

Connecting the EN-4000 to DC Power

This document describes assembly and use of a DC power connector for Encore Networks, Inc.'s EN-4000™ chassis. The detailed steps also include connection to AC power.

Note: If you do not need or want a detailed description of this procedure, see [EN-4000™ Quick Connection to DC Power](#).

! Caution: If you have an EN-4000 chassis that can use both DC and AC power, it is important to follow these steps to connect the chassis to its power sources in the proper order.

If you received a chassis that uses DC input power, the package includes a standard DC power connection set ([Figure 3-1](#), [Figure 3-2](#), and [Figure 3-3](#)).

Figure 3-1. Top Section of Connector Shell

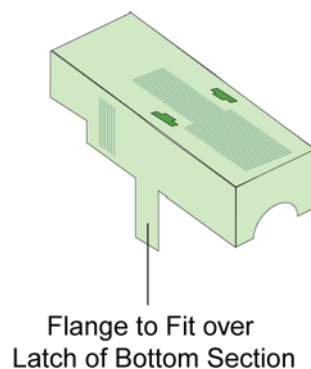


Figure 3-2. DC Power Connector

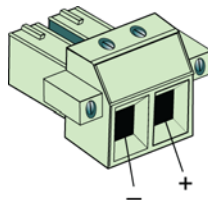
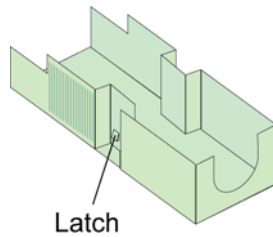


Figure 3-3. Bottom Section of Connector Shell



To connect your EN-4000 to a DC power source, perform the following procedure. Use the steps to connect cables to user equipment and to prepare the chassis for configuration and use.

Note: Consult the [EN-4000 Hardware Description and Specifications](#) to see diagrams of the chassis and the ports.

- 1 Place the EN-4000 chassis at its physical location in the network—for example, on a shelf or tabletop.

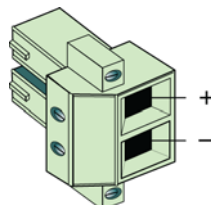
Note: Do not place anything below or on top of the chassis; it must have proper ventilation for cooling.

- 2 Connect the EN-4000 chassis's ports to their network devices. For example, connect the LAN ports, WAN port, USB port, and expansion ports (serial port, etc.) to the network devices, as follows:
 - a Use an Ethernet 10-Base-T cable to connect the WAN port to the WAN equipment.
 - b Use an Ethernet 10-Base-T cable to connect each LAN port to its equipment.
 - c Connect additional network equipment to the remaining ports on the EN-4000 chassis. This includes any port in the expansion slot.
- 3 Use an Ethernet cable to connect your management console (for example, a PC) to a LAN port (**eth 1**) on the back of the EN-4000.
- 4 If the EN-4000 chassis will use only AC input power, go to [step 10](#).
- 5 If the EN-4000 chassis will use DC input power, follow [step 6](#) through [step 9](#) to prepare the chassis for its DC power connection.

Note: The DC power source must supply -12/-24 VDC or -24/-48 VDC.

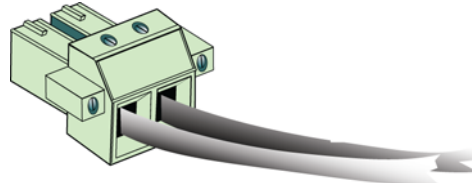
- 6 Make sure the EN-4000 chassis is disconnected from all power sources.
- 7 Do the following:
 - a Turn the DC power connector (the DC power plug) on its side, with the screwheads at the left and with the prongs pointing away from you (as shown in [Figure 3-4](#)).

Figure 3-4. DC Power Connector, on Side



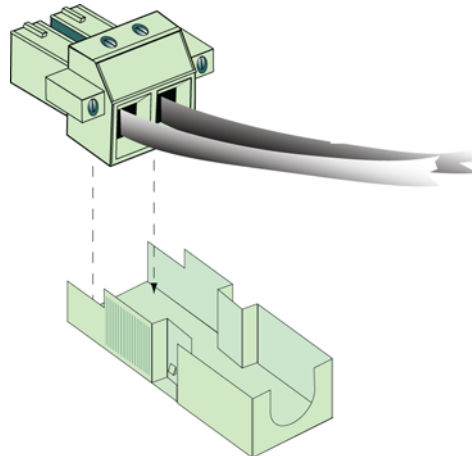
- b** Note the following:
- The top post is + (for the positive wire).
 - The bottom post is – (for the negative/return wire).
- c** Connect a minimum 14 AWG two-wire input cable to the green two-pin power connector (that is, the power plug). Make sure you connect the correct wire to each positive or negative post. [Figure 3-5](#) shows the plug with the cables attached.

