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TECHDOCS

ION 1000 Hardware Reference

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About the Documentation

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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.

- Tamper Proof Statement
- Third-Party Component Support
- Product Safety Warnings

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.

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Third-Party Component Support

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

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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).
- (ION 7000 and ION 9000 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.
- WAN and LAN ethernet ports are suitable for interconnection to other local device ethernet ports. These ports are not designed for direct connection to Public Switched Telephone Network (PSTN) ports or interfaces. In addition, copper-based WAN ports, LAN ports, and copper-based modular transceivers are not rated to connect to Telecommunications Outside Plant (OSP) cabling.

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- (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.

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ION 1000 Overview

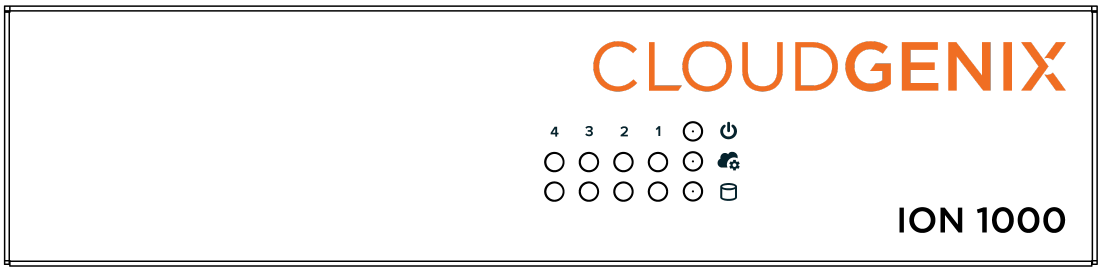
Learn about the Prisma SD-WAN ION 1000 and then plan your deployment.

- ION 1000
- ION 1000 Ports
- ION 1000 Front Panel with LEDs
- ION 1000 Specifications
- ION 1000 Compliance Statement
- ION 1000 Installation Kit Components
- Power on the ION 1000

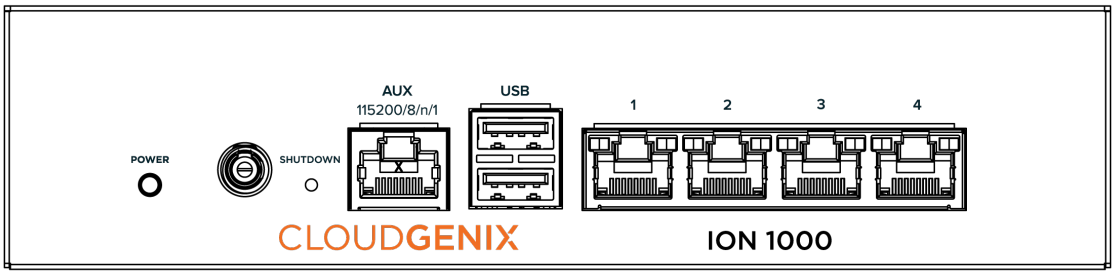
ION 1000

The Prisma SD-WAN Instant-On Network (ION) 1000, designed for the enterprise branch site only, transforms legacy wide area networks (WANs), enabling you to combine heterogeneous underlying transports into a unified hybrid WAN. It establishes service-level agreements (SLAs) for security, path selection, and application performance. It also helps gain direct insight into end user application performance for traditional, SaaS, modern encrypted applications.

Deploy the ION 1000 in a standalone fashion without a data center device, thereby, enabling granular control and visibility for direct-to-internet deployment scenarios.



FRONT



BACK

The ION device participates in bi-directional communications with the Prisma SD-WAN controller, enabling configuration of devices, applications, and WANs. It can be deployed as follows:

- Standalone Prisma SD-WAN ION 1000 (No HA)
- Prisma SD-WAN ION 1000 deployed as an HA pair

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ION 1000 Ports

The ports on the ION 1000 are used as follows:

Ports	Description
AUX	This port is an auxiliary access port intended for offline access, configuration, and troubleshooting of a system during installation.
Internet/LAN/WAN Ports	Ports 1- 4 are individual ports, used for internet, local area network (LAN), or multi-path label switching (MPLS) connectivity. By default, all ports 1- 4 are DHCP-enabled ports. On the LAN port, configure the application reachability probe to monitor the reachability of an application on a given path. If you do not configure a port for the application probe, an alarm is raised to indicate that application probe is disabled.

