Threat Protection System
Hardware Specification and Installation Guide

Legal and notice information

Contents

Threat Protection System Hardware Specification and Installation Guide

About this guide

Welcome to the installation and specification guidelines for your Threat Protection System (TPS) device.

This section covers the following topics:

Target audience

The intended audience includes technicians and maintenance personnel responsible for installing, configuring, and maintaining TippingPoint security systems and associated devices.

- Basic networking

- Network security

- Routing

Related documentation

A complete set of documentation for your product is available on the TippingPoint Threat Management Center (TMC) at: *https://tmc.tippingpoint.com*. The documentation generally includes installation and user guides, command-line interface (CLI) references, safety and compliance information, and release notes.

Conventions

This information uses the following conventions.

Typefaces

TippingPoint uses the following typographic conventions for structuring information.

Convention	Element
Bold font	- Key names - Text typed into a GUI element, such as into a box

Convention	Element
	• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes. Example: Click **OK** to accept.
Italics font	Text emphasis, important terms, variables, and publication titles
`Monospace font`	• File and directory names • System output • Code • Text typed at the command-line
`Monospace, italic font`	• Code variables • Command-line variables
`Monospace, bold font`	Emphasis of file and directory names, system output, code, and text typed at the command line

Messages

Messages are special text that is emphasized by font, format, and icons.

⚠**Warning!** Alerts you to potential danger of bodily harm or other potential harmful consequences.

△**Caution:** Provides information to help minimize risk, for example, when a failure to follow directions could result in damage to equipment or loss of data.

Note: Provides additional information to explain a concept or complete a task.

Important: Provides significant information or specific instructions.

Tip: Provides helpful hints and shortcuts, such as suggestions about how to perform a task more easily or more efficiently.

Product support

Get support for your product by using any of the following options:

Email support

tippingpoint.support@trendmicro.com

Phone support

North America: +1 866 681 8324

International: See *https://tmc.tippingpoint.com*

Overview

The TippingPoint Threat Protection System (TPS) is a high-performance, enterprise-class solution that protects your network by scanning, detecting, and responding to network traffic according to the filters, action sets, and global settings maintained on each device by a client.

The TPS offers higher throughput and improved technology that is optimized for high resiliency, high availability, and network segment protection from both external and internal attacks.

The following topics are covered:

- *TPS devices* on page 4

- *Core hardware features* on page 4

TPS devices

The TPS device delivers world-class defense against network intrusion and provides application control.

- The Threat Suppression Engine (TSE) scans, detects, and responds to network traffic according to the filters, action sets, and global settings maintained on each device by a client.

- Built-in intrinsic high-availability features guarantee that the network keeps running in the event of a system failure.

You can install as many TippingPoint security devices as you need to strategically protect your network enterprise zones. A local client on the device monitors and manages activity. Alternatively, you can manage devices by using the Security Management System (SMS) console.

Core hardware features

The TPS family includes the 440T device and the 2200T device.

These robust, high-performance security devices offer a scalable solution to support all types of organizations and network environments.

440T device

Figure 1. 440T device

The 440T device has the following hardware features:

Feature	440T device
Copper ports	8
1GbE SFP ports	None
10GbE SFP+ ports	None
Power supply	One 350W (built-in)
System memory	16GB
External CFast card	1 (8GB)
Replaceable fans	No
High Availability (HA)	Yes
Zero Power High Availability (ZPHA)	Built-in ZPHA on the 8 copper ports

In addition, the device includes:

- Built-in intrinsic high-availability features, guaranteeing continuity in the event of system failure
- Up to 500 Mbps aggregate across all four segments
- Encryption for VPN service

- Device management through the Local Security Manager (LSM) or centralized management through the Security Management System (SMS).

2200T device

Figure 2. 2200T device
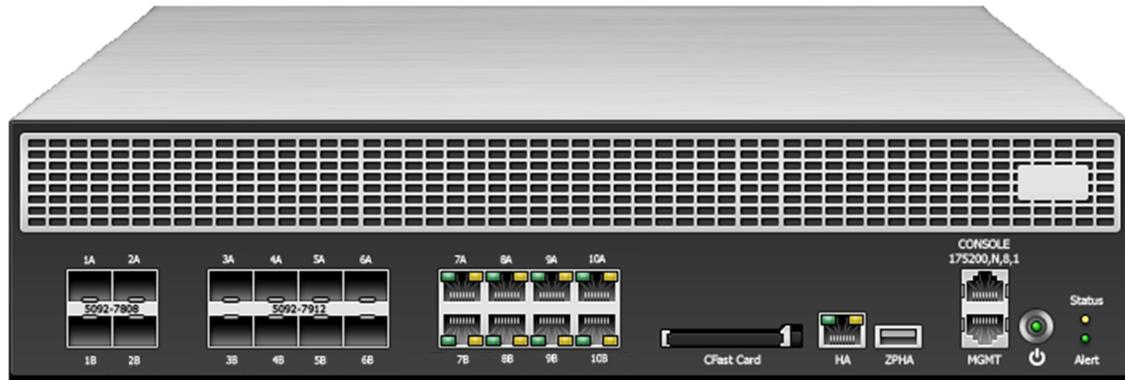
The 2200T device has the following hardware features:

Feature	2200T device
Copper ports	8
1GbE SFP ports	8
10GbE SFP+ ports	4
Power supply	Two 750W (removeable)
System memory	64GB
External CFast card	1 (8GB)
Replaceable fans	Yes

Threat Protection System Hardware Specification and Installation Guide

Feature	2200T device
High Availability (HA)	Yes
Zero Power High Availability (ZPHA)*	Built-in ZPHA for copper segments External ZPHA port for SFP and SFP+ segments

*For information on installing and operating a ZPHA module, refer to *TippingPoint Modular Fiber/Copper ZPHA Installation Guide* available on the TMC (*http://tmc.tippingpoint.com*).

In addition, the device includes:

- Built-in intrinsic high-availability features for copper segments, guaranteeing continuity in the event of system failure

- Up to 2Gbps aggregate across all 10 segments

- Encryption for VPN service

- Device management through the Local Security Manager (LSM) or centralized management through the Security Management System (SMS).

TippingPoint 440T hardware description

This information describes the components, chassis, requirements, and installation specifics of the TippingPoint 440T device. The following topics are discussed:

- *Device overview* on page 8

- *Model requirements* on page 12

- *Technical specifications* on page 12

- *Installing the device* on page 13

For information about installing the device, see *Installing the TPS device* on page 21. Prior to installation, have the *CLI Reference* available for configuration information.

Device overview

The 440T device is a small form-factor device designed for smaller network environments in which traffic throughput requirements are 500Mbps or less. This model provides the same high-level security protection as the higher-capacity models.

