un raccordement entre le conducteur de mise à la terre du même circuit d'alimentation c.c. et la mise à la terre du système c.c.
- Do not disconnect the firewall in the earthed circuit conductor between the DC source and the point of connection of the earthing electrode conductor.

  French Translation: Ne débranchez pas le pare-feu du conducteur du circuit de mise à la terre entre la source d'alimentation c.c. et le point de raccordement du conducteur à électrode de mise à la terre.
- Install all firewalls that use DC power in restricted access areas only. A restricted access area is where access is granted only to craft (service) personnel using a special tool, lock and key, or other means of security, and that is controlled by the authority responsible for the location.

  French Translation: Tous les pare-feux utilisant une alimentation c.c. sont conçus pour être installés dans des zones à accès limité uniquement. Une zone à accès limité correspond à une zone dans laquelle l'accès n'est autorisé au personnel (de service) qu'à l'aide d'un outil spécial,

cadenas ou clé, ou autre dispositif de sécurité, et qui est contrôlée par l'autorité responsable du site.

- Install the firewall DC ground cable only as described in the power connection procedure for the firewall that you are installing. You must use the American wire gauge (AWG) cable specified and torque all nuts to the torque value specified in the installation procedure for your firewall.

  French Translation: Installez le câble de mise à la terre c.c. du pare-feu comme indiqué dans la procédure de raccordement à l'alimentation pour le pare-feu que vous installez. Utilisez le câble American wire gauge (AWG) indiqué et serrez les écrous au couple indiqué dans la procédure d'installation de votre pare-feu pare-feu.

- The firewall permits the connection of the earthed conductor of the DC supply circuit to the earthing conductor at the equipment as described in the installation procedure for your firewall.

  French Translation: Ce pare-feu permet de raccorder le conducteur de mise à la terre du circuit d'alimentation c.c. au conducteur de mise à la terre de l'équipement comme indiqué dans la procédure d'installation du pare-feu.

- A suitably-rated DC mains disconnect device must be provided as part of the building installation.

  French Translation: Un interrupteur d'isolement suffisant doit être fourni pendant l'installation du bâtiment.

PA-220 Firewall Overview

The Palo Alto Networks® PA-220 next-generation firewall is designed for small organizations or branch offices and includes the following main features: active/passive and active/active high availability (HA), passive cooling (no fans) to reduce noise and power consumption, eight Ethernet ports, and dual power adapters for power redundancy. The PA-220 firewall enables you to secure your organization through advanced visibility and control of applications, users, and content.

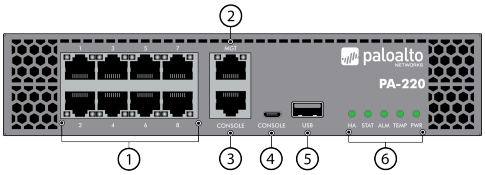
First Supported Software Release: PAN-OS® 8.0

The following topics describe the hardware features of the PA-220 firewall. To view or compare performance and capacity information, refer to the Product Selection tool.

- PA-220 Front Panel
- PA-220 Back Panel

PA-220 Front Panel

The following image shows the front panel of the PA-220 firewall and the table describes each front panel component.



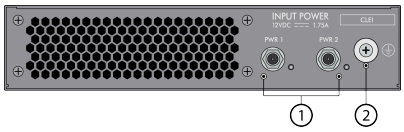
Item	Component	Description
1	Ethernet ports	Eight RJ-45 10/100/1000Mbps ports for network traffic. You can set the link speed and duplex or choose auto-negotiate.
2	MGT port	Use this Ethernet 10/100/1000Mbps port to access the management web interface and perform administrative tasks. The firewall also uses this port for management services, such as retrieving licenses and updating threat and application signatures.
3	CONSOLE port (RJ-45)	Use this port to connect a management computer to the firewall using a 9-pin serial to RJ-45 cable and terminal emulation software. The console connection provides access to firewall boot messages, the Maintenance Recovery Tool (MRT), and the command line interface (CLI).

Item	Component	Description
		If your management computer does not have a serial port, use a USB-to-serial converter. Use the following settings to configure your terminal emulation software to connect to the console port: • Data rate: 9600 • Data bits: 8 • Parity: none • Stop bits: 1 • Flow control: None
4	CONSOLE port (Micro USB)	Use this port to connect a management computer to the firewall using a standard Type-A USB-to-micro USB cable. The console connection provides access to firewall boot messages, the Maintenance Recovery Tool (MRT), and the command line interface (CLI). Refer to Micro USB Console Port for more information and to download the Windows driver or to learn how to connect from a Mac or Linux computer.
5	USB port	Use this port to bootstrap the firewall. Bootstrapping enables you to provision the firewall with a specific PAN-OS configuration and then license it and make it operational on your network.
6	LED status indicators	Five LEDs that indicate the status of the firewall hardware

Item	Component	Description
		components (see Interpret the LEDs on a PA-220 Firewall).

PA-220 Back Panel

The following image shows the back panel of the PA-220 firewall and the table describes each back panel component.



Item	Component	Description
1	Power adapter inputs (PWR 1 and PWR 2)	Use the power inputs to connect power to the firewall. *Use only the PA-220 external power adapters provided by Palo Alto Networks.*
2	Ground stud	Use the single post ground stud to connect the firewall to earth ground (ground cable not included).

