

The Palo Alto Networks logo, featuring a stylized orange and red icon to the left of the word "paloalto" in a lowercase sans-serif font.

**TECHDOCS**

# **M-300 and M-700 Appliance Hardware Reference**

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# 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	<p>Before upgrading the firewall, run the following CLI command to check the flash drive's status: <b>debug system disk-smart-info disk-1</b>.</p> <p>If the value for attribute ID #232, <b>Available_Reservd_Space 0x0000</b>, is greater than 20, then proceed with the upgrade. If the value is less than 20, then contact support for assistance.</p>	<p>Before downgrading the firewall, run the following CLI command to check the flash drive's status: <b>debug system disk-smart-info disk-1</b>.</p> <p>If the value for attribute ID #232, <b>Available_Reservd_Space 0x0000</b>, is greater than 20, then proceed with the downgrade. If the value is less than 20, then contact support for assistance.</p>

## 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.

<ul style="list-style-type: none"> <li>  </li> </ul>	<p>(All Palo Alto Networks appliances with two or more power supplies)</p> <p>Caution: Shock hazard</p> <p>Disconnect all power cords (AC or DC) from the power inputs to fully de-energize the hardware.</p> <p><b>French Translation:</b> (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.</p>
<ul style="list-style-type: none"> <li>    </li> </ul>	<p>(PA-7000 Series firewalls only)</p> <p>Caution: High touch current</p> <p>Connect to earth before connecting to the power supply.</p> <p>Ensure that the protective earthing conductor is connected to the provided ground lug on the rear side of the firewall.</p>
<ul style="list-style-type: none"> <li>  </li> </ul>	<p>(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.</p> <p><b>French Translation: (Pare-feu PA-7000 uniquement)</b> 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.</p>

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.

# M-300 and M-700 Appliance Overview

The Palo Alto Networks® M-300 and M-700 appliances are multi-function appliances that you can configure to function in Panorama™ Management mode, Panorama Management-only mode, Panorama Log Collector mode, or PAN-DB Private Cloud mode (**M-700 only**).

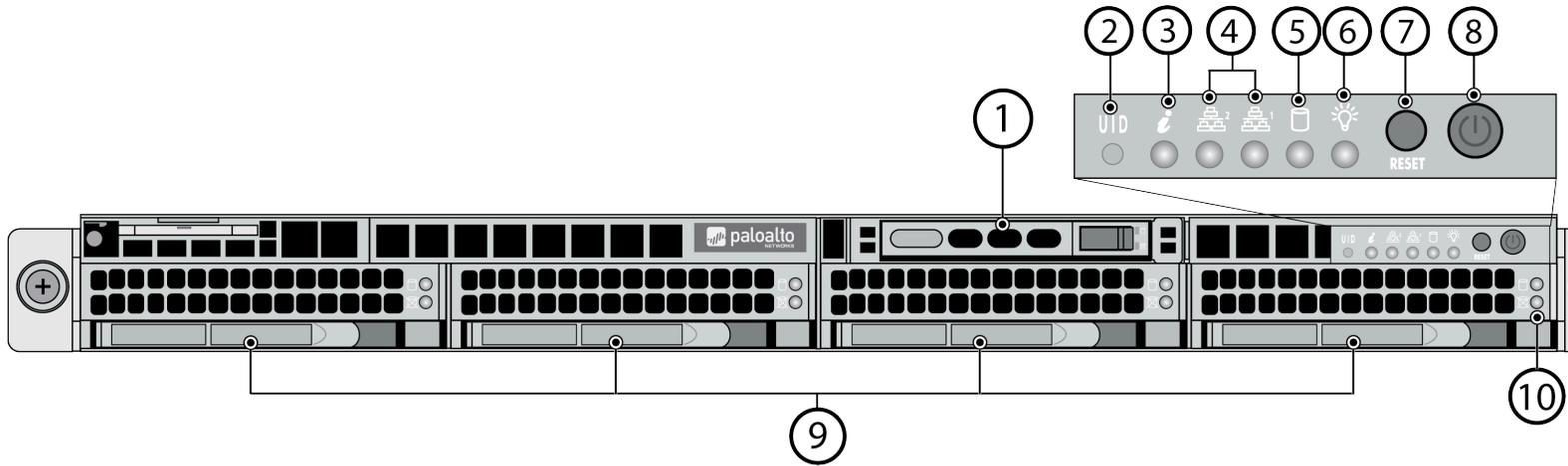
**First Supported Software Release:** Panorama 10.2

The following topics describe the hardware features of the M-300 and M-700 appliances.

- [M-300 Appliance Front Panel](#)
- [M-300 Appliance Back Panel](#)
- [M-700 Appliance Front Panel](#)
- [M-700 Appliance Back Panel](#)

## M-300 Appliance Front Panel

The following image shows the front panel of the M-300 appliance and the table describes each front-panel component.

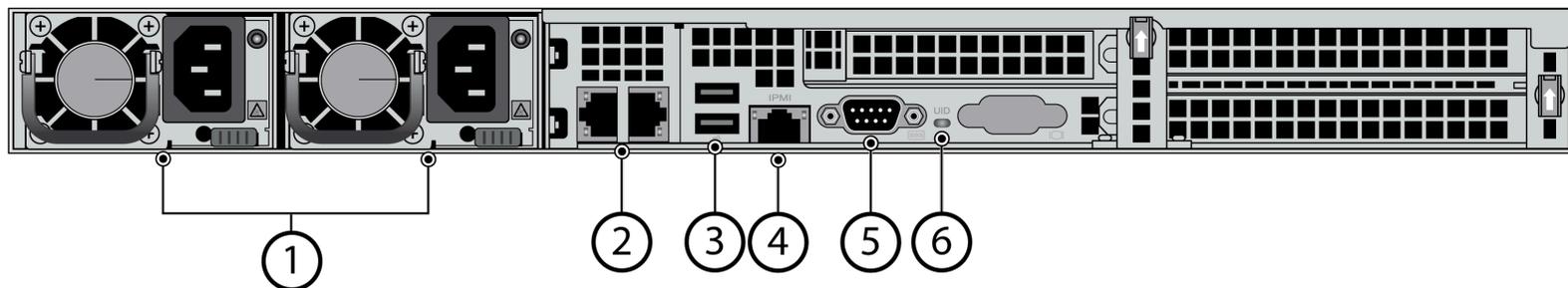


Item	Component	Description
1	System drive	480GB solid-state drive (SSD) used to store the operating system files and system logs.
2	Unique Identification (UID) button	Use the UID feature to help you locate the appliance when you move from the front to the back of the equipment rack where the appliance is installed. When you push the UID button to enable the UID feature, both the front-panel System information LED and the back-panel UID LED illuminate bright blue to help you locate the appliance when you move between opposite sides of the equipment rack. Push the UID button again to deactivate these LEDs.
3	System information (overheat and UID) LED	<ul style="list-style-type: none"> <li>• <b>Solid red</b>—An overheat condition occurred.</li> <li>• <b>Blinking red at the rate of one blink per second (1Hz)</b>—A fan failure occurred.</li> <li>• <b>Blinking red at the rate of one blink every four seconds (.25Hz)</b>—One of the two power supplies is not providing power to the appliance (possibly because a power supply failed or because there is no power source connected to the power supply).</li> <li>• <b>Solid blue</b>—The UID feature is activated (see the UID button description).</li> </ul>

Item	Component	Description
4	Network activity LEDs	Blinking green indicates network activity.
5	Hard-disk drive (HDD) LED	Blinking yellow indicates IDE channel activity (SAS/SATA drive) on the front log drives.
6	Power LED	Solid green indicates that the appliance is powered on.
7	Reset button	Press this button to reboot the appliance.
8	Power button	Press this button to power on or power off the appliance. Powering off the appliance with this button puts the appliance in standby power mode. To completely power off the appliance, you must disconnect the AC power cords from both power supplies.
9	Hard-disk drives (HDDs)	<p>Disk drive bays and HDDs used for log storage. By default, the M-300 ships with four HDDs installed. From left to right, the drive bays are labeled A1, A2, B1, and B2. Each pair of drives are in a RAID 1 configuration (A1/A2 is a RAID 1 pair and B1/B2 is a RAID 1 pair).</p> <p>For details on storage capacity, refer to the <a href="#">Panorama Datasheet</a>.</p>
10	Hard-disk drive (HDD) LEDs	<p>Status LEDs—two for each log drive:</p> <ul style="list-style-type: none"> <li>• <b>Top LED</b>—Flashing blue indicates drive activity.</li> <li>• <b>Bottom LED</b>—Solid red indicates a log drive failure.</li> </ul>

## M-300 Appliance Back Panel

The following image shows the back panel of the M-300 appliance and the table describes each back-panel component.