Chassis Front Panel

The 440T device is a 1U form-factor device that is rack-mountable in a 19-inch rack (or 23-inch rack, with appropriate conversion parts available from rack accessory vendors).

The following image is a front panel view of a 440T device:

Figure 3. 440T device front panel
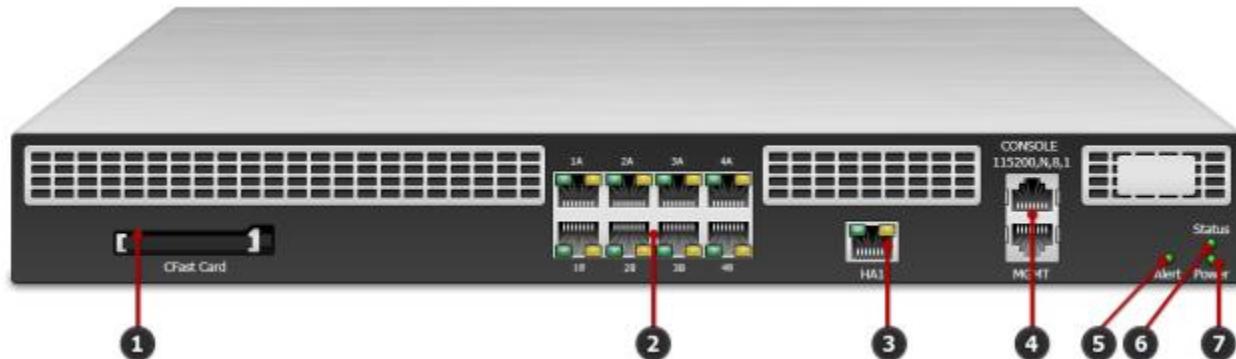
1. CFast card
2. 1GB copper ports
3. Dedicated HA port

4. Serial console port/Management port

5. Alert indicator

6. System status indicator

7. Power indicator

Chassis back panel

The following illustration shows a rear-panel view of a 440T device.

Figure 4. 440T device back panel

1. Fans (3)

2. AC power supply

3. AC power connector

4. Power switch

Chassis features

The chassis features include the following elements:

- *Power switch and power indicator* on page 10

- *System status indicator* on page 10

- *Alert indicator* on page 10

- *Fans and power supplies* on page 10

- *External storage card* on page 10

- *Ports* on page 11

Power switch and power indicator

The power switch is located on the right side of the back panel. The power indicator on the front panel indicates the current power status of the device.

- **No light** — Device is powered off.

- **Green** — Device is powered on.

System status indicator

The System Status indicator is located on the right side of the front panel and indicates the current operating status of the device.

- **Flashing Green** — Device is booting and is not yet ready to inspect traffic.

- **Flashing Green/Yellow** — Device is booting and BIOS or software is updating.

- **Solid Green** — Device is running in a healthy state.

- **Solid Yellow** — Device is running but has a health rating below the acceptable threshold.

Alert indicator

The Alert indicator is located on the right side of the front panel and indicates the current status of the software processes and the hardware.

- **Solid Green** — Both the hardware and the software processes are running normally.

- **Solid Yellow** — System is booting. If the solid yellow indicator remains after startup, a software problem has been detected. Hardware status is undefined.

- **Flashing Yellow** — Hardware problem detected. Software running normally.

- **Off** — Device power is off.

Fans and power supplies

The 440T device includes one power supply and five cooling fans (two of them are internal). These components are not customer-replaceable. For more information about these components, see *Power supply and fan modules* on page 33.

External storage card

The 440T device includes a CFast card slot. The external storage card stores traffic logs, snapshots, and other system data. The card can be removed and inserted while the device is running; however, to do so, you must issue the appropriate unmounting, mounting, and preparation commands in the command line interface (CLI).

For more information about the procedure, refer to *Using the external CFast storage card* on page 40.

Ports

The device is equipped with eight copper ports. In addition, the device includes the console and management ports shown in the following figure:

Figure 5. Management and Console ports
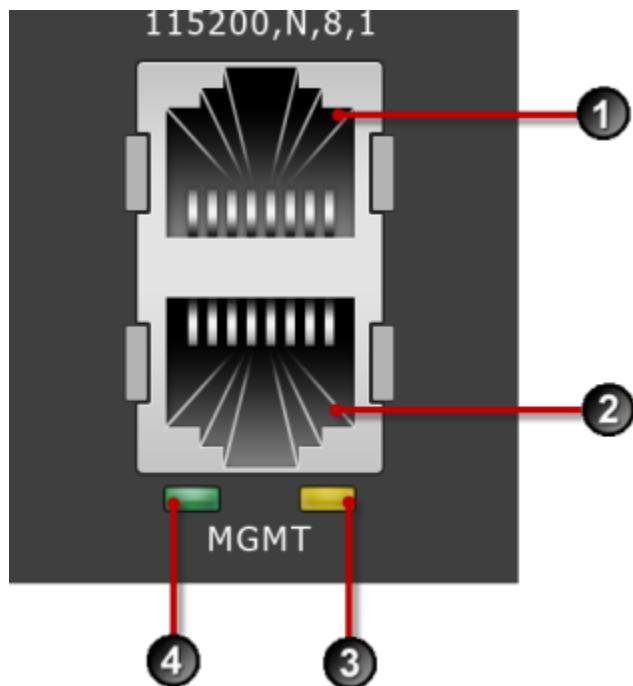
1. 1 RJ-45 serial console port
2. 1GbE copper management port
3. Activity LED
4. Link LED

The management port LEDs indicate link and activity state, as described in the following table.

LED Type	Color	Description
Link	Green	Link is active at 1000Mbps.
	Off	Link is inactive, or is active at 10Mbps or 100Mbps.
Activity	Blinking amber	Data traffic is passing.

LED Type	Color	Description
	Off	No traffic is passing.

Model requirements

The following topics describe the power and cabling requirements for the 440T device.

- *Power requirements* on page 12

- *Cabling requirements* on page 12

Power requirements

The 440T device requires one input of Alternating Current (AC) that must meet the following requirements:

- AC: Voltage 100V – 240V; 4 – 2 amp; 50 – 60 Hz

Cabling requirements

The 440T device ships with the following cables:

- One AC power cable

- Null modem cable for the serial console management port (DB-9 to RJ-45) shown in *Figure 5* on page 11

Technical specifications

The 440T device has the following specifications.

Specification	Description
Dimensions (unpackaged)	1.73 in (H) x 16.78 in (W) x 17.72 in (D) (4.40 cm x 42.62 cm x 45.00 cm)
Weight	15.28 lbs (6.93 kg)
Power Requirements	AC: Voltage 100 – 240; Current 4 – 2 A; Frequency 50 – 60 Hz The device's maximum power consumption is 142 W.