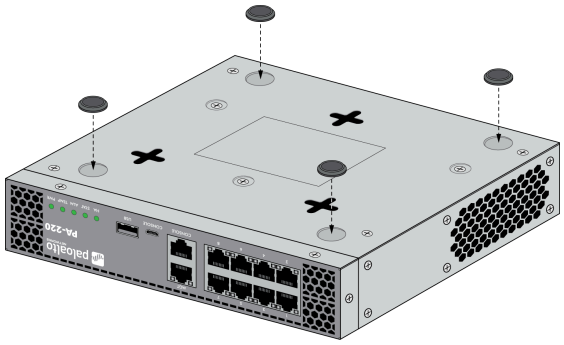
Install the PA-220 Firewall

The PA-220 next-generation firewall ships with the hardware required to install the firewall on a flat surface or on a wall. You can also order a rack mount kit to

- Install the PA-220 Firewall on a Flat Surface
- Install the PA-220 Firewall on a Wall
- Install the PA-220 Firewall in a 19-inch Equipment Rack

Install the PA-220 Firewall on a Flat Surface

Attach the rubber pads to the recessed circles on the bottom of the firewall and then place the firewall on a flat stable surface.



Install the PA-220 Firewall on a Wall

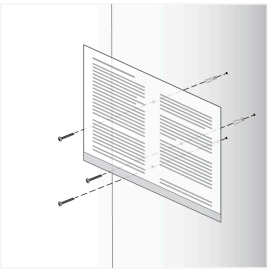
Install a PA-220 firewall on a drywall or plywood wall using the wall-mount kit as describe in the following procedure.

STEP 1 | If the four rubber pads are installed on the bottom of the firewall, remove them.

STEP 2 | Mark three locations on the wall that line up with the wall mount holes on the bottom of the firewall.

To ensure the wall mount screws line up with the firewall mount holes, use the PA-220 Quick Start Guide that ships with the firewall as a template. If you do not have a copy of the Quick Start, download and print it. When printing, select landscape and actual size in the print options to ensure the screw hole markers line up correctly.

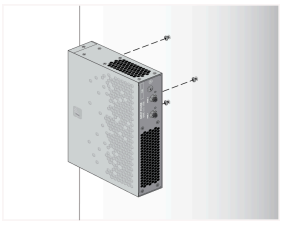
Ensure there are no building services (water, gas, or wiring) behind the wall where you intend to install the firewall.



STEP 3 | Use a #1 Phillips-head screwdriver to install the appropriate screws into each of the three marked locations:

- **Drywall**—Press a drywall anchor slightly into the center of a template mark. Then use your screwdriver to apply pressure while turning the anchor clockwise until the surface of the anchor is flush with the wall. After the drywall anchor is secure, install a 1.25” anchor screw into the anchor until the bottom of the screw head protrudes 1/4” (.6cm) from the wall. Repeat this step for the other two screw locations unless either is located over wood, in which case, use a .75” wood screw instead of a drywall anchor and screw.
- **Plywood wall**—Use your screwdriver to insert a .75” wood screw into the center of each template mark that is located over wood until the bottom of the screw heads protrude 1/4” (.6cm) from the wall.

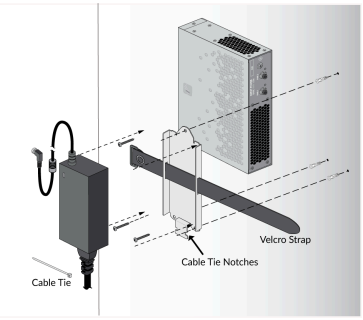
STEP 4 | Align the three holes on the bottom of the firewall with the three screws on the wall and hang the firewall on the screws. Make sure the firewall is securely connected to each of the three screws before you let go.



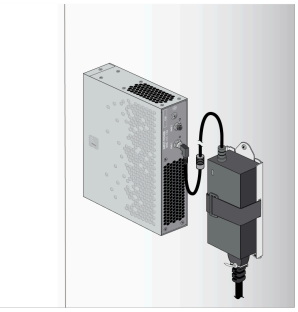
STEP 5 | Install the power adapter in the power adapter wall-mount bracket using the Velcro strap and cable tie. Make sure to align the cable tie with the notches in the bracket to prevent the power cord from falling out.

After you secure the power adapter to the bracket, mount the bracket next to the firewall using wood or drywall screws as appropriate. You can install an optional second power adapter next to the first power adapter.

Connect the second power adapter through a different circuit breaker to provide power redundancy and allow for electrical circuit maintenance.



The following image shows a completed installation for a PA-220 firewall with only a single power adapter.



Install the PA-220 Firewall in a 19-inch Equipment Rack

The PA-220 firewall one-unit (1U) rack tray kit (PAN-PA-220-RACKTRAY) enables you to install one or two PA-220 firewalls in a two-post 19" rack. The installation hardware (screws and brackets) for the left side of the tray is contained in bags. The installation hardware for the right side of the tray is pre-installed. This enables you to store the right side hardware in the tray (for future use) if you are installing only one firewall. If you want to install the firewall(s) in a four-post rack, purchase and install the four-post rack kit (PAN-PA-1RU-RACK4) in addition to the one-unit rack tray kit (PAN-PA-220-RACKTRAY) to secure the firewall to both the front and back rack-posts.

