


1 Before You Begin

Use this document to install and begin setting up your Palo Alto Networks PA-450R or PA-450R-5G device. Refer to the product's hardware reference at <https://docs.paloaltonetworks.com/hardware> for safety information, specifications, and more detailed procedures for installing the firewall.

- Verify that the installation site has adequate air circulation and DC power.
- Have the following equipment ready:
 - #2 Phillips-head screwdriver for #6-32 screws.
 - 1/8" flat head screwdriver for terminal block screws.
 - Crimp tool for #10 ground lug and 8 AWG wire.
 - Wire strippers for 8 AWG and 16 AWG wire.
- Unpack the equipment and verify that you received the following items:


 Do not open or power the device if a hazardous environment is present.


Qty	Description
1	PA-450R or PA-450R-5G firewall.
2	Euroblock connector and terminal block.
1	#10 Ground lug.
1	Console cable.
1	Shielded RJ-45 CAT6 Ethernet cable for management (MGT) port access.
4	Multi-band antenna. (PA-450R-5G only)
1	Sheet, Limited Warranty.
1	China RoHS declaration.

2 Install the Firewall

There are three ways to install the PA-450R or PA-450R-5G firewall:

- On a flat surface
- On a wall
- In a 19" equipment rack

 The device must be installed in an IP54 rated enclosure if installing in a Class 1 Division 2/Zone 2 Hazardous location.

 After installing the firewall and connecting all relevant cables, make sure to leave covers and plugs on any unused ports.


Install the Firewall on a Flat Surface


The PA-450R and PA-450R-5G firewalls ship with rubber "feet" attached to the bottom of the device. The device can be set horizontally upon a flat surface. See **Figure 1**.



Figure 1

Install the Firewall on a Wall

 The wall mount kit (PAN-1RU-RGD-WALLMNT) is not included with the firewall and must be purchased separately.

- 1 Mark the locations on the wall that line up with the wall mount holes on the bottom of the provided wall mount.
 -  Ensure there are no building services (water, gas, or wiring) behind the wall where you intend to install the firewall.
- 2 Attach the firewall to the wall mount using three #6-32 screws and a #2 Phillips-head screwdriver. See **Figure 2**.

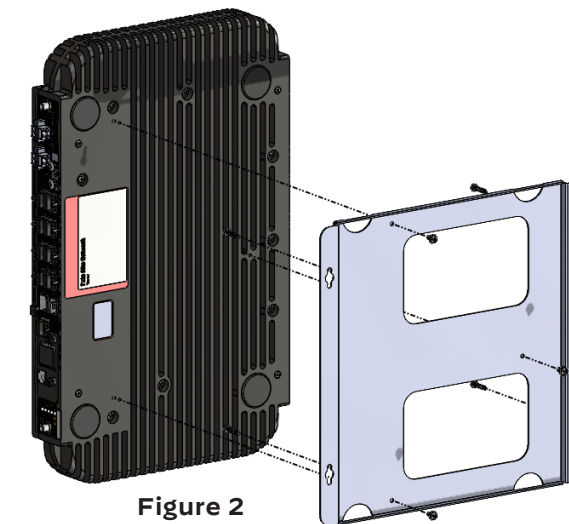


Figure 2

- 3 Attach the wall mount to the wall using four screws that are appropriate for your wall (sheet metal and drywall inserts are included with the wall mount kit). Ensure that the side fins run vertically, as shown in **Figure 3**.

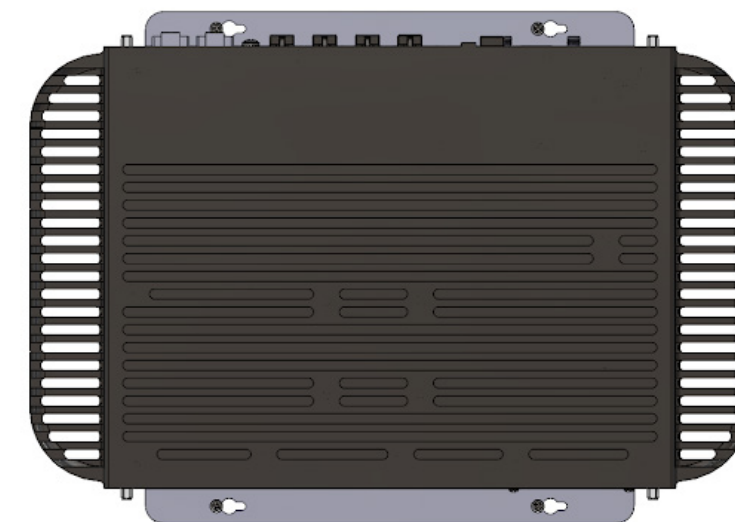




Figure 3

Install the Firewall in a 19" Equipment Rack

Refer to the PA-400R Series Next-Gen Firewall Hardware Reference at <https://docs.paloaltonetworks.com/hardware>.

 The rack kit (PAN-1RU-SMALL-RACK4) is not included with the firewall and must be purchased separately.

 If you are planning to install the PA-450R-5G in an equipment rack, make sure to install the antennas in **Step 3** before proceeding.

3 Install the Antennas (PA-450R-5G only)

- 1 Secure the antennas to the SMA connectors located at the corners of the device. Make sure to tighten each antenna by hand. The antennas are fixed at a 90-degree orientation but can be repositioned after installation. See **Figure 4**.
- 2 Adjust the antenna orientation to receive the optimal strength in your environment. Check the signal strength by viewing the Cellular LED or by checking the Firewall Web Interface.