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ION 1000 Front Panel with LEDs

The Prisma SD-WAN ION 1000 LEDs indicate the following status:

Icons	Description
Displays disk status.	Orange light (Blinking)—Disk activity.
Displays controller connectivity status.	Green light—Connected. Red light—Not Connected.
Displays power status.	Green light—Powered On. No light—Powered Off.

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ION 1000 Specifications

The ION 1000 device specifications are shown below:

Feature	Description
I/O	
WAN/LAN/Internet	4 x 10/100/1000 RJ-45
Throughput	
Throughput (encrypted 1400 byte packets)	250 Mbps
Throughput (encrypted 600 byte packets)	100 Mbps
Power and Mechanical	
Type or Watts	1 36W Power Adapter
Power Input	AC 100~240 V @50~60 Hz
Fan cooling	Fanless
Certifications	
Certifications	FCC/UL, CE (EMC)
Environmental	
Operating temperature	32°F to 104°F (0°C to 40°C)
Storage temperature	-4°F to 158°F (-20°C to 70°C)
Operating humidity	5% to 90% (non-condensing)
Storage humidity	5% to 95% (non-condensing)
Mounting Options	Rack Mounting, Wall Mounting
Physical	
Weight	2.20lbs
Dimensions	7.28" x 1.73" x 5.39"

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Feature	Description
Local network Access	Typically a downstream Layer 2 (L2) or Layer 3 (L3) Ethernet switch and/or a Wireless Access Point (WAP).
Internet connectivity	This connectivity is used to reach the Prisma SD-WAN controller. It can be in the form of a private connection by an MPLS network through a corporate data center. It can also be a public internet connection provided through a local or broadband connection.

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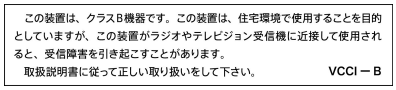
ION 1000 Compliance Statement

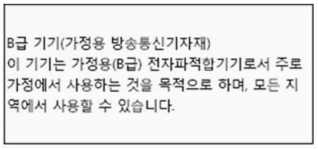
The following lists the ION device hardware compliance statements:

- **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.

- **KCC**



  Translation: Korean Communications Commission (KCC) Class B Statement—This equipment is an electromagnetic compatible device for business purposes (Class B). The provider or user should be aware that the equipment is intended for use outside the home.

- **UL**: 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.

- **CE (European Union (EU) Electromagnetic Compatibility Directive)**

  The ION devices that do not contain radios (ION 1200) comply with the requirements set out in the Electromagnetic Compatibility Directive (2014/30/EU) and the Low Voltage Directive 2014/35/EU.

  The ION devices with radios (ION 1200-C-ROW, ION 1200-C5G-WW) comply with the requirements set out in the Radio Equipment Directive (2014/53/EU).

- **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

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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 EMC Compliance Statement)**: This Class B digital apparatus complies with Canadian ICES-003.

  French Translation: Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

- **Declaration of the Presence Condition of the Restricted Substances Marking.**

限用物質含有情況標示聲明書
Declaration of the Presence Condition of the Restricted Substances Marking

證書號碼／受理編號：(No.) 新申請
Certificate No./Application No.
商品標籤及商品檢驗標識：(Picture)
Product Label and Commodity Inspection Mark.
樣張及其標示位置：(Description and Picture)
Sample and its location

設備名稱： 網路服務器 ，型號（型式）：ION 2000
Equipment name Type designation (Type)

單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
固態硬碟 HDD	–	○	○	○	○	○
金屬機構件 ME metal part	○	○	○	○	○	○
塑膠機構件 ME plastic part	–	○	○	○	○	○
配件(例：電源線等) Accessory (ex:cable, etc.)	–	○	○	○	○	○
印刷電路板元件 PCBA	–	○	○	○	○	○

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。
Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.
備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 2：“○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
備考3.〝–〞係指該項限用物質為排除項目。
Note 3：The “–” indicates that the restricted substance corresponds to the exemption.