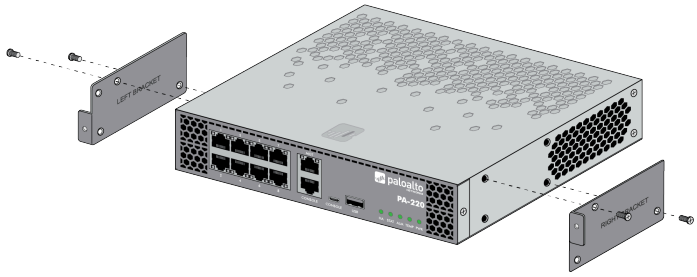
The PA-220 firewall one-unit (1U) rack kit (PAN-PA-220-RACK-SINGLE) enables you to install a single PA-220 firewall in a two-post or four-post 19” rack. The installation hardware includes two side brackets for attaching up to two PSUs to either side of the firewall.

To ease installation, first install the firewall(s) in the rack tray and then install the assembled rack tray into the equipment rack.

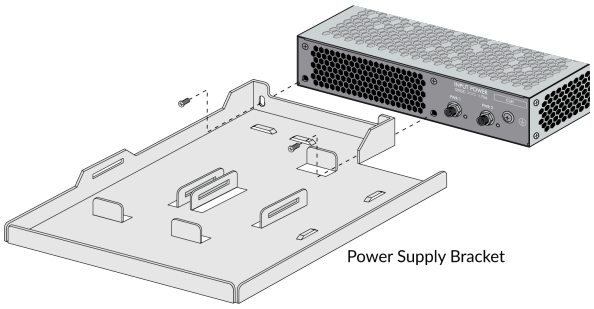
- Install the PA-220 Firewall Using the PAN-PA-220-RACKTRAY
- Install the PA-220 Firewall Using the PAN-PA-220-RACK-SINGLE

Install the PA-220 Firewall Using the PAN-PA-220-RACKTRAY

STEP 1 | Attach one rack tray bracket to each side of the firewall using two 4-40 x 1/4” screws for each bracket. The brackets are labeled left and right as shown in the illustration.

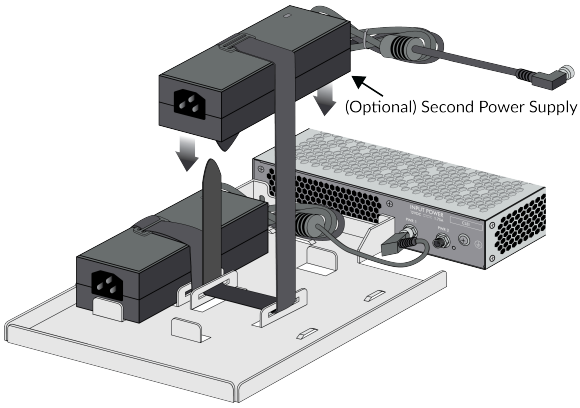


STEP 2 | Attach the power adapter bracket to the back of the firewall using two 4-40 x 1/4” screws.

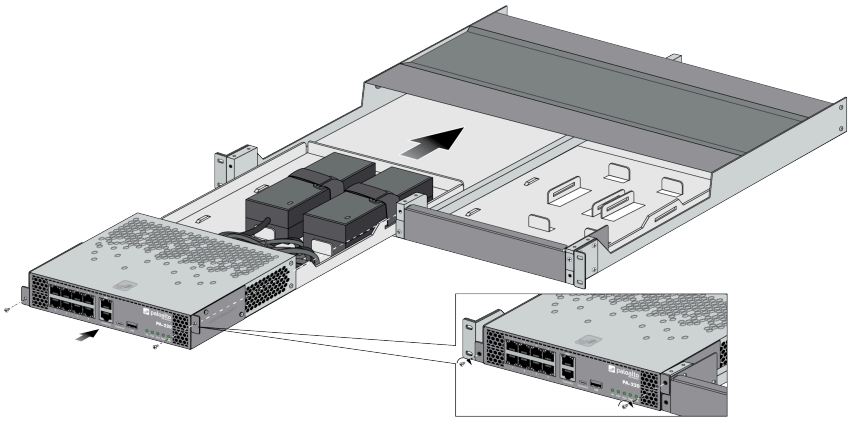


STEP 3 | Install the PA-220 power adapter in the power adapter bracket and secure it with the Velcro strap.

(Optional): Install a second power adapter for redundancy.



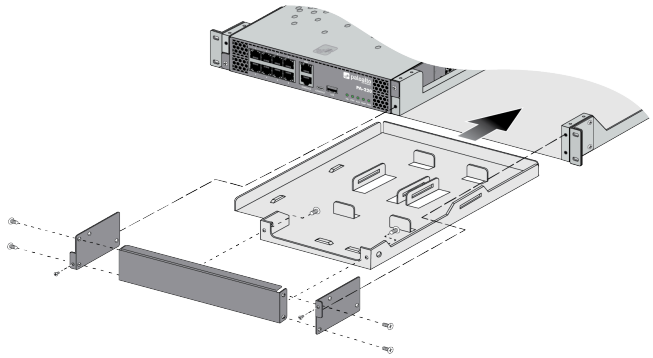
STEP 4 | Slide the firewall (with power adapter bracket) into the rack tray and attach the rack tray brackets to the rack tray using one 4-40 x 1/4” screw for each bracket.