Figure 3-5. DC Power Connector with Wires



- 8** A shell cover is provided with the DC power connector, to provide strain relief for the wires. Restrain the wires against the lower half of the shell, and place the shell around the connector, as described in the following substeps:
- a** Seat the DC power connector (the plug) into the bottom half of the shell. The connector will seat into the shell in only one way, as shown in [Figure 3-6](#).

Figure 3-6. Cabled DC Power Connector and Bottom Section of Shell

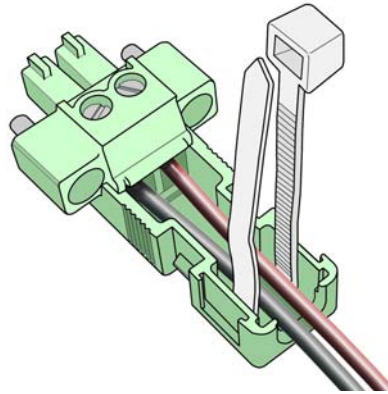


Note: The top and bottom sections of the shell differ. The top section (recall [Figure 3-1](#)) has flanges to fit against the bottom section's latches (recall [Figure 3-3](#)).

- b** Insert the end of a cable-tie through one of the holes in the bottom of the connector shell (Figure 3-7).

Note: The cable lock (the hollow block) can be above the lower shell (as shown) or below the lower shell.

Figure 3-7. Cable-Tie through Bottom of DC Power Connector Shell

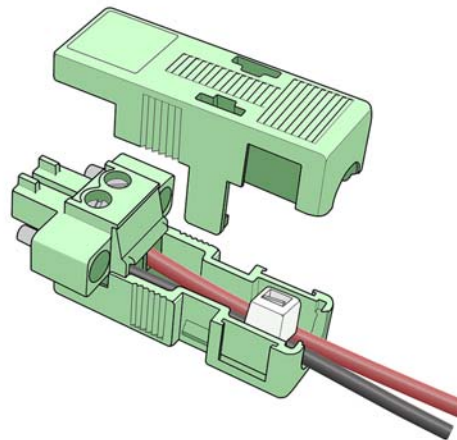


- c** Pull the cable-tie across the cables and through the other hole in the shell bottom.
- d** Put the end of the cable-tie through its lock and pull the cable-tie snug around the cables.

Note: The lock is designed so that the cable may move in only one direction. If you need to remove the cable, you will have to cut the cable.

- e** If you wish, you may trim the end of the cable-tie to be flush with the lock.
- ! Caution:** If you trim the cable-tie, trim it flush with the lock. Do not leave a few millimeters of the cable-tie extending past the lock. It is better to leave the cable-tie untrimmed than to cut it non-flush.
- f** With the plug seated into the bottom section, place the top section of the shell onto the bottom section. Do not yet snap them into place. Figure 3-8 shows how the top and bottom sections fit together around the DC power plug.

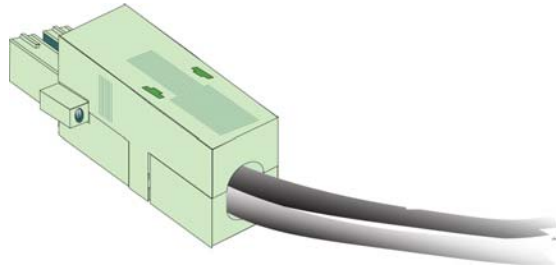
Figure 3-8. Top Section of Shell above Cabled DC Power Connector in Bottom Section of Shell



- g** Make sure the DC power connector sits properly in the bottom section. Then snap the top and bottom sections together, as shown in Figure 3-9.

Note: Make sure the cables do not get caught between edges of the shell. The cables should fit through the cable hole without catching on an edge.