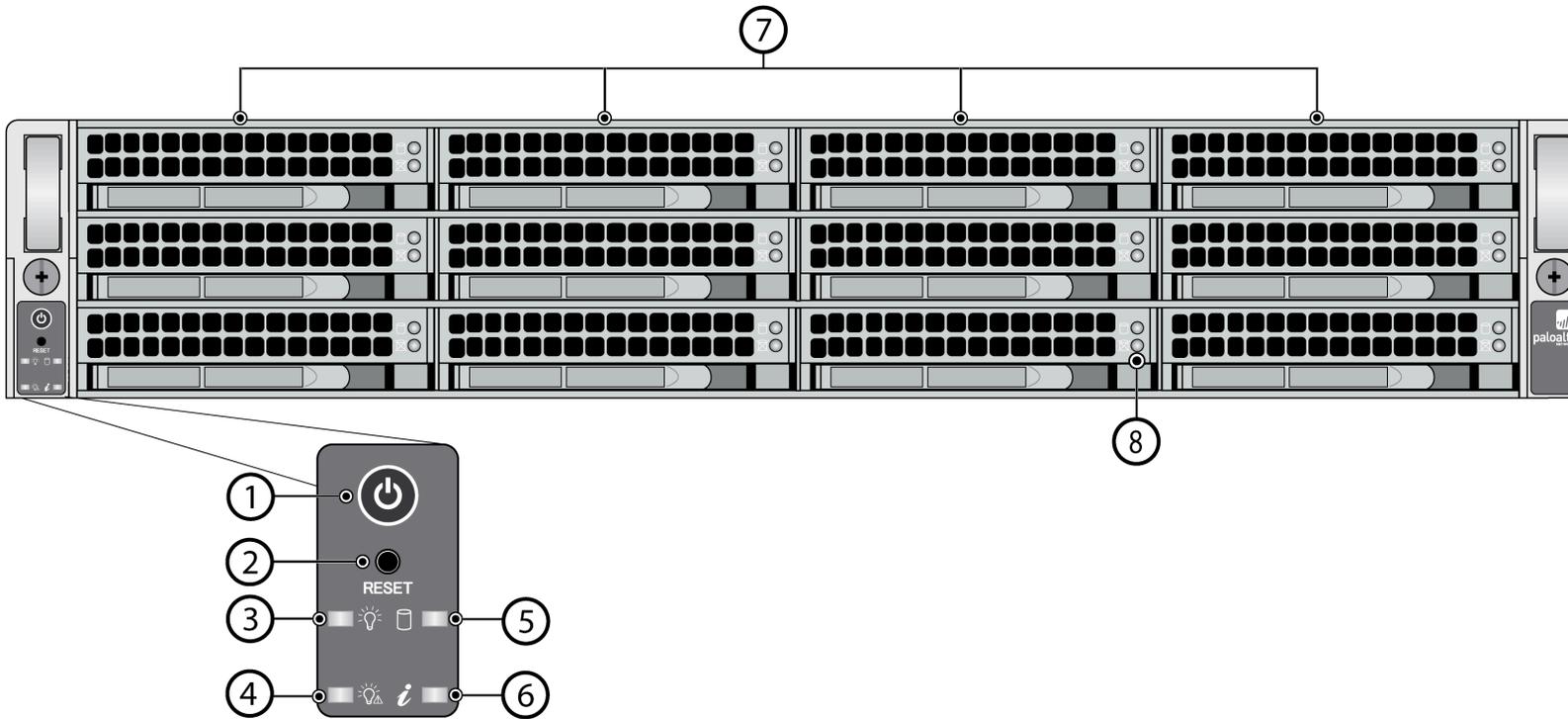


Item	Component	Description
1	Power supplies	Use the AC power supply inputs to connect power to the appliance. The second power supply is for redundancy.
2	Ethernet ports	<p>Two RJ-45 100Mbps/1Gbps/10Gbps Ethernet ports. While facing the back of the appliance, the ports are labeled as follows:</p> <ul style="list-style-type: none"> <li> <i>The port labels are located on top of the appliance.</i></li> <li><b>Left</b>—Management (MGT) port used for managing the appliance and for data traffic.</li> <li><b>Right</b>—Ethernet1/1</li> </ul> <p>For information on configuring these ports, refer to the Panorama™ Administrator's Guide on the <a href="#">Technical Documentation Portal</a> for the release version running on your appliance.</p>
3	USB ports	Not used.
4	IPMI port	Not used.

Item	Component	Description
5	Console port	<p>Use this port to connect a management computer to the appliance using a 9-pin serial cable and terminal emulation software.</p> <p>The console connection provides access to appliance boot messages, the Maintenance Recovery Tool (MRT), and the command line interface (CLI).</p> <p> <i>If your management computer does not have a serial port, use a USB-to-serial converter.</i></p> <p>Use the following settings to configure your terminal emulation software to connect to the console port:</p> <ul style="list-style-type: none"><li>• Data rate: 9600</li><li>• Data bits: 8</li><li>• Parity: None</li><li>• Stop bits: 1</li><li>• Flow control: None</li></ul>
6	Unique Identification (UID) LED	<p>UID LED that illuminates bright blue when you push the UID button on the front of the appliance.</p> <p>For information on using the UID feature, see the UID button description for the <a href="#">M-300 Appliance Front Panel</a>.</p>

## M-700 Appliance Front Panel

The following image shows the front panel of the M-700 appliance and the table describes each front-panel component.



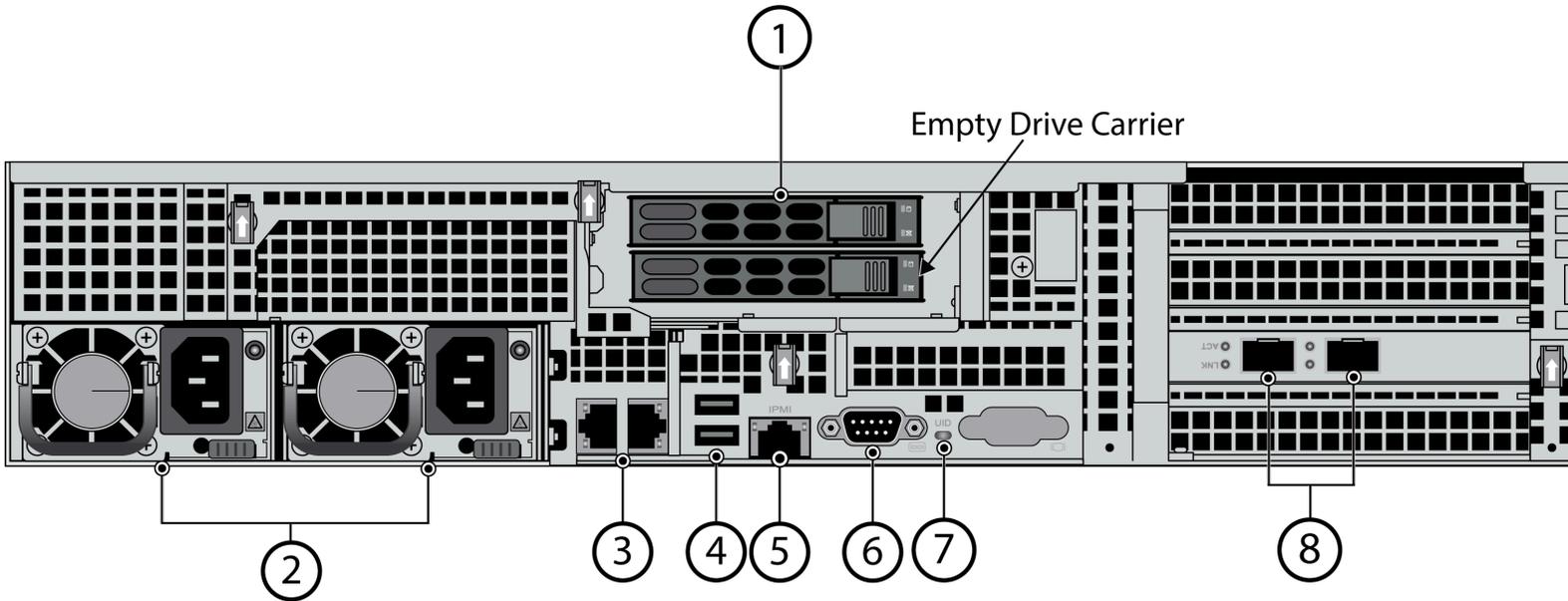
Item	Component	Description
1	Power button	Press this button to power on or power off the appliance. Powering off the appliance with this button puts the appliance in standby power mode. To completely power off the appliance, you must disconnect the AC power cords from both power supplies.
2	Reset button	Functions identically to the UID button on the <a href="#">M-300 Appliance Front Panel</a> .  Use the UID feature to help you locate the appliance when you move from the front to the back of the equipment rack where the appliance is installed. When you push the UID button to enable the UID feature, both the front-panel System information LED and the back-panel UID LED illuminate bright blue to help you locate the appliance when you move between opposite sides

Item	Component	Description
		of the equipment rack. Push the UID button again to deactivate these LEDs.
3	Power LED	Solid green indicates that the appliance is powered on.
4	Power failure LED	Solid red indicates that either a power supply failed or that there is no power source connected to a power supply.
5	Hard-disk drive (HDD) LED	Blinking yellow indicates IDE channel activity (SAS/SATA drive) on the front log drives.
6	System information (overheat and UID) LED	<ul style="list-style-type: none"> <li>• <b>Solid red</b>—An overheat condition occurred.</li> <li>• <b>Blinking red at the rate of one blink per second (1Hz)</b>—A fan failure occurred.</li> <li>• <b>Blinking red at the rate of one blink every four seconds (.25Hz)</b>—One of the two power supplies is not providing power to the appliance (possibly because a power supply failed or because there is no power source connected to the power supply).</li> <li>• <b>Solid blue</b>—The UID feature is activated (see the UID button description for the <a href="#">M-700 Appliance Back Panel</a>.)</li> </ul>
7	Hard-disk drives (HDDs)	<p>Disk drive bays and HDDs used for log storage. From left to right (starting at the top-left), the drive bays are labeled A1, A2, B1, B2, C1, C2, D1, D2, E1, E2, F1, and F2. By default, the M-700 ships with four HDDs installed in A1, A2, B1, and B2. You can install up to eight additional drives (four additional RAID 1 pairs) in the remaining drive bays to increase log storage capacity.</p> <p>Each pair of drives is in a RAID 1 configuration. For example, A1/A2 is a RAID 1 pair and B1/B2 is a RAID 1 pair.</p> <p>For details on storage capacity, refer to the <a href="#">Panorama Datasheet</a>. For details on adding additional storage to the appliance, refer the Panorama Administrator's Guide on the <a href="#">Technical Documentation Portal</a> for the release version running on your appliance.</p>
8	Hard-disk drive (HDD) LEDs	Status LEDs—two for each log drive:

Item	Component	Description
		<ul style="list-style-type: none"><li>• <b>Top LED</b>—Flashing blue indicates drive activity.</li><li>• <b>Bottom LED</b>—Solid red indicates a log drive failure.</li></ul>

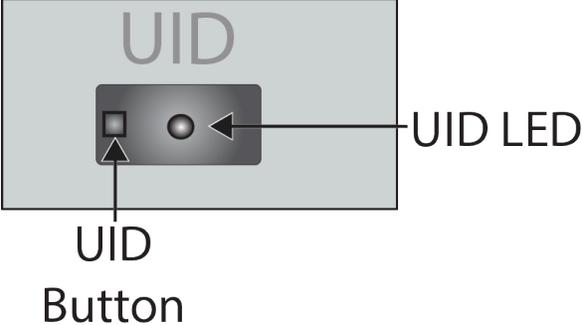
## M-700 Appliance Back Panel

The following image shows the back panel of the M-700 appliance and the table describes each back-panel component.