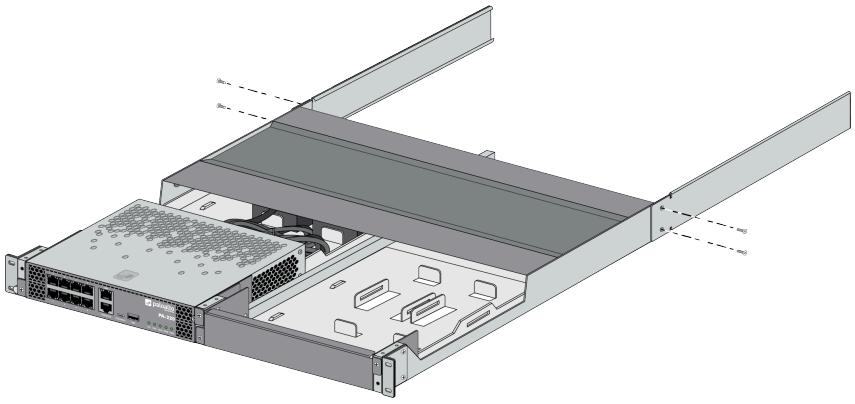
STEP 5 | (Optional) Install a second PA-220 firewall into the right side of the rack tray:

First remove the pre-installed rack tray installation hardware and set aside this hardware for use when you install the second firewall.

1. Remove one 4-40 x 1/4” screw (located on each side of the front cover) from each rack tray bracket to detach the rack tray installation hardware from the rack tray.
2. Slide the empty rack tray installation hardware assembly out of the equipment rack tray.
3. Remove the two screws that secure the front cover to the power adapter bracket.
4. Remove the two screws from each firewall rack tray bracket and remove the brackets from the front cover. Store the front cover for future use.
5. Install the rack tray hardware for the second firewall (Step 1 through Step 4) and then install it in the right side of the rack tray.

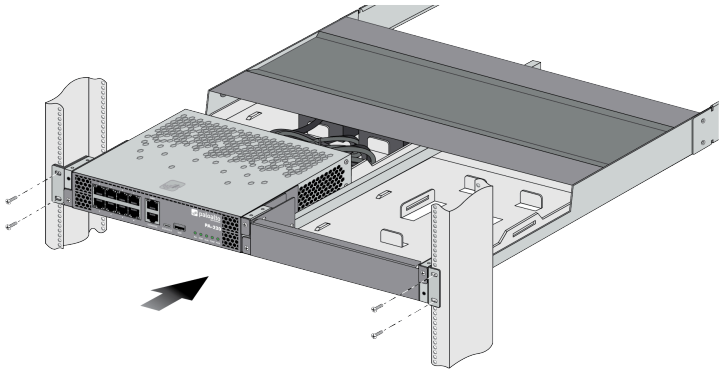


STEP 6 | (Four-post rack installation only) Install the four-post rack kit (PAN-PA-1RU-RACK4) to provide additional support to the back of the rack tray. First attach one rack-mount rail to each side of the firewall using two #6-32 x 5/16” screws for each rail and torque to 9 in-lbs (you will complete the installation after you install the rack tray in the rack as described in the next step).

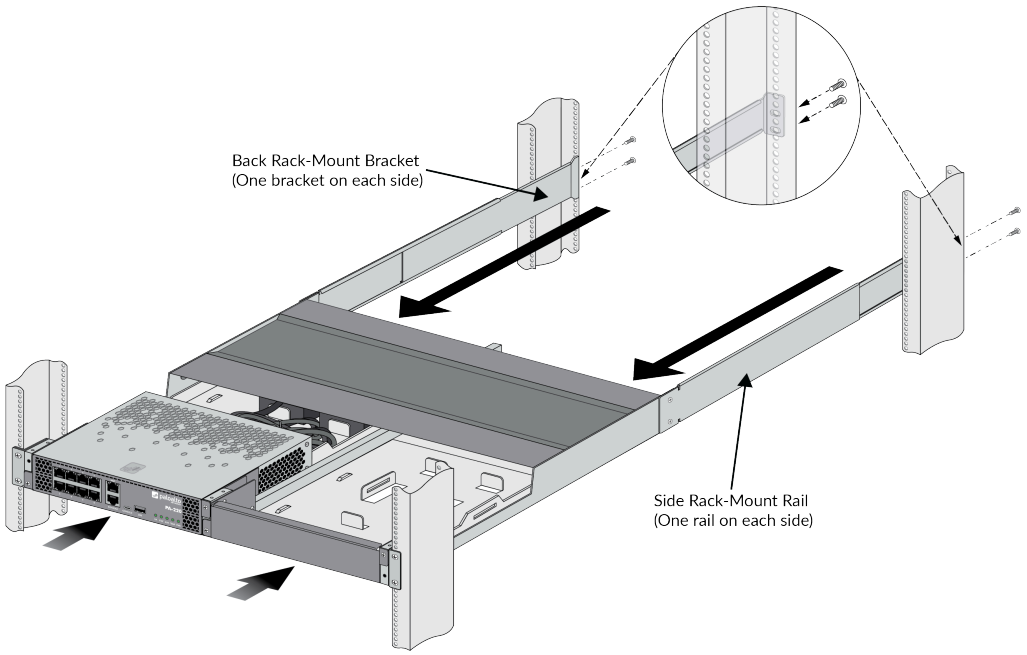


STEP 7 | With the help of another person, hold the assembled PA-220 firewall rack tray in place in the equipment rack and secure the rack tray brackets to the front rack posts using a #2 Phillips-

head screwdriver. Use the appropriate screws (#10-32 x 3/4” or #12-24 x 3/4”) for your rack and torque to 25 in-lbs. Use cage nuts to secure the screws if the rack has square holes.