Specification	Description
Service Provider operating requirements	Temperature: 32 – 104° F (0 – 40° C) — Operating Temperature: -4 – 158° F (-20 – 70° C) — Storage
	Altitude: No degradation up to 10,000 feet (3048 m)
	Humidity: 5% to 95% (non-condensing)
External interfaces	• 1 – 1GbE copper management port • 1 – RJ-45 console port • 8 – 1GbE copper ports • 1 external storage card drive

Installing the device

To install and complete installation setup of the device, see *Installing the TPS device* on page 21.

TippingPoint 2200T hardware description

This information describes the components, chassis, requirements, and installation specifics of the TippingPoint 2200T device. The following topics are discussed:

- *2200T device overview* on page 14

- *Model requirements* on page 19

- *Technical specifications* on page 19

- *Hardware installation and configuration* on page 20

For information about installing the device, see *Installing the TPS device* on page 21. Prior to installation, have the *CLI Reference* available for configuration information.

2200T device overview

The 2200T device is a mid-range system that has a larger form factor than the 440T device and is designed for network environments requiring inspection of inbound Secure Socket Layer (SSL) traffic throughput rates between 1Gbps and 2Gbps. These models provide the same high-level of security protection as the highest-capacity models.

Chassis front panel

The 2200T device is a 2U form-factor devices that are rack-mountable in a 19-inch rack (or 23-inch rack, with appropriate conversion parts available from rack accessory vendors). These appliances support throughput across multiple copper and fiber ports.

The following illustration shows a front panel view of the 2200T device:

Figure 6. 2200T device front panel
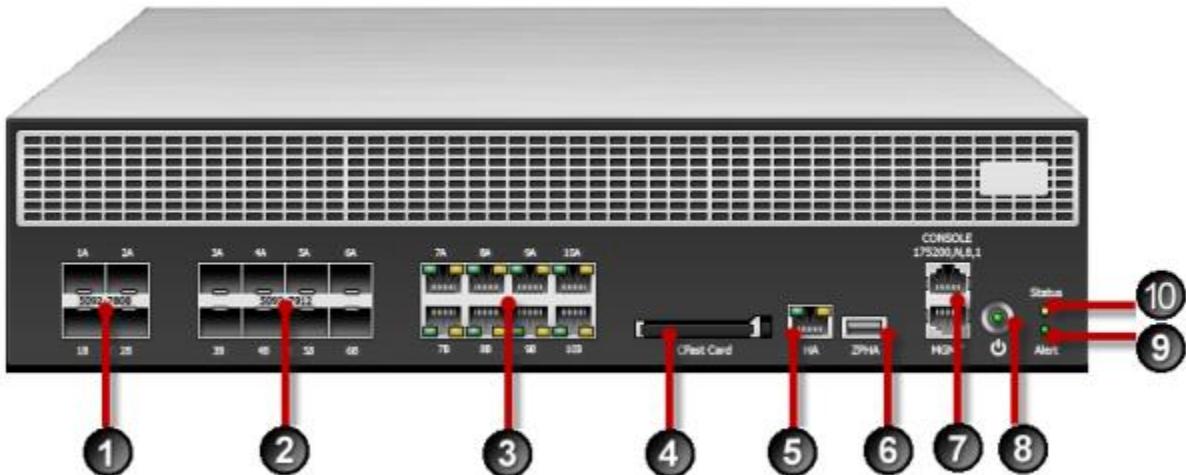
1. 10GbE SFP+ ports
2. 1GbE SFP ports
3. 1GbE copper ports
4. External CFast card
5. Dedicated HA port
6. ZPHA port
7. Console/Management port
8. Power button
9. Alert indicator
10. System status indicator

2200T chassis back panel

The following illustration shows the rear-panel view of a 2200T device.

Figure 7. 2200T device back panel
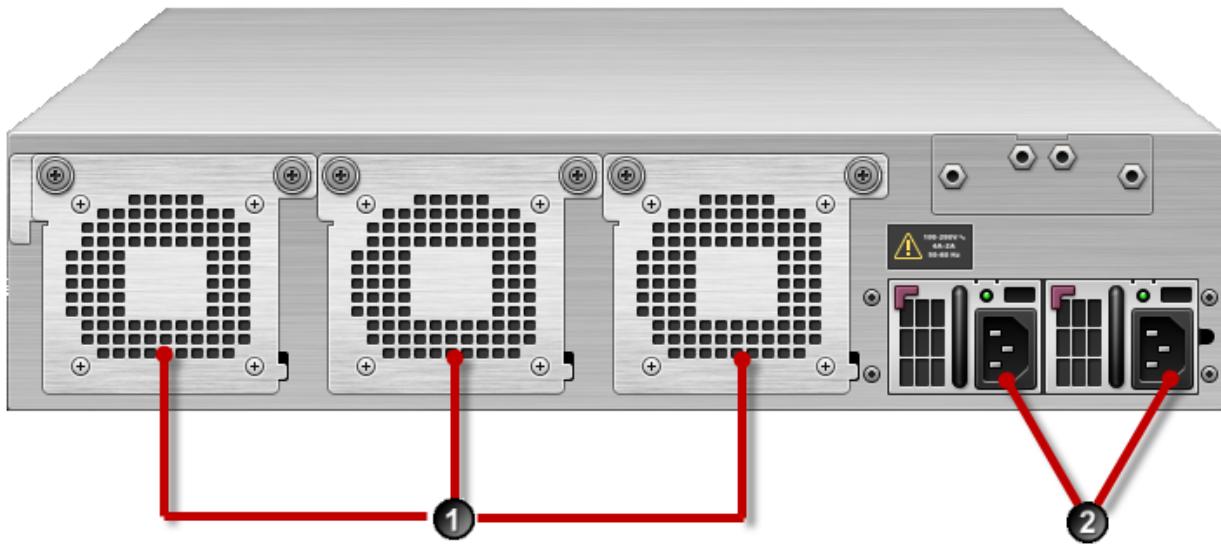
1. Fans (3)
2. Power supplies (2)

2200T chassis features

The chassis features include the following elements:

- *Power button* on page 16
- *System status indicator* on page 17
- *Alert indicator* on page 17
- *Fans and power supplies* on page 17
- *External storage card* on page 17
- *Ports* on page 17

Power button

The power button is located on the right side of the console/management ports on the front panel. The power button light indicates the current status of the appliance.

- **No light** — Appliance is powered off.
- **Green** — Appliance is powered on.

System status indicator

The System Status indicator is located on the right side of the front panel and indicates the current operating status of the appliance.

- **Flashing Green** — Appliance is booting and is not yet ready to inspect traffic.

- **Flashing Green/Yellow** — Appliance is booting and BIOS or software is updating.