Item	Component	Description
1	System drive	480GB solid-state drive (SSD) used to store the operating system files and system logs.
2	Power supplies	Use the AC power supply inputs to connect power to the appliance. The second power supply is for redundancy.
3	Ethernet ports	<p>Two RJ-45 100Mbps/1Gbps/10Gbps Ethernet ports. While facing the back of the appliance, the ports are labeled as follows:</p> <ul style="list-style-type: none"> <li> <i>The port labels are located on top of the appliance.</i></li> <li><b>Left</b>—Management (MGT) port used for managing the appliance and for data traffic.</li> <li><b>Right</b>—Ethernet1/1</li> </ul> <p>For information on configuring these ports, refer to the Panorama™ Administrator's Guide on the <a href="#">Technical Documentation Portal</a> for the release version running on your appliance. If the appliance</p>

Item	Component	Description
		is in PAN-DB mode, refer to the appropriate release-specific PAN-OS® Administrators Guide.
4	USB ports	Not used.
5	IPMI port	Not used.
6	Console port	<p>Use this port to connect a management computer to the appliance using a 9-pin serial cable and terminal emulation software.</p> <p>The console connection provides access to appliance boot messages, the Maintenance Recovery Tool (MRT), and the command line interface (CLI).</p> <p> <i>If your management computer does not have a serial port, use a USB-to-serial converter.</i></p> <p>Use the following settings to configure your terminal emulation software to connect to the console port:</p> <ul style="list-style-type: none"> <li>• Data rate: 9600</li> <li>• Data bits: 8</li> <li>• Parity: None</li> <li>• Stop bits: 1</li> <li>• Flow control: None</li> </ul>
7	Unique Identification (UID) button and LED	<p>Use the UID feature to help you locate the appliance when you move from the back to the front of the equipment rack where the appliance is installed. When you push the UID button to enable the UID feature, both the front-panel System information LED and the back-panel UID LED illuminate bright blue to help you locate the appliance when you move between opposite sides of the equipment rack. The back-panel UID LED is located to the right of the UID button. Push the UID button again to deactivate these LEDs.</p>

Item	Component	Description
		<p data-bbox="789 226 1333 359">  The UID button is very small and is located to the left of the UID LED. Use a small object, such as a paper clip, to press the button.         </p> 
8	SFP+ ports	<p data-bbox="784 779 1442 884">Two SFP+ (10Gbps) ports. While facing the back of the appliance, the left port is labeled Ethernet 1/3 and the right port is labeled Ethernet 1/2.</p> <p data-bbox="789 921 1352 989">  The port labels are located on top of the appliance.         </p> <p data-bbox="789 1026 1308 1131">  Ethernet 1/2 and Ethernet 1/3 are configured as link aggregation group (LAG) ports and cannot be changed.         </p> <p data-bbox="784 1165 1406 1371">For information on configuring these ports, refer to the Panorama™ Administrator's Guide on the <a href="#">Technical Documentation Portal</a> for the release running on your appliance. If the appliance is in PAN-DB mode, refer to the appropriate release-specific PAN-OS® Administrators Guide.</p>



# Install the M-300 and M-700 Appliance

The following topics describe how to install the M-300 and M-700 appliances in an equipment rack and how to connect power to them.

- [Install the M-300 or M-700 Appliance in an Equipment Rack](#)
- [Connect Power to an M-300 or M-700 Appliance](#)

# Install the M-300 or M-700 Appliance in an Equipment Rack

The following topics describe how to install the M-300 and M-700 appliances in an equipment rack.

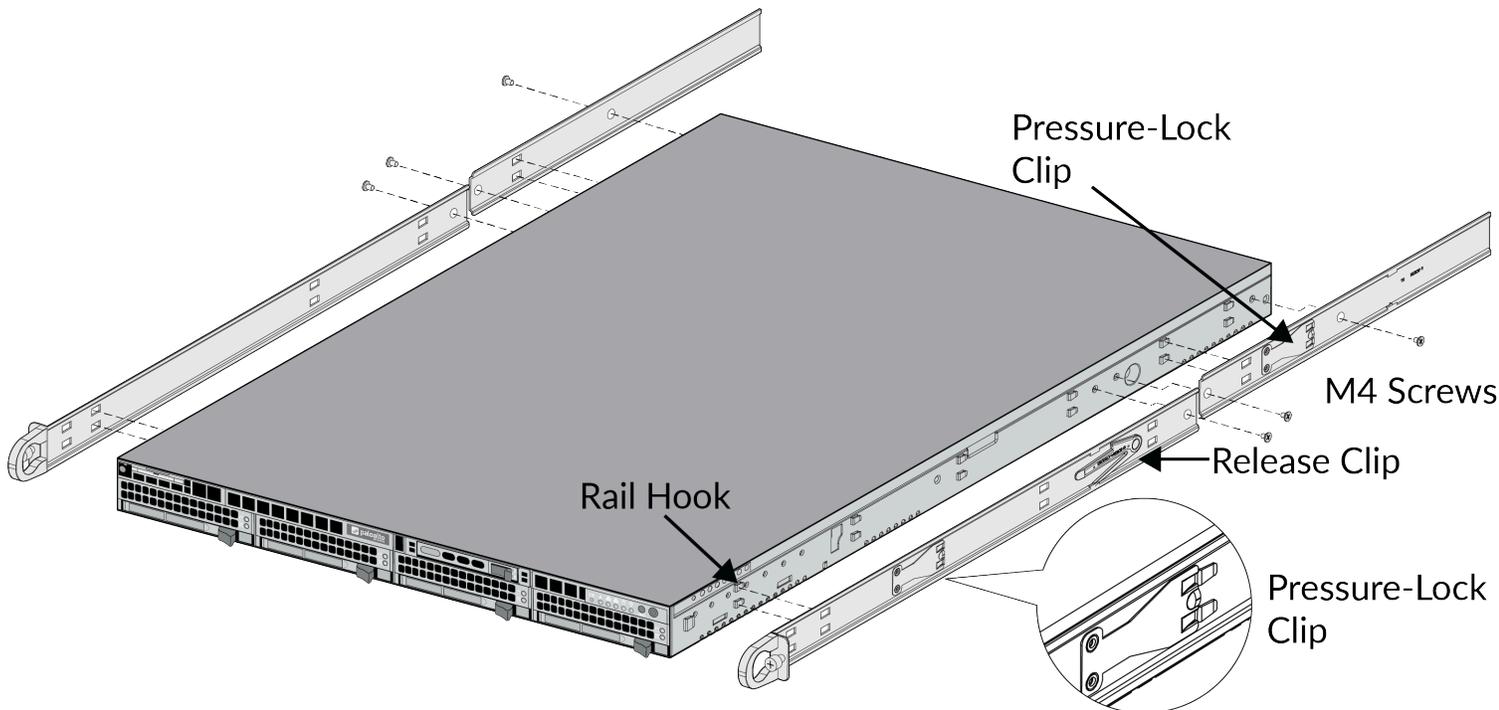
- [Install the M-300 Appliance in a 19" Equipment Rack](#)
- [Install the M-700 Appliance in a 19" Equipment Rack](#)

## Install the M-300 Appliance in a 19" Equipment Rack

The following procedure describes how to install the M-300 appliance in a four-post equipment rack (shipped with the appliance). The rack kit includes the hardware required to install the appliance in most equipment racks. Extra screws and washers are included.

**STEP 1 |** Attach the inner rail sets (two each) to each side of the appliance by aligning the square holes on each rail with the rail hooks on the appliance and then sliding the rails toward the front of the appliance to engage the hooks. Secure the back inner-rails using two M4 screws for each rail and secure the front inner-rails using one M4 screw for each rail.