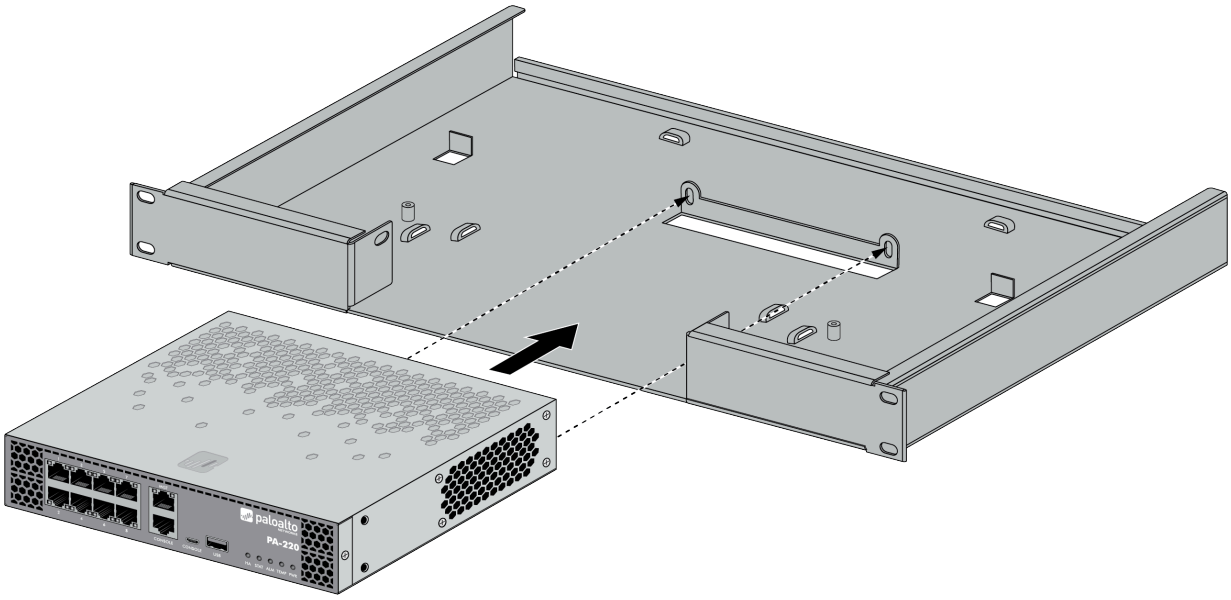


STEP 8 | (Four-post rack installation only) Slide one back rack-mount bracket into each of the two previously installed rack-mount rails and secure the brackets to the back-rack posts using the appropriate screws for your rack (#10-32 x 3/4” or #12-24 x 1/2”) and torque to 25 in-lbs. Use cage nuts to secure the screws if the rack has square holes.

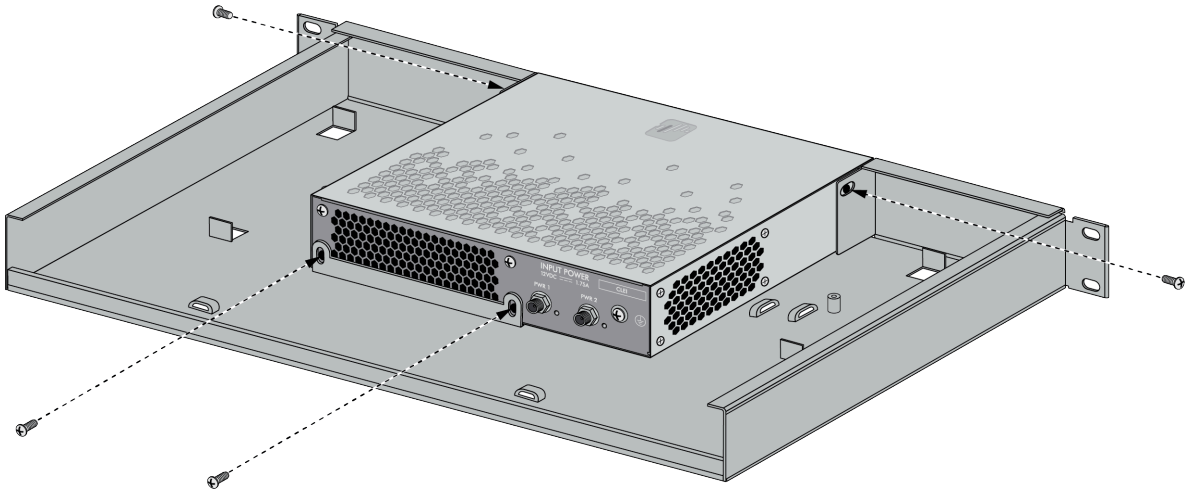


Install the PA-220 Firewall Using the PAN-PA-220-RACK-SINGLE

STEP 1 | Align the back of the firewall with the two tabs located on the rack mount.