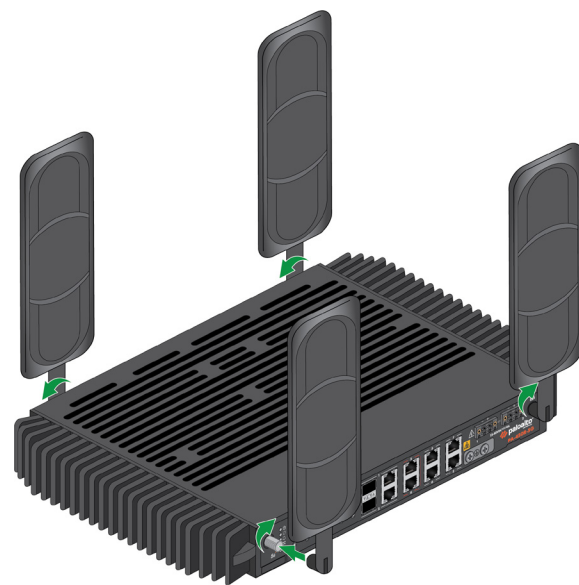


Figure 4

! Ensure that power cables do not cross over the antennas as this can cause signal quality distortion and antenna performance degradation.

4 Power On the Firewall

! The DC power supplies have an input rating of 12-48VDC.

- 1 Verify that your DC power source is powered off.
- 2 (If connecting the firewall in ZTP mode) Complete **Connect in ZTP Mode** in **Step 5** before proceeding.
- 3 Connect one end of a 8 AWG ground cable (not included) to the dual-hole ground lug. Connect the other end of the cable to earth ground. Remove the two ground screws from the ground point on the front panel of the firewall, pictured in **Figure 5**. Hold the ground lug (that you previously attached to the ground cable) over the screw hole, and then re-attach the screws to secure the cable to the firewall. Do not torque the screws to more than 6 in-lbs.
- 4 Insert the positive and negative DC cables into the terminal block. The terminal connectors support 12 to 30 AWG cables, but 16 AWG is recommended. Secure each cable using a 1/8" flat head screwdriver. Turn the terminal screws clockwise until tight. Do not torque the screws to more than 2 in-lbs.

💡 Apply an anti-corrosion gel (not included) to the ground lug and other connectors to protect the components against rust.

- 5 (Optional) Repeat the previous step to connect a second DC power source to a second terminal block.
- 6 Plug the cabled DC terminal block into the DC inputs on the firewall, making sure that the cables align with the polarity marked on the front of the device, as shown in **Figure 6**. Secure the terminal block by turning the two screws on each side of the block clockwise and torque to 3 in-lbs.
- 7 Power on the DC power source to power on the firewall. The firewall powers on and the power LED turns green.



Figure 5

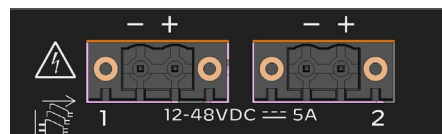


Figure 6

5 Connect to the Management Interface

Connect in ZTP Mode

- 1 Peel off the label and dust cover over the ZTP port, Ethernet port 1.

! SFP port 1 can also be used as a ZTP port.

- 2 Connect the ZTP port on the firewall to an active network switch.
- 3 Return to **Step 4** to power on the firewall.
- 4 Follow the instructions provided by your Panorama administrator to register your ZTP firewall. You will have to enter the serial number (12-digit number identified as S/N) and claim key (8-digit number). These numbers are on stickers attached to the back of the device.
- 5 Contact your Panorama administrator if you require further assistance.

Connect in Standard Mode (using Web Interface)

- 1 Connect the standard RJ-45 Ethernet cable from the RJ-45 port on your computer to the MGT port on the firewall.
- 2 Change the IP address on your computer to an address in the 192.168.1.0/24 network, such as 192.168.1.2.
- 3 Power on the firewall.
- 4 From a web browser, go to <https://192.168.1.1>.
- 5 On the firewall login screen, a prompt will ask if you wish to continue booting in ZTP mode or if you would like to switch to standard mode. Select Standard Mode and the firewall will begin rebooting in standard mode.

Connect in Standard Mode (using CLI)

- 1 Connect the standard RJ-45 Ethernet cable from the RJ-45 port on your computer to the MGT port on the firewall.
- 2 Ensure that you have access to a terminal emulator such as PuTTY.
- 3 Change the IP address on your computer to an address in the 192.168.1.0/24 network, such as 192.168.1.2.
- 4 Power on the firewall.
- 5 Access the firewall CLI using your terminal emulator. Watch for the following prompt:
Do you want to exit ZTP mode and configure your firewall in standard mode (yes/no)[no]?

Enter "yes." The system will then ask you to confirm. Enter "yes" again to boot the firewall in standard mode

- 6 Stand by for approximately 5 minutes as the firewall boots up.
- 7 From a web browser, go to <https://192.168.1.1>.
- 8 When prompted, log in to the web interface using the default username and password (admin/admin).

Where To Go Next

To learn more about the firewall, refer to the PA-400R Series Next-Gen Firewall Hardware Reference Guide:
<https://docs.paloaltonetworks.com/hardware>

To learn how to configure Palo Alto Networks firewalls, go to the Technical Documentation portal:
<https://docs.paloaltonetworks.com>

(Use the Getting Started information in the PAN-OS Administrator's Guide for initial configuration tasks.)

To learn more about the ZTP setup, refer to the Panorama Administrator's Guide:
<https://docs.paloaltonetworks.com/panorama>

Start here to Register and Set Up your firewall and access all resources and support tools:
<https://go.paloaltonetworks.com/CustomerLaunchPad>