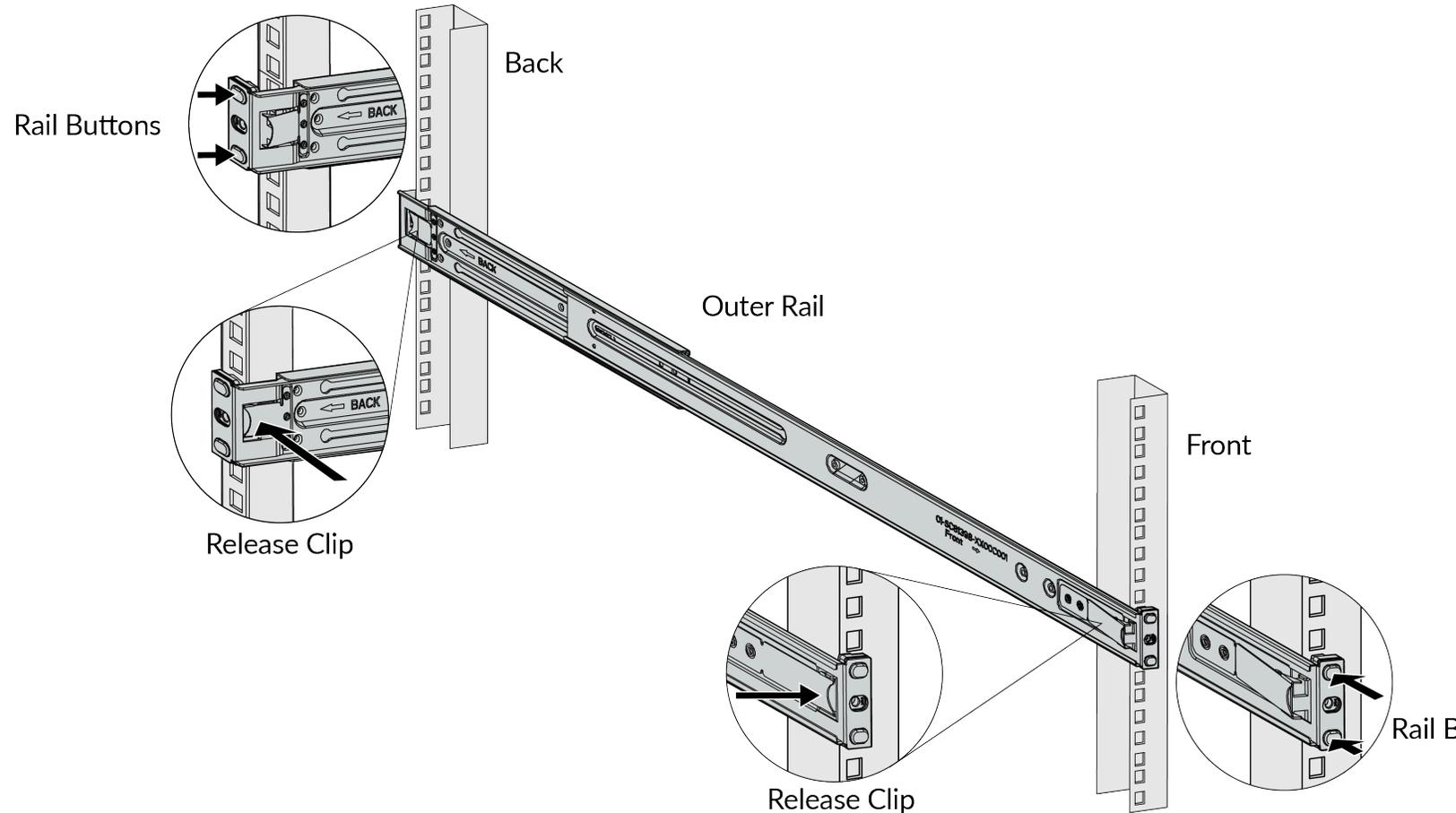
 *The inner-rails also use pressure-lock clips that lock the rails to the appliance. Remove the two M4 screws and pull the metal tab on the clips to remove the rail from the appliance.*



**STEP 2 |** Install one outer rack-mount rail assembly (two rails each) on each side of the equipment rack. Push the rail buttons in on the ends of the rails, insert the studs in to the square rack

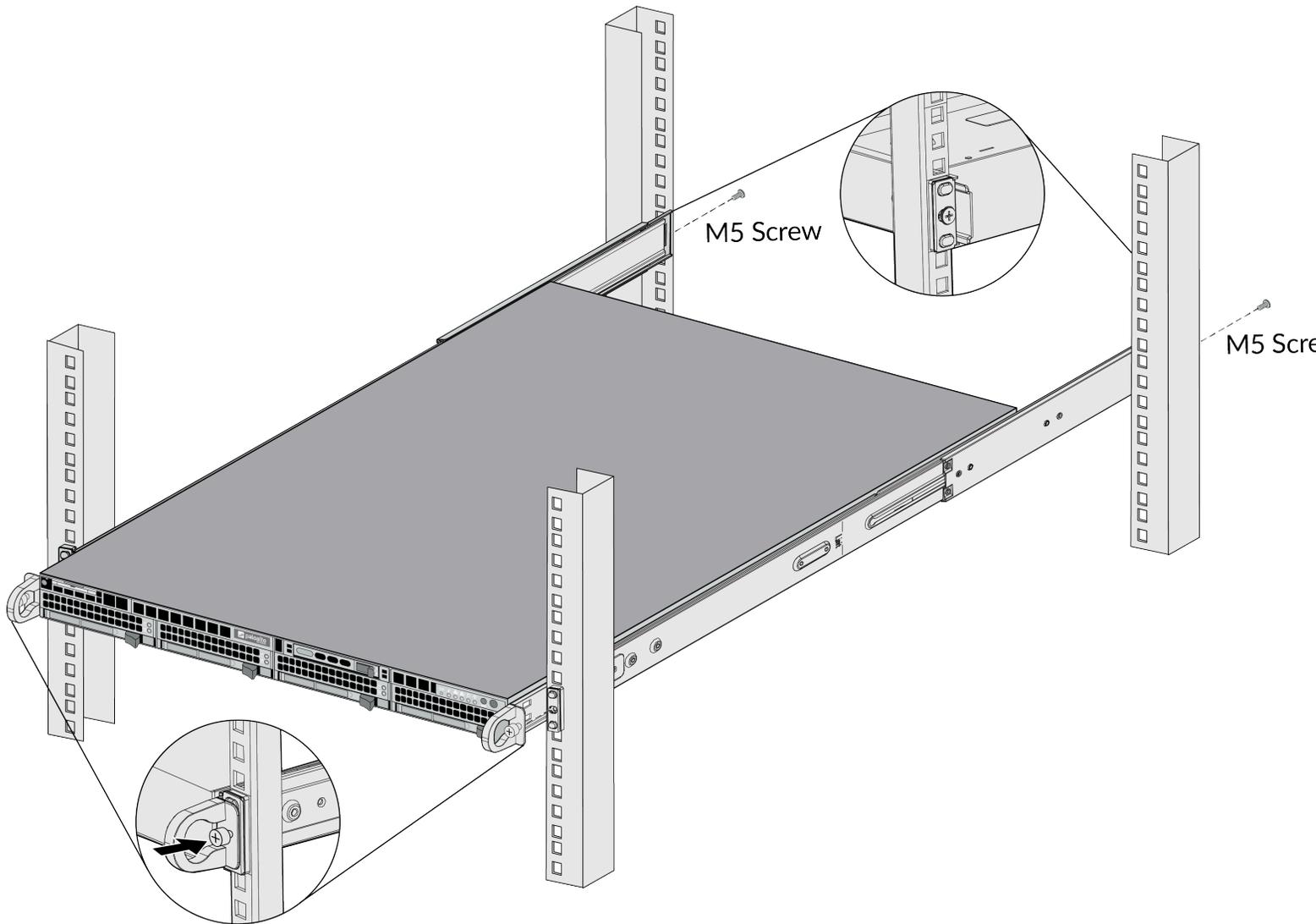
holes, and then release the buttons to secure the rails to the rack. The following image shows the right side of the rack if you are facing the front of the rack.

 To remove the outer rails from the rack, you must pull the release clips located at the front and back end of each rail assembly to release the rails from the rack.



**STEP 3 |** Install the firewall in to the equipment rack by sliding the inner-rails in to the outer rack-mount rails until the appliance stops (about halfway in to the rack). Push the inner-rail release clips on each side of the two rails (push the left clip up and the right clip down) to release

the appliance and then continue to slide the appliance in to the rack until the front of the appliance is flush with the front of the rack. The inner-rail release clips are shown in step 1.



**STEP 4 |** Secure the front of the appliance to the rack by turning the front thumb screws on each rail clockwise until tight. Secure the back rail to the rack using one M5 screw (with washer) for each rail.

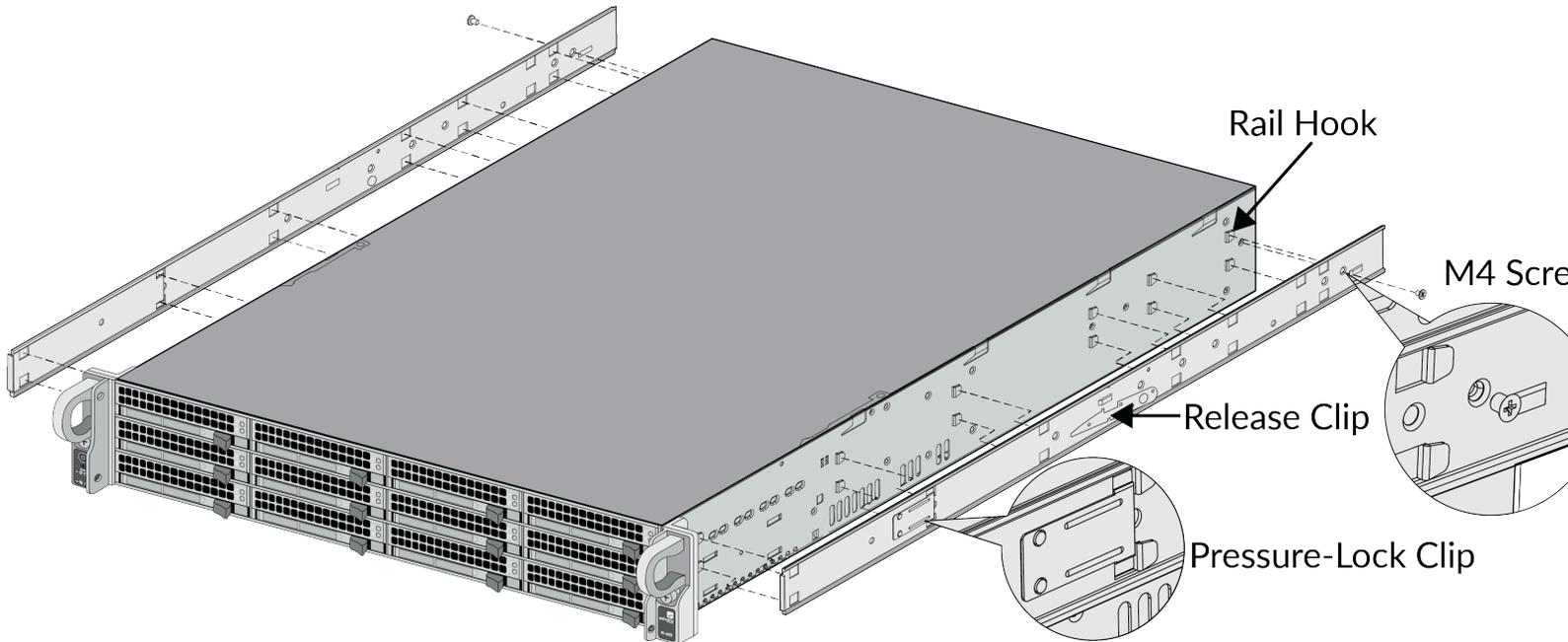
## Install the M-700 Appliance in a 19" Equipment Rack

The following procedure describes how to install the M-700 appliance in a four-post equipment rack (shipped with the appliance). The rack kit includes the hardware required to install the appliance in most equipment racks. Extra screws and washers are included.