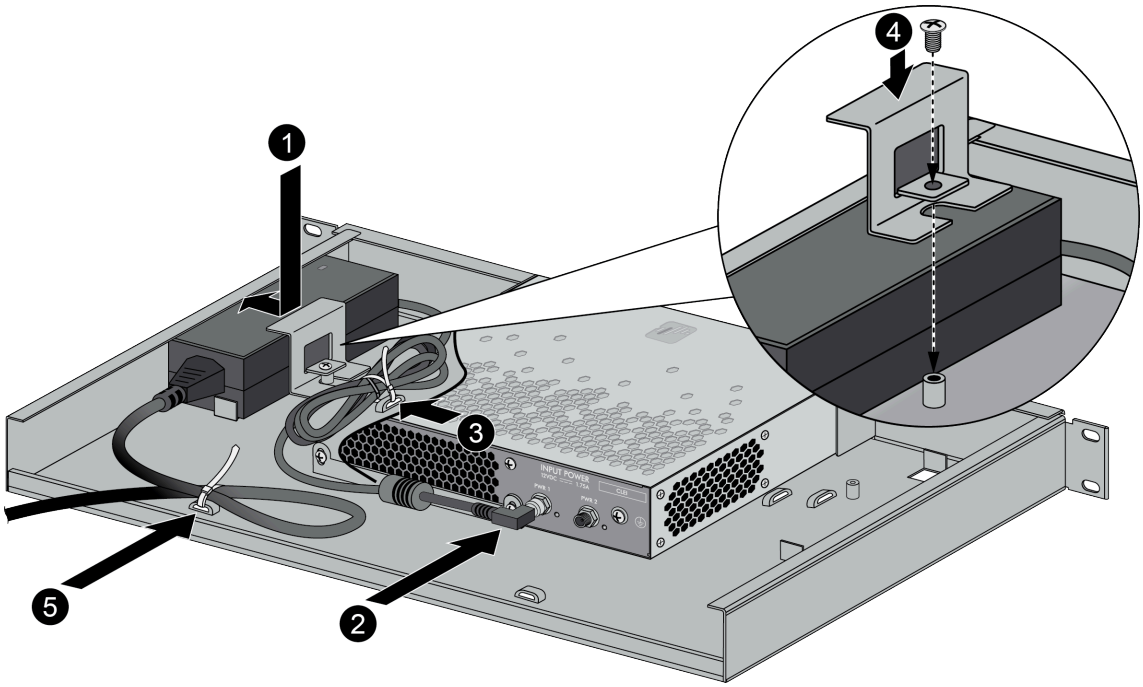


STEP 2 | Use two #4-40 X 1/4” screws to attach the back of the firewall to the two tabs from Step 1. Use two more #4-40 X 1/4” screws to attach the left and right sides of the firewall to the front mounting ears.



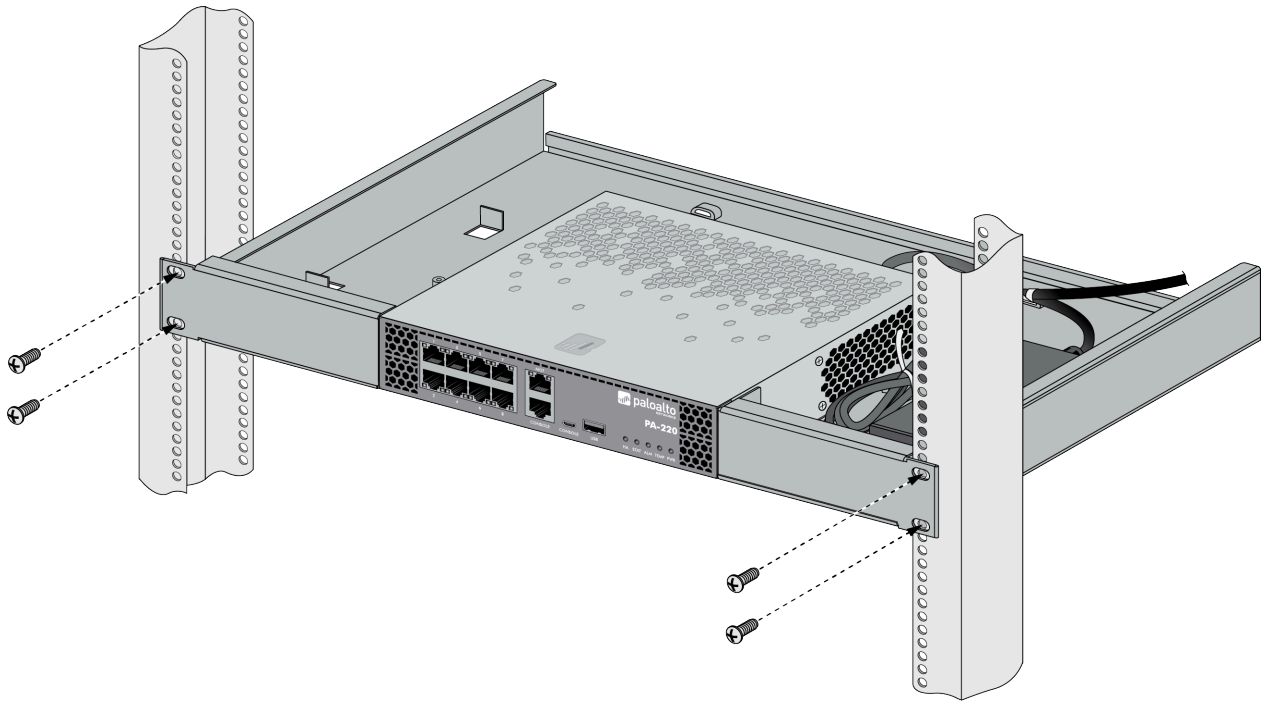
STEP 3 | Secure the power supply in the rack mount.

1. Place the power supply under the mount's left or right slot with the DC power cable extending towards the walled side of the mount.
2. Draw the DC connector around to the back of the firewall and plug it into the PWR 1 port.
3. Use a cable tie to coil any excess length of wire and loop the tie through the nearby latch feature on the mount.
4. Use one #4-40 X 1/4" screw to install the provided bracket over the power supply. The bracket should encase and lock the power supply in place, as shown in the image below.
5. Draw the AC power supply cable out the back of the mount. Assess the distance from the firewall to the power source and coil any excess length of wire as needed. Do not connect the AC power supply cable to the power source yet.



STEP 4 | (Optional): Install a second power supply for redundancy. Repeat Step 3 using the opposite mount slot and the PWR 2 port.

