

Tools Required

- Mechanical lift (recommended)
- Phillips screwdrivers, numbers 1 and 2
- Flat-blade screwdrivers, 3/16 in. and 1/4 in.
- Electrostatic discharge wrist strap
- Socket wrench, 9/16 in.
- Open-end or socket wrench, 7/16 in. (if you are front-mounting the router)
- Wire cutters
- Pliers
- Antistatic mat

Rack Space Requirements

- You can install the router into either a center-mount or front-mount rack, or a four-post cabinet.
- The holes in the mounting ears are spaced at 5-1/4 in. and 7 in.
- The router requires 24 in. (61 cm) clearance front and rear, and 6 in. (15.2 cm) on each side.
- The rack must be large enough to hold the router and strong enough to support its weight (up to 370 lb).

Unpack the Router

1. Move the shipping crate as close to the installation site as possible.
2. Twist the locking tabs to remove the front of the shipping crate.
3. Remove the accessory box.
4. Twist the locking tabs to remove the crate from the pallet.
5. Verify that you have received all parts on the packing list.
6. Use a socket wrench to remove the bolts securing the chassis to the pallet. Store the brackets and bolts in the accessory box.
7. Save the shipping crate, packing materials, and pallet in case you need to move or ship the router.

Install the Router Using a Lift

⚠ CAUTION: Because of the router's size and weight, we highly recommend using a lift to install the router.

1. Make sure the rack is in its permanent location and is secured to the building.
2. Load the router securely onto the lift.
3. Use the lift to position the router in the rack at the correct height.
4. Align the bottom mounting holes on the chassis mounting ears with the holes in the rack.
5. Install one of the provided mounting screws into each of the two aligned holes.

6. Moving up the sides of the router, install screws in every hole on the mounting ears.
7. Move the lift away from the rack.

Install the Router Manually

Remove Components

1. Remove the power supplies, component cover, SFMs, MCS, PCGs, Routing Engine, impellers, fan tray, and FPCs before lifting the router.
DO NOT remove the Connector Interface Panel (CIP) or the circuit breaker box.
2. Slide each component evenly out of the chassis so that it does not become stuck or damaged.
3. Label each component as you remove it so you can reinstall it in the correct location.
4. Immediately store each removed component in an electrostatic bag.

Do not stack removed components. Lay each one on a flat surface.

For instructions on removing router components, see "Install the Router and Its Components" in the *M160 Internet Backbone Router Hardware Installation Guide*.

Lift the Router into the Rack

Lifting the chassis and mounting it into a rack requires three people to lift and a fourth person to secure the mounting screws. The empty chassis weighs over 110 lb (50 kg).

1. Make sure the rack is in its permanent location and is secured to the building.
2. Install the lifting handle onto the rear of the chassis. If you are installing the router in a lower rack space, use the upper set of holes. If you are installing the router in an upper rack space, use the lower set of holes.
3. Have one person grasp the lifting handle while the other two people place one hand across the bottom of the FPC card cage and grasp the chassis with their other hand. Lift the chassis and position it in the rack.
4. Align the bottom mounting holes on the chassis mounting ears with the holes in the rack.
5. Install one of the provided mounting screws into each of the two aligned holes.
6. Moving up the sides of the router, install screws in each hole on the mounting ears.

Reinstall Components

Slide each component into the chassis evenly so that it does not become stuck or damaged.

⚠ CAUTION: Make sure the rear component cover is installed and all empty slots are covered with a blank panel before operating the router.

Connect External Devices and PIC Cables

Connect a Management Console


1. Turn off the power switch on the console.
2. Plug the female end of the RS-232 serial connector into the **CONSOLE** port on the CIP.
3. Tighten the screws on the connector.

Connect to a Network for Out-of-band Management

1. Plug one of the Ethernet cable connectors into the **ETHERNET** port on the CIP.
2. Plug the other end into the networking device.

Connect the PIC Cables

1. Identify the appropriate cable to be connected to each PIC.

 **WARNING:** Do not look directly into the PIC transceivers or into the ends of fiber-optic cables. Fiber-optic cables contain laser light sources that can damage your eyes.

2. Insert the appropriate cable connector into the PIC cable receptacle.
3. Drape the cables over the bobbins of the cable management system to protect them from bending past their recommended bend radius.

Connect Ground and Power Cables

1. Ensure that the voltage across the DC power source cables is 0 V and that the cable leads will not become active during installation.
2. Place the grounding cable lug over the grounding points on the chassis. The grounding cable should already be attached to a proper earth ground for both DC power sources.
3. Secure the grounding cable lug to the grounding points with the washers, then with the bolts.
4. Remove the plexiglass cover from the circuit breaker box.
5. Attach the power cable lugs for both DC power sources to the terminal studs on the circuit breaker box:
 - Connect the positive (+) cable lugs to the **RTN** (return) terminals.
 - Connect the negative (-) cable lugs to the **-48V** (input) terminals.
6. Secure the power cable lugs to the terminal studs with the washers, then with the bolts.
7. Verify that the power cabling and the grounding cabling are correct.
8. Repeat Steps 1 through 7 for the second power supply.
9. Replace the plexiglass cover.

Verify Power Supply Installation

Turn one circuit breaker **ON**. The **CB ON** LED on the power supply faceplate should light steadily, and the **OUTPUT OK** LED should blink briefly, then light steadily.

When both of the power supplies are switched on, the router boots. For information on initial software configuration, see the “Software Installation and Configuration” quick reference card.