**STEP 1 |** Attach the inner-rails to each side of the appliance by aligning the square holes on each rail with the rail hooks on the appliance and then sliding the rails toward the front of the

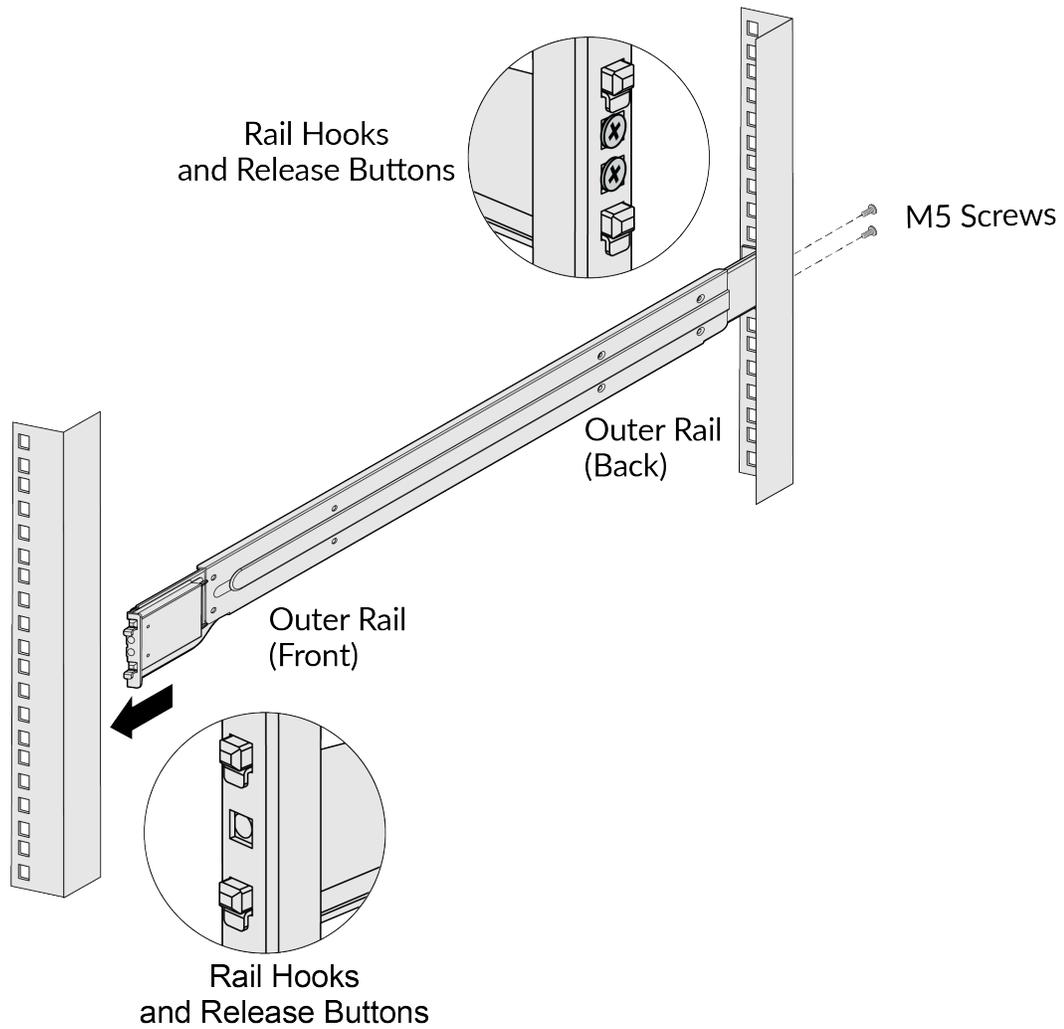
appliance to engage the hooks. Secure the back part of each rail to the appliance using one M4 screw for each rail.

 *The inner-rails also use a pressure-lock clip (one on each rail) that locks the rails to the appliance. Remove the M4 screw and pull the metal tab on the clip to remove the rail from the appliance.*



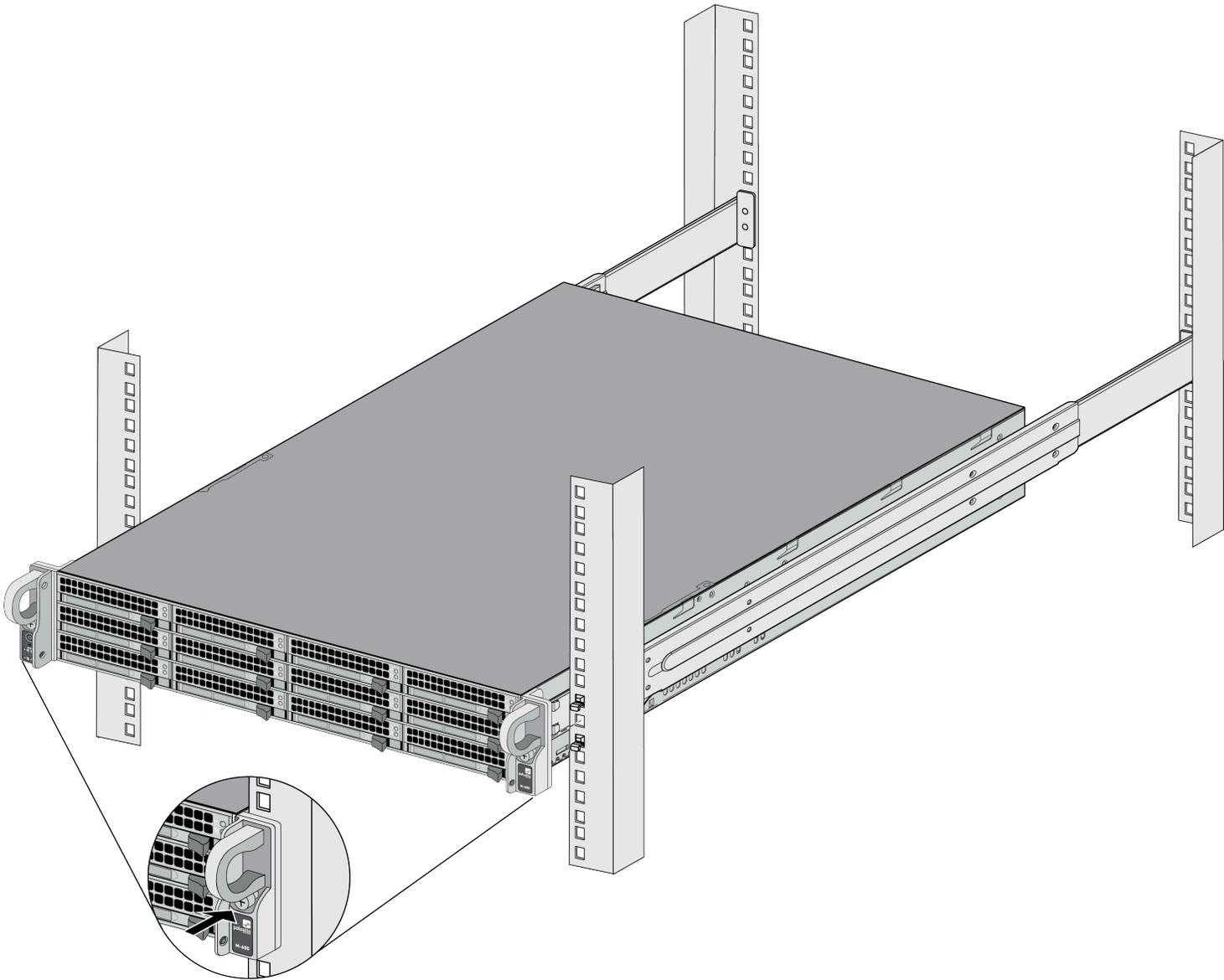
**STEP 2 |** Install one outer rack-mount rail to each side of the equipment rack. Push the two rail hooks (on the front and back of each rail) in to the square rack holes and push down to engage the hooks. The release buttons located above each rail hook will depress as you push the rail hooks in to the square holes. Secure the back of each rail to the rack using two M5 screws

(with washers) for each rail. The following image shows the right side of the rack if you are facing the front of the rack.



**STEP 3 |** Install the appliance into the equipment rack by sliding the inner-rails into the outer rack-mount rails until the appliance stops (about halfway into the rack). Push the inner-rail release clips on each side of the two rails to release the appliance and then continue to slide the

appliance in to the rack until the front of the appliance is flush with the front of the rack. The inner-rail release clips are shown in step 1.



**STEP 4 |** Secure the front of the appliance to the rack by turning the front thumb screws on each rail clockwise until tight.

## Connect Power to an M-300 or M-700 Appliance

M-300 and M-700 appliances have two AC power supplies (the second power supply is for redundancy). For details on power requirements and power consumption, see [M-300 and M-700 Electrical Specifications](#).