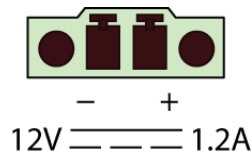
Figure 3-9. Closed Shell Assembly



- h** If you need to take the case apart, grasp each flange of the top section and gently pull them away from the latches on the bottom section. Then pull the top section off the bottom section. Repeat step 8a through step 8g to reassemble the connector case.

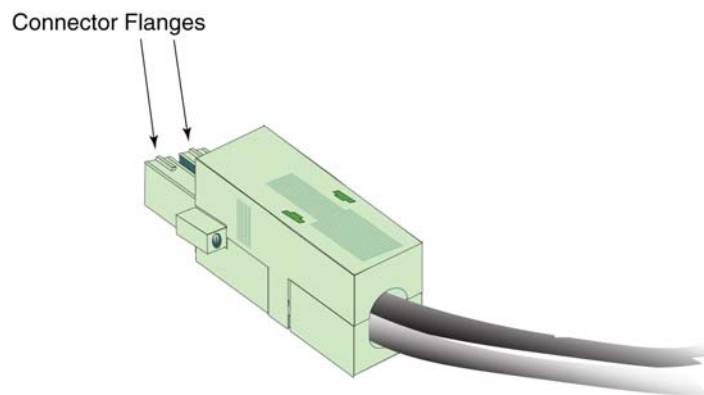
Note: Figure 3-10 shows the standard orientation of the EN-4000's DC power input port.

Figure 3-10. EN-4000 DC Power Input Port



Flanges on the plug (Figure 3-11) allow it to fit into the DC power input port on the backplate of the EN-4000 chassis in only one way. You may need to turn the plug over to fit it into the port.

Figure 3-11. DC Shell Assembly Connector Flanges



- 9** Do the following:
- a** If necessary, rotate the plug's shell assembly 180° around the axis corresponding to the DC power cable (Figure 3-12 and Figure 3-13).

Figure 3-12. Rotate DC Shell Assembly 180 Degrees around Axis of Power Cable

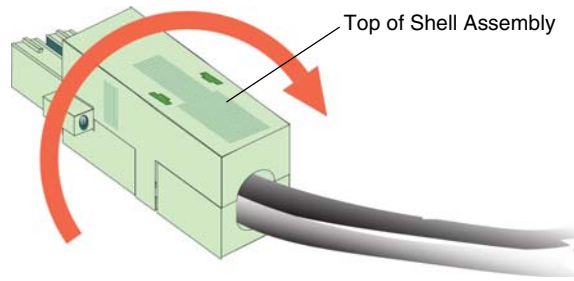
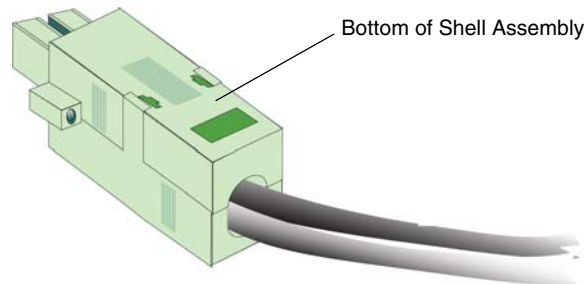


Figure 3-13. DC Shell Assembly Rotated 180 Degrees



- b** Plug the DC power connector into the DC power input port on the rear of the EN-4000 chassis.
- c** Then connect the other end of the DC power cable to a -12/-24 volt DC power source or a -24/-48 volt DC power source.

Note: The power source must supply -12/-24 VDC or -24/-48 VDC.

! **Caution:** The DC power source must match the DC input power rating indicated on the EN-4000 chassis.

- ❖ The EN-4000 chassis powers up.
- 10** If the EN-4000 chassis will use AC input power (in addition to DC power or instead of DC power), connect the AC power supply to the chassis, and then connect the AC power supply to a power outlet supplying 100–240 VAC at 47–63 Hz.
- ❖ If the chassis is already connected to DC power, the chassis has already powered up. If the chassis uses only AC power, the chassis powers up now.
 - ❖ The EN-4000 chassis's hardware installation is complete.

The Next Step

Follow the procedures in [Configuring General Settings for the EN-4000](#) to prepare the EN-4000 for its role in the network.