- **Solid Green** — Appliance is running in a healthy state.

- **Solid Yellow** — Appliance is running but has a health rating below the acceptable threshold.

Alert indicator

The Alert indicator is located on the right side of the front panel and indicates the current status of the software processes and the hardware.

- **Solid Green** — Both the hardware and the software processes are running normally.

- **Solid Yellow** — System is booting. If the solid yellow indicator remains after startup, a software problem has been detected. Hardware status is undefined.

- **Flashing Yellow** — Hardware problem detected. Software running normally.

- **Off** — Appliance power is off.

Fans and power supplies

The 2200T device includes two power supplies and three cooling fans. These components are hot-pluggable. For more information about these components, see *Power supply and fan modules* on page 33.

External storage card

The 2200T device includes a CFast card slot. The external storage card stores traffic logs, snapshots, and other system data. The card can be removed and inserted while the appliance is running; however, to do so, you must issue the appropriate unmounting, mounting, and preparation commands in the command line interface (CLI). Refer to *Using the external CFast storage card* on page 40 or the *CLI Reference* for command syntax.

For more information about configuring the external CFast card, refer to *Using the external CFast storage card* on page 40.

Ports

All TPS devices, including the 2200T device, are equipped with eight copper ports in addition to the console and management ports shown in the following figure:

Figure 8. Management and console ports
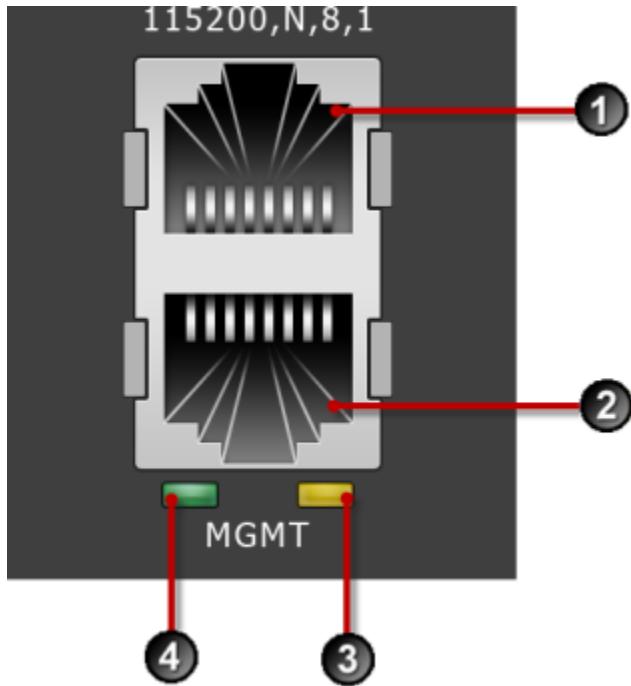
1. 1 RJ-45 serial console port
2. 1GbE copper management port
3. Link LED
4. Activity LED

The management port LEDs indicate link and activity state, as described in the following table.

LED Type	Color	Description
Link	Green	Link is active at 1000Mbps.
	Off	Link is inactive, or is active at 10Mbps or 100Mbps.
Activity	Blinking amber	Data traffic is passing.
	Off	No traffic is passing.

Model requirements

The following topics describe specific requirements for the 2200T device.

- *Power requirements* on page 19

- *Cabling requirements* on page 19

Power requirements

The 2200T device requires one input of Alternating Current (AC) or Direct Current (DC) that must meet the following requirements:

- AC: Voltage 100V – 240V; 12 – 6 amp; 50 – 60 Hz

- DC: Voltage -40V – -60V; 24 – 16 amp; SELV power source

The 2200T device ships with two AC power supplies. DC power supplies are also available for the device. Consult your TippingPoint account contact for more information if you require a DC power supply.

Cabling requirements

The 2200T device ships with the following cables:

- Two AC power cables, one for each hot-pluggable power supply

- Null modem cable for the serial console management port (DB-9 to RJ-45) shown in *Figure 8* on page 17

Technical specifications

The 2200T device has the following specifications.

Specification	Description
Dimensions (unpackaged)	2U – 3.46 in (H) x 16.77 in (W) x 18.80 in (D) (8.80 cm x 42.60 cm x 47.80 cm)
Weight	26.26 lbs (11.91 kg)
Power Requirements	AC: Voltage 100 – 240; Current 12 – 6 A; Frequency 47 – 63 Hz DC: Voltage -40V – -60V; 24 – 16 amp; SELV power source

Specification	Description
	The appliance's maximum power consumption is 493 W.
Service Provider operating requirements	Temperature: 32 – 104° F (0 – 40° C) — Operating Temperature: -4 – 158° F (-20 to 70° C) — Storage
	Altitude: No degradation up to 10,000 feet (3048 m)
	Humidity: 5% to 95% (non-condensing)
External interfaces	• 1x1GbE copper management port • 1x1 RJ-45 console port • 8 – 1GbE copper ports • 8 – 1GbE SFP fiber ports • 4 – 10GbE SFP+ fiber ports • 1 HA port • 1 ZPHA port • 1 external storage card drive

Hardware installation and configuration

For general instructions on installing the 2200T device, see

Installing the TPS device

After you have completed preparation procedures and unpacked the TPS device, you are ready to install and configure the components. Have the *CLI Reference* available for configuration information reference. After installation of the hardware components, complete the OBE Setup Wizard requirements as part of the installation and configuration procedures.

Note: Before installing your device, review and adhere to all safety guidelines described the *Hardware Safety and Compliance Guide*, which also contains detailed regulatory compliance information and is included with your product shipment.

This information includes the following procedures:

- *Install the chassis* on page 21

- *Connect the power supply* on page 28

- *Attach cables* on page 28

- *Check LEDs* on page 29

- *Run the setup wizard* on page 29

Install the chassis

Before installing your new security device, gather any necessary materials and prepare the network and hardware site. To carefully and correctly install the device, read through all preparation instructions and requirements. This information provides general guideline information for all TippingPoint devices.

To install the device you must do the following:

- *Determine total rack space* on page 21

- *Attach the device to the rack* on page 22

- *Connect the power supply* on page 28

Determine total rack space

Before you install the chassis, determine the total rack space that is required to install your system. The total required rack space increases if you plan to install multiple systems.

The device fits in a 19-inch-wide rack (or a 23-inch-wide rack, with appropriate conversion parts available from rack accessory vendors). For more information about the dimensions of the device, refer to the technical specifications and requirements for your model.

Attach the device to the rack

The TPS 440T device ships with a four-post rack-mount kit to mount the device to a rack. You can use this kit to install the device in a two-post or four-post rack.

The TPS 2200T device ships with a slide rail kit to mount this device to a four-post rack and mounting ears for two-post racks. Slide rail kits are also available for order from TippingPoint. Refer to the instructions in the slide rail kit for information about installing the slide rails.