- [Connect AC Power to an M-300 or M-700 Appliance](#)

### Connect AC Power to an M-300 or M-700 Appliance

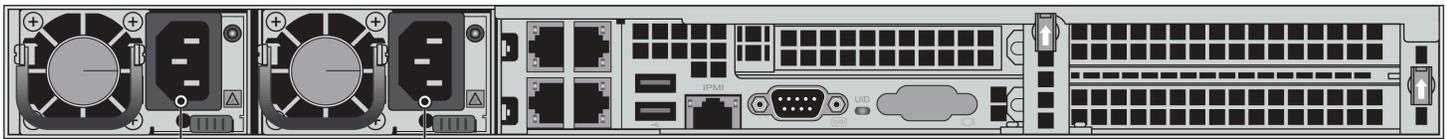
The following procedure describes how to connect AC power to an M-300 or M-700 appliance.

 *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](#).*

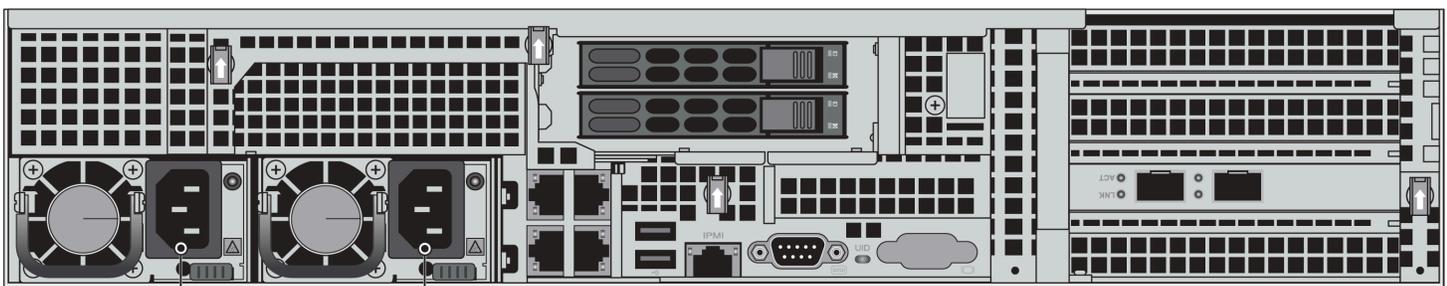
**STEP 1 |** Plug two AC power cables (provided) in to grounded wall outlets.

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

**STEP 2 |** Insert one power cord in to each of the two power supplies on the back of the appliance.



M-300 AC Power Inlets



M-700 AC Power Inlets

**STEP 3 |** Press the power button on the front of the appliance.

 *If only one power supply is connected, a warning beep will sound.*

# Service the M-300 or M-700 Appliance

The following topics describe how to replace serviceable components on an M-300 or M-700 appliance.

- [Replace an M-300 or M-700 Drive](#)
- [Replace an M-300 or M-700 Appliance Power Supply](#)

For information on interpreting the front-panel LEDs, see [M-300 and M-700 Appliance Port LEDs](#).

## Replace an M-300 or M-700 Drive

M-300 and M-700 appliances store the Panorama™ system files and system logs on a single solid-state drive (SSD) and the logs collected from Palo Alto Networks® firewalls are stored on hard-disk drives (HDDs). The HDD log drives are in RAID 1 arrays so that if a drive fails, you can replace the failed drive without service interruption.

- [Replace an M-300 or M-700 Appliance System Drive](#)
- [Replace an M-300 or M-700 Appliance Log Drive](#)

## Replace an M-300 or M-700 Appliance System Drive

If the system drive fails, the appliance attempts to boot the Maintenance Recovery Tool (MRT) where you can view error messages and drive status. If the MRT is not bootable, power down the appliance. For assistance in verifying the status of the drive to determine if it should be replaced, contact [Palo Alto Networks Support](#).

The only difference between replacing an M-300 and M-700 appliance system drive is that the system drive on an M-300 appliance is located on the front panel of the appliance (see [M-300 Appliance Front Panel](#)) and the system drive on the M-700 appliance is located on the back panel of the appliance (see [M-700 Appliance Back Panel](#)).



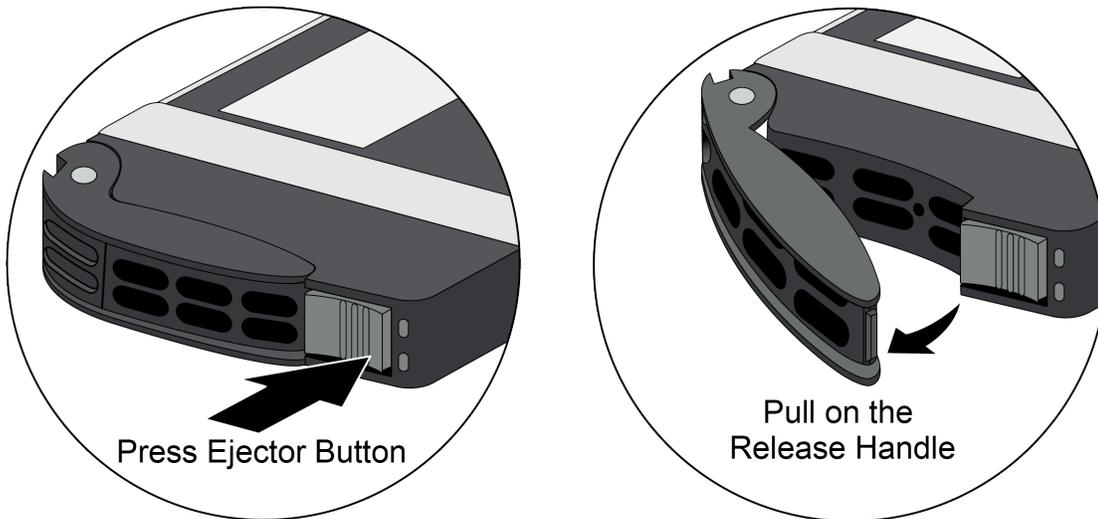
*Replacement drives ship with a factory default Panorama image with the default configuration. After you install the new drive, you will need to obtain a backup configuration that you saved from the failed appliance to [restore](#) your configuration.*



*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 |** Power off the appliance by pressing the power button on the front of the appliance and then remove the AC power cords.

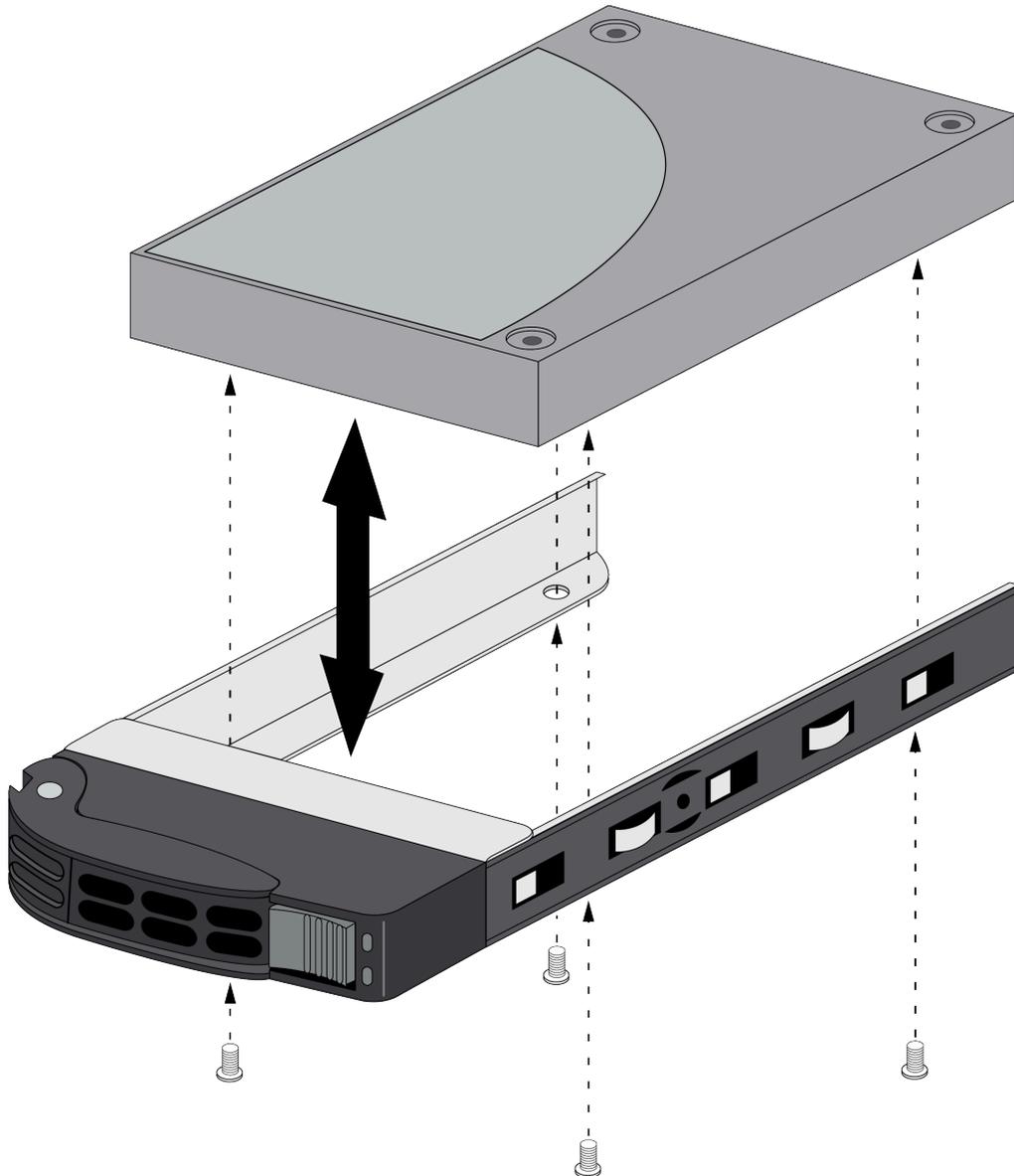
**STEP 2 |** Press the ejector button on the system drive carrier to release the carrier handle and gently pull the handle toward you to remove the carrier and drive. The following image shows an M-700 system drive; the M-300 system drive is similar.