茲切結保證所提供之商品限用物質含有情況標示內容係經執行測試作業或採適當之品質管理措施，並備置前述相關文件，確認正確無誤後提供貴局。並同意配合貴局執行後市場管理作業所需，依商品檢驗法第49條之規定，於限期28個工作天內提供相關證明文件以供審查。
I hereby ensure that “the presence conditions of the restricted substance” provided above have been proved by testing or appropriate quality control measures, and make sure the relevant documents provided are correct and ready. Also, I agree to cooperate with BSMI, as the Article 49 of the Commodity Inspection Act stipulates, to provide the relevant documents, if needed, for verification within 28 working days when BSMI carries out the market surveillance activities.

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ION 1000 Installation Kit Components

The ION 1000 installation kit contains the following parts and tools to install the device:

- 1x 36W power adapter.
- 1x power cord, which varies depending on the country or region.

The following optional hardware parts must be ordered separately:

- Additional external power supply kit:
  - 1x power adapter.
  - 1 x region specific power cable.
  - 1x USB to RJ45 serial cable.
- Rack mount kit.
- Wall mount kit.

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Power on the ION 1000

Connect the power cables to the ION device and plug the device power cable into an AC power outlet. When you switch on the power, the device is powered on and the power indicator turns green.

Reboot the ION 1000

Press the power switch 3 or 4 times to reboot the ION 1000.

Shut Down the ION 1000

Shut down the ION 1000 in the following ways:

- Shut down using the Device Toolkit commands

  Run the device toolkit command `debug shutdown` to shut down the device.

  Ensure the device is physically accessible to turn it back on, before executing the command.

- Shut down using the Power Switch

  Press the power switch 5 times (press and hold for 1 second, then, release) to shut down the device.

- Shut down using a Python script

  Gracefully shut down a single ION device or multiple ION devices using a script.

  First generate an API token and add it to `cloudgenix_settings.py` and then execute the command `./shutdown.py --serial <20-019291-9468>`. To shut down multiple devices, add the serial numbers of the ION devices as shown below:

```
./shutdown.py --serial 20-019291-9468
 ./shutdown.py --serial 20-019291-9469
 ./shutdown.py --serial 20-019291-9470
```

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Install the ION 1000

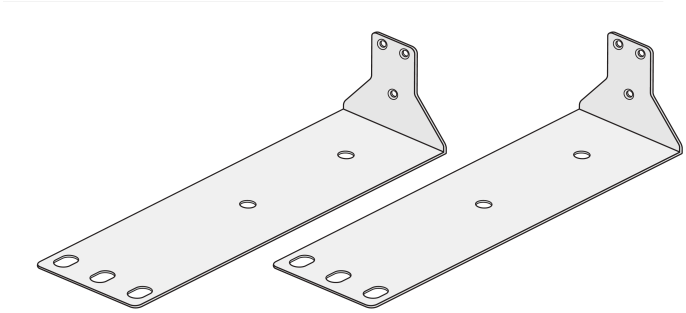
The ION 1000 can be installed to replace the existing router or deployed with an existing router without modifying any of the network settings at the remote office:

- Rack Mount the ION 1000
- Wall Mount the ION 1000
- Install the ION 1000 by Replacing an Existing Router
- Install the ION 1000 With an Existing Router
- Install the ION 1000 in Control Mode

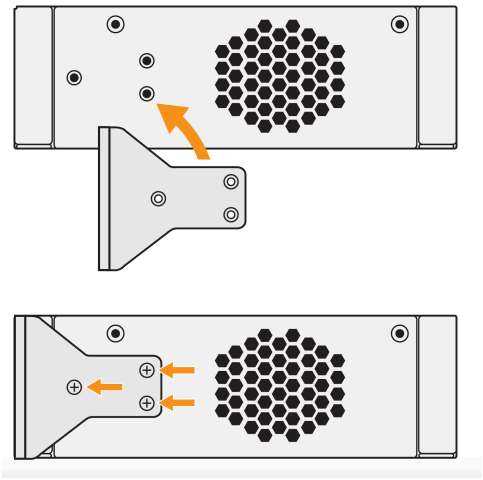
Rack Mount the ION 1000

Rack mount the ION 1000 on a standard 19 inch rack. The optional rack-mount kit includes two identical L-shaped brackets that you can attach to either side of the ION 1000 using screws.