For two-post racks, use the front mounting ears to install 2200T devices in either front-mount or mid-mount positions.

Your device shipment includes the following mounting hardware:

- Front-mounting brackets for a 19-inch rack. Adapters (available from rack accessory vendors) are required for posting in a 23-inch rack.

- Rear-mounting brackets for mounting a 440T device in a 19-inch rack. Adapters (not included) are required for posting in a 23-inch rack.

- Bracket screws for attaching the brackets to the chassis.

Your device can be stored on a desktop, on a shelf, or in a rack. If you are bolting the device to the rack, follow these guidelines.

⚠**Warning!** To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable.

- If the rack comes with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

- If the rack is partially filled, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If you plan to expand your system to include additional TippingPoint systems in the future, allow space in the rack for additions. During the initial installation, keep in mind the weight distribution and stability of the rack.

Rack-mounting the TPS 440T device

The TPS 440T device is a 1U device that you can install using a front mount or mid-mount in a two-post rack, or front and rear mount in a four-post rack.

Note: Do not use a two-post mount in a four-post rack. For four-post racks, use a four-post mount.

Two-post rack mount

Describes how to mount a 1U TPS device in a two-post rack.

1. Align the two front rack-mounting brackets (shown in *Figure 9* on page 23) with the 440T chassis holes according to your front mount or mid-mount requirements.

2. Secure the brackets to the chassis using the flat-head screws (six on each side) that came with the kit.

Figure 9. 440T front-mount bracket and ear
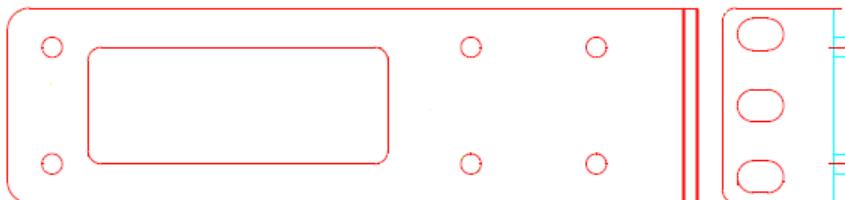
3. Secure the rack-mounting brackets into the holes of the front rack post or mid-rack post with three screws on each side (rack screws not included in the kit).

Use *Figure 10* on page 23 as a guide for how the front rack-mounting brackets are attached to the device and to the rack in a front-mount. Use *Figure 11* on page 23 as a guide for how the front rack-mounting brackets are attached to the device and to the rack in a mid-mount.

Figure 10. 440T chassis with front mounting in a two-post rack

Figure 11. 440T chassis with mid-mounting in a two-post rack

Four-post rack mount

Describes how to mount a 1U TPS device in a four-post rack.

1. After attaching the front rack-mounting brackets to the device as described in *Two-post rack mount* on page 22, attach the two slide-bracket screws (provided in the kit) on each side of the chassis.

2. Using three rack screws (not included in the kit) on each side, attach either the short slide-bracket or the long slide-bracket to the rear post of the rack, depending on which length is needed to secure the chassis in the rack.

3. Slide the slide brackets mounted to the back posts of the rack onto the chassis.

4. Secure the front rack-mounting brackets into the holes of the front rack post with three rack screws (not included) on each side.

Figure 12 on page 24 shows the device as it would appear in the rack with front and rear-mount brackets attached.

Figure 12. 440T chassis in a four-post rack

Rack-mounting the TPS 2200T device

The TPS 2200T devices are 2U devices that you can install using a front mount or mid-mount in a two-post rack, or front and rear mount in a four-post rack.

Two-post rack mount for 2U chassis

Describes how to mount a 2U TPS device in a two-post rack.

You can choose to install your chassis into a two-post rack using a front mount or a mid-mount.

1. Align the two front rack-mounting brackets (shown in *Figure 13* on page 25) to the chassis holes according to your front mount or mid-mount requirements.

2. Secure the brackets to the chassis using the flat-head screws (three on each side) that came with the kit.

Figure 13. 2200T model front-mount bracket and ear

3. Secure the rack-mounting ears into the holes of the front rack post with screws (two on each side, not included).

   Use *Figure 14* on page 26 as a guide for how the front rack-mounting brackets are attached to the appliance and to the rack in a front mount. Use *Figure 15* on page 26 as a guide for how the front rack-mounting brackets are attached to the appliance and to the rack in a mid-mount.

Figure 14. 2200T model with front mounting in a two-post rack

Figure 15. 2200T model with mid-mounting in a two-post rack

Four-post rack mount for 2U chassis

Describes how to mount a 2U TPS device in a four-post rack.

The 2200T models ship with a slide rail kit to mount the appliance to a four-post rack. Slide rail kits are also available for order from TippingPoint. Refer to the instructions in the slide rail kit for information about installing the slide rails.

1. Use *Figure 16* on page 27 as a reference for how a 2U chassis is installed in a four-post rack with slide rails.

Figure 16. 2200T chassis in a four-post rack

Connect the power supply

Describes how to get power to your device.

1. After you have bolted the device to the rack, attach the power supply AC connections.

2. To turn power on for the 440T device, flip the power switch on the back panel of the device.

3. To turn power on for the 22000T device, use the power button located on the front panel of the device.

Attach cables

During initial setup, use the management processor connection or the console port to access the setup wizard.

Attach the Console port connection

Describes how to attach the console port connection.

1. Connect the RJ-45 null modem cable to the Console port on the front of the unit.

2. Connect the other end of your cable (standard-sized female DB-9 connector) to your VT100-compatible terminal or your computer.

   Use the following terminal settings for the Console port:

   • Baud rate: 115.2 Kbps

   • Character size: 8 bits

   • Parity: None

   • Stop Bits: One

   • Flow Control: None

Attach the management processor connection

Describes how to attach the management processor connection.

1. Connect one end of the Category 5 Ethernet cable to the port labeled MGMT located on the front panel.

2. Connect the other end of the Ethernet cable to your network. This enables remote management.

Attach network connections

Describes how to make network connections.

All ports on the TPS device are dynamic and do not require fixed cable assignments. When making your network cable connections, keep track of which ports you select for which purpose.

1. Attach one or more network cables for the internal network. Make note of which front panel ports you use.

2. Attach a network cable for the external (WAN) network. Make note of which front panel port you use.

3. Using the LSM or the command line interface, configure network interface types appropriate to the surrounding network using the ports you selected.

   For more information about device network configuration and connections, refer to the *Local Security Manager User Guide* and the *CLI Reference*.

Check LEDs

When you connect power to the device, the system completes a series of component checks. It then displays LEDs to show the status of each component. Refer to *Chassis features* on page 9 for more information about the LEDs.

