CHAPTER 2

Preparing for Installation

This chapter includes specific information about required tools and parts, safety guidelines, and specific preparatory information required to assure a successful installation.

Do not unpack the Cisco 7000 until you are ready to install it. Keep the chassis in the shipping container to prevent accidental damage until you have determined where you want it installed. Use the document *Cisco 7000 and Cisco 7507 Unpacking Instructions*, which is available on UniverCD or as a printed copy (Document Number 78-1067-xx, where xx is the latest version of the document).

The *Cisco Information Packet* is included in the shipping container, together with any companion publications you specified on your order. Inspect all items for shipping damage. If anything appears to be damaged, immediately contact a customer service representative.

Tools and Parts You Need

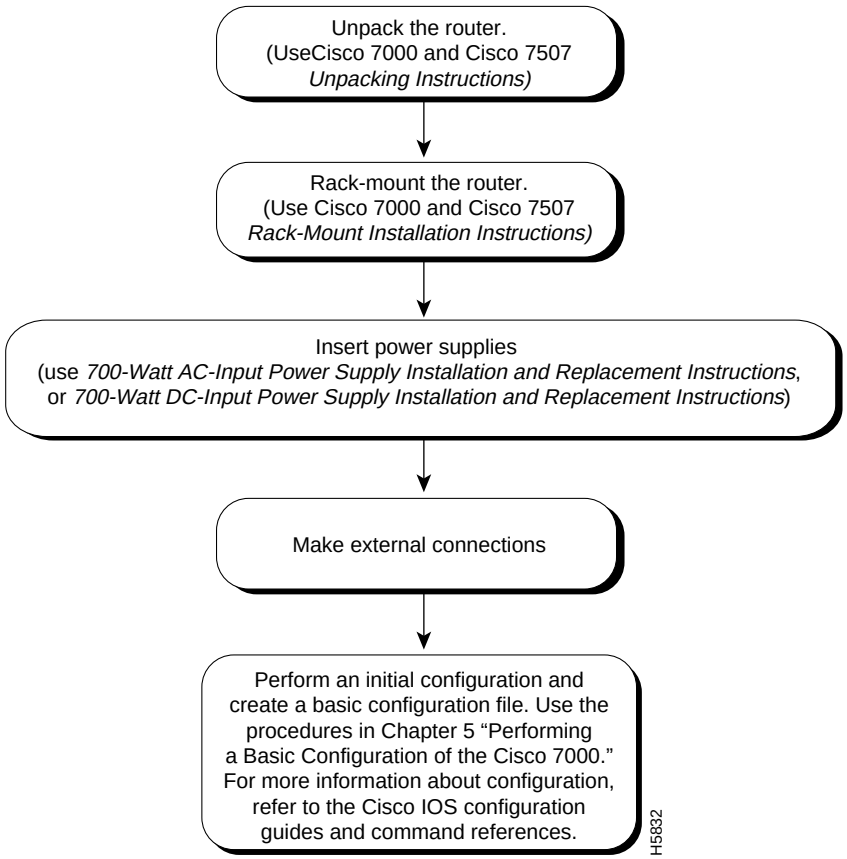
Following are the tools and parts generally required to install your Cisco 7000:

- Number 1 Phillips and 3/16-inch (0.476 cm) flat-blade screwdrivers
- Rack-mount kit (hardware and documentation)
- One interface cable for each physical interface required
- A channel service unit/digital service unit (CSU/DSU) for each data terminal equipment (DTE) serial interface
- Ethernet and Fast Ethernet transceivers (if required for the EIP and FEIP interfaces)
- Modem for remote configuration (if required)
- Additional tools, parts, and procedures listed and discussed in companion documentation, and which are not discussed in this publication

How to Install the Cisco 7000

Figure 2-1 shows a flowchart that illustrates the order of procedures required to install the Cisco 7000 router and connect cables. The flowchart also indicates other Cisco publications you should refer to for information.

Figure 2-1 Installation Flowchart



Safety Recommendations

Because any device that uses electricity must be treated with respect, follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Keep tools away from walk areas where you and others could trip over them.
- Wear safety glasses when exposed to conditions that might be hazardous to your eyes.
- Locate the emergency power-off switch for the room in which you are working. Then, if an electrical accident occurs, you can act quickly to shut off power.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- If ESD grounding is required, ground the chassis.
- Do not work alone when potentially hazardous conditions exist.
- Never assume that power is disconnected from a circuit. Always check.

Warning Before working on a chassis or working near power supplies, unplug the power cord on AC units or disconnect the power at the circuit breaker on DC units. (For translated versions of this warning, refer to the appendix “Translated Safety Warnings.”)

Warning Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected. (For translated versions of this warning, refer to the appendix “Translated Safety Warnings.”)

- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, and missing safety grounds.
- Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

- If an electrical accident occurs, proceed as follows:
  - Use caution; do not become a victim yourself. Disconnect power to the system.
  - If possible, send another person to get medical aid. Otherwise, assess the condition of the victim and then call for help.
  - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in intermittent or complete failures. Always follow ESD-prevention procedures when removing and replacing components. Ensure that the chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. To safely channel unwanted ESD voltages to ground, connect the clip to an unpainted surface of the chassis frame. If no wrist strap is available, ground yourself to the metal chassis.

Caution For safety, periodically check the resistance value of the ESD-preventive wrist strap, which should be between 1 and 10 megohms.

Removing and Installing Processor Modules

Depending on your configuration, you might need to insert additional or new processor modules in your Cisco 7000. To insert or remove interface processors, you do not need to turn off power to the system; they support online insertion and removal (OIR). Interface processors include AIP, CIP, EIP, FEIP, FIP, FSIP, HIP, MIP, and TRIP. However, you *must* turn off the system power before you insert or remove the RP, SP, or SSP, RSP7000, or RSP7000CI processor modules.

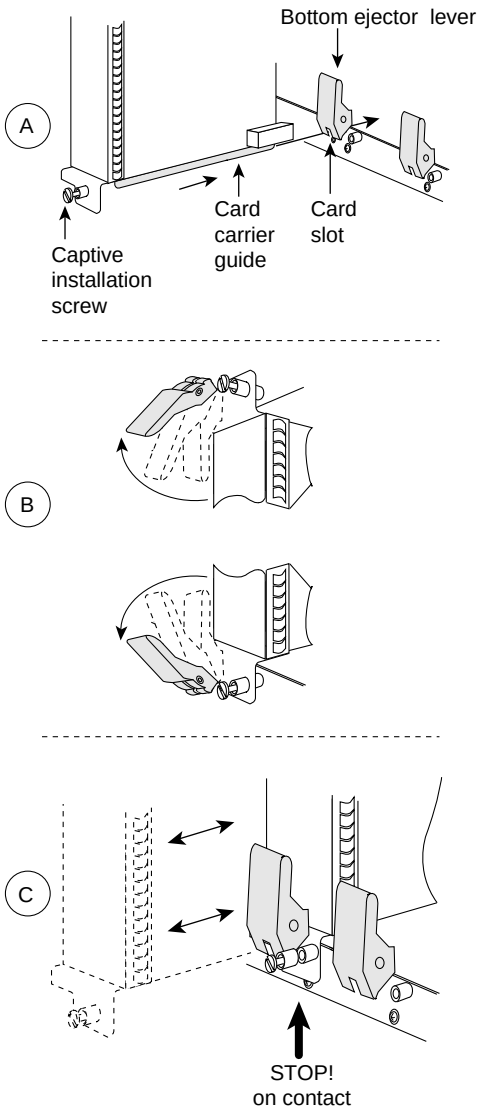
You need a number 1 Phillips or 3/16-inch flat-blade screwdriver to remove any fillers (blank processor module carriers) and to tighten the captive installation screws that secure the processor module in its slot. Whenever you handle modules, you should use an ESD-preventive wrist strap or other grounding device to prevent ESD damage.

You can install interface processors (as shown in Figure 2-2) in any of the five interface processor slots, numbered 0 through 4 from left to right when viewing the chassis from the rear. (Also refer to the illustration of the Cisco 7000 in Figure 1-1.) The two far-right slots contain the SP (or SSP) and RP, or the optional 7000 RSP and 7000 RSP CI, which are required system components.

Caution To prevent the overheating of internal components, always install fillers in empty slots to maintain the proper flow of cooling air across the processor modules. To prevent ESD damage, handle processor modules by the handles and carrier edges only.

Figure 2-2 illustrates how to remove and replace processor modules.

Figure 2-2 Removing and Replacing Processor Modules



Remove a module as follows:

1. Use a screwdriver to loosen the captive installation screws (shown in A).
2. Pull the ejector levers out to release the module from the backplane connector (shown in B). The levers should snap into their spring retainers.
3. Grasp the module handle with one hand and place your other hand under the carrier to support and guide the module as you pull it out of the slot. Avoid touching the card.
4. Place the removed module in the board racks that were provided with your packing material.
5. Install a new module or a filler (MAS-7KBLANK or MAS-RSPBLANK) to keep dust out of the chassis and to maintain proper airflow through the chassis.

Install a module as follows:

1. Choose a slot for the new module and ensure that there is enough clearance to accommodate any interface equipment that you will connect directly to its ports.
2. Use a screwdriver to loosen the captive installation screws (shown in A) and remove the filler (or the existing module) from the slot to be filled.
3. Hold the module handle with one hand, and place your other hand under the carrier to support the module and guide it into the slot. Avoid touching the card.
4. Place the back of the module in the slot and align the guide on the carrier with the groove in the slot (shown in A).
5. Carefully slide the module into the slot until the faceplate makes contact with the ejector levers (shown in C).
6. Use the thumb and forefinger of each hand to push the top lever down and the bottom lever up to fully seat the module in the backplane connector (shown in B).
7. Use a screwdriver to tighten the captive installation screws.