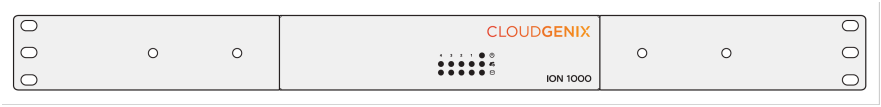
STEP 1 | Gather the L-shaped rack-mounting brackets.



STEP 2 | Locate the three (3) screw holes on each side of the device



STEP 3 | Attach the L-shaped brackets to the screw holes on the front of the device.



STEP 4 | Fasten the screws securely into the brackets.

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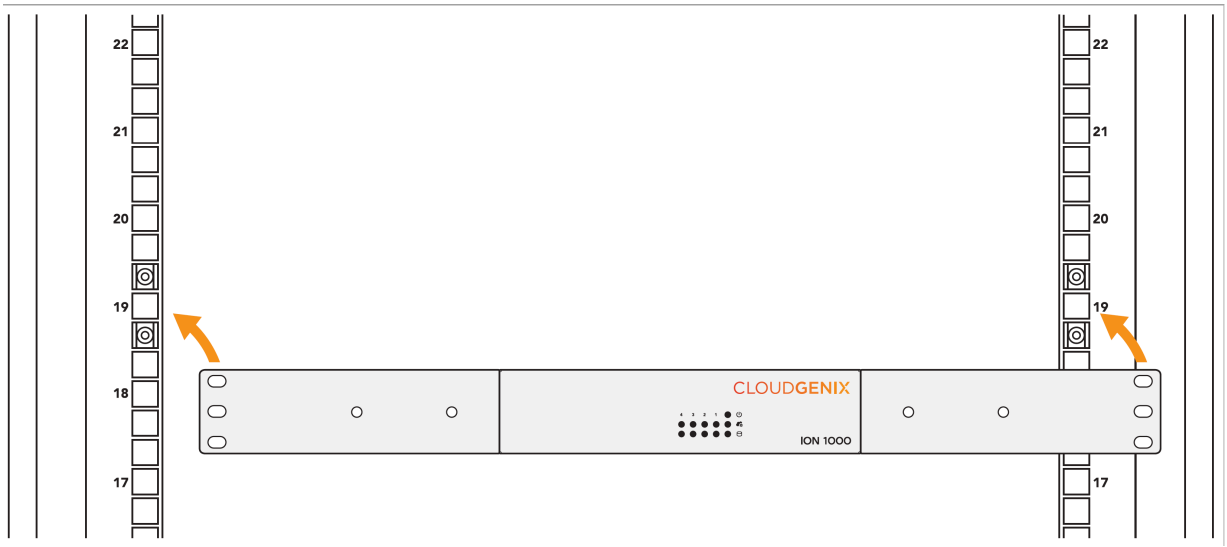
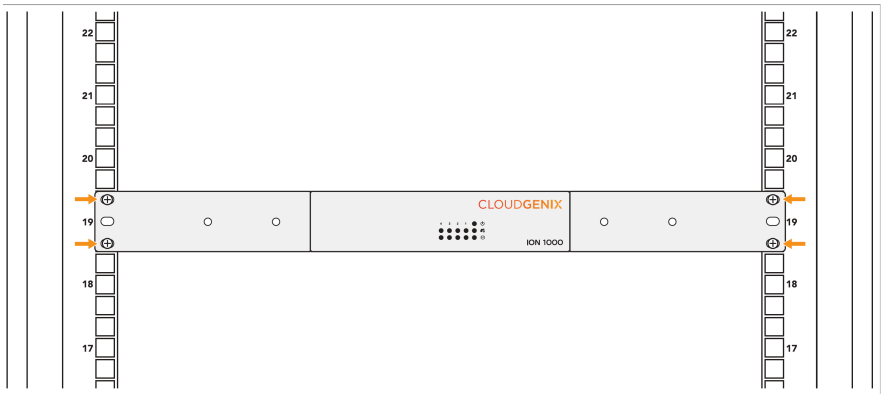
STEP 5 | Attach the L-shaped rack-mounting brackets to a standard 19 inch rack with the cage screws.