STEP 5 | Install the firewall onto the 19-inch rack frame and secure it with four #10-32 X 3/4” or #12-24 X 1/2” screws. Torque the #10 screws at 25.0 in-lbs and the #12 screws at 32.0 in-lbs.



STEP 6 | Plug the AC power supply cable(s) into a power source.

Connect Power to a PA-220 Firewall

The PA-220 firewall is powered by an external power adapter that converts an AC power source to DC power. The firewall can operate with one power adapter or you can install a second power adapter for power redundancy.

- How to Connect Power to a PA-220 Firewall

How to Connect Power to a PA-220 Firewall

The following procedure describes how to connect power to a PA-220 firewall.

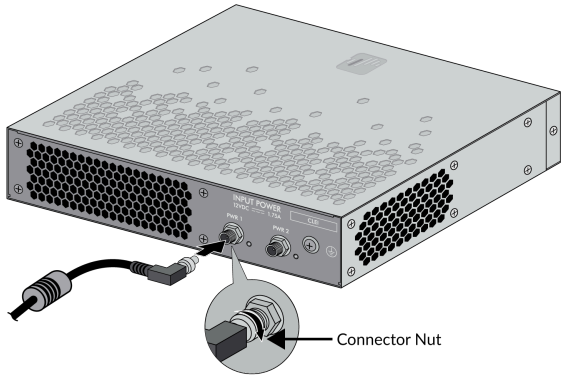
To avoid injury to yourself or damage to your Palo Alto Networks® hardware or the data that resides on the hardware, read the Product Safety Warnings.

STEP 1 | Remove the screw and star washer from the ground point on the back of the firewall.

STEP 2 | Crimp a 14AWG ground cable to a ring lug (cable and lug not included), place the ring lug over the screw and star washer, then replace the screw to attach the cable to the firewall. Torque the screw to 25 in-lbs and then connect the other end of the cable to earth ground.

STEP 3 | Connect the DC connector from the power adapter into the PWR 1 port on the firewall and tighten the connector nut to secure the cable to the firewall.

Ensure the power adapter itself is appropriately positioned (see Install the PA-220 Firewall).



STEP 4 | Plug the AC connector from the power adapter into your AC power source. After power is connected, the firewall powers on as indicated by the green power LED next to the PWR 1 port. The front PWR LED shows green when a functioning power adapter is connected.

STEP 5 | (Optional) Connect the DC connector from a second power adapter (purchased separately) into the PWR 2 port and plug the AC connector into an AC power source.

Connect the second PA-220 power adapter through a different circuit breaker to provide power redundancy and to allow for electrical circuit maintenance.

Service the PA-220 Firewall Hardware

The following topics describe how to interpret the PA-220 status LEDs and how to replace a PA-220 power adapter. The power adapter is the only serviceable component on the PA-220 firewall.

- Interpret the LEDs on a PA-220 Firewall
- Replace a Power Adapter on a PA-220 Firewall

Interpret the LEDs on a PA-220 Firewall

The following table describes how to interpret the status LEDs on the PA-220 firewall.

LED	Description
Front Panel LEDs	
HA (High Availability)	• Green—The firewall is the active peer in an active/passive configuration. • Yellow—The firewall is the passive peer in an active/passive configuration. • Off—High availability (HA) is not operational on this firewall. *In an active/active configuration, the HA LED only indicates HA status for the local firewall and has two possible states (green or off); it does not indicate HA connectivity of the peer. Green indicates that the firewall is either active-primary or active-secondary and off indicates that the firewall is in any other state (for example, non-functional or suspended).*
STAT (Status)	• Green—The firewall is operating normally. • Yellow—The firewall is booting.
ALM (Alarm)	• Red—A hardware component failed, such as a power adapter failure, a firewall failure that caused an HA failover, a drive failure, or hardware is overheating and the temperature is above the high temperature threshold. • Off—The firewall is operating normally.
TEMP (Temperature)	• Green—The firewall temperature is normal. • Yellow—The firewall temperature is outside tolerance levels.
PWR (Power)	• Green—The firewall is powered on. • Off—The firewall is not powered on or an error has occurred with the internal power system (for example, power is not within tolerance levels).
Ethernet port LEDs	• Left LED—Solid green indicates a network link. • Right LED—Blinking green indicates network activity.

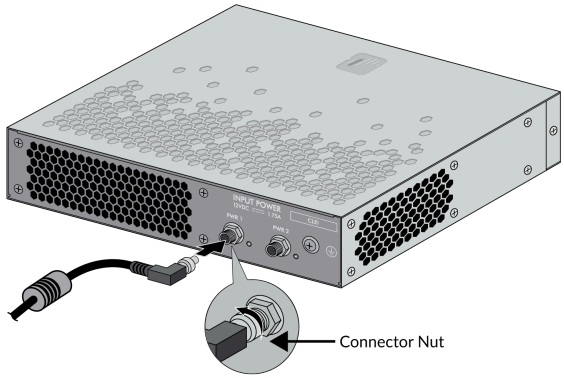
LED	Description
	*If you configure the link state to **down** on a port, the LEDs on some active ports will not work. Similarly, if the passive link state is set to **shutdown**, the HA link LEDs on the passive device in the HA pair will not work. To ensure your LEDs display correctly, avoid configuring link states to **down** or using the **shutdown** passive link state unless needed for security reasons.*
Back Panel LEDs	
PWR 1 and PWR 2 (Back panel LEDs)	The following describes the power adapter LEDs on the back of the firewall: • Green—The power input is receiving power. • Off—The power input is not receiving power. *The PWR LED on the front of the firewall shows green if one or both power adapters are connected to the back power inputs. If both power adapters are connected and one power adapter fails, the PWR LED on the back of the firewall turns off and the ALM LED turns red.*

Replace a Power Adapter on a PA-220 Firewall

The PA-220 firewall can operate on one power adapter or you can install a second power adapter for power redundancy. If two power adapters are installed and one fails, you can replace the failed power adapter without interruption.