**STEP 3 |** Remove the replacement drive from the packaging and place it on an antistatic surface.

**STEP 4 |** Install the replacement drive in the drive carrier of the failed drive.

1. Place the failed drive next to the replacement drive with the connectors facing the same direction.
2. Remove the four screws that hold the failed drive in the carrier and remove the drive from the carrier.
3. Install the replacement drive in the carrier and secure it using the four screws you removed from the failed drive.



**STEP 5 |** Install the replacement drive in the appliance.

1. Ensure that the drive carrier lever is in the open position; if it is not, press the ejector button on the drive carrier to release the lever and pull it out until it is fully open.
2. Slide the replacement drive and carrier assembly in to the empty drive bay until it is about 1/4" (.6cm) from being fully inserted.
3. Before fully inserting the drive carrier, ensure that the lever attaches to the locking mechanism on the appliance and then close the lever to seat the carrier.

**STEP 6 |** Power on the appliance and connect a standard RJ-45 Ethernet cable from the RJ-45 port on your computer to the MGT port on the appliance.

**STEP 7 |** Change the IP address on your computer to an address in the 192.168.1.0/24 network, such as 192.168.1.2.

**STEP 8 |** From a web browser, go to <https://192.168.1.1> and when prompted, log in to the web interface using the default username and password (admin/admin).

**STEP 9 |** Perform the following steps to restore the appliance:

1. Configure the appliance to access your management network (**Device > Support > Interfaces**).
2. Activate the Support license (**Device > Support**).
3. Activate licenses and subscriptions (**Device > Licenses**).
4. Upgrade or downgrade the appliance so that the software version matches the version that was installed on the failed drive.
5. Import a recent backup configuration to restore the appliance configuration (**Device > Operations Configuration Management**).

For information on configuring management access on an M-Series appliance, refer to Perform Initial Configuration of the M-Series Appliance in the Panorama™ Administrator's guide located on the [Technical Documentation](#) portal. For information on how to upgrade or downgrade an M-Series appliance, refer to the Install Content and Software Updates for Panorama in the Panorama Administrator's guide.

## Replace an M-300 or M-700 Appliance Log Drive

The M-300 and M-700 appliance log drives are located on the front of the appliance. Each drive pair (A1 and A2 for example) is in an independent RAID 1 array. This redundant configuration helps ensure that there is no service interruption or loss of log data if a disk drive fails.

When requesting a replacement log drive from Palo Alto Networks® or an authorized reseller, you will receive two new drives. The second drive is required if the failed drive is a different model than the replacement drive. In this case, replace both drives in the RAID 1 array that contains the failed drive so both drives in the array are the same model.



*Do not attempt to replace an M-300 or M-700 log drive with a third-party drive. Also, do not mix drive models within a RAID 1 array—the drive model must be the same for both drives in a RAID 1 array. You can, however, mix drive models in different RAID 1 arrays. For example, the drives in the A1/A2 array can both be model ST91000640NS and the drives in the B1/B2 array can both be model ST1000NX0423.*



The following procedure describes how to replace a log drive on an M-300 or M-700 appliance that is in Panorama™ mode or Panorama log collector mode. This procedure does not apply to an appliance in PAN-DB mode (M-700 only) or Panorama Management-only mode because the front log drives are not used for these modes.

**STEP 1 |** Identify the failed drive and record the drive model number by running the following operational command and viewing the status and model fields:

```
admin@hostname> show system raid detail
```

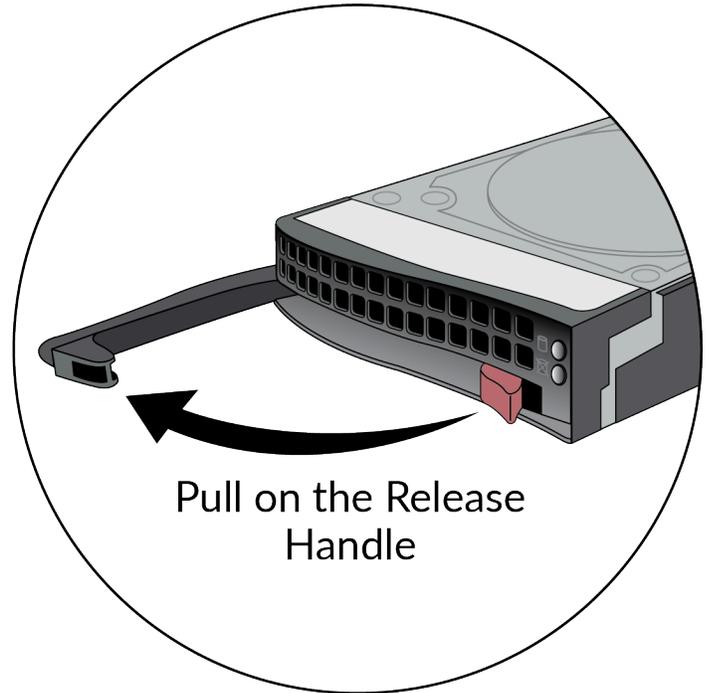
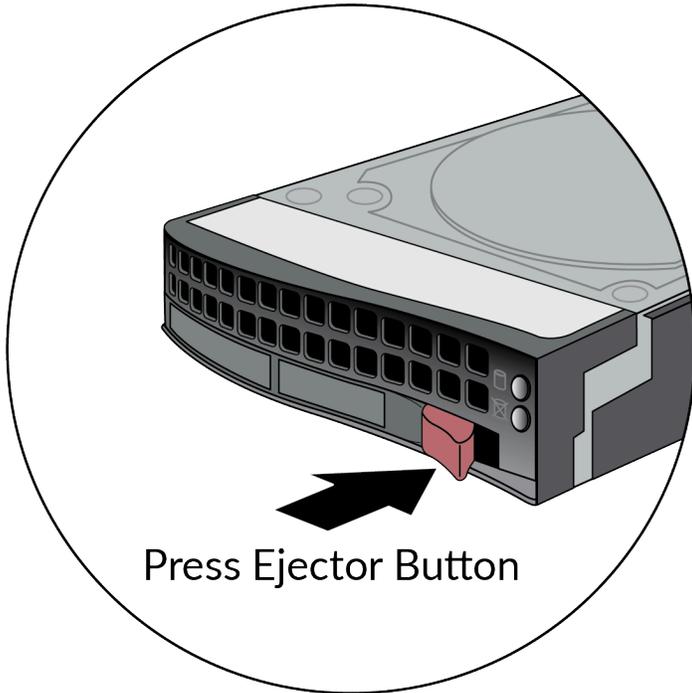
For example, the following output shows that disk drive A2 failed and the drive model is ST8000NM0055-1RM.

```
Disk Pair A Available
Status clean, degraded
Disk id A1 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : active sync
Disk id A2 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : failed
```

**STEP 2 |** Remove the failed drive from the RAID 1 array. In this example, run the following command to remove drive A2 from the array:

```
admin@hostname> request system raid remove A2
```

**STEP 3 |** Press the ejector button on the carrier of the failed drive (A2 in this example) to release the carrier handle and gently pull the handle toward you and slide the carrier out of the appliance.



**STEP 4 |** Remove the replacement drive from the packaging and compare the drive model written on the label with the drive model of the failed drive. Proceed as follows based on your findings:

- If the replacement drive is the same model number of the failed drive that you removed, then continue to Step 5.
- If the replacement drive is a different model number than the drive that you removed, then continue to Step 6.

**STEP 5 | (Same model replacement drive only)** Install a replacement disk drive that is the same model as the other drive in the RAID 1 array.

1. Ensure that the drive carrier lever on the replacement drive is in the open position; if it is not, press the ejector button on the drive carrier to release the lever and pull it out until it is fully open.
2. Slide the drive carrier in to the drive bay on the appliance until it is about 1/4" from being fully inserted. You can do this by pressing the ejector button on the carrier, which

will cause the lever to close part way. When the drive carrier is almost fully inserted, close the lever to seat the drive.

3. Add the replacement drive to the RAID 1 array. In this example, run the following command to add drive A2 to the array:

```
admin@hostname> request system raid add A2
```

The system automatically configures the new drive to mirror contents of the other drive in that RAID 1 array.

4. Continue to view RAID status by periodically re-entering the following command until you see that the disk pair (Disk Pair A in this example) shows `Available` and both drives show the status `active sync`.

```
admin@hostname> show system raid detail
```

The following output shows that the RAID 1 array is functioning properly:

```
Disk Pair A Available
Status cleanDisk id A1 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : active sync
Disk id A2 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : active sync
```

**STEP 6 | (Different model replacement drive only)** Install a replacement disk drive that is a different model than the other (still functioning) drive in the RAID 1 array:



*When you initiate the copy command as described in the following steps, logging and log query will not be available on the disk pair until the copy is complete and the disk pair shows `Available`. If the other drive pairs (B1/B2, C1/C2, and so on) are low on disk space during the copy process, older logs are deleted to make room for new logs.*

1. Ensure that the drive carrier lever on the replacement drive is in the open position; if it is not, press the ejector button on the drive carrier to release the lever and pull it out until it is fully open.
2. Slide the drive carrier in to the drive bay on the appliance until it is about 1/4" from being fully inserted. You can do this by pressing the ejector button on the carrier, which

will cause the lever to close part way. When the drive carrier is almost fully inserted, close the lever to seat the drive.

3. Copy the data from the existing drive in the RAID 1 array to the replacement drive. In this example, run the following command to copy the data from drive A1 to drive A2:

```
admin@hostname> request system raid copy from A1 to A2
```

4. Continue to view RAID status by periodically re-entering the following command until you see that the disk pair (A in this example) shows Available

```
admin@hostname> show system raid detail
```

In this example, the output shows that Disk Pair A is Available.