STEP 6 | Verify that the device is securely mounted on the rack.



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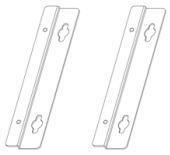
Wall Mount the ION 1000

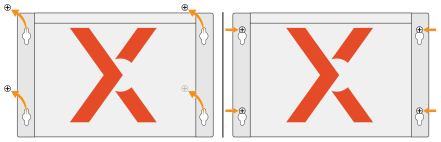
Wall mount the ION 1000 using the optional wall mounting kit that includes ear brackets.

STEP 1 | Gather the wall mounting brackets, also referred to as the ear brackets.

These brackets enable you to anchor the ION 1000 to the wall.

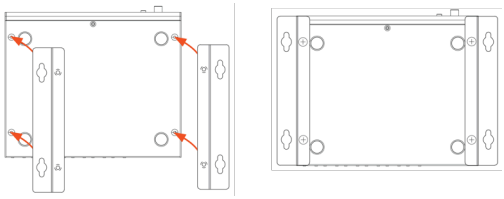


STEP 2 | Place the ION 1000 upside down and locate the four (4) screw holes on each corner of the device.



STEP 3 | Place the ear brackets on each side of the device and align the screw holes on the bracket and the device.

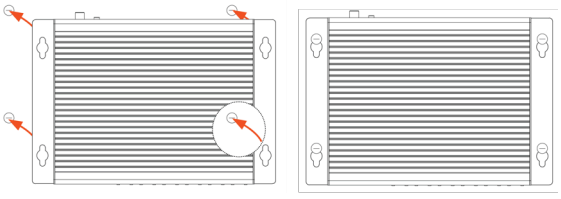
STEP 4 | Fasten the ear brackets with the screws to secure the brackets.



STEP 5 | Place the device on the wall where you plan to mount it and mark the wall to insert the wall anchors for each screw hole.

STEP 6 | Use a power drill to apply the four (4) white wall anchors into the screw holes.

STEP 7 | Insert the screws partially into the anchors, leaving a tiny gap to hang the ear bracket.



STEP 8 | Hang the device onto the wall, making sure to match the four (4) screw holes on the ear bracket with the four (4) screws on the wall.

STEP 9 | Fasten the screws securely to mount the device on the wall.

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STEP 10 | Verify that the ION 1000 is securely mounted on the wall.

Do not remove the rubber pads from the Prisma SD-WAN ION 1000 to prevent overheating and damage.