Run the setup wizard

After you have powered on, the setup wizard is displayed on your COM port terminal. The wizard prompts you to perform basic configuration tasks and periodically input information. After you run the setup, you can further configure your system using subsequent setup commands through the Command Line Interface (CLI). See the *CLI Reference* for detailed command descriptions.

Connector and cable pinout specifications

This information provides connector and pinout information for the TPS device and contains the following topics:

RJ-45 (COM) console

Describes the RJ-45 (COM) console specifications.

The following figure displays the RJ-45 connector and the following table shows the RJ-45 console connector pinouts.

Figure 17. RJ-45 connector

Pin number	Signal name
1	Request to Send (RTS)
2	Data Terminal Ready (DTR)
3	Transmit Data (TxD)
4	Ground (GND)
5	Ground (GND)
6	Receive Data (RxD)
7	Data Set Ready (DSR)

Pin number	Signal name
8	Clear to Send (CTS)

RJ-45 Ethernet connectors

Provides pinout information for when your RJ-45 device is operating in 10Mbps/100Mbps mode.

Pin number	Signal name
1	Transmit positive (Tx+)
2	Transmit negative (Tx-)
3	Receive positive (Rx+)
4	Ground (GND)
5	Ground (GND)
6	Receive negative (Rx-)
7	Ground (GND)
8	Ground (GND)

Pluggable transceivers

The 2200T device supports the following SFP and SFP+ pluggable transceivers:

- 1G SFP RJ45 T (Copper SFP)

- 1G SFP LC LX 10km 1310nm XCVR

- 1G SFP LC SX 550m 850nm XCVR

- 10G SFP+ LC SR

- 10G SFP+ LC LR

Note: Only optical transceiver modules (including SFP and SFP+) available from TippingPoint have been validated to achieve optimal performance with TippingPoint products. Other vendor devices are not supported. Using other vendor devices could be detrimental to proper operation of the TippingPoint system.

The following table details the information for SFP and SFP+ transceivers.

Fiber Input	Signal
Left side	Transmit
Right side	Receive

Power supply and fan modules

This topic provides information for using the power supply modules and fans. The following subjects are discussed.

- *The 2200T AC power supply* on page 33
- *The 2200T DC power supply* on page 34
- *TPS fans* on page 36

⚠**Warning!** This product might have more than one power supply source. All power sources must be removed to de-energize the unit.

Note: The 2200T device has removable fans and power supplies. The power supplies are hot-swappable. It has no other serviceable parts inside. There are no hot-swappable or serviceable parts inside the 440T device.

The 2200T AC power supply

The 2200T device includes two power supply modules. The modules are hot-pluggable, redundant, and current-sharing, and the appliance can run with one active module.

Figure 18. 2200T AC power supply
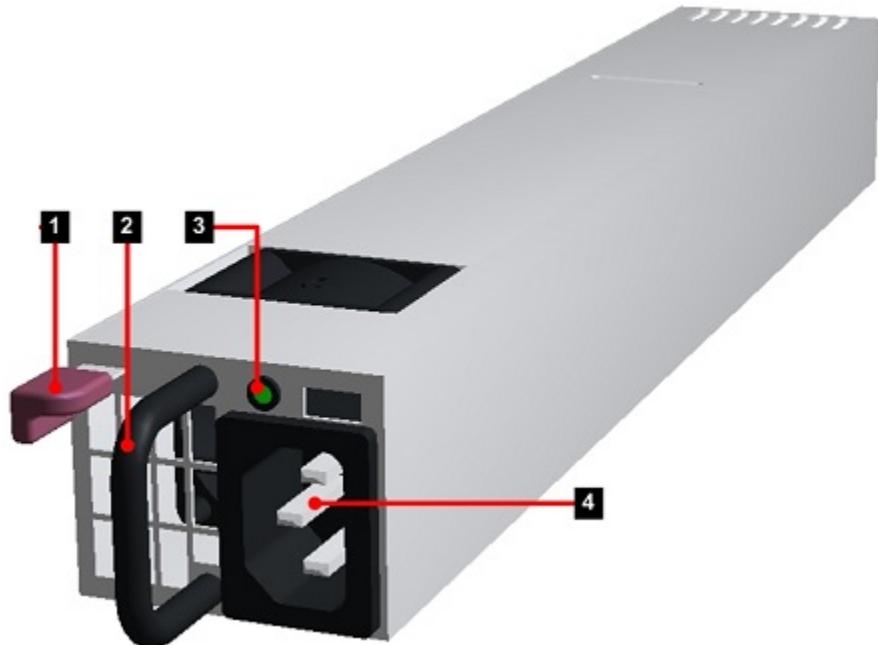
1. Removal Latch
2. Handle

3. Status LED

4. AC male power input

The Status LED is green when the module is powered and running normally.

Connect the AC power supply

Describes how to connect the power supply to your device.

When the AC power supply has been securely placed in the device, use the following procedure to connect power to the AC power supply:

1. Locate the male power input on the back of the chassis.

2. Plug one end of a standard female power plug into the power input.

3. Plug the other end into an AC outlet, power strip, or UPS.

   For the power requirements for the 440T device, see *Technical specifications* on page 12. For the power requirements for the 2200T device, see *Technical specifications* on page 19.

   The TPS device returns to its previous power-on state in the event of a power interruption. If power was on when the interruption occurred, the device automatically powers back on when the power is reconnected; if power was off, the device stays off when the power is reconnected. If necessary, power on the device with the button on the front of the chassis.

The 2200T DC power supply

The 2200T device is NEBS compliant and can accept a combination of AC and DC power supply units. Consult your TippingPoint account contact for more information on obtaining DC power supplies.

⚠**Warning!**   Do not attempt to install a DC power supply into a 440T device. The 440T device does not contain the grounding capability for safe installation of a DC power supply. Bodily harm and damage to the system could result.

Connect the DC power supply

⚠**Warning!**   When installing the product, always make the ground connection before applying power to the unit. This equipment needs to be grounded to an external ground connection. Use a green and yellow 12 AWG ground wire to connect the host to earth ground during normal use. Disconnect the ground connection only when the unit is completely powered down.

⚠**Caution:**   Do not attach a ground wire to the ground screw on the DC power supply module. Attach the ground wire to the 2200T chassis DC grounding screw holes (0.63-inch hole spacing) with #10 screws. The DC grounding screw holes are located in the rear of the chassis.

The power supply LED is green when the module is powered and running normally.

When the DC power supply has been securely placed in the device, use the following procedure to connect power to the DC power supply.

1. Locate the ground screw on the back of the chassis.

   Refer to the following figure for the location.