To avoid injury to yourself or damage to your Palo Alto Networks® hardware or the data that resides on the hardware, read the Product Safety Warnings.

STEP 1 | Unplug the failed power adapter from the AC power source and then turn the power cable connector nut on the back of the firewall (PWR1 or PWR2) counterclockwise to release the cable. Pull the cable away from the firewall to remove it.



STEP 2 | Connect the DC connector from the new power adapter to the power input (PWR 1 or PWR 2) port on the firewall and tighten the connector nut to secure the cable to the firewall.

STEP 3 | Plug the AC connector from the power adapter into an AC power source.

PA-220 Firewall Specifications

The following topics describe the PA-220 firewall hardware specifications. For feature, capacity, and performance information, refer to the PA-220 firewall datasheet.

Physical Specifications

The following table describes PA-220 firewall physical specifications.

Specification	Value
Rack units and dimensions	1.62”H X 6.29”D X 8.07”W (4.1cm X 16cm X 20.5cm) *The depth measurement includes hardware that protrudes from the back of the firewall. If the rubber feet are installed on the bottom of the firewall, add .78” (2cm) to the height.Rack units and dimensions if the PA-220 firewall is installed in the PA-220 19” rack kit.* • Rack units—1U • Rack kit dimensions—1.75”H X 14”D X 17.5”W (4.44cm X 35.56cm X 44.45cm)
Weight	• Firewall weight—3lbs (1.36Kg) • Shipping weight—5.4lbs (2.45Kg)

Electrical Specifications

The following table describes PA-220 firewall electrical specifications.

Specification	Value
Power adapter	The PA-220 firewall operates on DC power that is provided by the external power adapter (provided). The firewall can operate on one power adapter or you can install a second power adapter for power redundancy.
Input voltage	Power adapter (AC side)—100-240VAC (50-60Hz) The power adapter converts the AC power to 12VDC to provide power to the firewall.
Power consumption	Maximum—25W Average—21W
Maximum current consumption	Firewall—1.75A@12VDC Power adapter (AC side)—0.5A@100VAC, 0.2A@240VAC
Maximum inrush current	AC power adapter input—0.47A@100VAC

Environmental Specifications

The following table describes PA-220 firewall environmental specifications.

Specification	Value
Operating temperature range	32°F to 104°F (0° to 40°C)
Non-operating temperature	-4°F to 158°F (-20° to 70°C)
Humidity tolerance	5% to 90% non-condensing
Airflow	The PA-220 firewall uses passive cooling and does not contain fans.
Maximum BTUs/hour	102 BTUs/hour
Acoustic noise	Emits no sound.
Maximum operating altitude	10,000ft (3,048m)

Miscellaneous Specifications

The following table describes PA-220 firewall miscellaneous specifications.

Specification	Value
Storage capacity	One 32GB SSD for system files and log storage.
Mean time between failures (MTBF)	29 years

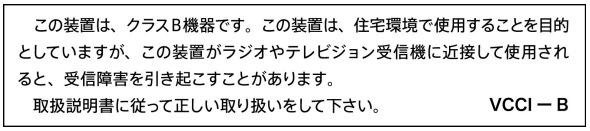
PA-220 Firewall Compliance Statements Overview

Palo Alto Networks obtains regulatory compliance certifications to comply with the laws and regulations in each country where there are requirements applicable to our products. Our products meet standards for product safety and electromagnetic compatibility when used for their intended purpose.To view compliance statements for the PA-220 firewall, see PA-220 Firewall Compliance Statements

PA-220 Firewall Compliance Statements

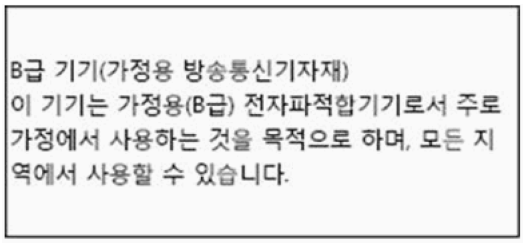
The following lists the PA-220 firewall hardware compliance statements:

- **VCCI**: This section provides the compliance statement for the Voluntary Control Council for Interference by Information Technology Equipment (VCCI), which governs radio frequency emissions in Japan.The following information is in accordance to VCCI Class B requirements:



  Translation: This is a Class B product. In a domestic environment this product may cause radio interference, in which case the user may be required to take corrective actions.

- **CE**: European Union (EU) Electromagnetic Compatibility Directive.This device is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC). The above product conforms with Low Voltage Directive 2006/95/EC and complies with the requirements in the Council Directive 2006/95/EC relating to electrical equipment designed for use within certain voltage limits and the Amendment Directive 93/68/EEC.
- **KCC**:



- **TUV**: Product Ambient Temperature: 0~40 degree C

  Risk of explosion if battery is replaced by an incorrect type. Dispose of used battery according to local regulations.

- **Federal Communications Commission (FCC) statement for a Class B digital device or peripheral**: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be

determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit that is different from the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

- **ICES**: Canadian Department Compliance Statement: This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