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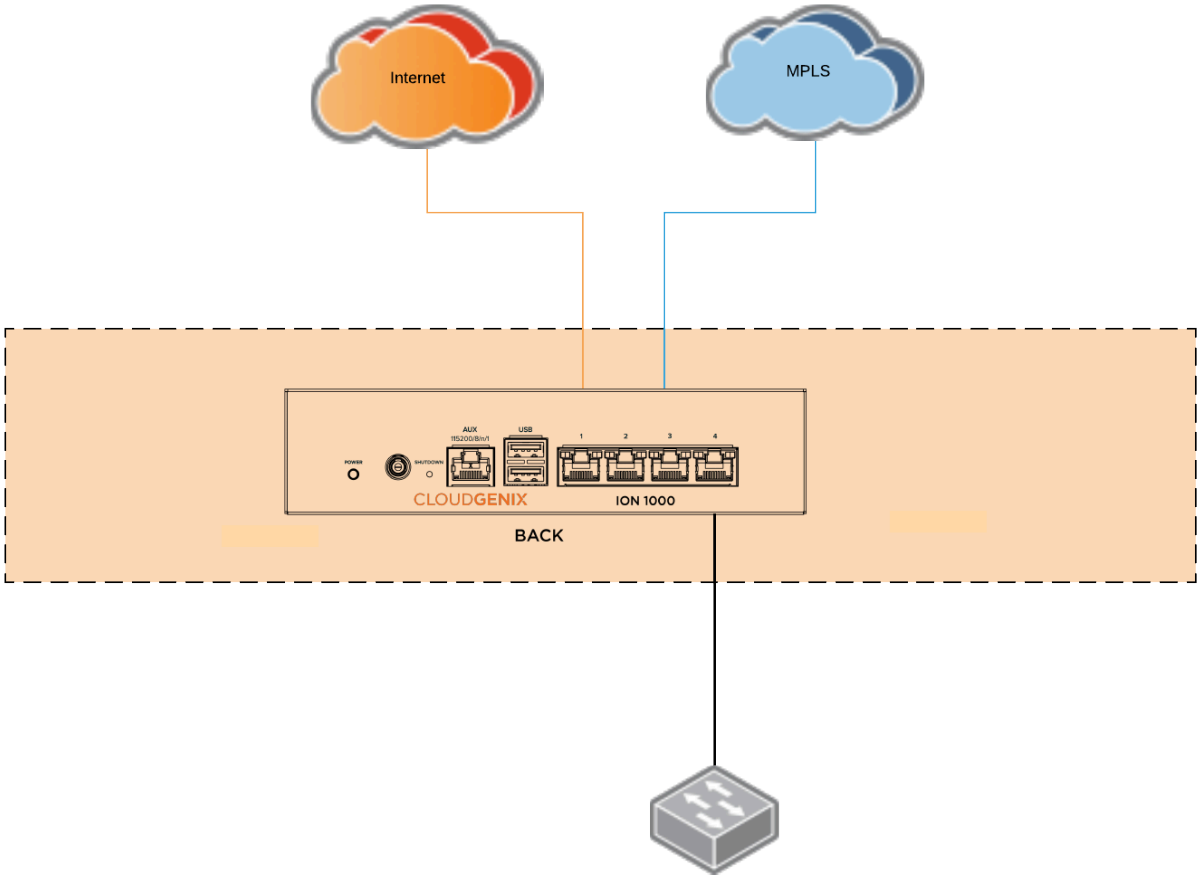
Install the ION 1000 by Replacing an Existing Router

Install the ION 1000 to replace an existing router, directly terminating the MPLS, especially in environments where routers are not already present or required.

Configure the ION 1000 as a drop-in replacement for the WAN Router. This mode is most useful for saving cost at new sites that are designed without a traditional router in mind.



While this mode is used to remove an existing router at a site, it is sometimes preferred to deploy with an existing router. In such a scenario, the existing router is unplugged or disabled after all functions are verified.