   Figure 19. DC grounding screw holes
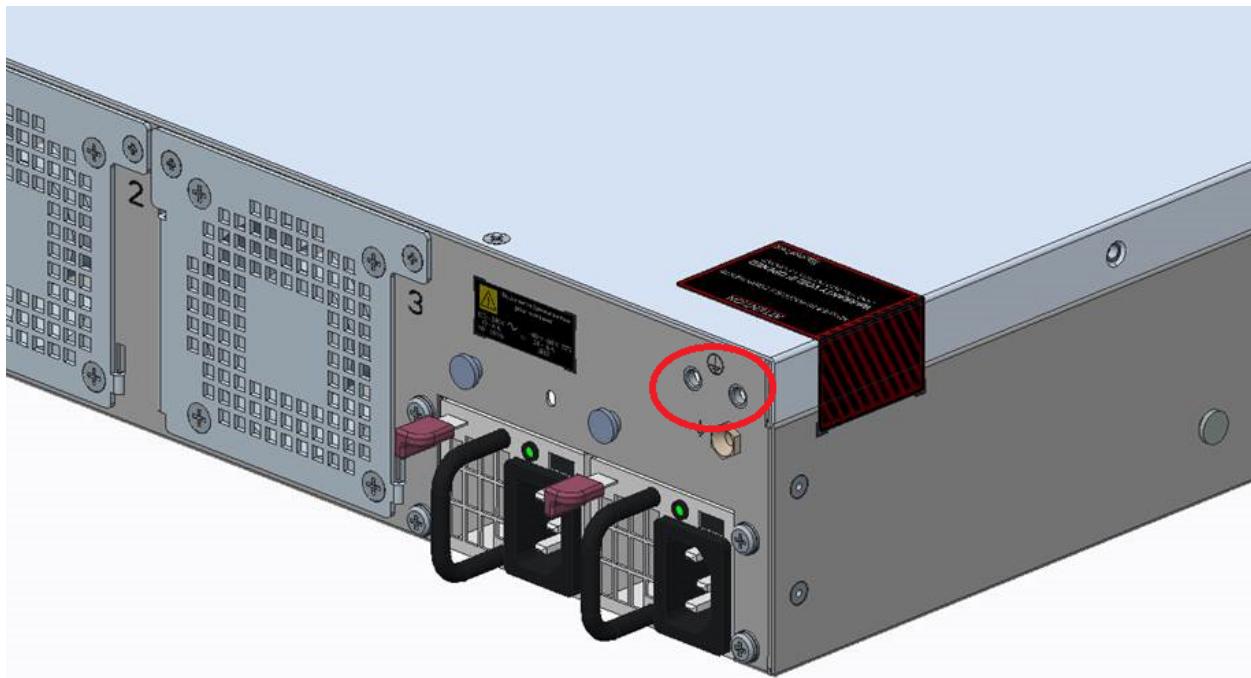
2. Attach a 12 AWG ground wire to the chassis ground strap mounting.

   The wire should be crimped with a ring lug.

3. Locate the power input terminal block on the back of the module.

4. Attach the 12 AWG DC power wires to the power input terminal block labeled -48V and RTN.

   The power wires should be crimped with lug spades to ensure a secure connection.

5. Connect the other side of the power cable to the SELV power source.

   The power source should meet the following requirements:

   • Voltage: -40 to -60 V

   • 24 - 16 Amps

   • SELV

6. Depending on the BIOS settings and the state the device was in when the power was unplugged, the device might or might not turn on automatically when power is reapplied. If necessary, power on the device with the button on the front of the chassis.

TPS fans

The 440T device includes five cooling fans (two of them are internal). The fans are not redundant or hot-pluggable. If a failure to a fan module occurs, you must replace the entire device.

The 2200T device includes three cooling fans. The fans for the 2200T device are redundant but not hot-pluggable. An individual fan can be replaced but not without first powering down the device.

The TPS Spare Fan (5066-3329) is a replacement unit and can only be used with TPS 2200T devices or NGFW S3000/S8000 Series appliances.

Figure 20. 2200T fan unit
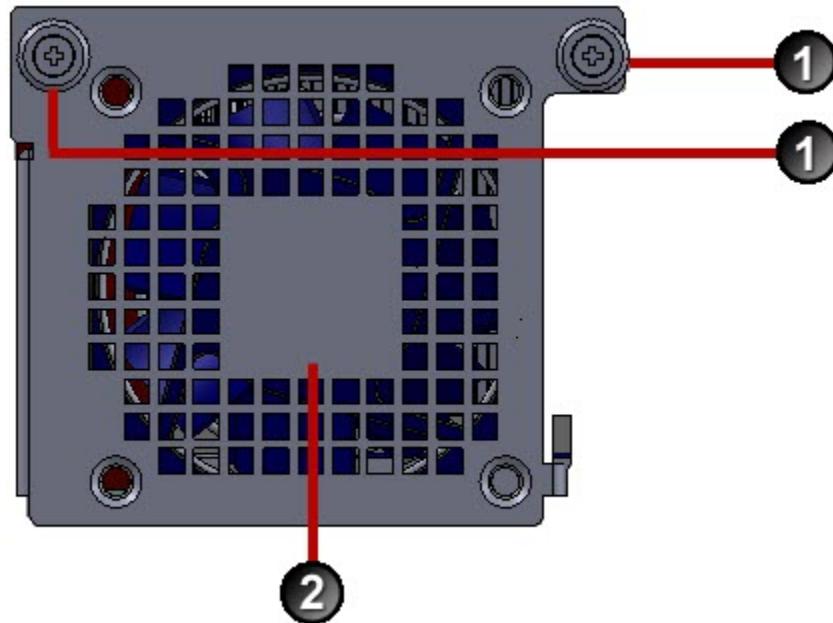
1. Attachment Screws
2. Fan Assembly

When a fan module fails or its RPM rate falls below a certain threshold, the system generates a warning or critical alarm message in its logs.

You can check a fan's performance using:

- The Local Security Manager (LSM) graphical user interface: **System Health > Monitor > Fan Speed**

- The command line interface (CLI): `show health fan`

Replace the fan

Describes how to replace the fan.

After you have identified the faulty fan assembly, follow this procedure to replace the fan:

1. Power down the system.
2. Remove the top two attachment screws and lift the fan unit up slightly and partially pull it from its slot.
3. Reach in the slot and disconnect the fan's cable connector from the main board.
4. Remove the entire fan assembly from its slot.
5. Set the faulty fan aside.
6. Remove the new fan assembly from the packaging.
7. Plug the new fan's cable into the main board.
8. Align the new fan assembly slightly higher than its open slot.
9. Slide the unit down until it is seated.
10. Tighten the two attachment screws securely.

Installing the power cord retention bracket

The power cord retention bracket lets you manage the placement of power cords for minimal obtrusiveness.