*At this point, drive A1 will show `not in use` because there is a drive model mismatch.*

5. Install the second replacement drive. In this example, physically remove the drive from bay A1, install it in the carrier, and then install the second replacement drive in to bay A1—one that is the same model as the new drive you installed in bay A2.
6. Add the second replacement drive to the RAID 1 array. In this example, run the following command to add drive A1 to the array:

```
admin@hostname> request system raid add A1
```

The system will automatically configure the new drive to mirror the contents of the other drive (A2 in this example) in that RAID 1 array.

7. Continue to view RAID status by periodically re-entering the following command until you see that the disk pair (A in this example) shows Available and both drives show the status `active sync`.

```
admin@hostname> show system raid detail
```

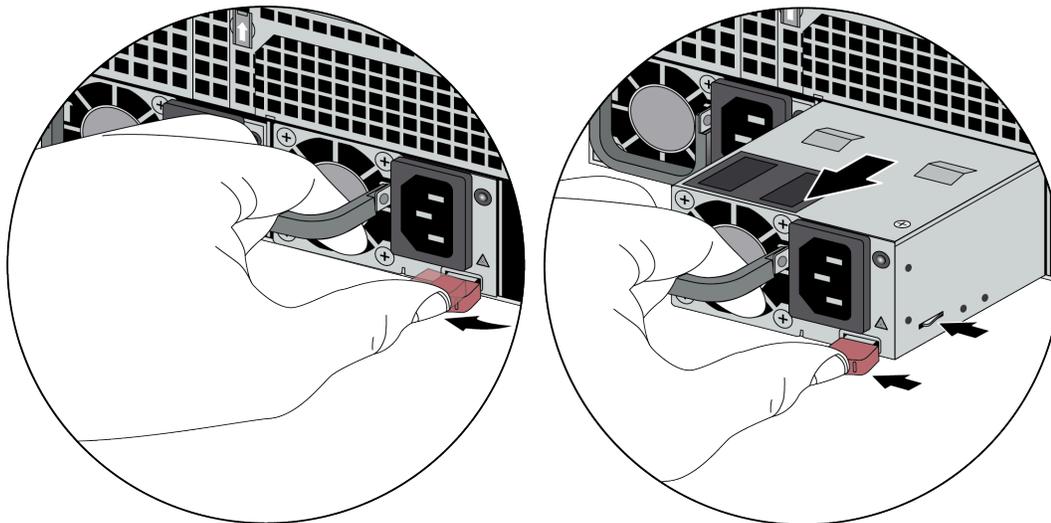
The following output shows that the RAID 1 array is functioning properly:

```
Disk Pair A Available
Status clean
Disk id A1 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : active sync
Disk id A2 Present
model : ST8000NM0055-1RM
size : 7630885 MB
status : active sync
```

## Replace an M-300 or M-700 Appliance Power Supply

M-300 and M-700 appliances have two AC power supplies (the second power supply is for redundancy). If one power supply fails, you can replace it without service interruption as described in the following procedure.

- STEP 1 |** Identify the failed power supply by viewing the power supply LED on the back of the appliance; when there is a failure, the LED turns solid yellow or turns off. The front panel system information LED also blinks red.
- STEP 2 |** Disconnect the power cord from the failed power supply.
- STEP 3 |** Grasp the handle on the failed power supply and simultaneously press the release lever to the left and then pull the power supply outward to remove it.



- STEP 4 |** Remove the replacement power supply from the packaging and slide it in to the empty power supply slot. Push the power supply all the way in until the release lever clicks and secures the power supply.
- STEP 5 |** Connect the AC power cord to the power supply input. The power supply LED turns green and the front system information LED stops blinking red.

## M-300 and M-700 Appliance Port LEDs

The following table describes how to interpret the status of port LEDs on M-300 and M-700 appliances. The only difference between the port LEDs on these appliances is that the M-700 appliance has two additional SFP+ port LEDs.

For information on interpreting the front-panel system LEDs, see [M-300 Appliance Front Panel](#) or [M-700 Appliance Front Panel](#) descriptions.

LED	Description
RJ-45 Ethernet port LEDs	
LNK (Link) LED	<ul style="list-style-type: none"> <li>• <b>Off</b>—No link</li> <li>• <b>Green</b>—100Mbps link</li> <li>• <b>Yellow</b>—1Gbps link</li> </ul>
ACT (Activity) LED	Flashing yellow indicates network activity.
SFP+ port LEDs ( <b>M-700 appliance only</b> )	
LNK (Link) LED	<ul style="list-style-type: none"> <li>• <b>Off</b>—No link</li> <li>• <b>Green</b>—1Gbps link</li> <li>• <b>Yellow</b>—10Gbps link</li> </ul>
ACT (Activity) LED	Flashing yellow indicates network activity.



# M-300 and M-700 Appliance Specifications

The following topics describe the M-300 and M-700 appliance hardware specifications. For feature, capacity, and performance information, refer to the [Panorama™ Datasheet](#).

- [M-300 and M-700 Physical Specifications](#)
- [M-300 and M-700 Electrical Specifications](#)
- [M-300 and M-700 Environmental Specifications](#)
- [M-300 and M-700 Miscellaneous Specifications](#)

## M-300 and M-700 Physical Specifications

The following table describes M-300 and M-700 appliance physical specifications.

Specification	Value
Rack units (U) and dimensions	<ul style="list-style-type: none"> <li>• <b>M-300 appliance</b> <ul style="list-style-type: none"> <li>• <b>Rack unit</b>—1U</li> <li>• <b>Dimensions</b>—1.7" H x 29" D x 17.2" W (4.32cm H x 73.67cm D x 43.69cm W)</li> </ul> </li> <li>• <b>M-700 appliance</b> <ul style="list-style-type: none"> <li>• <b>Rack unit</b>—2U</li> <li>• <b>Dimensions</b>—3.5" H x 28.46" D x 17.2" W (8.89cm H x 72.29cm D x 43.69cm W)</li> </ul> </li> </ul>
Weight	<ul style="list-style-type: none"> <li>• <b>M-300 appliance</b> <ul style="list-style-type: none"> <li>• <b>Appliance weight</b>—26lbs (11.79Kg)</li> <li>• <b>Shipping weight</b>—41lbs (18.59Kg)</li> </ul> </li> <li>• <b>M-700 appliance</b> <ul style="list-style-type: none"> <li>• <b>Appliance weight</b>—36lbs (16.33Kg)</li> <li>• <b>Shipping weight</b>—72lbs (32.66Kg)</li> </ul> </li> </ul>

## M-300 and M-700 Electrical Specifications

The following table describes M-300 and M-700 appliance electrical specifications.

Specification	Value
Power Supplies	<b>M-300 and M-700 appliances</b> —Two 1200W AC power supplies; the second power supply is for redundancy.
Input voltage and frequency	<b>M-300 and M-700 appliance</b> —100-240VAC (50-60Hz)
Power consumption	<ul style="list-style-type: none"><li>• <b>M-300 appliance</b>—330W</li><li>• <b>M-700 appliance</b>—486W</li></ul>
Maximum current consumption	<b>M-300 and M-700 appliance</b> —9.5A@100VAC, 4.5A@240VAC
Maximum inrush current (per power supply)	<ul style="list-style-type: none"><li>• <b>M-300 appliance</b>—35A</li><li>• <b>M-700 appliance</b>—35A</li></ul>

## M-300 and M-700 Environmental Specifications

The following table describes M-300 and M-700 appliance environmental specifications.

Specification	Value
Operating temperature range	<b>M-300 and M-700 appliance</b> —41°F to 104°F (5°C to 40°C)
Non-operating temperature	<b>M-300 and M-700 appliance</b> — -40°F to 140°F (-40°C to 60°C)
Humidity tolerance	<b>M-300 and M-700 appliance:</b> <ul style="list-style-type: none"> <li>• <b>Operating relative humidity (non-condensing)</b>—8% to 90%</li> <li>• <b>Non-operating relative humidity (non-condensing)</b>—5% to 95%</li> </ul>
Airflow	<b>M-300 and M-700 appliance</b> —Front-to-back
Maximum BTU/hr	<ul style="list-style-type: none"> <li>• <b>M-300 appliance</b>—1,114BTU/hr (127VAC) and 1,090BTU/hr (240VAC)</li> <li>• <b>M-700 appliance</b>—1,803BTU/hr (127VAC) and 1,765BTU/hr (240VAC)</li> </ul>
Electromagnetic Interference (EMI)	<b>M-300 and M-700 appliance</b> —FCC Part 15, EN 55032, CISPR 32
Maximum operating altitude	<b>M-300 and M-700 appliance</b> —7,500ft (2,286m)

## M-300 and M-700 Miscellaneous Specifications

The following table describes M-300 and M-700 appliance miscellaneous specifications.

Specification	Value
Mean time between failures (MTBF)	<ul style="list-style-type: none"><li>• <b>M-300 appliance</b>—10 years</li><li>• <b>M-700 appliance</b>—8 years</li></ul>

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# M-300 and M-700 Appliance Hardware Compliance Statements

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 M-300 and M-700 appliances, see [M-300 and M-700 Compliance Statements](#).

## M-300 and M-700 Compliance Statements

- **BSMI EMC Statement**—User warning: This is a Class A product. When used in a residential environment it may cause radio interference. In this case, the user will be required to take adequate measures.
  - **Manufacturer**—Super Micro Computer, Inc.
  - **Country of Origin**—Made in the USA with parts of domestic and foreign origin.
- **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 (2014/30/EU).

The above product conforms with Low Voltage Directive 2014/35/EU and complies with the requirements relating to electrical equipment designed for use within certain voltage limits.

- **Federal Communications Commission (FCC) statement for a Class A digital device or peripheral**—This equipment has been tested and found to comply with the limits for a Class A 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 A digital apparatus complies with Canadian ICES-003.

**French translation:** Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

- **Korean Communications Commission (KCC) Class A Statement**—This equipment is an electromagnetic compatible device for business purposes (Class A). The provider or user should be aware that the equipment is intended for use outside the home.
- **Technischer Überwachungsverein (TUV)**



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

- **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 A requirements:

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

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