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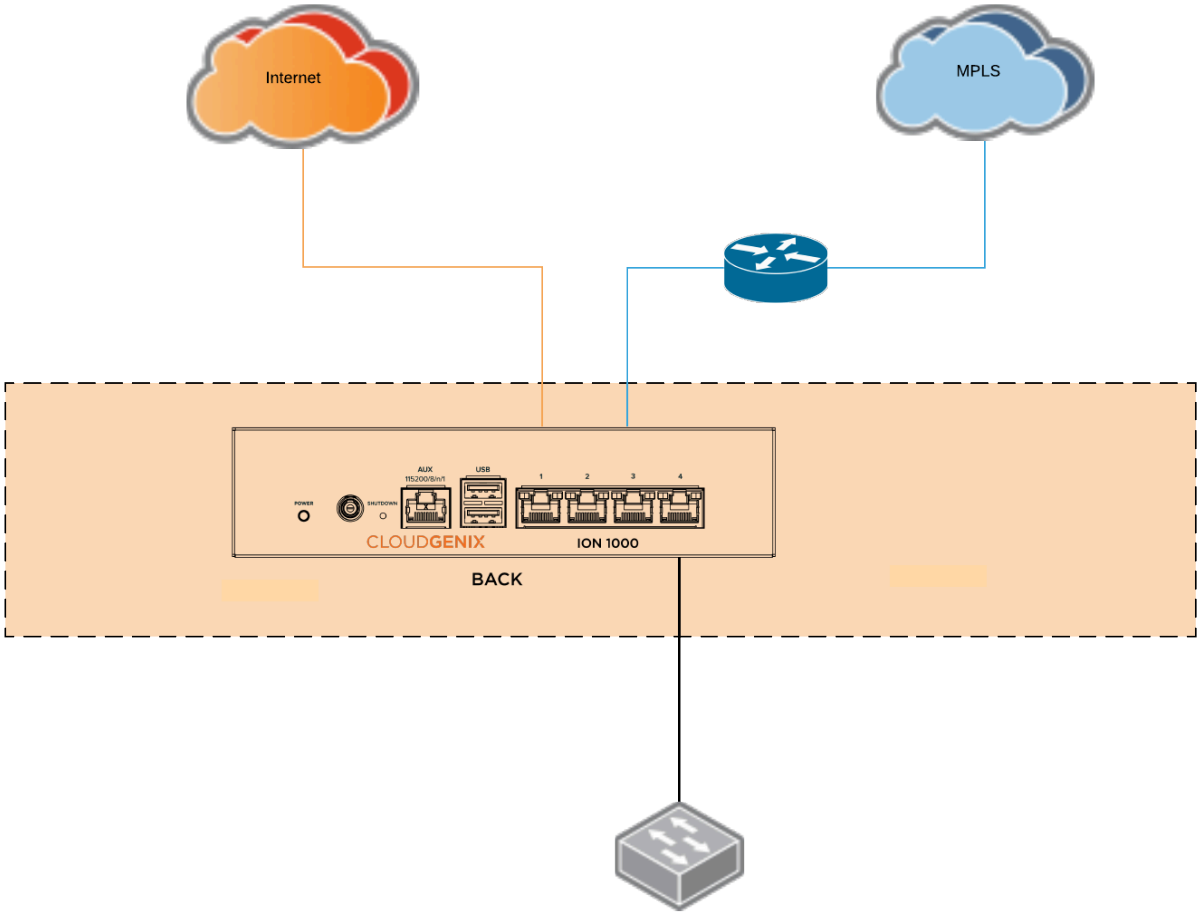
Install the ION 1000 With an Existing Router

Install the Prisma SD-WAN ION 1000 with an existing router. This allows you to insert the ION 1000 without modifying any network settings at the remote location.



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Install the ION 1000 in Control Mode

Install the Prisma SD-WAN ION 1000 in control mode.

STEP 1 | Plan and prepare for cabling and connection of the ION 1000 to insert it into your network.

Ensure that internet access using a private WAN connection or direct internet broadband is available at your site to allow remote configuration of the ION 1000.

STEP 2 | Power on the ION 1000 and connect the cables:

1. Connect the power cable to the power adapter and the adapter to the ION device.
2. Next, plug the device power cable into an AC power outlet. When the device is powered on, the power indicator turns green.

STEP 3 | Connect the internet or WAN or LAN ports:

1. Connect the ION device port 1 or 2 to a DHCP-enabled network that has access to the internet, such as an Internet Service Provider (ISP) cable modem.
2. If there are no DHCP-enabled networks, access the console and assign a static IP on port 1 or 2.

STEP 4 | Verify the device connection to the Prisma SD-WAN controller.

Upon successful connection, the controller connectivity indicator light on the ION device turns to green. The ION device is now connected to the Prisma SD-WAN controller and displays on the Prisma SD-WAN console under **Unclaimed Devices**.

STEP 5 | Connect to the Prisma SD-WAN console.

1. Log in to the Prisma SD-WAN console using the provided login credentials.
2. Navigate to **Map** > **Unclaimed Devices** to verify that the ION device is listed as Online under **Unclaimed Devices**.
3. Select the device and **Claim the device**.

STEP 6 | Next Step: Proceed to assign the device and configure it to a site.

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