The following subjects are discussed:

- *Power cord retention bracket* on page 38
- *Installing and using the bracket* on page 38
- *Removing the bracket* on page 39

Power cord retention bracket

Provides a description and image of the power cord retention bracket.

The power cord retention bracket helps reduce strain on the power cord and power supply outlets.

Figure 21. Power Cord retention bracket

Installing and using the bracket

The following figure shows a 2200T device with the power cord retention bracket installed:

Figure 22. 2200T TPS device- back panel
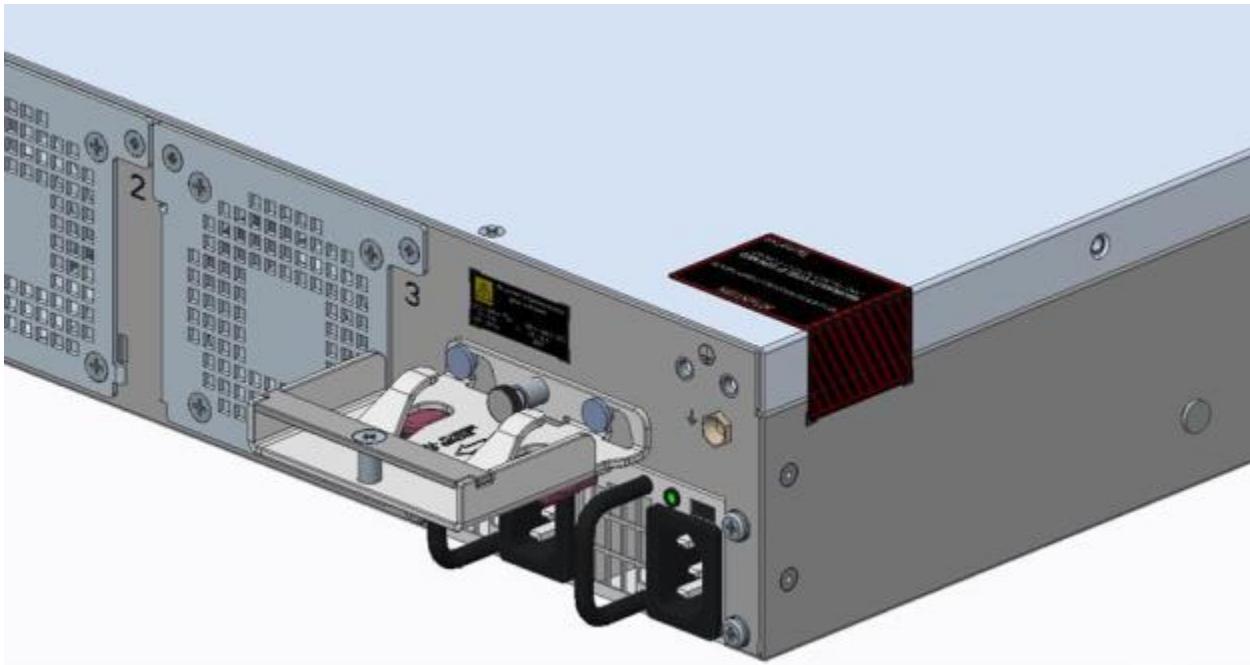
Follow the procedures in this section to install and use the power cord retention bracket and the cable management bracket.

Installing the bracket

Use the following procedure to install the power cord retention bracket:

1. Orient the bracket against the back surface of the chassis.

2. Slide the bracket over the two shoulder rivets on the back of the chassis.

   The spring-loaded plunger in the center of the bracket slides into place.

Using the power cord retention bracket

Follow this procedure to attach the power cord to the retention bracket:

1. Fold the power cable and slide it into the slot.

2. Push the folded cable into the slot until the cable loop goes past the sheet metal tabs.

3. Secure the folded cable loop under the sheet metal tabs and attach the power cable to the power supply.

Removing the bracket

If you need to remove one of the brackets, pull the spring-loaded plunger in the middle of the bracket and slide the bracket up and off the shoulder rivets.

Using the external CFast storage card

This information describes the external storage card and provides the following topics:

About the external CFast storage card

The TPS device comes with a pre-formatted external CFast storage card.

Note: Only CFast cards available from TippingPoint have been validated to achieve optimal performance with TippingPoint products. Other vendor cards are not supported. Using other vendor cards could be detrimental to proper operation of the TippingPoint system.

The external CFast card is an 8GB storage card used to store traffic logs, snapshots, and other system data.

⚠**Caution:** Failure to properly remove the TippingPoint CFast card can result in disk corruption and a system error.

You can replace the CFast card when the system is operating. Before you remove the card, use the command line interface (CLI) to first unmount the card. For the appropriate unmount command, consult *CFast card commands* on page 40.

After you successfully unmount the previous storage card, you can insert a new card into the CFast slot. Referencing *CFast card commands* on page 40, issue the appropriate mounting and preparation commands in the CLI.

When you manually mount and format a CFast card, the card will mount automatically when the device boots.

CFast card commands

Lists the commands used to manage the external storage card in the CLI.

Refer to the *CLI Reference* for detailed documentation of these commands.

Command	Description
`user-disk format`	Formats a card. Any existing data on the card will be erased.

Command	Description
	Note: Only cards that are mounted and formatted manually by the user will be mounted automatically by the device when it boots. However, after the initial install, any card still present in the device during subsequent installs will also be mounted automatically.
`user-disk mount`	Manually mounts the inserted card.
	Note: Only cards that are mounted and formatted manually by the user will be mounted automatically by the device when it boots. However, after the initial install, any card still present in the device during subsequent installs will also be mounted automatically.
`user-disk unmount`	Unmounts the card so that the user can remove it.
`user-disk encryption enable`	Encrypts the card if the system master-key has been set. Changing the encryption status reformats the card and erases all data on the card.
	Note: Master-key and encryption controls can also be configured using **System > Settings > Data Security** in the LSM. For more information, refer to the *Local Security Manager User Guide.*
`user-disk encryption disable`	Disables encryption of the card if the system master-key has been set. Changing the encryption status reformats the card and erases all data on the card.
	Note: Master-key and encryption controls can also be configured using **System > Settings > Data Security** in the LSM. For more information, refer to the *Local Security Manager User Guide.*
`show user-disk`	Shows properties of the card, including operation status and capacity.

Command	Description
`master-key set`	Encrypts the external CFast card and the system keystore using the system master-key. You are prompted to enter a master-key that is between 9 and 32 characters in length, contains a combination of numbers and uppercase and lowercase letters, and that has at least one special character (for example, !@#).
	Note: Master-key and encryption controls can also be configured using **System > Settings > Data Security** in the LSM. For more information, refer to the *Local Security Manager User Guide*.

Threat Protection System Hardware Specification and Installation Guide